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## Short Communication

# Children are safe in schools: a review of the Irish experience of reopening schools during the COVID-19 pandemic



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## ABSTRACT

**Objectives:** Schools in the Republic of Ireland reopened to students and staff in late August 2020. We sought to determine the test positivity rate of close contacts of cases of coronavirus disease 2019 (COVID-19) in schools during the first half-term of the 2020/2021 academic year.

**Methods:** National-level data from the schools' testing pathway were interrogated to determine the positivity rate of close contacts of cases of COVID-19 in Irish primary, postprimary and special schools during the first half-term of 2020/2021 academic year. The positivity rates among adult and child close contacts were compared and the proportion of national cases of COVID-19 who were aged 4–18 years during the observation period was calculated to assess whether this proportion increased after schools reopened.

**Results:** Of all, 15,533 adult and child close contacts were tested for COVID-19 through the schools' testing pathway during the first half-term of the 2020/2021 academic year. Three hundred and ninety-nine close contacts tested positive, indicating a positivity rate of 2.6% (95% confidence interval: 2.3–2.8%). The positivity rates of child and adult close contacts were similarly low (2.6% vs 2.7%,  $P = 0.7$ ). The proportion of all national cases of COVID-19 who were aged 4–18 years did not increase during the first half-term of the 2020/2021 school year.

**Conclusions:** The low positivity rate of close contacts of cases of COVID-19 in schools indicate that transmission of COVID-19 in Irish schools during the first half-term of the 2020/2021 academic year was low. These findings support policies to keep schools open during the pandemic.

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As the coronavirus disease 2019 (COVID-19) pandemic has progressed, our understanding of the effects of the virus on children and their role in its transmission has increased. Schools are recognised as important places of education, safety, health-care and social learning.<sup>1</sup> The risks and benefits of schools remaining open must be balanced against the risks associated with COVID-19, and mitigated insofar as possible, in order to ensure the education of children in a safe setting.<sup>1</sup> Countries across the world have facilitated children returning to school at various stages of the pandemic. This return to education has been without evidence of increased rates of infection or transmission amongst school-age children, where appropriate preventative measures are in place.<sup>2</sup>

The test positivity rate of close contacts of cases of COVID-19 in Irish primary, postprimary and special schools during the first half-term of 2020/2021 academic year in the Republic of Ireland was investigated by analysis of national-level school-specific data.

Infection prevention and control (IPC) measures in educational settings are essential to preventing and controlling COVID-19 transmission.<sup>3</sup> School-specific guidelines were developed for school staff and principals to support the safe reopening of schools.<sup>4</sup> Included in the guidance was advice on physical distancing, adapted based on age groups. Additional preventive measures included staggered class starting times, break and lunch times, assigning students to base classrooms with teachers transiting between classrooms and reconfiguration of classrooms using designated groupings of 'pods' and 'bubbles'. A 'bubble' is a class group which stays apart from other classes as much as possible. A 'pod' is a smaller grouping within the class 'bubble' with at least

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**Table 1**  
Positivity rate among school close contacts (adults and children) by school type, 23 August 2020–28 October 2020, Republic of Ireland.

School type	No. schools	No. contacts	No. positive results (%; 95% CI)	No. negative results (%; 95% CI)	Unknown results (%; 95% CI)
Primary	372	9858	270 (2.7%, 2.4–3.1%)	9571 (97.1%, 96.7–97.4%)	17 (0.2%, 0.1–0.3%)
Postprimary	199	4897	101 (2.1%, 1.7–2.5%)	4785 (97.7%, 97.3–98.1%)	11 (0.2%, 0.1–0.4%)
Special	33	778	28 (3.6%, 2.4–5.2%)	749 (96.3%, 94.7–97.5%)	1 (0.1%, 0.001–0.7%)
<b>Total</b>	<b>604</b>	<b>15,533</b>	<b>399 (2.6%, 2.3–2.8%)</b>	<b>15,105 (97.2%, 97.0–97.5%)</b>	<b>29 (0.2%, 0.1–0.3%)</b>

CI, confidence interval.

Source: Schools' COVID-19 testing pathway.

1 m physical distance between individual pods. In addition, all staff and postprimary school students were requested to wear a face covering when a physical distance of 2 m could not be maintained. Enhanced cleaning of commonly touched surfaces, increased ventilation and adherence to rigorous respiratory and hand hygiene was also advised.<sup>4</sup>

Approximately one million staff and students attend school on a daily basis in the Republic of Ireland. When a case of COVID-19 in a school is notified to a regional Department of Public Health (DPH), the school is contacted and a public health risk assessment is performed. This assessment involves collecting and consideration of information from the case interview, local community outbreaks, and particularly information from the school on adherence to the previously outlined guidance. The standardised close contact definition is then applied to identify close contacts, and to determine the control actions required.

