A black background with arrows

Description automatically generated

**Figure S1.** The overall workflow of the analysis. The analysis started with data training which consists of the characterising of case notification data in order to divide the population into two age groups before the seasonality of monthly DHF cases was averaged by month (first box). The transmission model was then run for 45 years, while the first 40 years was discarded, and the remaining 5 years was fitted with the data by minimising negative log-likelihood following Poisson distribution. Then, seroprevalence rate, vaccine coverage, and screening coverage were all calculated for modelling vaccination (second box). In the vaccination model, the model was run in order to evaluate the total hospitalised DHF cases averted after 3 years (third box). The sensitivity analysis was performed by adjusting the vaccination timing according to each period where the each DENV serotype was the highest in terms of its proportion. Then, the vaccination scenario was run according to each timing and the number of hospitalised DHF cases was recalculated (fourth box).

A graph of multiple different types of graphs

Description automatically generated with medium confidence

**Figure S2.** The trajectories of the trend and the seasonality of monthly reported DHF cases of those aged 0 - 14 years.

A graph of different types of graphs

Description automatically generated with medium confidence

**Figure S3.** The trajectories of the trend and the seasonality of monthly reported DHF cases of those aged 15 to 75+ years.

A collage of graphs

Description automatically generated

**Figure S4.** The resulting DENV-1 to DENV-4 serotype dominance following vaccination in scenario 1.

A collage of graphs

Description automatically generated

**Figure S5.** The resulting DENV-1 to DENV-4 serotype dominance following vaccination in scenario 2.

A collage of graphs

Description automatically generated

**Figure S6.** The resulting DENV-1 to DENV-4 serotype dominance following vaccination in scenario 3.

A collage of graphs

Description automatically generated

**Figure S7.** The resulting DENV-1 to DENV-4 serotype dominance following vaccination in scenario 4.

A collage of graphs

Description automatically generated

**Figure S8.** The resulting DENV-1 to DENV-4 serotype dominance following vaccination in scenario 5.