

# COVID-19 Scenario Modeling Hub Report

21 July, 2021  
Scenario Modeling Hub Team<sup>1</sup>

## Overview

This report presents the results of the seventh round of projections from the COVID-19 Scenario Modeling Hub. A consortium of nine modeling groups convened to generate week ahead projections of COVID-19 cases, deaths, and hospitalizations for a period of six months (weeks ending 2021-07-10 to 2022-01-01), given four scenarios. A full list of contributors is included at the end of the report. See the table on the next page for an overview of the scenarios included in this round. Detailed scenario descriptions and setting assumptions are provided [here](#).

## Key Takeaways From Seventh Round

- A resurgence in cases is projected for all scenarios at the national level, with larger and earlier resurgences projected in the high transmissibility scenarios.
- National progression of the delta variant is more closely aligned with the the high increase in transmissibility variant scenarios.
- Resurgences are most pronounced in low-vaccination jurisdictions and are not projected to occur in all states.
- In the high variant scenarios, the higher level of vaccination prevents 1,525,000 cases and 21,000 deaths (approximately 20% of cases and deaths projected for lower vaccination scenario).
- Nationally, in the worst case scenario (low vaccination, high variant transmissibility) the projected weekly peak in cases and deaths between July 2021 and January 2022 is approximately 25% of the weekly peak observed during the winter wave in 2020, however some jurisdictions could see a resurgence comparable to last winter's incidences.

Only data collected prior to July 4th, 2021 were used to calibrate the models, therefore these projections may not reflect insights gained from more recent infection rates. Differences between models are driven by uncertainty regarding the growth rate and severity of new variant, seasonality, and changes in reporting rates.

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<sup>1</sup>Compiled by Justin Lessler, Rebecca Borcherding, Emily Howerton, Michelle Qin, and Claire Smith.

## COVID-19 Scenario Modeling Hub: Round 7

### KEY ASSUMPTION DIFFERENCES BETWEEN SCENARIOS

See more detailed notes for each scenario below	Low Impact Variant (low transmissibility increase, no immune escape)	High Impact Variant (high transmissibility increase, no immune escape)
<b>High Vaccination (Low hesitancy)</b>	<p><b>Scenario A</b></p> <p>Vaccination:</p> <ul style="list-style-type: none"> <li>Coverage saturates at <b>80% nationally</b> among the vaccine-eligible population* by December 31, 2021**</li> <li>VE is <b>50%/90%</b> for Pfizer/Moderna against the Delta variant, against symptoms (1<sup>st</sup> /2<sup>nd</sup> dose)</li> <li>J&amp;J no longer used</li> </ul> <p>Variant:</p> <ul style="list-style-type: none"> <li><b>40% increased transmissibility</b> as compared with Alpha for Delta variant. Initial prevalence estimated at state-level by teams.</li> </ul>	<p><b>Scenario B</b></p> <p>Vaccination:</p> <ul style="list-style-type: none"> <li>Coverage saturates at <b>80% nationally</b> among the vaccine-eligible population* by December 31, 2021**</li> <li>VE is <b>35%/85%</b> for Pfizer/Moderna against the Delta variant, against symptoms (1<sup>st</sup> /2<sup>nd</sup> dose)</li> <li>J&amp;J no longer used</li> </ul> <p>Variant:</p> <ul style="list-style-type: none"> <li><b>60% increased transmissibility</b> as compared with Alpha for Delta variant. Initial prevalence estimated at state-level by teams.</li> </ul>
<b>Low Vaccination (High hesitancy)</b>	<p><b>Scenario C</b></p> <p>Vaccination:</p> <ul style="list-style-type: none"> <li>Coverage saturates at <b>70% nationally</b> among the vaccine-eligible population* by December 31, 2021**</li> <li>VE is <b>50%/90%</b> for Pfizer/Moderna against the Delta variant, against symptoms (1<sup>st</sup> /2<sup>nd</sup> dose)</li> <li>J&amp;J no longer used</li> </ul> <p>Variant:</p> <ul style="list-style-type: none"> <li><b>40% increased transmissibility</b> as compared with Alpha for Delta variant. Initial prevalence estimated at state-level by teams.</li> </ul>	<p><b>Scenario D</b></p> <p>Vaccination:</p> <ul style="list-style-type: none"> <li>Coverage saturates at <b>70% nationally</b> among the vaccine-eligible population* by December 31, 2021**</li> <li>VE is <b>35%/85%</b> for Pfizer/Moderna against the Delta variant, against symptoms (1<sup>st</sup> /2<sup>nd</sup> dose)</li> <li>J&amp;J no longer used</li> </ul> <p>Variant:</p> <ul style="list-style-type: none"> <li><b>60% increased transmissibility</b> as compared with Alpha for Delta variant. Initial prevalence estimated at state-level by teams.</li> </ul>

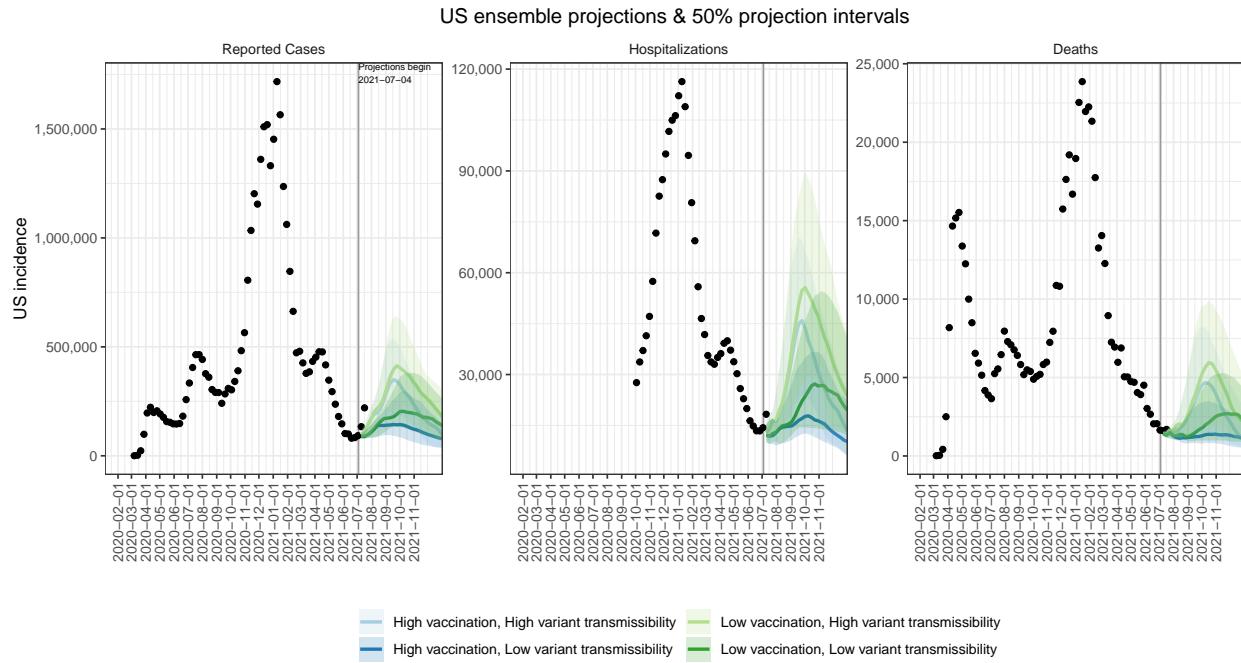
\* **Vaccine-eligible population.** On May 12, the eligible population is extended to individuals aged 12 years and older, through the end of the projection period. We are assuming in these Round 7 scenarios that vaccines for children under 12 will not be authorized before January 2022.

\*\* **Vaccine hesitancy** expected to cause vaccination coverage to slow and eventually saturate at some level below 100%. The saturation levels provided in these scenarios are *National* reference points to guide defining hesitancy, though the speed of that saturation and heterogeneity between states (or other geospatial scales) and/or age groups are at the discretion of the modeling team. The high vaccination 80% saturation is defined crudely as using the current estimates from the Delphi group, adjusted for potential bias in respondents, who tend to be more highly vaccinated than the general US population ([link](#), updated from round 6). The low saturation estimate of 70% is based on an adjustment of the Pulse Survey overall estimate, adjusted for survey participant vaccination coverage. This number also mirrors the lowest county-level estimate (73.3%) from the U.S. Census Bureau's Pulse Survey from May 26-June 7, 2021 ([link](#)), which is updated from round 6.

