



Commentary

COVID 19: Health care workers, risks, protection and transmission

Clare Leeds

Consultant Occupational Health Physician, County Durham and Darlington NHS Foundation Trust, UK

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The severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) pandemic has been a major challenge for healthcare systems throughout the world. Health care workers (HCW) have been considered at high risk of contracting the virus and may also pose a significant risk of transmitting the virus to patients, colleagues and social contacts [1]. The resilience of any healthcare system relies upon staff to maintain their health and to be protected from the risks associated with their work.

In addition, it is important that HCW are not a source of infection impacting upon vulnerable community members and their colleagues. The focus of many healthcare systems in the peak stages of the pandemic has been to ensure facilities were not overwhelmed and services maintained ability to respond to the acute demands. This ultimately led to service re-design and stepping down of non-acute services and development of remote consultations where feasible [2].

Rigorous infection control processes have been adopted in all healthcare systems which include enhanced hand hygiene and deep cleaning protocols, use of personal protective equipment (PPE), patient cohorting, isolation protocols and various testing protocols [3]. Whilst it is appropriate to adopt all methods, it is important to identify the measures associated with the most impact and to ensure any assumptions are challenged and where possible confirmed with robust evidence.

Piccoli et al. [4] describe their local situation in Southern Switzerland (Canton of Ticino) in early 2020. The region borders Lombardy (Italy) which was the first European area to be affected by an outbreak of SARS-CoV-2 [5]. Steps were put in place to mitigate against overwhelming of the health care service. Piccoli et al. [4] sought to assess the impact of healthcare reorganisation on seroprevalence in specific SARS-CoV-2 risk exposure groups of HCW.

It is worth noting that seropositivity in this study is used as an indication of past or current infection. There are significant

challenges with the use of seroprevalence as an indication of past disease and these must be recognised [6]. Recent studies examining antibodies to SARS-CoV-2 have been predominantly within hospital inpatients. There is evidence to suggest that a lower rate of seroconversion is prevalent in those with mild symptoms [7]. It is likely therefore that seroprevalence studies underestimate the true prevalence of SARS-CoV-2 in any study population. With this in mind however, this strategy could be considered a reasonable approach when comparing two groups of HCW. There is an assumption however that seroconversion rates are likely to be the same in both groups.

The authors report that SARS-CoV-2 testing by reverse transcriptase polymerase chain reaction (Rt-PCR) was available to HCW with fever, dry cough or respiratory distress [4]. Rt-PCR was also performed in some with confirmed exposures. It is interesting to note that 68.7% of participants reported mild symptoms that could possibly be related to SARS-CoV-2 infection. However only 23.8% of those with access to Rt-PCR testing were found to be positive [4]. These findings alone support the stance that reporting of symptoms is a poor proxy for identification of SARS-CoV-2 infection and reliable testing strategies are key for surveillance, case finding and diagnosis [8].

Piccoli et al. [4] provide an important analysis of presumed SARS-CoV-2 infection rates within a re-organised health care system. They make some important observations which will contribute to future infection control strategies within healthcare settings. The first important observation is that HCW had a lower than expected seroprevalence rate. One could explain this by successful infection prevention and control measures within the healthcare setting. However, it should be noted that the seroprevalence is likely to underestimate true infection rates. The magnitude of the underestimation is currently unknown. Piccoli et al. [4] do conclude that healthcare re-organisation had little impact upon seroprevalence within HCW and this is an important observation. As described earlier, this can only be concluded if the seroprevalence rates within the two groups of HCW can be assumed to be the same. There have been varied seroprevalence rates described in HCW [9]. The reasons for this are unknown but are likely to be related to study method designs, testing protocols, community prevalence of SARS-CoV-2 in specific areas and infection control procedures. Further limitations of this study and are worth noting, namely, risk of selection bias, risks of recall and desirability biases and disease severity classifications.

Further study should include the impact of COVID vaccine uptake on these rates. Recent emergence and spread of variants have been reported with some concern regarding possible increased transmission and impact on immune responses [10]. The impact of these

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emerging variants are an important consideration for future study. This is clearly a rapidly changing landscape and the authors are encouraged to continue in their efforts to examine potential factors impacting infection rates within HCW.

Declaration of Competing Interest

Dr. C Leeds has nothing to disclose

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