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Europe must come together to confront omicron

The SARS-CoV-2 omicron variant is spreading rapidly in Europe, even in countries with high levels of vaccination, including those that have moved quickly with booster vaccinations.^{1 2} We write as health professionals and researchers from across Europe to call for concerted European action to address the immediate threat and to move rapidly to develop joint plans to tackle future variants of concern effectively. EU Member States have accepted the principle of a European Health Union and have put in place measures to create a Health Emergency Preparedness and Response Authority.³ They now need to show that they can work together in ways that they have not always done before.

The need for urgent action stems from knowledge gained from laboratory and epidemiological studies that antibodies resulting from vaccination or prior infection with earlier variants have reduced ability to neutralise omicron, leading to frequent reinfections.^{4 5} While infections with omicron appear to be inducing less severe disease and to result in fewer deaths in these highly vaccinated populations, it is still causing high levels of hospitalisations in many countries, with pressure on health services exacerbated by infections among health and other essential workers.^{1 6-8} There are also worrying reports of its impact on children, who in most countries have been at most only partially vaccinated, as well as concerns about its longer term consequences, including long covid. While early reports from South Africa, amplified by media organisations, suggested that omicron is causing “mild” disease, the Director General of World Health Organisation (WHO) has argued that it should not be categorised in this way.⁹

Two years into the pandemic, the dangers of delayed, ineffective, or uncoordinated mitigation measures should be clear. We also know which strategies are most effective.¹⁰ These are a combination of minimising mixing with others in indoor spaces, and where this cannot be avoided, making these settings safer with good ventilation, air filtration, and mask wearing, supported by appropriate use of testing. There is no excuse for delay or inaction.

Why the urgency? Sera of vaccinated individuals exhibit a substantial reduction in ability to neutralise omicron, with most currently available monoclonal antibodies incapable of neutralising it.¹¹⁻¹⁴ Vaccination with only two doses offers little protection against infection but protection does increase markedly following a third dose.^{4 13} There is also reassuring evidence that vaccination induces a T cell response against omicron, although the duration of protection conferred by a third dose remains to be determined.¹⁵ However, despite the success of vaccination programmes in many countries, the majority have yet to receive booster doses and there are still many people with little or

no immunity, including those with reduced immune function, for example due to age or comorbidity, and children who, in most countries, have yet to be vaccinated, who have no history of prior infection.

For now, here are at least two critical questions (i) how well vaccination protects against infections and severe disease over time, noting that, so far, omicron has not yet spread extensively into older age groups in many countries and (ii) how much pressure the increased transmissibility and/or immune evasion of omicron puts on health systems, both through increased numbers of patients and staff absences. Even under the most optimistic assumptions, letting omicron run unfettered risks potentially devastating consequences. Our call for an immediate, united, coordinated response across Europe is threefold:

First, we urgently need to reduce infections to avoid overwhelming health systems and protect public life and the economy. Our concern is not only with the burden of severe disease; it is also with absences, through illness, even if mild, or quarantining of essential workers in all sectors, including education, transport, and infrastructure.^{16 17} Implementing effective measures such as working from home, mask mandates, and reducing indoor gatherings would bring rapid benefits, relieving pressure on these systems, and thus decreasing the likelihood of needing far-reaching stringent measures, such as closures, curfews, or lockdowns. These policies can certainly be adopted at national or regional levels but, from a European perspective, more can be done by coordinated action. Specifically, we need a coordinated communication strategy to support them, saying loudly and clearly that “covid is airborne,” with everything that follows from that. In particular, this points to a focus on measures that seek to ensure that the settings for common gatherings, for example in schools, factories, and entertainment venues, provide as safe environments as possible. This must be supported by coordinated guidance and, in due course, European legislation on how to make them safe, including ventilation standards.

Second, we need to protect children in ways that allow them to benefit from education safely. There are clear signals from South Africa and the United States of a steep rise in hospital admissions among children associated with high community transmission even if it is still unclear how this translates to Europe.^{18 19} However, if we wait for more evidence, the sheer number of hospitalised cases, even if not severely ill, could soon overwhelm limited paediatric care capacity. In this context we must note there are few anti-covid treatments currently approved for children and those approved for adults are also in short supply. European countries have, so far, varied greatly in how they have responded to covid in schools. For now, we call on all relevant

actors, including European professional bodies (in health and education), the European Commission, and the European Region of WHO to engage in urgent discussions on how to share experience of good practice in both safe classrooms and remote learning.

Third, we need to buy time so that more individuals, including children, can be vaccinated, including scale up of supplies of paediatric doses. Rapid scale-up of vaccinations and boosters is essential, but will not be fast enough to defeat the omicron wave. However, we can prepare for further variants. This requires concerted European (and indeed global) action to develop new polyvalent and new variant vaccines, coupled with a concerted campaign to reach those who have yet to be vaccinated. Again, we call for sharing of best practice, including measures that overcome the remaining barriers that people face, as well as concerted Europe-wide measures for infodemic management, and especially targeting sources of disinformation. This will necessitate engaging with social media platforms in ways that individual countries may find difficult. However, Europe also needs to do more to make the world safe. This includes additional support for Access to COVID-19 Tools (ACT) and the COVID-19 Vaccine Access Facility (COVAX), as well as withdrawal of opposition to measures that would facilitate manufacturing in low and middle income countries.

