

**Eleventh SAGE meeting on Wuhan Coronavirus (Covid-19), 27th February 2020  
Held in 10 Victoria Street**

**Summary**

1. SAGE reviewed Covid-19 planning assumptions and advised that, in the reasonable worst case scenario, 80% of the UK population may become infected, with an overall 1% fatality rate in those infected. Only a proportion of those infected will experience symptoms. This fatality rate represents a reduction in the number of excess deaths relative to previous planning assumptions (in which a case fatality rate of 2-3% was based purely on identified cases rather than all infected individuals).

**Situation update**

2. dCMO has established a system, CO-CIN, to catalogue data from cases of Covid-19.
3. CMO's office is looking out for any secondary bacterial infections in reported Covid-19 cases, but to date there is little evidence for secondary infections.
4. NERVTAG is reviewing a range of therapies and related trial designs that NHS settings can realistically implement.

**ACTION: dCMO** to circulate note outlining what information the CO-CIN report will capture

**ACTION: CMO's office** to gather evidence about Covid-19 in children for discussion at SAGE on 5 March 2020

**SAGE priorities**

5. SAGE agreed its priority areas:
  - Detect & monitor any outbreak as effectively as possible
  - Understand effective actions to help contain a cluster
  - Understand measures to alter the shape of a UK epidemic
  - Model UK epidemic & identify key numbers for NHS planning
  - Understand risk factors around demographics, geographies and vulnerable groups (e.g. age)
  - Generate Behavioural Science insights for policymakers
  - Ensure NHS trials key interventions
  - Consider emerging therapeutic, diagnostic & other opportunities

**Review of reasonable worst case scenario**

6. SAGE reviewed Covid-19 planning assumptions and advised that, in the reasonable worst case scenario, 80% of the UK population may become infected, with an overall 1% fatality rate in those infected. Only a proportion of those infected will experience symptoms.
7. This fatality rate represents a reduction in the number of excess deaths relative to previous planning assumptions.
8. SAGE agreed that the case fatality rate (2-3%) remains the same, but the fatality rate for the overall infected population (identified and unidentified cases) is closer to 1%. This better reflects the expected proportion of mild and possible asymptomatic infections. It still includes an assumption that there is a higher fatality rate in vulnerable groups.
9. The case fatality and infection fatality rates only reflect deaths as a direct result of infection, not those related to NHS overload or other second order effects.

**ACTION: NHS England** to confirm finally with **SPI-M** the variables for which it needs numbers in order to model NHS demand

**ACTION: UK academic modelling groups (Imperial, Oxford, London School of Hygiene and Tropical Medicine) and NHS planners** to organise a working group (in week starting 2

March 2020) to analyse key clinical variables for reasonable worst case planning for the NHS: for review by SPI-M and then discussion at SAGE

**ACTION: SPI-M** to refine models to include consideration of age groups and geographical variation at its next meeting

**Review of interventions to contain, delay or mitigate spread of Covid-19**

10. SAGE reviewed a table summarising the impacts of non-pharmaceutical interventions – to be finalised at its next meeting.
11. Mitigations can be expected to change the shape of the epidemic curve or the timing of a first or second peak, but are not likely to reduce the overall number of total infections.
12. The optimal shape of the epidemic curve will differ according to sectoral or organisational priorities.
13. Modelling suggests that earlier and/or combined interventions will have more significant impact. Such interventions would have to be maintained for an extended period.
14. On the risk posed by national and international travel associated with large events (e.g. sports), SAGE advised that the additional numbers travelling are not significant relative to overall numbers, but that this question should be further investigated.
15. On large events, SAGE noted that alternative/replacement behaviours (e.g. going to the pub instead of a stadium) would pose comparable risk.

**ACTION: SPI-M**, in support of the existing table on non-pharmaceutical interventions, to produce a narrative describing effects of interventions attempted in other countries, and develop illustrative scenarios showing the plausible impacts of combinations of interventions in the UK (simple visuals of epidemic curves) – for review at SAGE on 2 March 2020. Existing table to be reviewed weekly to assess whether it requires updating

**ACTION: DfT** to produce numbers indicating numbers travelling to major sporting events, compared to overall numbers travelling, including from abroad

**List of actions**

**dCMO** to circulate note outlining what information the CO-CIN report will capture

**CMO's office** to gather evidence about Covid-19 in children for discussion at SAGE on 5 March 2020

**NHS England** to confirm finally with **SPI-M** the variables for which it needs numbers in order to model NHS demand

**UK academic modelling groups (Imperial, Oxford, London School of Hygiene and Tropical Medicine)** and **NHS planners** to organise a working group (in week starting 2 March 2020) to analyse key clinical variables for reasonable worst case planning for the NHS: for review by SPI-M and then discussion at SAGE

**SPI-M** to refine models to include consideration of age groups and geographical variation at its next meeting

**SPI-M**, in support of the existing table on non-pharmaceutical interventions, to produce a narrative describing effects of interventions attempted in other countries, and develop illustrative scenarios showing the plausible impacts of combinations of interventions in the UK (simple visuals of epidemic curves) – for review at SAGE on 2 March 2020. Existing table to be reviewed weekly to assess whether it requires updating

**OFFICIAL-SENSITIVE**  
**Not to be shared beyond HMT or SAGE participants**

DfT to produce numbers indicating numbers travelling to major sporting events, compared to overall numbers travelling, including from abroad

**Attendees**

*SAGE participants: Patrick Vallance (chair), Chris Whitty, Jonathan Van Tam, Steve Powis, Mike Prentice, Charlotte Watts, Carole Mundell, Angela McLean, John Aston, Sharon Peacock, NR Graham Medley, Neil Ferguson, James Rubin, Ben Warner, Aidan Fowler, NR NR*

**Name Redacted**

SAGE secretariat

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