Forty-fifth SAGE meeting on Covid-19, 2nd July 2020
Held via Zoom

Summary

1. Nosocomial transmission is decreasing both in terms of numbers and proportion of cases.
2. Routine genomic sequencing has the potential to detect or refute clusters of infections where this is not possible by other means. SAGE agreed the importance of integrating genomics into the public health response.
3. There is evidence that individuals who are both antibody positive and PCR positive are much less likely to be infectious (medium confidence). This may offer a potential way forward, in the short term, for releasing some individuals from self-isolation or quarantine.

Situation update

4. SAGE approved the latest SPI-M estimates of R and growth rate. For the UK, R remains between 0.7 and 0.9, with an estimated growth rate between -6% and 0% per day.
5. These estimates are a lagging indicator. They do not include estimates from CoMix, which uses pre-infection data to estimate R and is not affected by low case numbers, and shows a potential slight increase.
6. SAGE agreed there are two circumstances where R cannot be reliably estimated: i) when incidence in a region is very low, e.g. fewer than 5 deaths per day, and ii) when a region is highly heterogeneous due to one or more isolated outbreaks. The latter circumstance can be overcome through the use of a heterogeneity indicator.
7. According to these criteria, R in Wales, Scotland and Northern Ireland cannot be estimated reliably due to low case numbers. This is also true for all NHS England regions excluding North East and Yorkshire, and North West.
8. Further work is required to communicate R effectively to avoid public behaviour being dictated by these estimates. Many of these rely on hospital data, which feature an approximate 3-week lag.
9. Short-term forecasts show levelling off of all indicators measured, including ICU bed occupancy and numbers of deaths.
10. SAGE highlighted the importance of getting the maximum amount of information into the public domain for people to understand the epidemic in totality.
11. SAGE proposed that JBC should be responsible for integrating and publishing available data on a single website, including incidence and prevalence figures. Until then, GCSA and CMO will approve R and growth estimates.
12. CO-CIN data show decreasing nosocomial transmission both in terms of numbers and proportion of cases. This was also confirmed by the chair of the Nosocomial Working Group.
13. NHS data show key metrics (including Covid-19 admissions) falling, but more slowly.
14. SAGE endorsed the annexe to the paper 'Managing Infection risk in high contact occupations'.

ACTION: SAGE secretariat to send networks annex to 'Reducing transmission in high connectivity contact occupations' paper to JBC, C-19 Taskforce, CCS and BEIS by 3 July

ACTION: SAGE secretariat to send most recent CoMix paper to JBC by 3 July

ACTION: JBC and **PHE** to devise an integrated approach to publication of R and other national and regional indicators by 9 July; **SAGE secretariat** to amend wording on website concerning reliability of regional R

ACTION: JBC to ensure localised testing data is being fed to ONS and SPI-M to inform future modelling

ACTION: SAGE secretariat to circulate PHE sitrep to CSAs and SPI-M

Genomics update

15. SAGE approved the COG UK paper on sequencing and transmission and noted that the UK is world-leading in this area.
16. Initial seeding of Covid-19 in the UK appears to have come largely from Europe (Spain, France and Italy).
17. Routine surveillance sequencing has the potential to detect or refute clusters of infections where this is not possible by other means. Rapidly suppressing clusters could have a significant impact in reducing overall transmission.
18. The ancestral variant of the virus (D variant) has a lower R than the G variant, which has rapidly spread across the world. One study estimates the G variant R to be 1.26 times greater than the ancestral version, with no apparent difference in disease severity.
19. SAGE agreed the importance of integrating genomics into the public health response and endorsed the proposal that COG UK should continue to work to improve data flows to get as close to real-time sequencing as possible.

Antibody testing and immunity

20. SAGE endorsed the commissioned paper on antibody testing and immunity.
21. Antibody tests provide information on an individual's immune response but cannot yet determine whether that individual is protected from infection or from disease. Animal study data suggest some protection is conferred (medium confidence) – but human challenge studies have not been undertaken.
22. Volunteer human challenge studies would increase understanding of protection conferred by antibodies, but probably require the availability of a rescue therapeutic (this is also being explored for vaccine studies).
23. It is possible, based on animal studies, that an individual with antibodies could still shed the virus and be infectious.
24. Immunity to coronaviruses from neutralising antibodies is known to wane in humans (most commercial tests do not currently screen for this kind of antibody). There is some international evidence that antibodies to Covid-19 may wane within 3 months in some people (low confidence).
25. However, in the short term, there is evidence that individuals who are both antibody positive and PCR positive are much less likely to be infectious (medium confidence). This offers a way forward for releasing individuals from self-isolation or quarantine.
26. PCR testing is highly sensitive and can identify presence of the virus long after an individual has ceased to be infectious. It is important to understand a PCR threshold level for infectiousness (as described in previous SAGE paper, 'Duration of Infectiousness', 8 June 2020, presented at SAGE#41).
27. There are now hundreds of commercial antibody tests available. Sensitivity and specificity are improving, with some suitable for home use, but the range in quality is broad (some quantify antibody levels, others only provide a positive or negative result). Common industry standards will be important.
28. If population-level seroprevalence is low, there is a risk that a higher proportion of positive tests will be false positives.
29. The UK life insurance industry is currently in dialogue with the BMA regarding the implications of seropositivity for life insurance.
30. These conclusions should be understood in combination with previous SAGE work on testing and behaviours, including the risk of reduced compliance from seropositive individuals and public attitudes towards vaccines.
31. SAGE advised that, based on current understanding, it would be premature to introduce immunity passports, but it advised that use of antibody positivity for short-term decisions may be possible.

