REPORT FROM THE COVID-19 ADVISORY SUB-GROUP ON EDUCATION AND CHILDREN'S ISSUES: SUMMARY OF THE EVIDENCE ON CHILDREN, SCHOOLS, EARLY LEARNING AND CHILDCARE SETTINGS AND TRANSMISSION FROM COVID-19

18 November 2020

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This is a revision of the original publication, published on 18 November 2020, as a result of a statement issued by the Office for National Statistics in relation to their analysis of the number of school workers, key workers and other workers who had COVID-19. This affects the information on *Risks to Teachers and Staff from COVID-19.*

Overview

This paper provides a summary of the latest evidence regarding the interactions between Covid-19 and school / early learning and childcare (ELC) settings. Specifically, it sets out our understanding of: the role of children in transmission of COVID-19; the risks to children and young people from COVID-19 or from being out of school; workplace-associated risks to staff from COVID-19; the approach to reducing risks in schools; and data on attendance and absences.

There is a need to continue to consider the balance of risks and harms in the light of any new trends in data, evidence and scientific advice, including the potential direct health risks to children and staff from COVID-19; the wider impact on community transmission of schools reopening; and the direct risks to mental health, wellbeing, development, educational attainment and health outcomes from school closures.

Key messages

- There continues to be strong evidence that children and younger people are much less susceptible to severe clinical COVID-19 disease than older people.
- There is no current direct evidence that transmission within schools plays a significant contributory role in driving increased rates of infection among children.
- ONS data shows no evidence of any difference between the test positivity rates of pre-school, primary and secondary school teachers and staff, relative to other worker groups of a similar age.
- The proportion of positive test cases from people aged 18+ who reported they were employed and their occupation was "education/childcare" has remained largely constant since late August at between 3 and 7%.
- International comparators suggest that there is no consistent pattern of relationship between the reopening of schools and increases in case numbers.
- *The Coronavirus (COVID-19): guidance on reducing risks in schools* published by Scottish Government sets out non-statutory guidance to ensure a safe and supportive environment for learning and teaching during the pandemic.

- There is clear evidence that time out of school has a detrimental effect on children and young people's wellbeing, including impacts on developmental and mental health harms. Evidence suggests that the mental health of adolescents is particularly affected. These detrimental effects are particularly prevalent for vulnerable children and young people.
- School closures put educational outcomes at risk, especially for vulnerable children and young people.
- COVID-19 increases educational and social inequities for children and young people; this is a key reason for keeping schools open.
- As at 12 November, around 1.2% of total absences are due to pupils who had a Covid-19 related sickness. This represents about 0.1% of all pupils. The recent rise in overall number of COVID-related absences is largely due to an increase in the number of pupils who are self-isolating.

Role of children and young people in transmission of COVID-19

- The opening and closing of schools will have an impact on the reproduction rate and community transmission of the virus, and on infection rates in children and young people; however the evidence on the size of these impacts is mixed[1].
- Early modelling studies suggested that closing schools reduced community transmission less than other social distancing interventions.[2] Modelling work for SAGE suggested mass closure of schools could have "moderate impact" on R when wider impacts (e.g. among parents and the wider community) were considered, but confidence in this estimate is reduced given the uncertainty around the role of schools in transmission.[3]
- Survey data suggest that the number of contacts that people report having is larger when schools are open. In Scotland, following the start of term in August, the average number of contacts increased from 6 to 8. This reduced between the end of August and mid-October, but increased again following the October half-term. The mean number of contacts remains higher than the 2.8 contacts per person for the UK as a whole at the beginning of the Stay-at-home-advice.[4]
- In Scotland, as in other countries, the 'second wave' has a different profile to the first, with a much higher prevalence among children and young adults. While this may indicate a potential role of school reopening as a factor, the extent to which there has been transmission *within* schools is difficult to establish.
- Transmission can occur in household, community and educational settings. It is difficult to separate the risk of infection as the result of behaviour outside schools from the risks arising from in-school contacts. For children, these wider contacts include journeys to and from school, and other activities and gatherings; there may also be impacts on adult contacts for example through return to work or behaviour changes.

