

Ninety-eighth SAGE meeting on COVID-19, 07 December 2021

Held via Video Teleconference

Situation update

1. The number of Omicron infections in the UK is now increasing rapidly, with evidence of community transmission, and hospital admissions from Omicron should be expected to follow soon (high confidence). Though there remain some important uncertainties, the emerging data from the UK is broadly consistent with early indications from South Africa. With the speed of growth seen, decision makers will need to consider response measures urgently to reduce transmission if the aim is to reduce the likelihood of unsustainable pressure on the NHS.
2. The spread of Omicron in the UK appears to be following a similar trajectory to that seen in South Africa; though there are many differences between the UK and South Africa it will remain important to monitor the situation there. Early verbal reports indicate that hospitalisations due to Omicron are now increasing in South Africa.
3. The number of new suspected daily Omicron cases identified is now in the hundreds (based on S-gene target failure (SGTF) data) and it is highly likely that the actual number of daily infections in the UK is in the thousands.
4. The doubling time for new Omicron infections is currently around 3 days in England and although some potential biases in the data lead to some uncertainty around this growth rate, it is unlikely to be any slower than a 5-day doubling time (high confidence). Omicron cases are making up an increasing proportion of SGTF cases, which will allow this estimate to be refined.
5. Several other sources of data from the UK also show evidence of Omicron having a growth advantage over Delta, including household studies which show higher secondary attack rates (high confidence).
6. The underlying mechanisms of the growth rate advantage of Omicron remain unclear. Both increased transmissibility and escape from immunity (following infection and/or vaccination) are likely to play a role, although the relative contribution of each of these, or any other factors, is not yet known. Preliminary modelling suggests a similar number of infections and hospitalisations should be expected in the near-term from any of the combinations of transmissibility and immune escape that are consistent with the high growth rates observed.
7. The proportion of Omicron infections that result in hospital admission cannot be known until there have been more hospitalisations (and analysis will need to consider the age profile of those infected and the immune history i.e. vaccination and past infection status). The number of people in hospital at any time will also depend on the length of stay, which will depend in part on severity of disease.
8. Some early indications from South Africa suggest less severe disease in those hospitalised when compared to previous waves, though this likely reflects at least in part the characteristics of those being admitted to date, who are younger than in previous waves (low confidence). A modest reduction in severity would not avert high numbers of hospitalisations if growth rates remained very high.
9. Although there are several unknown factors, preliminary modelling suggests that without any changes to measures in place, the number of hospitalisations from Omicron may reach 1,000 per day or higher in England by the end of the year (and still be increasing at that point).
10. The overall scale of any wave of hospitalisations without interventions is highly uncertain, but the peak could reach several times this level. The peak is highly likely to be higher than 1,000 to 2,000 Omicron hospital admissions per day without

- intervention to slow the speed of increasing infections; for it to be below this level there would need to be only a small degree of immune escape and very high protection from boosters against Omicron.
11. The impact of changes in transmissibility and immune escape on overall numbers of admissions is likely to be much more significant than the impact of any changes in severity (high confidence).
 12. There are other impacts from high levels of incidence aside from hospitalisations and deaths, including the morbidity burden in those who are not hospitalised and workforce absences. With very rapid doubling times a large wave could occur leading to synchronous absences from work.
 13. If measures to reduce transmission were introduced, admissions would continue to increase for a number of weeks after this point. This is due to the lags between measures being introduced, these measures affecting incidence of infections, and then this being reflected in hospitalisations.
 14. The faster the growth in infections at the point measures are introduced, the more admissions will increase in the period between action being taken and the number of admissions being affected. With lags of the order of two or more weeks, and doubling times of the order of three days, it is likely that, once hospitalisations begin to increase at a rate similar to that of cases, four doublings (i.e. a 16-fold increase) or more could already be “in the system” before interventions that slow infections are reflected in hospitalisations.
 15. It is highly likely that Omicron will account for the majority of new SARS-CoV-2 infections in the UK within a few weeks. Omicron may partially or largely replace Delta over this period, but the extent of this depends on the degree to which they are infecting different cohorts of people, which is not currently known. It is possible that both could continue to spread concurrently, which would mean that the Delta infections and hospitalisations would be in addition to Omicron ones. It is also possible that Omicron will completely displace Delta.
 16. Given the rapid increase, decision makers will need to consider urgently which measures to introduce to slow the growth of infections if the aim is to reduce the likelihood of unsustainable pressure on the NHS. The effectiveness of these will be dependent on the measures chosen, and also on behavioural responses. Evidence suggests that measures could be reintroduced with expectation of a similar level of adherence as has been seen in the past. Adherence is likely to be higher if messaging and policy have clear rationales and are consistent. Consistency across the UK may help with messaging.
 17. The generation time for Omicron is not known, but it is possible that it is shorter than for Delta, which would mean that case-based interventions (e.g. finding and isolating cases through contact tracing) become less effective because people become infectious sooner. This would increase the relative importance of population-based rather than case-based measures i.e. measures which affect everyone, not just those who are confirmed as being infected.
 18. Testing and self-isolation if positive remains very important. Testing before mixing events can help reduce the risk.
 19. Some international reports of ‘superspreading’ events (some of which include Omicron) also suggest a greater role for airborne transmission than has previously been the case, as it is less likely that Omicron could have spread to as many people as it has at those events by other routes (low confidence). This means that measures to reduce airborne spread such as ventilation, well-fitting masks and distancing or reduced density of people in indoor environments may be even more important.

