

COVID-19 modeling finds level of social distancing in Sydney inadequate to control Delta outbreak

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COVID-19 modeler and Director of the University of Sydney's Centre for Complex Systems Professor Mikhail Prokopenko has today released

modeling on pre-print server arXiv that shows Sydney's current level of social distancing is inadequate for outbreak control.

- The modeling, which analyzed the current situation up until 13 July, found that social distancing [compliance](#) of 80 percent would see a reduction of cases after one month.
- It also found that case numbers would begin to reduce after two months if social distancing compliance was at 70 percent.
- The model identifies that currently, about 40 percent of the Sydney population is observing social distancing.
- To see a drop off in case numbers in one month, Sydney residents must reduce their social interactions to one tenth of their normal social interactions, such as [shopping](#).

"As of July 2021, there is a continuing [outbreak](#) of the Delta variant of SARS-CoV-2 in Sydney. The outbreak is of major concern as the Delta variant is estimated to have twice the reproductive number of previous variants that circulated in Australia in 2020, which is also worsened by low levels of acquired immunity in the population," said Professor Prokopenko, from the Faculty of Engineering.

"Using a re-calibrated agent-based model, we explored a feasible range of non-pharmaceutical interventions, in terms of both mitigation (case isolation, home quarantine) and suppression (school closures, social distancing).

"Our modeling indicates that the level of social distancing currently attained in Sydney is inadequate for the outbreak control.

"Our analysis suggests if, however, 80 percent of the population comply with social distancing, then at least one month will be needed for the new daily cases to reduce from their peak to below ten. A small reduction in social distancing compliance to 70 percent lengthens this period to over

two months."

"Compliance with 80 percent social distancing would mean that 4 out of 5 people must drastically reduce their contact with others to just 10 percent of what they normally do.

"For example, this would mean reducing your shopping frequency or duration to just 1 out of 10 typical trips or hours. So, if someone spent 10 hours a week doing the shopping, now it needs to reduce to just one hour of shopping a week.

"The same goes for chatting with neighbors, and other activities which involve being around people outside your household.

"Crucially, 80 percent of [social distancing](#) also means that many services currently deemed essential would need to be included under the lockdown restrictions."

More information: Sheryl L. Chang et al, Nowcasting transmission and suppression of the Delta variant of SARS-CoV-2 in Australia, arXiv:2107.06617v1 [q-bio.PE] arxiv.org/abs/2107.06617

Provided by University of Sydney

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