Department for Education

Evidence summary: COVID-19 - children, young people and education settings

22 February 2021

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Evidence summary

At every stage since the start of the pandemic, decisions across education and care have been informed by the scientific and medical evidence – both on the risks of COVID-19 infection, transmission and illness, and on the known risks to children and young people not attending school and college[1] – balancing public health and education considerations.

The overwhelming evidence is that the risk to children and young people from SARS-CoV-2 (the coronavirus that causes COVID-19) is low, but the risks to children and young people of being out of school and college are high and increase the longer restrictions on education are in force. Whilst education settings can be places where transmission occurs, there is no strong evidence of them driving largescale community transmission. Rather, case rates within education settings have been shown to reflect those in the local community, and risks are reduced further in such a controlled environment by having appropriate mitigations and systems of control in place. Based on the recent data from the Office for National Statistics (ONS), the risks to education staff are similar to those for most other occupations.

That is why the Government's priority has been keeping education and care settings fully open for as long as possible – with a consistent message that these settings should be considered last when implementing restrictions, and first when restrictions can be lifted. As such the Government has taken, and continues to take, other steps across society and the economy to manage the spread of the virus, to allow restrictions on education to be lifted.

This summary sets out the evidence relevant to, and in support of, the Government's decision to lift restrictions on education from 8 March 2021 – focussed in particular on schools, colleges and early years settings. The Government's wider decision-making is set out in the Government's COVID-19 Response – Spring 2021 and supporting scientific evidence. This roadmap is a step-by-step plan to ease restrictions in England cautiously, starting with schools and colleges. Before taking each further step, the Government will review the latest data on the impact of the previous step against four tests. The tests are:

1. The vaccine deployment programme continues successfully.
2. Evidence shows vaccines are sufficiently effective in reducing hospitalisations and deaths in those vaccinated.
3. Infection rates do not risk a surge in hospitalisations which would put unsustainable pressure on the NHS.
4. Our assessment of the risks is not fundamentally changed by new Variants of Concern.

[1] College: General FE college, sixth form college, special post-16 institution, designated institution, independent training provider, adult community learning provider.

In addition, to ensure education and care policy is guided by the most up-to-date scientific evidence as this continues to evolve, the Department for Education regularly reviews data, analysis and advice from a number of different sources including the Scientific Advisory Group for Emergencies (SAGE), Public Health England, the Office for National Statistics, and the Joint Biosecurity Centre.

Current state of the pandemic

Cases, hospitalisations and deaths have fallen since lockdown started. Between 6 and 12 February, 1 in 115 people have tested positive for COVID-19 in England compared to a peak between 3 and 9 January when 1 in 50 tested positive for the virus. At a national and regional level, COVID-19 case rates and test positivity rates are continuing to fall steadily, with a 20% decrease in UK case rates in the 7 days ending 19 February 2021 compared to the previous week. In the UK, as of 16 February, 20,177 are in hospital with COVID-19, down from a peak of 39,244 on 18 January, and average daily reported deaths have fallen from a high of 1,248 to 494.[2]

As of 19 February 2021, over 17.2 million people had already received their first vaccine dose and 604,885 people had also received their second dose across the UK. The uptake of the first dose of vaccine in those 70 and over is more than 90%.[3]

Public Health England has studied the effect of the Pfizer/BioNTech COVID-19 vaccine on symptomatic and asymptomatic infection, and on hospitalisation and deaths from COVID-19.[4] The data is beginning to show clearly what the benefits of vaccination are in preventing infection, preventing symptomatic cases, and in significantly reducing hospitalisation and mortality for those who do show symptoms:

- The vaccine is preventing people from catching COVID-19. Studies in healthcare workers show that one dose of Pfizer/BioNTech vaccine reduces the risk of catching infection by more than 70%. A second dose reduces the risk by a further 15%, meaning protection of up to 85% after two doses.

- The vaccine is preventing symptomatic cases of COVID-19 in the older people who were first eligible for vaccination. The data suggests that one dose of Pfizer vaccine reduces symptomatic cases by between 50% and 70% in those aged 70 years and over. This effect occurs about three weeks after the first dose of vaccine, and the second dose improves this protection to between 80% and 90%.

