

**Addendum to twentieth SAGE meeting on Covid-19, 29<sup>th</sup> March 2020**  
**Held via Zoom**

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), Angela McLean (CSA MoD), Jonathan Van Tam (Deputy CMO), Jenny Harries (Deputy CMO), Steve Powis (NHS), Charlotte Watts (CSA DfID), John Aston (CSA HO), Peter Horby (Oxford), Graham Medley (LSHTM), Neil Ferguson (Imperial), James Rubin (King's College), Gregor Smith (dCMO Scotland), Calum Semple (Liverpool), Rob Orford (Health CSA Wales), Andrew Morris (Scottish Covid-19 Advisory Group), Ian Young (CMO Northern Ireland).*

**Observers and Government Officials:** *Simon Whitfield (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.

**Twentieth SAGE meeting on COVID-19, 29th March 2020**  
**Held via Zoom**

**Summary**

1. SAGE endorsed the reasonable worst case and optimistic scenarios, incorporating changes discussed in the meeting.
2. Further work is required to understand how best to release measures and the scale of any resultant epidemic peaks.
3. Further work is required on age distribution of ICU cases.

**Situation update**

4. The average length of stay in ICU was taken as 9.5 days on NHS advice.
5. Vast majority of admissions to ICU and high dependency units are aged between mid-40s and 70. There are fewer admissions among the over 70s.
6. ICU care may not reflect the full burden of disease, as now many patients are being cared for in other settings.
7. NHS reported that critical care bed occupancy is not yet reaching saturation levels, London included.
8. There is evidence that severity varies by sex (men are affected more severely), but there is no evidence that transmission varies by sex.
9. NHS models use numbers approved by SAGE, but they are run more frequently and need to provide regional and other detail – leading to quantitative, but not qualitative differences in projected scenarios.

**Reasonable worst case (RWC) and optimistic scenario**

10. SAGE noted that the underlying epidemiology is unchanged, but cases within the NHS have grown rapidly, affecting bed requirements.
11. Some numbers contained in the scenarios derive from data; others are assumptions – for example, around compliance.
12. Age profile of ICU patients is not critical to modelling the trajectory of the epidemic – but modelling will need to evolve to reflect emerging practice in referrals to ICU.
13. The modelling draws on both admission and death data.
14. SAGE endorsed the document under review, subject to the following changes:
  - there needs to be a clearer narrative, clarifying areas subject to uncertainty and sensitivities
  - it makes clear that these are scenarios, not absolute predictions, and that timings are only indicative
  - it makes clear that R assumptions are different for each scenario, and highly dependent on levels of contact among the population (i.e. on compliance)
  - it clarifies that assumptions about compliance are based on survey and other data, but these do not measure contacts, which must be inferred: the reality could be better or worse
  - it explains that the scenarios are modelled for 6 months, both predicting a second epidemic peak when measures are released
  - the wording around workplace contacts needs to be clearer
  - it makes clear the modelling does not consider sex, and this does not affect outputs
  - it makes clear the modelling makes no judgments about who is admitted to ICUs.
15. Further work is required to understand how best to release measures and the scale of the second epidemic peak. This is a priority for SAGE in the coming week.
16. Further work is required on age distribution of ICU cases.

**ACTION: SPI-M/SAGE secretariat** to revise reasonable worst case and optimistic case scenarios to:

- Make clear that these are scenarios, not predictions

- Explain how assumptions on compliance have been made
- Make clear these have been modelled over 6 months, assuming continued social distancing measures, but there will be a second peak when measures are released and that further work is needed to model release of measures
- Include R values in the different scenarios
- Not include age profiling within this iteration

**For future discussion at SAGE**

17. It would be useful to understand regional variation in compliance with measures, and whether compliance correlates with social deprivation levels.

**Attendees**

*SAGE participants: Patrick Vallance, Angela Mclean, Jonathan Van Tam, Jenny Harries, Steve Powis, Charlotte Watts, John Aston, Peter Horby, Graham Medley, Neil Ferguson, James Rubin, ██████████ Gregor Smith, Calum Semple, Rob Orford, Andrew Morris, Ian Young*

*SAGE secretariat: ██████████ Simon Whitfield, ██████████  
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