

**Thirty-fourth SAGE meeting on Covid-19, 7<sup>th</sup> May 2020**  
**Held via Zoom**

**Summary**

1. SAGE reiterated its advice that there should be extensive testing of healthcare workers including asymptomatic workers.
2. It is important that the public understands the symptoms of Covid-19 disease in order for testing and tracing to be effective.
3. SAGE agreed scientific principles to inform approaches to risk assessment in the workplace.
4. Assessment of the introduction of bubbles is not straightforward and potential unforeseen risks accompany the potential benefits. SAGE advises that further work is done to understand this more to inform any decision.
5. As steps are taken to ease the lockdown, each step needs to be accompanied by very clear communication of the continued public health justification for remaining restrictions.

**Introduction**

6. SAGE noted the important contribution made by Neil Ferguson over the course of the response and agreed the importance of continuing to draw upon the work of the Imperial College London team.
7. SAGE reemphasised that its own focus should always be on providing clear scientific advice to government and the principles behind that advice.
8. A better mechanism for filtering commissions and requests for SAGE's advice is needed to ensure that participants of SAGE are only required to respond urgently to requests when those matters specifically relate to an urgent science question. This will help the resilience of participants of SAGE who will continue to work under intense pressure on the Covid-19 response for many more months. Commissions should be coordinated by the SAGE Secretariat.
9. The need for pastoral support to be available to participants was noted. Ian Boyd is an independent participant whose role includes providing this type of support.
10. A sub-group has been established to focus on evaluation under the leadership of Ian Diamond.

**Action: SAGE Secretariat** to work with **Cabinet Office** to improve the commissioning process and ensure that the right questions are put to SAGE or related groups in a timely manner. Expert subgroup chairs to work with **SAGE secretariat** to agree priorities for groups.

**Action: SAGE Secretariat** to make pastoral support available to participants.

**Outstanding Actions**

11. Granular data are not yet currently available from PHE to fully understand transmission pathways in healthcare settings. Preliminary data suggests the prevalence of Covid-19 in healthcare settings is 2-4%.
12. Genomic epidemiological analysis is in progress in both healthcare and care home settings.
13. Preliminary data from the convalescent plasma programme shows that after 24 days, almost all people infected with Covid-19 have formed a serological immune response. This will be helpful for testing strategies for healthcare workers but does not provide detail about long-term immunity to the disease.
14. SAGE reiterated the importance of addressing the epidemic in the healthcare and care home sectors, and reiterated its advice that there should be extensive testing of



healthcare workers including asymptomatic workers as well as the application of other measures previously advised. SAGE participants offered to provide advice to the healthcare worker testing programme if required.

15. Strategies and plans for testing in care homes are being rolled out and a paper will be presented to SAGE next week which covers frequency and focus of testing.
16. SAGE agreed that serology testing should be used to understand if asymptomatic infected individuals have had a serological response.
17. An ONS survey is underway measuring prevalence in the population by repeat household testing for both virus and antibodies. Work with SPI-M will produce estimates of R, which will be estimated twice a week. Regional estimates will also be provided.
18. Preliminary results of a study indicate that the Covid-19 virus decays rapidly when exposed to artificial sunlight – paper to come next week.
19. SAGE noted some rare symptoms or complications which are emerging including cerebrovascular events, renal disease, and systemic endothelial and organ dysfunction.
20. SAGE also noted the existence of longer-term health sequelae (such as persistence of extreme tiredness and shortness of breath for several months) and the importance of monitoring these impacts through longer-term cohort studies (as agreed previously and being taken forward by funders).
21. A paper will be presented to SAGE at a later date on the breadth of clinical presentation of the disease.

**Action: Serological Testing Strategy Group** to develop a serological testing strategy to utilise high through-put serology testing becoming available. This is important for surveillance and potentially for individual application.

**Action: NERVTAG** to consider a broader clinical syndrome definition and its use, for CMO. Should also link this to long-term cohort study.

#### **Testing and tracing**

22. The sensitivity and specificity of several potential symptom combinations for identifying Covid-19 patients was developed by NERVTAG. The most accurate definition includes: upper respiratory AND gastrointestinal OR generalised signs (see paper 4c).
23. It was noted that different case definitions may be needed for different individuals (e.g. Health Care Workers). The senior clinical group will refine the definition and pass it onto NHSX. ONS should test the NERVTAG definition through its survey.
24. SAGE noted the importance of the public understanding Covid-19 symptoms for testing and tracing to work.

**Action: ONS** to test the **NERVTAG** case definition through its survey; **NERVTAG** to provide case definition to test and trace group. **SPI-B** to advise on communication of this to the public.

#### **Risk assessment approach for environmental mitigation measures**

25. A paper was presented to SAGE on risk assessments and how these should be carried out for different work activities and in different work settings. The paper highlights the scientific principles of risk assessment to inform those who need to develop operational guidance. SAGE did not endorse the paper in its current form as SAGE does not give specific operational advice. This is a matter for HSE and the safer working place group.
26. SAGE agreed with underpinning scientific principles in the paper. A greater focus should be given in the paper to the quantitative methodology. The principle that PPE was a defence only required for very high transmission risk situations where other mitigations were not possible should be emphasised.



