RSV Scenario Modeling Hub Report

Round 1 2025/26 - 2025 to 2026 Season

16 February, 2026, Scenario Modeling Hub Team[1]

Overview

The RSV Scenario Modeling Hub has generated seasonal hospitalization estimates for the 2025-26 season over a 45-week period running from July 27, 2025 to June 6, 2026. Four intervention scenarios were considered, representing high and moderate coverage of infant interventions (maternal vaccines and long-acting monoclonal antibodies), and optimistic vs. pessimistic waning of vaccine protection among individual 50yrs and over. A fifth counterfactual scenario with no intervention was modeled for reference. Ensemble projections are based on contributions from 4 modeling teams using the linear opinion pool aggregation approach. All-age and age-specific estimates of RSV hospitalizations are provided nationally and for the 12 states that contribute to multi-year RSV-NET surveillance.

Our main findings include:

- On a national scale, and compared to the counterfactual, we project that 36% (95% confidence Interval [CI]: 31-41%) of seasonal RSV hospitalizations, or 18,000 (95% CI: 15,000–22,000) hospitalizations, will be averted among infants under 1yr in the scenario with high infant coverage and slow senior waning (scenario A), compared to non-intervention scenario (scenario E). With the same scenario comparison, immunization benefits among seniors over 65yrs amount to 28% (95% CI 19-37%) hospitalizations averted, or 19,000 (95% CI 8,000-29,000) hospitalizations. Further, with the same assumptions, the vaccination program would avert 2,700 (95% CI 1,600-3,800) hospitalizations among high-risk individuals 50-64 yo, who are also targeted for vaccination.
- Estimates of intervention benefits are sensitive to assumptions about vaccine waning and immunization coverage. In optimistic scenarios assuming a slow waning of vaccine protection in the second and third year after vaccine receipt, we project that 11% (95% CI 2-19%) and 4,800 (95% CI: 1,500-8,000) additional hospitalizations will be averted among seniors over 65yrs, compared to pessimistic scenarios modeling fast waning. In scenarios assuming high infant immunization coverage, we project 12% (10-14%) additional hospitalizations averted among infants, or 4,400 (95% CI 3,300-6,000) hospitalizations, compared to moderate coverage scenarios.
- The peak and cumulative hospitalization burden of the 2025-26 RSV season is likely to remain lower than that of last season and this is consistent across all intervention scenarios. On a national scale, RSV activity is most likely to peak from late December to late February, with the earliest peak expected in Southeastern and Midatlantic States (Georgia, Maryland, Tennessee) and the latest peak in Western states (Utah, Colorado, Oregon).

Our main findings include:

- Projections are based on only 4 participating models, which project different RSV seasonality and peak timing.
- Testing practices continue to evolve in the wake of the COVID-19 pandemic (e.g., increased use of multi-pathogen testing), which may affect reported hospitalizations in the RSV-NET system. Testing changes are not fully understood and imperfectly accounted for in the models.
- There is limited availability of calibration data from the RSV-NET hospitalization dataset, which covers only a fraction of 12 states (9% of the US population overall). Future work could focus on expanding these projections to all states as more data become available via the NHSN reporting system.
- Most models assume that RSV interventions do not affect susceptibility to infection or transmission, so that ensemble estimates of indirect benefits are minimal (i.e., mean estimates of hospitalization reduction in non-immunized individuals 1-49 years are within 0-2% depending on age group and scenario considered).

[1]Compiled by Sara Loo, Lucie Contamin, Shaun Truelove, Cécile Viboud.

Round 1 2025/26 Specifications

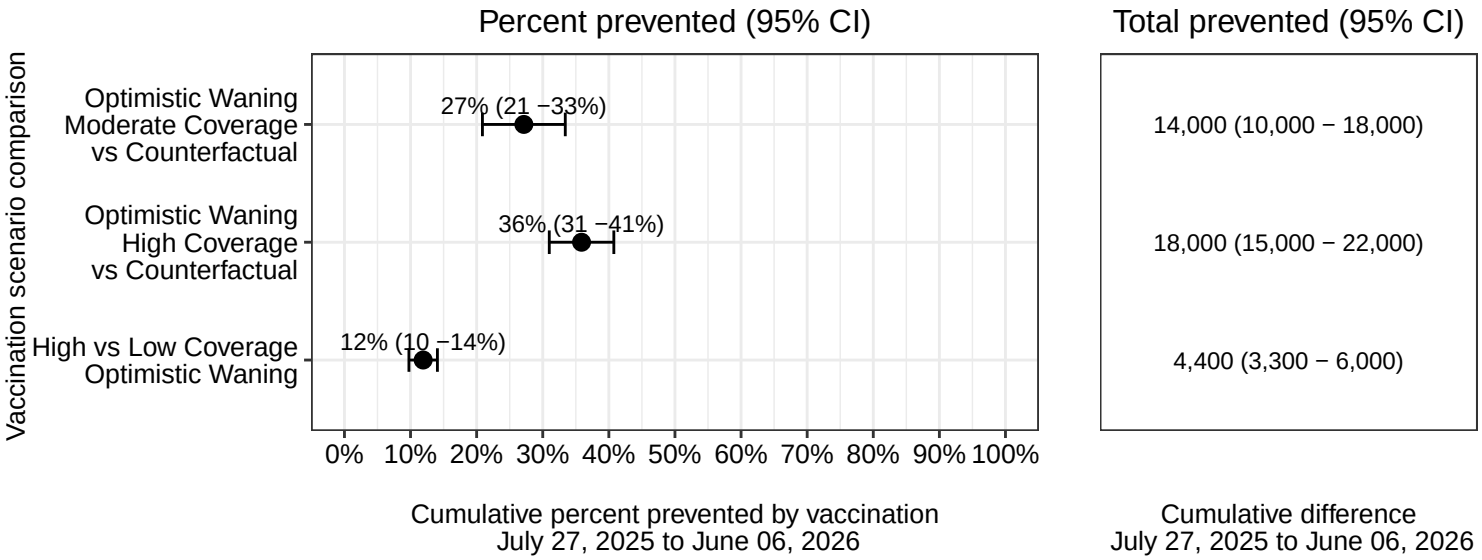
	Optimistic senior waning ● Vaccine is administered to eligible individuals over 50 yrs following provided vaccination curves ● Total coverage, which includes coverage in 2023-24 and 2024-25, saturates at **55%** of the eligible population and varies by state, indexed on historic differences ● VE against hospitalization is **75% at the time of vaccine receipt** and is reduced by 10% each year**, i.e., VE_year2=68%, VE_year3=61%.**	**Pessimistic senior waning** ● Same coverage assumptions as for the optimistic senior waning level ● VE against hospitalization is **75% in the first year** after vaccination and is reduced by 50% each year, **ie, VE_year2=38% and VE_year3=19%.**	**No senior vaccination in 2023-2024, 2024-25, or 2025-26**
High infant immunization coverage ● Long-acting monoclonals (nirsevimab, clesrovimab) target infants ≤ 7 months during RSV season, starting **starts Oct 1 and ending Mar 30** ○ coverage saturates at **70%** nationally ○ Timing of administration differs between catch-up babies born Apr 1-Oct 1, and those born during the RSV campaign Oct 1-Mar 30 ○ VE against hospitalization is **80%** ● Maternal vaccine is given to pregnant mothers 32-36 weeks, starting **Sep 1 and ending Jan 31** ○ Coverage saturates at **20%** of eligible women nationally ○ VE against hospitalization is **75%** ● **Vaccine coverage is state-dependant and state differences are indexed on 2024-25 season**	**Scenario A**	**Scenario B**	
Moderate infant immunization coverage ● Coverage of long-acting monoclonals is the same as last season, 2024-25 (50% eligible babies at saturation) ● Coverage of maternal vaccine is the same as last season (15% eligible babies) ● All other assumptions similar to high infant immunization scenarios	**Scenario C**	**Scenario D**	
Long-acting monoclonals and maternal vaccines are not available. No infant intervention beyond what was used historically, ie, limited supply of palivizumab, targeting ~2% of birth cohort at high risk			**Scenario E (counterfactual)**

