

Round 2

Scenarios

We asked teams of researchers across Europe to use quantitative models to project COVID-19 outcomes for 32 European countries over the next year. In order to explore different sets of assumptions about drivers of the pandemic, we asked teams to vary four sets of parameters. We can describe this in a 2x2 scenario specification:

| | Age 60+ booster campaign <ul style="list-style-type: none">• 2nd* booster recommended for 60+• Uptake starts 15th September, and reaches 50% coverage by 15th December | Age 18+ booster campaign <ul style="list-style-type: none">• 2nd* booster recommended for general population, ages 18+• Uptake starts 15th September, and reaches 50% coverage by 15th December |
|---|--|---|
| Optimistic vaccine effectiveness <ul style="list-style-type: none">• Increased booster vaccine effectiveness to that seen against Delta variant | Scenario A | Scenario B |
| Pessimistic vaccine effectiveness <ul style="list-style-type: none">• Reduced booster vaccine effectiveness against infection from BA.4/BA.5/BA.2.75 variants | Scenario C | Scenario D |

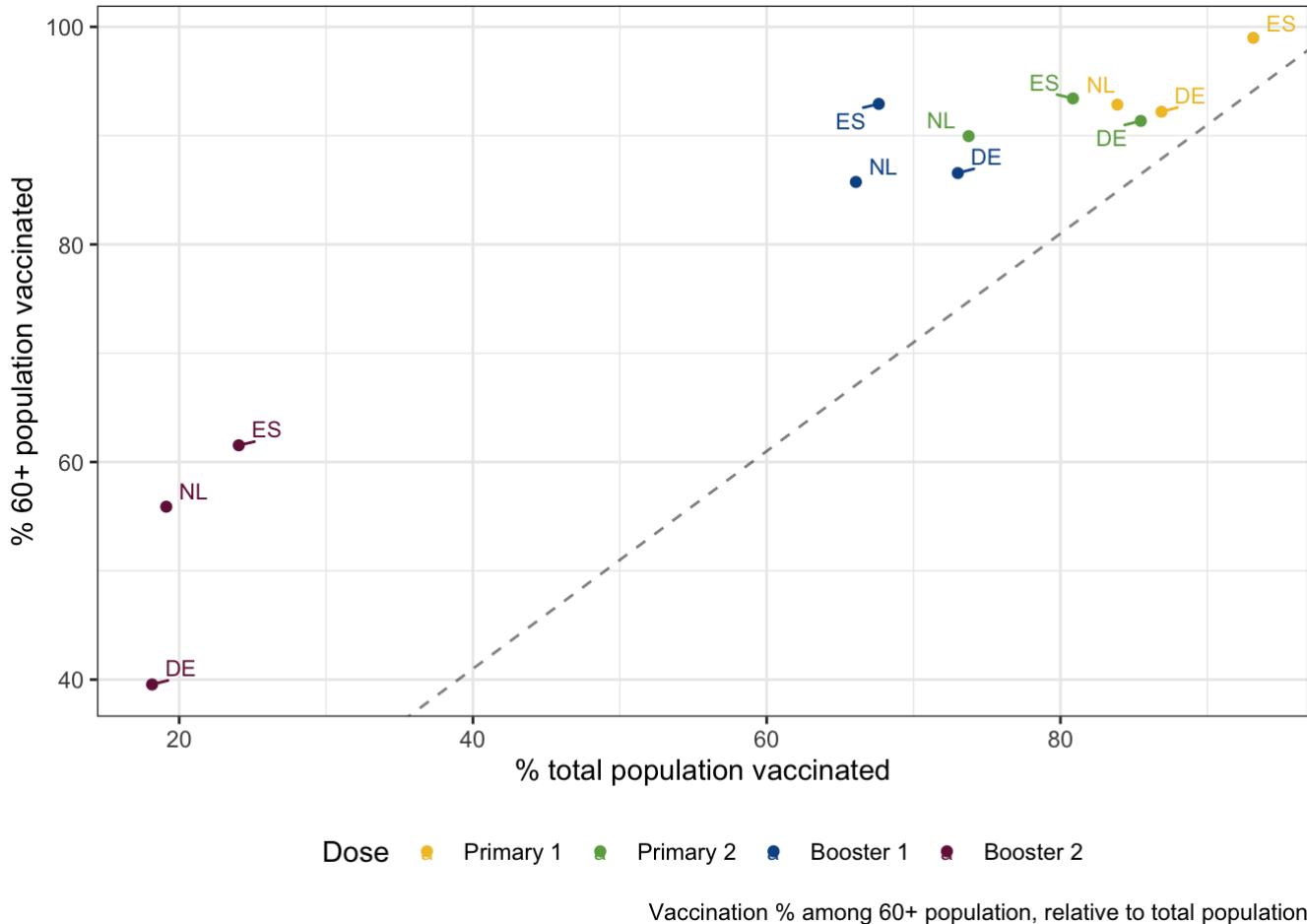
See also the full scenario details (<https://github.com/covid19-forecast-hub-europe/covid19-scenario-hub-europe/wiki/Round-2>) for more detail on the common set of assumptions teams used to create their models.

In Round 2, we asked modellers to start their projections from the 2022-07-24. Data after this date were not included, and as a result, model projections are unlikely to fully account for later information on the changing variants or behavioural patterns.

In this report we only show results from countries with at least 3 models.

Current situation

We consider vaccination rates in countries for which multiple teams of modellers contributed projections.



Participating teams

6 models contributed scenario projections to Round 2.

Models

Participating teams by number of countries and horizon

| Team | Countries | Weeks |
|--------------------|-----------|-------|
| USC-SIkJalpha | 31 | 52 |
| ECDC-CM_ONE | 28 | 53 |
| MODUS_Covid-Episim | 1 | 53 |
| RIVM-vacamole | 1 | 53 |
| SIMID-SCM | 1 | 52 |
| UC3M-EpiGraph | 1 | 41 |

Countries

Number of independent model projections for each target variable and location

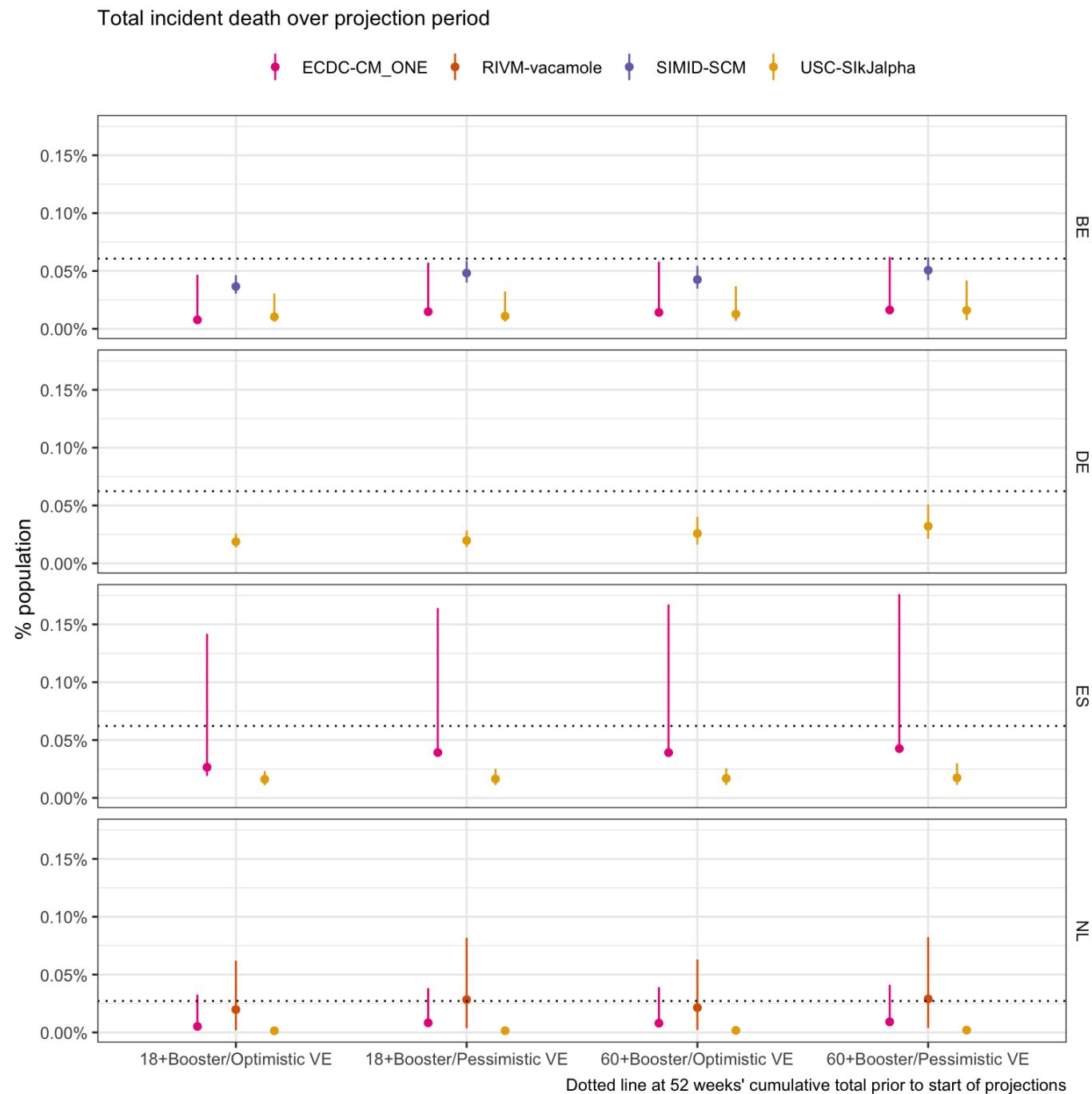
| Code | Country | Infection | Case | Hosp | Icu | Death |
|------|---------|-----------|------|------|-----|-------|
| BE | Belgium | 1 | 3 | 2 | 1 | 3 |
| DE | Germany | 1 | 2 | 2 | 0 | 1 |
| ES | Spain | 1 | 3 | 2 | 0 | 2 |

| Code | Country | Infection | Case | Hosp | Icu | Death |
|------|-------------|-----------|------|------|-----|-------|
| NL | Netherlands | 1 | 3 | 2 | 1 | 3 |

Cumulative outcomes

For each model and scenario, we compare the total number of outcomes over the entire projection period as a % of the total country population. We compared the cumulative number of projected outcomes to the cumulative total over one year before projections started (July 2021 to July 2022).

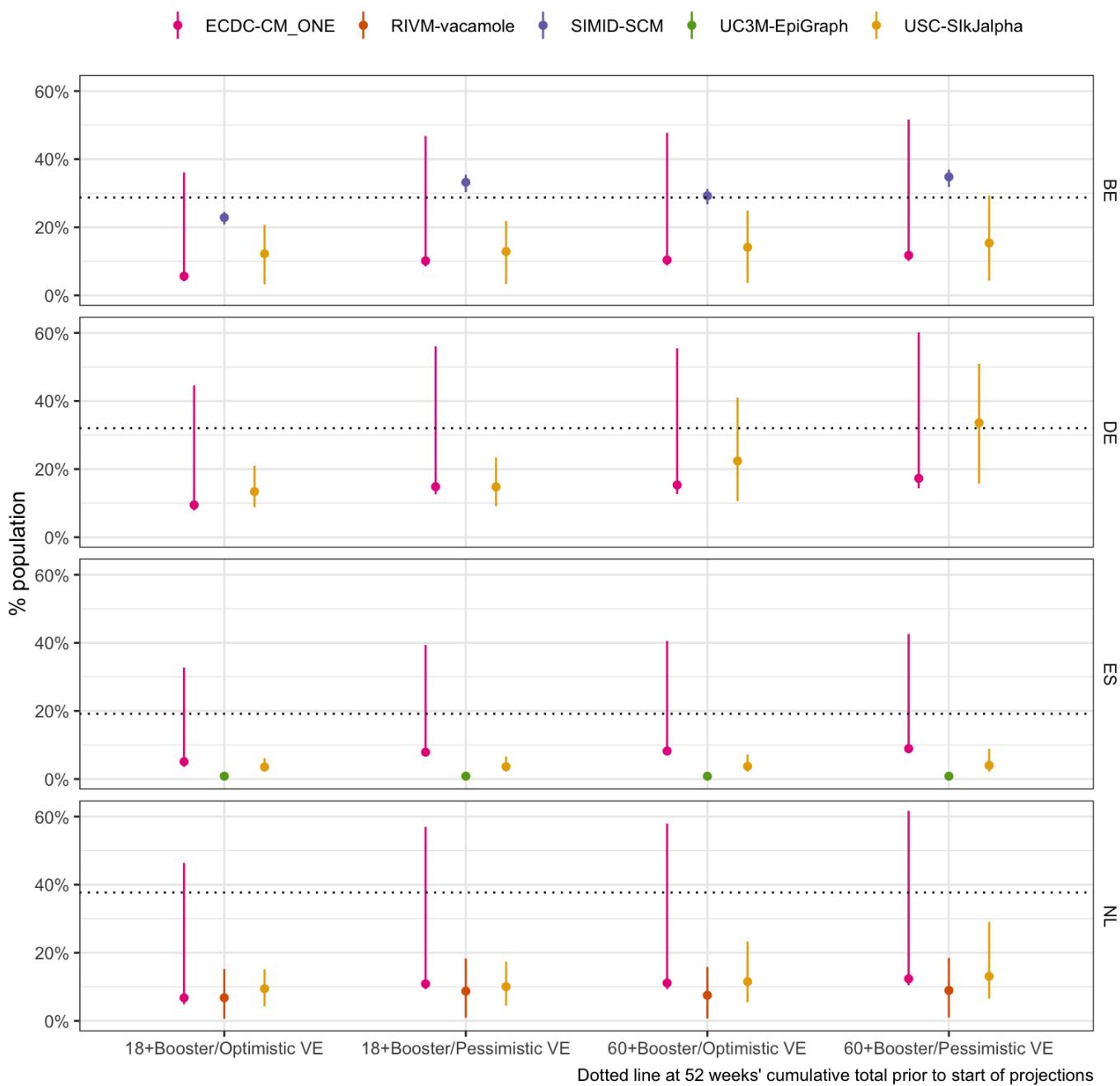
Death



Scenarios: Autumn second booster campaign among population aged '18+' or '60+'; Vaccine effectiveness is 'optimistic'(effectiveness as of a booster vaccine against Delta) or 'pessimistic' (as against BA.4/BA.5/BA.2.75)

