

Eighty-fourth SAGE meeting on COVID-19, 25 March 2021

Held via Video Teleconference

Summary

1. Prevalence of COVID-19, and of some variants of concern including B.1.351, remains high in some parts of Europe and elsewhere. Border measures would likely delay importation of variants not currently widespread in the UK (medium/high confidence). This may be useful to allow more time for the risk to be understood and measures taken to mitigate those risks (e.g., vaccine updates).
2. Prisons are highly prone to outbreaks of COVID-19 and consequent raised risks of hospitalisations and deaths (high confidence). Age-standardised mortality rates are significantly higher for prisoners than the general population. Incidence of disease, number and size of outbreaks, hospitalisation and mortality rates in prisons have increased markedly in wave 2 compared to wave 1 (high confidence). Prisons can act as amplifiers for community infection.
3. Multiple minority ethnic groups in the UK have been at higher risk of mortality throughout the COVID-19 pandemic (high confidence). This risk has been particularly high among Bangladeshi and Pakistani groups in wave 2 (high confidence). Many factors are likely to interact and contribute to the risk in these groups including health inequalities, occupational factors and household circumstances (high confidence). There are measures that can help reduce these risks.
4. There is variation in nosocomial COVID-19 rates across NHS trusts and there are multiple factors that may explain this variation. There are a number of tiers in the hierarchy of controls which are likely to be equally or more effective in terms of controlling risk and exposure in healthcare settings than PPE alone. It remains the case that available evidence on use of FFP3 face masks is limited, but they may have a role as part of a hierarchy of control (there is an absence of evidence rather than evidence of absence of effect).
5. CO-CIN data show that in the 40-59 and 60-79 age groups, men are more likely than women to be admitted to hospital with COVID-19, though for the 20-39 age group there is an apparent excess of hospitalisations of women with COVID-19. The difference for this age group can largely (but not entirely) be explained by the admission screening of women being admitted to hospital for pregnancy-related reasons.

Situation Update

6. R in the UK is estimated to be between 0.7 and 0.9. Estimates for England, Scotland, and Northern Ireland are between 0.8 and 1.0, and for Wales between 0.7 and 0.9. The growth rate in new infections in the UK is between -5% and -2% per day. Estimates lag changes in transmission by two to three weeks and will not yet fully reflect the impact of schools reopening in England.
7. There are currently estimated to be between 8,000 and 12,000 new infections per day in England. For the most recent week of the study (14th to 20th March), the ONS Community Infection Survey estimates that an average of 162,500 people had COVID-19 in the community in England (credible interval 143,200 to 183,100). This is in line with data for the previous week, suggesting a flattening in prevalence.
8. Analysis of CoMix behavioural survey data suggests R is now above 1. These data are less lagged than other sources, although there is lower confidence in these estimates than for the SPI-M consensus estimates given above.
9. The upper limit of the SPI-M consensus estimate for R in a number of regions is 1.0. Areas where transmission is currently high and not decreasing are likely to be those which face higher levels of transmission as restrictions are eased. Monitoring

changes in transmission, and particularly outbreaks, by region and by setting will be important as restrictions are eased.

10. Medium-term projections using scenarios based on a range of plausible R values (0.8, 1.1 and 1.3) starting from the 29th March show that it will be difficult to identify which trajectory the epidemic is on following those changes until mid-late April.

Importation Analysis and Impact of Travel Restrictions

11. Prevalence of COVID-19, and of some variants of concern including B.1.351, remains high in some parts of Europe and elsewhere. Evidence from clinical trials suggests a modest decrease in vaccine efficacy against B.1.351 infection. The effect may be larger for some vaccines (low confidence).
12. Though B.1.351 may not be increasing in prevalence in places where it is competing with B.1.1.7 or other variants, its selective advantage may be greater in a vaccinated population where it may have an advantage of some immunological evasion (low confidence). Transmission would be faster when there are fewer other non-pharmaceutical interventions in place (high confidence). Further significant importation of this variant as the vaccination programme is underway and as measures are eased would be a concern.
13. COG-UK and PHE analysis of border measures introduced between June and September 2020 shows that whilst measures including quarantine did not prevent importation and onwards transmission, they did reduce it by reducing the number of contacts of returning travellers from countries not on the travel corridor list (high confidence).
14. Using border measures would likely delay importation of variants not currently widespread in the UK (medium/high confidence). This may be valuable to allow more time for the risk to be understood and measures taken to mitigate those risks (e.g., vaccine updates).
15. Border measures are likely to result in a greater delay in the introduction of new variants. The more people who are exempt from border measures, the higher the risk of undetected importation of a new variant. Although some of those exempted will be covered by a different testing regime, positive results may not go on to be sequenced, and data may not feed into the public health system.

