Meeting details

The meeting was held on 20 June 2022 from 2pm to 4pm via Microsoft Teams.

The co-chairs were Julia Gog (academic chair) and Tom Irving (government chair).

Attendees

From the Scientific Pandemic Infections group on Modelling (SPI-M):

- Daniela De Angelis
- Marc Baguelin
- Paul Birrell
- Declan Bradley
- Ellen Brooks-Pollock
- Andre Charlett
- Louise Dyson
- John Edmunds
- Jessica Enright
- Neil Ferguson
- Thomas Finnie
- Christophe Fraser
- Michael Gravenor
- Ian Hall
- Thomas House
- Rowland Kao
- Matt Keeling

- Adam Kucharski
- Edwin Van Leeuwen
- Steven Riley
- Chris Robertson
- Anna Seale
- Nick Watkins
- Christopher Williams

Observers:

- Laura Bellingham (Cabinet Office)
- Anita Bhalla (Cabinet Office)
- Hayley Butcher (DHSC)
- Sarah Deeny (UKHSA)
- Simon Whitfield (GO-Science)

Participant apologies:

- Graham Medley
- Thomas Waite

Introduction

Tom Irving (DHSC) and Julia Gog were acting chairs for the meeting, as Thom Waite and Graham Medley were unavailable.

Hayley Butcher, who has taken over Paul Allen's role within DHSC, was introduced and welcomed by the committee.

It was brought to the committee's attention that SPI-M minutes will be published but with comments not attributed to individuals.

Outstanding actions from the previous meeting were noted.

UK Health Security Agency (UKHSA) update

UKHSA provided an update on their work on monkeypox and thanked SPI-M members who have been contributing with the response. It was noted that the trend of monkeypox cases have been difficult to determine due to data issues but that data flows were improving.

Members of the committee were told to contact the SPI-M secretariat or Steven Riley if they would like to contribute work to UKHSA's monkeypox response.

Influenza pandemic countermeasures analysis

UKHSA presented updated epidemiological modelling that considers a range of transmission rates, severity and seasonal effect combinations in an influenza pandemic compartmental model.

The group were reminded of the underlying assumptions in each of the scenarios.

The committee agreed that it is still important to consider the impact of a 1918-style pandemic, among a range of different scenarios.

The committee discussed the impact of different thresholds at which transmission rates are modelled to change via the deployment of NPIs and spontaneous behaviour change. The committee agreed this modelling would be strengthened by adding sensitivity analysis around this threshold.

The committee noted some difficulties in interpreting the vertical axis scales on some of the plots shown, and some apparent anomalies comparing the plots with given thresholds in the scenarios.

Action:

UKHSA to include sensitivity analysis around thresholds for changes in transmission.

The committee discussed the chosen assumptions vaccination prioritisation by age, noting that vaccination policy in a future influenza pandemic would be based on advice from the Joint Committee on Vaccines and Immunisations (JCVI), reflecting the nature of the particular pandemic.

The committee also discussed the choice of how partial vaccine immunity was implemented, particularly reduction of susceptibility and noted that it was “non-leaky”, i.e. some of those vaccinated fully unavailable for infection.

The committee discussed R0 and the effective R number Rt, and the effect of different levels of pre-existing immunity in the population used in the scenarios. For previous influenza pandemics, pre-existing immunity and its age distribution mean that the distinction between R0 and Rt is important. It was agreed that the inclusion of an explicit effective R for the start of each scenario is needed. It would also be helpful if the plot against time of R during each scenario gives effective R rather than relative R, accounting for changing immunity.

Action:

UKHSA to give Re at the start and show its change over time in each scenario.

The group discussed the emergence of variants in the scenarios. The current modelling does not consider different variants.

The role of spatial variation was discussed. The group discussed transmission between regions in the scenarios: the model does not include any interactions between regions, only different initial conditions.

The committee asked whether the models included any seasonal change in the rate of transmission during the scenarios. UKHSA clarified that the potential impact of school holidays on transmission was included, but no additional seasonal impact is included beyond this. It was noted that scenarios had been modelled with epidemics starting at different times of the year, which increases the robustness of results to seasonality.

The committee discussed the time from the start of the epidemic to the time of vaccine rollout and recommended that shorter intervals also be considered.

The committee discussed the role of demography. The model does explicitly include age-structured mixing, and assumptions about severity in different age groups.

The committee discussed the range of the pandemic scenarios. It was agreed that the current set of scenarios represent a reasonable range for the purpose of this piece of work, and no further scenarios would be added.

Action:

UKHSA to rename the scenarios for clarity.

Infection prevalence reaching very low levels between waves in each scenario was discussed, and the risk this has for artefactual errors in deterministic compartmental models. The committee recommended that this possibility be excluded by checking how low infection rates are in infection troughs.

Action:

UKHSA to adapt models to prevent prevalence becoming unrealistically low.

The group agreed that, with the recommended considerations and changes, the modelling is appropriate and proportionate for this work.

Any other business (AOB)

The date of the next SPI-M meeting was agreed.