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[1] Update on Children, Schools and Transmission, prepared by the Children's Task and Finish Group (TFC) for the Scientific Advisory Group for Emergencies (SAGE):
[2] https://www.thelancet.com/journals/lanchi/article/PIIS2352-4642(20)30095-X/fulltext
[3] https://www.gov.uk/government/publications/npis-table-17-september-2020
[4] https://www.gov.scot/binaries/content/documents/govscot/publications/research-and-analysis/2020/11/coronavirus-covid-19-modelling-epidemic-issue-no-26/documents/coronavirus-covid-19-modelling-epidemic-scotland-issue-no-26/coronavirus-covid-19-modelling-epidemic-scotland-issue-no-26/govscot%3Adocument/coronavirus-covid-19-modelling-epidemic-scotland-issue-no-26.pdf

- There is no current direct evidence that transmission within schools plays a significant contributory role in driving increased rates of infection among children, but neither is there direct evidence to suggest otherwise. The role of children in transmission remains relatively less well understood, and asymptomatic transmission is particularly problematic to analyse.
- Pre-school and primary school aged children are less susceptible to infection from COVID-19 than adults. The evidence is more mixed for secondary aged young people.
- The risk of transmission from children to children and children to adults in primary school and ELC settings appears low, particularly when effective infection control measures are in place.

- The prevalence of infection in young people aged 12-16 in England increased between September and October. ONS analysis suggests that young people aged 12-16 played a significantly higher role in introducing infection into households. The difference is less marked for younger children. The relative rate of external exposure (i.e. bringing infection into the household) for young people aged 12-16 was found to be higher than for adults. For those aged 12-16 there was a marked increase in rate of infection in the period after schools in England re-opened.[5]
- In Scotland, the prevalence of infection only began to increase in primary or secondary school aged children in mid-September. This coincided with the return of university students and the subsequent increase in community prevalence across all ages. The proportionate increase in positive rates seen in school aged children since late August is lower than observed in other age groups.

Risks to teachers and staff from COVID-19

- There is evidence that adults have higher susceptibility to infection and clinical disease than children. This implies that adults/staff in educational settings who contract COVID-19 have a generally higher risk of experiencing severe symptoms than children and young people, although specific evidence of this is currently lacking.[6]
- Analysis by ONS of the COVID-19 Infection Survey data shows no evidence of any difference between the positivity rates of pre-school, primary and secondary school teachers and staff, relative to other worker groups of a similar age. This is the same when including household members of such groups. [7] Experimental analyses undertaken by Public Health Scotland also indicate that teachers are not at an increased risk of testing positive for COVID-19, more detailed analysis will be available shortly.
- In Scotland, since schools returned in August, the proportion of test positive cases aged 18+ who reported they were employed and their occupation was "education/childcare" has remained constantly between 3-7%.

[5] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/935102/sage-65-meeting-covid-19-s0863.pdf

[6] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/903374/S0621_Risks_associated_with_the_reopening_of_education_settings_in_Sept.pdf

[7] Coronavirus (COVID-19) Infection Survey, UK - Office for National Statistics and ONS Statement addressing questions around the "Analysis of the number of school workers, key workers and other professions in England who had COVID-19" - Office for National Statistics

- Analysis of all healthcare workers in Scotland plus their household contacts has indicated that having young children in the household provides a small protective effect for adults against COVID-19.[8]
- Analysis of a cohort of over 9 million adults aged <=65 years in England who shared a household with children aged 0-11 did not have an increased risk of COVID-19 infection, and had a lower risk of death from COVID-19. Their results showed no change in the effect of sharing a household with children after schools in England re-opened.[9]
- In the same study, living with children aged 12-18 years was associated with a small increased risk of recorded COVID-19 infection, but was not associated with other COVID-19 outcomes.
- Additionally, living with children of any age was also associated with lower risk of dying from non-COVID-19 causes. Among over 2.5 million adults >65 years there was no association between living with children and outcomes related to COVID-19.
- The WHO noted that in school outbreaks it is more likely that the virus is introduced by adult personnel. Transmission from staff-to-staff is most common; among staff and students was less common; and student-to-student spread is more rare. [10, 11] A qualitative analysis around incidents in Scottish schools indicated that in-school transmission was largely found to be related to teacher-to-teacher or (more rarely) teacher-to-pupil transmission.
- A more recent study[12] has examined the occupational risk of COVID-19 in the first and second waves of infection in Norway. A country with a comparable population size to Scotland, Norway has had 28,963 confirmed cases of COVID-19 with 264 deaths[13].
- Using linked health and occupation data, the study included the entire Norwegian population aged 20-70 years (n=3 553 407) comparing those in occupations in contact with pupils, students, patients and customers to everyone aged 20-70 years. Positive PCR tests and hospitalisation with confirmed COVID-19 were the study outcomes.
- The study authors report that teachers are not at higher risk of infection and that none of the included occupations had a particularly increased risk of severe COVID-19. However, pre-school and child care workers were at moderate risk of hospitalisation [1 to 2 times increased odds ratio]. Overall, the authors conclude that teachers had no or only a moderately increased risk of COVID-19.
- In terms of hospitalisations, confidence intervals were wide and the small number of COVID-19 hospitalizations means analyses should be treated with caution. This study is in pre-print and has not been peer-reviewed.

