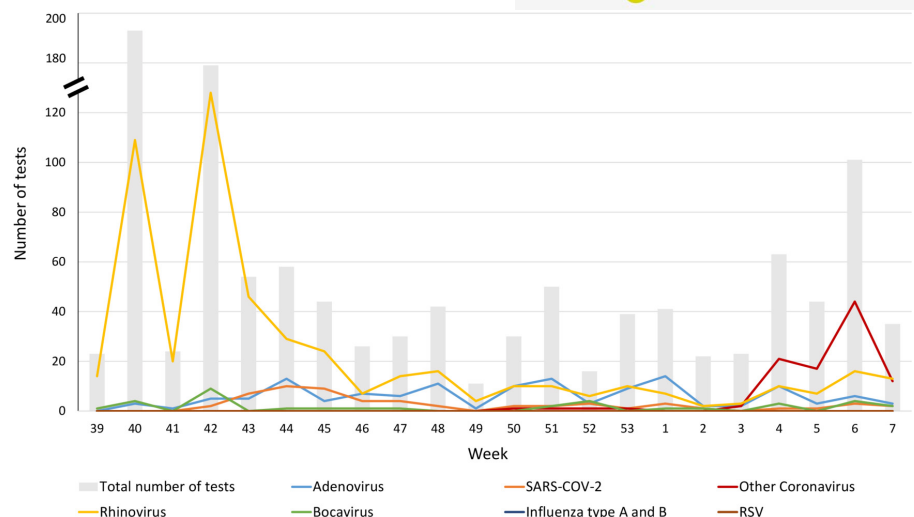


## Social distancing measures for COVID-19 are changing winter season

Health authorities worldwide have adopted measures of social distancing and movement restrictions, in addition to other public health measures to reduce exposure and to suppress interhuman SARS-CoV-2 transmission. In Italy, a national lockdown with school closure was introduced from March to May 2020. From November 2020, Italy has been divided into zones according to regional epidemiological data, with primary schools reopened, associated with the mandatory use of face masks and different levels of social distance measures. For children with symptoms suggestive of COVID-19, the surveillance mechanism for the control of SARS-CoV-2 infection is based on the performance of a real-time PCR on a nasopharyngeal swab. A diagnostic test has been introduced at the tertiary-level university hospital, Institute for Maternal and Child Health, IRCCS “Burlo Garofolo” of Trieste, consisting of a multiple nucleic acid amplification assay for 13 common viral respiratory pathogens on nasopharyngeal swab (Respiratory Flow Chip assay (Vitro, Sevilla, Spain), including SARS-CoV-2, influenza A and B, adenovirus, other coronaviruses, parainfluenza virus 1–4, enteroviruses, bocavirus, metapneumovirus, respiratory syncytial virus (RSV), rhinoviruses, *Bordetella pertussis*, *Bordetella parapertussis* and *Mycoplasma pneumoniae*. Before routine utilisation, international standard quality control samples for each pathogen were used for test validation, and no cross-detection was found between the different pathogens. Criteria for testing referral did not change during the study period. Weekly variability of the number of total tests performed was due to the normal variations of acute illness. During the last winter season, from September 2020 (week 39) to February 2021 (week 7), 1138 nasopharyngeal swabs were tested for patients younger than 17 years old (figure 1). No influenza A or B nor RSV was detected during this period. The most common pathogen was rhinovirus (n=505), followed by adenoviruses (n=131), other coronaviruses (n=101) and SARS-CoV-2 (n=57). Our data show that common winter pathogens circulation changed, and influenza virus and RSV did not produce a seasonal epidemic in the 2020–2021 winter season. These data suggest that social distancing measures



**Figure 1** Results of naso-pharyngeal swab for respiratory pathogens. Grey bars represent total number of tests per week.

and mask wearing profoundly changed the seasonality of winter paediatric respiratory infections that are mainly spread by respiratory droplets. The reasons why rhinovirus remains the main pathogen despite social distancing and face mask use are still a matter of debate. Similar data showing a decrease of common viral respiratory infections during the winter season have recently been reported in the southern hemisphere.<sup>1–4</sup> Our data refer to a single institute, covering paediatric population of the Trieste Province (about 230 000 inhabitants), limiting the generalisation of our findings. However, our results highlight the need for continuing surveillance for the delayed spread of such viruses during spring and summer.

**Alessandro Amaddeo** , <sup>1</sup> **Carolina Cason**,<sup>2</sup> **Giorgio Cozzi**,<sup>1</sup> **Luca Ronfani**,<sup>3</sup> **Manola Comar**<sup>2</sup>

<sup>1</sup>Emergency Department, Institute for Maternal and Child Health—IRCCS Burlo Garofolo, Trieste, Friuli-Venezia Giulia, Italy

<sup>2</sup>SSD of Advanced Microbiology Diagnosis and Translational Research, Institute for Maternal and Child Health—IRCCS Burlo Garofolo, Trieste, Friuli-Venezia Giulia, Italy

<sup>3</sup>Clinical Epidemiology and Public Health Research Unit, Institute for Maternal and Child Health—IRCCS Burlo Garofolo, Trieste, Italy

**Correspondence** to Dr Alessandro Amaddeo, Emergency Department, Institute for Maternal and Child Health—IRCCS Burlo Garofolo, Trieste, Friuli-Venezia Giulia, Italy; [alessandro.amaddeo@burlo.trieste.it](mailto:alessandro.amaddeo@burlo.trieste.it)

**Contributors** AA and MC designed the study. AA, CC, GC and MC collected and analysed the data. All the authors contributed equally to the interpretation of the results and to the writing of the manuscript.

**Funding** The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

**Competing interests** None declared.

**Patient consent for publication** Not required.

**Provenance and peer review** Not commissioned; externally peer reviewed.

This article is made freely available for use in accordance with BMJ’s website terms and conditions for the duration of the covid-19 pandemic or until otherwise determined by BMJ. You may use, download and print the article for any lawful, non-commercial purpose (including text and data mining) provided that all copyright notices and trade marks are retained.

Accepted 12 May 2021

### ORCID iD

Alessandro Amaddeo <http://orcid.org/0000-0003-2117-0781>

### REFERENCES

- 1 Sullivan SG, Carlson S, Cheng AC, *et al*. Where has all the influenza gone? the impact of COVID-19 on the circulation of influenza and other respiratory viruses, Australia, March to September 2020. *Euro Surveill* 2020;25.
- 2 Friedrich F, Ongaratto R, Scotta MC, *et al*. Early impact of social distancing in response to COVID-19 on hospitalizations for acute bronchiolitis in infants in Brazil. *Clin Infect Dis* 2020. doi:10.1093/cid/ciaa1458. [Epub ahead of print: 28 Sep 2020] (Published Online First: 28 September 2020).
- 3 Nascimento MS, Baggio DM, Fascina LP, *et al*. Impact of social isolation due to COVID-19 on the seasonality of pediatric respiratory diseases. *PLoS One* 2020;15:e0243694.
- 4 Yeoh DK, Foley DA, Minney-Smith CA, *et al*. The impact of COVID-19 public health measures on detections of influenza and respiratory syncytial virus in children during the 2020 Australian winter. *Clin Infect Dis* 2020. doi:10.1093/cid/ciaa1475. [Epub ahead of print: 28 Sep 2020] (Published Online First: 28 September 2020).