ACTION: DfT CSA to lead a small group discussion on the potential impact of vaccination of regular travellers exempted from quarantine on reducing risk of importation of variants – this should be fed into JCVI.

Transmissions in prisons

16. Prisons are highly prone to outbreaks of COVID-19 and consequent raised risks of hospitalisations and deaths (high confidence). Age-standardised mortality rates are significantly higher for prisoners than the general population.
17. In response to these risks, control measures (such as reduced socialisation and stopping visitations) have been in place since March 2020. Further control measures were introduced during wave 2, including increased routine testing of staff and mass testing of prison residents during outbreaks.
18. Despite the control measures, incidence of disease, number and size of outbreaks, hospitalisation and mortality rates have increased markedly in wave 2 compared to wave 1 (high confidence). This may reflect the transmissibility of the B.1.1.7 variant, higher community incidence or fatigue with control measures.
19. Prisoners' mental health and rehabilitation are also negatively impacted by some of the restrictions in place (high confidence). The restrictions can also be challenging for families. Visits from families and friends have largely been stopped through the

- pandemic but would normally constitute an important contact with the community (high confidence).
20. Prisons are highly connected epidemiologically with the community, primarily through prison staff who have close contact with prisoners and enter prisons daily (high confidence). Regular testing of staff helps to reduce risk but is limited by incomplete uptake (high confidence).
 21. Another connection between the community and prisons is inflow of new prisoners, which has decreased during the pandemic due to reduced court activity (high confidence). However, throughput is likely to increase markedly as courts reopen (high confidence). This will lead to increased occupancy levels and throughput and difficulty maintaining current control measures (high confidence).
 22. Prisons also have an outflow of prisoners into the community. Prisoners often come from, and are released to, more deprived communities with higher levels of COVID-19 (high confidence). After release, they may also move into communal settings (such as approved premises or homeless hostels) which may also have higher risks of outbreaks (high confidence).
 23. Prisons will remain at high risk of outbreaks even when infection levels in the community are low because the importation of a single case can lead to a large outbreak (high confidence). Without high levels of immunity or continued intensive control measures, prisons could become reservoirs and amplifiers of infection, including variants of concern (high confidence). This presents a risk to the wider community as well as to those in the prison.
 24. Modelling suggests that universal vaccination of prisoners would have a similar impact to the current highly intensive control measures, and that vaccination of staff would also decrease infection levels in residents (high confidence). JCVI provides advice on vaccine prioritisation.
 25. SAGE endorsed the paper 'COVID-19 transmission in prison settings'.

ACTION: Cabinet Office Taskforce and SAGE Secretariat to organise a teach-in for policy colleagues in MoJ on the paper 'COVID-19 transmission in prison settings'

ACTION: SAGE Secretariat to share the paper 'COVID-19 transmission in prison settings' with JCVI.

Minority ethnic outcomes in wave 1 and 2

26. ONS data show that all minority ethnic groups of sufficient size to be measurable in the UK have been at higher risk of mortality throughout the COVID-19 pandemic (high confidence). Understanding the reasons for this is important in mitigating these inequalities in the longer-term and reducing the risk of enduring transmission.
27. Data from wave 2 (1st September 2020 to 31st January 2021) show this risk has been particularly high among Bangladeshi and Pakistani groups over this period (high confidence).
28. Multiple factors are likely to interact to contribute to the risk in these groups. These include:
 - a. *health inequalities* (high confidence). Pakistani and Bangladeshi groups suffer severe, debilitating underlying conditions at a younger age and more often than other ethnic minority groups. People in these groups are more likely to have more than two health conditions that interact to produce greater risk of death from Covid-19 (medium confidence);
 - b. *disadvantages associated with occupation and household circumstances* (high confidence). Pakistani and Bangladeshi communities are more likely to be involved in: work that carries risks of exposure (e.g., retail, hospitality, taxi driving); precarious work where it is more difficult to negotiate safe working conditions or absence for sickness; and small-scale self-employment with a

- restricted safety net and high risk of business collapse (high confidence). Household circumstances including higher numbers of multigenerational households can also amplify some risk factors (medium confidence);
- c. *barriers to accessing health care* (medium confidence). This may be due to intersecting forms of stigma which can cause health inequalities (medium confidence), or over-burdened health services in the regions in which these communities live, which may have faced high rates of COVID-19 over a longer period of time, including greater strains on GP services (high confidence); and
 - d. *potential influence of policy and practice on people's experiences with COVID-19* (medium confidence). This could include inadequate financial support in some cases (high confidence), or stigmatisation by media narratives such as those around multigenerational households and religious festivals, which can result in barriers to seeking help and contribute to more severe health problems (medium confidence).
29. There is a range of possible policy responses in the short, medium and long term which could help address some of these issues.

