## Supplementary Information

The parameters used in the PSA across all interventions are shown in the table below.

Supplementary Table 1. Parameters used across strategies in PSA

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Parameter** | **Base** | **Low** | **High** | **Distribution** |
| Vaccinated Susceptibility | 100.0 | 80.0 | 100.0 | LogNormalDistribution(-4.6052,1.5285) |
| Boosting Probability | 100.0 | 80.0 | 100.0 | BetaDistribution(30.217,3.3574) |
| Vaccinated Susceptibility | 100.0 | 80.0 | 100.0 | BetaDistribution(30.217,3.3574) |
| QALY Weights By Age  | 100.0 | 80.0 | 100.0 | LogNormalDistribution(-6.9078,2.7053) |
| QALY Weights Breakthrough Varicella | 100.0 | 80.0 | 100.0 | LogNormalDistribution(-2.5257,0.60916) |
| QALY Weights Natural Varicella | 0.999 | 0.799 | 1.000 | LogNormalDistribution(-1.5606,0.28622) |
| QALY Weights Breakthrough Zoster | 0.920 | 0.736 | 0.976 | LogNormalDistribution(-2.0402,0.43342) |
| QALY Weights PHN | 0.790 | 0.632 | 0.880 | LogNormalDistribution(-0.77219,0.10682) |
| QALY Weights Zoster | 0.870 | 0.696 | 0.944 | LogNormalDistribution(-2.0402,0.43342) |
| Varicella Work Days Lost OP | 0.538 | 0.430 | 0.625 | GammaDistribution(17.147,0.13803) |
| Varicella Work Days Lost IP | 0.870 | 0.696 | 0.944 | GammaDistribution(5.6671,0.72642) |
| Cost Per Work Day Missed | 2.367 | 1.893 | 2.840 | GammaDistribution(96.04,2.3324) |
| Varicella Care Percent OP | 4.117 | 3.293 | 4.940 | BetaDistribution(38.786,26.953) |
| Varicella Care Utilization OP | 224.0 | 179.2 | 268.8 | GammaDistribution(96.04,0.014131) |
| Varicella Cost For Care OP | 0.590 | 0.472 | 0.708 | GammaDistribution(96.04,0.21512) |
| Varicella Care Percent IP | 1.357 | 1.086 | 1.629 | BetaDistribution(83.203,545.76) |
| Varicella Care Utilization IP | 20.66 | 16.53 | 24.79 | GammaDistribution(96.04,0.055037) |
| Varicella Cost For Care IP | 0.132 | 0.106 | 0.159 | GammaDistribution(96.04,7.9863) |
| Varicella Medication Count OP | 5.286 | 4.229 | 6.343 | GammaDistribution(96.04,0.016362) |
| Varicella Medication Percent OP | 767.0 | 613.6 | 920.4 | BetaDistribution(14.976,1.664) |
| Varicella Average Drug Cost Outpatient | 1.571 | 1.257 | 1.886 | GammaDistribution(96.04,0.36953) |
| Varicella Average Diagnostic Test Cost | 0.900 | 0.720 | 1.000 | GammaDistribution(96.04,0.50708) |
| Booster Coverage | 35.49 | 28.39 | 42.59 | BetaDistribution(15.497,3.174) |

OP = outpatient; IP = inpatient; QALY = quality-adjusted life years

Parameters that vary by intervention are shown in the table below.

