

Economic analysis of an additional dose of the 2024-2025 COVID-19 vaccine

University of Michigan
COVID-19 Vaccination Modeling Team

Presentation to the Advisory Committee on Immunization Practices



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Conflict of interest statement

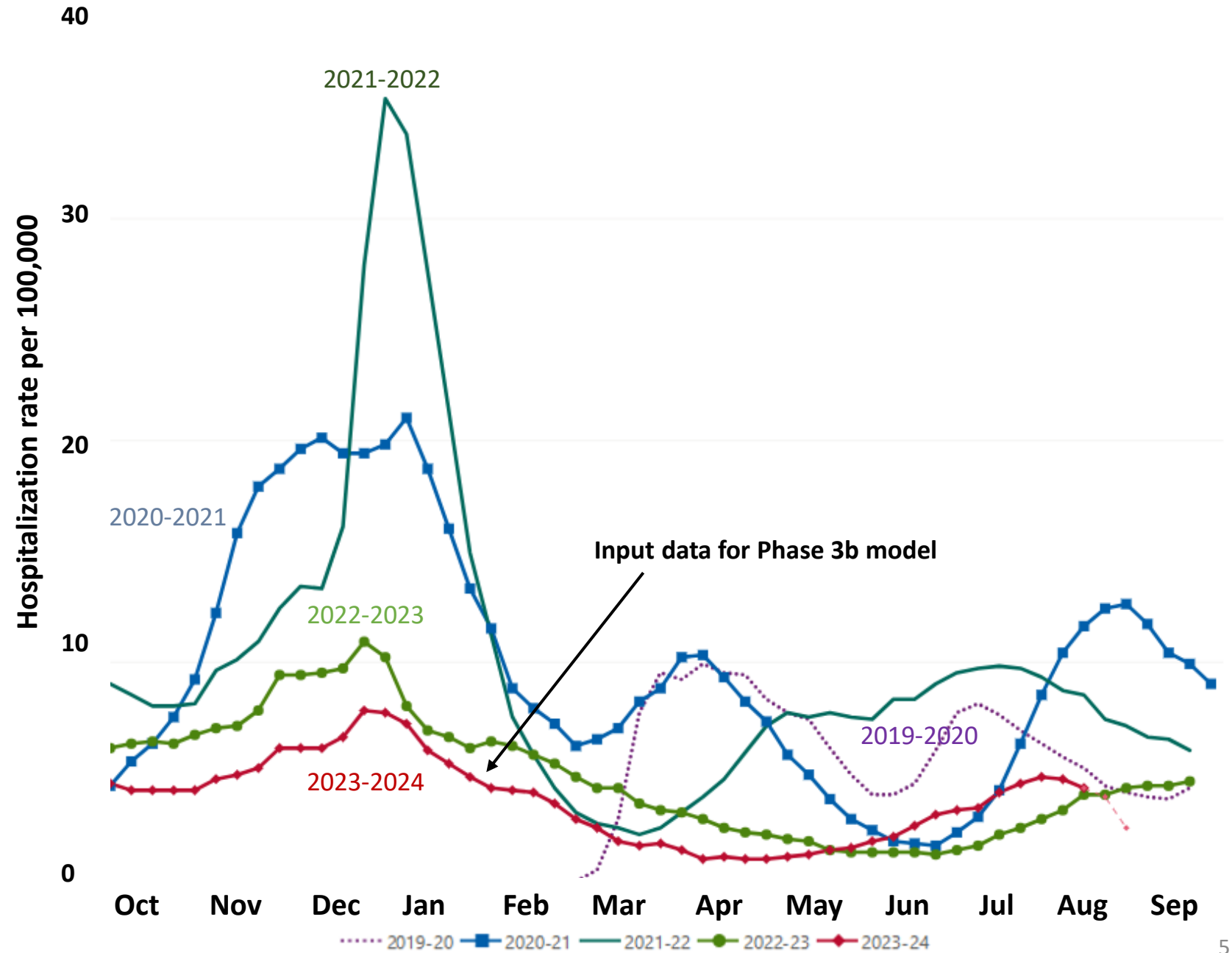
Authors have no known conflicts of interest.

Objectives

- Original aims*:
 - Estimate annual disease burden and healthcare utilization associated with COVID-19 illness and COVID-19 booster vaccination, including cases of symptomatic illness, hospitalizations, deaths, adverse events, costs, and quality-adjusted life years
 - Project cost-effectiveness of an updated mRNA booster against COVID-19-associated illness in persons ages ≥ 18 years
- Updates to the current version of the model (Phase 3B):
 - 2-dose strategy (an additional mid-year dose)
 - 2023-2024 hospitalization rates (COVID-NET data)
 - Vaccine dose costs reflect CDC-negotiated 2024-2025 prices
 - All cost inputs adjusted to 2024\$

* Earlier analyses from this model were presented to ACIP in September 2023, February 2024, and June 2024: Prosser, Lisa A. (2023). Economic Analysis of Vaccination with mRNA Booster Dose against COVID-19 Among Adults; Prosser, Lisa A (2024). Economic analysis of an additional dose of COVID-19 vaccine; Prosser, Lisa A (2024). Economic Analysis of COVID-19 Vaccination.

