

## Rapid Response:

### The scientific arguments in favour of mandatory Covid-19 vaccination in healthcare workers are 'waning'

Dear Editor

Although the UK government has at the last minute suspended compulsory Covid-19 vaccination for healthcare workers (HCWs) (1), many other countries, including Belgium, are still sticking to their decision to make it mandatory, mostly based on the same vague arguments as advocated by Dr Sokol (2).

Before mandatory vaccination can be considered, a number of criteria must be met, such as necessity and proportionality, sufficient evidence of vaccine safety, vaccine effectiveness and efficacy (3).

What is missing in most discussions is a clear definition of the end goal.

Two main goals can meet the "necessity" criterion:

1. To significantly reduce the spread of Sars-CoV-2 virus by HCWs
2. To reduce Covid-19 absenteeism among HCWs.

The question remains whether mandatory vaccination in HCWs is the most efficient way to achieve those goals, and whether its effectiveness is long-lasting enough to justify coercion.

The European Covid-19 vaccines are initially designed to prevent symptomatic infections caused by the Wuhan variant in infection-naïve adults. Early studies showed tremendous effectiveness for up to two months after the second vaccine dose (4). Since infectiousness correlates with viral load, you also expect a huge impact on transmission.

Vaccines maintained a good efficacy profile, especially during the second and third waves, but waning was observed several months after the last injection which coincided with the Delta wave (5).

Evidence is mounting that the latest Omicron variant appears to be able to evade the vaccines' effect on transmission (5, 6). The booster seems to give a more favourable picture, but 'waning' is already noticed after 10 weeks (6). Luckily, vaccines seem to keep their protective effect against hospitalisation and serious outcomes.

'Waning' and 'evading' lead to breakthrough infections in fully vaccinated HCWs. As a result, an increase in absenteeism has already been noted during the Delta wave and could be even higher during Omicron, despite high vaccination coverage among HCWs (7). Finally, we must also count the days of absenteeism caused by side effects after vaccination.

Meanwhile, unvaccinated caregivers have already been exposed to many covid cases, acquired natural immunity or resisted any Covid infection through robust innate immunity or through rigorous implementation of non-pharmaceutical physical barriers (8). The acquired natural immunity appears to have long-lasting efficacy, although reinfections increase in the Omicron peak (9, 10).

Improving the effectiveness of other preventive measures such as ventilation, personal protective equipment and intelligent testing and isolation, could potentially further reduce transmission more effectively, with an equal impact in vaccinated and unvaccinated and also prevent the transmission of other infections (11).

In addition to efficacy, side effects and costs must also be considered.

In particular, the balance between serious adverse events such as myocarditis and venous thrombotic events against absolute risk of a serious course of Covid-19 infection is not favourable for vaccinating young adults (<40 years) (12, 13), over-represented in the healthcare sector.

The obligation itself also has a cost for the government, but more importantly on an individual level. The HCW, who sees no medical and personal need for a vaccination after two years of dedicated professional engagement, risks punishment and/or will be fired. In addition, those forced to leave the job are not quickly replaced with the risk of knock-on effects and a total collapse of the health care system (7).

Certainly, any HCW vaccinated or not has a duty to reduce the transmission of any infection through a variety of proven measures, including taking sick leave for symptomatic infection (14). Vaccination is part of the solution, but not the ultimate goal and could even be counterproductive by creating a false sense of security and losing valuable staff.

In conclusion, at present the scientific arguments for the mandatory vaccination of HCWs became uncertain. The efficacy of current Covid vaccines, including booster shots, against transmission in HCWs is declining and is uncertain in the long term. The cost of an implementation is likely to outweigh the profit. The WHO criteria for a mandatory vaccination policy are insufficiently met (3).

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