

Appendix 3: Calculation of change in confirmed cases or deaths if a moratorium been in place

Our model estimates change in growth rate of infections or deaths. To convert this to an estimate of the number of cases we do the following:

Change in confirmed cases or deaths (Δ Confirmed cases or deaths):

$$\Delta \text{Confirmed cases or deaths} = \sum_{k=1}^{50} \sum_{i,j=4/17/2020}^{12/31/2020} \Delta \text{Confirmed cases or deaths} (k, i, j)$$

Whereas Δ Confirmed cases or deaths (k, i, j) is the change in confirmed cases or deaths for state k from day i to day j .

$$\begin{aligned} \Delta \text{confirmed or death cases} (k, i, j) &= \text{cumulative confirmed or deaths} (k, i) \\ &\quad * (1 + \# \text{ of days from } i \text{ to } j * \text{Adj}_{\text{growth rate}}) \\ &\quad - \text{cumulative confirmed or death cases} (k, j) \end{aligned}$$

To estimate the decrease in infection (column 1) and death (column 2) rates in Table 1, we use the following formula and the Coeff for each model from Appendix 2:

$$\text{Adj}_{\text{growth rate}} = \frac{\frac{\text{cumulative confirmed or death cases} (k, j)}{\text{cumulative confirmed or death cases} (k, i)} - 1}{\# \text{ of days from } i \text{ to } j} + \text{Coeff}$$