Addendum to eighteenth SAGE meeting on Covid-19, 23rd March 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), Ian Diamond (ONS), Sharon Peacock (PHE), John Aston (CSA HO), Jonathan Van Tam (Deputy CMO), Steve Powis (NHS), Maria Zambon (PHE), Angela McLean (CSA MoD), Phil Blythe (CSA DfT), John Edmunds (LSTHM), Carole Mundell (CSA FCO), Tom Rodden (CSA DCMS), Graham Medley (LSHTM), Jeremy Farrar (Wellcome), David Halpern (CO), Susan Michie (UCL), Wendy Barclay (Imperial), Neil Ferguson (Imperial), Brooke Rogers (King's College), James Rubin (King's College), Andrew Curran (CSA HSE), Aidan Fowler (NHS).*

Observers and Government Officials: *Morwenna Carrington (DHSC), Stuart Wainwright (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.

Eighteenth SAGE meeting on Covid-19, 23rd March 2020
Held in 10 Victoria Street

Summary

1. UK case accumulation to date suggests a higher reproduction number than previously anticipated. High rates of compliance for social distancing will be needed to bring the reproduction number below one and to bring cases within NHS capacity.
2. Public polling over the weekend on behaviour indicated significant changes but room for improvement in compliance rates.
3. Estimated Covid-19 fatalities are anticipated to overlap with those who are likely to be within the final year of their lives. It is important to get an accurate excess deaths estimate, including potential deaths due to the measures taken.
4. Given the clear links between poverty and long-term ill health, health impacts associated with the economic consequences of interventions also need to be investigated.
5. Antibody screening for healthcare workers should aim to identify those with immunity who can care for the most vulnerable patients.

Situation update

6. The NHS is surging bed capacity over the next fortnight, with a focus on London.
7. The data suggest that London is 1-2 weeks ahead of the rest of the UK on the epidemic curve. Case numbers in London could exceed NHS capacity within the next 10 days on the current trajectory.
8. The accumulation of cases over the previous two weeks suggests the reproduction number is slightly higher than previously reported. The science suggests this is now around 2.6-2.8. The doubling time for ICU patients is estimated to be 3-4 days.
9. Increased community testing and surveillance will be invaluable to measure the effects of the interventions taken.
10. Genome sequencing is providing insight into the seeding of cases across the UK. Results suggests that there have been introductions from different parts of the world as well as community transmission and some nosocomial clusters (i.e. in hospital settings).
11. PHE are seeking to understand environmental dispersal of the virus in hospitals. They are working with SPI-M and NERVTAG, and will bring a paper back to SAGE.

ACTION: PHE, **SPI-M** and **MoD Chief Scientific Adviser** to review how the true infection rate in the community can be ascertained as a basis to measure the effects of interventions (Report back to SAGE w/c 30 March)

ACTION: NERVTAG and **DSTL** to investigate spread of Covid-19 in hospitals and environmental dispersal of the virus (Report back to SAGE w/c 30 March)

Clinical update

12. Emerging data on the virus is supportive of prior clinical knowledge. Reports of possible cardiac complications need further investigation.
13. Hospitalisation data for around 500 UK patients is being collected through the CO-CIN system, providing a detailed report of cases. The proportion of severely ill patients who have single organ compared to multi-organ failure is important for planning.
14. The RECOVERY trial started recruiting patients on 19th February, with wide participation from NHS trusts. Four other trials were discussed. Coordination of trial activity was discussed and a clinical trials forum is being explored.

15. Evaluation of credible licensed drugs that may be suitable for future trials is underway and there is support from the private sector.
16. Very limited observations, based on a few dozens of cases, suggest that vertical transmission cannot be ruled out. There have been no traces of the virus found in breast milk, amniotic fluid or in the placenta.
17. Genome sequencing work has started and is yielding important results already.

ACTION: dCMO and **DHSC** with **NERVTAG chair** to consider how to set up a UK forum to coordinate clinical trials. This should include protocols for adding extra testing arms if needed

ACTION: dCMO to consider what UK manufacturing capabilities are required to support the clinical trial supply chain

Reasonable worst case scenario

18. There is significant uncertainty concerning the impact of interventions brought in thus far on numbers of cases.
19. SAGE will update the reasonable worst case at its next meeting, taking interventions into account.