Case

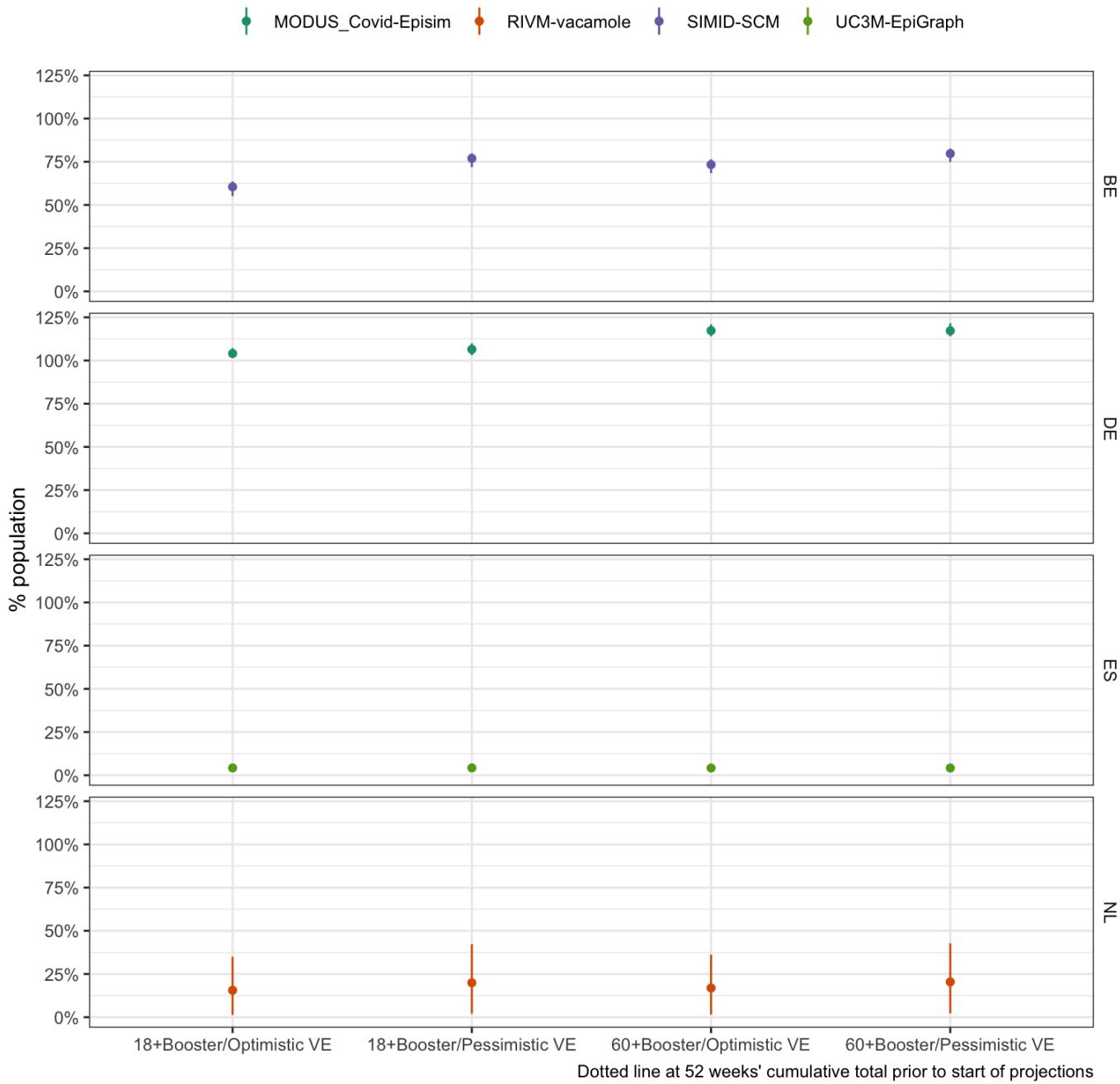
Total incident case over projection period



Scenarios: Autumn second booster campaign among population aged '18+' or '60+'; Vaccine effectiveness is 'optimistic'(effectiveness as of a booster vaccine against Delta) or 'pessimistic' (as against BA.4/BA.5/BA.2.75)

Infection

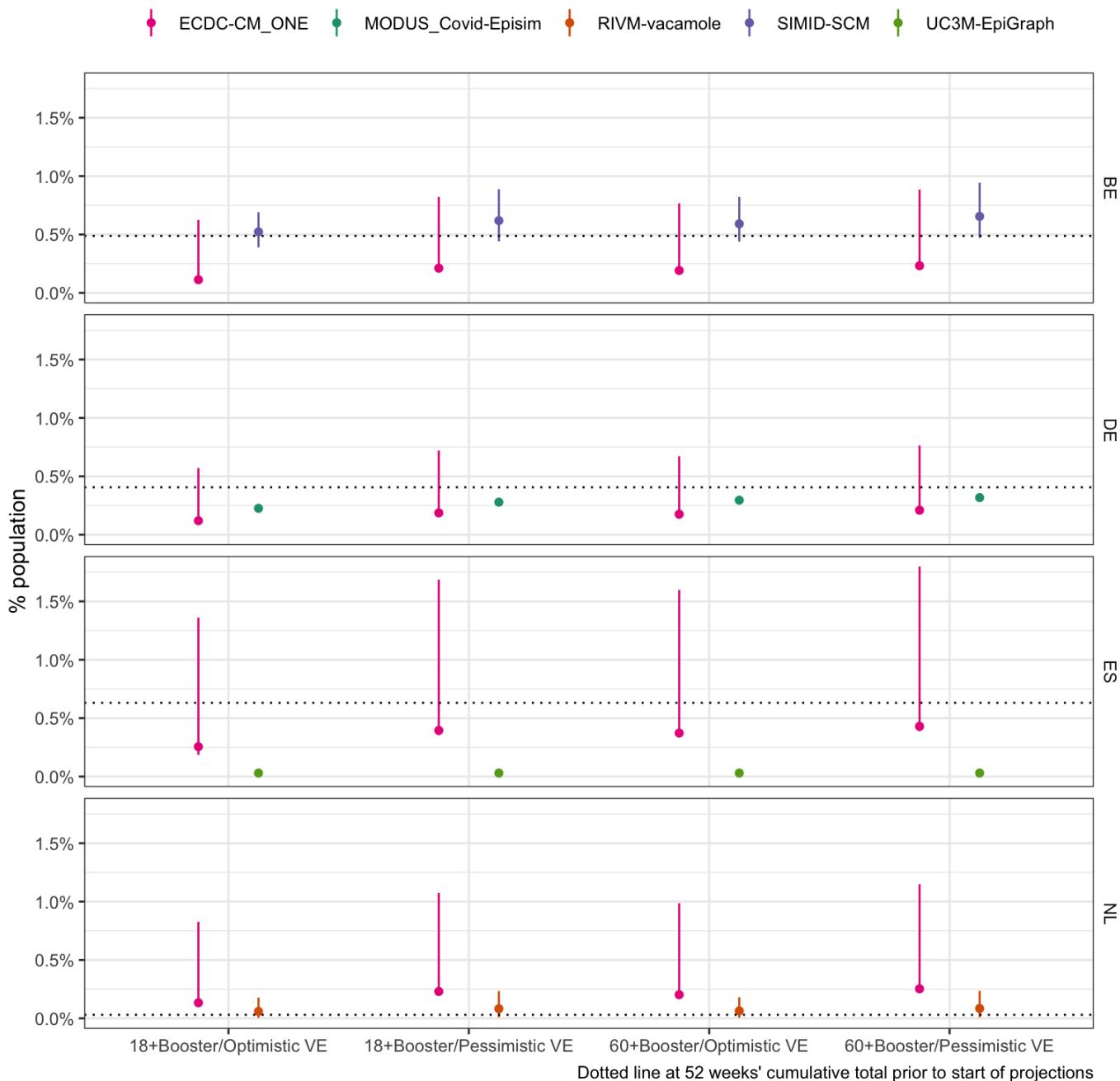
Total incident infection over projection period



Scenarios: Autumn second booster campaign among population aged '18+' or '60+'; Vaccine effectiveness is 'optimistic'(effectiveness as of a booster vaccine against Delta) or 'pessimistic' (as against BA.4/BA.5/BA.2.75)

Hosp

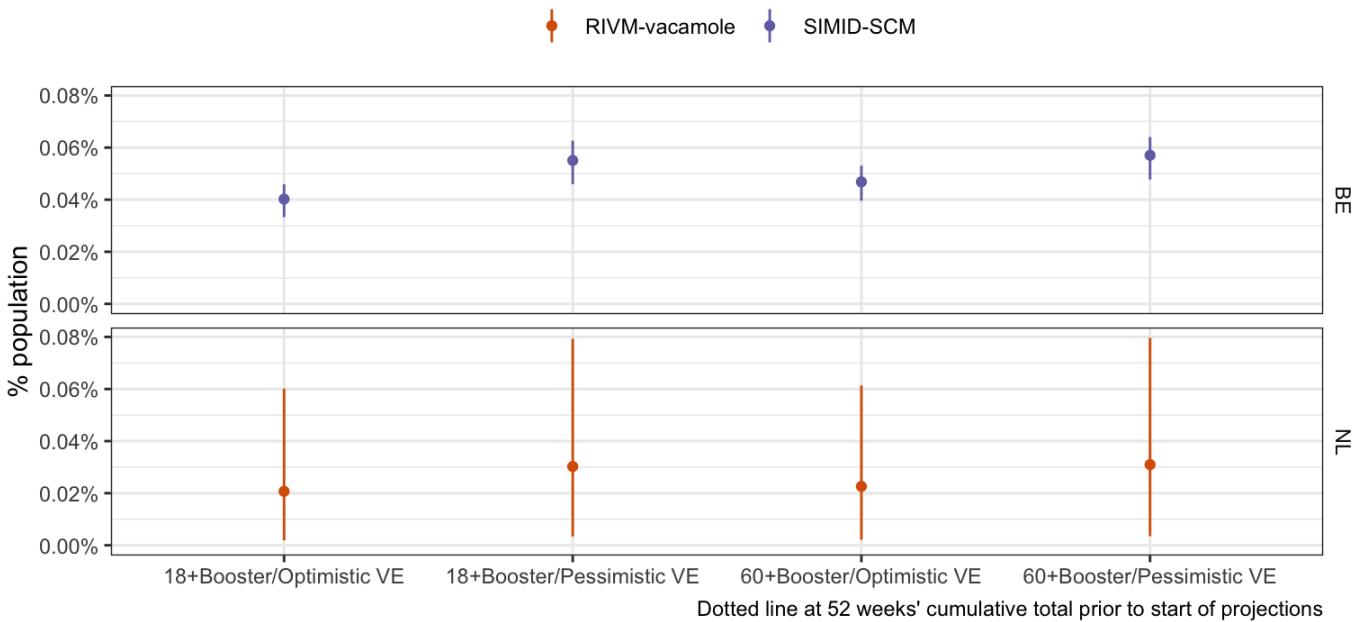
Total incident hosp over projection period



Scenarios: Autumn second booster campaign among population aged '18+' or '60+'; Vaccine effectiveness is 'optimistic'(effectiveness as of a booster vaccine against Delta) or 'pessimistic' (as against BA.4/BA.5/BA.2.75)

|ICU

Total incident icu over projection period



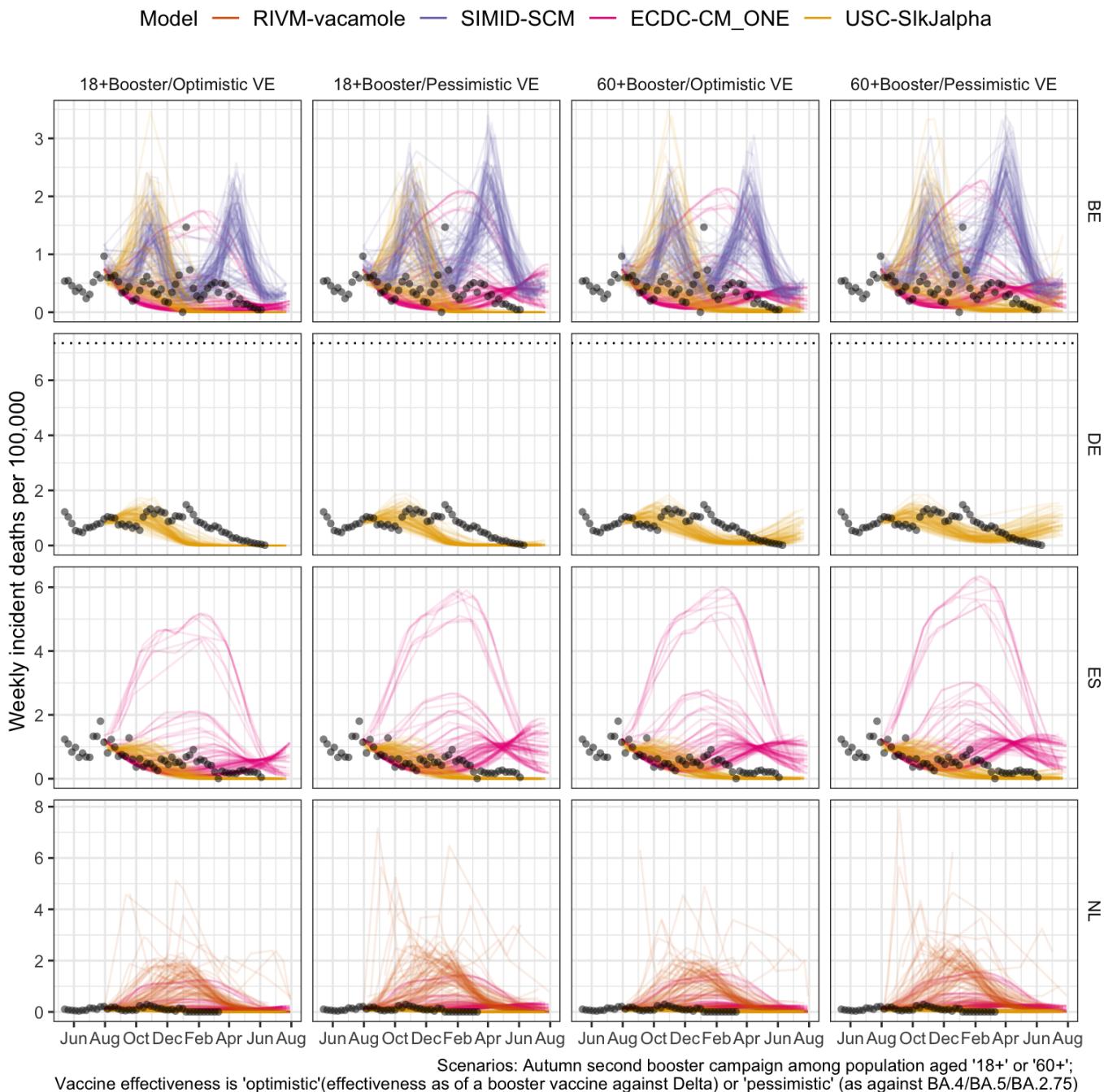
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Incident outcomes