In Ireland, there is a bespoke testing pathway for close contacts identified in schools. Positive cases of COVID-19 identified through this schools' testing pathway are notified to the regional DPHs and case data are aggregated on the national Computerized Infectious Disease Reporting (CIDR) system.<sup>5</sup> Notification completeness is optimised by systematised electronic reporting from the laboratories. The data presented were extracted from two sources: total numbers of cases aged 4–18 years were obtained from CIDR and the positivity rate among close contacts in schools was calculated through data collected from the schools' testing pathway.

From August 23rd 2020–October 28th 2020, close contacts (adults and children) from 604 schools were referred for COVID-19 testing through the schools' testing pathway. Of these schools, 372 (61.6%) were primary, 199 (32.9%) were postprimary and 33 (5.5%) were special schools. In total, 15,533 individuals were identified as close contacts in the school setting and referred for COVID-19 testing (Table 1). This represents approximately 1.5% of the national school community. Of these, 399 close contacts (2.6%, 95% CI: 2.3–2.8%) tested positive and were spread across 156 schools. The highest positivity rate occurred in special schools (3.6%).

Of the 15,533 close contacts, 13,408 were children and 2125 were adults. The positivity rates of child and adult close contacts were similarly low at 2.6% and 2.7%, respectively ( $P = 0.7$ ). Children in special schools had the highest positivity rate (4.4%) compared with children in primary (2.7%) and postprimary schools (2.1%). Adults in primary schools had the highest positivity rate (3.0%) compared with adults in postprimary (2.1%) and special schools (2.9%).

During the observation period, the proportion of COVID-19 cases nationally who were of school-going age (i.e. 4–18 years) did not increase and represented 14.3%, 15.0% and 14.9% of national cases during the months of August, September and October, respectively ( $P = 0.6$ ). Of the 604 schools where close contacts were referred for testing, one school was advised by a regional DPH to close to reduce the risk of further COVID-19 transmission in the school.

This paper presents the transmission dynamics of COVID-19 in Irish primary, postprimary and special schools over a nine-week time period from when schools reopened in late August until the midterm break in late October 2020. Overall, the positivity rate of close contacts across all school types in the Republic of Ireland

during this period remained at a stable, low level. The positivity rate of close contacts in schools was considerably lower than the positivity rate of close contacts in the community at the time, which was approximately 10%. This finding of a low positivity rate of close contacts of cases of COVID-19 in schools is consistent with findings from similar studies conducted nationally<sup>6</sup> and internationally<sup>2</sup> and supports the observation that children are not the main drivers of COVID-19 transmission.<sup>7</sup> While it is a proxy measure, the low positivity rate of close contacts in schools suggests that the level of intraschool transmission of COVID-19 which occurred in the Republic of Ireland during this time period was low. Additional data from regional DPHs on individual schools, where in-depth epidemiological investigations were conducted, supported the fact that intraschool transmission of COVID-19 was uncommon during the nine-week observation period.<sup>8</sup> Many close contacts who subsequently became cases were reported to have had other, more likely, sources and exposures for COVID-19 infection. The reporting of a low positivity rate among school close contacts is further supported by the observation that the proportion of 4–18-year-old cases among all national cases did not increase when schools in the Republic of Ireland reopened in late summer. The 14-day national incidence of COVID-19 in the Republic of Ireland increased from 33 cases per 100,000 in early September 2020 to 299 cases per 100,000 in late October 2020,<sup>9</sup> but the proportion of cases who were school-going aged children remained remarkably stable.

The positivity rates amongst adults and children in schools were both low. This finding is somewhat surprising as the available evidence to date suggests children may be less susceptible to infection with COVID-19 than adults.<sup>10</sup> The reasons for this result, however, may be due to IPC measures implemented in schools which mitigated against virus transmission in all settings and in all age groups.

Prolonged school closures have been linked to detrimental effects on many aspects of children's health and well-being.<sup>1</sup> This interrogation of national-level Irish data investigating the transmission dynamics of COVID-19 contributes to the emerging evidence and demonstrates that, with appropriate mitigation measures, the rate of onward transmission of COVID-19 in educational facilities remains low. Furthermore, it supports policies on schools remaining open for the educational and psychosocial development of children.

In light of the Irish experience thus far, we recommend that the facilitation of onsite learning in all school types, with all mitigation measures carefully adhered to, remains a high priority. Continued evaluation of the pandemic, timely case investigation, and contact tracing and testing should be prioritised to ensure close contact positivity remains low among staff and students and onsite learning can be safely maintained.

## Author statements

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#### Authorship

AC collated the data and produced an initial report. PW conducted further analysis on the data. PW, EK, RC, AC, MW and MOS wrote and edited the article for submission.

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