Forty-first SAGE meeting on Covid-19, 11th June 2020
Held via Zoom

Summary

1. Short-term forecasts project a downward trend in all indicators modelled, including hospital admissions and deaths, across all geographies modelled.
2. Current advice to isolate for seven days in the case of mild infection, or seven days after symptoms have ended for more severe cases, remains sound (but would not catch 100% of infectious individuals).
3. SAGE agreed strongly on the value of linking all health data, as well as linking health data to other data systems (e.g. social security).

Situation update

4. SAGE agreed the latest R estimates: 0.7-0.9 in the UK; 0.8-1.0 in England; 0.6-0.9 in Scotland; 0.7-1.0 in Wales; 0.6-1.0 in Northern Ireland. Short-term forecasts project a downward trend in all indicators modelled, including hospital admissions and deaths, across all geographies modelled.
5. CO-CIN data indicate that the North West of England continues to have higher proportion of hospital acquired infections than other regions. Individual settings and outbreaks can have a significant impact on regional figures.
6. Analysis of CO-CIN data can provide case fatality ratios by age and comorbidity. It would be valuable to combine this with other data to estimate infection fatality rates by age and co-morbidity.
7. SAGE endorsed the paper 'Reducing transmission in high connectivity occupations' with minor changes.
8. NHS serology data indicate 16% seroprevalence in healthcare workers and 20% in hospital patients but these data should be seen as provisional.

ACTION: NHS Medical Director and **SPI-M** to resolve remaining uncertainties concerning hospital admissions recorded as Covid-19

ACTION: Care Home subgroup to send 'Wearing of mask coverings to reduce infections within care homes and other potentials settings' paper, once complete, to DHSC and to SAGE secretariat for placement in repository

ACTION: CSA MoD to establish current status of external actuarial research on case fatality ratios and on ascertaining proportion of infected people who end up in hospital by 18 June

ACTION: SAGE secretariat to send 'Reducing transmission in high connectivity occupations' paper to PHE, HSE, Cabinet Office, NHS T&T/JBC, BEIS, DfT by 12 June (after checking language around describing risk with HSE)

Publication of regional data

9. Estimating R across smaller populations results in wider confidence intervals and means that outbreaks and individual settings can have a significant impact on R inference. SAGE agreed that estimating and publishing R at a regional level was currently viable, but as incidence and prevalence decrease, the reliability of these estimates will decline to a point where they will not be accurate or meaningful.

10. SAGE agreed that regional growth rates should be published alongside regional R values as growth rates are not reliant on assumptions around the generation time interval for which data are not currently available.
11. ONS intends to publish regional incidence and prevalence figures weekly from the beginning of July. This observed data will be more robust than modelled estimates.
12. All these data should be accompanied by an explanation of terms and guidance on interpretation. In particular, the low reliability and high variability over time in estimates of R when case numbers are low needs to be communicated.

ACTION: SPI-M to advise in future on growth rate alongside R and to produce suitable explanation of both (plus statement indicating that incidence and prevalence will become a more useful measure than R in future) by 18 June; **SAGE secretariat** to discuss with Cabinet Office how best to publish these by 18 June

ACTION: SPI-M to advise on criteria for when individual areas R would cease to be an accurate or meaningful indicator of infection spread by 18 June

Infectiousness

13. The average incubation period estimate remains 5 days. The peak of viral load occurs just before or around the time of symptom onset.
14. Data indicate that people are infectious for up to 8-12 days after symptom onset. RT-PCR testing may still detect virus after this point, but it is unlikely to be viable.
15. Viral load (determined by RT-PCR) is a good indicator of whether live virus can be recovered from a sample. However, the relationship of virus recovery to infectiousness is unknown.
16. Viral load does not appear to correlate with disease severity.
17. Infectiousness does correlate with duration of disease/severity. For mild cases, there is a low probability of infectiousness 7-9 days after symptom onset (moderate confidence). For hospitalised patients, there is a low probability of infectiousness 14 days after symptom onset (moderate confidence).
18. In general, the presence of antibodies negatively correlates with infectiousness. Antibody response is seen as early as day 10-14 in most people and may account for reduced infectivity.
19. Overall, this evidence indicates that the current advice to isolate for seven days in the case of mild infection, or seven days after symptoms have ended for more severe cases, remains sound.
20. It may be possible to develop a risk-based assessment, combining multiple factors (e.g. symptom onset and duration as well as both antibody and antigen testing). This may be of particular value for decisions involving those people coming into contact with vulnerable people or other higher-risk situations. Review of the advice is a matter for CMOs and PHE.
21. Further work would be needed to develop such an assessment and consider its application. Further studies on infectiousness between 7 and 14 days after infection would also be valuable and could be incorporated into existing and planned studies (serology group and ONS).

ACTION: PHE (with senior clinicians' group, as appropriate) to determine additional advice on testing to enable safe return of patients and staff to settings involving vulnerable people (e.g. care homes).

ACTION: Jeremy Farrar and **ONS** to provide update on any additional research relating to infectiousness which can be commissioned using existing cohort studies by 18 June

Test, trace and isolate

22. SAGE continues to recommend backwards contact tracing. It will be important to determine over what period contacts should be considered for tracing. The main value of backward contact tracing is to identify potential clusters.
23. It is difficult to determine a reasonable period for backward contact tracing for those who test positive but do not display symptoms, as time of onset of infection will be unknown. The percentage of people who are asymptomatic remains uncertain and could be between 30-80%; it may vary by age and other characteristics.
24. The predictive value of testing depends on prevalence levels, as well as operational specificity and sensitivity of the testing process. SAGE will consider this further at its next meeting.