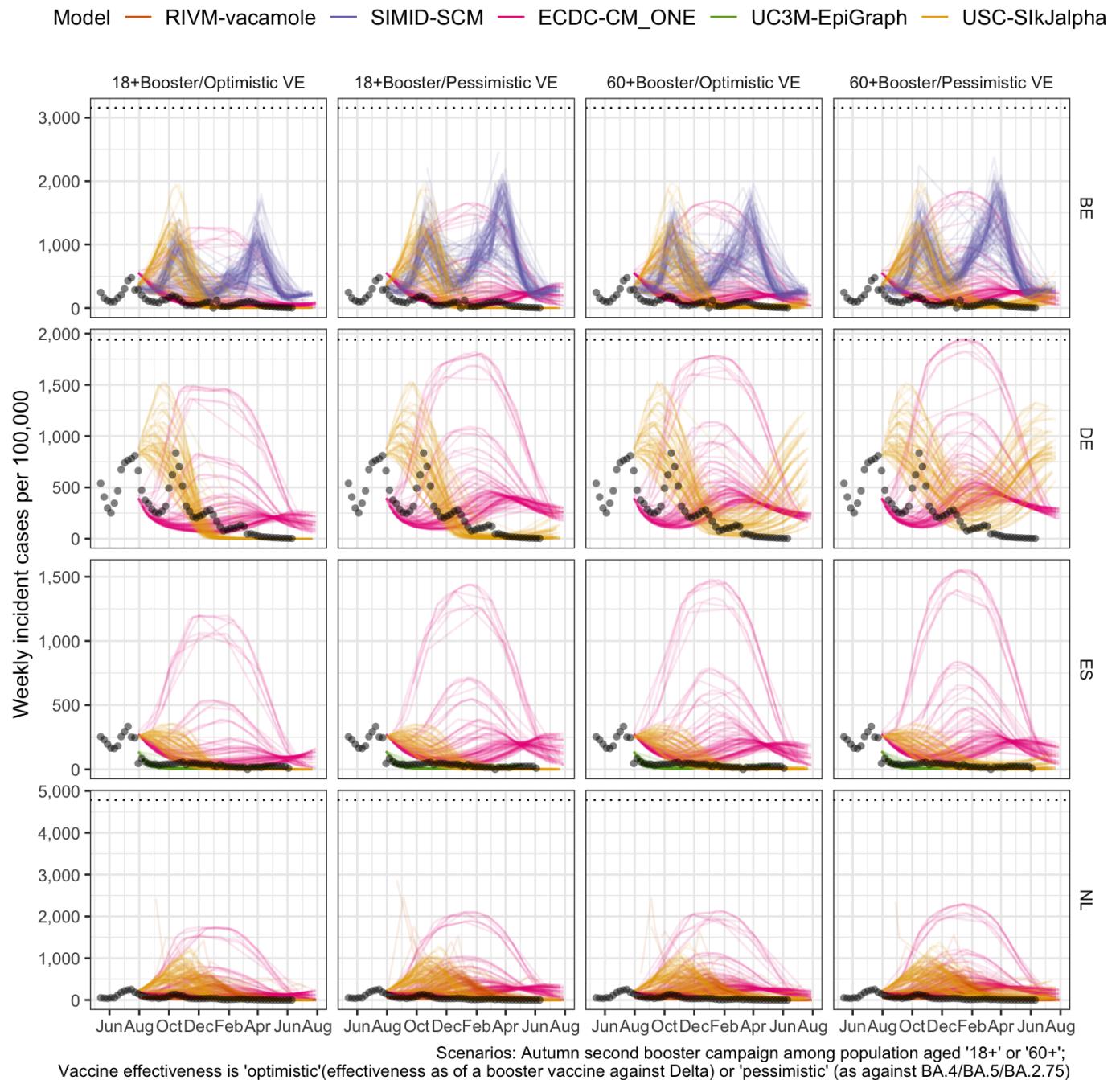
We explored the incidence of COVID-19 per 100,000 over the projection period and in terms of projected peaks in incidence. We summarised peaks both over the entire projection period, and over only the autumn-winter period (October through March); we considered (A) the timing and maximum weekly incidence of each peak, and (B) the total number of peaks.

