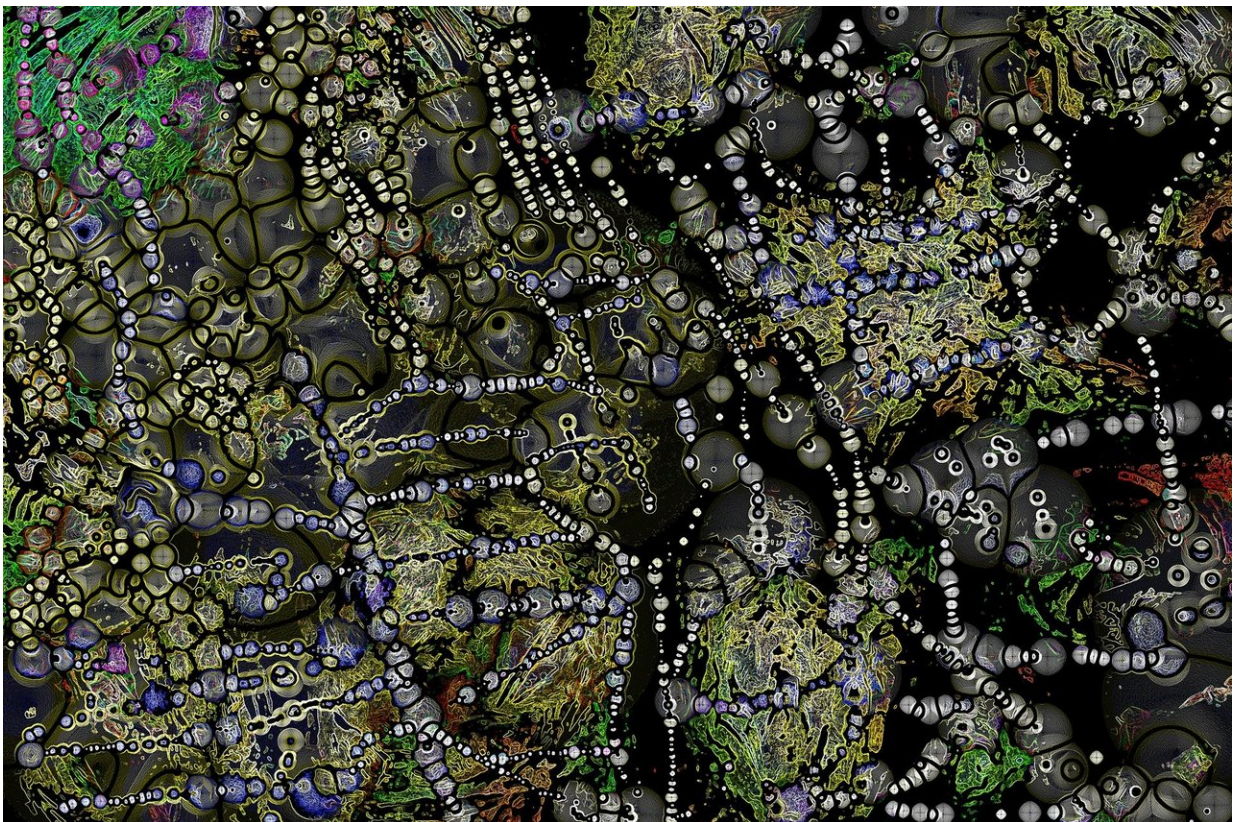


Confirmed COVID-19 cases and outbreaks were low in schools and nurseries in England that re-opened after 1st lockdown

December 9 2020



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COVID-19 cases and outbreaks were low among staff and students in schools and nurseries in England that re-opened during the summer half-

term after lockdown, according to research published in *The Lancet Infectious Diseases* journal.

Nurseries, primary and [secondary schools](#) were closed in late March 2020 as part of the first national lockdown to help reduce the spread of COVID-19. Following the rollout of strict infection control measures, including smaller classes separated into distinct social bubbles, most [educational settings](#) re-opened during the summer half-term from June 1 to July 17, 2020.

Educational settings re-opened to [children](#) in nurseries, primary [school](#) reception and years 1 and 6 (ages 4-5, 5-6 and 10-11 years, respectively), secondary school years 10 and 12 (ages 14-15 and 16-17 years, respectively), and children of any age whose parents were key workers, or who were classified as vulnerable. Of the 8.9 million students in England, 1.6 million attended school during the period. The new study included data from all early years settings, primary and secondary schools open in England during this time—spanning around 38,000 nurseries, 15,600 [primary schools](#), and 4,000 secondary schools at any one time.

To date, few studies have assessed COVID-19 cases and outbreaks in educational settings, with most involving a single school with a small number of [staff](#) and students affected. The authors suggest that while their findings are specific to England, insights gained into the risks of infection and the impact of community transmission could have implications for infection control measures in schools and nurseries in other parts of the world.