- In older people (aged 80 and over) who do develop COVID-19 infection, those who are vaccinated, most of whom have so far had one dose, have a much lower chance of hospitalisation (about 40% lower) and death (around 56% lower) than those who are unvaccinated. In addition, there is early evidence that the rate of

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[2] All data sourced from Coronavirus in the UK, UK Government website for data and insights on Coronavirus

[3] Data sourced from Vaccinations | Coronavirus in the UK

[4] Public Health England, PHE monitoring of the effectiveness of COVID-19 vaccination (22 February 2020)

decline in hospitalisation and mortality is currently greater in those 75 years of age and above (the population so far vaccinated) than in younger age cohorts. The opposite was the case at a similar period during the first wave in April 2020.

The success of the vaccine programme means the Government can begin to chart a course out of lockdown. However, the Government will take a cautious approach to easing lockdown, which is guided by the data, in order to avoid a surge in cases which would put unsustainable pressure on the NHS and claim more lives before people have the chance to take a vaccine. Even as restrictions are lifted, adherence to the non-pharmaceutical interventions that are still in place to reduce transmission remains essential.

New Variant of Concern (VOC B.1.1.7)

The Variant of Concern B.1.1.7 appears to have increased transmissibility compared to previously circulating variants and has spread rapidly to become the dominant variant in the UK.[5] Despite initial concerns, the new variant is not particularly adapted to any age group, meaning children and young people are not disproportionately infected by the new variant.[6] There is no evidence that the relative increase in transmission associated with the new variant is greater in some settings than others, nor that the new variant is transmitted in different ways from other variants. SAGE has reiterated that the current personal, procedural and environmental mitigations to reduce transmission of SARS-CoV-2 should all continue to apply to the new variant.[7]

The core principles of a hierarchy of control measures to reduce transmission by all routes – close-range, airborne, and surface – remain essential, in conjunction with reducing social contacts, isolation and quarantine, alongside testing and tracing and the vaccination programme. In the presence of the new variant, it is even more important to have mitigation measures in place in all settings, as increased transmissibility increases the likelihood of outbreaks.[8]

Emerging evidence suggests it is likely that infection with B.1.1.7 is associated with an increased risk of hospitalisation and death compared to infection with non-VOC viruses. However, the absolute risk of death remains low, particularly for children and young

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[5] Public Health England, Technical Briefing Document (updated February 2021)

[6] SAGE Children's Task and Finish Group, Update to 17 December 2020 paper on children, schools and transmission (10 February 2021)

[7] SAGE EMG, Mitigations to Reduce Transmission of the new variant SARS-CoV-2 virus (23 December 2020)

[8] SAGE 75, Minutes (7 January 2020)

people[9], and infection with the B.1.1.7 variant does not result in an appreciably different clinical course to the original strain for children and young people.[10]

The Government will keep evidence on this and other emerging variants under review, as new data become available.

[9] NERVTAG, Paper to SAGE (21 December 2020)

[10] Brookman et al, Effect of the new SARS-CoV-2 variant B.1.1.7 on children and young people, The Lancet Child and Adolescent Health (February 2021)

Risks and harms of missing education

There is clear and unequivocal evidence that missed attendance in education is detrimental to children's cognitive and academic development and their long-term productivity. The most robust studies suggest that time out of attending education leads to lost learning which can meaningfully affect the attainment and life chances of children if not addressed.[11] Meta-analysis of learning loss shows that every further day missed matters and will likely lead to further reduced attainment.[12]

Recently published studies show that time out of school in the 2019/20 academic year may have affected primary pupils' performance in reading, maths and spelling, punctuation and grammar assessments,[13] with pupil premium pupils being more affected, as well as basic skills for independence in younger children – reinforcing the importance of keeping children in classrooms.[14] Overall, many school leaders assess that there has been 'extensive' learning loss due to COVID-19 disruption,[15] including younger children losing basic skills for independence.[16] The Education Endowment Foundation (EEF) and National Foundation for Educational Research (NFER) find that Year 2 pupils are around 2 months behind in their attainment in reading and maths.[17]

Learning at home may be particularly challenging for disadvantaged pupils and students – the Institute for Fiscal Studies found that children from better-off families spent 30% more time on home learning than those from poorer families during the first lockdown.[18] The EEF has estimated that the disadvantage 'gap' in attainment could widen as a result of the pandemic.[19] However, in most schools, remote education has likely significantly improved since the first period of lockdown. The Sutton Trust document major changes in schools' offers – for example 54% of teachers are now using online live lessons,