20. Nosocomial transmission is likely to be an even greater risk as a result of Omicron, particularly as hospitalisations increase. Measures will need to be put in place to reduce this risk including measures to reduce the risk of healthcare workers becoming infected and infecting others, and measures to reduce the risk of transmission between patients. Other vulnerable settings (e.g. care homes and prisons) will also need particular attention. Reducing nosocomial spread will be even more difficult with a more highly transmissible variant.
21. Taking measures which slow or delay the wave of infections would allow more time for vaccination including ensuring increased coverage and boosting with existing vaccines. Laboratory neutralisation data will give an early indication of vaccine protection against Omicron infection over the next week, although data on infections and hospitalisations will be needed to fully understand the efficacy of different immune histories (different vaccines and/or past infections) particularly against severe disease. Vaccine and immune effectiveness against severe disease is likely to remain higher than protection against infection (medium confidence).
22. Pharmaceutical interventions including antivirals will also continue to be important. Though antivirals should be used in combination where possible to reduce the risk of resistance developing, this will not be possible in the forthcoming wave of infections due to availability and lack of clinical trial data for combination approaches. Resistance monitoring, particularly in immunocompromised patients, will be needed and preparation should be made for combination therapies to be tested and rolled out as soon as practical.

ACTION: EMG to work with others to review evidence on potential effectiveness of measures to reduce transmission of Omicron.

List of actions

EMG to work with others to review evidence on potential effectiveness of measures to reduce transmission of Omicron.

Attendees

Scientific experts (32): Patrick Vallance (GCSA), Chris Whitty (CMO), Andrew Rambaut (Edinburgh), Brooke Rogers (KCL), Calum Semple (Liverpool), Charlotte Watts (FCDO, CSA), David Crossman (Scottish government, Health CSA), Derek Smith (Cambridge), Fliss Bennee (Welsh Government), Gavin Screaton (Oxford), Graham Medley (LSHTM), Harry Rutter (Bath), Ian Diamond (ONS), Ian Young (Northern Ireland Executive, Health CSA), Jeanelle de Gruchy (dCMO), John Edmunds (LSHTM), Jonathan Van Tam (dCMO), Julie Fitzpatrick (Scottish Government, CSA), Kamlesh Khunti (Leicester), Lucy Chappell (DHSC, CSA), Mark Wilcox (Leeds), Matt Keeling (Warwick), Meera Chand (UKHSA), Peter Horby (Oxford), Ravi Gupta (Cambridge), Rob Orford (Welsh Government, Health CSA), Sharon Peacock (Cambridge), Stephen Powis (NHS England), Steven Riley (UKHSA), Susan Hopkins (UKHSA), Thomas Waite (dCMO) and Wendy Barclay (Imperial).

Observers and government officials (29): Alan Penn (MHCLG, CSA), Andrew Curran (HSE, CSA), [REDACTED], Christopher Williams (PHW), Daniel Kleinberg (Scottish Government), David Lamberti (DHSC), Edward Wynne-Evans (UKHSA), Emma Sherwood (DHSC), [REDACTED], Gideon Henderson (Defra, CSA), Henry Cook (No.10),

Ian Hall (Manchester), Jim McMenamin (Health Protection Scotland), Laura Gilbert (No.10), Laura Bellingham (CO), Liz Lalley (Welsh Government), Louise Tinsley (HMT), [REDACTED], [REDACTED], Osama Rahman (DfE, CSA), [REDACTED], [REDACTED], Paul Taylor (NPCC, CSA), Paul Monks (BEIS, CSA), [REDACTED], [REDACTED], Rob Harrison (CO), Rupert Shute (HO), Sarah Sharples (DfT, CSA), and Tom Rodden (DCMS, CSA).

Secretariat (all GO-Science) (14): [REDACTED], [REDACTED], [REDACTED], [REDACTED], [REDACTED], [REDACTED], [REDACTED], [REDACTED], [REDACTED], [REDACTED], [REDACTED], [REDACTED], [REDACTED], [REDACTED], *Simon Whitfield and Stuart Wainwright.*

Total: 75