

**Addendum to the second SAGE meeting on Covid-19, 28 January 2020  
Held in 10 Victoria St, London, SW1H 0NN**

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), Charlotte Watts (CSA DfID), Jonathan Van Tam (dCMO), John Aston (CSA HO), James Rubin (King's College), Neil Ferguson (Imperial), Peter Horby (Oxford), Guy Poppy (CSA FSA), Carole Mundell (CSA FCO), Christine Middlemiss (CVO DEFRA), Jim McMenamain (Health Protection Scotland), Jeremy Farrar (Wellcome), David Lalloo (LSHTM), Maria Zambon (PHE), Andrew Rambaut (Edinburgh), Wendy Barclay (Imperial).*

**Observers and Government Officials:** *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 the complete list.

**Second SAGE meeting on Wuhan Coronavirus, 28 January 2020**  
**Held in 10 Victoria St, London SW1H 0NN**

**Actions from previous meeting**

1. DHSC to send PHE isolation plan to behavioural scientists (see further action below).
2. Others in train.

**Situation update**

3. SAGE is responsible for coordinating science advice across HMG, including from NERVTAG.
4. SAGE agreed that SPI-M (Scientific Pandemic Influenza Group on Modelling) is now a formal sub-group of SAGE for the duration of this outbreak.
5. A separate group has been convened outside SAGE to consider how UK science can contribute to the international effort to tackle the outbreak.
6. DHSC provided an update on current declared cases, deaths and geographic spread.
7. 50% of new cases in China are now occurring outside of Wuhan.
8. Diagnostics: Specific test should be ready by the end of week, with capacity to run 400 to 500 tests per day. Guidance being rolled out to laboratories in the UK. Sensitivity of test unclear, particularly in early phases of illness or when symptoms are mild. Currently it would not be useful to test asymptomatic individuals, as a negative test result could not be interpreted with certainty.

**Current understanding of WN-CoV**

9. Origin: Current evidence suggests a single point zoonotic outbreak, which is now being sustained by human-to-human transmission. No evidence of ongoing zoonotic transmission.
10. Case fatality rate: currently estimated to be lower than SARS, but many uncertainties remain.
11. Reproductive number: estimated as between 2 and 3, in accordance with estimates from the Chinese authorities, but these figures are uncertain.
12. Doubling rate: estimated at 3 to 4 days.
13. Clinical presentations: varied, from mild coughing to fever and pneumonia. Uncertainty regarding clinical symptoms for individuals with mild illness.
14. Incubation period: likely to be average of 5 days, but considerable variation in specific cases.
15. Duration of infectivity: unknown, but 14 days seems a reasonable estimate.
16. There is limited evidence of asymptomatic transmission, but early indications imply some is occurring. PHE developing a paper on this.
17. Transmission route: respiratory.
18. SAGE urges caution in comparing WN-CoV with SARS and MERS: the transmission dynamics are different.
19. Control measures: ideally infection control in healthcare settings and rapid detection of cases.
20. It was agreed that Pandemic Influenza infection control guidance should be used as a base case and adapted.
21. Currently no evidence of control measures having an impact on transmission rate, but this is to be expected: not enough time has passed since implementation of measures.
22. SAGE supported the principle of self-isolation (but requires behavioural science input on public communication).
23. SAGE endorsed NERVTAG's position that those coming into contact with returning travellers to the UK, e.g. Border Force agents, do not need additional infection control measures to those currently advised.

**ACTION: SPI-M** to advise on actions the UK could take to slow down the spread of the outbreak domestically, even if widespread globally.

**ACTION: PHE** to share paper on asymptomatic transmission with SAGE.

### **Reasonable Worst-Case Scenario (RWCS)**

24. There are a number of scenarios that this outbreak could follow, depending on virulence and transmissibility.
25. The current RWCS is similar to an influenza pandemic where no vaccine or specific treatment is available.
26. The RWCS for the UK should be based on a reproductive number of 2.5 (middle of current estimates) and should assume that some of those who have returned from China are infectious.
27. SAGE also agreed that the UK RWCS should be based on pandemic influenza planning.

**ACTION: DHSC** to use existing planning assumptions for an influenza pandemic to develop a reasonable worst case for WN-CoV in the UK.

### **Triggers for change in HMG approach**

28. For UK: SAGE agreed that the current triggers which would require a change in HMG's approach (sustained human-to-human transmission outside China and/or a severe UK case) are appropriate.
29. For changing travel advice for China: NERVTAG advised a change in the geographical aspect of case definition, from Wuhan to a number of Chinese provinces. SAGE agreed that this should inform travel advice – which Chinese provinces is to be determined.
30. SAGE agreed to keep these triggers under review, e.g. if there were multiple, geographically-spread mild cases in the UK.

**ACTION: PHE** to share map of Chinese provinces that have reported cases with FCO and CCS

### **Behavioural science and public understanding of risk**

31. SAGE agreed on the importance of behavioural science informing policy – and on the importance of public trust in HMG's approach.
32. SAGE will keep under review whether further sub-groups, such as a behavioural science sub-group, are needed.

**ACTION: PHE** to open lines of communication with SAGE behavioural scientists and to share available polling data on the outbreak.

### **SAGE battle rhythm**

33. SAGE stands ready to reconvene, as required.

### **List of actions**

**SPI-M** to advise on actions the UK could take to slow down the spread of the outbreak domestically, even if widespread globally.

**PHE** to share paper on asymptomatic transmission with SAGE.

**DHSC** to use existing planning assumptions for an influenza pandemic to develop a reasonable worst case for WN-CoV in the UK.

**PHE** to share map of Chinese provinces that have reported cases with FCO and CCS.

**PHE** to open lines of communication with SAGE behavioural scientists and to share available polling data on the outbreak.

**Attendees**

*SAGE participants:* Patrick Vallance, Chris Whitty, Charlotte Watts, Jonathan Van Tam, John Aston, James Rubin, Neil Ferguson, Peter Horby, Guy Poppy.

*By phone:* Carole Mundell, Christine Middlemiss, Jim McMenamin, Jeremy Farrar, David Lalloo, Maria Zambon, Andrew Rambaut, Wendy Barclay

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