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Mathematical modeling of vaccination strategies for COVID-19 in Thailand

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COVID-19 vaccination is an important role to reduce the chance of infection and lower the risk of hospitalization and death. However, the vaccination is far less effective with the recent emergence of the Omicron variant. In addition, vaccine protection after vaccination may wane over time, thus receiving additional booster doses is significant to maintain the protection. In this work, we applied an extended SEIR model with vaccinations to investigate the impact of the vaccination rate of primary and additional doses on the spread of the COVID-19 pandemic in Thailand. The results shown that the booster vaccination rate has a major impact on the reduction of infection. These results suggest that the high coverage of booster vaccination remains crucial for reducing the spread of COVID-19.

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