Weekly rates of COVID-19 associated hospitalizations by season, all ages



Source: COVID-NET

Probability of hospitalization due to COVID-19 illness

| Age groups | 2023-2024 | 2022-2023 | % change |
|-------------|-----------|-----------|----------|
| 5-11 years | 0.000105 | 0.000133 | -21% |
| 12-17 years | 0.000139 | 0.000181 | -23% |
| 18-49 years | 0.000299 | 0.000443 | -33% |
| 50-64 years | 0.001184 | 0.001551 | -24% |
| ≥65 years | 0.006778 | 0.007901 | -14% |

Updated seasonality-adjusted vaccine impact*

| Health outcomes | Age | Seasonality-adjusted vaccine impact | | | | | |
|--|---------|-------------------------------------|-------|-------|-----------------|-------|-------|
| | | 1-dose strategy | | | 2-dose strategy | | |
| | | Base case | Low | High | Base case | Low | High |
| <ul style="list-style-type: none"> Symptomatic illness (non-hospitalized) Hospitalization, uncomplicated | 5-11 y | 0.375 | 0.112 | 0.705 | 0.512 | 0.158 | 0.716 |
| | 12-17 y | 0.379 | 0.110 | 0.704 | 0.501 | 0.143 | 0.711 |
| | 18-49 y | 0.295 | 0.106 | 0.442 | 0.404 | 0.144 | 0.482 |
| | 50-64 y | 0.310 | 0.118 | 0.453 | 0.416 | 0.157 | 0.492 |
| | ≥65 y | 0.315 | 0.121 | 0.455 | 0.422 | 0.163 | 0.498 |
| <ul style="list-style-type: none"> Critical illness** Death | 5-11 y | 0.375 | 0.112 | 0.705 | 0.512 | 0.158 | 0.716 |
| | 12-17 y | 0.379 | 0.110 | 0.704 | 0.501 | 0.143 | 0.711 |
| | 18-49 y | 0.391 | 0.221 | 0.662 | 0.527 | 0.355 | 0.666 |
| | 50-64 y | 0.402 | 0.234 | 0.665 | 0.534 | 0.366 | 0.670 |
| | ≥65 y | 0.410 | 0.238 | 0.665 | 0.536 | 0.369 | 0.671 |

* Updated hospitalization rates Oct 23- Sept 24

**Hospitalization requiring ICU and/or ventilator assistance

Source: COVID-NET, VISION, and IVY

Seasonality-adjusted vaccine impact, 2023-2024 v. 2024-2025

| Age group | 1-dose | 2-dose |
|---|--------|--------|
| Seasonality-adjusted vaccine impact against symptomatic illness or hospitalization | | |
| 5-11 years | -11% | -1% |
| 12-17 years | -10% | -6% |
| 18-49 years | -18% | -6% |
| 50-64 years | -13% | -5% |
| 65+ years | -9% | -3% |
| Seasonality-adjusted vaccine impact against critical care (hospitalization with ICU stay or death) | | |
| 5-11 years | -11% | -1% |
| 12-17 years | -10% | -6% |
| 18-49 years | -15% | -3% |
| 50-64 years | -12% | -3% |
| 65+ years | -9% | -2% |

Vaccine dose cost, 2023-2024 v. 2024-2025

| | 2023 | | | | 2024 | | | | % change |
|---------|---------|----------------|-----------------|-----------|---------|----------------|-----------------|-----------|----------|
| | CDC | Private sector | % VFC or Bridge | Base case | CDC | Private sector | % VFC or Bridge | Base case | |
| 5-11 y | | | | | | | | | |
| Pfizer | \$65.45 | \$77.00 | 50% | \$89.09 | \$65.45 | \$77.00 | 54% | \$88.25 | -1% |
| Moderna | \$85.91 | \$128.00 | | | \$85.91 | \$129.00 | | | |
| 12-17 y | | | | | | | | | |
| Pfizer | \$97.75 | \$115.00 | 50% | \$102.44 | \$99.71 | \$136.75 | 54% | \$114.18 | 10% |
| Moderna | \$85.91 | \$128.00 | | | \$85.91 | \$141.80 | | | |
| 18+ y | | | | | | | | | |
| Pfizer | \$97.75 | \$115.00 | 12.8% | \$118.73 | \$99.71 | \$136.75 | NA | \$139.28 | 15% |
| Moderna | \$85.91 | \$128.00 | | | \$85.91 | \$141.80 | | | |

Additional assumptions: 2-dose strategy

- Adverse events: Twice the number of the 1-dose strategy
- Costs of vaccination: Twice the cost of the 1-dose strategy
- See additional slides

Analysis Plan

- Conduct base case and uncertainty analyses (one-way sensitivity and scenario analyses) comparing no vaccination, 1-dose, and 2-dose strategies
- Project disaggregated outcomes stratified by intervention strategy and by age subgroups (5-11y, 12-17y, 18-49y, 50-64y, $\geq 65y$) – supplemental slides
 - Cases
 - Hospitalizations
 - ICU
 - Long COVID
 - Deaths
 - Costs
 - QALYs
 - Adverse events