Trajectories

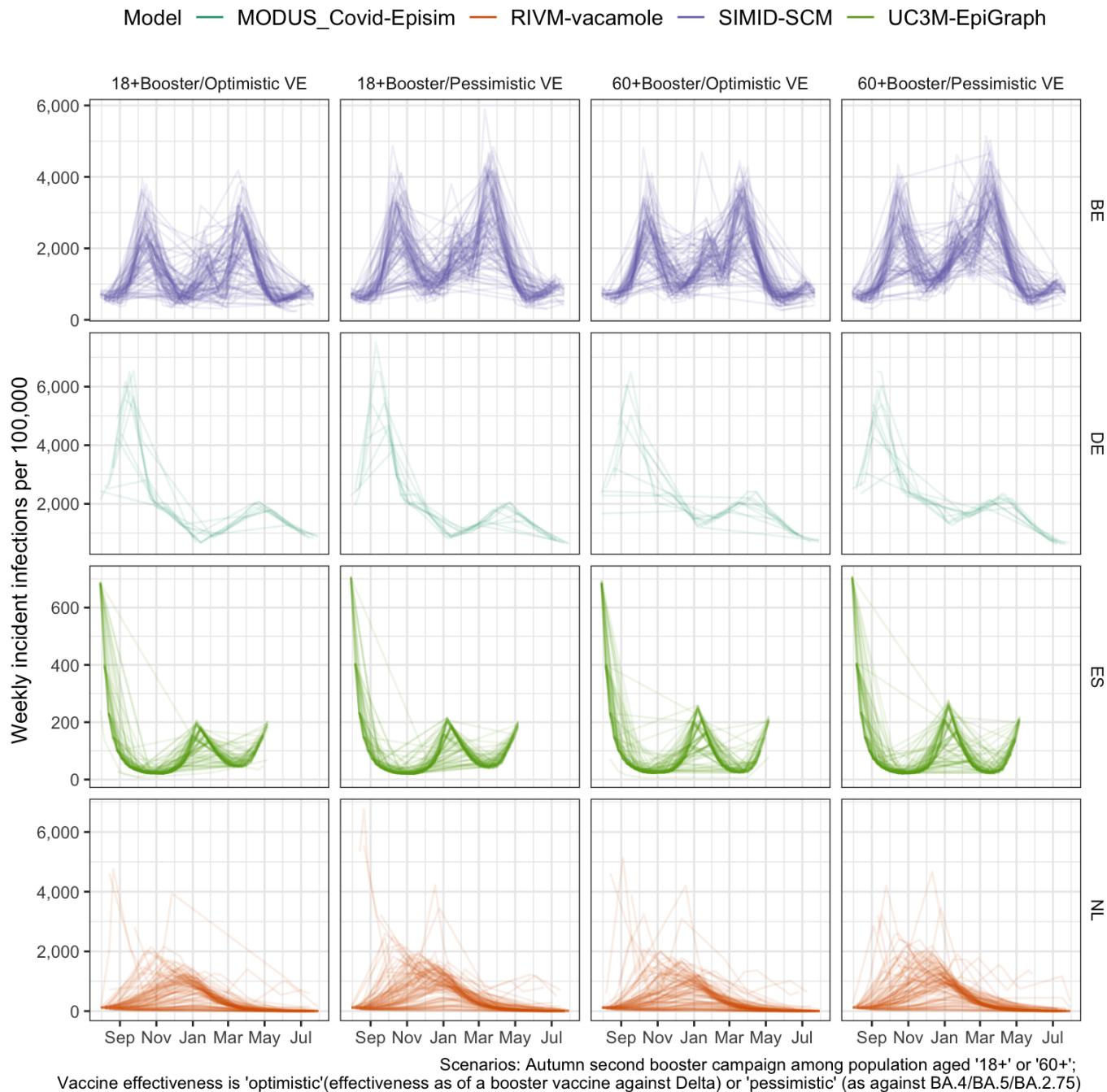
Death



Case

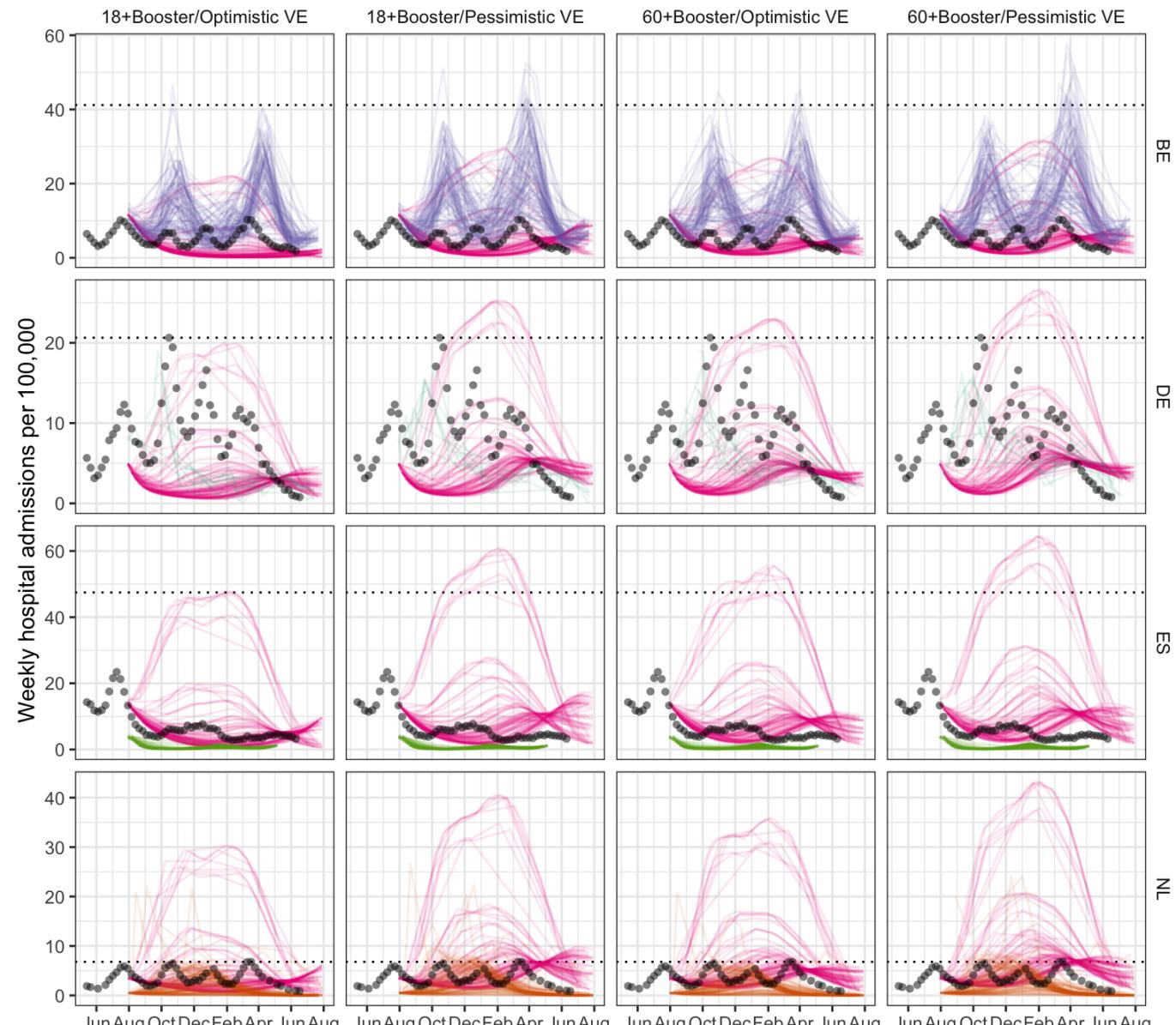


Infection

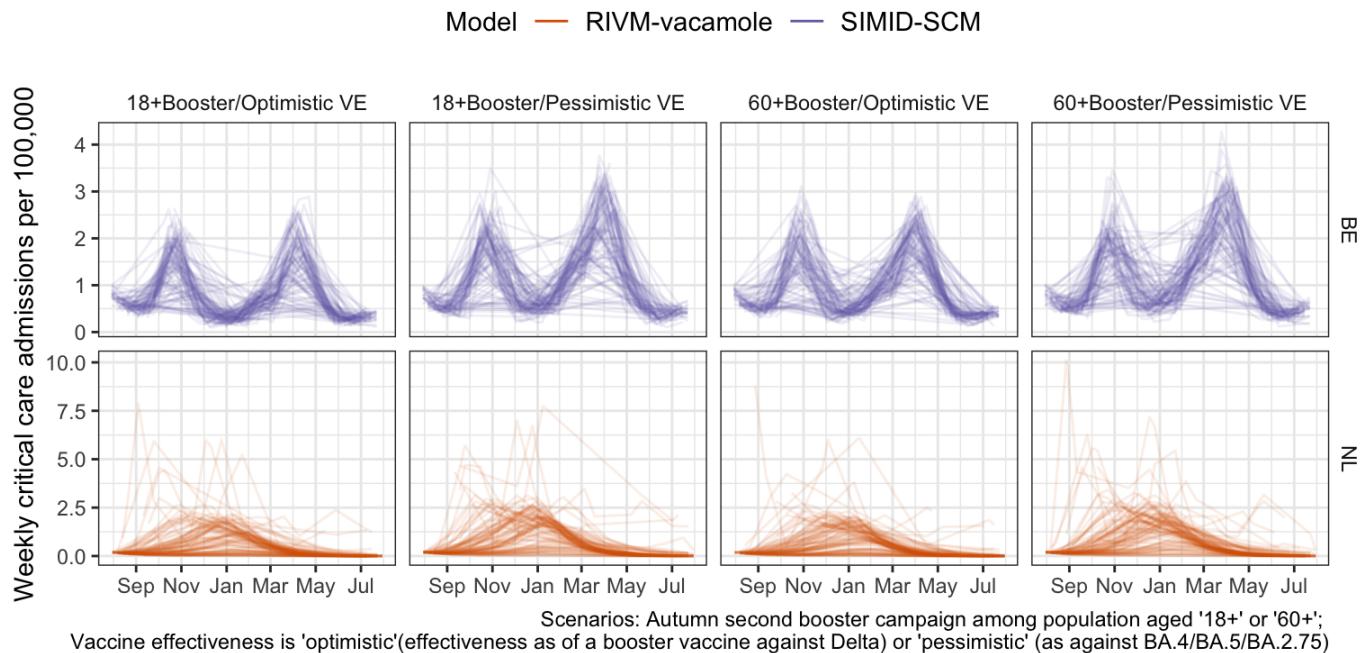


Hosp

Model MODUS_Covid-Episim RIVM-vacamole SIMID-SCM ECDC-CM_ONE UC3M-EpiGrap



|ICU



Peaks

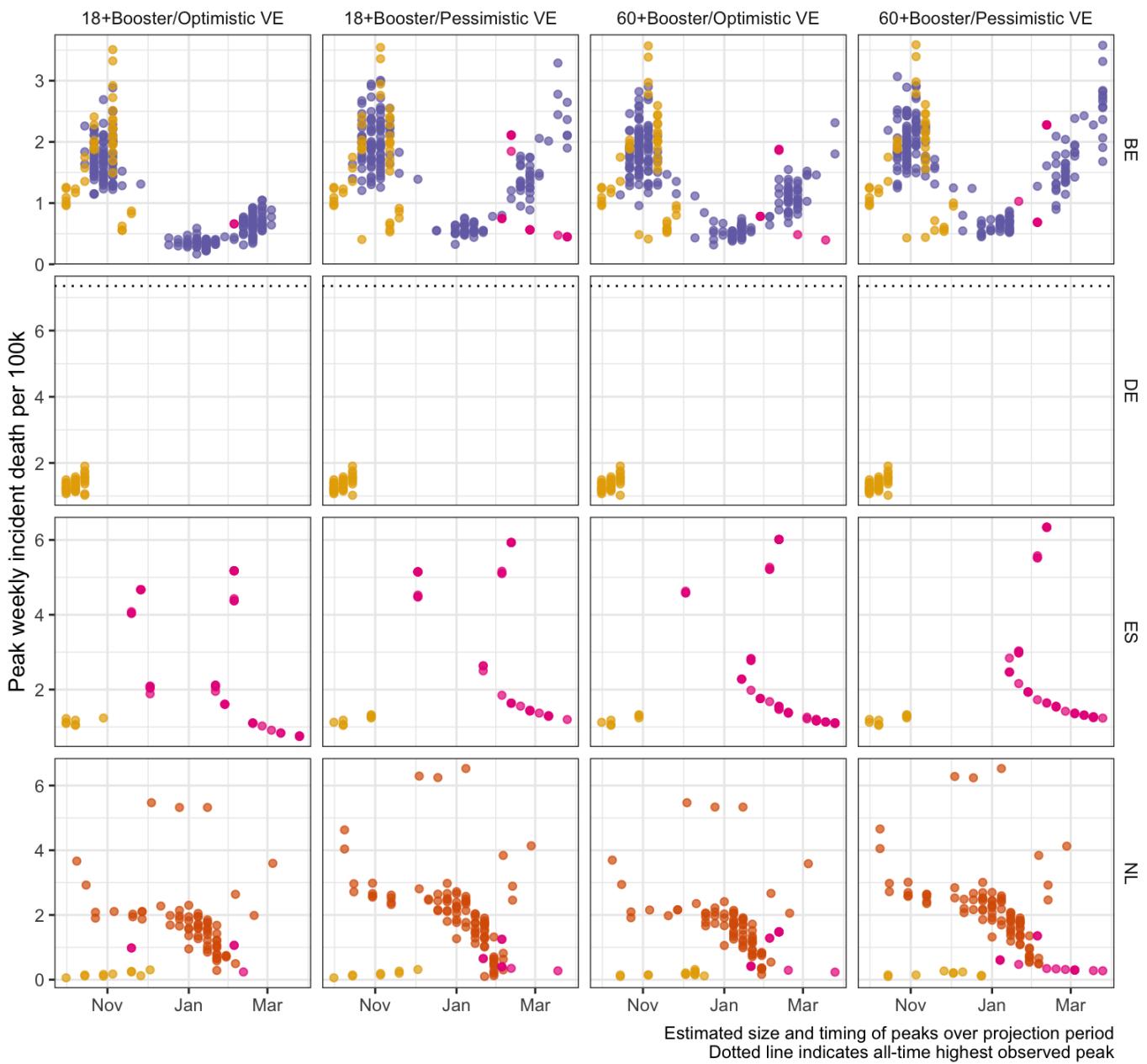
Autumn-winter

Projections over October 2022 through March 2023

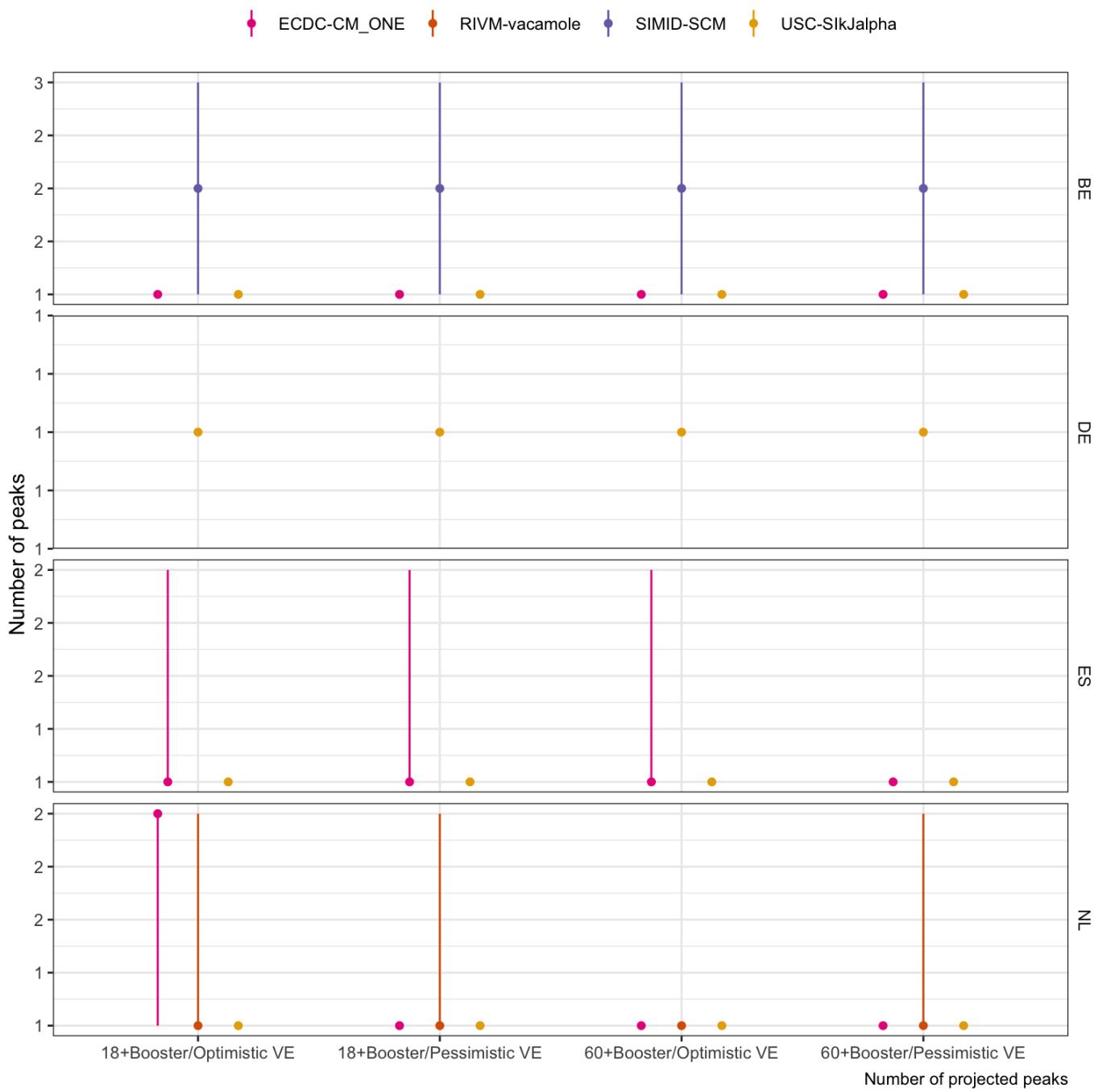
Death

A. Size and timing of peaks. Boxplots show summary of the likely value at peak incidence (median and interquartile range); points show timing and size of peaks from independent sample simulations

● ECDC-CM_ONE ● RIVM-vacamole ● SIMID-SCM ● USC-SIkJalpha



B. Projected number of peaks (median with 5-95% probability)

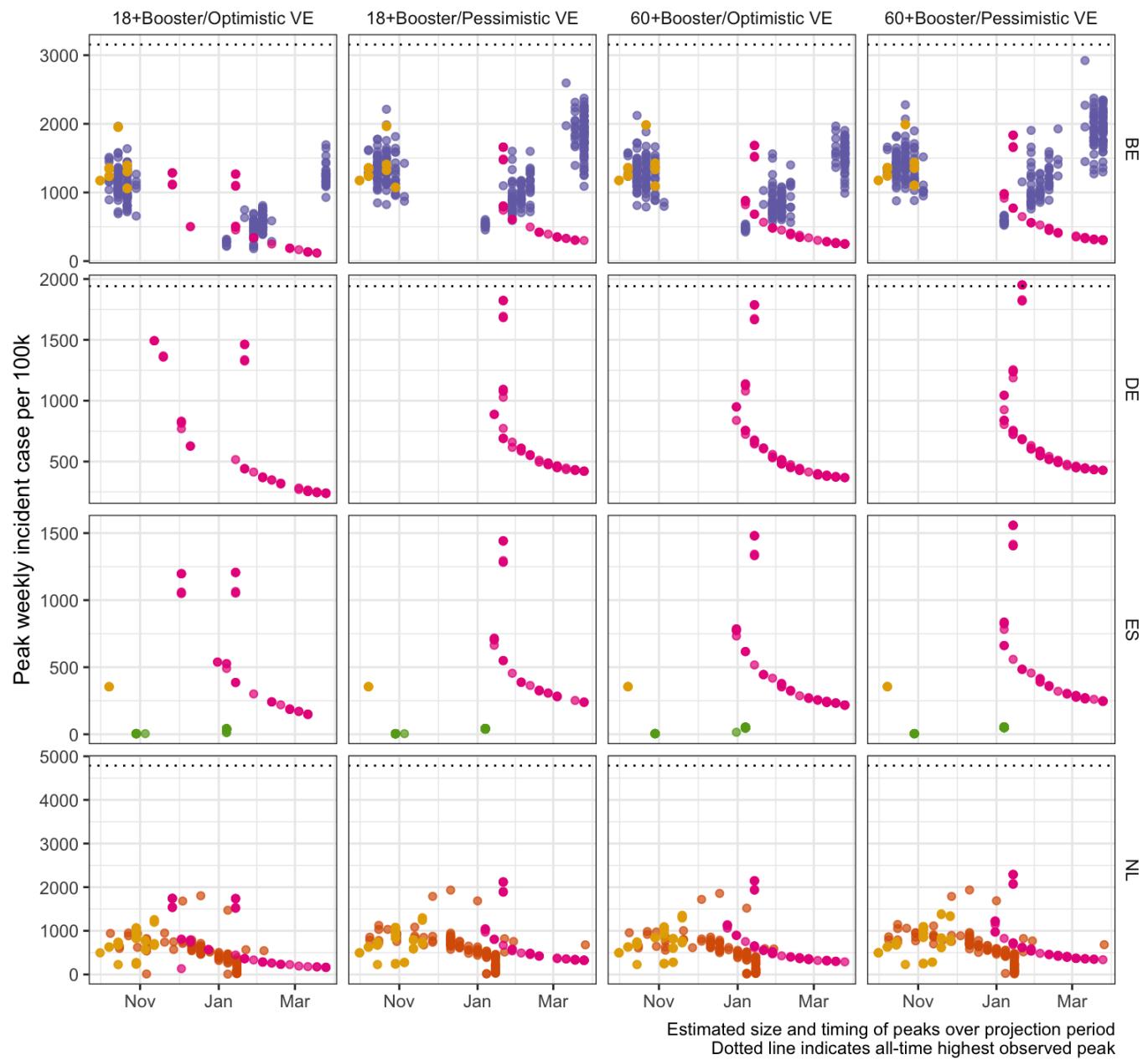


Scenarios: Autumn second booster campaign among population aged '18+' or '60+'; Vaccine effectiveness is 'optimistic' (effectiveness as of a booster vaccine against Delta) or 'pessimistic' (as against BA.4/BA.5/BA.2.75)

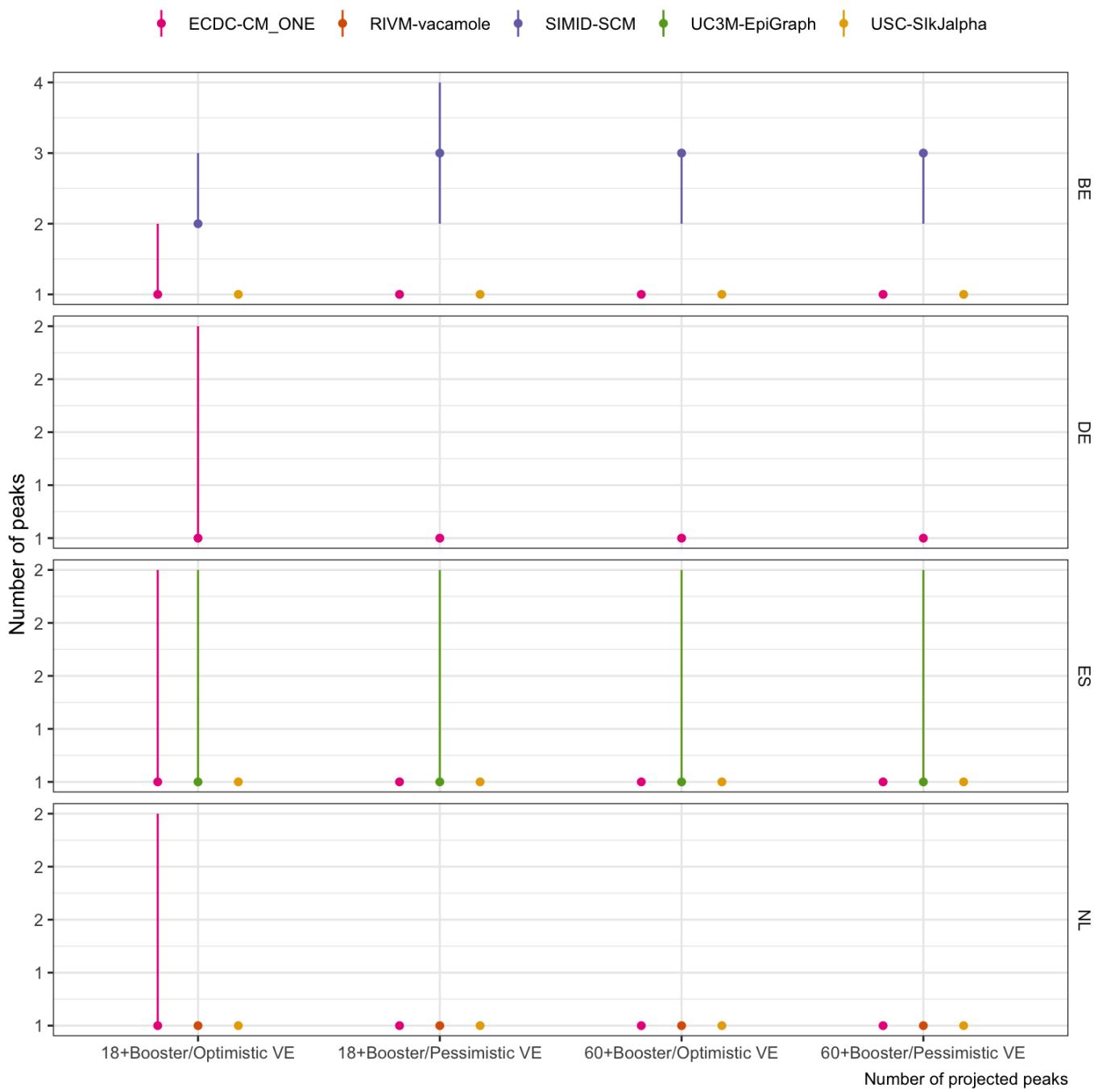
Case

A. Size and timing of peaks. Boxplots show summary of the likely value at peak incidence (median and interquartile range); points show timing and size of peaks from independent sample simulations