27. Once re-drafted the paper should be shared with BEIS and the HSE for their consideration as they develop policy.

**Action: Cath Noakes** to update paper to clarify that the purpose is to provide the scientific principles for risk assessment, and to share paper with **HSE** and **BEIS**.

### **Bubbling**

28. The concept of 'bubbles' has potential benefits, such as supporting mental wellbeing or allowing childcare to be shared between households. However, there are also risks, particularly if bubbles were to be introduced alongside other changes or if there is poor adherence.
29. The effects of bubbles are complex. Introducing bubbles alongside other changes could reconstruct extensive networks, particularly when combined with any increase in contacts in other settings. These networks could enable transmission through the population. It will be difficult to assess the effects of individual policy changes on R if multiple changes are introduced together.
30. Mitigation of these risks would require very careful policy design. Key mitigations will include maximising adherence of those within bubbles to other measures and maintaining exclusivity of bubbles (which would be difficult to enforce). Size of bubbles will also be an important factor, with smaller bubbles being lower risk. There are many variables that would need to be considered to establish design principles.
31. A safe approach to bubbles would need to include isolation of all members of a bubble in the case of one member showing symptoms. This would lead to increased frequency of isolation for people, particularly in the winter months.
32. There are also equity considerations in the design of bubbles. Additional factors would need to be considered around vulnerable people, healthcare workers, and other groups who may be affected differently. The approach needs to consider the effects on households of different sizes, including those in HMOs. Introducing bubbles may affect people in different cultural groups differently, for these reasons and others.
33. Further work is required to fully understand the potential impact of bubbles, which has not been possible to do in the timeframe or with the parameters given. Until a detailed approach is developed, it will not be possible to assess the level of risk with any degree of confidence.
34. The conclusion is that introduction of bubbles is not straightforward and carries potential unforeseen risks. SAGE can undertake more work on this and would advise understanding this more to inform any decision.

**Action: SPI-M & SPI-B** to work together to further consider principles for safe bubble design, to be based on further input from **CO**.

### **Infection transmission in protests**

35. Public assembly, including protest, is currently restricted by the Covid-19 regulations. As part of the longer-term release of measures, restriction of public assembly will need to be reconsidered.
36. It is not expected that protest or social disorder will automatically follow from an easing of restrictions. Nor is it expected that any resistance to new measures will emerge which reflect patterns of protests in other countries, because such events appear to be specific.
37. SAGE agreed that as steps are taken to ease the lockdown, each step needs to be accompanied by very clear communication of the continued public health justification for any remaining restrictions. Tracking of emerging patterns of public support, non-adherence and potential social disorder may be useful.
38. It was noted that a useful addition to control measures SAGE considers (in addition to scientific uncertainty) would be the feasibility of monitoring/enforcement.

### List of actions

**SAGE Secretariat** to work with **Cabinet Office** to improve the commissioning process and ensure that the right questions are put to SAGE or related groups in a timely manner. Expert subgroup chairs to work with **SAGE secretariat** to agree priorities for groups.

**SAGE Secretariat** to make pastoral support available to participants.

**Serological Testing Strategy Group** to develop a serological testing strategy to utilise high through-put serology testing becoming available. This is important for surveillance and potentially for individual application.

**NERVTAG** to consider a broader clinical syndrome definition and its use, for CMO. Should also link this to long-term cohort study.

**ONS** to test the **NERVTAG** case definition through its survey; **NERVTAG** to provide case definition to test and trace group. **SPI-B** to advise on communication of this to the public.

**Cath Noakes** to update paper to clarify that the purpose is to provide the scientific principles for risk assessment, and to share paper with **HSE** and **BEIS**.

**SPI-M & SPI-B** to work together to further consider principles for safe bubble design, to be based on further input from **CO**.

**Scientific experts (31):** Patrick Vallance (GCSA), Chris Whitty (CMO), Angela McLean (CSA MoD), Stephen Powis (NHS), Maria Zambon (PHE), Graham Medley (LSHTM), John Edmunds (LSHTM), Peter Horby (Oxford), Brooke Rogers (King's), Lucy Yardley (Bristol), James Rubin (King's), Calum Semple (Liverpool), Wendy Barclay (Imperial), Michael Parker (Oxford), Ian Boyd (St Andrews), Cath Noakes (Leeds), Andrew Curran (CSA HSE), John Aston (CSA HO), Carole Mundell (CSA FCO), Charlotte Watts (CSA DfID), [REDACTED] Sheila Rowan (CSA Scotland), Nicola Steedman (dCMO Scotland), Jim McMenamin (Health Protection Scotland), Andrew Morris (Scottish Covid-19 Advisory Group), Rob Orford (Health CSA Wales), Ian Young (CMO Northern Ireland), Ian Diamond (ONS), Mark Walport (UKRI), Venki Ramakrishnan (Royal Society), Jeremy Farrar (Wellcome).

**Observers and Government officials (6):** [REDACTED]

Ben Warner (No. 10), Kata Escott (CO), [REDACTED] Vanessa MacDougall (HMT), [REDACTED]  
[REDACTED]

**SAGE Secretariat** [REDACTED]  
[REDACTED]

Simon Whitfield, Stuart Wainwright

**Total Participants: 50**