

Superspreaders, asymptomatics and COVID-19 elimination

TO THE EDITOR: We read with interest the article by Kault,¹ who carried out an analysis on superspreaders, asymptomatic cases, and coronavirus disease 2019 (COVID-19) elimination. Although all efforts made for preventing or containing the COVID-19 pandemic are certainly welcome, we raise doubts on some basic aspects used for constructing the prediction model and which do not seem to be evidence-based.

In the risk model of COVID-19 re-emergence after release of restrictive measures (eg, lockdowns), Kault made some erroneous assumptions, including the fact that asymptomatic subjects may be as infectious as symptomatic patients with COVID-19.¹ This hypothesis seems to be contradicted by several lines of evidence. First, a meta-analysis published in 2020 concluded that the rate of asymptomatic transmission of severe acute respiratory syndrome

coronavirus 2 (SARS-CoV-2) infection is 35% lower compared with COVID-19 patients with symptomatic illness.² This has also been clearly explained in a seminal study showing that the viral load is the highest in concomitance with symptoms onset, so that the infectiousness of pre-symptomatic or asymptomatic individuals is probably low.³ Notably, the impact of pre-symptomatic SARS-CoV-2 transmission seems also rather limited, whereby the secondary attack rate was found to account for only 15% of all secondary COVID-19 cases.⁴

A second aspect that needs to be highlighted is that presuming that 50% of SARS-CoV-2-positive patients are asymptomatic may also be formally incorrect. Beside the fact that the asymptomatic SARS-CoV-2-positive rate varies greatly depending on many genetic, demographic (ie, age, sex and ethnic origin) and even clinical (eg, time course of disease, comorbidities) variables, an analysis in the official database of the Italian

National Institute of Health reveals, for example, that the rate of asymptomatic subjects with SARS-CoV-2 infection approximates 70%.⁵

Combined with lower infectiousness, the high prevalence of asymptomatic subjects bearing SARS-CoV-2 infection after release of restrictive practices (eg, lifting of lockdowns) would persuade us to conclude that the possible impact of asymptomatic superspreaders on SARS-CoV-2 transmission would be low and perhaps insufficient to influence or guide future policies aimed at restricting individual freedom.

Competing interests: No relevant disclosures. ■

Camilla Mattiuzzi¹
Giuseppe Lippi² 

¹Service of Clinical Governance, Provincial Agency for Social and Sanitary Services, Trento, Italy.

²Università degli Studi di Verona, Verona, Italy.

giuseppe.lippi@univr.it

doi: [10.5694/mja2.51174](https://doi.org/10.5694/mja2.51174)

© 2021 AMPCo Pty Ltd

References are available online.

- 1 Kault D. Superspreaders, asymptomatics and COVID-19 elimination. *Med J Aust* 2020; 213: 447–448. <https://www.mja.com.au/journal/2020/213/10/superspreaders-asymptomatics-and-covid-19-elimination>
- 2 Buitrago-Garcia D, Egli-Gany D, Counotte M, et al. Occurrence and transmission potential of asymptomatic and presymptomatic SARS-CoV-2 infections: A living systematic review and meta-analysis. *PLoS Med* 2020; 17: e1003346.
- 3 He X, Lau EHY, Wu P, et al. Temporal dynamics in viral shedding and transmissibility of COVID-19. *Nat Med* 2020; 26: 672–675.
- 4 Zhang Y, Muscatello D, Tian Y, et al. Role of presymptomatic transmission of COVID-19: evidence from Beijing, China. *J Epidemiol Community Health* 2020; 75: 84–87.
- 5 Istituto Superiore di Sanità. [Epidemia COVID-19] [Italian]. https://www.epicentro.iss.it/coronavirus/bollettino/Bollettino-sorveglianza-integrata-COVID-19_20-ottobre-2020.pdf (viewed Oct 2020). ■