The European response in the early stages of the pandemic was often fragmented and delayed.²⁰ We cannot make the same mistakes again.

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- 1 Statens Serum Institut. Risikovurdering af omikron Copenhagen2021 [Available from: https://covid19.ssi.dk/-/media/arkiv/subsites/covid19/risikovurderinger/risikovurdering_omikron_121221_ssi.pdf?la=da
- 2 Ferguson N, Ghani A, Hinsley W, et al. Report 50: Hospitalisation risk for Omicron cases in England London2021 <https://www.imperial.ac.uk/media/imperial-college/medicine/mrc-gida/2021-12-22-COVID19-Report-50.pdf>
- 3 Anderson M, Forman R, Mossialos E. Navigating the role of the EU Health Emergency Preparedness and Response Authority (HERA) in Europe and beyond. *Lancet Reg Health Eur* 2021;9:100203. doi: 10.1016/j.lanep.2021.100203. pmid: 34661186
- 4 Ferguson N, Ghani A, Cori A, et al. Report 49: Growth, population distribution and immune escape of Omicron in England London2021 <https://www.imperial.ac.uk/media/imperial-college/medicine/mrc-gida/2021-12-16-COVID19-Report-49.pdf>
- 5 Pulliam JRC, van Schalkwyk C, Gounder N, et al. Increased risk of SARS-CoV-2 reinfection associated with emergence of the Omicron variant in South Africa. *medRxiv* 2021:2021.11.11.21266068. doi: 10.1101/2021.11.11.21266068
- 6 Christie B. Covid-19: Early studies give hope omicron is milder than other variants. *BMJ* 2021;375:n3144. doi: 10.1136/bmj.n3144. pmid: 34949600
- 7 Iacobucci G. Covid-19: NHS trusts declare "critical incidents" because of staff shortages. *BMJ* 2022;376:o3. doi: 10.1136/bmj.o3. pmid: 34983792
- 8 Leicester J. France allows some COVID-19-infected medics to keep working 2022 [Available from: <https://apnews.com/article/coronavirus-pandemic-business-health-europe-france-089395eed168b8d24be09ad05b532e62>
- 9 Covid BBC. Deadly Omicron should not be called mild, warns WHO 2022 <https://www.bbc.co.uk/news/world-59901547>.
- 10 Priesemann V, Balling R, Brinkmann MM, et al. An action plan for pan-European defence against new SARS-CoV-2 variants. *Lancet* 2021;397:469-70. doi: 10.1016/S0140-6736(21)00150-1. pmid: 33485462
- 11 Cele S, Jackson L, Khoury DS, et al. SARS-CoV-2 Omicron has extensive but incomplete escape of Pfizer BNT162b2 elicited neutralization and requires ACE2 for infection. *medRxiv* 2021:2021.12.08.21267417. doi: 10.1101/2021.12.08.21267417
- 12 Ai J, Zhang H, Zhang Y, et al. Omicron variant showed lower neutralizing sensitivity than other SARS-CoV-2 variants to immune sera elicited by vaccines after boost. *Emerg Microbes Infect* 2021;1-24. doi: 10.1080/22221751.2021.2022440. pmid: 34935594
- 13 Gardner BJ, Kilpatrick AM. Estimates of reduced vaccine effectiveness against hospitalization, infection, transmission and symptomatic disease of a new SARS-CoV-2 variant, Omicron (B.1.1.529), using neutralizing antibody titers. *medRxiv* 2021:2021.12.10.21267594
- 14 Andrews N, Stowe J, Kirsebom F, et al. Effectiveness of COVID-19 vaccines against the Omicron (B.1.1.529) variant of concern. *medRxiv* 2021:2021.12.14.21267615. doi: 10.1101/2021.12.14.21267615
- 15 Keeton R, Tincho MB, Ngomti A, et al. SARS-CoV-2 spike T cell responses induced upon vaccination or infection remain robust against Omicron. *medRxiv* 2021:2021.12.26.21268380. doi: 10.1101/2021.12.26.21268380
- 16 Torjesen I. Covid-19: More doctors in London are now off work than at any time during the pandemic. *BMJ* 2021;375:n3135. doi: 10.1136/bmj.n3135. pmid: 34937688
- 17 Moloney C. Southern cancels London Victoria trains for two weeks over Covid: The Guardian: 2022 <https://www.theguardian.com/uk-news/2021/dec/30/southern-cancels-london-victoria-trains-for-two-weeks-over-covid>
- 18 Cloete J, Kruger A, Masha M, et al. Rapid rise in paediatric COVID-19 hospitalisations during the early stages of the Omicron wave, Tshwane District, South Africa. *medRxiv* 2021:2021.12.21.21268108. doi: 10.1101/2021.12.21.21268108
- 19 News ABC. Hospitalisations jump in US children aged under five with COVID-19, CDC data says 2022 <https://www.abc.net.au/news/2022-01-09/covid-19-vaccinations-children-hospitalisations-us/100746416>.
- 20 Anderson M, Mckee M, Mossialos E. Covid-19 exposes weaknesses in European response to outbreaks. *BMJ* 2020;368:m1075. doi: 10.1136/bmj.m1075. pmid: 32188590