The findings may not be generalisable to all schools and nurseries, since those that re-opened in summer 2020 did so at a time when COVID-19 cases had fallen nationally. Additionally, stringent infection control measures were in place with strict limits on bubble sizes, which might

not be achievable in fully opened school settings.

Dr. Shamez Ladhani, Public Health England, said: "SARS-CoV2 infections and outbreaks were uncommon in educational settings after they reopened during the summer term. The strong correlation with rates in the wider community also emphasises the importance of controlling transmission outside the school gates to protect educational settings. This is consistent with studies that have been conducted since this paper was completed in August, and forthcoming PHE research into transmission in schools during the autumn term."

The authors used COVID-19 data recorded in Public Health England's online national database for recording events that need public health management, HPZone, to calculate case and event rates for staff and students in schools and nurseries that re-opened during the half-term. Events were classified as single cases, co-primary cases (two or more confirmed cases within 48hrs, typically children who live in the same household), and outbreaks (two or more linked cases diagnosed within 14 days in the same educational setting). All events were followed-up for 28 days after schools and nurseries closed for the summer holidays.

Statistical analyses were used to reveal how COVID-19 cases and events in schools and nurseries were affected by the size and density of the local population, and levels of community transmission on a regional level. Authors determined whether infections were passed from staff to students, students to staff, or within these groups based on the first identified cases, dates when symptoms began, and when testing was done.

Rates of COVID-19 infection and outbreaks were very low across all educational settings, with 113 single cases, nine co-primary cases, and 55 outbreaks between June 1 and July 17. The 113 single cases included 55 (49%) children and 58 (51%) staff, and occurred mainly in primary

schools (61%, 69/113 cases). There were nine co-primary cases including 19 children and one staff member. Six co-primary cases were in primary schools, two were in nurseries, and one involved a parent and child at the same school. Of the 55 outbreaks identified in the analysis, 27 were in primary schools, with 16 in nurseries, seven in secondary schools, and five in schools of mixed age groups.

A strong association was identified between outbreaks in schools and levels of community transmission, with the risk of an outbreak rising by 72% for every increase of five cases per 100,000 within the local community. The analysis also revealed that cases brought into educational settings increased the risk of an [outbreak](#) by 40% in nurseries, 26% in primary schools, and 39% in secondary schools.

Infection rates were higher in staff than students, with 27 cases per 100,000 per day compared with 18 for children in nurseries, 6 in primary school students, and 6.8 in secondary school students. The virus was most often spread between staff, while student-to-student transmission was rare. Staff members accounted for 73% of cases (154/210 cases) linked to outbreaks compared with 27% (56/210) for students. The probable direction of transmission was staff to staff in 26 outbreaks, staff to student in eight, student to staff in 16, and student to [student](#) in five.

Dr. Sharif Ismail, from the London School of Hygiene & Tropical Medicine, UK, said:: "While staff did have higher infection rates, it's important to note that the overall number of cases was very small and the vast majority of staff were completely fine and able to protect themselves and their students. Teachers were very cautious with physical distancing and infection control practices when they were in class with their students, but this was more difficult to maintain outside the classroom. Teachers are also more likely to develop symptoms than students and are, therefore, more easily identified, which almost

certainly contributed to their higher infection rate."

Limitations in swab testing used to confirm COVID-19 infections, coupled with the fact few schools or nurseries were selected for wider testing, could mean the size of some outbreaks identified in the analysis were underestimated. Very few secondary school years were open during the summer half-term, therefore the results cannot be generalised to all secondary schools, especially since the risk of [infection](#), disease, and transmission is likely to be higher in older than younger children. It is also likely that some populations, such as children of key workers, were over-represented in the analysis.

Writing in a linked Comment, lead authors Stefan Flasche and John Edwards (who were not involved in the study), from the London School of Hygiene & Tropical Medicine, note that the partial re-opening of schools during the UK in summer half-term, when COVID-19 levels were low, was reassuringly associated with very few confirmed outbreaks in schools. However, they say: "The partial opening of schools in June and July with small bubbles and much fewer children attending, particularly in secondary education, may have led to considerably less within-school transmission than the reopening of schools to all children after the summer." They also note that more transmission likely occurred among children than was recorded, saying: "Children rarely display obvious symptoms and are likely missed by the largely passive case finding that was in place at the time. In fact, in most instances where further symptom agnostic testing was initiated in response, a substantial number of additional cases were identified."

More information: Sharif A Ismail et al, SARS-CoV-2 infection and transmission in educational settings: a prospective, cross-sectional analysis of infection clusters and outbreaks in England, *The Lancet Infectious Diseases* (2020). [DOI: 10.1016/S1473-3099\(20\)30882-3](https://doi.org/10.1016/S1473-3099(20)30882-3)

Provided by Lancet

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