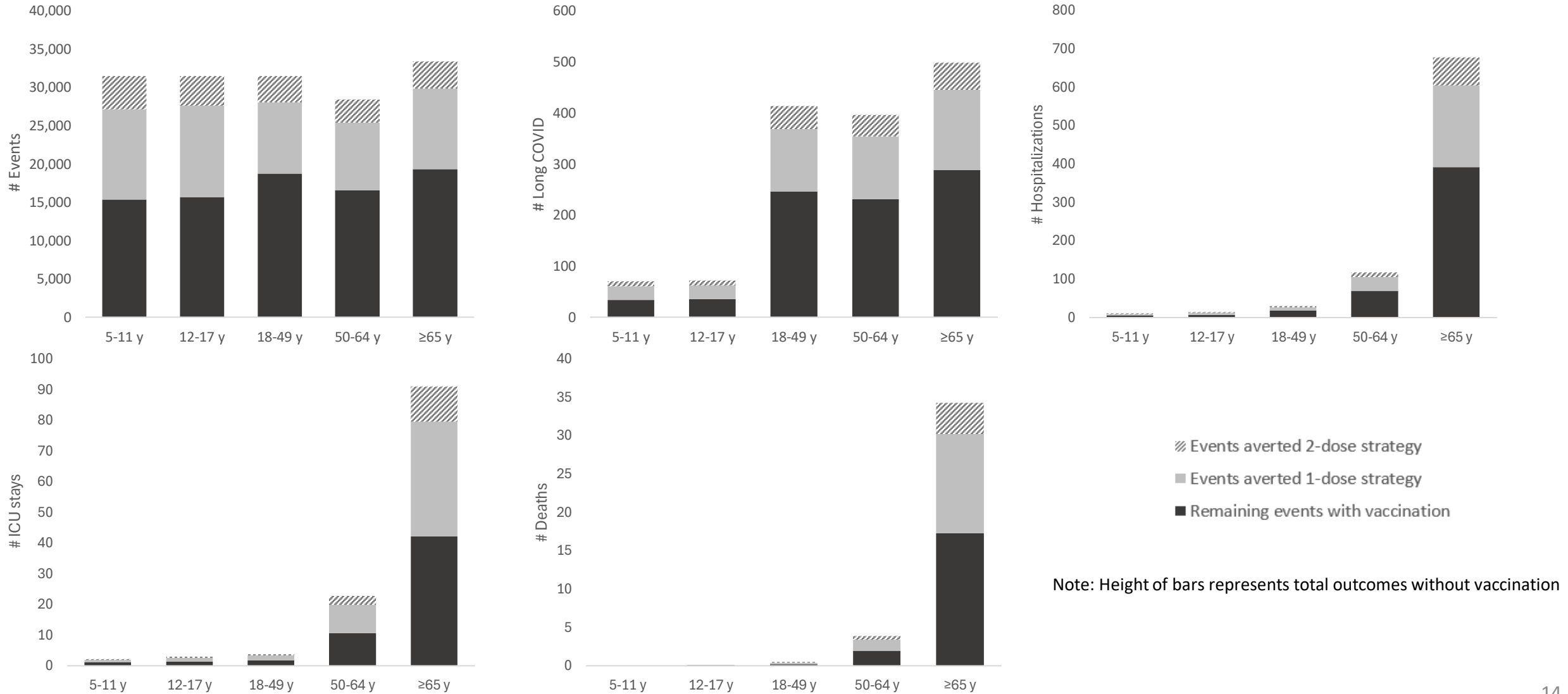
****This presentation reports preliminary results from the fourth phase of an ongoing analysis****

Analysis Plan cont.: Uncertainty analyses

- Multi-way sensitivity analyses/parameter sets
 - Vaccination-related costs
 - Vaccination settings
 - Hospitalization and critical illness
- Scenario analyses
 - Seasonality adjusted vaccine impact
 - Alternative seasonality scenarios
 - Probability of hospitalization- proxy for lower and higher risk cohorts
 - Probability of critical care- proxy for higher risk cohorts
 - Probability of symptomatic illness
 - Vaccine dose cost
- One-way sensitivity analyses

Results

Disaggregated results, per 100,000, societal perspective, 2024-2025 vaccination, *preliminary results*



Disaggregated results, per 100,000, societal perspective, 2024-2025 vaccination, *preliminary results*

| Age | Intervention strategy | Outcomes | | | | | Outcomes Averted | | | | |
|---------|-----------------------|----------|------------|-------|------|--------|------------------|------------|-------|------|--------|
| | | Cases | Long COVID | Hosp. | ICU | Deaths | Cases | Long COVID | Hosp. | ICU | Deaths |
| 5-11 y | No vaccination | 31,450 | 70.6 | 10.5 | 2.2 | 0.1 | - | - | - | - | - |
| | Vaccination, 1-dose | 19,656 | 44.1 | 6.6 | 1.3 | 0.1 | 11,794 | 26.5 | 3.9 | 0.8 | 0.0 |
| | Vaccination, 2-dose | 15,348 | 34.4 | 5.1 | 1.1 | 0.0 | 4,309 | 9.7 | 1.4 | 0.3 | 0.0 |
| 12-17 y | No vaccination | 31,450 | 71.5 | 13.9 | 2.9 | 0.1 | - | - | - | - | - |
| | Vaccination, 1-dose | 19,530 | 44.4 | 8.6 | 1.8 | 0.1 | 11,919 | 27.1 | 5.3 | 1.1 | 0.0 |
| | Vaccination, 2-dose | 15,694 | 35.7 | 6.9 | 1.4 | 0.1 | 3,837 | 8.7 | 1.7 | 0.4 | 0.0 |
| 18-49 y | No vaccination | 31,450 | 413.0 | 29.9 | 3.9 | 0.4 | - | - | - | - | - |
| | Vaccination, 1-dose | 22,172 | 299.1 | 21.1 | 2.4 | 0.2 | 9,278 | 121.8 | 8.8 | 1.5 | 0.2 |
| | Vaccination, 2-dose | 18,744 | 246.1 | 17.8 | 1.8 | 0.2 | 3,428 | 45.0 | 3.3 | 0.5 | 0.1 |
| 50-64 y | No vaccination | 28,410 | 395.4 | 118.0 | 22.8 | 3.8 | - | - | - | - | - |
| | Vaccination, 1-dose | 19,603 | 272.8 | 81.4 | 13.6 | 2.3 | 8,807 | 122.6 | 36.6 | 9.2 | 1.5 |
| | Vaccination, 2-dose | 16,591 | 230.9 | 68.9 | 10.6 | 1.9 | 3,011 | 41.9 | 12.5 | 3.0 | 0.5 |
| ≥65 y | No vaccination | 33,390 | 498.2 | 678.0 | 90.9 | 34.4 | - | - | - | - | - |
| | Vaccination, 1-dose | 22,872 | 341.3 | 464.4 | 53.6 | 21.4 | 10,518 | 156.9 | 213.6 | 37.3 | 12.9 |
| | Vaccination, 2-dose | 19,299 | 288.0 | 391.9 | 42.2 | 17.3 | 3,573 | 53.3 | 72.6 | 11.5 | 4.1 |