Figure 1: Round 7 Scenario Specifications

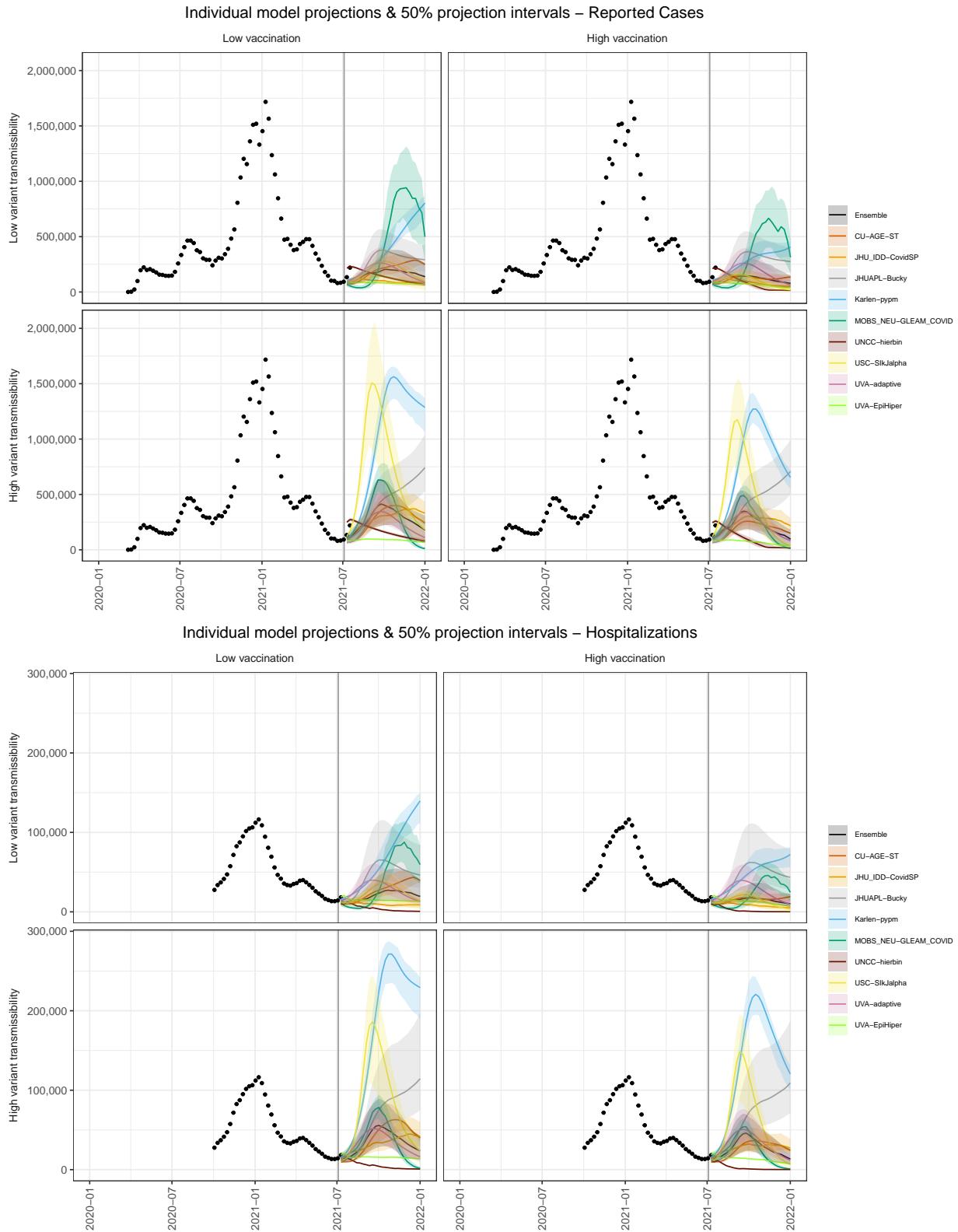
## National ensemble projections

Ensemble projections for national cases, hospitalizations and deaths separated by scenario.

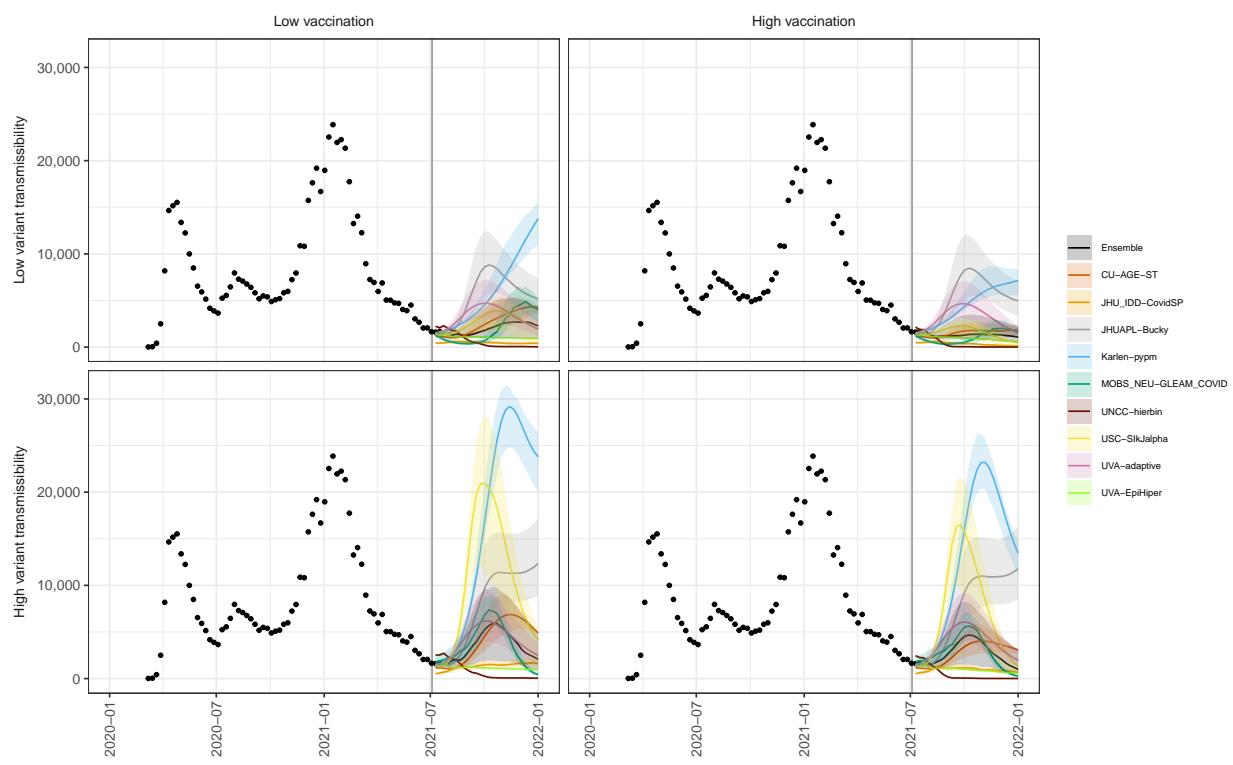


## National individual model projections

Individual model projections and ensemble by scenario for national cases, hospitalizations, and deaths.

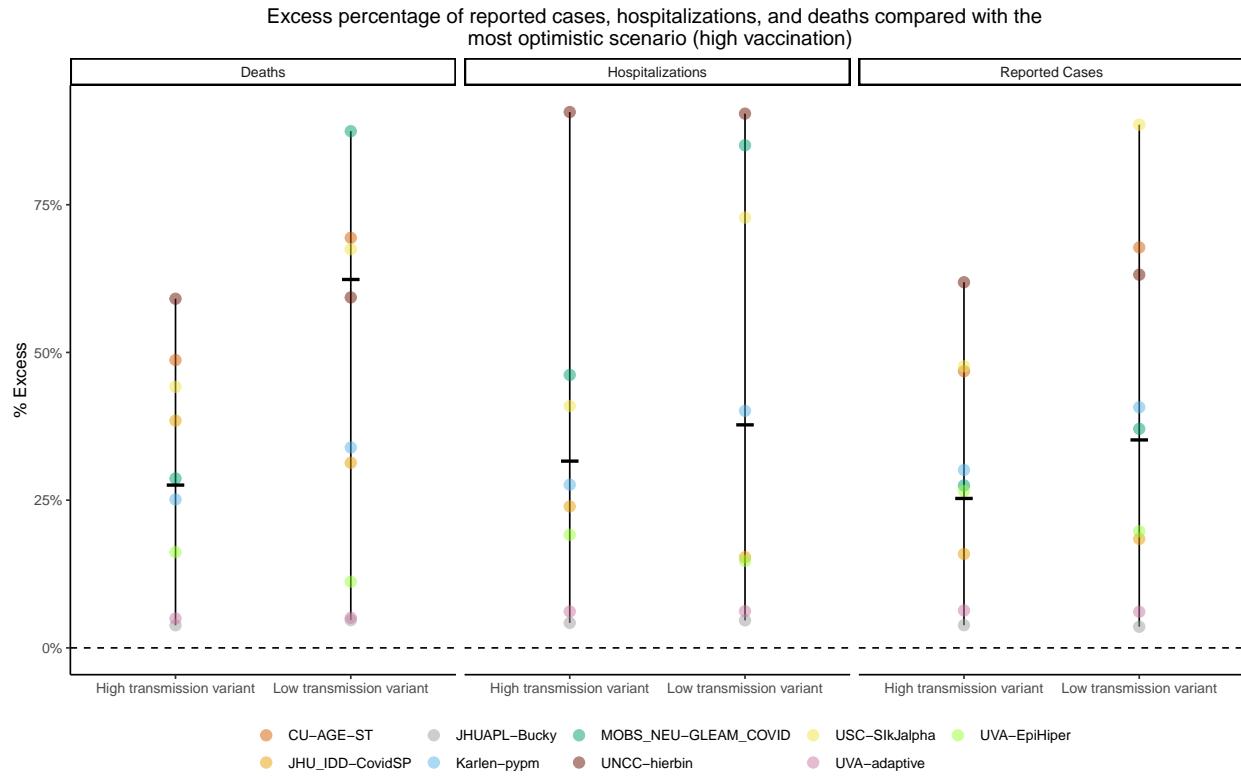


### Individual model projections & 50% projection intervals – Deaths



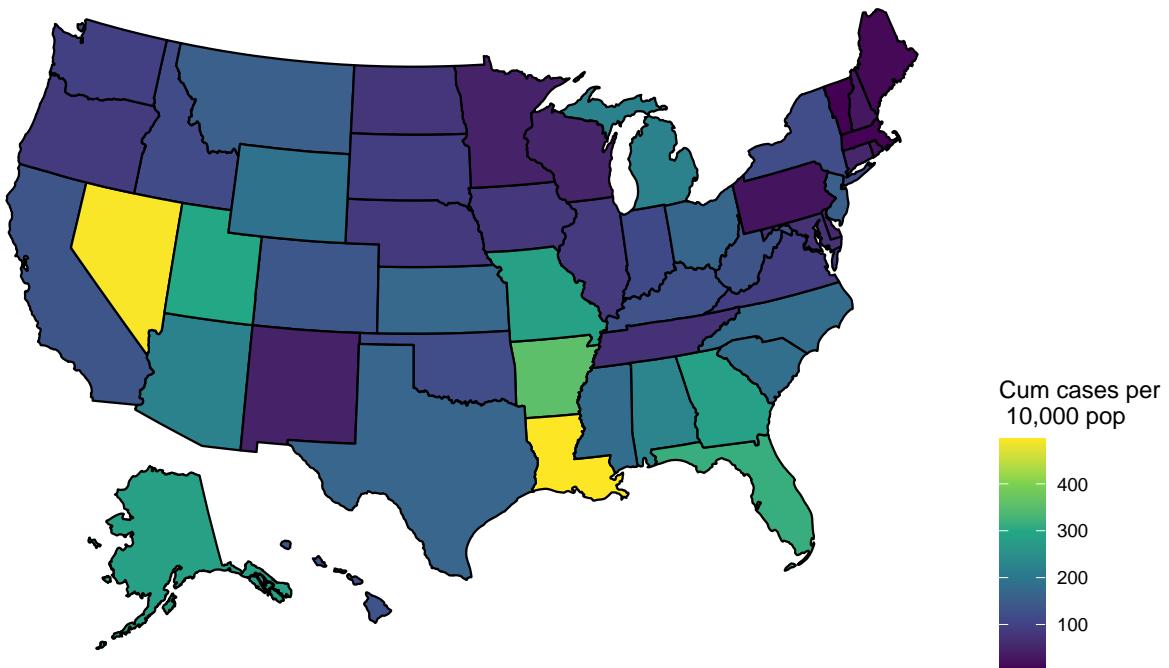
## Scenario comparison

Reported cases, deaths, and hospitalizations averted in the high vaccination scenarios for each variant transmissibility assumption.