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[11] DELVE Initiative, Balancing the Risks of Pupils Returning to Schools: DELVE Report No. 4 (July 2020)

[12]Centre for Education Policy & Equalising Opportunities, Briefing Note: School Absences and Pupil Achievement (2020)

[13] Hodder, Schooldash, The impact of lockdown on children's education: a nationwide analysis (2020)

[14] Ofsted, COVID-19 series: briefing on schools (October 2020)

[15] Ofsted, Covid-19 series: briefing on schools (November 2020)

[16] Ofsted, COVID-19 series: briefing on schools (October 2020)

[17] EE, Impact of school closures and subsequent support strategies on attainment and socio-emotional wellbeing in Key Stage 1: Interim Paper (2021)

[18] IFS, Learning during the lockdown (2020)

[19] EEF, Rapid Evidence Assessment, Impact of School Closures on the Attainment Gap (2020)

compared to just 4% in March 2020. This means the negative impacts of time out of school may be different to those experienced in 2020.[20]

Loss of time in school and college has detrimental impacts on outcomes throughout a person's lifetime. As highlighted in a recent Institute for Fiscal Studies release,[21] each year of schooling is associated with an 8% increase in annual earnings.[22] Half a year of lost learning can equate to £40,000 of lost earnings over a lifetime, which would equate to £350bn across the UK's 8.7m school children.

Attending school is also vital for the mental and physical health and well-being of children – especially vulnerable children who are most likely to be affected due to increased risk of abuse and harm associated with isolation and financial stress.[23, 24] A strong positive relationship exists between education and health outcomes whether measured by death rates (mortality), illness (morbidity), health behaviours or health knowledge. One study across 22 European countries found that overall, people with low education were more likely to report poor general health and functional limitations.[25] School closures also cause deterioration in children's mental health.[22]

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[20] Sutton Trust, Learning in Lockdown (21 January 2021)

[21] Institute for Fiscal Studies, The crisis in lost learning calls for a massive national policy response (1 February 2021)

[22] Psacharopoulos, G and Patrinos H.A., Returns to investment in education: a decennial review of the global literature: Education Economics: Vol 26, No 5 (2018)

[23] ONS, Mental Health of Children and Young People in the Pandemic (2020)

[24] SPI-B and SPI-M paper to SAGE 66, COVID-19: Benefits of remaining in education - evidence and considerations (4 November 2020)

[25] von dem Knesebeck O, Verde PE, Dragano N., Education and health in 22 European countries, Social Science and Medicine (2006)

Education settings and transmission

There is no strong evidence to suggest that early years, schools and colleges play a role in driving large scale transmission in the community. Transmission to children and young people can occur in household, community and educational settings. The infection risk from behaviours and contacts within education settings cannot be separated from the wider 'end to end' behaviours and contacts associated with attendance but taking place outside of these settings.

A Public Health England-led review of infection rates over the course of the autumn term shows that rises and falls in the infection rate among the adult population are followed a week or so later by similar changes in the rate in children.[26] It should be noted that this study was before the variant B.1.1.7 became prevalent – the pattern of spread of this new variant in London, the South East and East of England in early adolescent age groups first, appears to have been influenced by education having remained open to all pupils and students during the national restrictions in November 2020 when other sectors were closed and social contacts and mixing were restricted, rather than any inherent difference in the virus.

Public Health England's research into transmission in educational settings also suggests changes in rates among children tend to follow changes among adults. This includes the large Schools Infection Survey undertaken in partnership with the London School of Hygiene and Tropical Medicine. Early estimates for testing undertaken in November 2020 have shown that infection rates in schools reflected those in the local community, such that higher infection rates were observed among staff and students in regions with higher community prevalence, compared to regions with low community prevalence. This was observed for both primary and secondary schools.[27]

Since its last rapid review of the evidence on the transmission of COVID-19 within school settings,[28] Public Health England has identified approximately 30 new observational studies (11 preprints) published up to 1 February 2021, mostly from Europe, the USA and Australia. These studies are mostly descriptive, so have important limitations due to the

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[26] Public Health England, SARS-CoV-2 Infections in Children Following the Re-Opening of Schools and the Impact of National Lockdown during Autumn 2020: Prospective, National Observational Cohort Surveillance, England (January 2021, pending peer review)