Incremental cost-effectiveness ratios (ICERs), per 1000, societal perspective, 2024-2025 vaccination, *preliminary results*

| Age group | Intervention strategy | Projected costs | Incremental costs | Projected QALYs | Incremental QALYs | ICER (\$/QALY) |
|-----------|-----------------------|-----------------|-------------------|-----------------|-------------------|----------------|
| 5-11 y | No vaccination | \$39,723 | - | 26,788 | - | - |
| | Vaccination, 1-dose | \$191,776 | \$152,053 | 26,789 | 0.6566 | \$231,570 |
| | Vaccination, 2-dose | \$353,283 | \$161,507 | 26,789 | 0.2129 | \$758,268 |
| 12-17 y | No vaccination | \$46,010 | - | 24,638 | - | - |
| | Vaccination, 1-dose | \$214,115 | \$168,105 | 24,639 | 0.6733 | \$249,670 |
| | Vaccination, 2-dose | \$394,045 | \$179,930 | 24,639 | 0.1942 | \$926,390 |
| 18-49 y | No vaccination | \$128,351 | - | 20,208 | - | - |
| | Vaccination, 1-dose | \$289,206 | \$160,855 | 20,209 | 0.4802 | \$335,010 |
| | Vaccination, 2-dose | \$474,497 | \$185,290 | 20,209 | 0.1633 | \$1,134,840 |
| 50-64 y | No vaccination | \$218,703 | - | 12,278 | - | - |
| | Vaccination, 1-dose | \$347,499 | \$128,796 | 12,279 | 0.6197 | \$207,834 |
| | Vaccination, 2-dose | \$523,448 | \$175,949 | 12,279 | 0.1957 | \$898,653 |
| ≥65 y | No vaccination | \$336,230 | - | 6,525 | - | - |
| | Vaccination, 1-dose | \$419,404 | \$83,174 | 6,527 | 1.4132 | \$58,855 |
| | Vaccination, 2-dose | \$577,132 | \$157,729 | 6,528 | 0.4424 | \$356,534 |

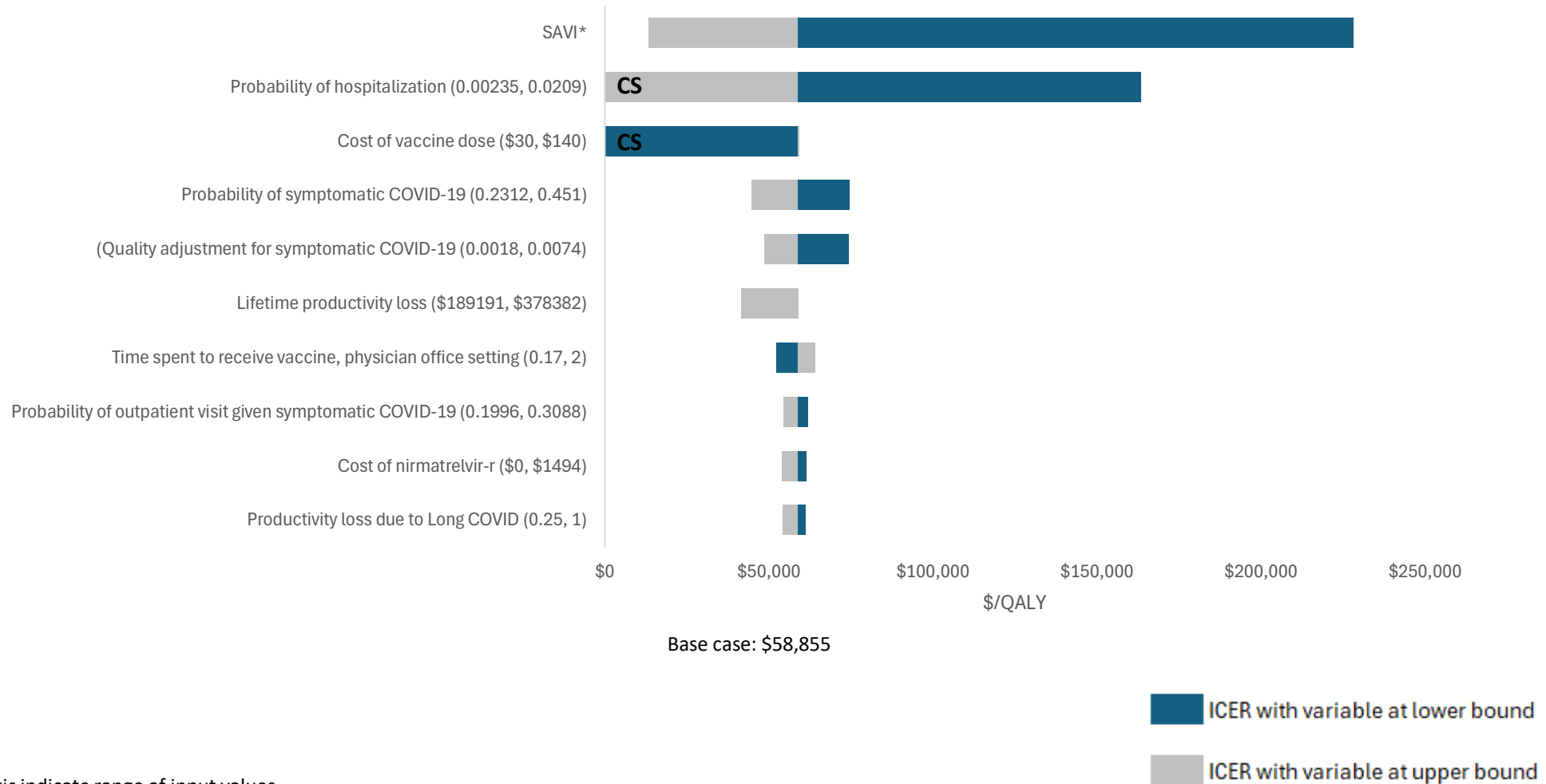
ICER = incremental cost effectiveness ratio; QALY = quality-adjusted life year