National Scenario Comparative Impacts

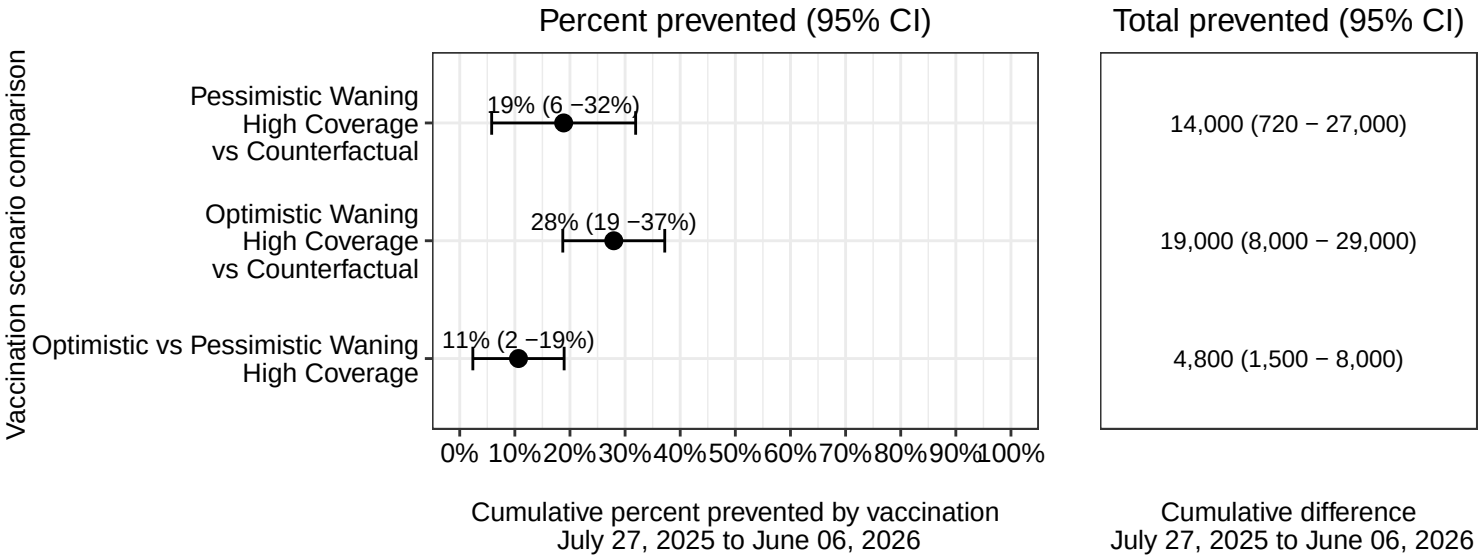
Estimates (cumulative pooled differences) of relative impact and cumulative hospitalizations averted in the US, by targeted immunization age groups (under 1 year olds, and 65+) from July 27, 2025 to June 06, 2026.

Vaccination is expected to prevent a substantial number of hospitalizations. For instance, high vaccination coverage for infant (under 1 year old) would prevent 36% (95% confidence Interval [CI]: 31-41%) infant hospitalizations against a no intervention scenario. A moderate coverage would decrease these benefits to 27% (95% CI: 21-33%). An optimistic waning would result in 28% (95% CI: 19-37%) of hospitalization prevented in senior (65 + years old) against a no intervention scenario. A pessimistic waning would decrease these benefits to 19% (95% CI: 6-32%)

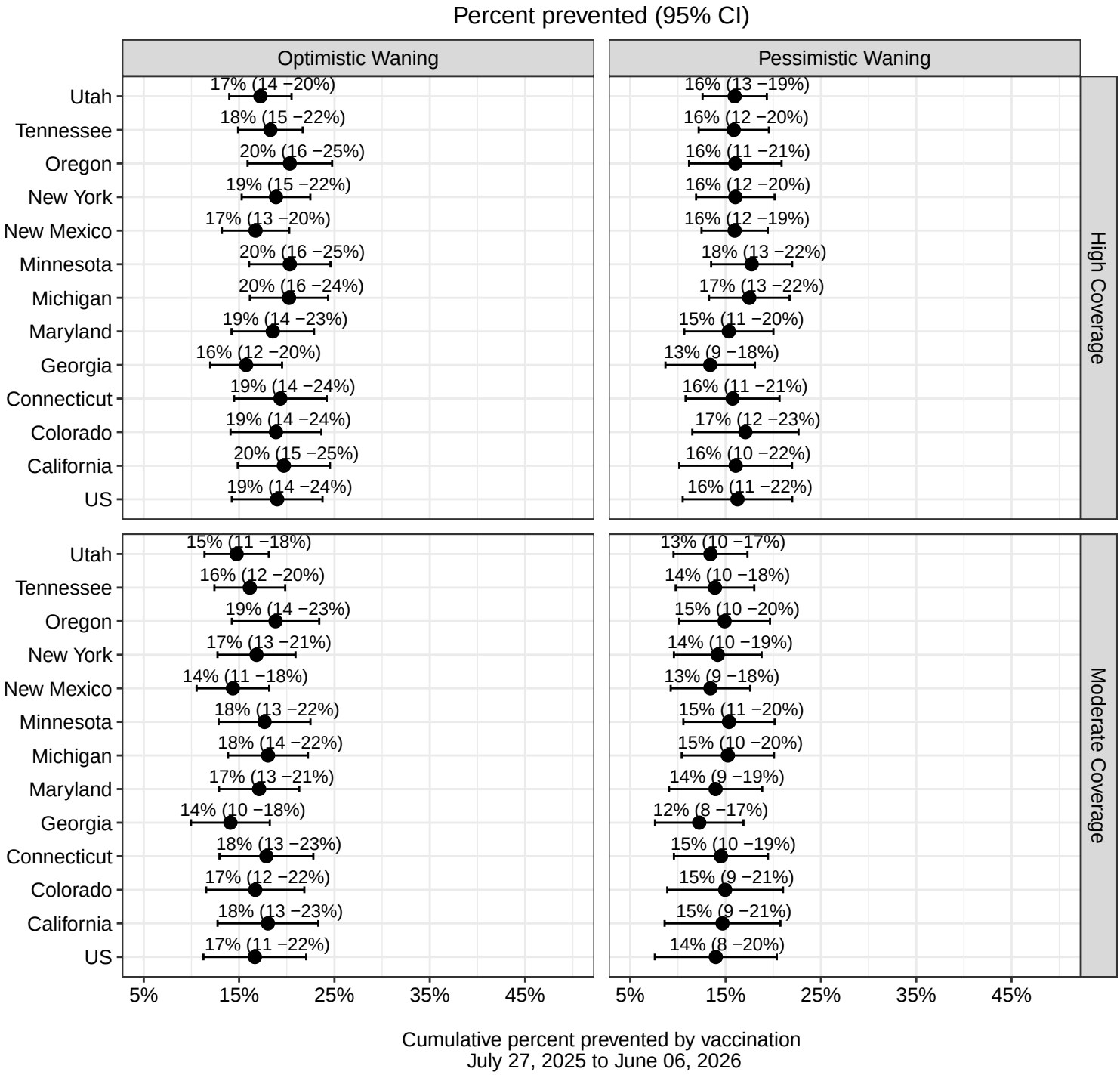
Impacts of RSV Immunization Scenarios, National for Under 1 year old



