

FROM THE MINISTER OF HEALTH



Department of
Health

An Roinn Sláinte

Mánnystrie O Poustle

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COVID-19 MODELLING UPDATE

Introduction

1. The purpose of this note is to set out the latest advice from the expert modelling group, chaired by the Chief Scientific Advisor, in respect of the impact of COVID-19 on the Northern Ireland (NI) health & social care sector. The primary objective of this work is to inform our planning and response to the epidemic.
2. To place this update in context, it is important to note that although the number of deaths from COVID-19 in NI has increased by 61 over the past week, the reported number of deaths per head of population is approximately 60% lower than the United Kingdom (UK) average and is broadly the same as in the Republic of Ireland.
3. As set out in my note of 8 April 2020, the modelling work is particularly sensitive to assumptions based on emerging data, and thus is expected to change over time. The modelling group met on 14 April 2020 and following a review of the latest observed data and analysis agreed that some amendments were appropriate to the outputs in the best case and reasonable worst case scenarios.
4. The latest data suggests that the social distancing measures continue to work effectively to limit the spread of the virus. Hence the modelling group now expects that we are currently within the period of time that the peak of wave one is expected to occur. In light of this and the additional data available, the modelling group has indicated that the resource requirement in respect of critical care beds is lower than projected previously, although for the reasons outlined below the number of projected deaths has not been changed.

5. There remains significant uncertainty in respect of how long the peak impact will last as well as how rapidly the number of cases will decline subsequently.
6. In addition, there remains a material risk of a second wave of cases as soon as control measures begin to be withdrawn. This means that there are still many difficult weeks and months ahead, and the progress we have made by good adherence to the measures introduced will be lost very quickly if there is any adverse change in compliance.
7. As before, it is important to emphasise that the modelling work is not a prediction or forecast, rather a model of potential scenarios for planning purposes.

Updated Modelling Results

8. Set out in Table 1 below is the updated advice in respect of the key scenario considered by the modelling group, the reasonable worst case scenario. This represents, on the balance of probabilities, an upper limit for patient flows in wave one. The only change from the previous update is in respect of the peak requirement for critical care beds which has been reduced from 140 to 90. This is higher than the current level of usage (45-60) as a reflection of the potential for small changes in population compliance with social distancing or location specific incidents to significantly increase demand.
9. The number of hospital admissions for COVID-19 and the number of patients requiring oxygen are based on the scaling to the NI population of UK projections by the Scientific Advisory Group for Emergencies (SAGE). It is hoped that it will be possible for NI specific modelling on these indicators to be undertaken when there is greater certainty in respect of the data. No change was made in respect of these indicators.

Table 1: Modelling Results for Reasonable Worst Case Scenario

Description	Best Judgement
Peak number of Covid-19 patients requiring ventilation and critical care beds during the first wave of the epidemic	90
Peak number of Covid-19 patients requiring oxygen in the first wave of the epidemic	400
Peak number of Covid-19 hospital admissions during the first wave of the epidemic (per week)	500
Number of cumulative Covid-19 deaths in the first 20 weeks of the epidemic.	1,500

10. In respect of deaths, there has been a significant downward adjustment in the expected UK impact of the outbreak projected by other organisations such as the Institute for Health Metrics and Evaluation (IHME). However, in light of the uncertainty regarding the number of COVID-19 deaths outside of a hospital setting, the modelling group decided to not change the number of cumulative COVID-19 deaths in the first 20 weeks of the epidemic in NI.
11. Table 2 below sets out the updated projections in respect of the best case scenario. As with the reasonable worst case scenario, the main change is to the required number of critical care beds at the peak, which has been reduced from 80 to 55. It was agreed that no change was required in respect of the worst case scenario.

Table 2: Modelling Results for Best Case Scenario

Description	Best Judgement
Peak number of Covid-19 patients requiring ventilation and critical care beds during the first wave of the epidemic	55
Peak number of Covid-19 patients requiring oxygen in the first wave of the epidemic	130
Peak number of Covid-19 hospital admissions during the first wave of the epidemic (per week)	220
Number of cumulative Covid-19 deaths in the first 20 weeks of the epidemic.	251

12. The modelling group did not consider the expected position beyond the first wave of the epidemic, as its path will depend heavily on decisions with respect to future social distancing measures and the extent to which these are adhered. Future modelling will likely consider these issues.

Surge Planning

13. The previous advice from the modelling group had fully informed the development of the COVID-19 surge plan for critical care. Their latest advice suggests that the increased available capacity is expected to be greater than the potential demand within a comfortable margin. This may have implications for the balance of provision between COVID-19 critical care and other health & social care.

Conclusion

14. I hope this update is useful. I will continue to ensure that the Executive is updated as further iterations of the modelling briefing note become available.

15. I am copying this memo to Executive colleagues.

Personal Data

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Minister of Health**