Mathematical equations used in the stochastic model

1. **Uniform distribution:**

   $x \sim U(a, b)$

   where x is the random variable, a is the lower bound, and b is the upper bound.

2. **Normal distribution:**

   $x \sim N(\mu, \sigma^2)$

   where x is the random variable, μ is the mean, and σ^2 is the variance.

3. **Beta distribution:**

   $x \sim Beta(\alpha, \beta)$

   where x is the random variable, α is the alpha parameter, and β is the beta parameter.

Table S1. Estimated median (95% CI) hospitalized cases and deaths in patients ≥65 years of age from respiratory illnesses, cardiovascular disease, and other causes for no vaccination and aQIV vaccination

Variable	No vaccination	QIVe	aQIV
Hospitalization			
Respiratory illness	98,794 (44,347–196,134)	53,455 (22,235–100,237)	50,103 (20,877–94,401)
CVD	190,829 (82,306–378,236)	102,569 (45,951–196,580)	97,120 (43,321–185,025)
Other	299,343 (135,789–533,813)	156,958 (72,016–281,476)	148,189 (68,062–263,408)
Death			
Respiratory illness	9,303 (3,193–19,996)	4,815 (1,676–10,494)	4,549 (1,583–9,849)
CVD	17,349 (6,379–40,583)	9,045 (3,279–21,284)	8,543 (3,119–20,062)
Other	26,235 (10,051–56,806)	13,718 (5,277–29,702)	12,840 (4,986–27,807)

aQIV, adjuvanted quadrivalent influenza vaccine; CI, confidence interval; QIVe, egg-based quadrivalent influenza vaccine

Table S2. Incremental differences in estimated hospitalization rates and mortality due respiratory, CVD, and other complication of influenza for vaccination of adults ≥65 years with aQIV vs QIVe

Variable	Median	Lower bound 95% CI	Upper bound 95% CI
Hospitalization			
Respiratory illness	2,981	1,071	6,301
CVD	5,747	2,204	12,248
Other	8,768	3,583	18,388
Death			
Respiratory illness	272	85	655
CVD	514	172	1,267
Other	765	271	1,944

aQIV, adjuvanted quadrivalent influenza vaccine; CI, confidence interval; QIVe, egg-based quadrivalent influenza vaccine