NI COVID 19 Modelling Group Conference Call – 3 November 2020

Attendees

Ian Young DoH (Chairperson)
Paul McWilliams SIB
Janice Bailie PHA
Declan Bradley PHA
Adele Marshall QUB
Frank Kee QUB
Paul Montgomery DoH

Key issues discussed

Update

- Ian provided an update on the latest position in respect of the key indicators of the trajectory of the virus and the impact on the health & social care sector. The 7 day rolling average for new Covid-19 cases has started to fall and was 790 on average per day over the past week (1,000 previous week). This reflects in part a decline in the number of tests to 21.8 per 1,000 population (26.0 last week), perhaps linked to the school holidays. The proportion of tests with a positive result for the virus has fallen slightly to 13.9% (14.5% last week). It was highlighted that it would be important to monitor the impact of the return of schools on case numbers. The proportion of positive tests accounted for by those aged 60 and over has increased over the past week to 21.1% (17.6% last week).

- The reduction in the number of cases is starting to be seen in a decline in the number of Covid positive hospital admissions (242 compared with 258 last week) although this has not yet fed through into inpatient numbers which continue to increase, in part due to rising nosocomial infections. The number of patients in ICU and deaths continue to rise rapidly, although there was a small fall in the former today.

- The number of cases in the Derry City & Strabane Local Government District (LGDs) continues to fall with Mid Ulster now having the highest rate of infection (393 over last 7 days per 100k population) with Ards & North Down having the lowest (129).

- The group agreed that the latest estimate of the R number is between 0.6-0.8 (0.6-1.1 last week) for cases and 0.9-1.1 (1.1-1.3) for hospital inpatients although the R number for ICU patients stands at 1.2-1.4; all based on calculations by Paul McWilliams.

Scenario Modelling

- Ian presented the results of scenario modelling produced by Paul McWilliams based on the R number being 0.7 for the 2 weeks of the extended school holidays

followed by 0.9 for the 2 weeks of the remainder of the current intervention period- these are expected to reduce hospital occupancy from over 400 to around 200.

- Under the high scenario the R number is assumed to be 1.4 for the remainder of November followed by 1.6 in December before returning to 1.4 in January (1.4,1.6,1.4). Under the medium scenario the R number is assumed to be slightly lower (1.3,1.45,1.3). Based on a further intervention being required when hospital occupancy reaches 300, both scenarios are expected to require a further intervention in early December. Even under a low scenario (1.2,1.3,1.2) an intervention may still be required before Christmas, but this level of virus transmission was not judged to be achievable without ongoing additional interventions.

- Extending the current interventions for a further 2 weeks would delay the need for further action until just before Christmas under the medium scenario and until early 2021 under the low scenario. Although it was suggested that the Christmas school holidays (perhaps extended) might reduce the R number in December, it was agreed that it was essential that the current interventions should be extended for a further 2 weeks, recognising the severe impact on the hospitality sector of restrictions in early December. It was agreed that the modelling would be updated on a weekly basis.

- Ian indicated that the Test Trace and Protect (TTP) measures were estimated to reduce the community transmission of the virus by 30%. There was a discussion about how this could be improved, for example, by having the target for tracing set from the onset of symptoms rather than when the contact tracing service was informed.

AOB

- Ian advised the group of the intention to have a rapid expansion of testing. Frank Kee queried whether there was the risk of a reduction in adherence to social distancing measures if individuals felt they would have enhanced protection through the increased testing.

- Ian indicated that SAGE had been considering the potential impact of increased infection rates on the R number for localised areas which had experienced severe outbreaks through herd immunity. Declan Bradley indicated that while there was some supporting evidence from SPI-M modelling, this depended on current social behaviours being maintained, with any protection being removed if these became more relaxed. Ian referred to evidence that antibody levels were reducing relatively rapidly in infected individuals, although other factors will also influence levels of immunity.

- Ian provided an update on the latest position in terms of the development and expected roll-out of vaccines. There was a discussion about the potential for combined and/or repeated dosages of the different vaccines.

- Janice Bailie indicated that the plan to analyse a further sample of residual biochemical specimens remains on course for the second week of November. The Covid Infection Survey continues to report results although there is an issue in respect of the time taken for participants to receive the result of their test.

- Adele Marshall presented the results of the agent based model she had developed, run for the entire Northern Ireland population with variations in susceptibility by age band. The simulation incorporates interventions such as shielding and the requirement to wear face coverings with the results broadly in line with the actual trajectory of clinical cases. In addition, the number of contacts is consistent with the results from the contact survey. In particular, the average number of contacts is estimated as 7.9 at the outset of the pandemic before falling to 4.7 during the initial period of lockdown and then rising to 5 as restrictions were eased, and 6 as schools returned. Adele indicated that the model could be used to run future scenarios by setting the parameters and extending the simulation.