

**Media Release**  
**Actuarial Society of South Africa**  
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### **Actuarial Society's COVID-19 Model confirms Government's risk concerns**

A team consisting of some of South Africa's leading healthcare actuaries has developed a model to assist the actuarial profession in understanding the potential impact of COVID-19 on the South African healthcare system and the mortality rate. The model will be made available selectively to other interested parties such as Government.

Lusani Mulaudzi, healthcare actuary and President of the Actuarial Society of South Africa (ASSA), says the urgent need for the ASSA COVID-19 Model was driven by actuaries being expected to provide reasonable projections to a number of stakeholders for planning purposes and to inform intervention strategies.

He says these stakeholders include healthcare funders and providers who need reasonable projections for capacity planning and procurement, and to assess expected effects on medical scheme reserves. He adds that life assurance companies need reasonable projections to assess their mortality expectations and stress test capital requirements.

Mulaudzi says the model is based on the key mechanisms of a pandemic, namely susceptibility, exposure, infection and recovery (SEIR). He adds that the model's baseline assumptions were informed by an extensive scientific literature review conducted by the ASSA COVID-19 task team.

Mulaudzi stresses that the projections are solely based on assumptions since South Africa has only two months of data to work with.

"Society, and indeed the actuarial profession have not had the time to come to terms with all the dynamics of this disease with the evidence, science, and opinions on the disease changing rapidly. There is much about this Corona virus that remains unknown and new evidence emerges daily."

He adds that the ASSA COVID-19 task team will update the assumptions regularly as more data becomes available. "Version 1.0 of the model is currently being tested by a number of expert users and additional insights will be used to improve and refine the model," according to Mulaudzi.

### **Conservative modelling**

Mulaudzi says the ASSA COVID-19 model confirms current Government assumptions that infections are likely to increase significantly without appropriate interventions.

"Conservative modelling indicates that the peak is only likely to be reached between August and September this year, depending on the effectiveness of lockdown and other non-pharmaceutical interventions. Deaths are currently below 100 and may exceed 48 000 within the next four months if Government does not maintain a strict approach to flattening the curve."

Mulaudzi explains that the ASSA COVID-19 model's baseline scenario assumes that one infected person is likely to infect three others (a reproduction number ( $R_0$ ) of three), and that 75% of infected people present as asymptomatic.

He says the most optimistic scenario assumes that the lockdown initiative reduces the reproduction number to 1.5 and that non-pharmaceutical interventions (NPIs) after the strict lockdown period result in a reproduction number of 2.1. In this scenario, hospital bed usage would peak at 70 000 between August and September this year and requirements for ICU beds at just over 10 000. Expected cumulative deaths stop short at just over 48 300.

"We have to caution that the projected mortality figures are sensitive to the mortality assumptions made. Views on the COVID-19 impact on mortality rates still vary widely and as more data becomes available we may find that the actual mortality figures are significantly different to what has been projected. As we update the ASSA COVID-19 Model, we will include new scenarios assuming different mortality rates."

## **Ends**

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### **Issued on behalf of:**

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*The Actuarial Society of South Africa is the professional organisation for actuaries and actuarial students in South Africa. The vision of the Actuarial Society is an actuarial profession of substance and stature, serving, and valued by, our communities as a primary source of authoritative advice and thought leadership in the understanding, modelling and management of financial and other measurable risks.*