[27] Office for National Statistics, Public Health England and London School of Hygiene and Tropical Medicine COVID-19 Schools Infection Survey Round 1, England (November 2020)

[28] Public Health England, COVID-19 Rapid Evidence Service: Transmission of COVID-19 in school settings and interventions to reduce the transmission: a rapid review [Update1] (26 September 2020)

absence of control groups and the lack of adjustment for other factors that might have affected the results, such as socio-economic factors, reduced school attendance or wider interventions implemented to reduce community transmission. Additionally, most of the studies were conducted before the variant B.1.1.7 became widespread. However, the majority of the studies suggest that transmission within schools is low when sufficient infection prevention and control (IPC) measures are implemented. Only a small number of studies (approximately six in total) have reported that transmission occurred within schools. Most of these studies reported high levels of community transmission or inadequate IPC measures.

Impact of the return to education on wider transmission

SAGE has previously advised that implementing and lifting restrictions on attendance in early years, schools, colleges and universities is likely to have an impact on transmission and R, and decisions by government need to consider the balance of risks and harms including the potential direct health risks to children and staff from COVID-19; the wider impact of lifting restrictions on attendance on community transmission; and the direct risks to student mental health, wellbeing, development, educational attainment, and lifetime health outcomes from missed attendance in education.

Education is a major part of children and young people's lives, and compared to wider national restrictions, the full opening of schools is associated with increases in contact rates. Multiple data sources show a reduction in transmission in children following schools closing for half term in late 2020, and transmission rates increasing again following the post-half term return to school. This pattern is consistent with there being an effect of schools being open on increasing the spread of the virus amongst children. There is not enough evidence to quantify the size of the effect of school closures, or indicate what the impact is (if any) on the wider community.[29]

The extent of the impact on transmission and the role played by transmission within schools and colleges, versus transmission in the wider community associated with restrictions being lifted, also remains uncertain and difficult to quantify. Whilst secondary schools may have more transmission within the school, primary schools may have more effect on the wider community (e.g. from modelling studies, it is unclear whether primary or secondary schools have the greater impact on overall transmission).[30]

The most recent consensus view from SPI-M is that the return of more pupils to primary and secondary schools is likely to increase effective R by a factor of 1.1 to 1.5 (10% to

[29] SAGE Children's Task and Finish Group, update to 4 November 2020 paper on children, schools and transmission (17 December 2021)
[30] SAGE 78, Minutes (28 January 2021)

50%). Options with fewer children in attendance (such as selected year groups or cohorts) are likely to fall towards the lower end of this range.[31] This relative impact on R is highly sensitive to modelling assumptions on susceptibility and infectivity by age – particularly any distinction between primary and secondary school-aged children. Consequently, there remains uncertainty over the impact on R of lifting lockdown restrictions.

SAGE has been clear that lifting restrictions on schools needs to be considered in the wider context and that this will interact with other NPIs, affecting the activities and behaviours of parents and other adults as well as children.[32]

SAGE has also stated that if there is an increase in transmission, it will take time for the data to show this, and then more time for any response to be implemented and to have an effect. There may therefore be value in breaks in the easing of measures to allow this assessment and help maintain control, including around school holidays.[33]

[31] SAGE 78, Minutes (28 January 2021)
[32] SAGE 80, Minutes (11 February 2021)
[33] SAGE 80, Minutes (11 February 2021)

Safety and risks to children and young people

There continues to be strong evidence that children and younger people (<19 years) are much less susceptible to severe clinical disease than older people.[34] COVID-19 Clinical Information Network (CO-CIN) data shows no significant increase in the proportion of deaths in children under 19 years old when comparing wave 1 (17 January-3 July 2020) with a time period including wave 2 (17 January-31 December 2020).[35] Paediatric Multisystem Inflammatory Syndrome (PIMS), which is temporally associated with COVID-19, is rare and is estimated to occur in 45 cases per 100,000 SARS-CoV-2 infections in 0-14 year-olds.[36]

Evidence continues to confirm that children can be susceptible to COVID-19 infection although a range of analyses suggest that children's susceptibility to infection appears less than adults. The evidence is stronger that pre-school and primary aged children are less susceptible to infection than adults and more mixed for secondary-age and older children.[37] Children can transmit within households, as in other settings where mixing takes place. Analysis of ONS data has previously indicated that children aged 12-16 were playing a higher role in introducing infection into households than those 17 or over (i.e. being the index case), although this has reduced over time; the difference remains less marked for those under 12.[38]