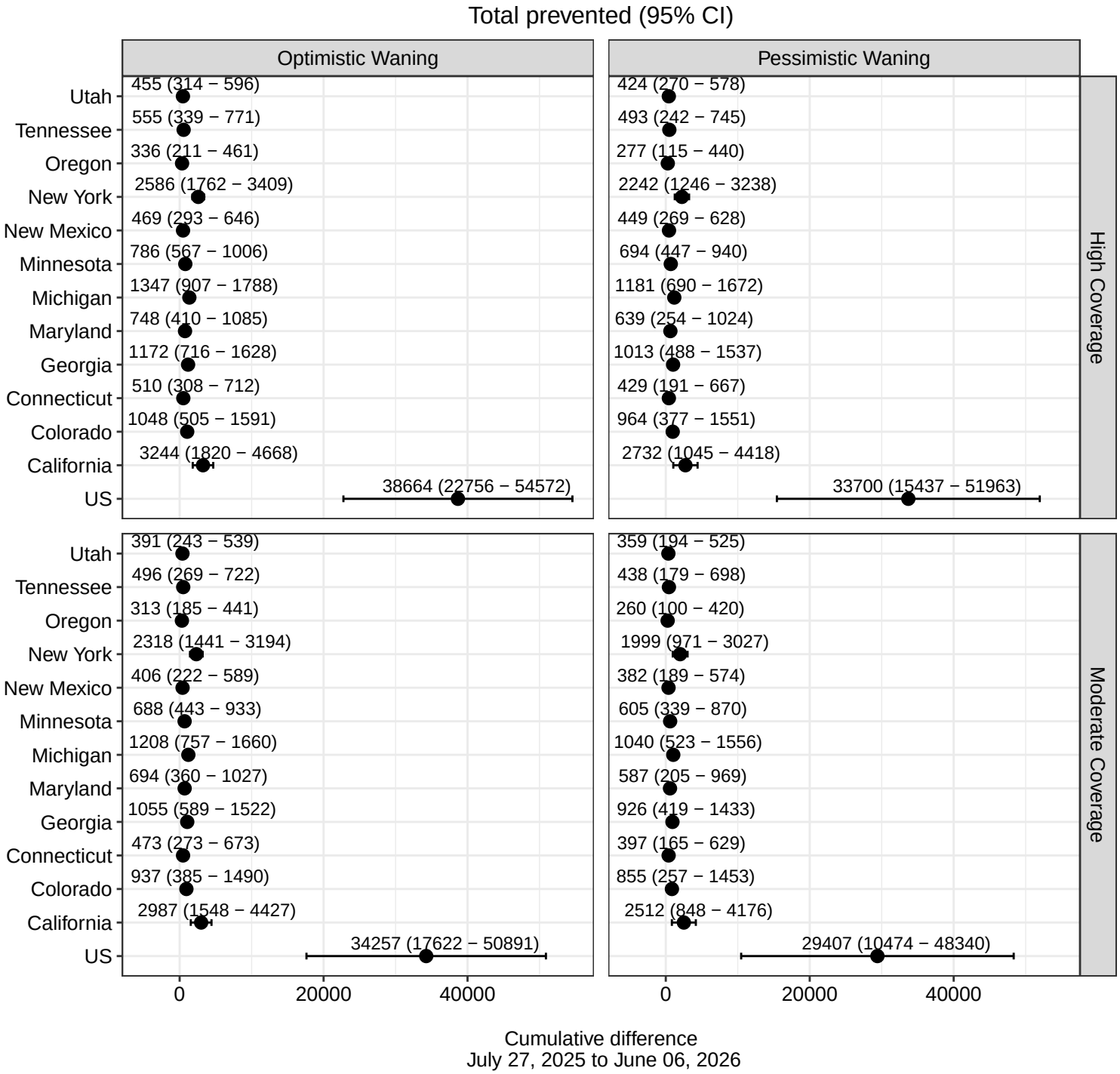
Impacts of RSV Immunization Scenarios, National for 65+



Relative Impact in Hospitalizations compared to No Intervention (Counterfactual), by Jurisdiction



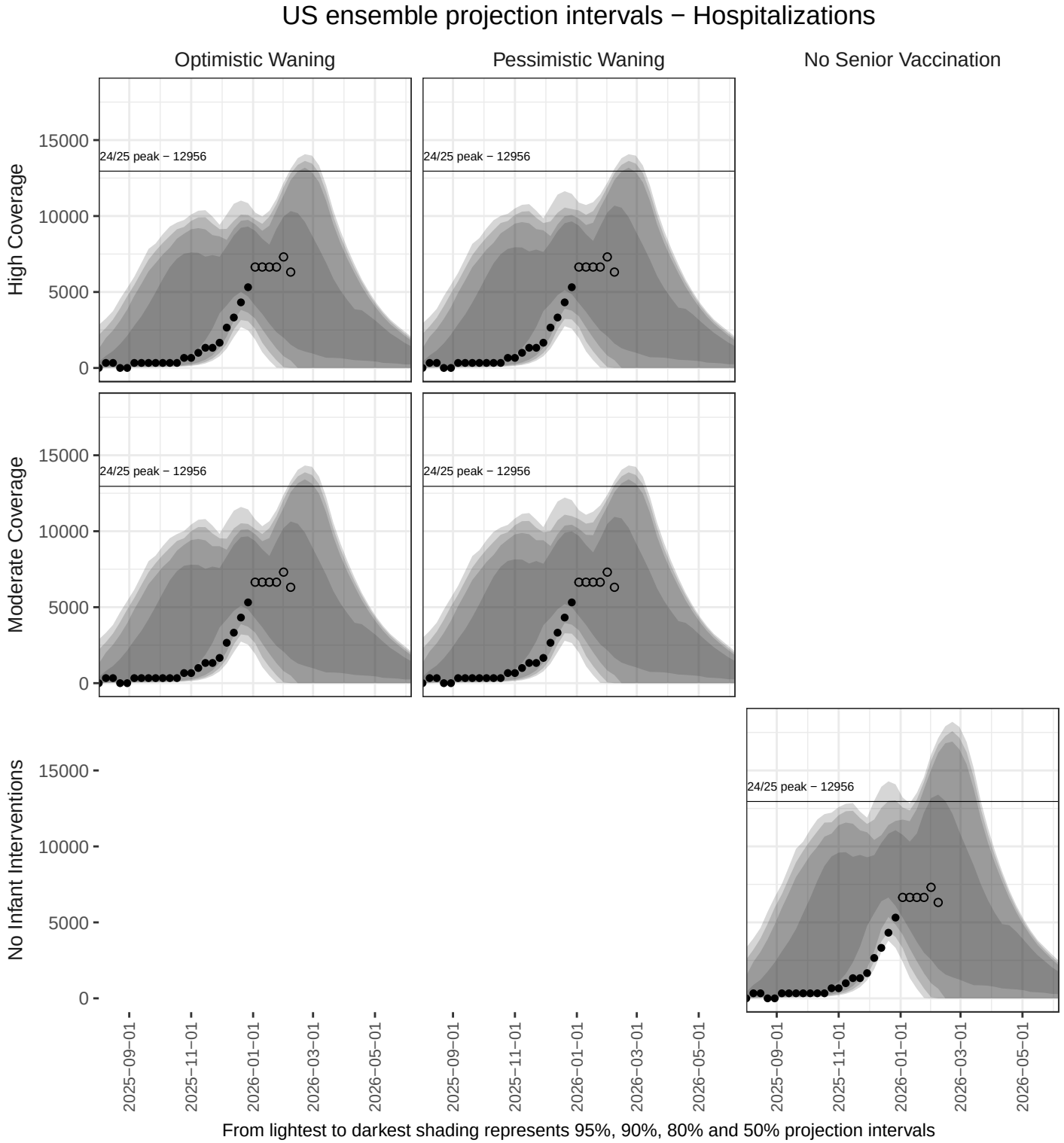
Number of Hospitalizations averted compared to No Intervention (Counterfactual), by Jurisdiction