Risks to children and young people: from COVID-19 or from being out of school

[8] https://www.medrxiv.org/content/10.1101/2020.09.21.20196428v1
[9] https://www.medrxiv.org/content/10.1101/2020.11.01.20222315v1
[10] https://www.who.int/docs/default-source/coronaviruse/risk-comms-updates/epi-win-update40-overview-of-the-pandemic.pdf?sfvrsn=8d355bcd_4
[11] https://www.nccmt.ca/knowledge-repositories/covid-19-rapid-evidence-service.
12 https://www.medrxiv.org/content/10.1101/2020.10.29.20220426v1

13 https://covid19.who.int/region/euro/country/no

- There is strong evidence that children and younger people are less susceptible to severe clinical disease than older people[14]. There have been no deaths in Scotland due to COVID-19 among children aged under 15 years, while in this age group there were 194 deaths due to other causes in the year 2020 to date.[15]
- The infection takes a milder course in children than in adults. Clinical signs are very similar to other childhood respiratory infections, and very few infected children develop severe disease.[16] Studies suggest that approximately 50% of children may be asymptomatic, and only 10-15% will exhibit symptoms consistent with COVID-19 case definitions (cough, fever, shortness of breath).[17]
- There is some evidence from contact tracing studies that pre-school and primary aged children are less susceptible to infection than adults, however the evidence is more mixed for secondary aged children.[18]
- The UK Chief Medical Officers (CMOs) remain confident in the evidence that schools and ELC settings are less important in the transmission of COVID-19 than for some other respiratory infections, including influenza.
- The CMOs[19] have been clear that school attendance is "very important" for children and young people, and is critical to reduce inequality, improve life chances and enhance physical and mental health. Schools also play an essential role in safeguarding vulnerable children.
- There are significant educational, developmental and mental health harms from schools being closed, particularly for younger children, and vulnerable children and young people. Home-based learning is likely to reinforce inequalities.
- School closures have an impact on the physical and mental health of children. Evidence suggests that the mental health of adolescents is particularly affected. Cognitive, social, and emotional developmental outcomes are also at risk, as is physical health.
- Previous SAGE advice noted that there is a low risk to children's health from COVID-19 and significant harms from schools being closed[20].

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14 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/903374/S0621_Risks_associated_with_the_reopening_of_education_settings_in_Sept.pdf

15 https://www.nrscotland.gov.uk/covid19stats

16 https://www.rcpch.ac.uk/resources/covid-19-research-evidence-summaries#prognosis

17 https://dontforgetthebubbles.com/evidence-summary-paediatric-covid-19-literature/

18 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/935102/sage-65-meeting-covid-19-s0863.pdf

19 https://www.gov.uk/government/news/statement-from-the-uk-chief-medical-officers-on-schools-and-childcare-reopening

20 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/906467/s0622-forty-sixth-sage-meeting-covid-19.pdf