● ECDC-CM_ONE ● RIVM-vacamole ● SIMID-SCM ● UC3M-EpiGraph ● USC-SIkJalpha



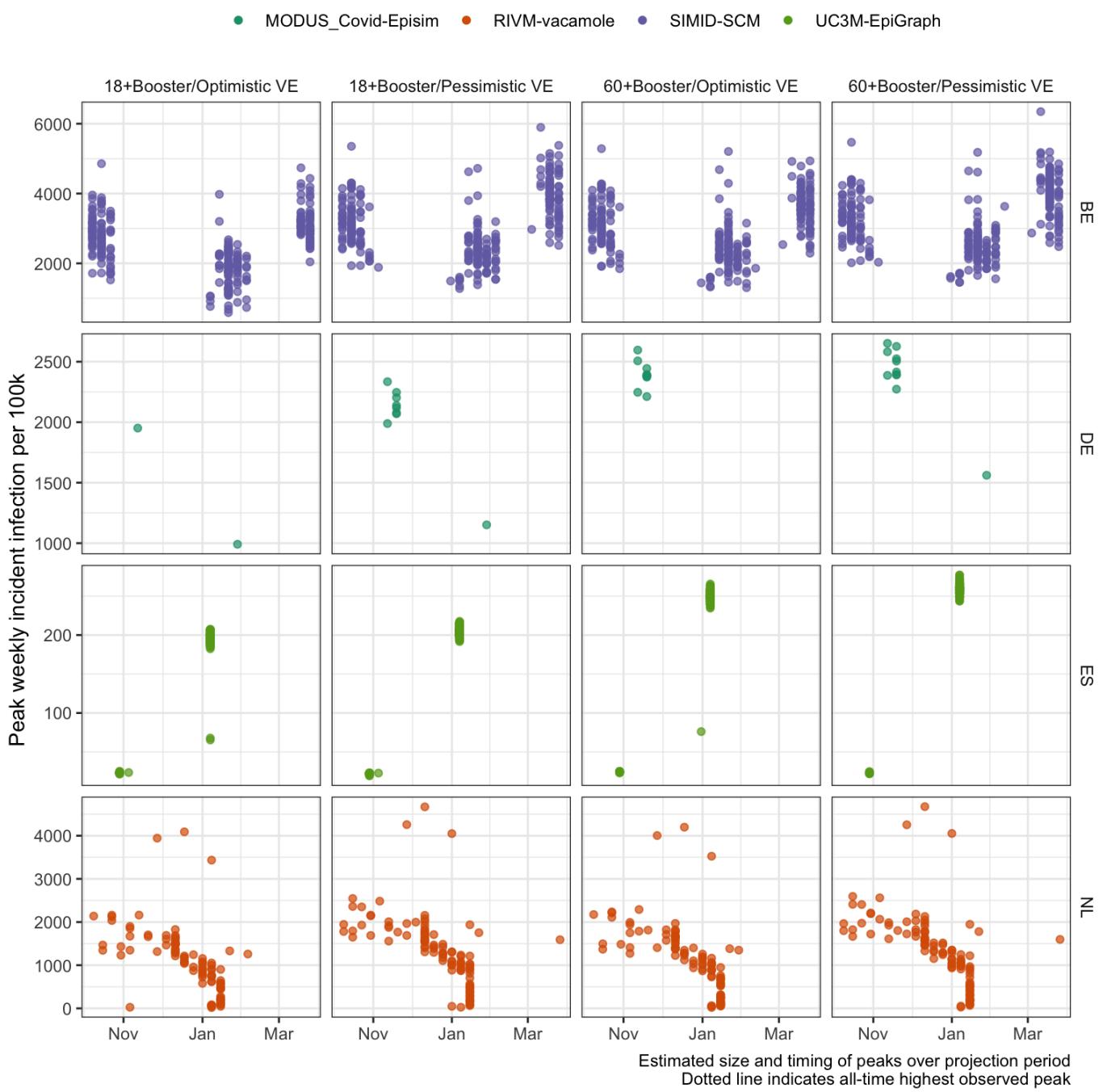
B. Projected number of peaks (median with 5-95% probability)



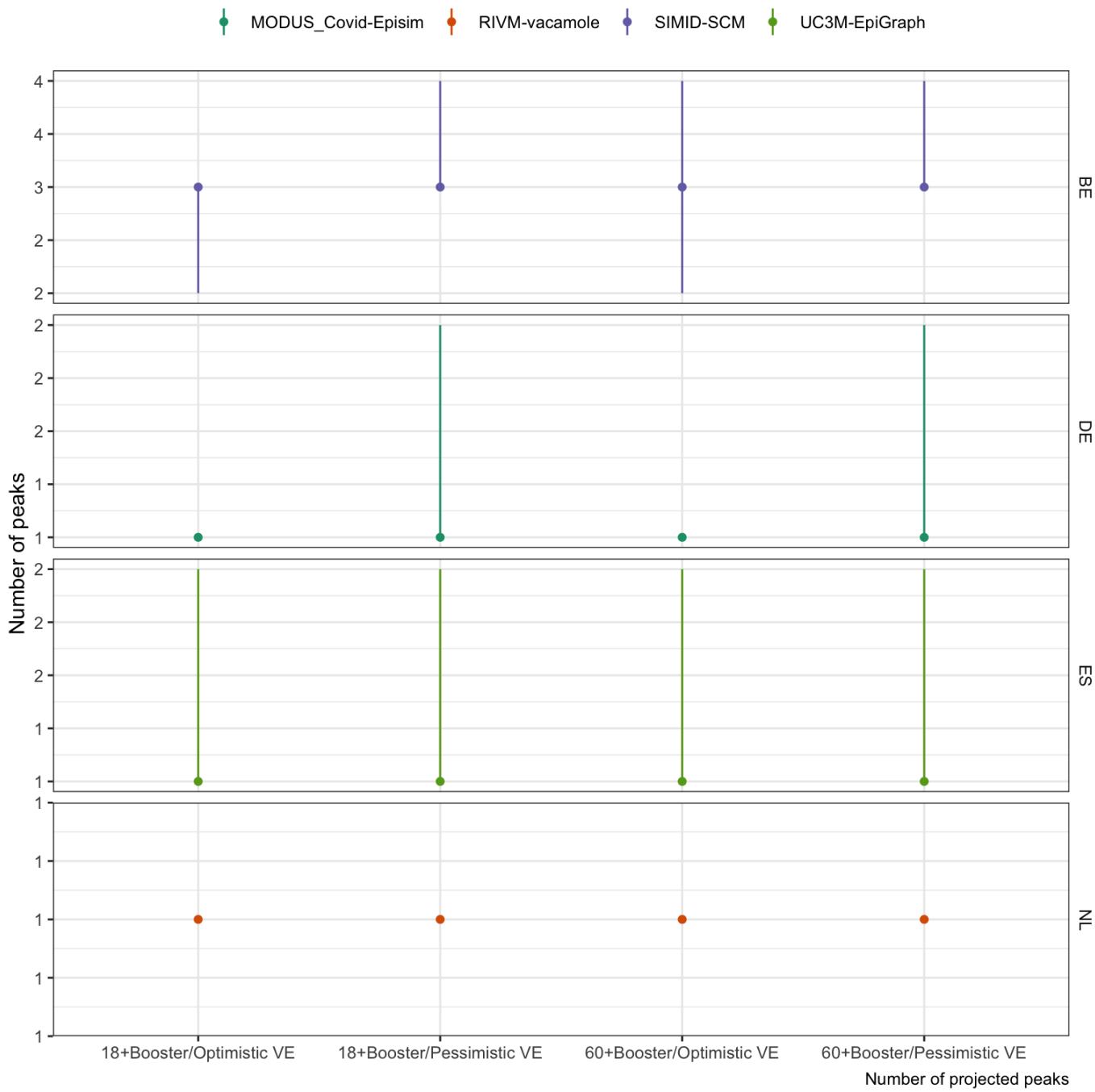
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Infection

A. Size and timing of peaks. Boxplots show summary of the likely value at peak incidence (median and interquartile range); points show timing and size of peaks from independent sample simulations



B. Projected number of peaks (median with 5-95% probability)

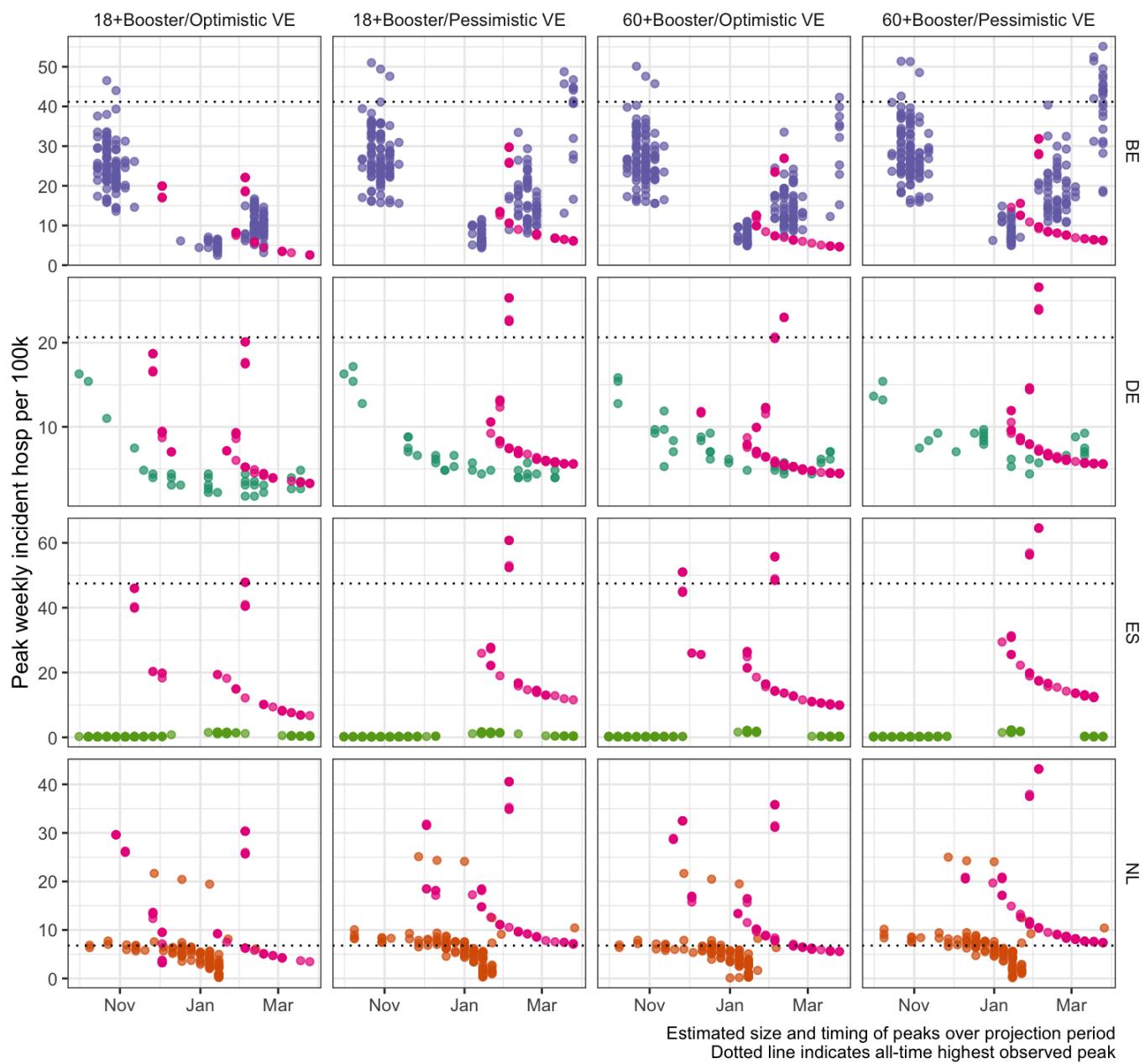


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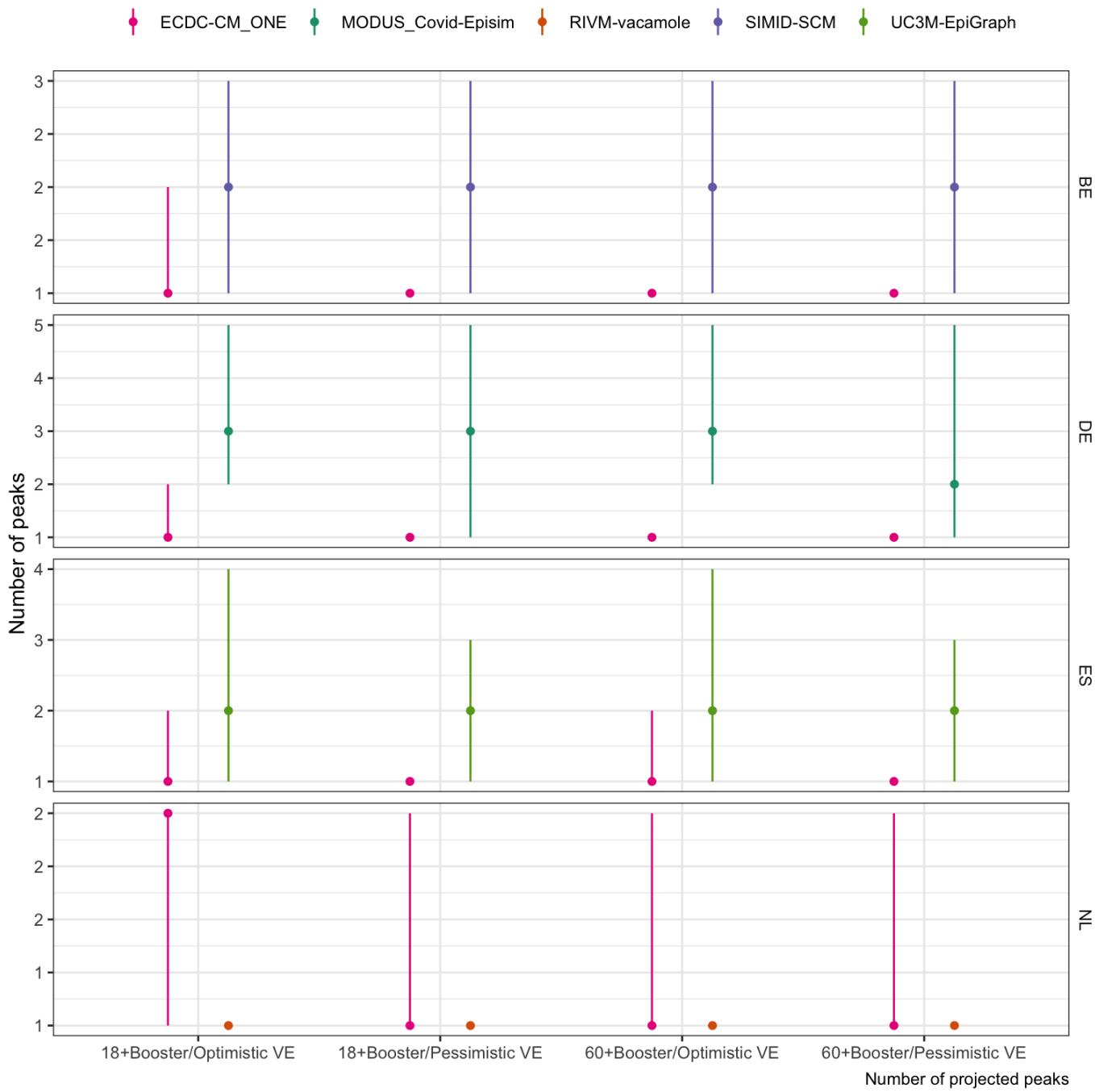
Hosp