Incremental cost-effectiveness ratios (ICERs), adding a 2-dose strategy, societal perspective, 2024-2025 vaccination, *preliminary results*

| Age group | Intervention strategy | ICER (\$/QALY) |
|-----------|-----------------------|----------------|
| 5-11 y | No vaccination | - |
| | Vaccination, 1-dose | \$231,570 |
| | Vaccination, 2-dose | \$758,268 |
| 12-17 y | No vaccination | - |
| | Vaccination, 1-dose | \$249,670 |
| | Vaccination, 2-dose | \$926,390 |
| 18-49 y | No vaccination | - |
| | Vaccination, 1-dose | \$335,010 |
| | Vaccination, 2-dose | \$1,134,840 |
| 50-64y | No vaccination | - |
| | Vaccination, 1-dose | \$207,834 |
| | Vaccination, 2-dose | \$898,653 |
| ≥65 y | No vaccination | - |
| | Vaccination, 1-dose | \$58,855 |
| | Vaccination, 2-dose | \$356,534 |

QALY = quality-adjusted life year

1-way sensitivity analyses, 1-dose strategy, ≥ 65 y

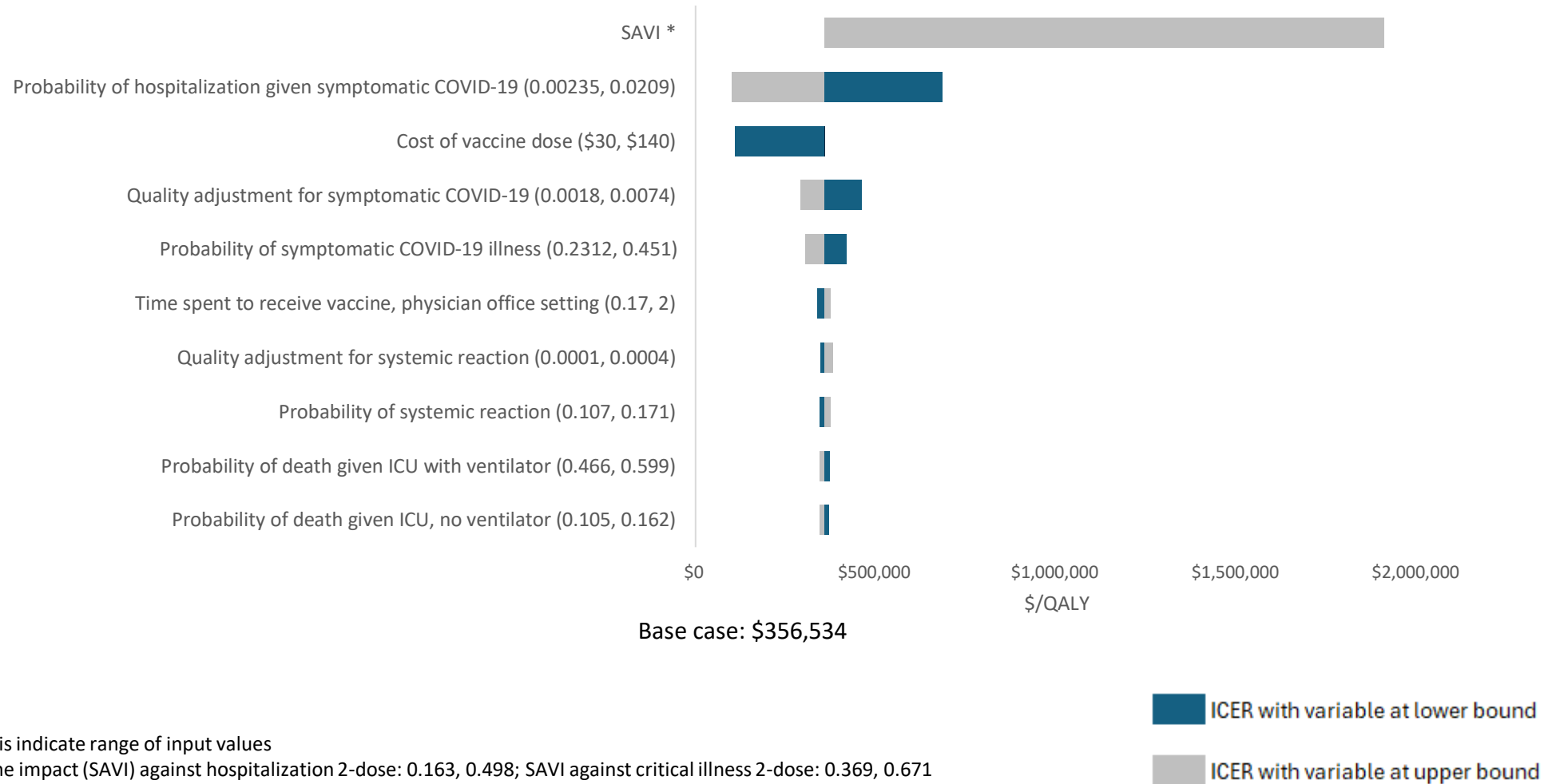


Note: Numbers in parenthesis indicate range of input values

* Seasonality adjusted vaccine impact (SAVI) against hospitalization 1-dose: 0.121, 0.455; SAVI against critical illness 1-dose: 0.238, 0.665

QALY = quality-adjusted life year; ICER = incremental cost effectiveness ratio; SAVI = seasonality-adjusted vaccine impact; CS = cost-saving

1-way sensitivity analyses, 2-dose strategy, ≥ 65 y



Note: Numbers in parenthesis indicate range of input values

* Seasonality adjusted vaccine impact (SAVI) against hospitalization 2-dose: 0.163, 0.498; SAVI against critical illness 2-dose: 0.369, 0.671

QALY = quality-adjusted life year; ICER = incremental cost effectiveness ratio; SAVI = seasonality-adjusted vaccine impact

ICERs, 1-way sensitivity analysis, probability of hospitalization, societal perspective, 2024-2025 vaccination, *preliminary results*

| Age group | Intervention strategy | ICER (\$/QALY) | | |
|-----------|-----------------------|----------------|-------------|-------------|
| | | Base case | Lower bound | Upper bound |
| 5-11 y | Vaccination, 1-dose | \$231,570 | \$237,799 | \$216,062 |
| | Vaccination, 2-dose | \$758,268 | \$773,808 | \$719,816 |
| 12-17 y | Vaccination, 1-dose | \$249,670 | \$256,907 | \$230,464 |
| | Vaccination, 2-dose | \$926,390 | \$944,391 | \$878,879 |
| 18-49 y | Vaccination, 1-dose | \$335,010 | \$363,084 | \$183,058 |
| | Vaccination, 2-dose | \$1,134,840 | \$1,207,451 | \$746,171 |