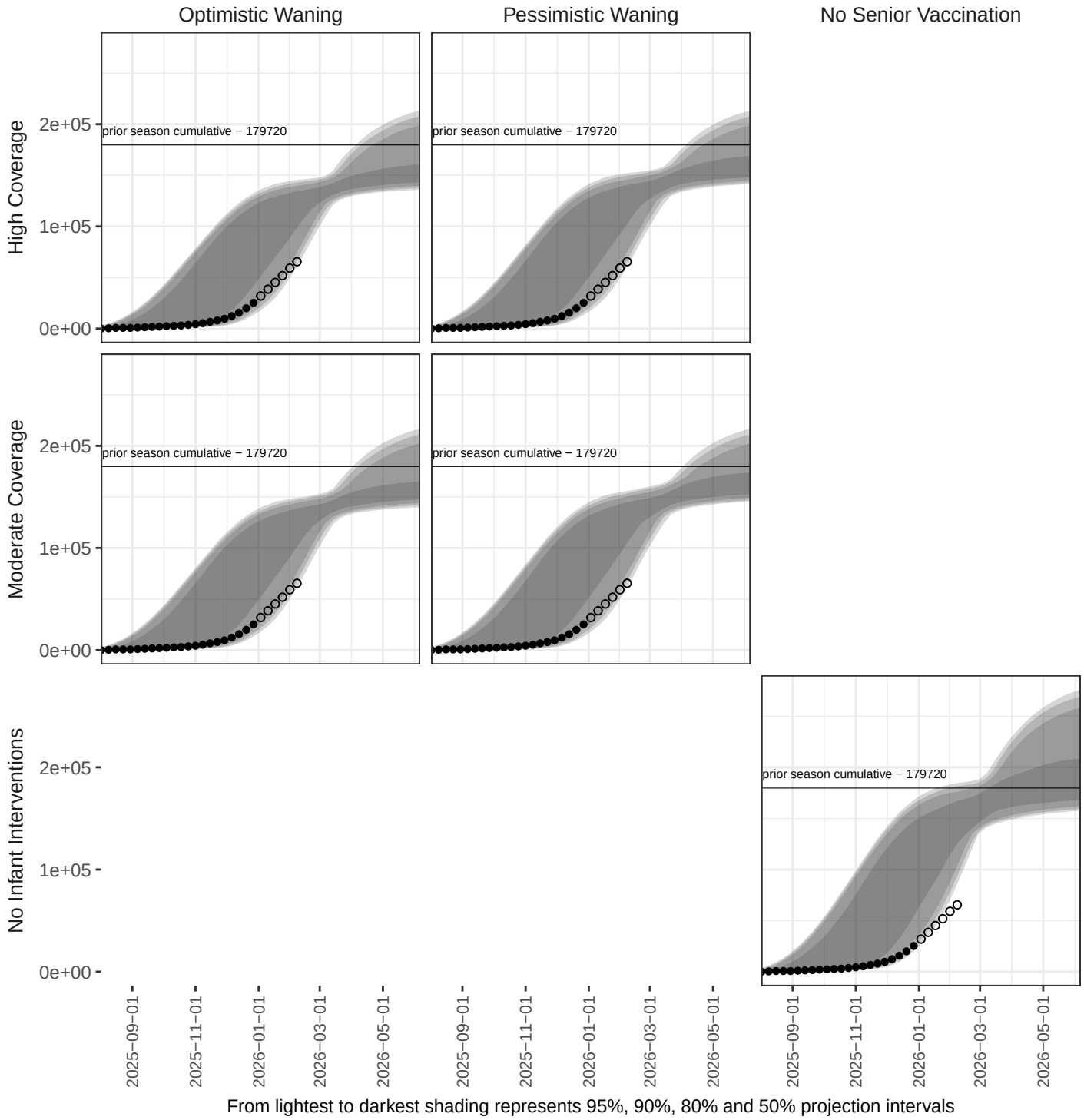
National Ensemble Projections

Weekly Incident hospitalizations in the national ensemble. Horizontal lines are given for prior peak incident hospitalizations, from past 2024-25 season based on RSV-Net data.

Whether high or moderate vaccine coverage in infants and optimistic or pessimistic waning in older adults, incident hospitalizations are likely to remain lower than last year.