COVID-19: Reducing risks in schools

- Coronavirus (COVID-19): guidance on reducing the risks in schools was developed to support a safe return to school for all children, young people and staff in August 2020. It has since been updated on a regular basis to support the continuing safe implementation of a full-time return to school.
- Separate guidance is in place for ELC and childcare settings, providing a package of age-appropriate public health measures.
- The Health and Safety Executive has provided very positive feedback about the commendable work of staff in Scottish schools to implement that guidance, following an independent programme of spot checks and inspections.
- Schools are heterogeneous settings, with differences in class sizes, rules, structures, environmental conditions and ventilation rates. Mitigations such as ventilation, effective hand and respiratory hygiene, physical distancing and face coverings are important in all school and ELC settings.
- The consensus of the UK CMOs was that: *"Control measures such as hand and surface hygiene, cohorting to reduce number of daily contacts, and directional controls to reduce face-to-face contact remain key elements of maintaining COVID-19 secure school environments and minimising risk"*.[21]
- Differences in the school environment and the mitigations in place will influence the potential for transmission in schools. The age of children, and the feasibility of effectively implementing infection controls, influence the balance of risks and benefits.
- Countries with comparable or higher infection levels have chosen to keep schools open during this second wave, for example, Switzerland, France, and Germany[22]. Other countries are moving towards blending or remote learning for specific age groups, for example Belgium, parts of Italy and Austria.
- In the first two weeks after schools returned in Scotland, 1% of schools had a confirmed case (by positive test) of COVID-19 among the pupil population. This increased to 10% in the week commencing 12th October.
- Less than a quarter of schools in Scotland had any pupils who tested positive in term 1, and over three-quarters of schools had no pupils who tested positive. Of those with any pupils affected during the nine week period, fewer than half of the schools had infection among pupils for the whole period.
- Among the 305 schools with more than one pupil who tested positive, there were 195 schools (i.e. around 7.0% of all schools) in which there was more than one positive case occurring in the same week, on at least one occasion (the cases were not necessarily linked). Of these, 118 were secondary schools (24% of all secondary schools), 72 primary schools (3% of primaries), and five were special schools (5%).
- The higher number observed in secondary schools reflects both the higher incidence of cases among secondary aged pupils, and generally the larger school size at secondary level.

[21] https://www.gov.uk/government/news/statement-from-the-uk-chief-medical-officers-on-schools-and-childcare-reopening
[22] Infection rates from: https://www.statista.com/statistics/1139048/coronavirus-case-rates-in-the-past-7-days-in-europe-by-country/

- In the last week of term 1, 6% of secondary schools had more than one pupil who tested positive in the same week, although the cases were not necessarily linked. The occurrence of multiple pupil cases in the same week in the primary school setting has remained an infrequent occurrence.

Attendance and absences

- Attendance rates in Scotland over the course of a whole academic year have been between 93% and 94% since 2008/09.
- Since 1 November 2020[23], attendance has ranged from 88.6% to 90.8%.
- Absences (authorised and unauthorised) because of non COVID-19 related reasons (including exclusions) have ranged from 5.7% to 7.4%.
- The number of pupils who were not in school either all or part of the day because of COVID-19 related reasons rose to its highest level to date on 11 November, at **30,028** pupils.
- The percentage of school openings that showed pupils were not in school because of COVID-19 related reasons has ranged from 3.3% to **4.4%.**
- As at 12 November, the breakdown of school openings for pupils not in school due to Covid-19 related reasons were as follows
    - **9.9%** were because parent(s) chose to keep pupils away from school as a precautionary measure contrary to public health guidance,
    - **86.9%** were because pupils were self-isolating in relation to Covid-19,
    - **2.6%** were because pupils had a Covid-19 related sickness and
    - **0.7%** were because schools were closed because of Covid-19.
- As at 12 November, around **1.2%** of total absences were due to pupils who had a COVID-19 related sickness. This represents about **0.1%** of all school pupils.
- The rate of absence due to COVID-related sickness varies by Local Authority, largely in line with the wider prevalence of the virus in those communities.
- The overall absence rate due to COVID-19 has risen in recent weeks. There have been rises in each of the underlying reasons for absence, but by far the largest driver is the number of pupils who are absent due to the need to self-isolate.

School staff absences due to COVID-19

- As at 10 November 2020, 630 school staff were absent with confirmed COVID-19 or with symptoms of COVID-19, and a further 1,985 school staff were absent for other COVID-19 related reasons (e.g. isolating, quarantining, or were looking after someone)[24]. The equivalent figures for 20 October were 403 and 1,497 staff respectively.
- To provide some context, and expressed as headcounts, as at September 2019, there were almost 57,000 teachers, 15,600 classroom support staff and 10,500 for other support staff (excluding janitors, cleaners, catering staff, and volunteers etc.).

[23] Based on 30 local authorities – two local authorities had an in-service day
[24] Data carried forward for two local authorities.