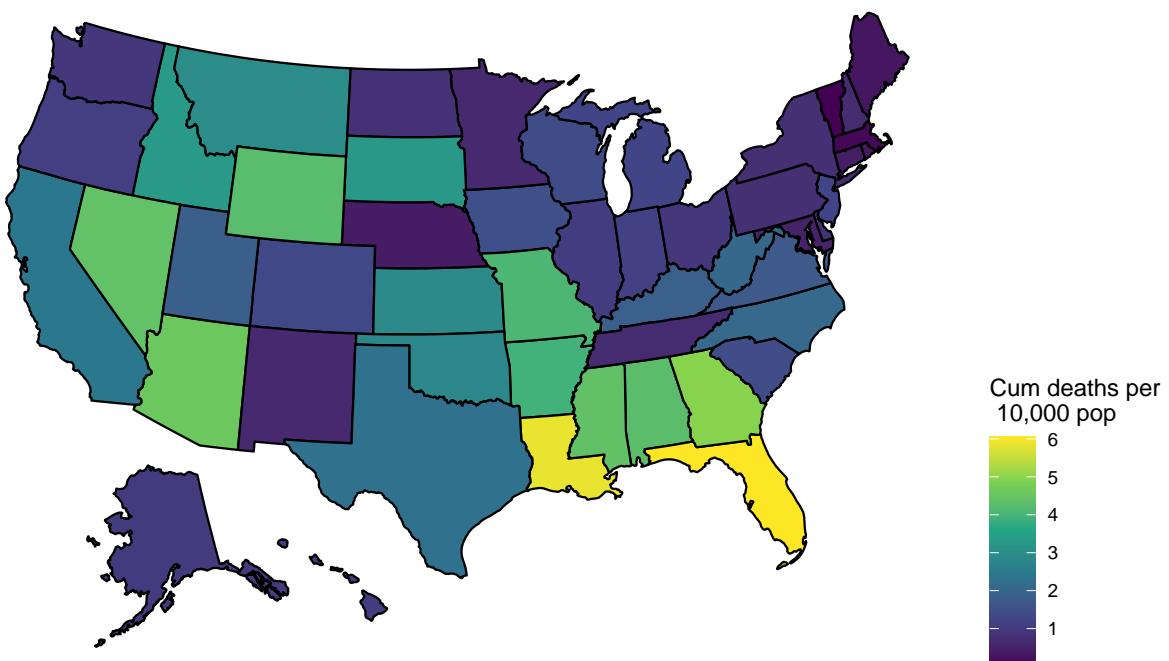


## Risk maps

Cumulative reported cases per 10,000 population in low vaccination,  
high transmissibility variant scenario: July 04, 2021 to January 01, 2022

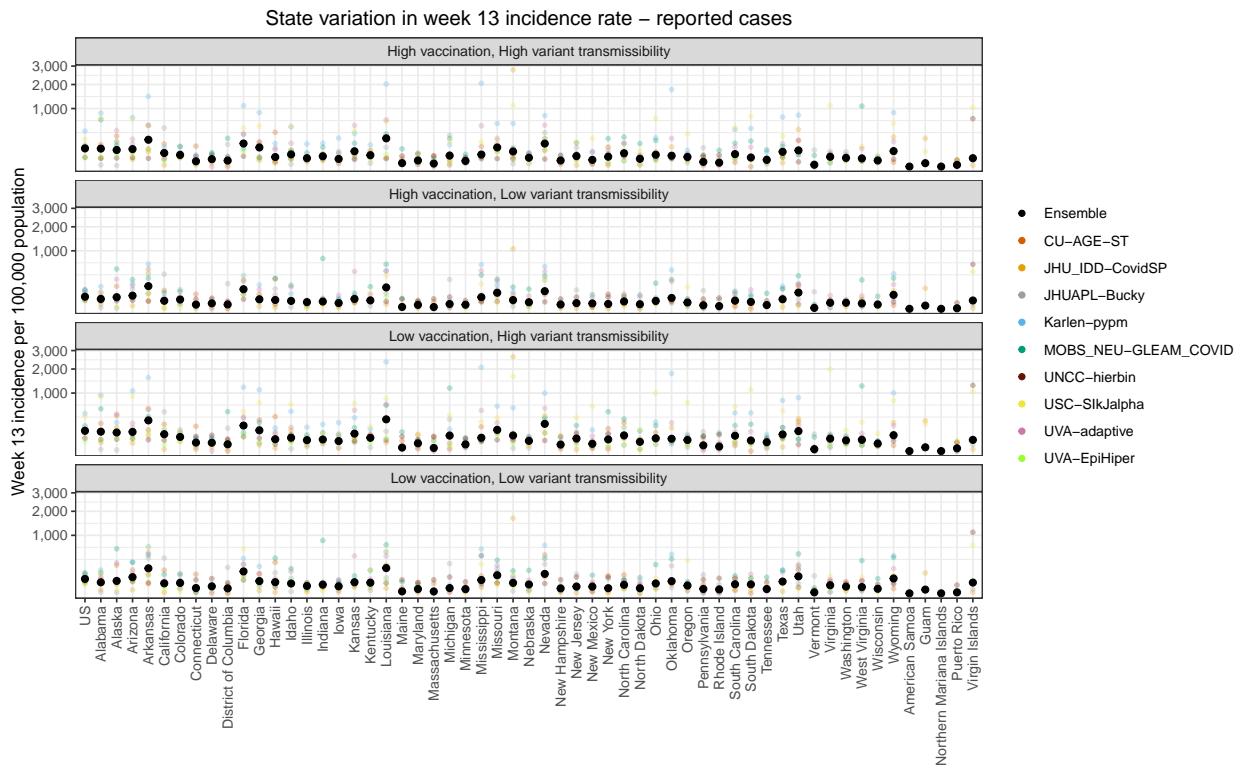


Cumulative deaths per 10,000 population in low vaccination,  
high transmissibility variant scenario: July 04, 2021 to January 01, 2022

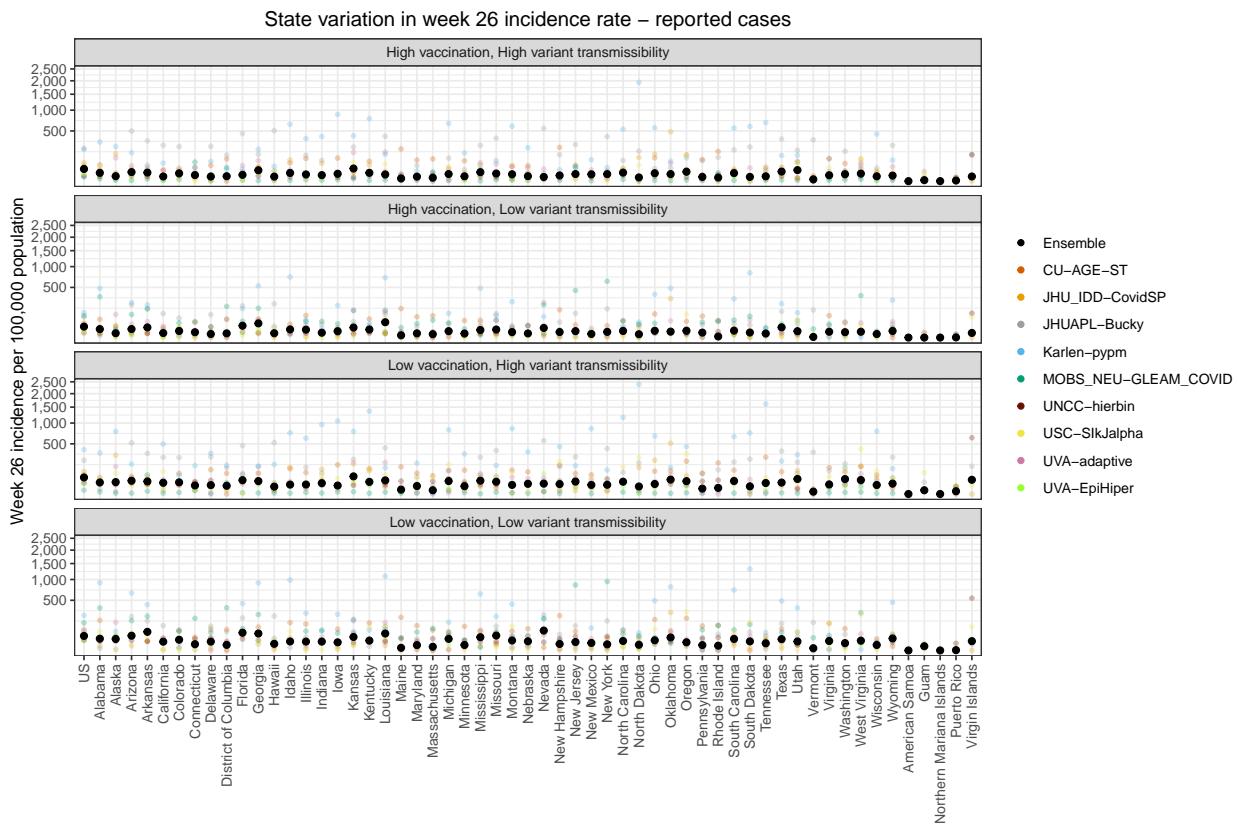


## State-level deviation from national

Individual model and ensembles projections for state-level case incidence per 100,000 population at week 13.