Supplementary Table 2. Parameters used in PSA that vary by strategy

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Strategy** | **Parameter** | **Base** | **Low** | **High** | **Distribution** |
| QQVa | Primary Efficacy | 100 | 93 | 100 | LogNormalDistribution(-4.6052,0.99283) |
| QQVa | Booster Efficacy | 100 | 97 | 100 | LogNormalDistribution(-6.9078,1.7353) |
| QQVa | Duration Of Vaccine Immunity Dose 1 | 25 | 20 | 30 | GammaDistribution(96.04,0.26031) |
| QQVa | HZ Susceptible Transition Rate 1 | 25 | 0.0333 | 0.05 | GammaDistribution(96.04,0.26031) |
| QQVa | Duration Of Vaccine Immunity Dose 2 | 75 | 60 | 90 | GammaDistribution(96.04,0.78092) |
| QQVa | HZ Susceptible Transition Rate 2 | 0.0133 | 0.0111 | 0.0167 | GammaDistribution(96.04,0.78092) |
| QQVa | Vaccine Take | 95 | 76 | 100 | BetaDistribution(23.911,3.2606) |
| QQVa | Varicella Dose Administration Costs | 0.6 | 0.48 | 0.72 | GammaDistribution(96.04,0.0062474) |
| QQVa | Primary Coverage | 85 | 68 | 100 | BetaDistribution(15.413,2.7199) |
| QQVa | Varicella Dose Costs | 38.6 | 30.9 | 46.3 | GammaDistribution(96.04,0.40181) |
| MQVa | Primary Efficacy | 100 | 93 | 100 | LogNormalDistribution(-4.6052,0.99283) |
| MQVa | Booster Efficacy | 100 | 97 | 100 | LogNormalDistribution(-6.9078,1.7353) |
| MQVa | Duration Of Vaccine Immunity Dose 1 | 25 | 20 | 30 | GammaDistribution(96.04,0.26031) |
| MQVa | HZ Susceptible Transition Rate 1 | 25 | 0.0333 | 0.05 | GammaDistribution(96.04,0.26031) |
| MQVa | Duration Of Vaccine Immunity Dose 2 | 75 | 60 | 90 | GammaDistribution(96.04,0.78092) |
| MQVa | HZ Susceptible Transition Rate 2 | 0.0133 | 0.0111 | 0.0167 | GammaDistribution(96.04,0.78092) |
| MQVa | Vaccine Take | 95 | 76 | 100 | BetaDistribution(23.911,3.2606) |
| MQVa | Varicella Dose Administration Costs | 7.39 | 5.91 | 8.87 | GammaDistribution(96.04,0.076947) |
| MQVa | Primary Coverage | 80.8 | 64.6 | 97 | BetaDistribution(17.632,4.1897) |
| MQVa | Varicella Dose Costs | 42.8 | 32.5 | 48.8 | GammaDistribution(96.04,0.42357) |
| QQVb | Primary Efficacy | 75 | 60 | 90 | LogNormalDistribution(-1.3863,0.2398) |
| QQVb | Booster Efficacy | 95 | 76 | 100 | LogNormalDistribution(-2.9957,0.80033) |
| QQVb | Duration Of Vaccine Immunity Dose 1 | 15 | 12 | 18 | GammaDistribution(96.04,0.15618) |
| QQVb | HZ Susceptible Transition Rate 1 | 15 | 0.0556 | 0.0833 | GammaDistribution(96.04,0.15618) |
| QQVb | Duration Of Vaccine Immunity Dose 2 | 50 | 40 | 60 | GammaDistribution(96.04,0.52062) |
| QQVb | HZ Susceptible Transition Rate 2 | 50 | 0.0167 | 0.025 | GammaDistribution(96.04,0.52062) |
| QQVb | Vaccine Take | 85 | 68 | 100 | BetaDistribution(16.101,3.0669) |
| QQVb | Varicella Dose Administration Costs | 0.6 | 0.48 | 0.72 | GammaDistribution(96.04,0.0062474) |
| QQVb | Primary Coverage | 85 | 68 | 100 | BetaDistribution(15.413,2.7199) |
| QQVb | Varicella Dose Costs | 41.3 | 33.1 | 49.6 | GammaDistribution(96.04,0.43024) |
| MQVb | Primary Efficacy | 75 | 60 | 90 | LogNormalDistribution(-1.3863,0.2398) |
| MQVb | Booster Efficacy | 95 | 76 | 100 | LogNormalDistribution(-2.9957,0.80033) |
| MQVb | Duration Of Vaccine Immunity Dose 1 | 15 | 12 | 18 | GammaDistribution(96.04,0.15618) |
| MQVb | HZ Susceptible Transition Rate 1 | 15 | 0.0556 | 0.0833 | GammaDistribution(96.04,0.15618) |
| MQVb | Duration Of Vaccine Immunity Dose 2 | 50 | 40 | 60 | GammaDistribution(96.04,0.52062) |
| MQVb | HZ Susceptible Transition Rate 2 | 50 | 0.0167 | 0.025 | GammaDistribution(96.04,0.52062) |
| MQVb | Vaccine Take | 85 | 68 | 100 | BetaDistribution(16.101,3.0669) |
| MQVb | Varicella Dose Administration Costs | 7.39 | 5.91 | 8.87 | GammaDistribution(96.04,0.076947) |
| MQVb | Primary Coverage | 80.8 | 64.6 | 97 | BetaDistribution(17.632,4.1897) |
| MQVb | Varicella Dose Costs | 41.3 | 33.1 | 49.6 | GammaDistribution(96.04,0.43024) |

Abbreviations: HZ = herpes zoster; MQVa = Vaccine Cfollowed by Vaccine A ; MQVb = Vaccine D followed by Vaccine B; QQVa = Vaccine A; QQVb = Vaccine B.