

ANALYSIS OF COVID-19 LOCKDOWNS

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Government's Analysis

- No quantitative Cost-Benefit analysis invoked.
- Why? Because it “*..may not fully capture the dynamic nature of the information and choices available at particular points in time..*” (National Crisis Management Centre, Covid-19 Weekly Monitoring Report 15 April).
- Not true. Quantitative Cost-Benefit analysis can deal with these features via backward induction. Presented in even basic university texts in operations research, economics, finance, etc.

Evolution in the Views of Profs Blakely, Baker and Wilson

- Pre Covid: Numerous publications using quantitative CBA to assess health interventions, with a numerical value for a QALY, including *“Economic Evaluation of Border Closure for a Generic Severe Pandemic Threat using NZ Treasury Methods”*.
- 23 March 2020: published paper supporting a quantitative CBA to compare elimination with mitigation, with numerical value for a QALY. No conclusions reached due to lack of data on the economic costs of these options, but urged government to complete this work. *“If we are flattening the curve we need our young and healthy citizens...being infected at higher rates to build up herd immunity.”*
- Since: Unqualified support for elimination, but no quantitative CBA in support of it.
- Prof Baker: *“I wept when PM announced that NZ was going into lockdown.”* (14 April, 2020)

Evolution in the Views of Te Punaha Matatini (Prof Hendy et al)

- 25 March 2020: Estimation of the death toll under various policy choices, but no mention of the costs of these competing policies.
- 21 October 2020: Estimation of GDP losses from Level 3 and 4 lockdowns of Auckland in August, to achieve a given prob of covid elimination. They approvingly refer to quantitative CBAs with QALYs compared to economic costs, but not do so themselves: "*Previous analyses...have compared the benefits measured in terms of QALYs...to the economic costs. Combining our approach...with these more in-depth analyses may be useful...*"
- 9 November 2020: Revised estimates of the death toll under various policies that might have been adopted in March. Recognition that deaths should be converted to QALYs, for comparison with economic costs, but not carried out. "*For CBA, age-dependent mortality and morbidity allow number of cases and deaths to be quantified in terms of QALYs, which can be converted to monetary units to facilitate comparison with economic costs.*"
- From no consideration of costs to recognition of them and the value of CBA, but still no CBA performed.

Estimation of the Death Toll in NZ under Mitigation

- Blakely et al, 23 March 2020: Using an epidemiology model, 6,500 to 13,000 (1,300 to 2,600 per 1m).
- Hendy et al, 9 November 2020: Using an epidemiology model, at least 32,000 by 31 October (6,400 per 1m).
- Both vastly exceed the death toll of every European mitigator by that date or even today: Finland (84), Iceland (82), Latvia (190) and Sweden (750), and Hendy et al even exceed the worst performing country (Belgium: 1,500).
- Using European data, cross-country regressions identify various variables as explaining death rate: population density and date of first death but not Stringency of government restrictions. This implies that the European lockdowns did not work (unlike NZ's), and deletion of Stringency yields a model that can predict a country's death rate under mitigation.
- Yields a predicted death rate for NZ under mitigation of 144 per 1m and 312 at the upper limit of the 95% confidence interval.
- Box: "All models are wrong but some are useful"