CORONAVIRUS — HEALTH MODELLING — OMICRON VARIANT

382. Ms M.J. Davies to the Premier:

(1) I refer to the document WA Department of Health Omicron COVID-19 modelling, tabled 22 February 2022 in the Legislative Assembly as tabled paper 963, and I ask:

    (a) Is there specific modelling for outbreaks in the following scenarios:

        (i) Aged care setting;

        (ii) Remote Aboriginal Communities;

        (iii) Regional Western Australia, where a hospital is present;

        (iv) Regional Western Australia, where there is no hospital or healthcare present;

        (v) Homeless community;

        (vi) Major events, such as a grand final for football;

        (vii) Retail venues, for example bottle shops;

        (viii) Boarding schools;

        (ix) Step up, Step down facilities;

        (x) Women's refuges;

        (xi) Camp schools;

        (xii) Prisons;

        (xiii) Childcare facilities;

        (xiv) Day hospital venues or physical rehabilitation facilities;

        (xv) Hotels, with both negative pressure and positive pressure environments; and

        (xvi) Other venues where there is potential for high contact amongst a small group of people, where transmission is likely?

(2) For all examples in (1), please provide details on how these scenarios had different variables compared to the baseline data?

(3) If no scenario specific modelling has been done, why was this modelling not undertaken considering these high contact environments are widely accepted of being at greater risk of experiencing negative outcomes due to COVID-19?

Mr M. McGowan replied:

(1)–(3) Highly detailed scenarios such as those outlined in this question could not be modelled due to the lack of available data and the diminishing efficacy of modelling at a too granular level. WA Health continues to monitor community infections and hospitalisations related to COVID-19. This information is published on the HealthyWA website twice a week.

The modelling conducted by the WA Department of Health was focused on assessing the impact of various pandemic management and mitigation strategies at the macro level, rather than in specific settings.

The model is based on the long-standing Susceptible-Exposed-Infectious-Recovered (SEIR) compartmental infectious diseases model, where a theoretically homogenous population is assumed within each compartment. To achieve greater heterogeneity and allow for the parametrisation of public health policies, the population groups are disaggregated into sub-compartments according to age, vaccination status, isolation status and origin (local or non-local); transmission dynamics within and between population groups are simulated using contact matrices from the Prem et al. (2017) study typically referenced in infectious diseases modelling, which represents interactions within four macro environments: home, school, work, and others.

The level of disaggregation that can be applied to a large population is however limited by uncertain parameters and a lack of available data accurately representing interactions and relative susceptibility within specific micro-environments, thus imposing a trade-off between scope and heterogeneity.

An independent review by expert modellers from the Telethon Kids Institute and Curtin University have determined that the WA Health model is consistent in structure and parametrisation to other Australian and international models used to inform government policy.