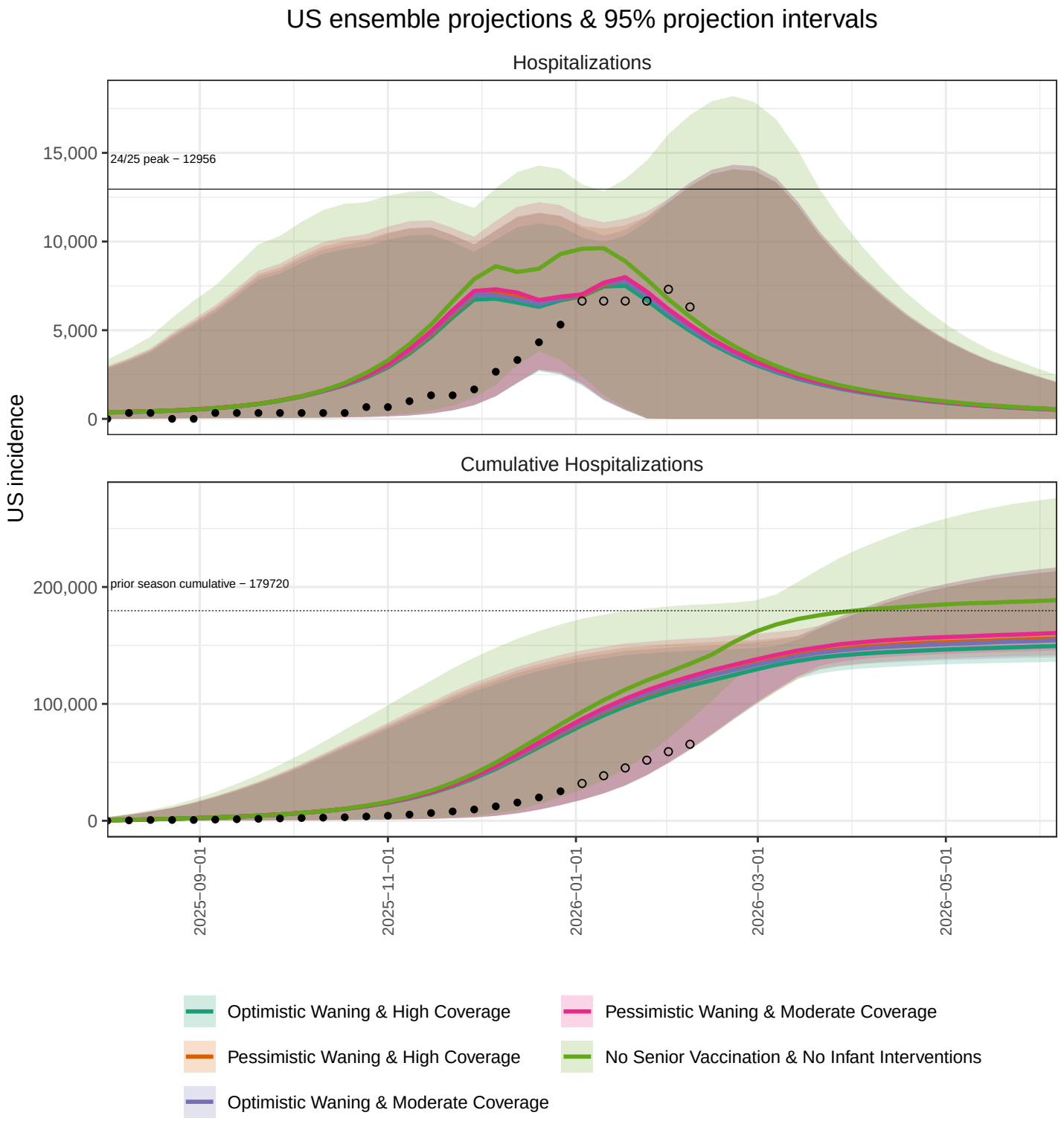


If vaccine coverage is high for infants, and with an optimistic senior waning, cumulative burden for this season is projected to reach 150,000 (95% PI: 136,000-214,000) hospitalizations.


US ensemble projection intervals − Cumulative Hospitalizations
Optimistic Waning
Pessimistic Waning
No Senior Vaccination
High Coverage
Moderate Coverage
No Infant Interventions
prior season cumulative − 179720
2e+05
1e+05
0e+00
2025−09−01
2025−11−01
2026−01−01
2026−03−01
2026−05−01
From lightest to darkest shading represents 95%, 90%, 80% and 50% projection intervals

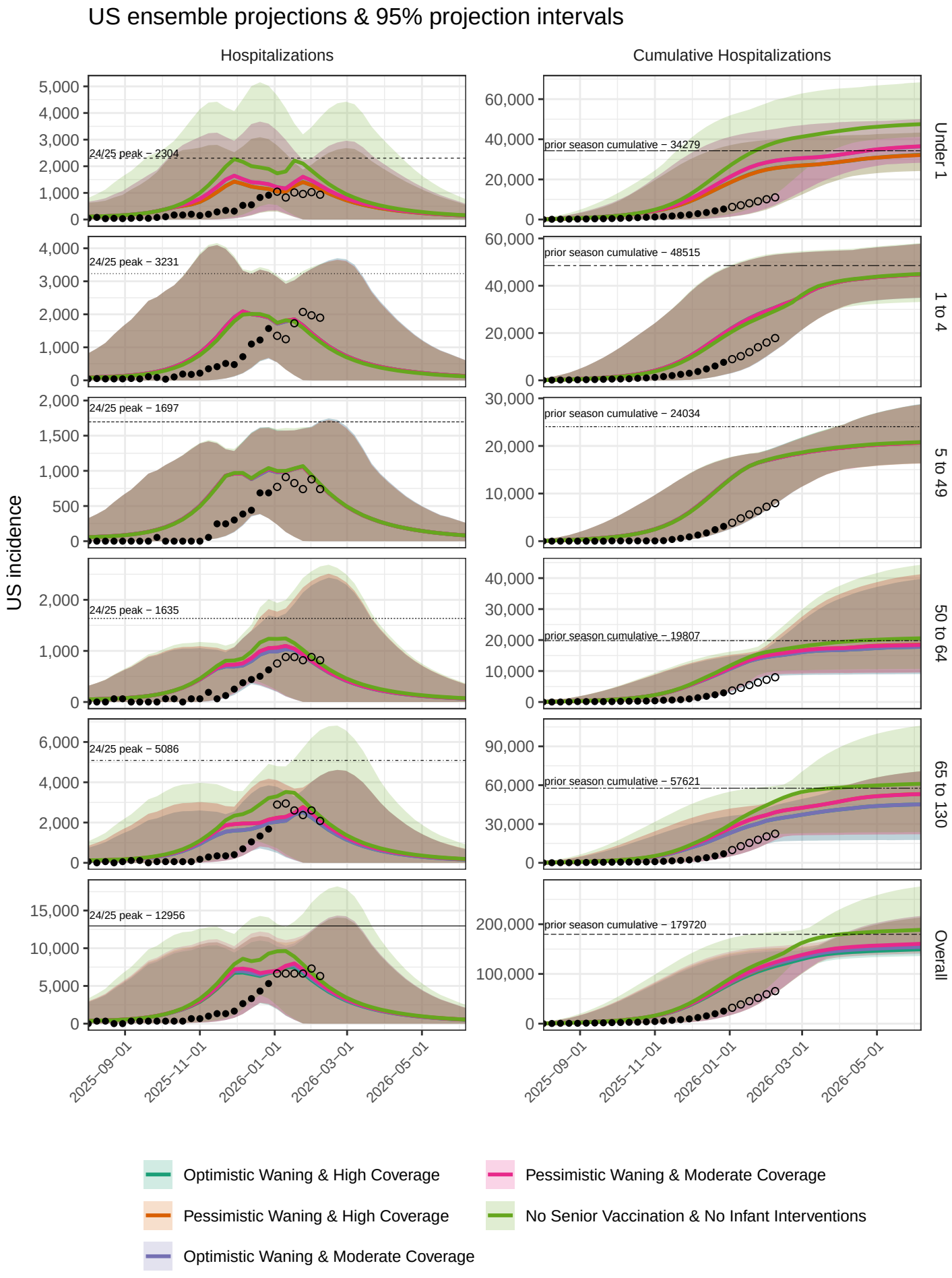
Ensemble Projection Comparisons

Ensemble projections for national incident and cumulative hospitalization separated by scenario