A range of data sources indicate that rates of infection tend to be lower in younger children than older children, and that infections have been falling across all age groups in recent weeks:

- The ONS COVID-19 Infection Survey (CIS) data, which tests a representative sample of the community population, show the rates of those testing positive for COVID-19 from Age 2 to School Year 6 have been falling, broadly in line with older age groups, since mid-January 2021.[39] During December 2020, when schools were fully open and cases in the whole population were growing, rates

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[34] SAGE Children's Task and Finish Group: Update to 17th December 2020 paper on children, schools and transmission (10 February 2021)

[35] SAGE Children's Task and Finish Group: Update to 17th December 2020 paper on children, schools and transmission (10 February 2021)

[36] SAGE 80, Minutes (11 February 2021)

[37] Children's Task and Finish Group: Update to 17th December 2020 paper on children, schools and transmission (10 February 2021)

[38] Children's Task and Finish Group: Update to 17th December 2020 paper on children, schools and transmission (10 February 2021)

[39] Office for National Statistics, Coronavirus (COVID-19) Infection Survey (19 February 2021)

were around 1 percentage point lower in children age 2 to school year 6 than secondary-aged children.[40]

- Real-time Assessment of Community Transmission (REACT) data covering early February 2021 showed reduced prevalence in all age groups compared with January 2021, and few statistically significant differences in prevalence rates between school-aged children and adult age groups.[41] This is in the context of more contacts for primary-aged and younger children, due to early years settings being open to all and attendance at primary schools being higher than secondary schools.

- The weekly National Influenza and COVID-19 surveillance reports from PHE shows children aged 9 years and younger consistently have the lowest case rate per 100,000, whereas children and young people aged 10-19 have higher case rates.[42] PHE uses data from Pillar 1 and Pillar 2 testing, so are weighted towards symptomatic cases. The contrast with ONS and REACT results is indicative of the high proportion of cases among children being asymptomatic.

PHE surveillance data found a very low risk of COVID-19 infection in students or staff attending primary schools during both partial attendance in the summer half-term and full attendance in the autumn term.[43] This is demonstrated by low seroconversion (change from negative to positive antibody status) among primary school staff and pupils at around 3-4%, lower than is seen in adults over the same period. Antibody rates indicated that primary school students were as likely to get infected as staff, but more likely to have asymptomatic or mild illness.

[40] Office for National Statistics: Coronavirus (COVID-19) Infection Survey

[41] REACT, Community infection trends in early February (18 February 2021)

[42] PHE, National flu and COVID-19 surveillance reports

[43] PHE, Prospective Active National Surveillance of Preschools and Primary Schools (January 2021, pending peer review)

Safety of educational settings and risks to the workforce

Latest ONS data on COVID-19 infection covers the period from 1 September 2020 and 7 January 2021. During this period of time, there was a national lockdown in England between 5 November and 1 December 2020 and varying local tier restrictions in place; there was also a significant rise in the positivity rate across the country, including that related to the new variant. These data show that after adjusting for differences across occupations and reported ability to socially distance in the workplace and work from home, there was no statistical evidence of a difference in the likelihood of testing positive for the COVID-19 between the majority of occupations.[44]

Evidence of difference presents as a continuum, which can be seen in the comparisons between different occupations. Within this, there are a group of occupations at the upper end of the continuum, that have no significant difference with the majority of other occupations, but do show a higher probability of testing positive compared with some of those at the lower end. At the upper end are caring personal service occupations, protective service occupations, teaching and other education professionals, secretarial and related occupations, and other managers and proprietors; while at the lower end are skilled agricultural and related trades; science, research, engineering and technology professionals; business, media and public service professionals; textiles, printing and other skilled trades.

