

# Rapid analysis of the possible growth of respiratory outbreaks in Nursing and Residential Care Homes in Northern Ireland

## Introduction

We are seeing some growth of outbreaks of respiratory infection in Nursing Care Homes and to a lesser extent in Residential Care Homes. Some international evidence suggests that we may be beginning to see exponential growth in the number of care homes that are affected and that we should plan on a worst case assumption of 90% of homes seeing an outbreak over the next 30-40 days. Some modelling has been undertaken by Dr Damien Bennett and is provided in Appendix 1. A number of immediate actions that are being taken to address the situation are also provided below.

## Modelling

In summary, the modelling suggest that by the end of May 2020 we may have between 160 and 360 Nursing or Residential Care Home outbreaks of respiratory infection in Northern Ireland. It is reasonable to assume that most of these will be COVID-19, even where testing of cases is negative. We may see a rise from around three care/nursing home outbreaks per day up to around 14 outbreaks a day by the end of May 2020.

## Proposed Actions

There is intensive ongoing public health and social care action to address all outbreaks in Nursing and Residential Care Homes, with extensive advice on infection control measures and provision of PPE. Trusts are also providing staffing support to a number of homes. However, if the growth of outbreaks follows the pattern shown in Appendix 1, it may stretch staffing resources.

HSCB and PHA Executives held an emergency meeting at 17:30 hrs on 17 April 2020 to consider the issue of care home outbreaks. A number of actions were agreed. The topic will be further at SILVER on 18 April 2020 and a wider meeting between representatives of the HSCB/PHA and Trust representatives, including Directors of Social Care and Nurse Directors, is being arranged for 10 am on Monday 20 April 2020. In particular, there is a need to consider nursing/carer/cleaner staff support to those care settings that are most stretched. Advice will be sought from RQIA, the Health Protection team and care setting themselves as to where support is most needed.

## Appendix 1: Rapid Modelling Exercise by Dr Damien Bennett

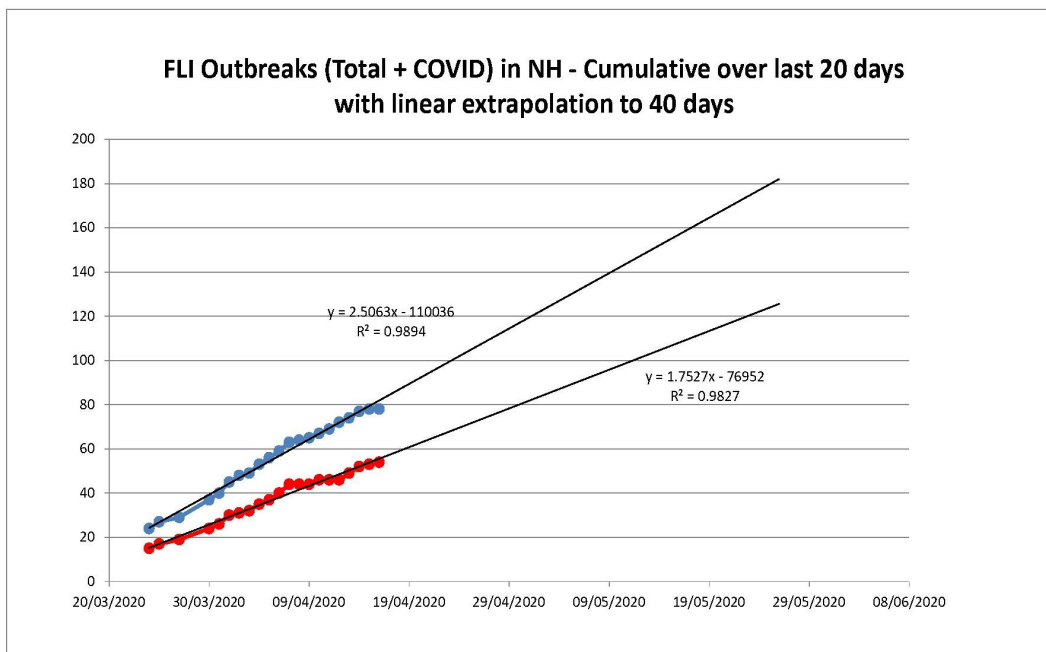
### Methods

A rapid modelling exercise has been undertaken of outbreaks in Nursing and Residential Care Home settings. This work draws upon available data and international information on the possible rate of growth of outbreaks in these settings over the next 30 – 40 days.

### Results

The high level results are shown below in visual form. Fuller details of the assumptions made can be provide on request. Figure 1 shows the potential growth in Respiratory outbreaks (Flu-like illness) and COVID-19 outbreaks in Nursing and Residential Care Homes, if the growth follows a linear pattern.