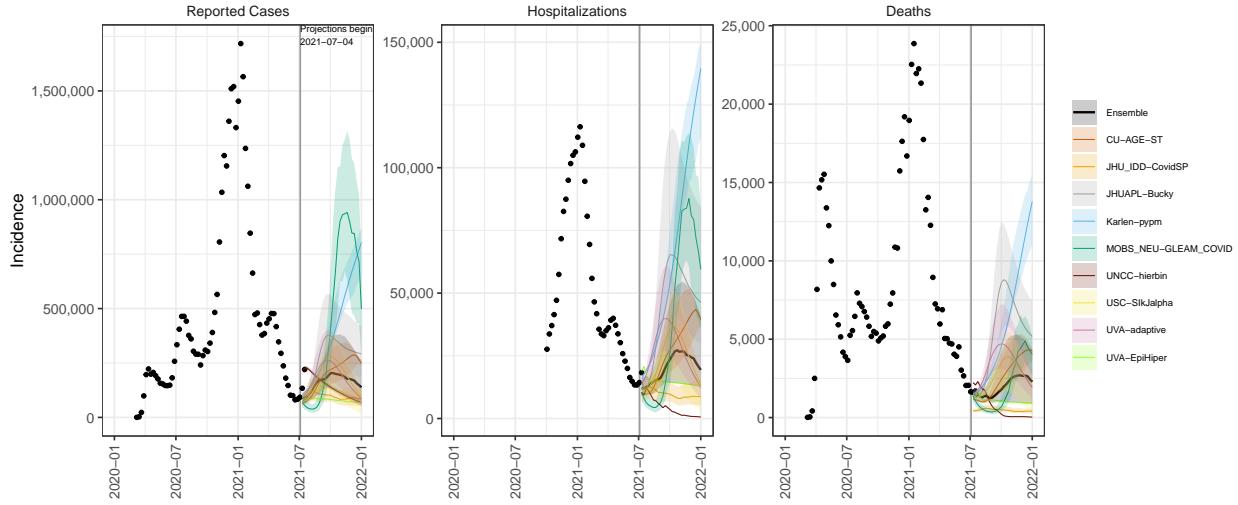
Individual model and ensembles projections for state-level incidence per 100,000 population at week 26.



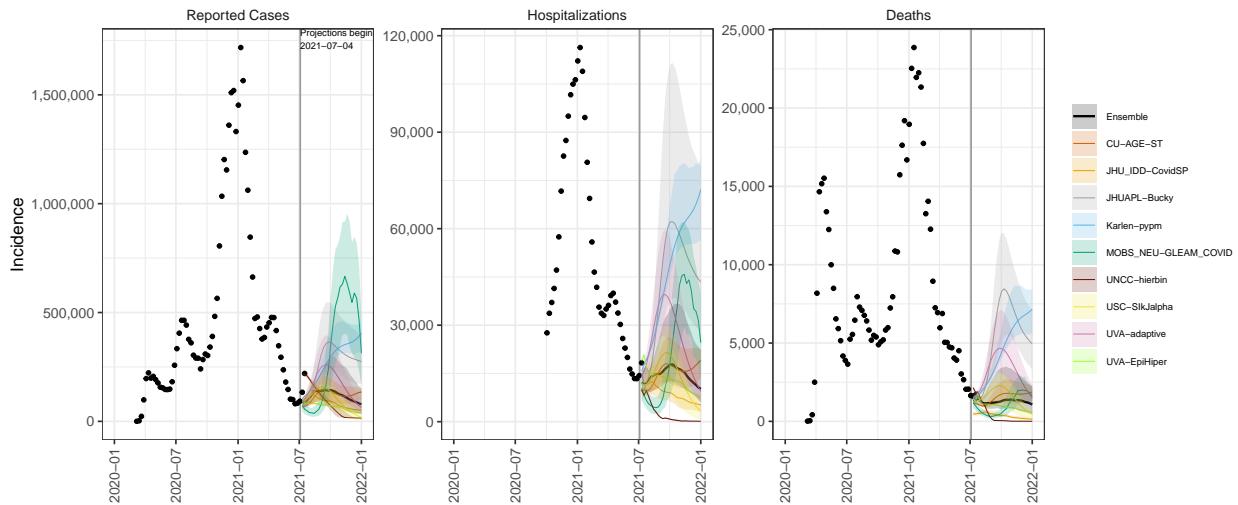
## National model variation

Individual model projections for national incident cases, hospitalizations and deaths.

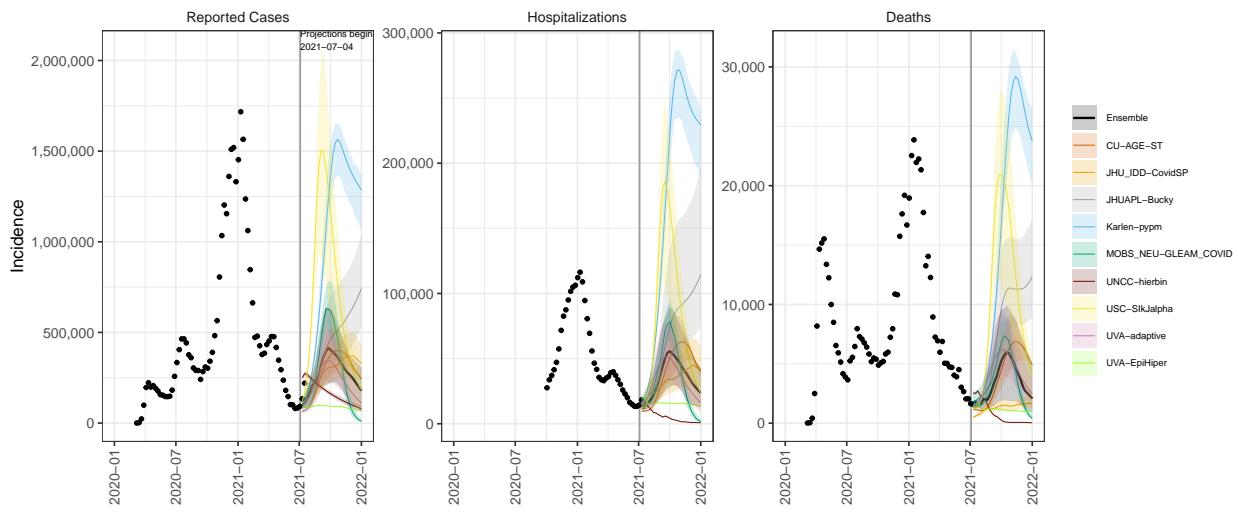
Individual model projections & 50% projection intervals – Low vaccination, Low variant transmissibility



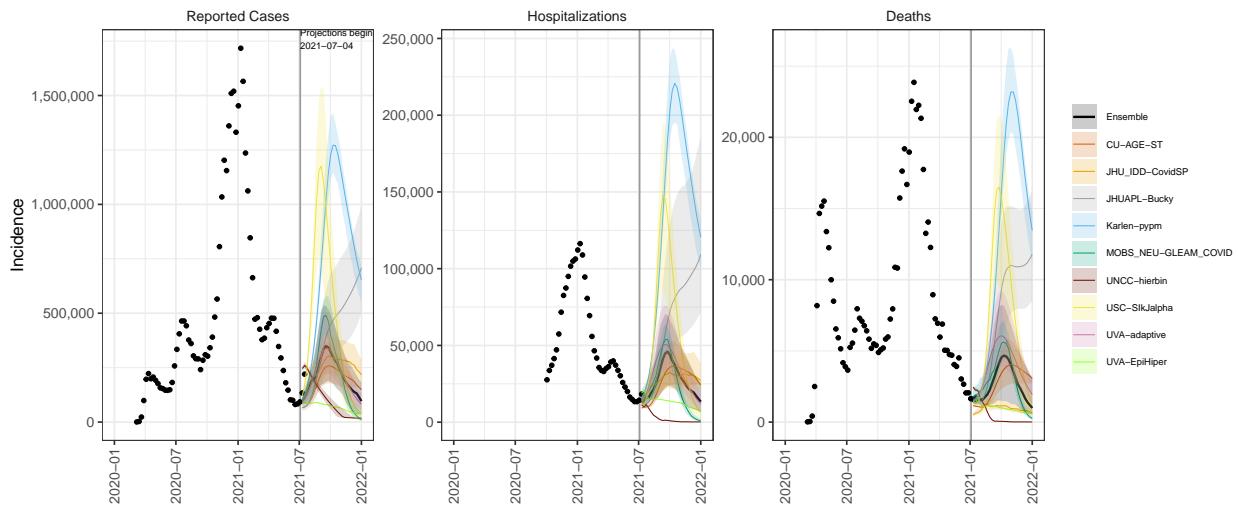
Individual model projections & 50% projection intervals – High vaccination, Low variant transmissibility



