One-hundredth SAGE meeting on COVID-19, 20 December 2021
Held via Video Teleconference

Situation update

1. The number of Omicron infections in the UK continues to increase very rapidly. Case rates remain highest in London but are increasing across the country, including in over-60s. There is accumulating evidence that cases in deprived areas are more likely to be Omicron than in non-deprived areas. Similarly, those in urban areas are more likely to be Omicron than those from rural areas.

2. Hospitalisations with Omicron are increasing but the numbers remain uncertain. Pillar 1 testing data in Manchester indicate a doubling time of around 2–3 days for patients and staff testing positive for Omicron infection. This suggests that Omicron is getting into hospitals at a similar rate to its spread in the community.

3. Data over the Christmas period will be significantly disrupted. Testing behaviours and capacity limits may already be affecting case data. This will make interpretation of trends difficult.

4. The number of infections and hospitalisation in Gauteng appears to be declining. The reasons for this are not clear and it cannot be assumed that this will be sustained. Nor can it be assumed that the wave in the UK will follow a similar pattern, given the different populations and epidemiological situations.

5. Laboratory data shows that Omicron replicates more quickly than Delta in human nasal cells (high confidence). This suggests that this is one form of transmission fitness advantage that Omicron has over Delta. It may be that Omicron is more likely to replicate in the upper airways, but data are currently unclear (low confidence).

6. There remain several important uncertainties in the parameters used for modelling, including biological parameters for Omicron as well as behavioural changes. Policy decisions (either to do nothing or something) will need to be made sooner than these uncertainties can be resolved. There is already evidence of behavioural change over the past week with increased mask wearing, reduced social mixing (although this varies across age groups) and a change in testing patterns.

7. Key sensitivities also include Omicron's intrinsic severity (i.e. the severity of the virus itself), the realised severity (the severity observed in a population depending on background rates of immunity and other factors that modify disease severity), and the impact of boosters. Modelling from two different groups has considered severity parameters for Omicron in different ways. Scenarios consider a range of values for intrinsic severity of Omicron and vaccine effectiveness including those which are more optimistic than the central projection. Intrinsic severity considered in scenarios ranges from 10% to 100% of Delta severity, though there is not yet any clear evidence of whether there is any difference in intrinsic severity.

8. It is possible that the infection hospitalisation rate could rise even if Omicron is intrinsically less severe than Delta if vaccine escape means a higher proportion of those infected are in older age groups. A large wave of hospitalisations would be likely to follow a large wave of infections, even if there were a reduction in intrinsic severity. In the absence of further interventions or significant behaviour change, intrinsic severity would need to be greatly reduced (by around 90%) for hospitalisations to not reach the levels of previous peaks unless the wave peaks early for other reasons, which should not be assumed for planning purposes.

9. It continues to be the case that the earlier interventions happen the greater the effect they will have (high confidence). Even a short intervention could reduce both peak and total admissions, particularly if introduced early enough. The main benefit of a short intervention would be in flattening the peak of admissions, and to allow more people to receive boosters. If measures are implemented later, when hospital admissions have risen significantly, measures may need to be in place for longer and may be too late to avert a period with very high admissions.

10. Hospital occupancy will be affected by length of stay as well as admissions. Changes to treatment plans e.g., treating more patients at home, or increased use of antivirals, may affect admissions and occupancy. Occupancy scales approximately linearly with length of stay.

ACTION: **SPI-M** to review draft paper for clarity prior to publication.

Response measures in context of Omicron

11. Protective measures are important for the individual, and this is particularly the case for those who are at higher risk. However, measures targeted at more at-risk groups only (e.g. 'shielding') are not an effective substitute for population-wide measures if the aim is to reduce overall hospitalisation rates (high confidence).

12. Targeted approaches may have some benefits as an addition to population-level interventions though there is not clear evidence of this. They are likely to have only a modest effect on overall case numbers, hospitalisations or deaths in the groups involved (low confidence). The size of such an effect cannot be robustly quantified.

13. Measuring the protective effect of reducing contacts for such groups is difficult. This is because there is a high likelihood of severe outcomes including mortality within some of these groups in a given time period (e.g., those with a terminal prognosis). It is also difficult to identify a relevant group to compare against when assessing impact.

14. The effectiveness would also depend on the type and number of individuals asked to take extra measures. If more people were to take these measures, the effect would be greater. There will be differences in effectiveness depending on whether it covers those most clinically at-risk or whether coverage includes a wider set of groups e.g., older or more disadvantaged groups.