A. Size and timing of peaks. Boxplots show summary of the likely value at peak incidence (median and interquartile range); points show timing and size of peaks from independent sample simulations

● ECDC-CM_ONE ● MODUS_Covid-Episim ● RIVM-vacamole ● SIMID-SCM ● UC3M-EpiGraph



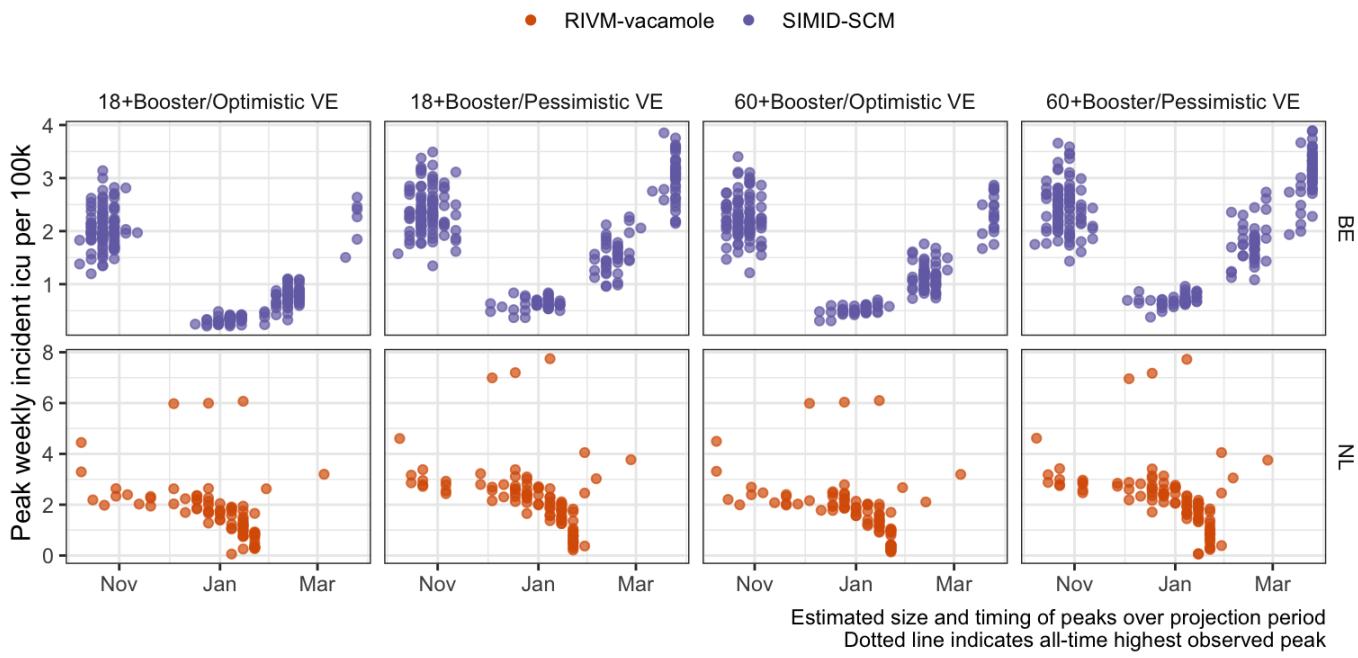
B. Projected number of peaks (median with 5-95% probability)



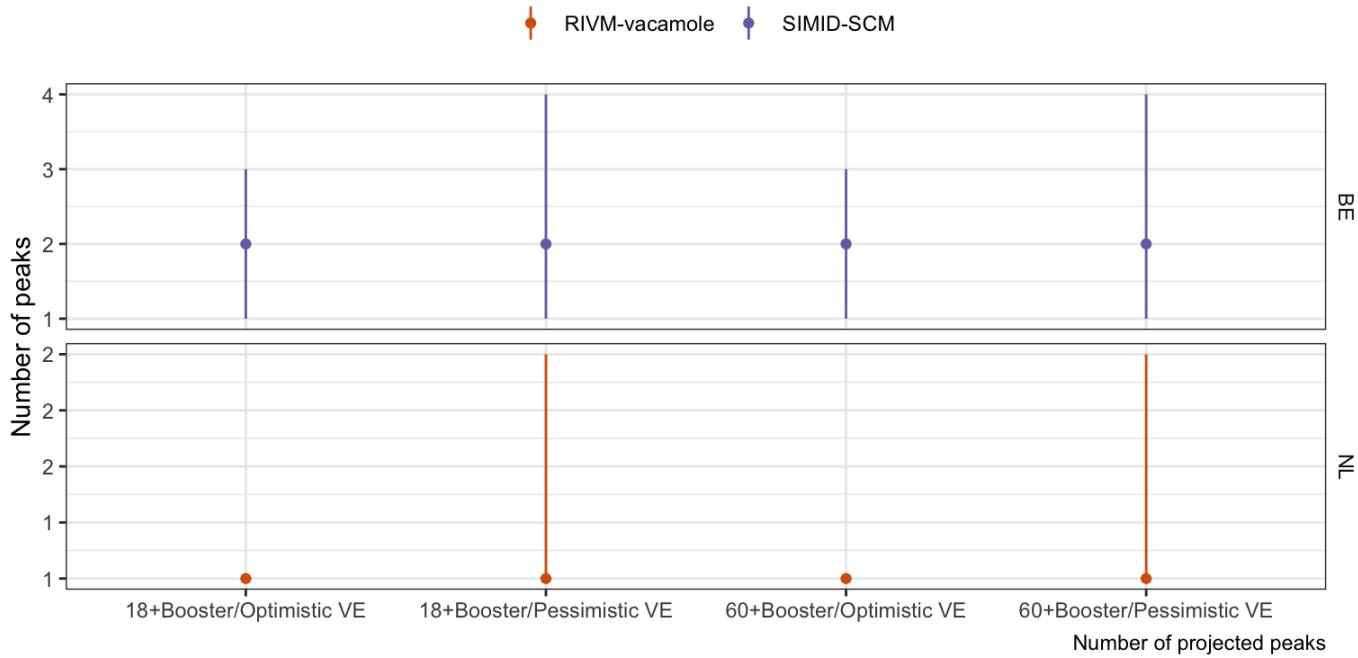
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|ICU

A. Size and timing of peaks. Boxplots show summary of the likely value at peak incidence (median and interquartile range); points show timing and size of peaks from independent sample simulations



B. Projected number of peaks (median with 5-95% probability)



Scenarios: Autumn second booster campaign among population aged '18+' or '60+'; Vaccine effectiveness is 'optimistic' (effectiveness as of a booster vaccine against Delta) or 'pessimistic' (as against BA.4/BA.5/BA.2.75)

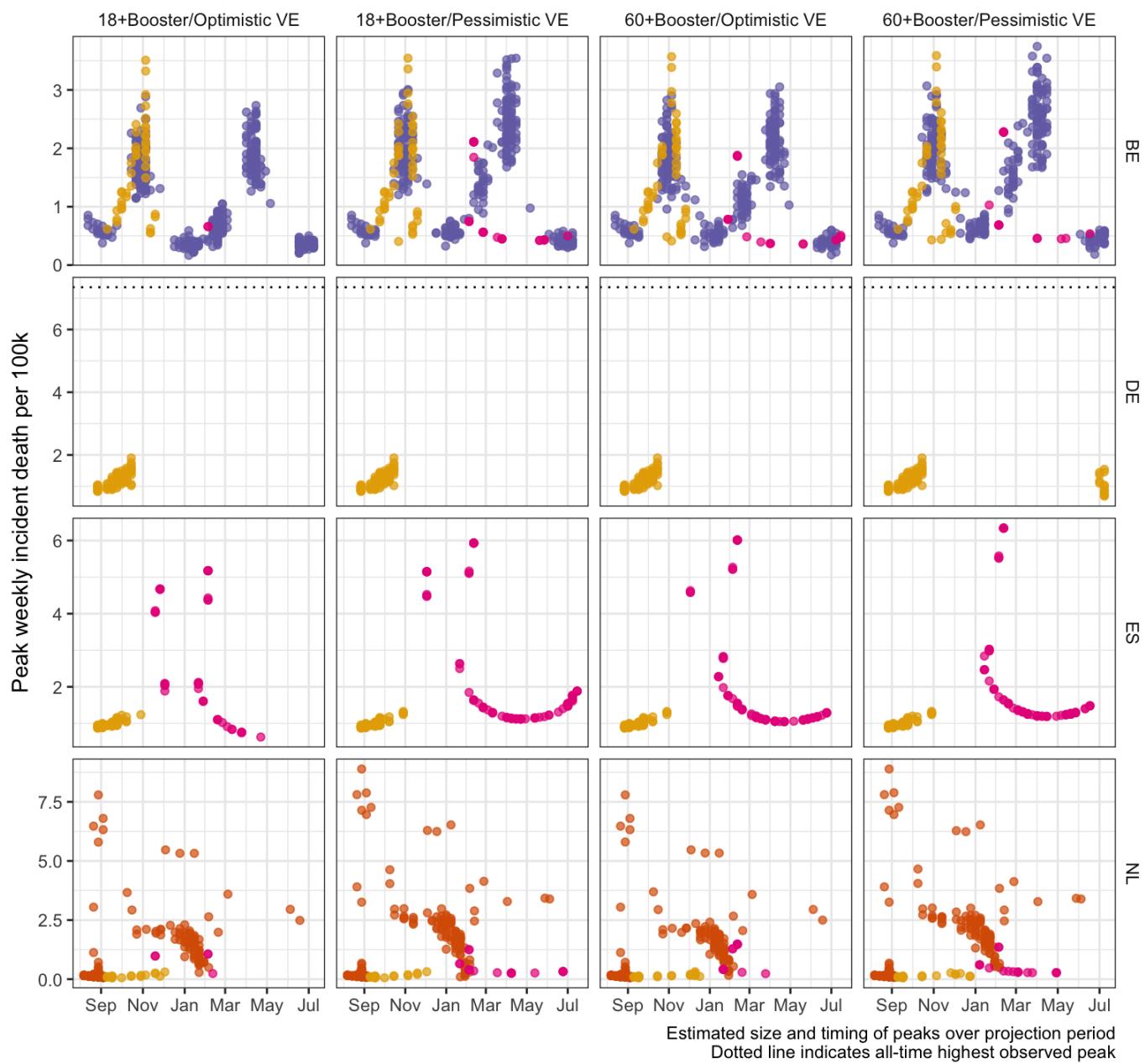
Entire projection period

Projections over June 2022 through June 2023

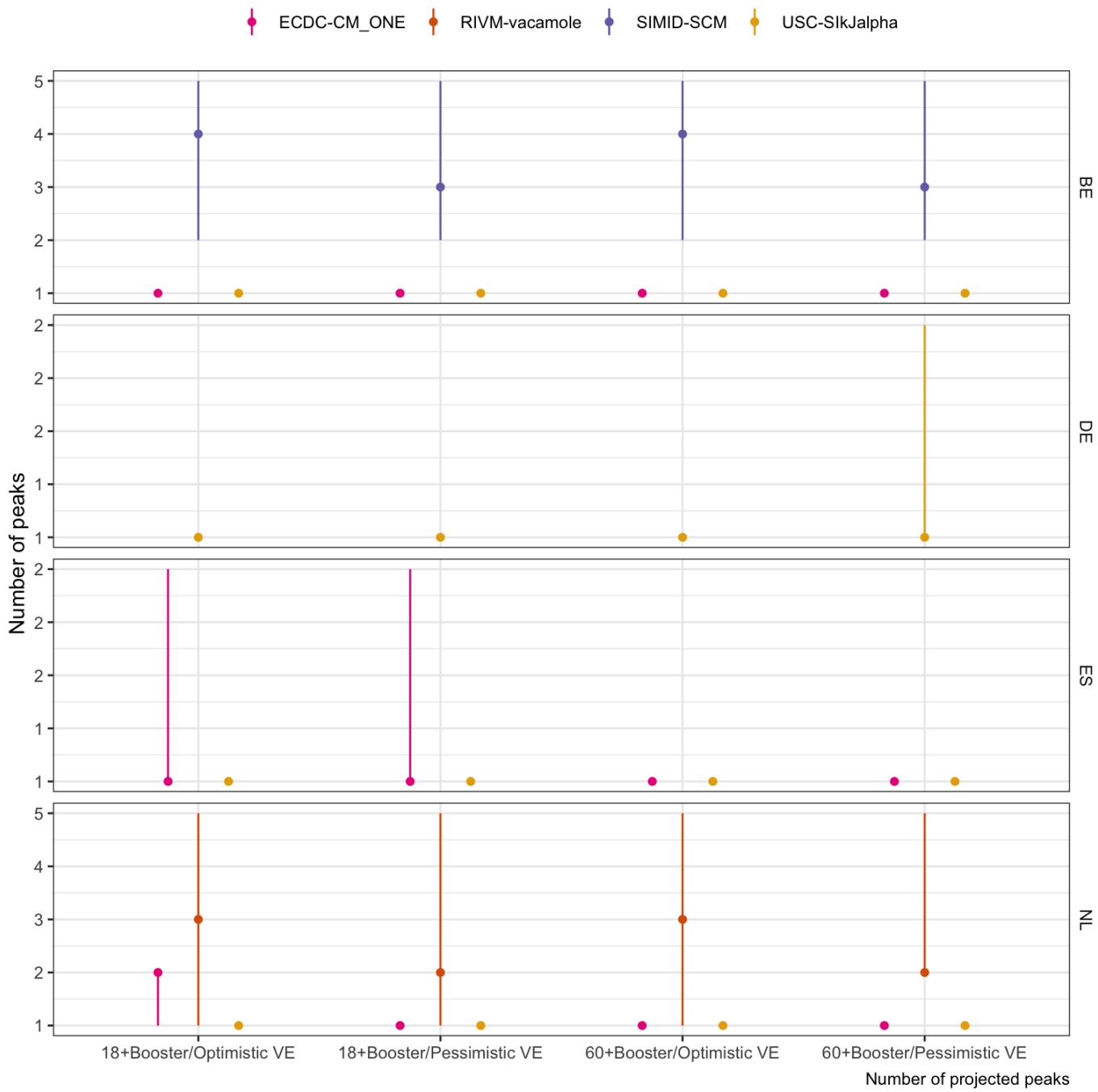
Death

A. Size and timing of peaks. Boxplots show summary of the likely value at peak incidence (median and interquartile range); points show timing and size of peaks from independent sample simulations