| 50-64 y | Vaccination, 1-dose | \$207,834 | \$309,213 | \$29,782 |
| | Vaccination, 2-dose | \$898,653 | \$1,208,636 | \$373,246 |
| ≥65 y | Vaccination, 1-dose | \$58,855 | \$163,421 | Cost saving |
| | Vaccination, 2-dose | \$356,534 | \$682,429 | \$99,455 |

*Probability of hospitalization inputs, base case (range): 5-11 y: 0.000105 (0.0000168 - 0.000336); 12- 17 y: 0.000139 (0.0000252 - 0.000456); 18-49 y: 0.000299 (0.0000799 - 0.00204); 50-64 y: 0.00118 (0.000348 - 0.00479); ≥65 y 0.00678 (0.00235 - 0.02090)

ICER = incremental cost-effectiveness ratio; QALY = quality-adjusted life year

ICER, scenario analysis varying probability of hospitalization, societal perspective, 2024-2025 vaccination, *preliminary results*

| Age group | Intervention strategy | ICER (\$/QALY) | | | | | |
|-----------|-----------------------|----------------|-------------|-------------|--------------|--------------|--------------|
| | | ¼ base case | ½ base case | Base case | 2x base case | 3x base case | 4x base case |
| 5-11 y | Vaccination, 1-dose | \$237,123 | \$235,256 | \$231,570 | \$224,381 | \$217,426 | \$210,693 |
| | Vaccination, 2-dose | \$772,119 | \$767,458 | \$758,268 | \$740,400 | \$723,184 | \$706,585 |
| 12-17 y | Vaccination, 1-dose | \$256,292 | \$254,067 | \$249,670 | \$241,081 | \$232,755 | \$224,680 |
| | Vaccination, 2-dose | \$942,860 | \$937,321 | \$926,390 | \$905,095 | \$884,525 | \$864,645 |
| 18-49 y | Vaccination, 1-dose | \$363,779 | \$353,853 | \$335,010 | \$300,917 | \$270,898 | \$244,263 |
| | Vaccination, 2-dose | \$1,209,252 | \$1,183,547 | \$1,134,840 | \$1,046,999 | \$969,960 | \$901,847 |
| 50-64 y | Vaccination, 1-dose | \$317,597 | \$274,393 | \$207,834 | \$121,533 | \$68,015 | \$31,582 |
| | Vaccination, 2-dose | \$1,234,636 | \$1,101,255 | \$898,653 | \$641,036 | \$484,085 | \$378,439 |
| ≥65 y | Vaccination, 1-dose | \$192,897 | \$127,480 | \$58,855 | \$1,483 | Cost saving | Cost saving |
| | Vaccination, 2-dose | \$775,607 | \$569,600 | \$356,534 | \$180,751 | \$103,912 | \$60,824 |

Adjusted risk of hospitalization by underlying condition: hypertension: 2.8, coronary artery disease: 1.3, history of stroke: 0.9, diabetes: 3.2, obesity: 2.9, severe obesity: 4.4, chronic kidney disease: 4.0, asthma: 1.4, chronic obstructive pulmonary disease: 0.9 . Ko et al 2021.