### Individual model projections & 50% projection intervals – Low vaccination, High variant transmissibility

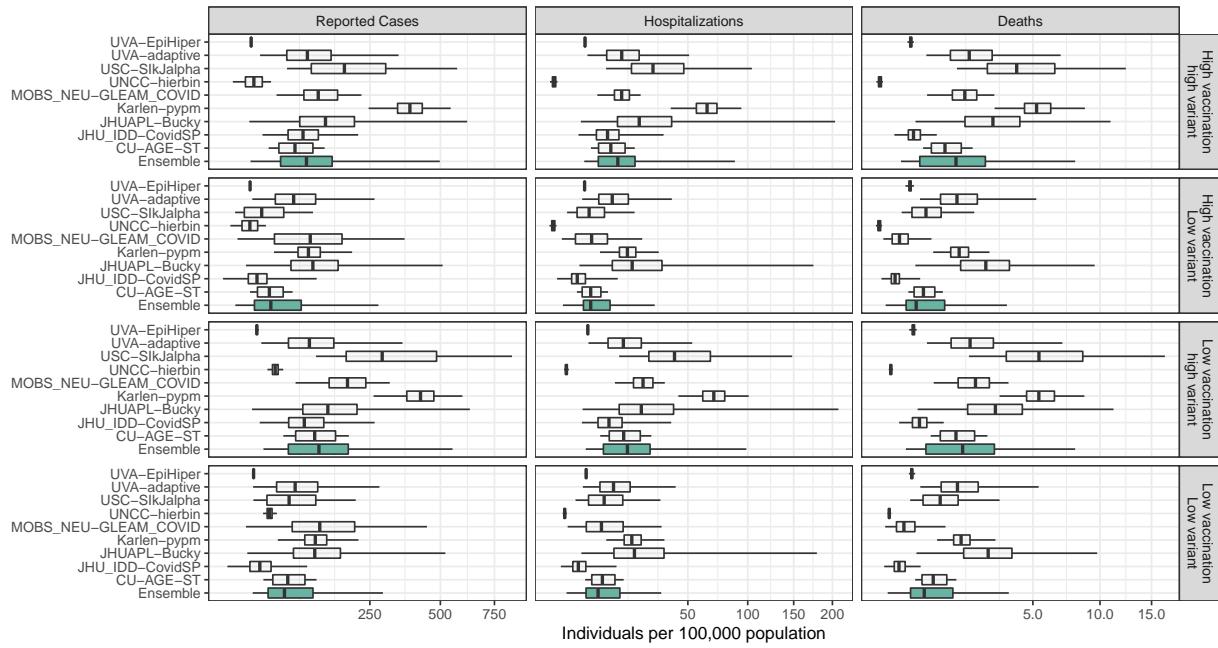


### Individual model projections & 50% projection intervals – High vaccination, High variant transmissibility

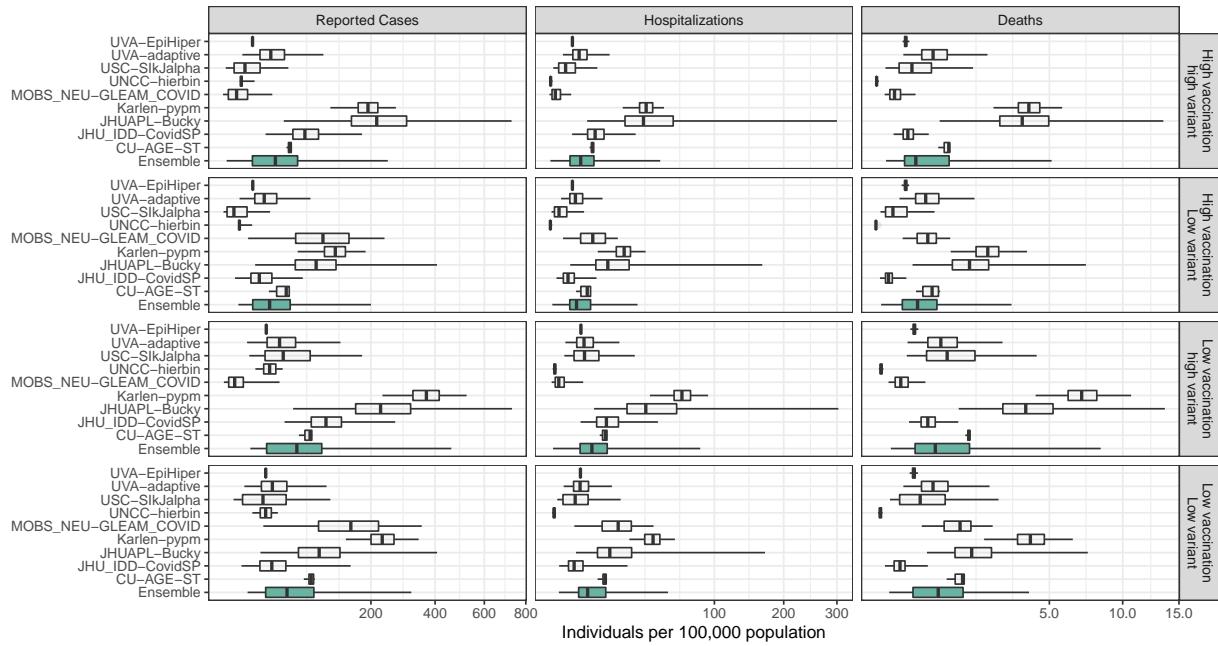


## Projection distributions

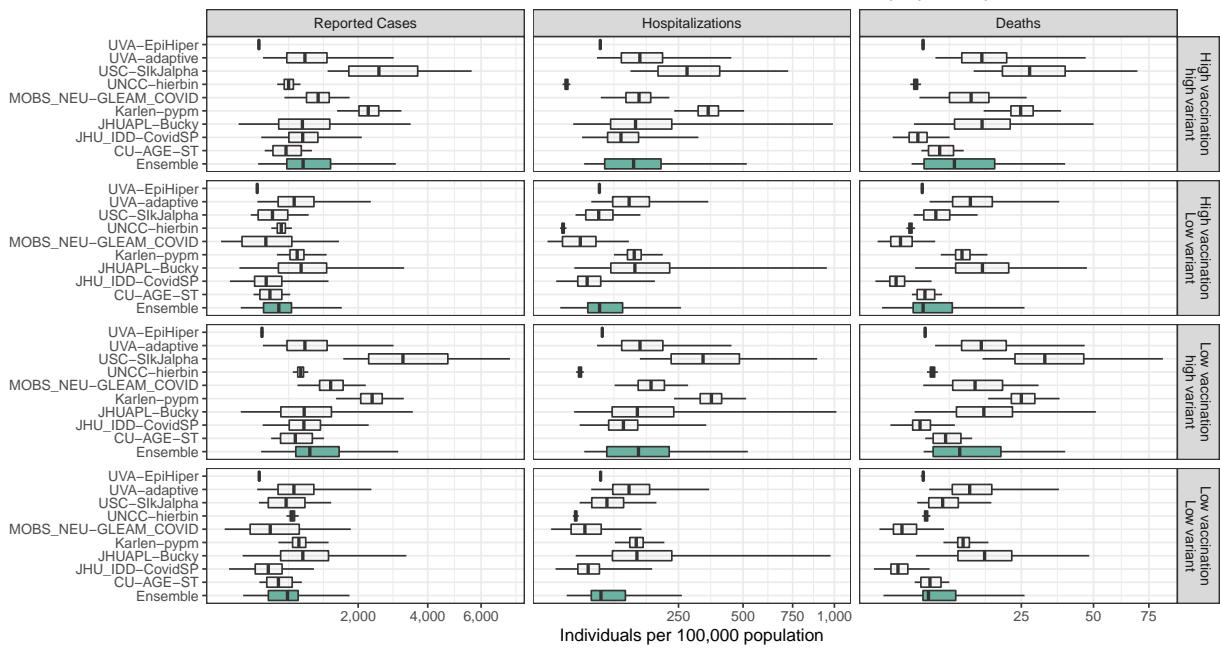
Model variation – 13 week ahead incidence



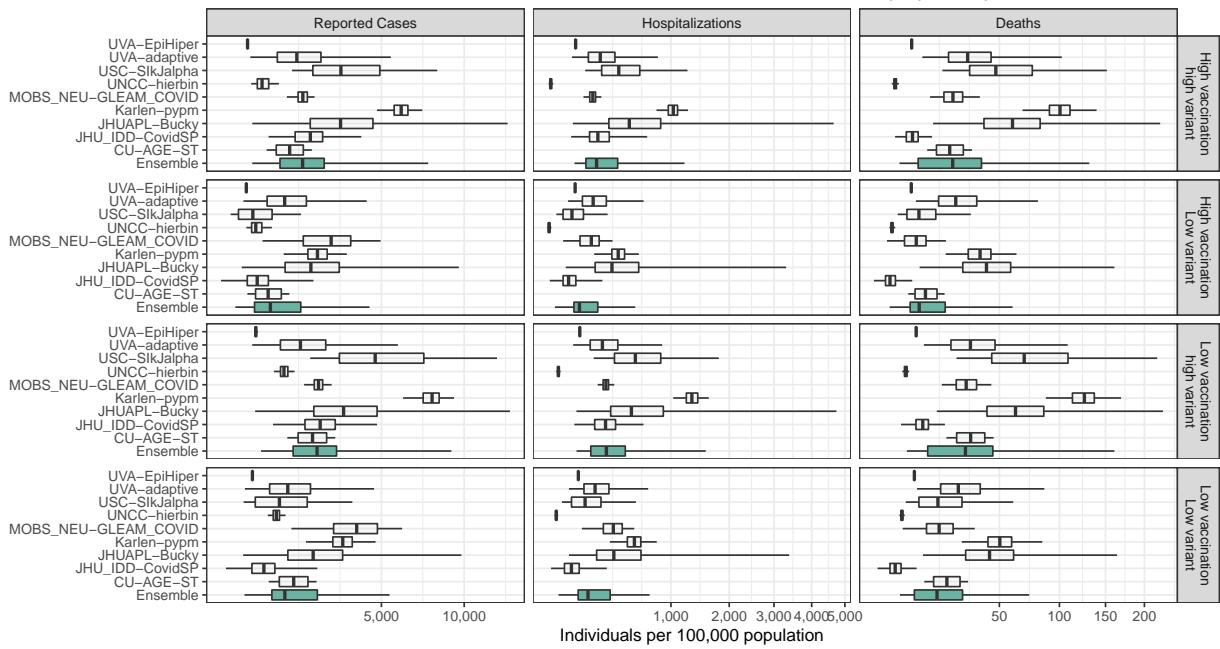
Model variation – 26 week ahead incidence