Figure 1: Flu-like illness outbreaks with linear extrapolation (Northern Ireland)



If this pattern is followed, we would expect 180 nursing and residential care homes to have been affected by the end of May 2020.

Figure 2: Model of Flu-like illness outbreaks using existing baseline data up to 16/4/20 and then modelled to have an exponential growth up to 90% of Nursing and Care Homes in Northern Ireland over the 40 days from 17/4/20

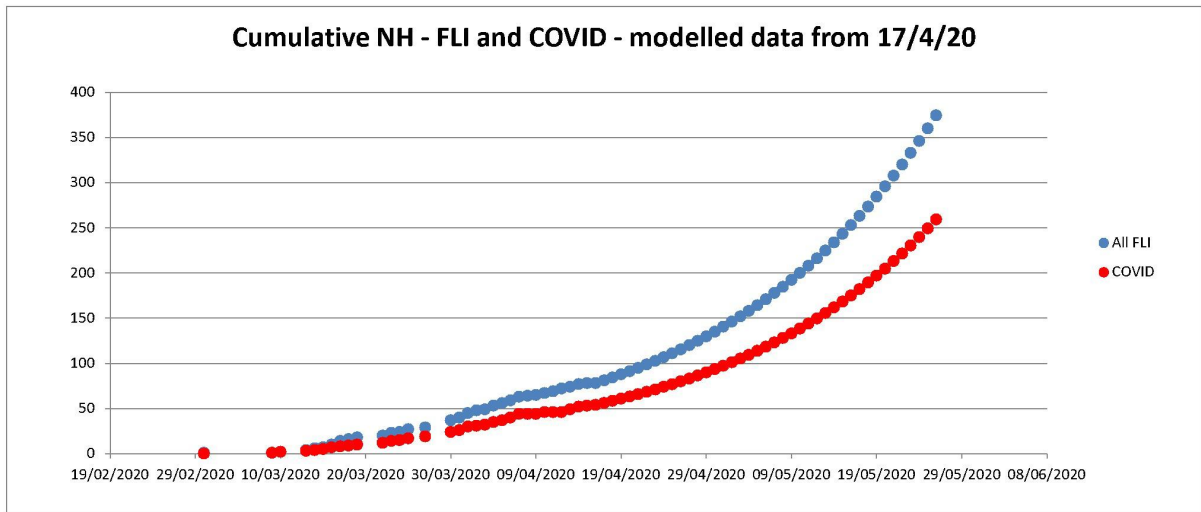


Figure 3: Daily incidence of reported outbreaks, based on assumptions in Figure 3 above.

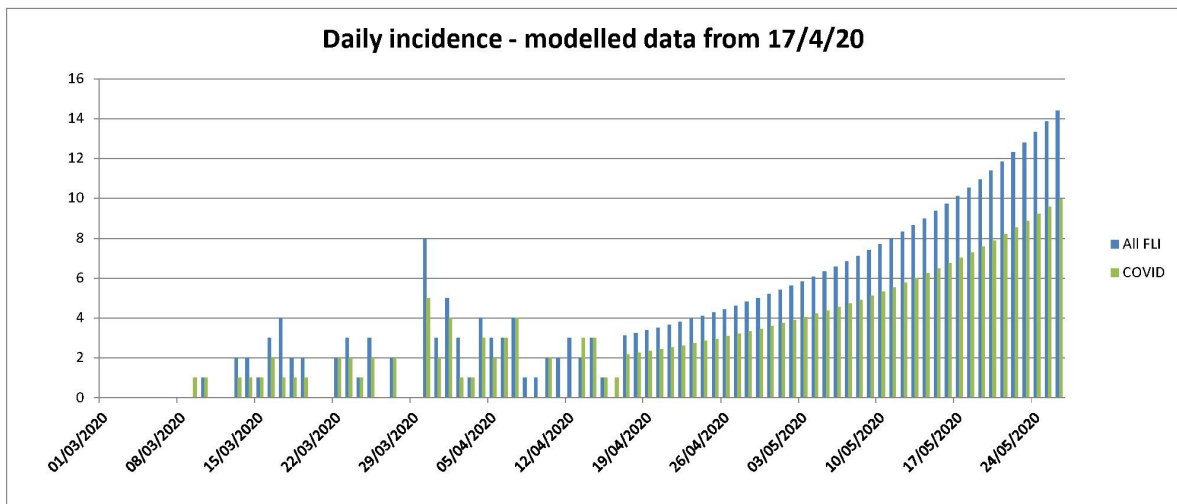


Figure 3 indicates that Nursing and Care Home respiratory (Flu-like illness) outbreaks in Northern Ireland would rise from around three reported outbreaks per day to around 14 reported outbreaks per day by the end of May if the assumption of 90% of homes being affected over the next 40 days was correct.