SPI-M-O: Consensus view on the impact of mass school closures on 2019 Novel Coronavirus (2019-nCoV)

Date: 10th February 2020.

Key points

1. We cannot say at this stage how much of an impact school closures in the UK would have on 2019-nCoV. Very little is known about the virus including, importantly, the role of children in transmission, and the severity of infections in children.

2. Most modelling of the impact of school closures has been in relation to pandemic influenza. In the 2009 influenza pandemic, the school summer holiday interrupted transmission to such an extent that the UK epidemic was split into two waves, with the second coming after their reopening in the Autumn.

3. Any impact of school closures on 2019-nCoV is expected to be smaller than in 2009, because:

    - The average time between symptom onset in primary and secondary cases (known as the serial interval) is longer than for influenza. As a result, schools would have to be closed for longer to have the same effect.

    - The reproduction number in Wuhan in the early stage of the outbreak is higher than was seen in previous pandemics.

    - In 2009, some adults had pre-existing immunity, so a higher proportion of transmission took place within schools.

    - We do not yet know what role children have in the transmission of 2019-nCoV. If it is limited, then school closures would have a smaller effect.

4. Because of the higher reproduction number, if school closures have an impact, it would be more likely that it could reduce incidence at the peak of an epidemic rather than to reduce the cumulative number of people infected.

5. If there is value in school closures, it may be greatest around the peak of a UK epidemic. If the peak is to be chosen as a trigger to close schools, It is likely that this point could be identified in real time using PHE's 2019-nCoV model. It is expected that the initial outputs of this model will not become available until there have been several weeks of sustained transmission with the UK.

6. School closures of a given duration may be more effective if held in the weeks immediately before and / or after school holidays. It is currently unclear whether this is the case for 2019-nCoV.

7. As well as the large economic and educational costs of school closures, including increased levels of workforce absence in the health and care system and elsewhere, school closures could have adverse consequences:

    - As infections appear to be more severe in older people, putting children in the care of their grandparents may result in a higher number of severe cases.

    - Once schools are reopened, the number of cases may increase again, with the overall attack rate not being reduced.

8. A rapid literature review by Brooks and Rubin has shown that whilst school closures do appear to reduce the number of contacts that children have outside the home, such contacts remain common. Were children to congregate in day-care settings during a UK 2019-nCov epidemic, the impact of school closures would be lower.

9. A more detailed assessment of the likely impact of school closures will be possible once there has been several weeks of sustained transmission of 2019-nCoV within the UK.