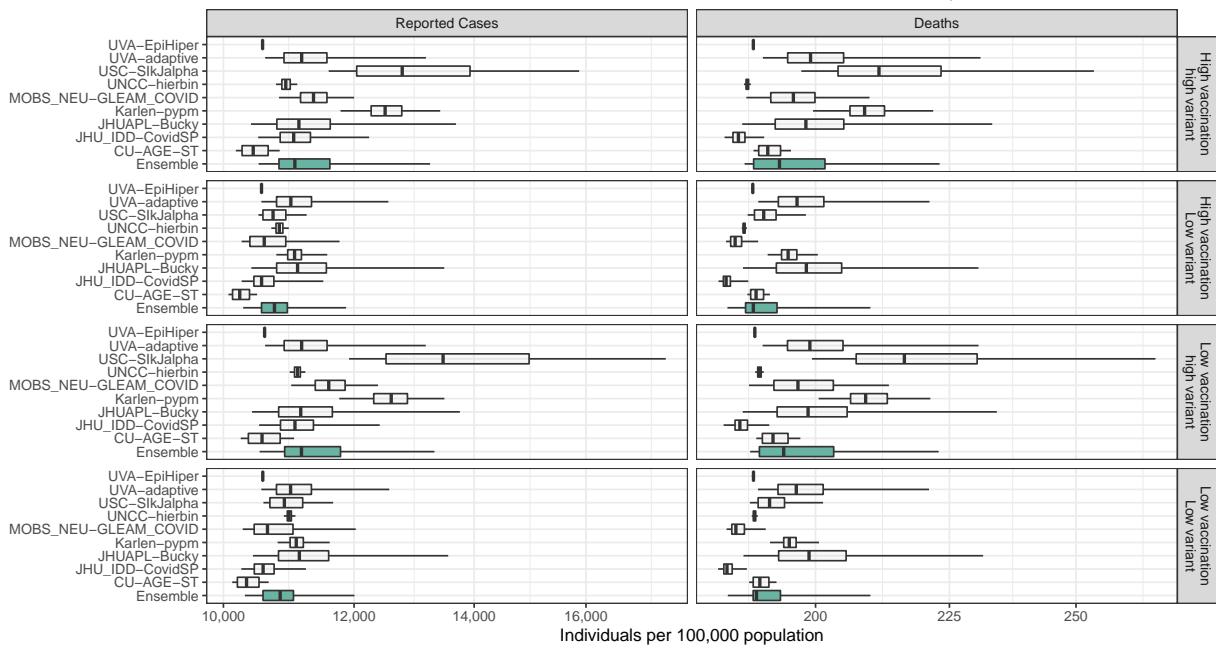
Model variation – 13 week ahead cumulative incidence over projection period



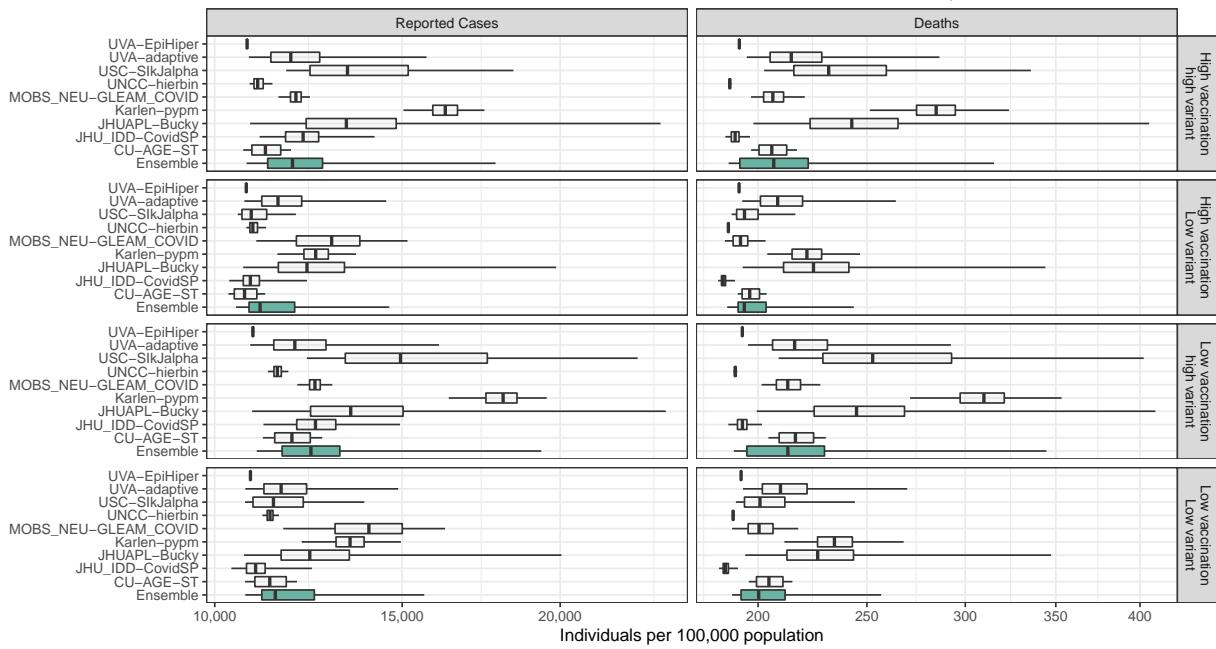
Model variation – 26 week ahead cumulative incidence over projection period



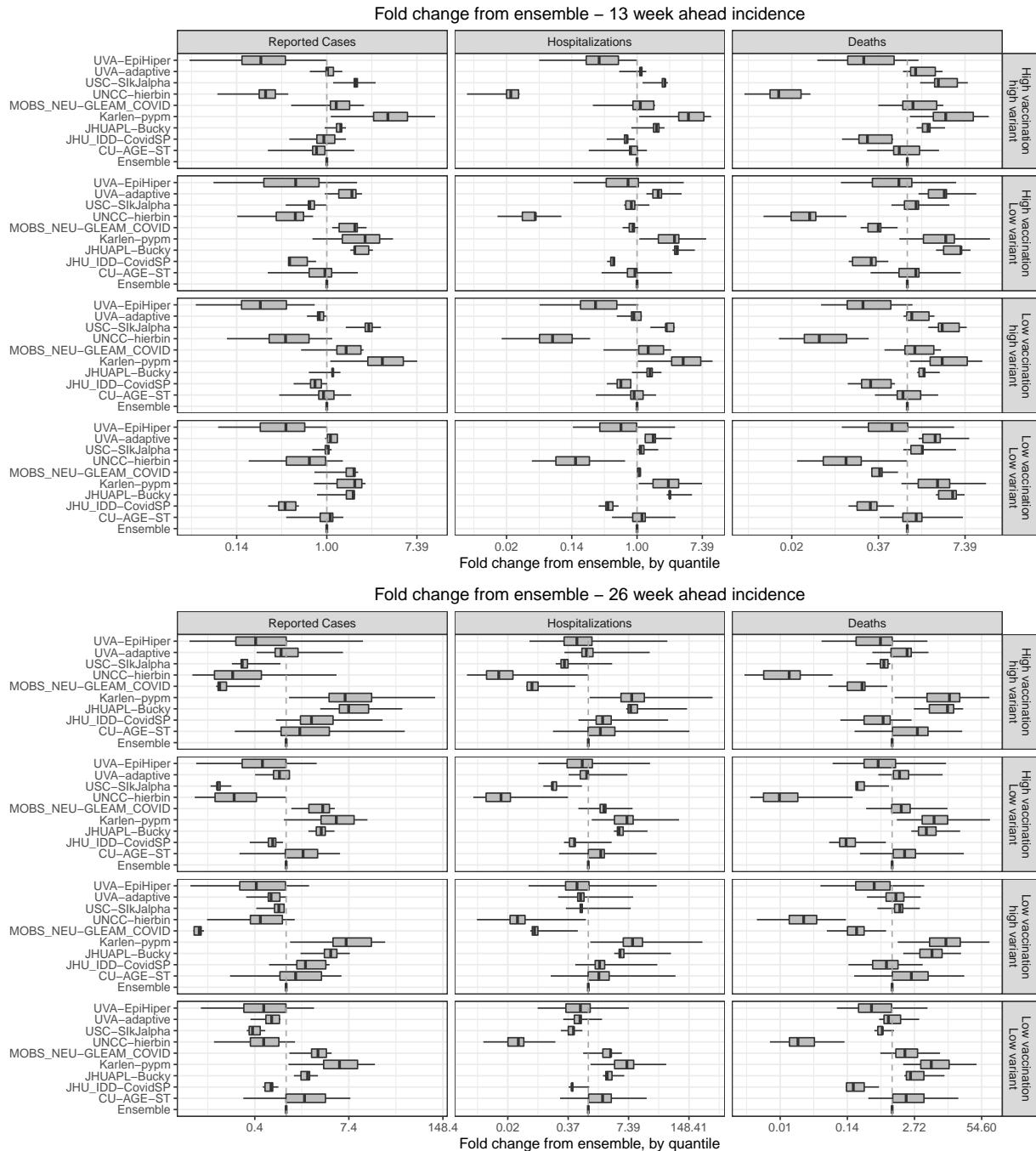
Model variation – 13 week ahead cumulative incidence over entire pandemic