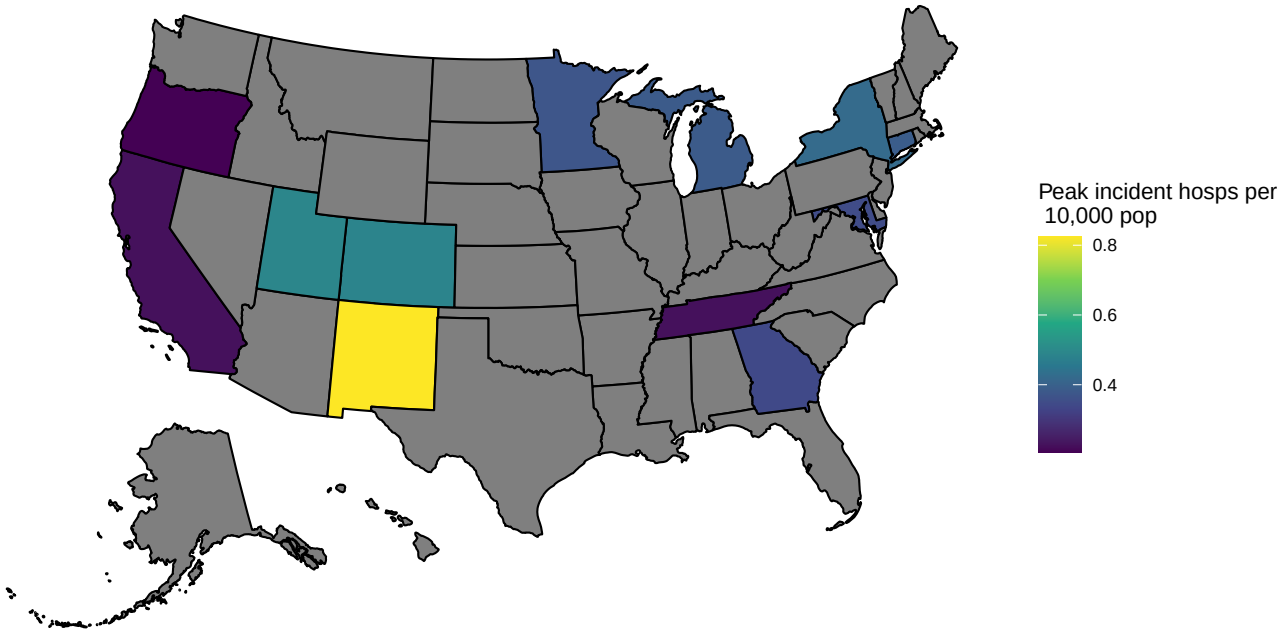
Ensemble Projection Comparisons by Age

Ensemble projections for national incident and cumulative hospitalization separated by scenario and age group

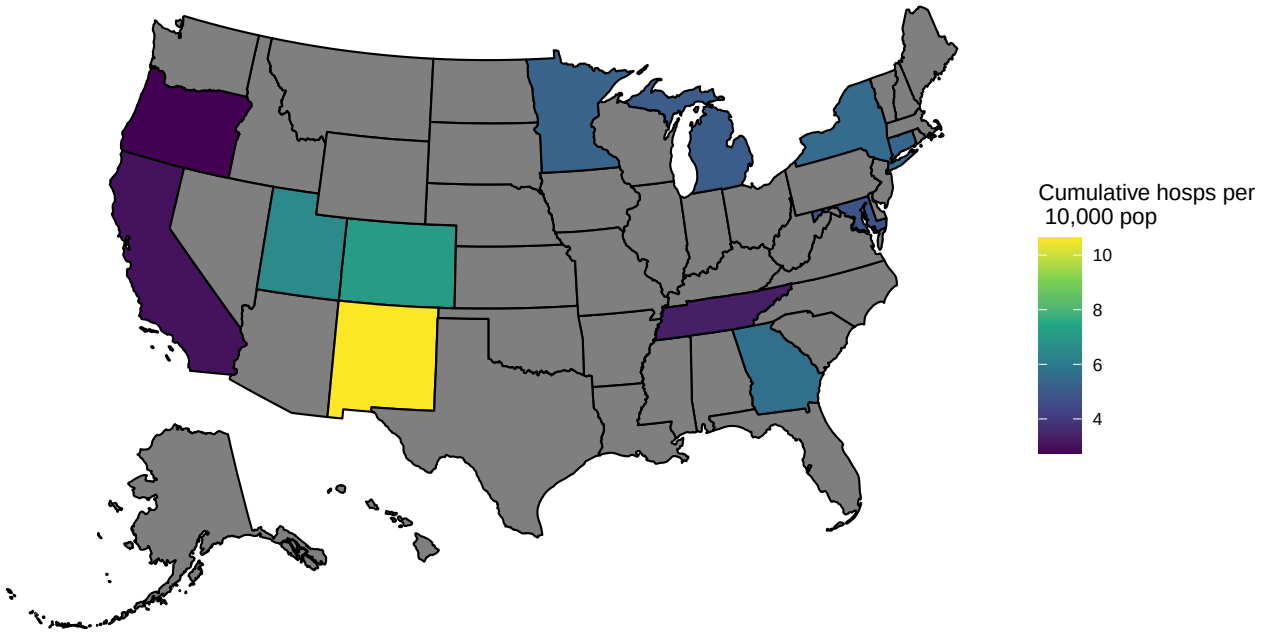

US ensemble projections & 95% projection intervals
Hospitalizations
Cumulative Hospitalizations
US incidence
24/25 peak – 2304
prior season cumulative – 34279
Under 1
24/25 peak – 3231
prior season cumulative – 48515
1 to 4
24/25 peak – 1697
prior season cumulative – 24034
5 to 49
24/25 peak – 1635
prior season cumulative – 19807
50 to 64
24/25 peak – 5086
prior season cumulative – 57621
65 to 130
24/25 peak – 12956
prior season cumulative – 179720
Overall
2025–09–01
2025–11–01
2026–01–01
2026–03–01
2026–05–01
Optimistic Waning & High Coverage
Pessimistic Waning & Moderate Coverage
Pessimistic Waning & High Coverage
No Senior Vaccination & No Infant Interventions
Optimistic Waning & Moderate Coverage

