

**Addendum to third SAGE meeting on Covid-19, 3<sup>rd</sup> February 2020**  
**Held by teleconference**

This addendum clarifies the roles of the SAGE attendees listed in the minute. There are three categories of attendee. Scientific experts provide evidence and advice as part of the SAGE process. HMG attendees listen to this discussion, to help inform policy work, and are able to provide the scientific experts with context on the work of government where appropriate. The secretariat attends in an organisational capacity. The list of attendees is split into these groups below.

**Attendees:**

**Scientific experts:** *Patrick Vallance (GCSA), Chris Whitty (CMO), Jonathan Van Tam (Deputy CMO), John Aston (CSA HO), Neil Ferguson (Imperial), John Edmunds (LSTHM), Graham Medley (LSHTM), Carole Mundell (CSA FCO), Phil Blythe (CSA DfT).*

**Observers and Government officials:** *Kavitha Kishen (DfT), Tasha Grant (CCS), Stuart Wainwright (GoS), Samantha Harris (GoS).*

**Secretariat:** [redacted]

Names of junior officials and the secretariat are redacted.

Participants who were Observers and Government Officials were not consistently recorded therefore this may not be a complete list.

**Third SAGE meeting on Wuhan Coronavirus (WN-CoV), 3 February 2020**  
**By teleconference**

**Summary**

1. On the expected impact of travel restrictions, SAGE estimates – with limited data – that if the UK reduces imported infections by 50%, this would maybe delay the onset of any epidemic in the UK by about 5 days; 75% would maybe buy 10 additional days; 90% maybe buys 15 additional days; 95%+ maybe buys a month.
2. Only a month of additional preparation time for the NHS would be meaningful. It would also be meaningful if the outbreak were pushed out of usual winter respiratory season.
3. To prevent imported infections along these lines would require draconian and coordinated measures, because direct flights from China are not the only route for infected individuals to enter the UK.
4. Additional measures would be required and 50% reduction is probably about the best that could be achieved with a ban on direct travel from China alone.
5. Stopping travel would also have other impacts, including on supply chains.
6. SAGE will address the question of what package of measures might lead to a 1 month delay (including measures to stop spread within the UK).
7. SAGE will also seek to refine its estimates through further modelling; SAGE is next meeting on Tuesday 4 February 2020.

**Situation update**

8. The epidemic is still in its early stages. It is a reasonable hypothesis that the epidemic is still growing exponentially – doubling every 4-5 days.
9. Case ascertainment in China appears to be low: potentially 1 in 15 being identified, possibly 1 in 20. The scale of the epidemic in China could be in the region of 200,000 to 300,000 cases.
10. Incubation period (time between exposure to infection and symptom onset): consensus of modellers puts this at 5 days, but range is 2 to 14 days.
11. Generation time (the time between the infection of a primary case and one of its secondary cases) estimated at 6-7 days.
12. There is some evidence of younger people in China showing symptoms.
13. Sustained community transmission outside China should be expected.
14. Data challenges remain: data from Hubei province, where testing is more thorough, is most reliable.
15. To better understand the epidemic, it is important to have access to case numbers reported by onset date, data on numbers of people being tested, age distribution of cases and co-morbidity information – updated daily.

**Travel restrictions: assessment of impacts**

16. It is hard to determine numbers of people entering the UK from China: fill rates on direct flights must be estimated; indirect flights, rail and maritime are also routes into the UK.

**ACTION: DfT and Home Office** to produce more wide-ranging estimates on people entering the UK from China for the next SAGE meeting (February 4), splitting out numbers by different routes of entry.

17. Gaining 5 to 10 days of extra time for the NHS and wider HMG to prepare for a WN-CoV epidemic would be of limited value.
18. An extra month for the NHS and wider HMG to prepare for a WN-CoV epidemic – and to reduce the pressures arising from seasonal influenza – would offer a significant advantage.
19. There is considerable uncertainty around these estimates.
20. Ongoing transmission of WN-CoV in other countries would negate the effectiveness of travel restrictions on passengers coming directly from China – as might other

international travel restrictions which force travellers from China to use alternative means /routes to travel.

**ACTION: SPI-M** to consider whether the estimates on the impact of travel restrictions agreed by SAGE can be refined.

**ACTION: SAGE**, with support from **SPI-M**, to review (on February 4) what measures besides travel restrictions could contribute to delaying spread of WN-CoV to the UK by 1 month, and what further knowledge of WN-CoV is needed to inform those measures.

#### **List of actions**

**DfT** and **Home Office** to produce more wide-ranging estimates on people entering the UK from China for the next SAGE meeting (February 4), splitting out numbers by different routes of entry.

**SPI-M** to consider whether the estimates on the impact of travel restrictions agreed by SAGE can be refined.

**SAGE**, with support from **SPI-M**, to review (on February 4) what measures besides travel restrictions could contribute to delaying spread of WN-CoV to the UK by 1 month, and what further knowledge of WN-CoV is needed to inform those measures.

#### **Attendees**

*SAGE participants:* Patrick Vallance, Chris Whitty, Jonathan Van Tam, John Aston, Neil Ferguson, John Edmunds, Graham Medley, Carole Mundell, Phil Blyth

*Observers:* [REDACTED] Kavitha Kishen, Tasha Grant, Stuart Wainwright, Samantha Harris,  
[REDACTED]

SAGE Secretariat