EDITORIALE

Test, Trace and Learn: lessons about COVID-19 from young people

Testare, tracciare e imparare: lezioni sul COVID-19 dai giovani

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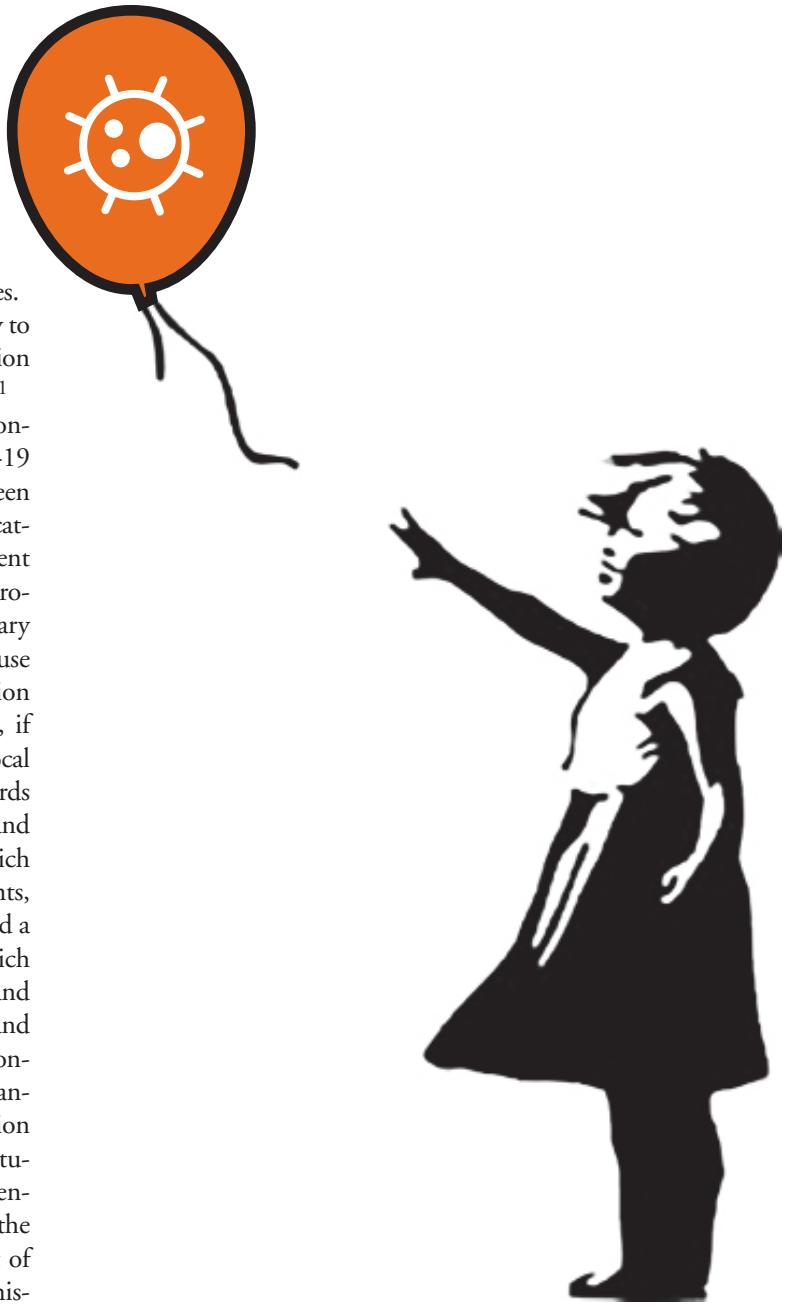

In this issue of Epidemiologia&Prevenzione, there are five papers which relate to COVID-19 in children and adolescents in Italy. Together they form a picture of the disease in this section of the population, and the challenges which addressing it poses, which would be highly relevant to many other countries. The papers support calls for the international community to have a stronger focus on protecting the younger generation from the long-term effects of the COVID-19 pandemic.[1] The paper of Popovic et al.[2] utilises mothers from an ongoing birth cohort to gain information about COVID-19 symptoms in families, to explore the inevitable link between infection in adults and transmission to children, complicated by the different degree of symptoms manifest in different age groups. Bena et al.[3] report the results of a screening programme in second and third grade students in secondary schools through Piedmont. Their results support the use of mass testing in schools as a way of gaining information about the level of transmission in the population and, if linked to effective contact tracing and isolation, part of local initiatives to contain the spread of the disease.[4] This accords very well with the initiative in Southampton schools, and subsequently the University and local residents, in which screening was achieved weekly in 90% of school students, along with many parents and staff.[5] The programme used a saliva sample, coupled to the direct RT-LAMP test, which is cheaper, quicker (97% of results the same day), easier and more acceptable than the use of swabs for the mouth and nose, and which avoided the swab and reagent supply constraints which have beset parts of the UK during the pandemic. This programme effectively eliminated transmission in schools and ensured school attendance of 94% of students. Insights from qualitative research into effective engagement strategies with young people were critical to the success of the programme.[6] It demonstrates the benefit of a community-based action plan, linked to rapid transmis-

sion of data to track and trace and local clinical facilities. Young people are particularly susceptible to peer pressure and also keen to act as agents of change in their social and wider environment. Both our work with an educational facility for teenagers in University Hospital Southampton, LifeLab,[7] and in the saliva testing programme in the city's schools, we have been able to promote health literacy in this age group, and to make them more critical of their own behaviour. This starts with being aware of their motivations, values and life-goals, and then engaging them in a person-centered way which offers opportunities for autonomy and also facilitates social interactions. The latter have very much depended on the provision of online resources and use of social media during periods of lockdown. There is considerable scope for new research in such important initiatives and, in the context not only of infectious disease but issues of environment and planetary health, this is likely to be well-received by young people today.

