Eighty-fifth SAGE meeting on COVID-19, 31 March 2021

Held via Video Teleconference

Situation Update

1. R estimates for England, Scotland, and Northern Ireland are between 0.8 and 1.0. For Wales, R is between 0.7 and 0.9. Estimates lag changes in transmission by two to three weeks and will not yet fully reflect the impact of schools reopening in England. The impact of school reopening on R remains uncertain.
2. As restrictions are lifted independently across the four nations, estimates for R and growth rate for the UK as a whole become less meaningful. SPI-M advises that R and growth rates for the four nations and NHS England regions are more robust and useful metrics than those for the whole of the UK; SPI-M will review whether UK estimates should be continued.
3. The upper limit of the range for all regions in England is 1.0, reflecting a flattening in transmission across the country. Incidence of infection continues to increase in some smaller areas, and there is a risk that transmission persists in these areas even if the situation improves nationally. The impact of this will be greater if there is also lower vaccine uptake in these areas (high confidence).
4. There are currently estimated to be between 6,000 and 12,000 new infections per day in England. For the most recent week of the study (21st to 27th March), the ONS Community Infection Survey estimates that an average of 148,100 people had COVID-19 in the community in England (credible interval 129,700 to 167,400). This is consistent with level or slightly declining prevalence.
5. There has been a slight increase in cases of the B.1.351 variant identified with a link to travel, though no increase in community transmission. Although prevalence of B.1.351 in parts of Europe remains high, few cases have been identified as being imported from Europe, with most coming from other parts of the world.
6. Recent studies (not yet published – verbally reported only) do not indicate a difference in the ability of different variants to survive in the environment. The studies considered survival of B.1.1.7 and B.1.351 on surfaces, and B.1.1.7 in air.

Further modelling of easing restrictions

7. Updated modelling continues to suggest that an epidemic resurgence (third wave) is highly likely, though there remains uncertainty about the timing, scale and shape of this. This is because there will be people in vulnerable groups who do not have direct protection (either because they have not been vaccinated, or because vaccination does not fully prevent infection or illness), and there is not sufficient indirect protection from wider population immunity (medium-high confidence).
8. An increase in incidence of infection is likely following Step 2. The vaccination programme, if it stays on the current trajectory, means that Step 2 alone may only lead to a modest increase in hospitalisations and deaths, although there are broad credible intervals which means that a range of outcomes is possible.
9. Any resurgence in hospital admissions and deaths following Step 2 of the Roadmap alone is highly unlikely to put unsustainable pressure on the NHS (high confidence). However, the higher the level of infections during this step, the greater the risk associated with moving to later steps.

10. The impact on hospitalisations will take longer to assess than the impact on infections, due to the delays between someone being infected, becoming ill, and then being admitted to hospital. If hospitalisation levels turned out to be higher than anticipated, infections could already have increased to worryingly high levels by the time this was identified. This would mean that the situation could continue worsening for a time, even if measures were taken at this point to reduce transmission.
11. Maintaining 5 weeks between steps allows the initial impact of changes to be assessed before moving to the next step. However, this is a minimum, and there will still be uncertainty about the impact of subsequent steps. Steps 3 & 4 have more uncertainty and greater risk than Step 2. It will be difficult to determine the impact of the 29th March changes (Step 1b) until before the end of April.
12. Key uncertainties in the modelling are around vaccine effectiveness, particularly against infection and transmission, and around behavioural responses including the amount of mixing in the later stages of the roadmap. Differences in the assumptions made for these parameters significantly impact the modelling results, and some scenarios with pessimistic but plausible vaccine efficacy assumptions can result in resurgences in hospitalisations of a similar scale to January 2021 after later stages of the roadmap.
13. The main scenarios presented in the models also do not account for waning immunity, or the potential impact of variants of concern other than B.1.1.7 (though a sensitivity analysis for one of the models does consider the potential effect of waning immunity). These factors are unknown but could have an impact on the scale and timing of a resurgence, and the longer-term trajectory of the epidemic. The B.1.351 variant continues to be of particular concern given the possibility of some degree of immunological evasion. Keeping levels of variants of concern low will be important.
14. There is further uncertainty around the extent of any seasonal patterns in transmission as a result of environmental or behavioural factors. SPI-M's consensus is that peak-to-trough seasonality in transmission is between 10% to 30% (low confidence). Modelling results and sensitivity analysis suggest that seasonal factors could delay or flatten a resurgence but are unlikely to prevent it. If prevalence is low in the summer, it should not be assumed that SARS-CoV-2 has retreated or that the population has high enough levels of immunity to prevent another wave in the autumn or winter.
15. Vaccine uptake assumptions for this round of modelling are higher than those used previously, reflecting observed uptake in those who have been offered vaccines to date and the stated intentions of those not yet offered vaccines. Assumptions on the speed of vaccine rollout are slower than previously modelled. It will be useful to model the effects on subsequent epidemiology of a supply interruption or slowing of the vaccine rollout for any other reason.
16. The vaccination programme means that high numbers of infections will not lead to as high a number of hospitalisations and deaths as it would previously have done. However, there will be other health impacts, including post-Covid syndromes ('Long Covid'). The overall prevalence and impact of these syndromes is not well understood, and nor is the potential role in vaccination in preventing them. This needs to be considered when assessing the impact of different levels of prevalence.
17. Results from one model show that with high levels of vaccine uptake, during the third wave the majority of hospitalisations and deaths would occur in vaccinated people in older age groups (as few vulnerable people have not been vaccinated, vaccines are not 100% effective, and these groups are most vulnerable). This is important to recognise as it does not represent a failure of vaccination, but simply indicates that with high population coverage there will be fewer hospitalised cases, but a higher proportion of these individuals will have been vaccinated.