Further evidence around the safety of the education workforce is from the ONS COVID-19 related deaths by occupation, covering the period from 9 March 2020 and 28 December 2020. There were 139 deaths involving COVID-19 in teaching and educational professionals aged 20 to 64 years registered between 9 March and 28 December 2020 in England and Wales. For both sexes, rates of death involving COVID-19 for this group were statistically significantly lower than the rate of death involving COVID-19 among those of the same age and sex in the wider population. The analysis suggests that men working in secondary education may have a higher risk of COVID-19 mortality than men of the same age in other professional occupations, although not statistically significantly different than men of the same age in the wider population.[45]

Based on the recent ONS data, the risks to education staff are similar to those for most other occupations. Implementing the system of controls outlined in guidance creates a safer environment for pupils, students and staff where the risk of transmission of infection

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[44] ONS, Coronavirus (COVID-19) Infection Survey: characteristics of people testing positive for COVID-19 in England (22 February 2021)

[45] ONS, Coronavirus (COVID-19) related deaths by occupation, England and Wales (25 January 2021)

is substantially reduced. The way to control this virus is the same, even with the current new variants.

Health and Safety Executive spot checks in 5,000 and inspections in 1,000 primary and secondary schools between September and December 2020 identified that around 80% had a good understanding of the guidance and what it means to be 'COVID-secure'. Where issues were identified these were minor, with less than 1% requiring any formal enforcement.[46]

Since its last rapid review of the evidence on the transmission of COVID-19 within school settings,[47] Public Health England has identified approximately 20 new studies (15 preprints) published up to 1 February 2021, examining the effectiveness of school-based interventions, predominantly from the United States and Europe. Most of the studies are modelling studies, which are limited (and impacted) by the certainty of data and the assumptions underpinning the models. A range of interventions were simulated, including social distancing, the use of smaller class sizes, use of face coverings, regular testing, isolation policies and daily symptom screening. All interventions reduced predicted COVID-19 transmission levels to varying degrees, and combinations of interventions were required for minimal transmission. The evidence also suggested that wider community transmission is an important factor for school transmission; and that stricter and/or more measures may be required where community transmission is high.

Asymptomatic testing

The testing programme in secondary schools and colleges for staff, pupils and students will help to break chains of transmission by identifying asymptomatic positive cases using Lateral Flow Device (LFD) tests. Those who test positive will then self-isolate, helping to reduce transmission of the virus and keeping other pupils and students in face-to-face education. Public Health England and NHS Test and Trace have been clear that regular testing of staff, pupils and students is an important part of the Government's overarching testing programme.[48]

[46] SAGE 80, Minutes (11 February 2021)

[47] Public Health England, COVID-19 Rapid Evidence Service: Transmission of COVID-19 in school settings and interventions to reduce the transmission: a rapid review [Update1] (September 2020)

[48] PHE and NHS Test and Trace, Position Statement (20 January 2020)

Evaluations from Public Health England and the University of Oxford show LFD tests are accurate and sensitive enough for specific uses within community settings.[49] More than 130 types of LFD have been assessed and 20,545 evaluations completed, indicating that LFDs are effective at detecting a high viral load in an individual and registering an appropriate positive result,[50] including for currently circulating COVID-19 variants.[51]

LFD tests have different performance from PCR (Polymerase Chain Reaction) and have a lower positive predictive value than PCR at population prevalence less than 1%. However, they have benefits in terms of both ease of use and speed of result, with LFD tests delivering results after 30 minutes rather than in 1-2 days as is the case with PCR tests. This ability of LFD tests to deliver quick results makes them particularly suitable for mass rapid testing and has informed the decision to use them for the purposes of infection control in schools.

PCR tests are typically more reliable at identifying individuals with lower viral loads, but the clinical utility for 'case finding' of doing so is contested, given the high initial infectivity and long-lasting traces of SARS-CoV-2 that continue to generate positive PCR results. LFD tests are effective at identifying those who are most infectious, because they are more likely to detect those with higher viral loads. COVID-19 is typically most infectious around the onset of symptoms, but infectiousness declines thereafter and is short-lived, heightening the importance of early case finding.[52] Delay to isolation of positive cases has a significant negative impact on reducing transmission: for instance, modelling considered by SAGE suggests that halving the delay between an individual test and contacts being traced substantially reduces overall transmission.[53] As such, LFD tests are an important tool for quickly detecting asymptomatic and infectious cases in schools while reducing risk of identifying and hence excluding those who are past the infectious stage.

