

Actuarial Society of SA slashes Covid-19 death estimates - The earlier version of Assa's model had produced a limited range of scenarios, and many focused on the higher death estimate of 80,000

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The Actuarial Society of SA (Assa) has slashed its estimates of the likely coronavirus death toll in SA in 2020, releasing a revised model that now puts the probable range at between 27,000 and 50,000.

The first version of its Covid19 model, released for comment at the end of April, predicted between 46,000 and 88,000 deaths from the disease by December.

While the model is not used by the government, which relies on projections by a consortium coordinated by the National Institute of Communicable Diseases (NICD), Assa's work has added to the debate about the likely effect of Covid19 and the appropriateness of the government's response.

The earlier version of its model had produced a limited range of scenarios, and many people had focused on the higher death estimate of 80,000. "It was intended to show the sensitivity of the model to key assumptions, but people took it as the worstcase scenario," said Assa's Covid19 modelling working group coordinator Barry Childs, who is joint CEO of Insight Actuaries.

Assa's Covid19 model is intended to be used by actuaries, and has been updated to allow a user to be able to input a range of assumptions about key parameters, such as the extent to which the population is susceptible to the disease, and the extent to which they may be asymptomatic. The earlier version did not allow for this kind of heterogeneity, said Child.

Assa has modelled 30 different scenarios to show the sensitivity of the model to changes in these kinds of assumptions.

The most likely range of Covid19 deaths is captured in two scenarios. In scenario one, a high proportion (75%) of the population is asymptomatic and everyone is susceptible to the disease, but there is a low infection rate

because there is an effective lockdown and nonmedical interventions such as social distancing. In this scenario there would be 15million infections (most of which would be asymptomatic), 27,000 deaths by the end of 2020, and a mortality rate of 481 deaths per million population.

In scenario two, a high proportion (60%) of the population is not susceptible to the disease, a modest (35%) proportion of people are asymptomatic, and there is moderate interaction between people who are infected and those who are not. Under this scenario, 10million people would be infected and there would 50,000 deaths by the end of 2020, or 876 deaths per million population.

Assa emphasised that the number of infected people in both scenarios is far higher than the number of reported cases, due to testing limitations.

The model is open source and publicly available.

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