Risk maps

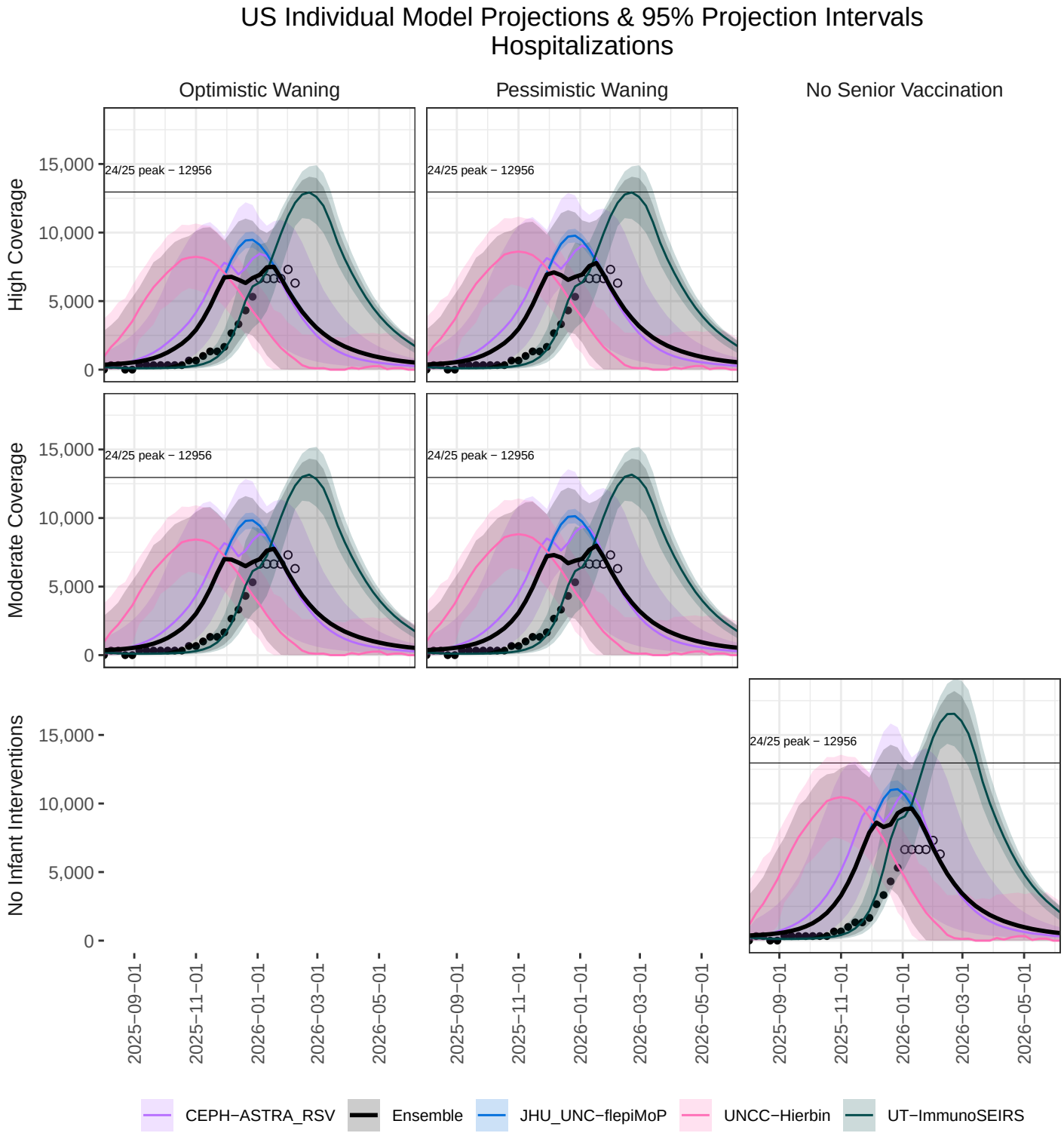
Peak incident reported hospitalizations per 10,000 population in scenario with Optimistic senior (50+) waning and moderate coverage of infant interventions: July 27, 2025 to June 06, 2026

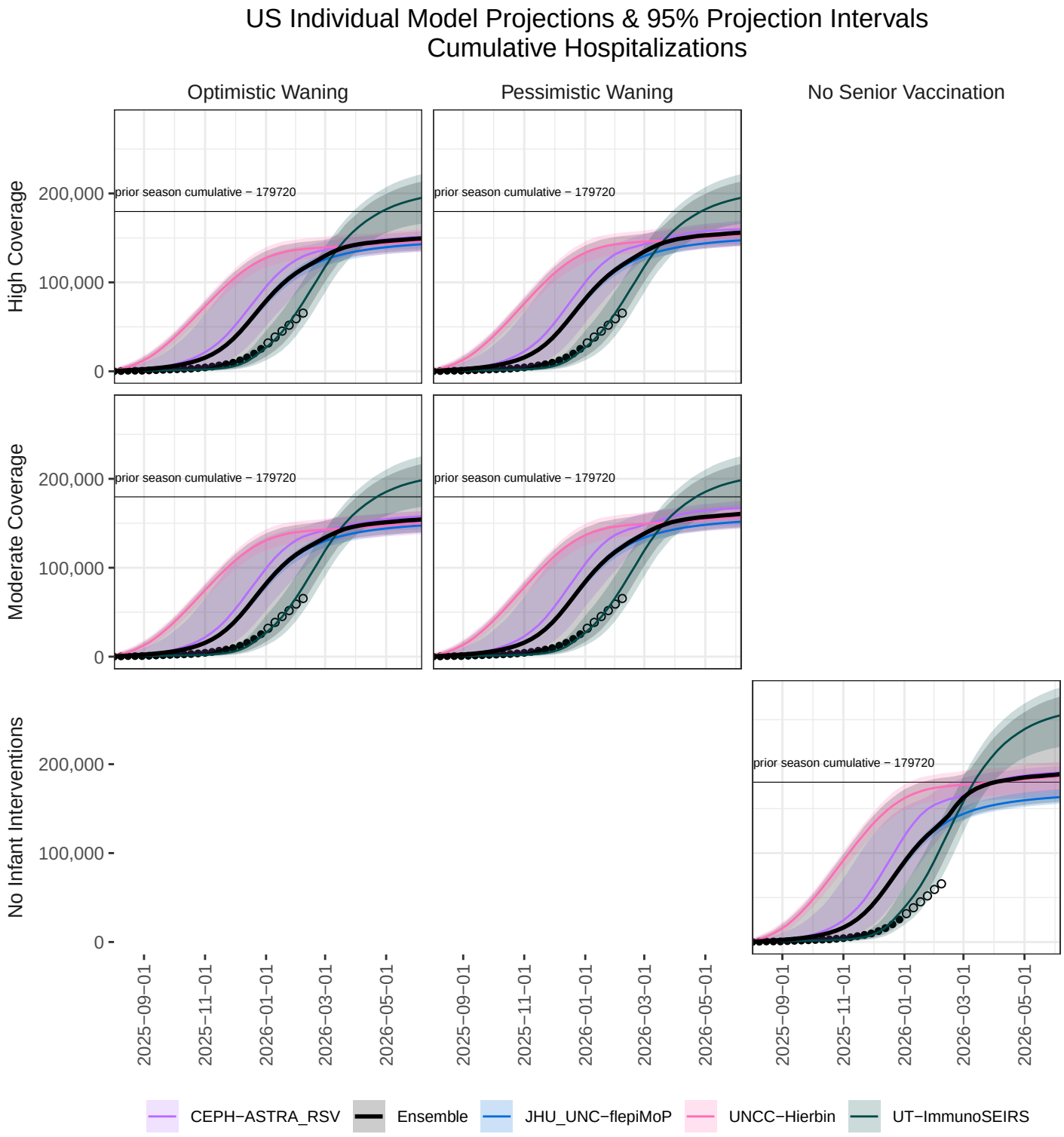


Cumulative reported hospitalizations per 10,000 population in scenario with Optimistic senior (50+) waning and moderate coverage of infant interventions: July 27, 2025 to June 06, 2026