● ECDC-CM_ONE ● RIVM-vacamole ● SIMID-SCM ● USC-SIkJalpha



B. Projected number of peaks (median with 5-95% probability)

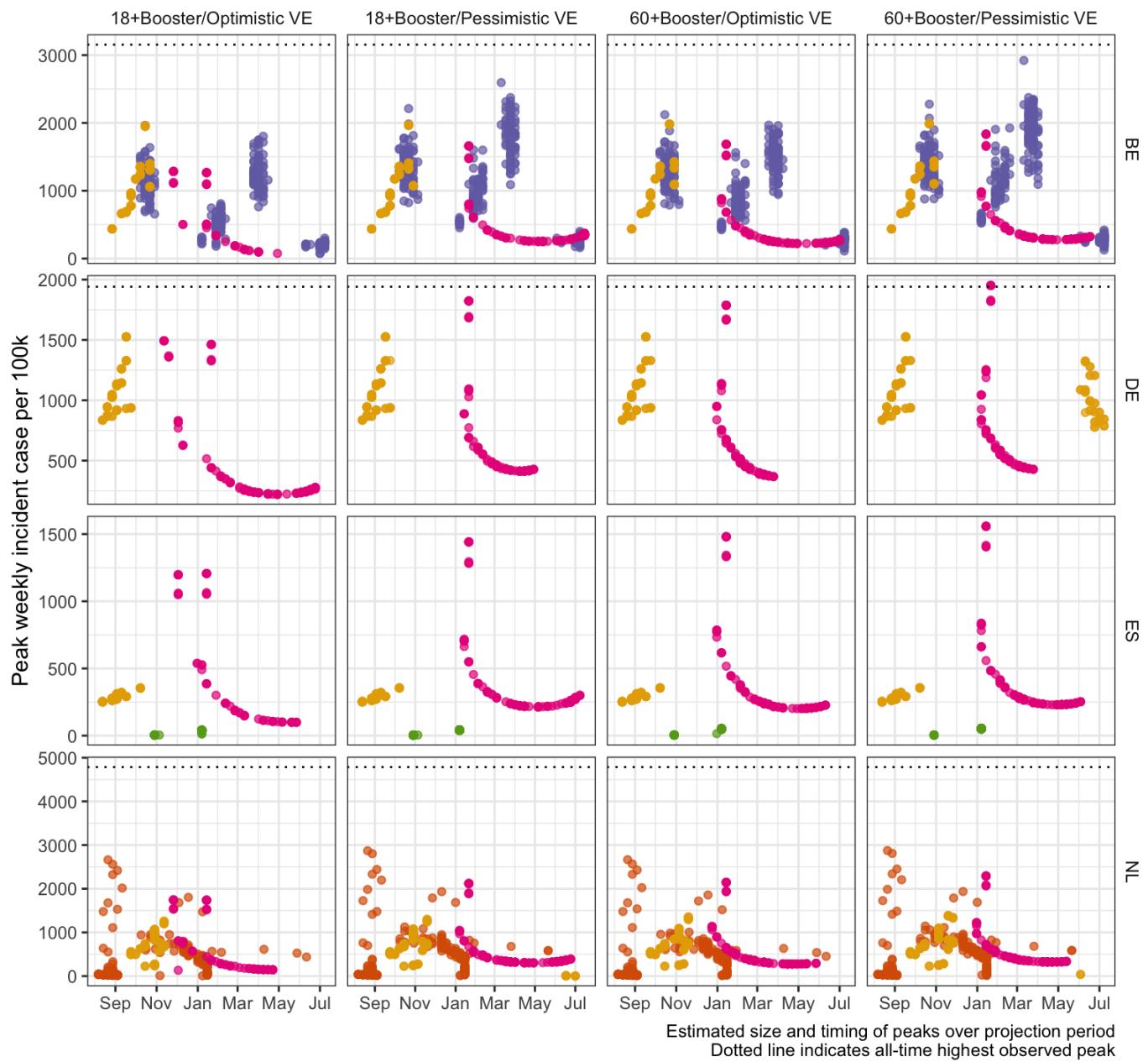


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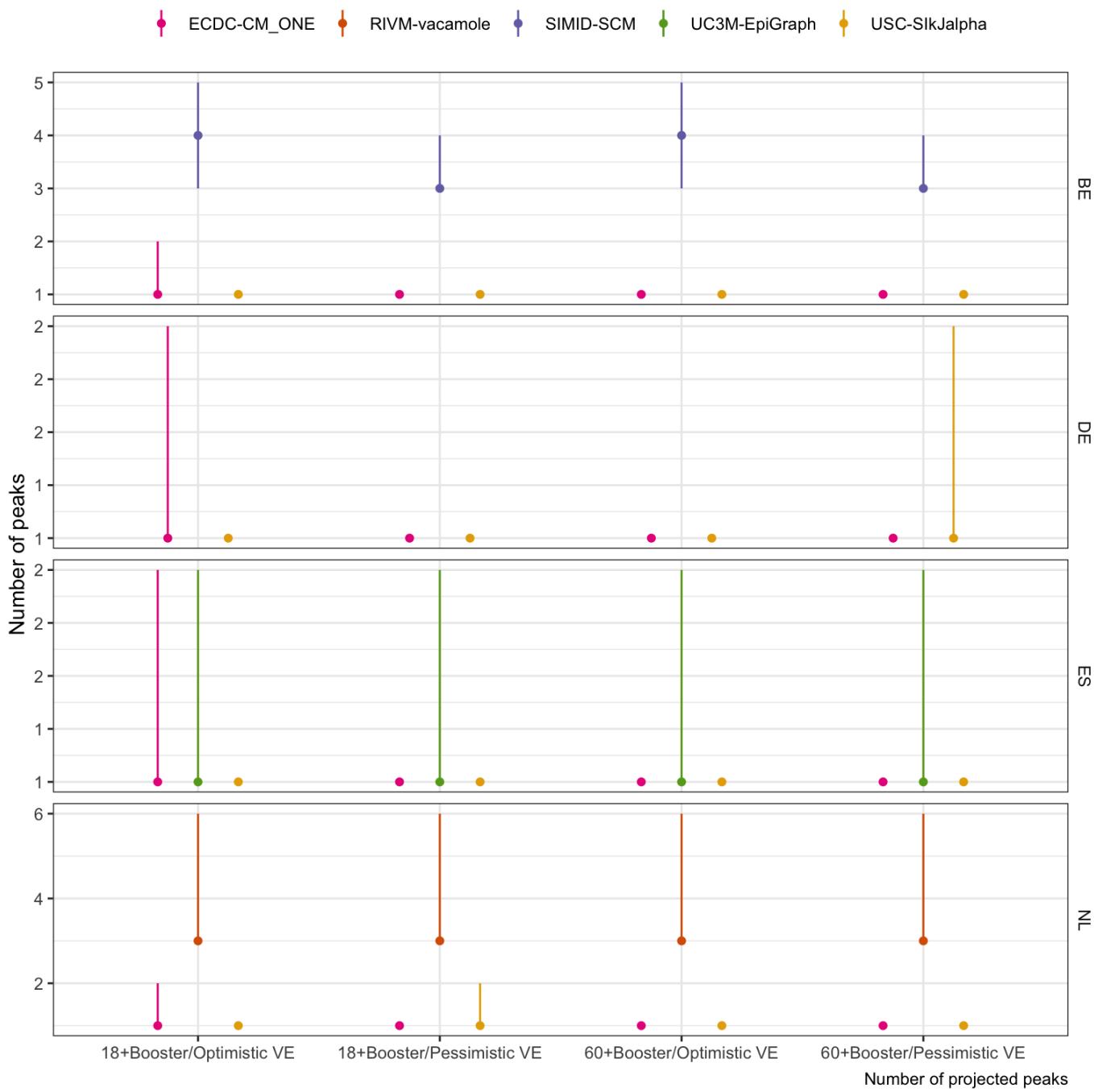
Case

A. Size and timing of peaks. Boxplots show summary of the likely value at peak incidence (median and interquartile range); points show timing and size of peaks from independent sample simulations

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B. Projected number of peaks (median with 5-95% probability)

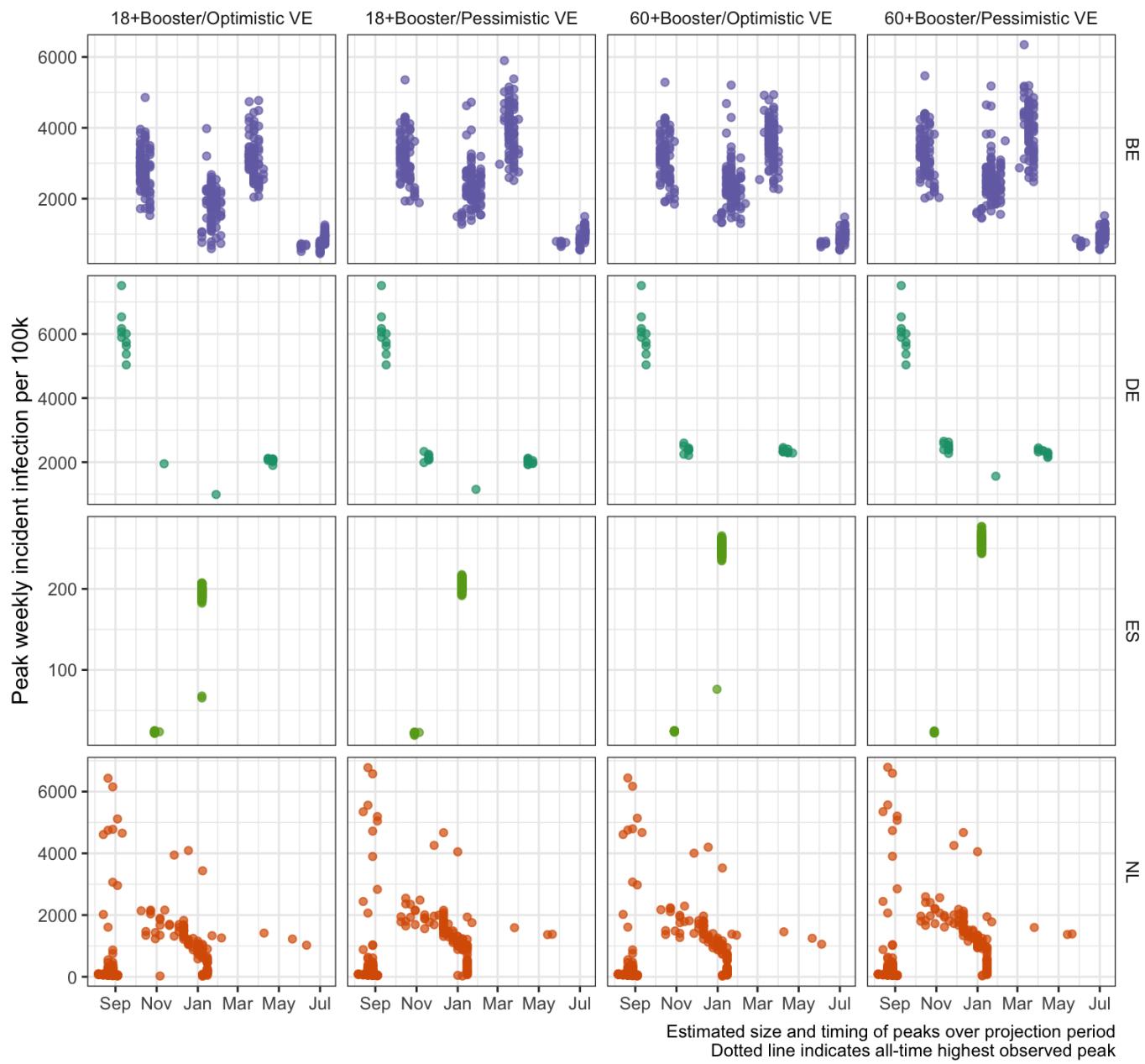


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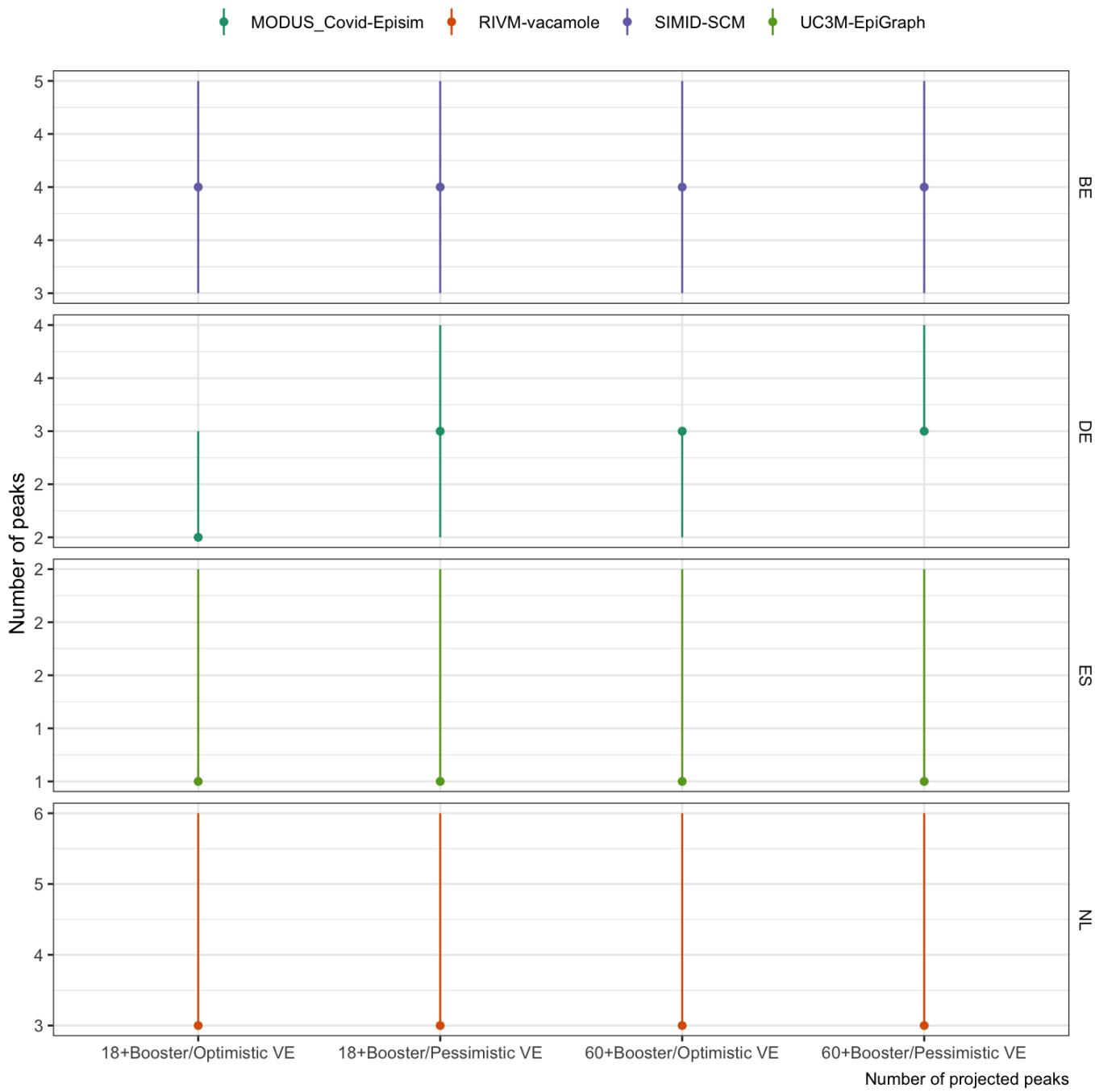
Infection

