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Figure S1. Model structure. Figure (A) shows the original transmission model by Atchison et al. and (B) illustrates how vaccination was included in the current analysis.

(A) Transmission model

Susceptible: 1st infection → Infected: 1st infection

Susceptible: 2nd infection → Infected: 2nd infection

Susceptible: 3rd infection → Infected: 3rd infection

Susceptible: 4th infection → Infected: 4th infection

Recovered

Maternal protection: \( \mu \)

Incubation rate: \( \lambda \)

Vaccination: \( \alpha_1 \gamma \), \( \alpha_2 \gamma \), \( \alpha_3 \gamma \)

Recovery rate: \( \gamma \)

(B) Model including vaccination

Susceptible: 1st infection → Infected: 1st infection

Susceptible: 2nd infection → Infected: 2nd infection

Susceptible: 3rd infection → Infected: 3rd infection

Susceptible: 4th infection → Infected: 4th infection

Recovered

Vaccine: Dose 1, Dose 2

Maternal protection: \( \mu \)

Incubation rate: \( \lambda \)

Vaccination: \( \alpha_1 \gamma \), \( \alpha_2 \gamma \), \( \alpha_3 \gamma \)

Recovery rate: \( \gamma \)

\( \omega \)