ACTION: Ethnicity subgroup to review paper with secretariat support, so that statements reflect the evidence base and make strength of evidence clear, and then to share the paper with the relevant policymakers.

Face masks in healthcare settings

- 30. SAGE considered this issue at SAGE 83 and noted the importance of the hierarchy of controls in infection prevention and control (IPC). This approach can be used to identify appropriate controls to reduce risk to as low as reasonably practicable.
- 31. There are a number of tiers in the hierarchy which are likely to be equally or more effective in terms of controlling risk and exposure than PPE alone, which should therefore be considered before/with PPE.
- 32. As previously noted, transmission occurs through several routes, including droplets, aerosols, and fomites. These routes often occur together and at the same time, which makes it difficult to distinguish the extent to which individual routes contribute to transmission.
- 33. There is a need for consideration of aerosol transmission within IPC strategies, including the use of face masks as source control by staff and patients and ventilation in both clinical and non-clinical areas (medium confidence). Evidence from quarantine centres in Australia and New Zealand indicates that airborne transmission can occur.
- 34. There is wide variation in nosocomial COVID-19 rates across NHS trusts and there are multiple factors that may explain this variation. Inspections of acute hospital trusts have identified clear variability in compliance with the full range of "COVID-secure" guidance recommended to mitigate virus transmission risk (high confidence). There are examples of trusts with relatively higher nosocomial COVID-19 rates where large decreases have occurred with interventions that do not include aerosol mitigation measures.
- 35. It is not possible to identify whether any of this variation is related to FFP3 use (there is an absence of evidence rather than evidence of absence of an effect). It remains the case that available evidence on use of FFP3 face masks is limited (though this does not mean there is no effect). Decision makers in the NHS will need to consider the extent to which they take a precautionary approach, taking into account the other measures they have in place and their local environments, and will also need to consider other factors. SAGE endorses the hierarchy of control principles.

ACTION: Mark Wilcox to update the paper to reflect SAGE input and include confidence statements throughout.

Gender differences in clinical and social impacts of COVID

36. Analysis of ONS Community Infection Survey (CIS) data shows no evidence to support the hypothesis that women are at higher risk of testing positive for COVID-19 than men (medium confidence). More men than women have died from COVID-19 in the UK, and the difference in mortality was particularly pronounced in the early stages of the pandemic (before April 2020).
37. Analysis of CIS data also shows that for respondents who tested positive for COVID-19, females were more likely than males to report symptoms 5 weeks later.
38. CIS data also show females having higher rates of antibody positivity than males. Overall evidence on differences in immunity between men and women are mixed, with some evidence of different immune responses, with plausible biological explanations as to why this may occur.
39. CO-CIN data show that in the 40-59 and 60-79 age groups, men are more likely than women to be admitted to hospital with COVID-19, though for the 20-39 age group there is an apparent excess of hospitalisations of women with COVID-19. The difference for this age group can largely (but not entirely) be explained by the admission screening of women being admitted to hospital for pregnancy-related reasons.
40. Overall outcomes for pregnant women admitted to hospital with COVID-19 are no worse than for non-pregnant women, in part because they are likely to be admitted with less severe cases of COVID-19. Those admitted from December 2020 onwards, when B.1.1.7 became the dominant variant, were more likely to be symptomatic, and those who were symptomatic were more likely to require respiratory support, when compared to those admitted before this period.
41. Symptomatic pregnant women often did not receive COVID-19 treatments such as steroids. Steroids for maternal indication were only administered in around 7% of symptomatic pregnant women admitted to hospital, and 18% of those who received critical care.
42. The factors associated with increased risk of hospital admission for pregnant women were similar to those seen in the general population, including being older, being from ethnic minority groups, obesity and other comorbidities.
43. Of symptomatic pregnant women admitted to hospital, 18% had a preterm birth, which is around 2.5 times the background rate (around 7-8% of all live births in the UK are preterm).
44. ONS data show that similar proportions of men and women report vaccine hesitancy, though in the 16-29 age group women are more likely to report vaccine hesitancy than men, with concerns related to pregnancy or planned pregnancy one of the reasons for this difference.
45. ONS survey data show that the pre-pandemic trend of women being more likely to report experiencing depression than men has continued, with rates of reported depression (which is not necessarily clinical depression) roughly doubling for both women and men (from 12% to 22% and 7% to 15% respectively). Recent data also show women as being more likely to report their wellbeing as being affected by the pandemic, and to report feeling worried about the effect of COVID-19 on their lives. This may be related to being more likely to be affected by home-schooling or unpaid childcare.