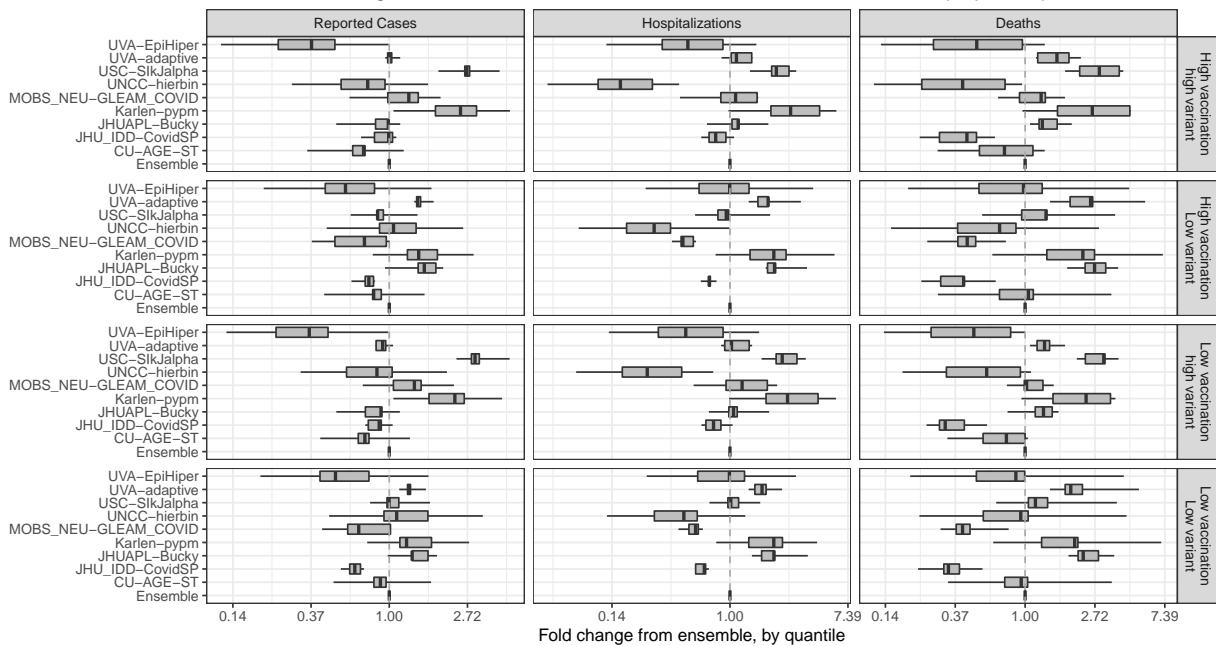
Model variation – 26 week ahead cumulative incidence over entire pandemic



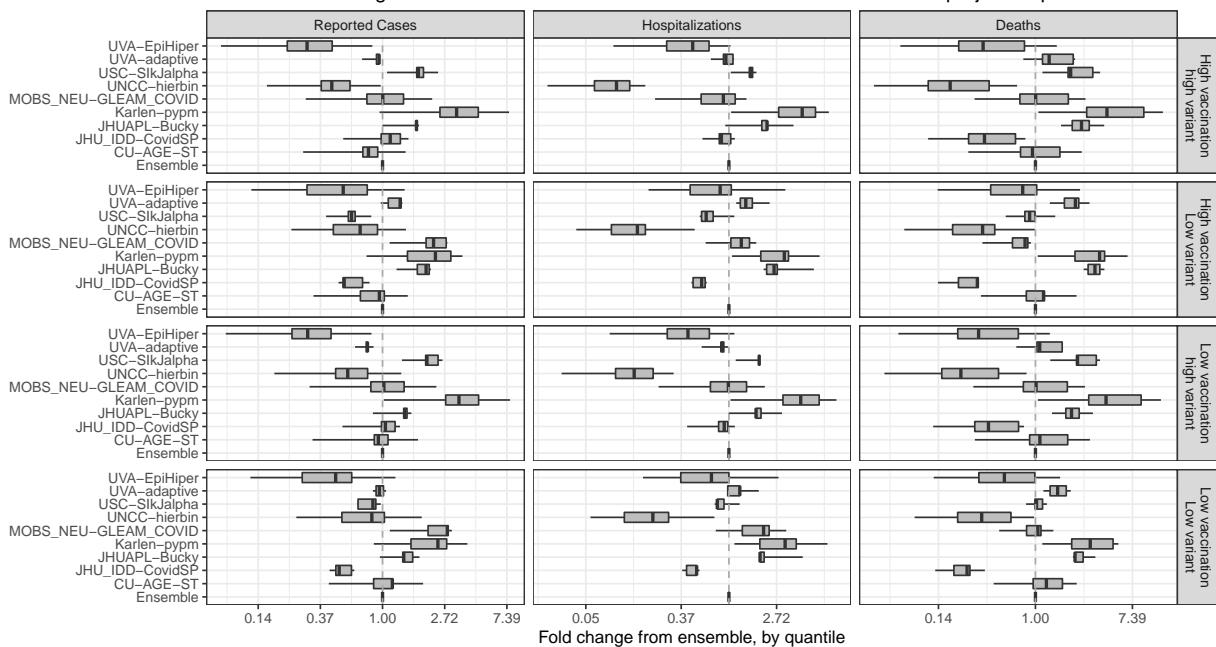
## Difference between model and ensemble distributions



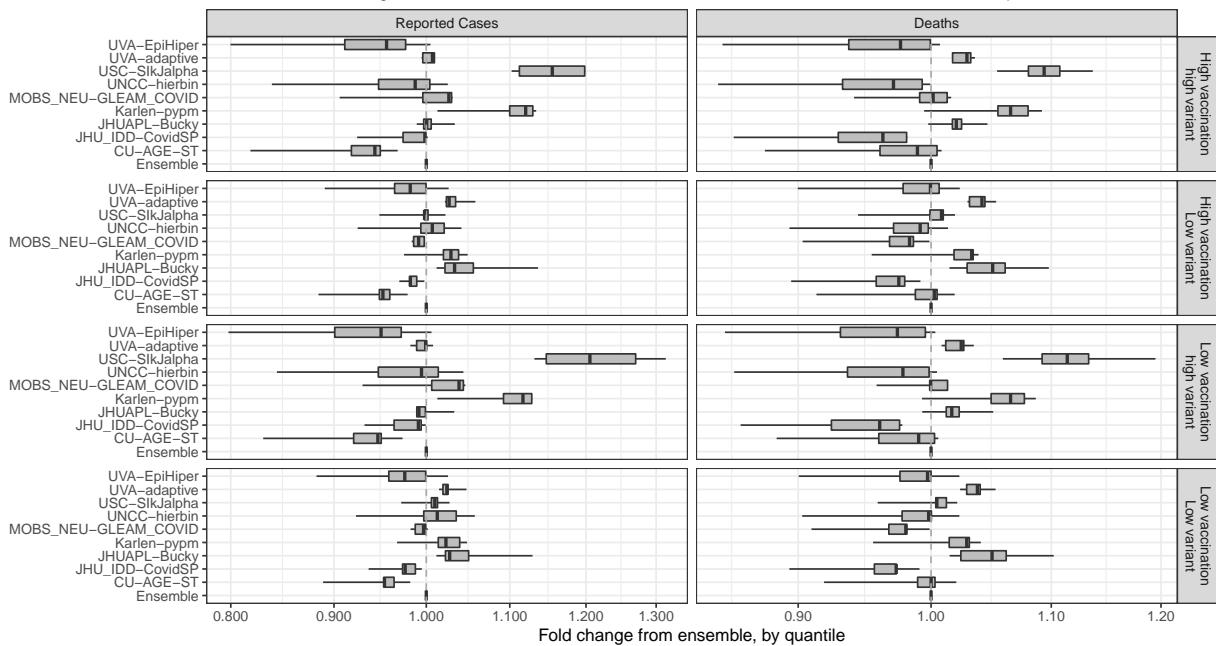
Fold change from ensemble – 13 week ahead cumulative incidence over projection period



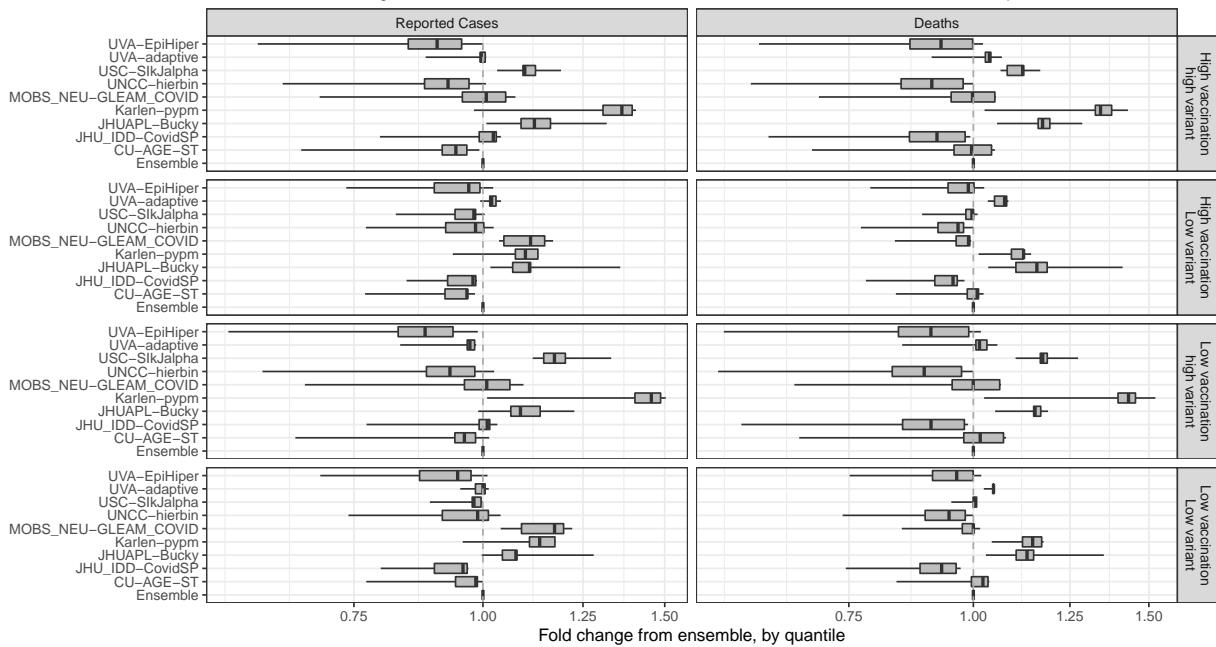
Fold change from ensemble – 26 week ahead cumulative incidence over projection period



Fold change from ensemble – 13 week ahead cumulative incidence over entire pandemic