The focus of immunisation for COVID has largely been on adults and older age groups (and later pregnant women in 2021). We have seen that children and adolescents were not a major part of the research related to vaccines. Globally, almost 3 million children have missed routine vaccines due to effects of the pandemic (GAVI) negatively impacting the gains made for tackling infectious diseases.[8] In August-September, COVID rates among school children in the UK reached a peak after lockdown restrictions were eased. A 2021 survey among school students aged 9-18 years in England (N. 27,910) showed that only half the students would opt-in to take the vaccination, with 37% students stating they were undecided and 12.9% choosing to opt-out.[9] Younger students and children from more deprived backgrounds were more likely to be vaccine hesitant. We recommend that key factors such as vaccine hesitancy, health behaviours related to COVID-19 and vaccine efficacy are explored and addressed for children and young people at the earliest and targeted programmes for high-risk groups are provided. Two papers in this issue are concerned with the clinical aspects of COVID-19 infection in children, rather than preventive measures. Parodi et al.[10] examine the role of the gastrointestinal tract in multisystem inflammatory syndrome in children with COVID-19, showing detection of SARS-CoV-2 RNA in faecal samples in a proportion of children around the time of onset of symptoms. This may be a valuable avenue for future research on mechanistic pathways, and testing of waste water is emerging as one possible early warning system for community outbreaks.[11]

Finally, Valent et al.[12] report that a considerable proportion of children with COVID-19 admitted to hospital in the province of Trento were in fact admitted as a result of other conditions requiring hospitalisation, such as trauma or other procedures. This suggests that such admissions to due to SARS-CoV-2 in children may be less than previously thought in this region. However, it also raises several other issues. One is that of nosocomial transmission of SARS-CoV-2, a problem which has beset may clinical facilities globally. But the wider issue of the greater susceptibility of many members of the population, including children, to such infection as result of 'pre-existing' conditions is also currently much debated, as these often represent underlying social inequalities which have been exacerbated by the pandemic[13] The opportunity to address such conditions in the recovery from COVD-19 but also for longer-term population health and resilience to such shocks, cannot be overstated.

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REFERENCES

1. Roseboom TJ, Ozanne SE, Godfrey KM, et al. Unheard, unseen and unprotected: DOHaD council's call for action to protect the younger generation from the long-term effects of COVID-19. J Dev Orig Health Dse 2021;12(1):3-5.
2. Popovic M, Moccia C, Isaevska E, et al. COVID-19-like symptoms and their relation to the SARS-CoV-2 epidemic in children and adults of an Italian birth cohort. Epidemiol Prev 2021;45(6):486-495.
3. Farina E, Eboli I, Spaeda T, et al. 'Scuola sicura': a school screening testing programme to prevent the spread of COVID-19 in students in Piedmont. Epidemiol Prev 2021;45(6):504-512.
4. Peto J, Alwan NA, Godfrey KM, et al. Universal weekly testing as the UK COVID-19 lockdown exit strategy. Lancet 2020;395(10234):1420-21.
5. Godfrey K, Bagust L, Baird J, et al. Evaluation of the expanded Southampton pilot study (Phase 2) for use of saliva-based lamp testing in asymptomatic populations: Final report, 16th November 2020. Southampton: University of Southampton; 2020.
6. Watson D, Baralle NL, Alagil J, et al. How best do we engage the general population in testing for COVID-19? medRxiv 2021. doi: 10.1101/2021.01.29.21250730. Available from: https://www.medrxiv.org/content/10.1101/2021.01.29.21250730v1.full
7. Woods-Townsend K, Hardy-Johnson P, Bagust L, et al. A cluster-randomised controlled trial of the LifeLab education intervention to improve health literacy in adolescents. PLoS One 2021;16(5):e0250545.
8. GAVI Vaccine Alliance 2021. Gavi progress report shows resilience in childhood vaccinations despite impact of COVID-19 pandemic. Available from https://www.gavi.org/news/media-room/gavi-progress-report-shows-resilience-childhood-vaccinations-despite-impact-covid (last accessed: October 2021).
9. Fazel M, Puntis S, White SR, et al. Willingness of children and adolescents to have a COVID-19 vaccination: Results of a large whole schools survey in England. EClinicalMedicine 2021;40:101144.
10. Parodi E, Carpino A, Franchitti E, et al. Detection of faecal SARS-CoV-2 RNA in a prospective cohort of children with multisystem inflammatory syndrome (MIS-C). Epidemiol Prev 2021;45(6):522-527.
11. Hewitt J, Trowsdale S, Armstrong B, et al. Sensitivity of wastewater-based epidemiology for detection of SARS-CoV-2 RNA in a low prevalence setting. medRxiv 2021. doi: 10.1101/2021.08.24.21258577. Available from: https://www.medrxiv.org/content/10.1101/2021.08.24.21258577v1
12. Valent F, Gentilini MA, Fateh-Moghdam P. COVID-19 hospitalizations in children in the Autonomous Province of Trento (Northern Italy), year 2020. Epidemiol Prev 2021;45(6):528-532.
13. Penkler M, Jacob CM, Müller R, et al. Developmental Origins of Health and Disease, resilience and social justice in the COVID era. J Dev Orig Health Dis 2021. Online ahead of print. doi: 10.1017/S204017442100060X.