ACTION: CMO to highlight low usage of steroids in hospitalised pregnant women with COVID-19 to Senior Clinicians Group and to share evidence with relevant professional bodies.

ACTION: UKRI and NIHR to consider potential research questions related to gender differences in the impacts of COVID-19.

List of actions

DfT CSA to lead a small group discussion on the potential impact of vaccination of regular travellers exempted from quarantine on reducing risk of importation of variants – this should be fed into JCVI.

Cabinet Office Taskforce and **SAGE Secretariat** to organise a teach-in for policy colleagues in MoJ on the paper ‘COVID-19 transmission in prison settings’.

SAGE Secretariat to share the paper ‘COVID-19 transmission in prison settings’ with JCVI.

Ethnicity subgroup to review paper with secretariat support, so that statements reflect the evidence base and make strength of evidence clear, and then to share the paper with the relevant policymakers.

Mark Wilcox to update the paper to reflect SAGE input and include confidence statements throughout.

CMO to highlight low usage of steroids in hospitalised pregnant women with COVID-19 to Senior Clinicians Group and to share evidence with relevant professional bodies.

UKRI and NIHR to consider potential research questions related to gender differences in the impacts of COVID-19.

Attendees

Scientific experts (38): *Patrick Vallance (GCSA), Chris Whitty (CMO), Andrew Hayward (UCL), Angela McLean (MoD CSA), Brooke Rogers (KCL), Calum Semple (Liverpool), Catherine Noakes (Leeds), Chantal Edge (UCL), Charlotte Deane (UKRI), Charlotte Watts (FCDO CSA), Declan Bradley (NI), Dinesh Aggarwal (Cambridge), Doreen Cantrell (Dundee), Fliss Bennee (Welsh Government), Graham Medley (LSHTM), Harry Rutter (Bath), Ian Boyd (St Andrews), Ian Diamond (ONS), James Rubin (KCL), Jennet Woolford (ONS), Jenny Harries (DHSC), Jeremy Farrar (Wellcome), John Edmunds (LSHTM), Kamlesh Khunti (Leicester), Laura Bear (LSE), Linda Partridge (Royal Society), Marian Knight (Oxford), Mark Walport (UKRI), Mark Wilcox (NHS), Meera Chand (PHE), Michael Parker (Oxford), Nicola Steedman (Scotland), Peter Horby (Oxford), Rob Orford (Health CSA, Wales), Sheila Rowan (CSA, Scotland), Stephen Powis (NHS England), Wendy Barclay (Imperial), and Yvonne Doyle (PHE).*

Observers and government officials (28): *Alan Penn (MHCLG CSA), Andrew Curran (HSE CSA), [REDACTED] Ben Warner (No.10), [REDACTED] Christopher Williams (PHW), David Crossman (CSA Health, Scotland), Gideon Henderson (Defra CSA), Giri Shankar (PHW), [REDACTED] James Benford (HMT), Jennifer Rubin (HO CSA), Jim McMenamin (Health Protection Scotland), [REDACTED] Liz Lalley (Welsh Government), [REDACTED] Osama Rahman (DfE, CSA), [REDACTED] [REDACTED] Paul Monks (BEIS CSA), [REDACTED] Phil Blythe (DfT CSA), [REDACTED]*

[REDACTED] Rob Harrison (CO), Robin Grimes (MoD), Rupert Shute
(Home Office), [REDACTED] Tom Rodden (DCMS CSA), [REDACTED]

Secretariat (all GO-Science) (22): [REDACTED] [REDACTED] [REDACTED] [REDACTED]
[REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED]
[REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED] Laura Eden, [REDACTED],
[REDACTED] [REDACTED] [REDACTED] [REDACTED] Simon Whitfield, [REDACTED]
Stuart Wainwright, [REDACTED].

Total: 88