Letter

# Beware of regional heterogeneity when assessing the role of schools in the SARS-CoV-2 second wave in Italy 

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Gandini et al. [1] argue that school opening was not a driver of the SARS-CoV-2 second wave in Italy. We contend this is an overreaching interpretation of their results. First, contrary to what indicated by the authors, cross-sectionally the incidence of SARS-CoV-2 among students age $14-18$ is higher than the general population in 8 out of 18 regions considered (see Fig. 1.b in Gandini et al. [1]). Second, Gandini et al. [1]'s prospective analysis focuses on the temporal relationship between school opening and COVID-19 transmission in the Veneto region until November 7, 2020. However, consistently with the different implementation of public health measures at the sub-national level and the distinctive pandemic evolution and management in the Veneto region, evidence for 12 regions under monitoring by the Italian Epidemiological Association reveals substantial geographic variation in the role of school opening for Italy's second wave. Notably, at the end of September 2020, the rise in incidence among high school students age 14-18 preceded that of adults age 25+ in Emilia-Romagna, Lazio, Lombardy, Marche, Piemonte, and Tuscany [2] - the same regions (except for Lombardy) where Gandini et al. [1] find a higher incidence of SARS-CoV-2 among students age 14-18 than the general population (see Fig. 1.b). Official data from the Istituto Superiore di Sanità confirm that, nationally, the rise in incidence among 10-19 years old has preceded that of adults age

[^0]$30+$ after school opening in Fall 2020 [3]. The role of school openings on the second COVID-19 wave in Italy should thus not be minimized.

## Author contributions

SB, YB, and DG designed the study. SB led manuscript writing. SB, DG and NS reviewed the literature. All authors contributed to final draft.

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## Declaration of Interests

All authors have no interests to declare.

## References

[1] Gandini S, Rainisio M, Iannuzzo ML, Bellerba F, Cecconi F, Scorrano L. A cross-sectional and prospective cohort study of the role of schools in the

SARS-CoV-2 second wave in Italy. Lancet Reg Health Eur 2021. doi: 10.1016/j. lanepe.2021.10009.
[2] Italian Epidemiological Association. Dentro i dati settimanali di sorveglianza Covid-19. Settimo aggiornamento. Settimana 28 dicembre $2020 / 03$ gennaio 2021. https://www.epidemiologia.it/wp-content/uploads/2021/01/settimoaggiornamento.pdf. Accessed on June 8, 2021.
[3] Istituto Superiore di Sanità. Epidemia COVID-19. Aggiornamento nazionale 3 marzo 2021. Figura 24. https://www.epicentro.iss.it/coronavirus/bollettino/Bollet-tino-sorveglianza-integrata-COVID-19_3-marzo-2021.pdf. Accessed on June 8, 2021.


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