Behavioural and social interventions

20. SAGE noted that social distancing behaviours have been adopted by many but there is uncertainty whether they are being observed at the level required to bring the epidemic within NHS capacity.
21. Key areas for further improvement include reducing contact with friends and family outside the household, and contact in shops and other areas.
22. Surveys to assess behaviours must gather data on the nature, location and frequency of contacts that people are engaging in, rather than qualitative indications of compliance.
23. A nationally representative ONS survey over the weekend indicates significant behaviour changes in the UK. There is a positive correlation between behaviour change and age – higher compliance rates are reported among older groups.
24. Compliance levels vary throughout the country; higher levels of compliance are being observed in London.
25. Consumer spending has increased since measures were introduced, including major increases in food and drug spending.
26. Footfall in London transport hubs reduced by 80-90% over the weekend, but in retail and food outlets has decreased by a smaller margin. Footfall in London parks has trebled on average since social distancing measures were introduced.

ACTION: CCS and **ONS** to agree who is best placed to lead on evaluation of adherence to interventions, including avoiding duplication on public polling surveys and collecting quantitative data

ACTION: SAGE secretariat to share SAGE paper from behavioural scientists on options for increasing adherence to social distancing measures with **CCS** and **HMG Communications** leads

UK Borders

27. SAGE, on the advice of SPI-M, reconfirmed its previous advice that the effect of closing borders would have a negligible effect on spread.

28. Numbers of cases arriving from other countries are estimated to be insignificant in comparison with domestic cases, comprising approximately 0.5%. Compliance with protective measures by those entering the UK is unknown and should be explored.
29. SAGE noted that it is unlikely that current migration rates pose significant additional risk to border force workers.

Testing and treatments

30. NHS testing capacity in the UK is currently at around 5,000 a day, to be increased to 15,000 a day by mid-April. A platform in partnership with the private sector has been established to aim to increase capacity to 110,000 a day by mid-April.
31. It is essential to have a clear rationale for prioritising testing for patients and health workers, and to coordinate testing supplies across the UK to ensure the most urgent needs are being met.
32. Healthcare workers must be screened repeatedly and should take priority.
33. There is a worldwide shortage of key reagents, platforms and equipment. The priority for screening should be adhered to all by UK healthcare providers and there needs to be coordination to ensure that reagent supply gets to the PHE screening effort.
34. Data from serology will be discussed at the next SAGE. It is critical that this is used to understand the proportion of asymptomatic cases.
35. For serology, any positive results from a rapid screening approach should be followed up with a PHE test in healthcare workers, to ensure confidence in immunity.
36. Access to serological material from recovered patients is essential.
37. A network of recovered people is required to enable future medical testing, assays and blood donations.

ACTION: PHE to work with **NHS** to set out a national priority order for testing, including UK-wide procurement and distribution of reagents to support testing capacity (for next SAGE meeting)

ACTION: PHE and **Jeremy Farrar** to present a proposal for UK-wide serological screening priorities and distribution of essential equipment (for next SAGE meeting). **PHE** to provide a serology update at next SAGE meeting

Excess deaths planning

38. The science suggests that a proportion of the estimated fatalities from Covid-19 would be among those expected to die within a year.
39. NHSX and ONS data need to be combined by modelling groups to give a picture of deaths caused directly and indirectly by Covid-19.
40. Actuarial analysis is required to estimate numbers of deaths caused indirectly by Covid-19, including those caused by the social interventions. For planning, data on patient backgrounds and risk factors, including GP data, are needed. In due course, analysis of the effects of the interventions on other causes of death should be undertaken.

ACTION: SPI-M to provide **ONS** (Ian Diamond) with a summary on what mortality data is needed from **NHSX** to inform modelling (23 March). **HO Chief Scientific Adviser** to lead actuarial work on establishing excess death, taking into account those expected to die over the same period

List of actions

PHE, **SPI-M** and **MoD Chief Scientific Adviser** to review how the true infection rate in the community can be ascertained as a basis to measure the effects of interventions (Report back to SAGE w/c 30 March)

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dCMO to consider what UK manufacturing capabilities can support the clinical trial supply chain

CCS and **ONS** to agree who is best placed to lead on evaluation of adherence to interventions, including avoiding duplication on public polling surveys and collecting quantitative data

SAGE secretariat to share SAGE paper on options for increasing adherence to social distancing measures with **CCS** and **HMG Communications** leads

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Attendees

SAGE participants: *Patrick Vallance (chair), Chris Whitty, Charlotte Watts,* [redacted] *Ian Diamond, Sharon Peacock, Morwenna Carrington, John Aston,* [redacted]

By phone: Jonathan Van Tam, Steve Powis, Maria Zambon, Angela McLean, Phil Blythe, John Edmunds, Carole Mundell, Tom Rodden, Graham Medley, Jeremy Farrar, David Halpern, Susan Michie, Carole Mundell, Wendy Barclay, Neil Ferguson, Brooke Rogers, James Rubin, Andrew Curran, [redacted] *Aidan Fowler, Stuart Wainwright*

SAGE secretariat: [redacted]