

SPI-M-O: Consensus Statement on COVID-19

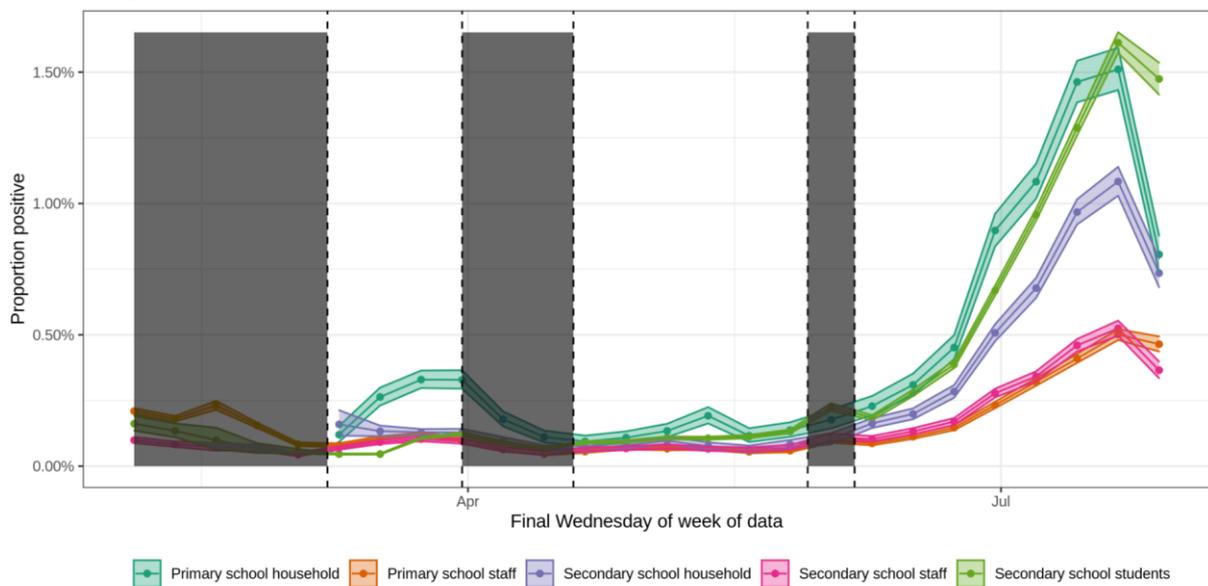
Date: 11th August 2021

All probability statements are in line with the framework given in the Annex.

Return to schools

1. Understanding the potential trajectory of the epidemic when schools reopen will be important, both for within-school population transmission and the community more generally. This occurs over the next two weeks in Scotland, and early September in England, Wales, and Northern Ireland. As discussed in the previous SPI-M-O consensus statement, confirmed cases of COVID-19 in England rapidly increased for several weeks, up to and including the week commencing 12th July, with a peak recorded on 16th July before a sharp downward trend¹. This profile was also reflected in lateral flow testing in populations associated with schools – students, staff, and households – over the same period (Figure 1). The proportion of positive tests increased from approximately 0.1% in May to around 1.5% at the end of July, i.e. over one half-term. Positivity will highly likely increase again once schools reopen in the autumn.

Figure 1: Time series of observed proportion of positive lateral flow tests in England by week for different school populations. Each darker area represents times of school closure (exact dates vary across England).



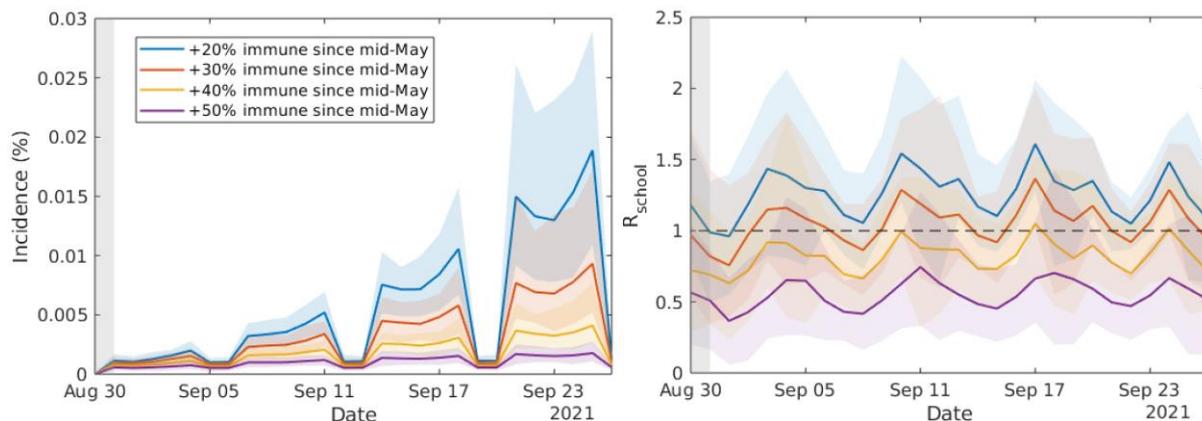
2. One modelling group has adapted an individual-based model of secondary schools to explore the impact of school reopening in September 2021 on incidence of SARS-CoV-2

¹ As measured by the seven-day average

among secondary-school aged pupils in England. This focuses on within-school dynamics, does not account for additional community transmission as a result of reopening, only considers the month of September, and assumes that school bubbles no longer exist. This analysis does not account for the increase in transmission that may result from this relaxation of within-school measures and so may underestimate within-school transmission on reopening.

- Acquired immunity in school-attending age groups is assumed to be 20% in mid-May 2021 and a range of acquired immunity levels at the start of term, from 40% to 70%, are considered. This initial level of immunity among secondary school aged pupils has a large impact on the within-school epidemiological dynamics; at high levels of immunity, within-school reproduction number (R) remains below 1 throughout September 2021, whereas lower levels of immunity lead to within-school R exceeding 1, exponential growth, and outbreaks of school epidemics.

Figure 2: The modelled impact of immunity amongst secondary school pupils on within-school incidence (left) and within-school R (right) assuming different levels of acquired immunity between mid-May and 1st September 2021 (blue = 40%; orange = 50%; yellow = 60%; purple = 70%), where 20% of pupils had acquired immunity by mid-May 2021. This assumes 36% participation in twice-weekly mass testing and no school bubbles. Means and 95% prediction intervals shown.



- Schools will represent a high proportion of remaining susceptible individuals and it is highly likely that exponential increases will be seen in school-attending age groups after schools open. Vaccination will also have made almost no difference in these population groups over the summer holidays. When schools reopen, the mitigations in place to limit transmission within schools will be much reduced compared to the spring and summer terms. Additionally, the prevalence of infection in the community and school-age groups will be higher than in May 2021.
- This analysis shows that within-school transmission could be reduced through more participation in twice weekly mass testing. Even without these mitigations, the more pupils and teachers that contract COVID-19, the more missed schooling there will be, as well as

the subsequent consequences for parents and carers, and the wider workforce implications.

6. While this analysis focuses on within-school transmission, schools are also inevitably linked to any community epidemic. Within SPI-M-O, there is no consensus whether schools are major or effective drivers of community transmission or merely good indicators of it.
7. **It is highly likely that high prevalence will be seen within schools by the end of September 2021. This may reflect either community or within-school transmission, and the role of schools in driving wider transmission remains uncertain. Regardless of this, it would be sensible for government to plan for this eventuality.**

Annex: PHIA framework of language for discussing probabilities