32. SAGE noted the importance of sampling during outbreak investigations to understand antibody immunity and advised PHE and NHSTT to undertake such studies.

ACTION: Senior Clinicians Group to assess 'Tests for antibodies against SARS CoV2' paper as part of consideration of a testing strategy for release from quarantine/isolation, including swab testing and Ct

Hand hygiene

33. SAGE endorsed the NERVTAG/EMG paper on hand hygiene.
34. Hand hygiene is an effective measure, especially when adopted in concert with other measures, but it has to be positively encouraged. It is worth revisiting behavioural interventions to increase uptake.
35. CoMIX data suggest a gradual decline in self-reported handwashing frequency over the course of the epidemic, except among those who wash their hands very frequently. It is possible to gather objective data on handwashing, e.g. from sensors on taps.

SAGE secretariat to publish 'Hand hygiene to limit SARS-CoV-2 transmission' without appendices and send to PHE, DfE and C-19 Taskforce to support further communication on hand hygiene, by 3 July

Public unrest

36. SAGE noted the SPI-B paper highlighting evolving social conditions, the potential for public unrest and the associated risks to public health.
37. SAGE recognised a need to review the latest evidence for risks from mass gatherings and protests, but also noted that risk may be more closely linked to activities around mass gatherings, e.g. transport, pubs and events such as block parties. It was noted that there was no increase in incidence recorded following mass protests in the US (low confidence).
38. Alcohol consumption may exacerbate some of these risks (low confidence).

ACTION: HO CSA to establish process to ensure relevant papers from SPI-B on law and order go directly to HO, bringing papers to SAGE if required

ACTION: SPI-B to consider existing evidence which can provide any assessment of risk of transmission of Covid-19 via public gatherings and associated activities, and report directly to Home Office as necessary

Future meetings

39. The next meeting will consider reopening of schools, challenges linked to winter, co-infection and immunity, and children.
40. The challenges around measuring 'Covid Security' are currently being considered by HSE and EMG, and may be brought for further discussion next week.
41. Future meetings will consider the Leicester outbreak and ways to help academic SAGE participants to manage competing demands on their time.

ACTION: CMO to report on lessons learned from Leicester outbreak; **JBC** to update on detection and management of outbreaks, both at future SAGE meeting

ACTION: SPI-M/EMG to report back to SAGE on the viability of measuring 'Covid Security' and produce a paper, if appropriate, for 9 July

List of actions

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Attendees

Scientific Experts (37): *Patrick Vallance (GCSA), Chris Whitty (CMO), Jenny Harries (dCMO), Jonathan Van Tam (dCMO), Angela McLean (CSA MoD), John Aston (CSA HO), Andrew Curran (CSA HSE), Charlotte Watts (CSA DfID), Carole Mundell (CSA FCO), Robin Grimes (CSA Nuclear), Andrew Morris (Scottish Covid-19 Advisory Group), Steve Powis (NHS), Mark Wilcox (NHS), Sharon Peacock (PHE), Maria Zambon (PHE), Yvonne Doyle (PHE), Paul Cosford (PHE), Peter Horby (Oxford), Calum Semple (Liverpool), Graham Medley (LSHTM), John Edmunds (LSHTM), Lucy Yardley (Bristol/Southampton), Michael Parker (Oxford), Wendy Barclay (Imperial), Clifford Stott (Keele), Brooke Rogers (KCL), James Rubin (KCL), Catherine Noakes (Leeds), Ian Diamond (ONS), Venki Ramakrishnan (Royal Society), Ian Boyd (St Andrews), Mark Walport (UKRI), Rob Orford (Health CSA Wales), Fliss Bennee (Wales Technical Advisory Cell), Nicola Steedman (dCMO Scotland), Jim McMenamin (Health Protection Scotland), Ian Young (CMO Northern Ireland)*

Observers (8): [redacted], *Vanessa MacDougall (HMT),* [redacted]

Secretariat (All GO-Science) (14): [redacted] *Simon Whitfield,* [redacted]

Total: 59