15. For such an approach to be effective, people in the relevant groups would have to substantially reduce contact with others. Previous studies suggested an initial benefit of shielding, followed by a loss of benefit and subsequently a worse outcome (low confidence)

16. These types of measures are likely to be less effective against Omicron than previous variants because of Omicron's increased transmissibility and immune escape. There are highly likely to be incursions into the networks of at-risk people and more transmission within those networks. However, increased use of lateral flow testing (which was not available when the shielding programme ran) may increase effectiveness compared to past programmes.

17. There are practical barriers to individuals taking significant additional precautions such as large reductions in contacts. Support would be needed to address some of these. There would also be impacts on the workforce if many people needed to reduce contacts.

18. The group of people affected would be wider than just those the policy aimed to protect. For example, those coming into contact with residents (such as care home staff and visitors) may also need to reduce their contacts to prevent incursions of infections into the care home network.

19. Reducing contacts may have significant negative impacts on the mental health and wellbeing of those asked to do so (high confidence). In addition, those who have previously been asked to shield may be reluctant to take similar steps again, reducing the effectiveness of such measures. If individuals are asked to reduce contacts more than the wider population, policies and messaging will need to consider potential reluctance and mental health impacts. It would also be important to consider how such an approach would be ended; evidence from the shielding programme shows that some individuals continued to follow highly restrictive measures even after the programme ended.

20. Consistent and increased use of Lateral Flow Devices (LFDs) could also be used to help protect vulnerable individuals. LFDs should be used regularly by those visiting or working with vulnerable individuals. If coming into contact with a vulnerable individual, an LFD should be used as close to the meeting as possible (e.g. a test should be taken just before visiting a resident of a care home). Increased use of LFDs should be considered alongside, not instead of, population-level interventions. Clear guidance on when to use LFDs in different circumstances would be helpful.

21. It will be important to measure the duration of protection following boosting.

ACTION: **SPI-B** and **ONS** to share available data on attitudes towards shielding or similar measures in vulnerable groups with Cabinet Office.

ACTION: **UKHSA** and **DHSC** to consider whether there is any need to review current guidance given to care homes.

List of actions:
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SPI-B and **ONS** to share available data on attitudes towards shielding or similar measures in vulnerable groups with Cabinet Office.

UKHSA and **DHSC** to consider whether there is any need to review current guidance given to care homes.

Attendees
Scientific experts (33): *Patrick Vallance (GCSA), Chris Whitty (CMO), Angela McLean (MoD, CSA), Ann John (Swansea), Calum Semple (Liverpool), Catherine Noakes (Leeds), Charlotte Watts (FCDO, CSA), Fliss Bennee (Welsh Government), Gavin Screaton (Oxford), Graham Medley (LSHTM), Gregor Smith (Scottish Government, CMO), Harry Rutter (Bath), Ian Diamond (ONS), Ian Hall (Manchester), Ian Young (Northern Ireland Executive, Health CSA), Jeanelle de Gruchy (dCMO), Jenny Harries (UKHSA), Jim*

McManus (ADPH), John Edmunds (LSHTM), Jonathan Van Tam (dCMO), Julie Fitzpatrick (Scottish Government, CSA), Lucy Chappell (DHSC, CSA), Mark Wilcox (Leeds), Matt Keeling (Warwick), Meera Chand (UKHSA), Michael Parker (Oxford), Nisha Mehta (DHSC), Peter Horby (Oxford), Steve Powis (NHS England), Steven Riley (UKHSA), Susan Hopkins (UKHSA), Wendy Barclay (Imperial) and Yvonne Doyle (NHSE).

Observers and government officials (31): Alan Penn (DLUHC, CSA), Andrew Curran (HSE, CSA), Andrew Morris (Edinburgh), ██████████ ████████████████████ Ben Cropper (CO), ██████████████████████ Christopher Williams (PHW), Charlette Holt-Taylor (DHSC), David Crossman (Scottish Government, Health CSA), David Lamberti (DHSC), Edward Wynne-Evans (UKHSA), ████████████████ Gideon Henderson (Defra, CSA), Jennifer Rubin (HO, CSA), Jim McMenamin (Health Protection Scotland), Laura Gilbert (No. 10), ████████████ Liz Lalley (Welsh Government), ██████████████████ ███████████ Nicholas Broadway (HMT), Osama Rahman (DfE, CSA), ████████████████ Paul Monks (BEIS, CSA), Paul Taylor (NPCC, CSA), Rob Harrison (CO), Sarah Sharples (DfT, CSA), ████████████████ ████ ███████████ and Tom Rodden (DCMS, CSA).

Secretariat (all GO-Science) (14): ███████████ ███████████ ████████████ █████ ███████ ████████████ ████████████ Laura Eden, ██████████ ██████████████ ██████████ ████████████ Simon Whitfield, Stuart Wainwright, and Zoe Bond.

Total: 78