A. Size and timing of peaks. Boxplots show summary of the likely value at peak incidence (median and interquartile range); points show timing and size of peaks from independent sample simulations

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B. Projected number of peaks (median with 5-95% probability)

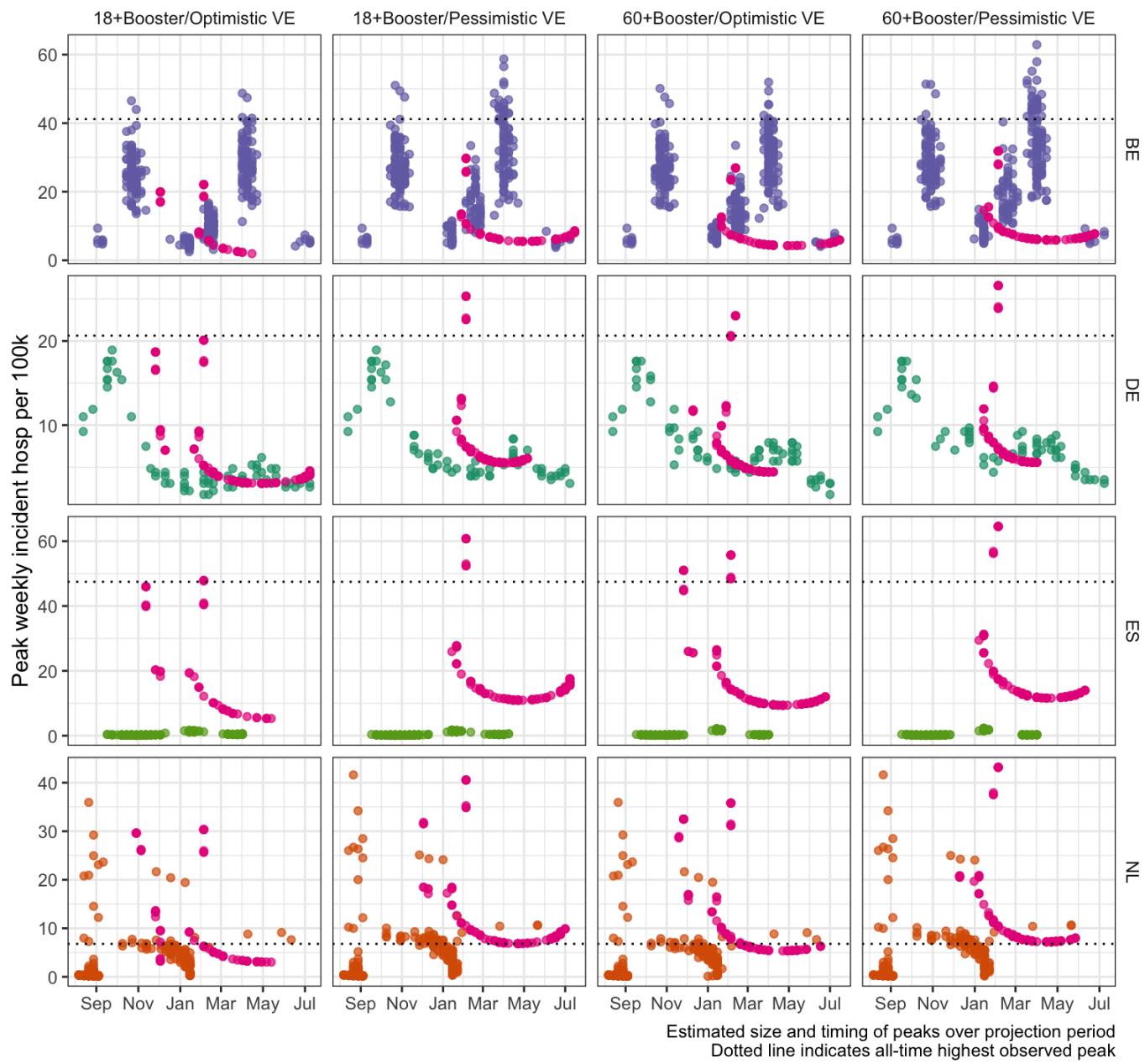


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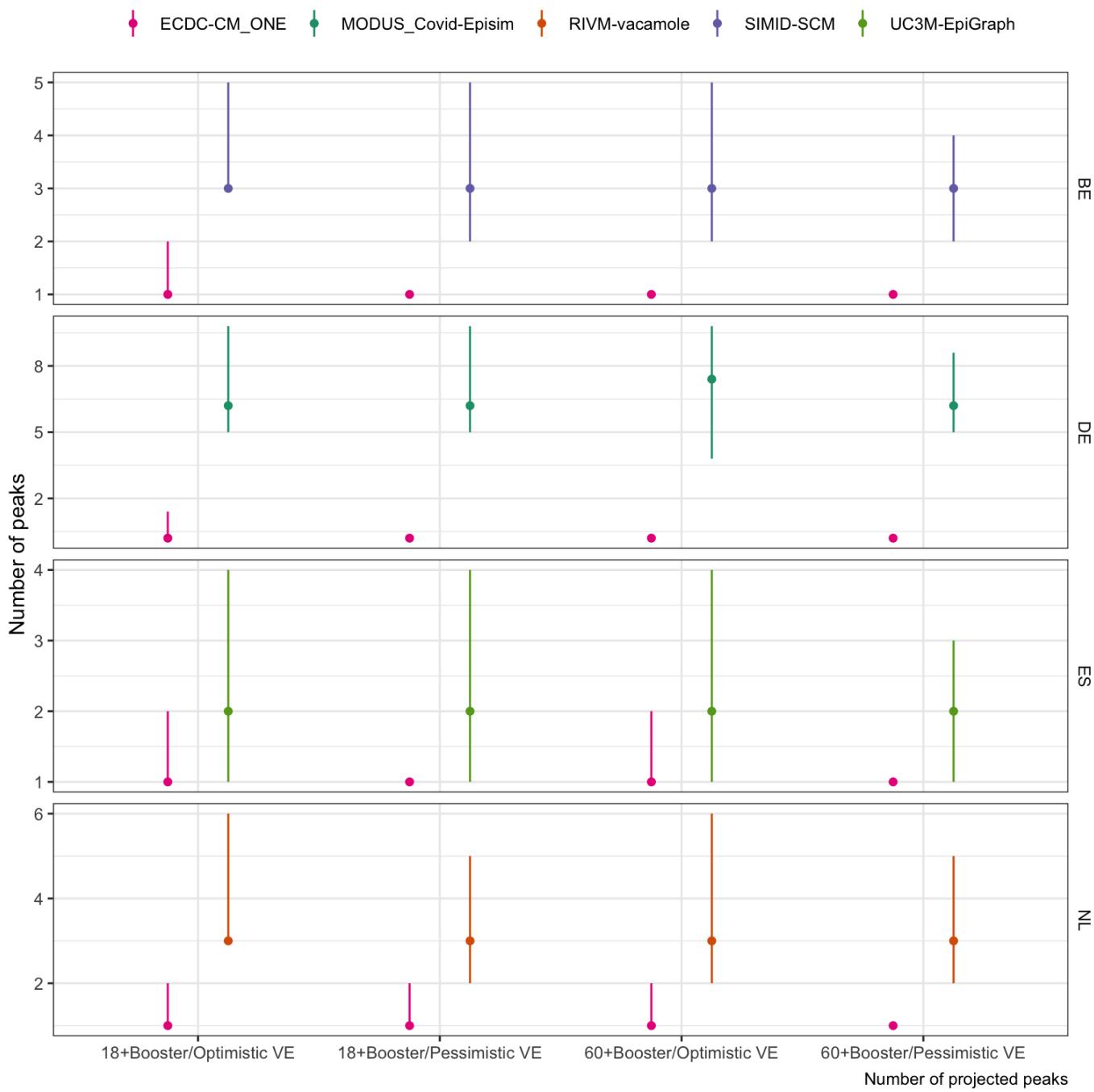
Hosp

A. Size and timing of peaks. Boxplots show summary of the likely value at peak incidence (median and interquartile range); points show timing and size of peaks from independent sample simulations

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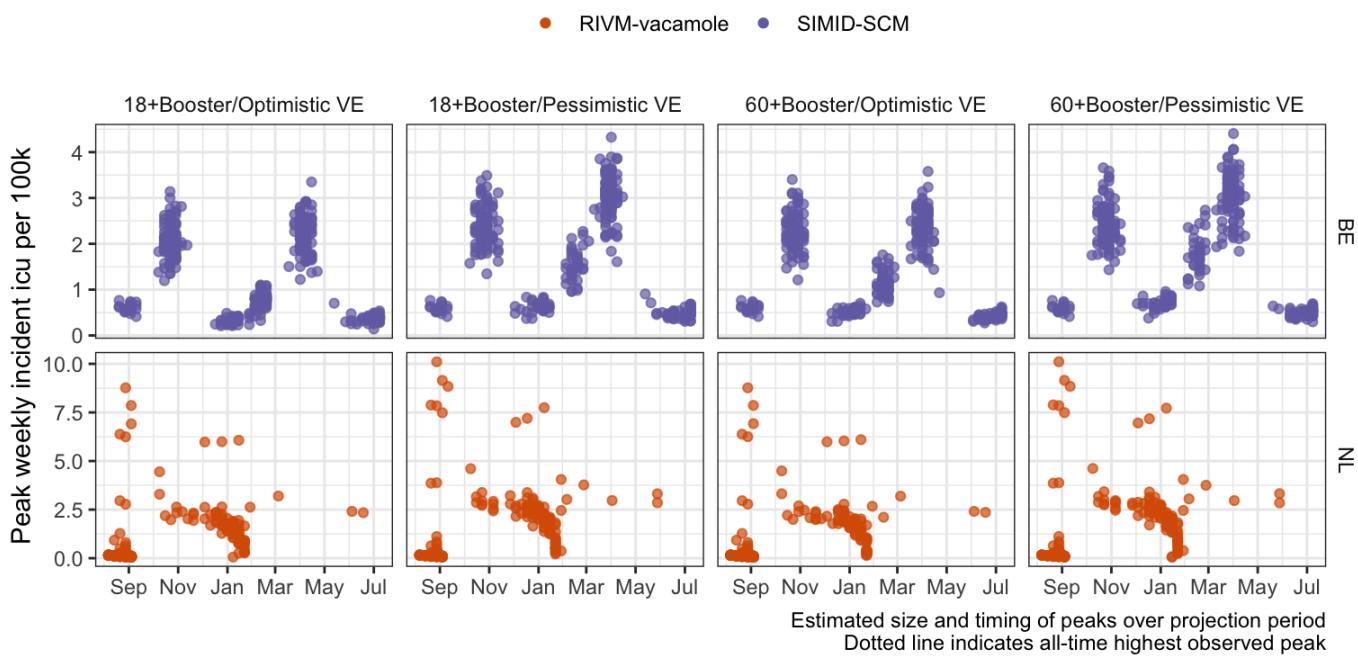
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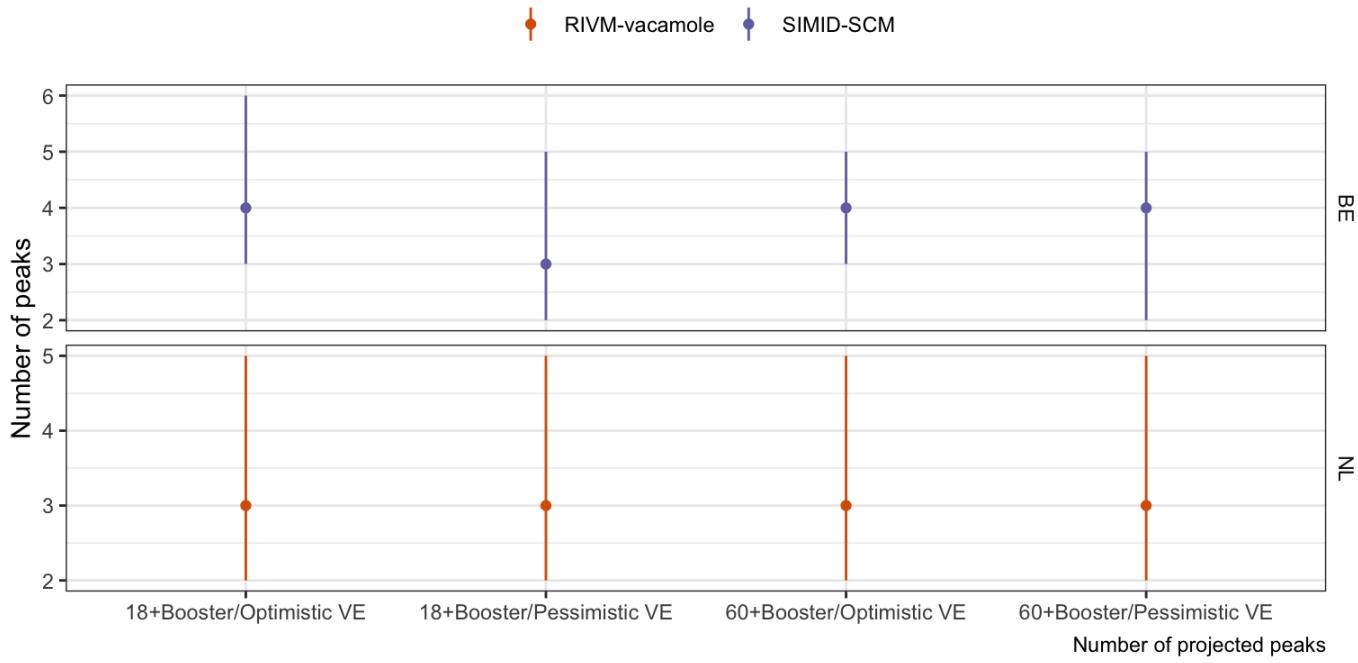
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|ICU

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The European Scenario and Forecast (<https://covid19forecasthub.eu/index.html>) Hubs are run in collaboration between the Epiforecasts team (<https://epiforecasts.io/>) at the London School of Hygiene & Tropical Medicine (<https://www.lshtm.ac.uk>); and the European Centre for Disease Control and Prevention (ECDC) (<https://ecdc.europa.eu>).

Contact us ([contact.html](#))