ICER = incremental cost effectiveness ratio; QALY = quality-adjusted life year

ICER, scenario analysis varying probability of hospitalization*, age ≥ 65 , societal perspective, 2024-2025 vaccination, *preliminary results*

| Age group | Intervention strategy | ICER (\$/QALY) | | | | | |
|-------------|-----------------------|----------------------------------|----------------------------------|--------------------------------|------------------------------------|------------------------------------|------------------------------------|
| | | ¼ base case (169 per 100,000) | ½ base case (339 per 100,000) | Base case (678 per 100,000) | 2x base case (1356 per 100,000) | 3x base case (2033 per 100,000) | 4x base case (2711 per 100,000) |
| ≥ 65 y | Vaccination, 1-dose | \$192,897 | \$127,480 | \$58,855 | \$1,483 | Cost saving | Cost saving |
| | Vaccination, 2-dose | \$775,607 | \$569,600 | \$356,534 | \$180,751 | \$103,912 | \$60,824 |

*Adjusted risk of hospitalization by underlying condition: chronic obstructive pulmonary disease: 0.9, history of stroke: 0.9, coronary artery disease: 1.3, asthma: 1.4, hypertension: 2.8, obesity: 2.9, diabetes: 3.2, chronic kidney disease: 4.0, severe obesity: 4.4. Ko et al 2021.

ICER = incremental cost-effectiveness ratio; QALY = quality-adjusted life year

ICER, scenario analysis varying probability of critical care, societal perspective, 2024-2025 vaccination, *preliminary results*

| Age group | Intervention strategy | ICER (\$/QALY) | | | |
|-----------|-----------------------|----------------|-------------|-------------|-----------|
| | | Base case* | 2x | 3x | 4x |
| 5-11 y | Vaccination, 1-dose | \$231,570 | \$226,638 | \$221,839 | \$217,169 |
| | Vaccination, 2-dose | \$758,268 | \$744,568 | \$731,285 | \$718,401 |
| 12-17 y | Vaccination, 1-dose | \$249,670 | \$245,073 | \$240,586 | \$236,205 |
| | Vaccination, 2-dose | \$926,390 | \$912,162 | \$898,312 | \$884,826 |
| 18-49 y | Vaccination, 1-dose | \$335,010 | \$310,742 | \$288,947 | \$269,266 |
| | Vaccination, 2-dose | \$1,134,840 | \$1,066,161 | \$1,004,627 | \$949,177 |
| 50-64 y | Vaccination, 1-dose | \$207,834 | \$146,192 | \$105,154 | \$75,870 |
| | Vaccination, 2-dose | \$898,653 | \$692,143 | \$556,444 | \$460,466 |
| ≥65 y | Vaccination, 1-dose | \$58,855 | \$28,898 | \$12,731 | \$2,614 |
| | Vaccination, 2-dose | \$356,534 | \$239,110 | \$175,202 | \$135,015 |

*Base case probability of ICU given hospitalization: 5-11 y- 0.205; 12-17 y- 0.208; 18-49 y- 0.130; 50-64 y- 0.193, ≥65 y- 0.134

Adjusted risk ratios for ICU: 1 condition: 1.32, 2-5 conditions: 1.60, 6-10 conditions: 1.84, >10 conditions: 1.96. Underlying conditions: Essential hypertension, Disorders of lipid metabolism, Obesity, Diabetes with complication, Coronary atherosclerosis and other heart disease, Esophageal disorders, Chronic kidney disease, Anxiety and fear-related disorders, COPD and bronchiectasis, Thyroid disorders, Depressive disorders, Implant device or graft-related encounter, Sleep-wake disorders, Neurocognitive disorders, Osteoarthritis, Aplastic anemia, Diabetes without complication, Asthma. Source: Kompaniyets et al 2021.

ICER = incremental cost effectiveness ratio; QALY = quality-adjusted life year

Scenario analysis: vaccination-related costs, societal perspective, 2024-2025 vaccination, *preliminary results*

| Age group | Intervention strategy | ICER (\$/QALY) | | |
|-----------|-----------------------|----------------|-------------|-------------|
| | | Base case | All lower | All upper |
| 5-11 y | Vaccination, 1-dose | \$231,570 | \$103,396 | \$353,999 |
| | Vaccination, 2-dose | \$758,268 | \$363,134 | \$1,135,689 |
| 12-17 y | Vaccination, 1-dose | \$249,670 | \$92,955 | \$325,103 |
| | Vaccination, 2-dose | \$926,390 | \$383,118 | \$1,187,889 |
| 18-49 y | Vaccination, 1-dose | \$335,010 | \$71,945 | \$382,665 |
| | Vaccination, 2-dose | \$1,134,840 | \$361,230 | \$1,274,981 |
| 50-64 y | Vaccination, 1-dose | \$207,834 | \$4,019 | \$244,737 |
| | Vaccination, 2-dose | \$898,653 | \$253,551 | \$1,015,457 |
| ≥65 y | Vaccination, 1-dose | \$58,855 | Cost saving | \$75,585 |
| | Vaccination, 2-dose | \$356,534 | \$70,458 | \$409,976 |

ICER = incremental cost effectiveness ratio; QALY = quality-adjusted life year

ICER, scenario analyses varying vaccination costs, age ≥ 65 , societal perspective, 2024-2025 vaccination, *preliminary results*