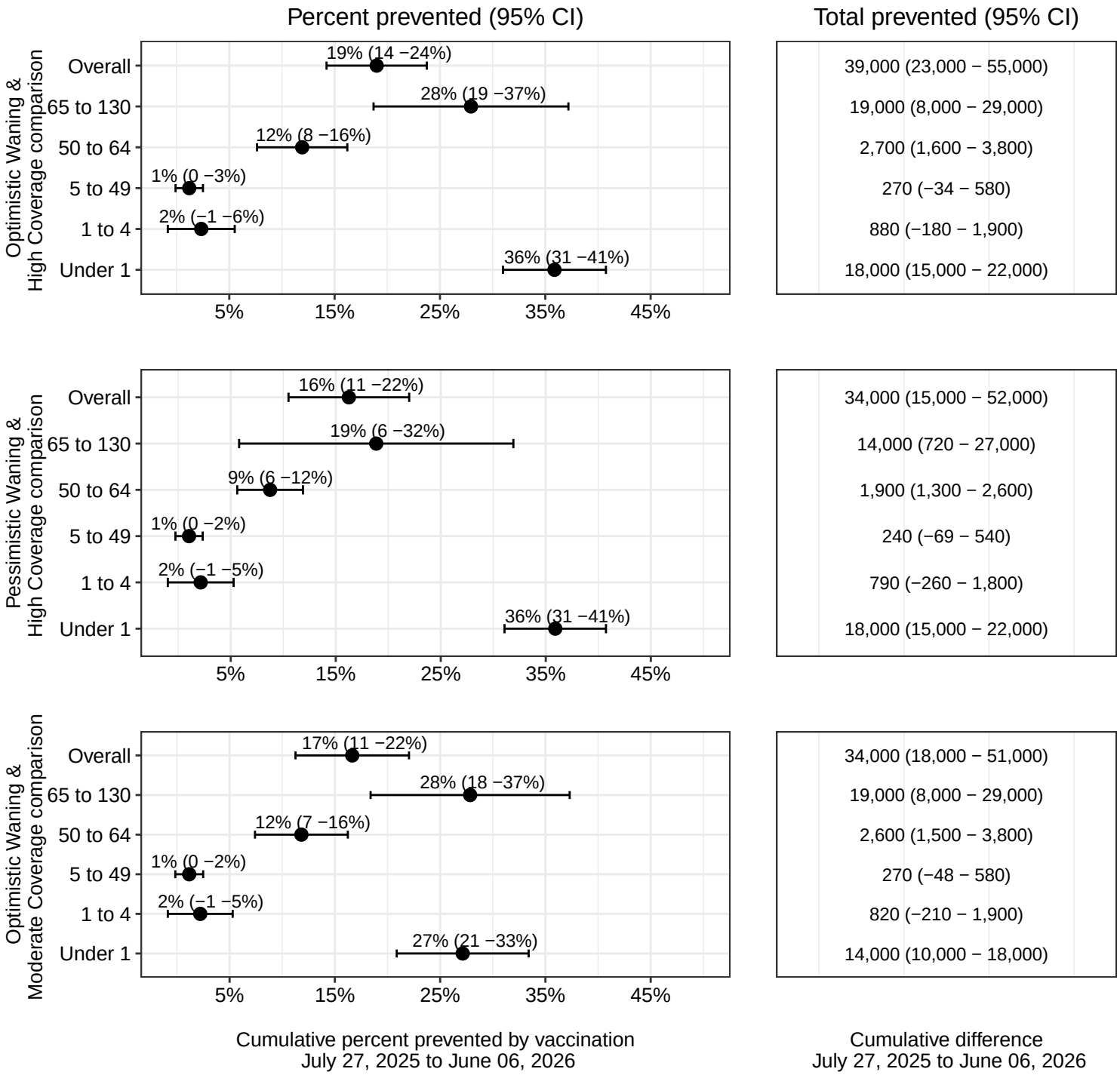
National individual model projections

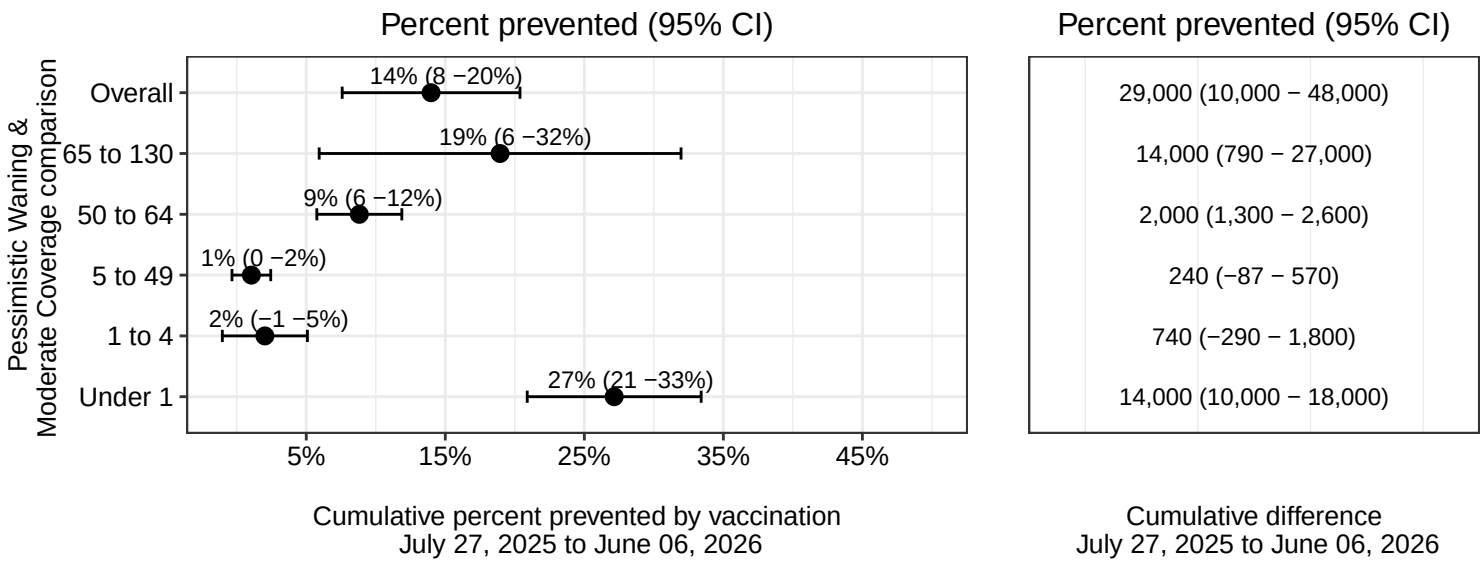



US Individual Model Projections & 95% Projection Intervals
Cumulative Hospitalizations
Optimistic Waning
Pessimistic Waning
No Senior Vaccination
High Coverage
Moderate Coverage
No Infant Interventions
200,000
100,000
0
prior season cumulative − 179720
2025−09−01
2025−11−01
2026−01−01
2026−03−01
2026−05−01
CEPH−ASTRA_RSV
Ensemble
JHU_UNC−flepiMoP
UNCC−Hierbin
UT−ImmunoSEIRS

Additional National Scenario Comparative Impacts

Age group comparison against Counterfactual scenario




Percent prevented (95% CI)
Pessimistic Waning & Moderate Coverage comparison
Overall
65 to 130
50 to 64
5 to 49
1 to 4
Under 1
14% (8 −20%)
19% (6 −32%)
9% (6 −12%)
1% (0 −2%)
2% (−1 −5%)
27% (21 −33%)
5%
15%
25%
35%
45%
Cumulative percent prevented by vaccination
July 27, 2025 to June 06, 2026
Percent prevented (95% CI)
29,000 (10,000 − 48,000)
14,000 (790 − 27,000)
2,000 (1,300 − 2,600)
240 (−87 − 570)
740 (−290 − 1,800)
14,000 (10,000 − 18,000)
Cumulative difference
July 27, 2025 to June 06, 2026

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