



Letter

The epidemiological relevance of the COVID-19-vaccinated population is increasing

Günter Kampf*

University Medicine Greifswald, Institute for Hygiene and Environmental Medicine, Greifswald, Germany

ARTICLE INFO

Article History:

Received 1 November 2021

Accepted 3 November 2021

Available online 20 November 2021

High COVID-19 vaccination rates were expected to reduce transmission of SARS-CoV-2 in populations by reducing the number of possible sources for transmission and thereby to reduce the burden of COVID-19 disease. Recent data, however, indicate that the epidemiological relevance of COVID-19 vaccinated individuals is increasing. In the UK it was described that secondary attack rates among household contacts exposed to fully vaccinated index cases was similar to household contacts exposed to unvaccinated index cases (25%

for vaccinated vs 23% for unvaccinated). 12 of 31 infections in fully vaccinated household contacts (39%) arose from fully vaccinated epidemiologically linked index cases. Peak viral load did not differ by vaccination status or variant type [1]. In Germany, the rate of symptomatic COVID-19 cases among the fully vaccinated ("breakthrough infections") is reported weekly since 21. July 2021 and was 16.9% at that time among patients of 60 years and older [2]. This proportion is increasing week by week and was 58.9% on 27. October 2021 (Figure 1) providing clear evidence of the increasing relevance of the fully vaccinated as a possible source of transmission. A similar situation was described for the UK. Between week 39 and 42, a total of 100.160 COVID-19 cases were reported among citizens of 60 years or older. 89.821 occurred among the fully vaccinated (89.7%), 3.395 among the unvaccinated (3.4%) [3]. One week before, the COVID-19 case rate per 100.000 was higher among the subgroup of the vaccinated compared to the subgroup of the unvaccinated in all age

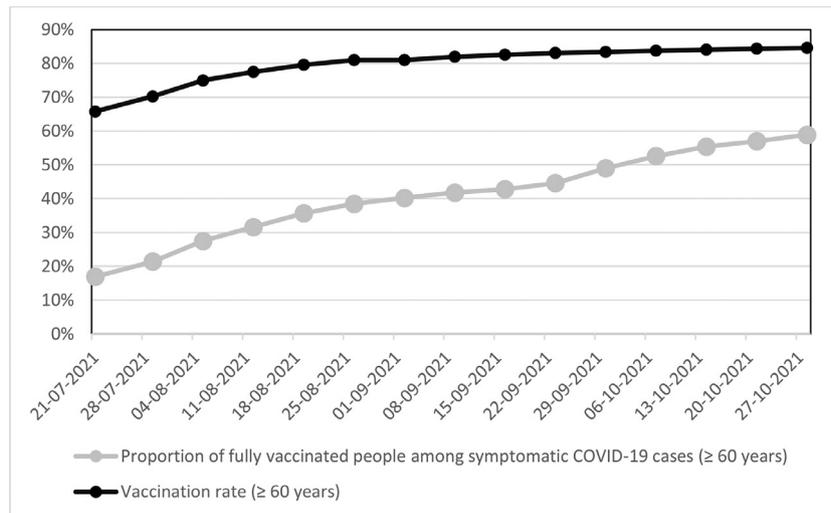


Figure 1. Vaccination rates and proportions of fully vaccinated people among symptomatic COVID-19 cases (≥ 60 years) in Germany between 21. July and 27. October 2021 based on the weekly reports from the Robert Koch-Institute [2].

* Correspondence to: Prof. Dr. Günter Kampf, University Medicine Greifswald, Institute for Hygiene and Environmental Medicine, Ferdinand-Sauerbruch-Strasse, 17475

Greifswald, Germany

E-mail address: gunter.kampf@uni-greifswald.de

groups of 30 years or more. In Israel a nosocomial outbreak was reported involving 16 healthcare workers, 23 exposed patients and two family members. The source was a fully vaccinated COVID-19 patient. The vaccination rate was 96.2% among all exposed individuals (151 healthcare workers and 97 patients). Fourteen fully vaccinated patients became severely ill or died, the two unvaccinated patients developed mild disease [4]. The US Centres for Disease Control and Prevention (CDC) identifies four of the top five counties with the highest percentage of fully vaccinated population (99.9–84.3%) as “high” transmission counties [5]. Many decisionmakers assume that the vaccinated can be excluded as a source of transmission. It appears to be grossly negligent to ignore the vaccinated population as a possible and relevant source of transmission when deciding about public health control measures.

Author Contribution statement

GK as the sole author of this Letter, contributed to all aspects of the text.

Declaration of Competing Interests statement

The author has no competing interests to declare

References

- [1] Singanayagam A, Hakki S, Dunning J, et al. Community transmission and viral load kinetics of the SARS-CoV-2 delta (B.1.617.2) variant in vaccinated and unvaccinated individuals in the UK: a prospective, longitudinal, cohort study. *Lancet Infect Dis* 2021. doi: [10.1016/S1473-3099\(21\)00648-4](https://doi.org/10.1016/S1473-3099(21)00648-4).
- [2] Robert Koch-Institut. Wöchentlicher Lagebericht des RKI zur Coronavirus-Krankheit-2019 (COVID-19). AKTUALISIERTER STAND FÜR DEUTSCHLAND 22. Juli 2021. https://www.rki.de/DE/Content/InfAZ/N/Neuartiges_Coronavirus/Situationsberichte/Wochenbericht/Wochenbericht_2021-07-22.pdf?__blob=publicationFile (accessed 28. September 2021).
- [3] UK Health Security Agency. COVID-19 vaccine surveillance report. Week 4328. Oktober 2021. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1029606/Vaccine-surveillance-report-week-43.pdf (accessed 1. November 2021).
- [4] Shitrit P, Zuckerman NS, Mor O, Gottesman BS, Chowers M. Nosocomial outbreak caused by the SARS-CoV-2 Delta variant in a highly vaccinated population, Israel, July 2021. *Euro Surveill* 2021;26(39):2100822. doi: [10.2807/1560-7917.ES.2021.26.39.2100822](https://doi.org/10.2807/1560-7917.ES.2021.26.39.2100822).
- [5] Subramanian SV, Kumar A. Increases in COVID-19 are unrelated to levels of vaccination across 68 countries and 2947 counties in the United States. *Eur J Epidemiol* 2021. doi: [10.1007/s10654-021-00808-7](https://doi.org/10.1007/s10654-021-00808-7).