Varying all vaccination-related costs*

| Age group | Intervention strategy | ICER (\$/QALY) | | |
|-------------|-----------------------|----------------|-----------|-----------|
| | | All lower | Base case | All upper |
| ≥ 65 y | Vaccination, 1-dose | Cost saving | \$58,855 | \$75,585 |
| | Vaccination, 2-dose | \$70,458 | \$356,534 | \$409,976 |

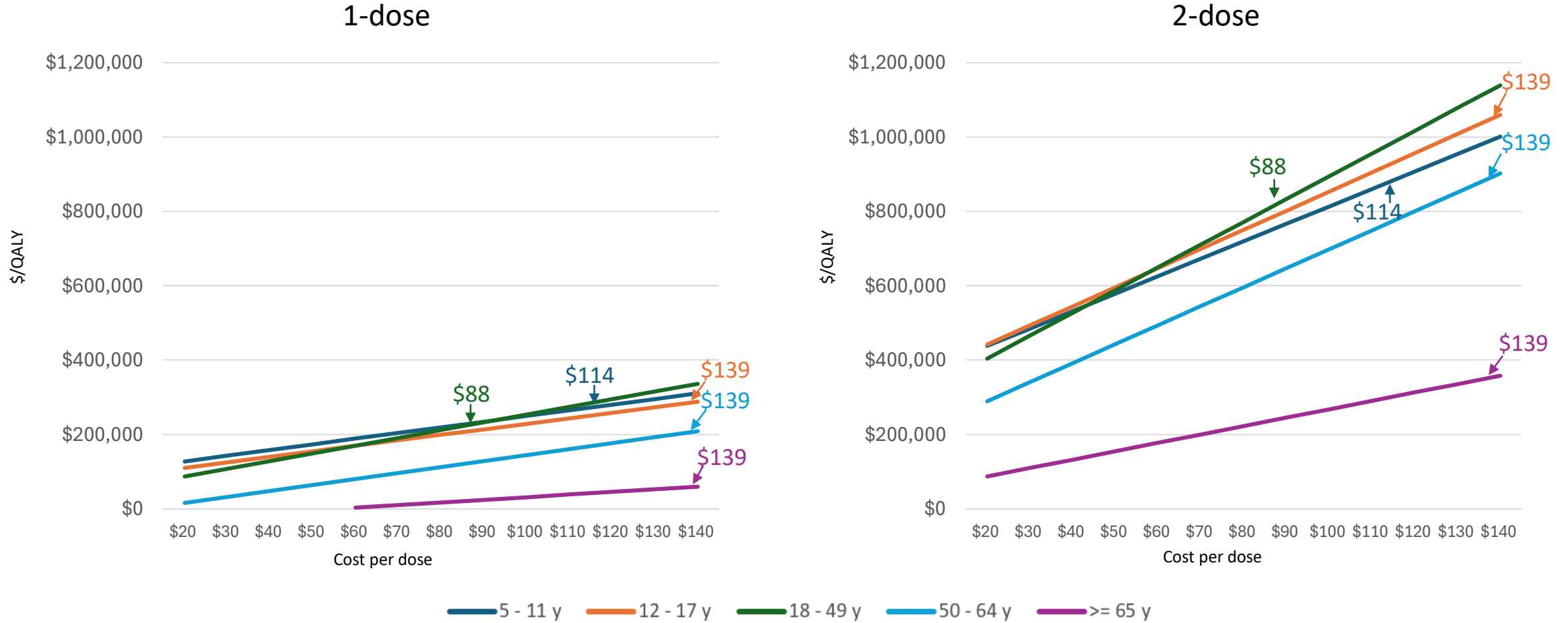
*Multi-way sensitivity analysis varying vaccine dose cost, vaccine administration cost, time costs of vaccination, and cost of vaccine-associated adverse events to lower and upper bounds. See supplementary slide 44 for input data.

Varying vaccine dose cost only

| Age group | Intervention strategy | ICER (\$/QALY) | | | | |
|-------------|-----------------------|----------------|-----------|-----------|-----------|-----------------|
| | | \$20 | \$60 | \$80 | \$100 | Base case \$133 |
| ≥ 65 y | Vaccination, 1-dose | Cost saving | \$2,755 | \$16,908 | \$31,060 | \$58,855 |
| | Vaccination, 2-dose | \$86,910 | \$177,327 | \$222,536 | \$267,744 | \$356,534 |

ICER = incremental cost-effectiveness ratio; QALY = quality-adjusted life year

Scenario analysis: vaccine dose cost, 2024-2025 vaccination, *preliminary results*



Note: arrows indicate base case vaccine dose cost by age group
QALY= quality-adjusted life year

Limitations

- Unpublished data used to derive key parameters in the model: vaccine effectiveness, symptomatic illness, probabilities of hospitalization and critical illness
- Data sources vary in representativeness, generalizability
- VE estimates derived from single prior season data
- Few seasons to date to estimate seasonality
- MarketScan data for ages ≥ 65 only includes those with supplemental insurance
- Evidence base for long covid is especially scarce
- Model does not include reduced transmission (conservative approach)

Summary

2024-2025 COVID-19 vaccination, 2-dose strategy

- ICERs for age groups <65 y were less favorable than for those ≥ 65 y across plausible parameter ranges
- For ≥ 65 years, ICERs are sensitive to seasonality-adjusted vaccine impact, probability of hospitalization, and costs of vaccination
- ICERs are more favorable in scenarios with higher risk of hospitalization and lower costs of vaccination