

**Thirty-first SAGE meeting on Covid-19, 1st May 2020, 1115-1215
Held via Zoom**

Summary

1. Younger children might be less susceptible to infection (low degree of confidence) but are less susceptible to clinical disease (moderate to high degree of confidence) than adults; there is not enough evidence to determine whether this is also the case for older children.
2. It is not clear whether transmissibility by children is lower than in adults, but some variable evidence indicates that this may be the case for younger (up to age 11-13) children (low confidence).
3. For a variety of reasons reopening options relating to younger children are lower risk than those related to older children.
4. Indirect effects of re-opening schools (regardless of which option is taken) are likely to have a greater impact on transmission than schools themselves (e.g. work-related reopening, behaviour changes)
5. SAGE advises that effective measures should be in place to monitor the effects of any change in schools, and to respond to cases within schools.

Infection and transmission in children

6. Evidence indicates that the severity of disease in children is lower than in adults (high degree of confidence).
7. The susceptibility of younger (up to age 11-13) children to clinical disease is lower than for adults (moderately high degree of confidence). For older children there is not enough evidence to determine whether susceptibility to disease is different to adults.
8. The susceptibility of younger (up to age 11-13) children to infection might be lower than for adults (low degree of confidence). For older children there is not enough evidence to determine whether susceptibility to infection is different to adults.
9. There is no evidence to suggest that children transmit the virus any more than adults. There are some studies that suggest that younger children may transmit less, but evidence is mixed and provides a low degree of confidence at best.
10. These dynamics may vary continuously with age in children. It is also possible that there is discontinuity caused by either biological or behavioural factors, for example factors related to puberty.

Impact of reopening schools

11. Options for partial and full reopening of schools have been modelled.
12. The estimated absolute effect of each option on R varies significantly based on the model and data used and other assumptions made. The models are particularly sensitive to assumptions around susceptibility and infectivity. Some factors cannot practicably be modelled such as increased hygiene and social distancing within schools.
13. Although the overall magnitude of impact varies, the models provide a broad consensus around the relative ranking of impact of different options.
14. SAGE agreed the rank order presented of the impact of the options (moderate confidence).
15. Those options which involve early years settings have a lower impact than those involving primary schools, which in turn have a lower impact than those involving secondary schools. This is driven by the numbers of pupils, and the numbers of contacts per pupil.
16. The consequences of changes in behaviour or contacts outside of schools as a result of schools reopening (such as changes to adherence to measures and to working patterns) are likely to have a larger effect on R than the effect of the schools themselves. These consequences are complex and highly uncertain. Even a short period of reopening may

result in some of these occurring, which may persist even after schools close again for holidays.

17. Social distancing has not been factored into the models. It is difficult to put some of these measures into place in practice in schools, particularly with younger children, but some elements may be achievable. Hygiene will continue to be important in schools.
18. SAGE advises that effective monitoring and reporting is put in place ahead of any reopening. Serology testing to be carried out at the start of the opening period, and repeated would be useful as part of a monitoring programme.
19. SAGE advises that appropriate response plans are put in place to address cases in schools, which may include reactive closures of schools or classes.

Scientific experts: Patrick Vallance (GCSA), Chris Whitty (CMO), Jenny Harries (dCMO), Angela McLean (CSA MoD), Charlotte Watts (CSA DfID), Osama Rahman (CSA DfE), Graham Medley (LSHTM), Julia Gog (Cambridge), Neil Ferguson (Imperial), John Edmunds (LSHTM), Peter Horby (Oxford), Ian Young (CMO Northern Ireland), Rob Orford (Health CSA Wales), Sheila Rowan (CSA Scotland), Nicola Steedman (dCMO Scotland), Jeremy Farrar (Wellcome), Michael Parker (Oxford), Ian Boyd (St Andrews), Russell Viner (UCL), Chris Bonell (LSHTM), Rebecca Allen (Oxford)

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