18. The models do not account for uneven vaccine coverage. If there are communities with lower levels of vaccination, they will be more susceptible to infection and disease (high confidence).
19. The models continue to show that retaining a baseline set of measures to reduce transmission after other restrictions have been lifted would significantly reduce the scale of a resurgence and is therefore almost certain to reduce the burden on the NHS and save many lives (high confidence). It is not possible to determine what set of measures or behaviour changes would equate to the transmission reductions modelled. These could include voluntary measures (for example, hygiene measures, mask wearing in certain situations, avoiding crowding), environmental measures (for example, ventilation), or test, trace, and isolate systems.
20. It will be important to monitor behavioural data as well as data on infections, hospitalisations, and deaths, in order to understand the potential impact of changes to measures as early as possible.

ACTION: SPI-B chairs to advise ONS on questions that it would be useful to include in surveys to monitor behavioural changes.

ACTION: SPI-M to consider including additional sensitivity analysis in future rounds of modelling to consider the potential effect on subsequent epidemiology of a supply or deployment interruption or slowing of vaccine rollout.

List of actions

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SPI-M to consider including additional sensitivity analysis in future rounds of modelling to consider the potential effect on subsequent epidemiology of a supply or deployment interruption or slowing of vaccine rollout.

Attendees

Scientific experts (28): *Patrick Vallance (GCSA), Chris Whitty (CMO), Angela McLean (MoD CSA), Brooke Rogers (KCL), Calum Semple (Liverpool), Catherine Noakes (Leeds), Charlotte Watts (FCDO CSA), David Crossman (Health CSA, Scotland), Graham Medley (LSHTM), Harry Rutter (Bath), Ian Boyd (St Andrews), Ian Diamond (ONS), James Rubin (KCL), Jeanelle de Gruchy (ADPH), Jenny Harries (DCMO), Jeremy Farrar (Wellcome), John Edmunds (LSHTM), Kamlesh Khunti (Leicester), Linda Partridge (Royal Society), Mark Wilcox (Leeds), Meera Chand (PHE), Peter Horby (Oxford), Rob Orford (Health CSA, Wales), Stephen Powis (NHS England), Stuart Elborn (NI DoH), Susan Hopkins (PHE/NHSTT), Wendy Barclay (Imperial), and Yvonne Doyle (PHE).*

Observers and government officials (23): *Alan Penn (MHCLG CSA), Andrew Curran (HSE CSA),* [redacted] *Ben Warner (No.10), Daniel Kleinberg (Scottish Government), Giri Shankar (PHW), James Benford (HMT), Jennifer Rubin (HO CSA), Julian Fletcher (CO),* [redacted] *Liz Lalley (Welsh Government),* [redacted] *Osama Rahman (DfE CSA),* [redacted] *Paul Monks (BEIS CSA), Phil Blythe (DfT CSA), Rob Harrison (CO),*

Robin Grimes (MoD), Thomas Waite (JBC), [redacted] Tom Rodden (DCMS CSA), and Will Musker (No.10).

Secretariat (all GO-Science) (11): [redacted]
Simon Whitfield, and Zoe Bond.

Total: 62