ACTION: SPI-M to advise NHS T&T/JBC directly on optimal time for backward testing and tracing and share supporting papers by 15 June

ACTION: SAGE Secretariat to commission item on double testing and release, quarantine and antibodies (including updated paper on false positive/false negative testing) for next SAGE meeting

Health Data Research

25. SAGE strongly endorsed HDR's work, agreed that open research and sharing of data through accessible secure research environments is required to prevent response work becoming fragmented, and agreed to continue to identify any blockers against data sharing.
26. SAGE agreed that a coherent approach to mapping serology and antigen testing data for research purposes across the four nations is essential.
27. SAGE agreed not only on the value for Covid-19 research of linking all health data, but also linking health data to other data systems (e.g. ONS, education and social security).
28. SAGE agreed links to the JBC are important and that an abstracted research data infrastructure is essential.
29. A registry of national Covid-19 studies may be of value.

ACTION: SAGE Secretariat to convene small group to consider concept for a national Covid-19 studies collection

ACTION: HDR UK to work with partners to define a plan for the creation of serology and testing data research asset that is linkable to other data sources, and to report back to SAGE in due course

ACTION: HDR UK to work with ONS and other partners to accelerate linkage of cross-sectoral datasets, and to report back to SAGE on progress in due course

Environmental transmission

30. Public toilets are a potential vector for transmission because of the stacked risk of aerosol presence, faecal matter, frequently touched surfaces, confined space and public queuing.
31. SAGE will consider environmental transmission in more detail at its next meeting.

ACTION: CSA Defra to circulate paper on environmental spread in outdoor environments to SAGE participants by 12 June

List of Actions

NHS Medical Director and **SPI-M** to resolve remaining uncertainties concerning hospital admissions recorded as Covid-19

Care Home subgroup to send 'Wearing of mask coverings to reduce infections within care homes and other potentials settings' paper, once complete, to DHSC and to SAGE secretariat for placement in repository

CSA MoD to establish current status of external actuarial research on case fatality ratios and on ascertaining proportion of infected people who end up in hospital by 18 June

SAGE secretariat to send 'Reducing transmission in high connectivity occupations' paper to PHE, HSE, Cabinet Office, NHS T&T/JBC, BEIS, DfT by 12 June (after checking language around describing risk with HSE)

SPI-M to advise in future on growth rate alongside R and to produce suitable explanation of both (plus statement indicating that incidence and prevalence will become a more useful measure than R in future) by 18 June; **SAGE secretariat** to discuss with Cabinet Office how best to publish these by 18 June

SPI-M to advise on criteria for when individual areas R would cease to be an accurate or meaningful indicator of infection spread by 18 June

PHE (with senior clinicians' group, as appropriate) to determine additional advice on testing to enable safe return of patients and staff to settings involving vulnerable people (e.g. care homes)

Jeremy Farrar and **ONS** to provide update on any additional research relating to infectiousness which can be commissioned using existing cohort studies by 18 June

SPI-M to advise NHS T&T/JBC directly on optimal time for backward testing and tracing and share supporting papers by 15 June

SAGE Secretariat to commission item on double testing and release, quarantine and antibodies (including updated paper on false positive/false negative testing) for next SAGE meeting

SAGE Secretariat to convene small group to consider concept for a national Covid-19 studies collection

HDR UK to work with partners to define a plan for the creation of serology and testing data research asset that is linkable to other data sources, and to report back to SAGE in due course

HDR UK to work with ONS and other partners to accelerate linkage of cross-sectoral datasets, and to report back to SAGE on progress in due course

CSA Defra to circulate paper on environmental spread in outdoor environments to SAGE participants by 12 June

Attendees

Scientific Experts (38): *Patrick Vallance (GCSA), Chris Whitty (CMO), Jenny Harries (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), Gideon Henderson (CSA Defra), Andrew Morris (Scottish Covid-19 Advisory Group), Steve Powis (NHS), Mark Wilcox (NHS), [redacted] Maria Zambon (PHE), Yvonne Doyle (PHE), Peter Horby (Oxford), Calum Semple (Liverpool), Graham Medley (LSHTM), John Edmunds (LSHTM), Lucy Yardley (Bristol/ Southampton), Brooke Rogers (King's), Ian Diamond (ONS), Jeremy Farrar (Wellcome), Venki Ramakrishnan (Royal Society), Ian Boyd (St Andrews), Michael Parker (Oxford), Catherine Noakes (Leeds), Rob Orford (Health CSA Wales), Fliss Benee (Wales Technical Advisory Cell), Nicola Steedman (dCMO Scotland), Jim McMenamin (Health Protection Scotland), Wendy Barclay (Imperial), Andrew Rambaut (Edinburgh), Paul Cosford (PHE), Rhoswyn Walker (HDR-UK), David Seymour (HDR-UK), Caroline Cake (HDR -UK)*

Observers (8): *Ben Warner (No.10), [redacted] Vanessa MacDougall (HMT), [redacted] Imran Shafi (No 10), [redacted]*

Secretariat (16): *[redacted] Simon Whitfield (GO-S), [redacted] Stuart Wainwright (GO-S)*

Total participants: 62