Given the differing performance of LFD tests for people with different viral loads, one LFD test may miss people who are in the early stages of COVID-19 infection with lower but

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[49] PHE and University of Oxford Preliminary report from the Joint PHE Porton Down & University of Oxford SARS-CoV-2 test development and validation cell: Rapid evaluation of Lateral Flow Viral Antigen detection devices (LFDs) for mass community testing (2020)

[50] PHE and University of Oxford Preliminary report from the Joint PHE Porton Down & University of Oxford SARS-CoV-2 test development and validation cell: Rapid evaluation of Lateral Flow Viral Antigen detection devices (LFDs) for mass community testing (2020)

[51] PHE, SARS-CoV-2 lateral flow antigen tests: evaluation of VOC1 (Kent, UK) and VOC2 (South Africa) (12 February 2021)

[52] Cevik et al. SARS-CoV-2, SARS-CoV, and MERS-CoV viral load dynamics, duration of viral shedding, and infectiousness: a systematic review and meta-analysis (19 November 2020)

[53] CMMID COVID-19 Working Group, Rapid testing strategies for traced contacts: comparing quarantine, quarantine and testing, and daily testing (16 November 2020)

increasing viral loads, and give a negative result. Repeating the test a number of days later may pick up some of these infections as the viral load becomes higher. LFD test sensitivity means there will, as with most types of tests, be some false negatives. Any negative test should not be considered a 'green light' and that those testing negative should continue to follow the rules and advice to prevent the spread of COVID-19.

Face coverings

SAGE has advised that face coverings can be effective in reducing transmission in public and community settings.[54] Their effectiveness stems mostly from reducing the emission of virus-carrying particles when worn by an infected person (known as source control). They may provide a small amount of protection to an uninfected wearer; however, this is not their primary intended purpose. Face coverings (worn correctly and of suitable quality) are likely to be most effective at reducing transmission in both indoor and outdoor settings when people are likely to be close together or where social distancing cannot be maintained. There may be marginal benefits in some indoor spaces where people are further apart through the reduction in the amount of small aerosols released into the space.

Widespread application of face coverings as a source control is likely to have a small but significant impact on population level transmission. The benefit is difficult to quantify, but estimates range from 7-45%.[55]

[54] SAGE 76, Minutes (14 January 2021)

[55] SAGE-EMG Application of physical distancing and fabric face coverings in mitigating the B117 variant SARS-CoV-2 (13 January 2020)

Early years

The wider significant restrictions in place as part of the national lockdown to contain the spread of the virus in the community enable us to continue prioritising keeping nurseries and childminders open to all, supporting parents and delivering the crucial care and education needed for our youngest children. The earliest years are the most crucial point of child development and attending early education lays the foundation for lifelong learning and supports children's social and emotional development.

The risks within early years settings for children and staff are lower because young children are generally less susceptible to the virus and play a lesser role in transmission:

- PHE National flu and COVID-19 surveillance reports[56] show that since November, 0–4-year-olds have consistently been among the lowest case rates of all age groups (latest data from 18 February: case rates slightly higher than 5-9 year olds, 67.7 vs. 57.7 per 100,000). Although initial data from these reports suggests that since the national lockdown began rates are falling more slowly in under 5s than in older age groups, rates are continuing to decrease despite Early Years settings remaining open to all.

- Latest COVID-19 Infection Survey data[57] published on 19 February 2021 indicates that although there was a slight increase in prevalence in children aged 2 to 10/11 (Year 6) in mid-January, levels have been falling in this group in recent weeks and are similar to other age groups. This survey is more likely to capture asymptomatic cases than case rates data.

Further relevant information is set out in recent SAGE Children's Task and Finish Group papers.[58] As in schools, where early years settings implement the system of controls outlined in guidance, in line with their own workplace risk assessment, these measures create a safer environment for children and staff where the risk of transmission of infection is substantially reduced. The way to control this virus is the same, even with the current new variants. As above, under 5s continue to be among the lowest confirmed rates of COVID-19 across age groups, and there is no evidence that the new variant B.1.1.7 disproportionately infects young children.[59]

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[56] PHE, National flu and COVID-19 surveillance reports

[57] Office for National Statistics: Coronavirus (COVID-19) Infection Survey

[58] Children's Task and Finish Group: update to 17th December 2020 paper on children, schools and transmission (10 February 2021)

[59] SAGE Children's Task and Finish Group, Update to 17 December 2020 paper on children, schools and transmission (10 February 2021)

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