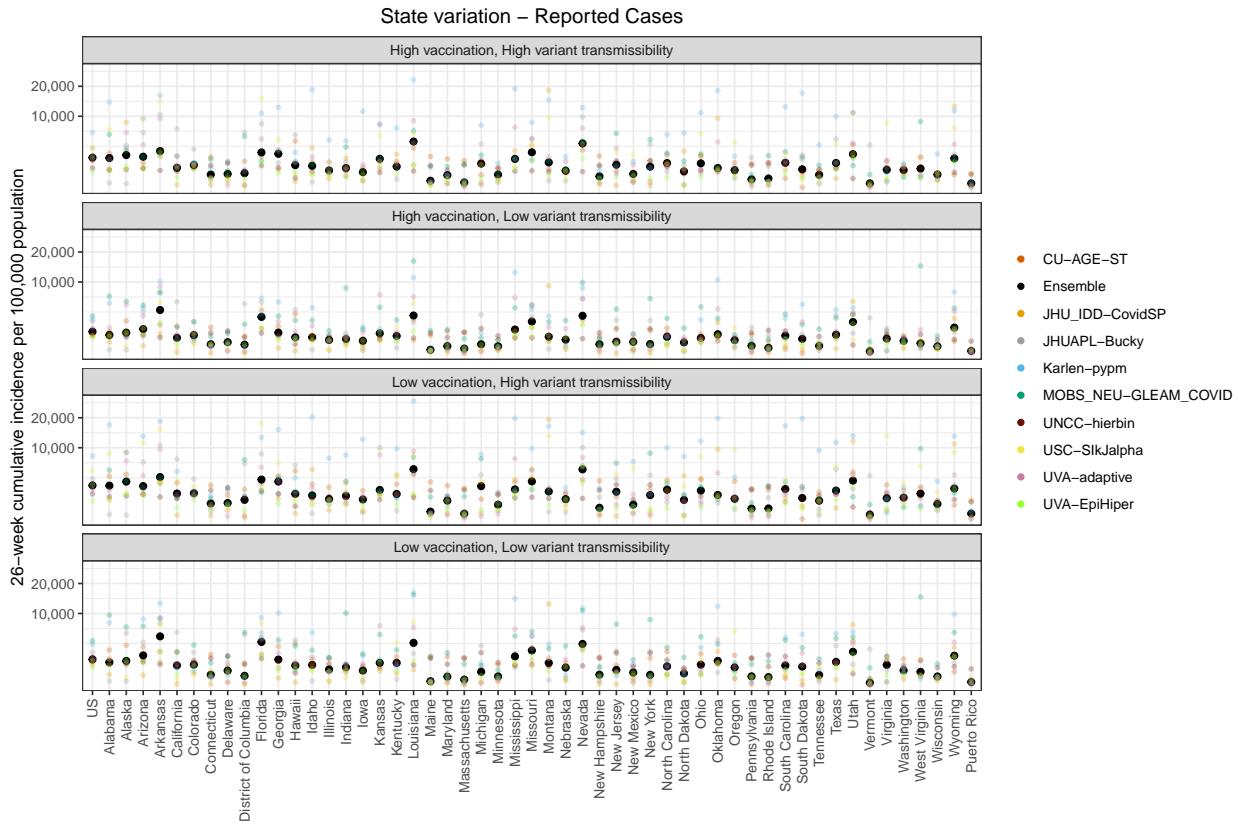


Fold change from ensemble – 26 week ahead cumulative incidence over entire pandemic

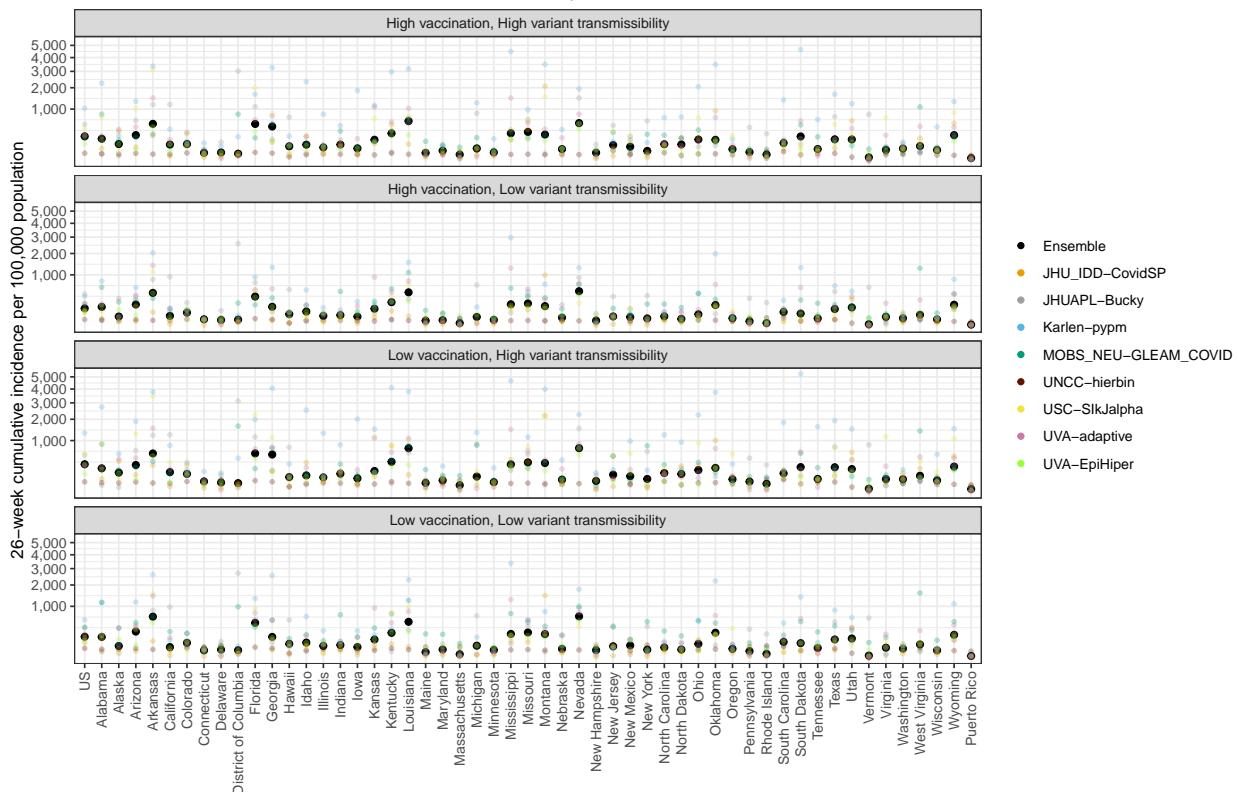


## Supplemental Plots

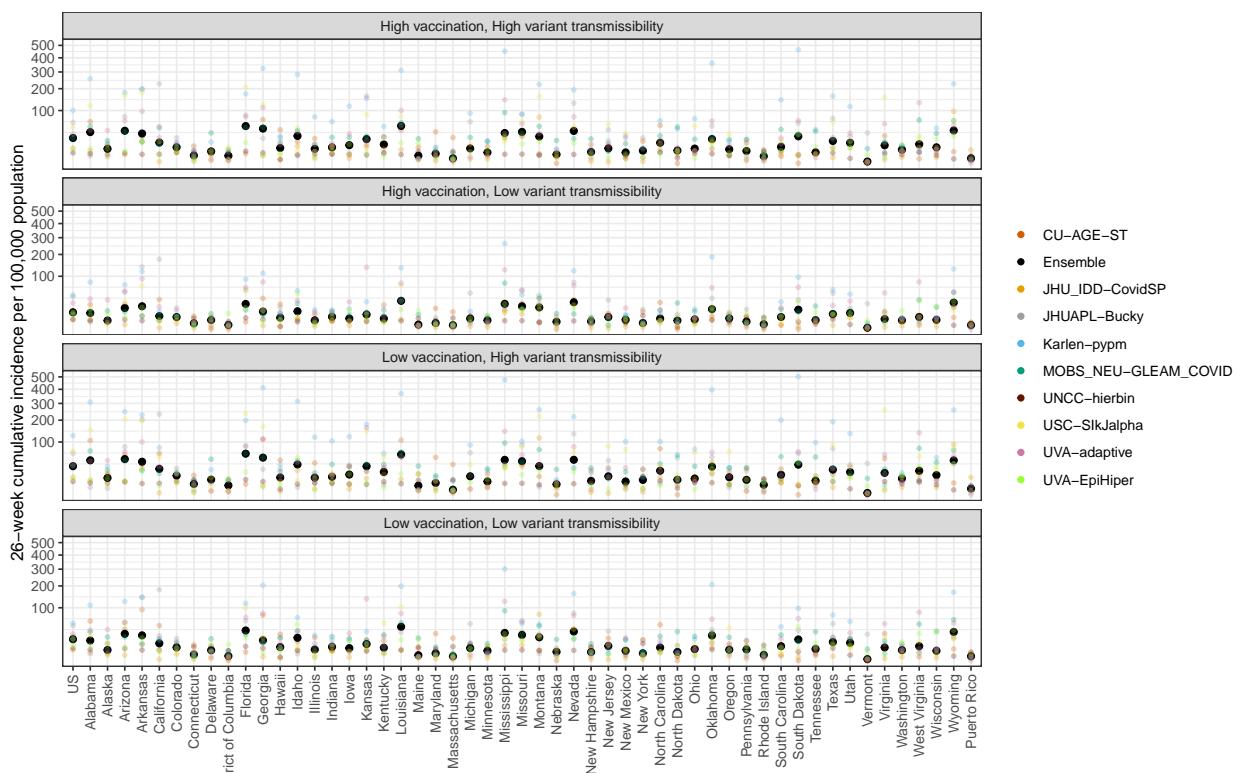
Individual model and ensembles projections for state-level cumulative incidence per 100,000 population over 26-week projection period. Please note the relatively small number of models incorporated in the ensemble at this stage, particularly states and territories for which only one or two models have submitted projections.



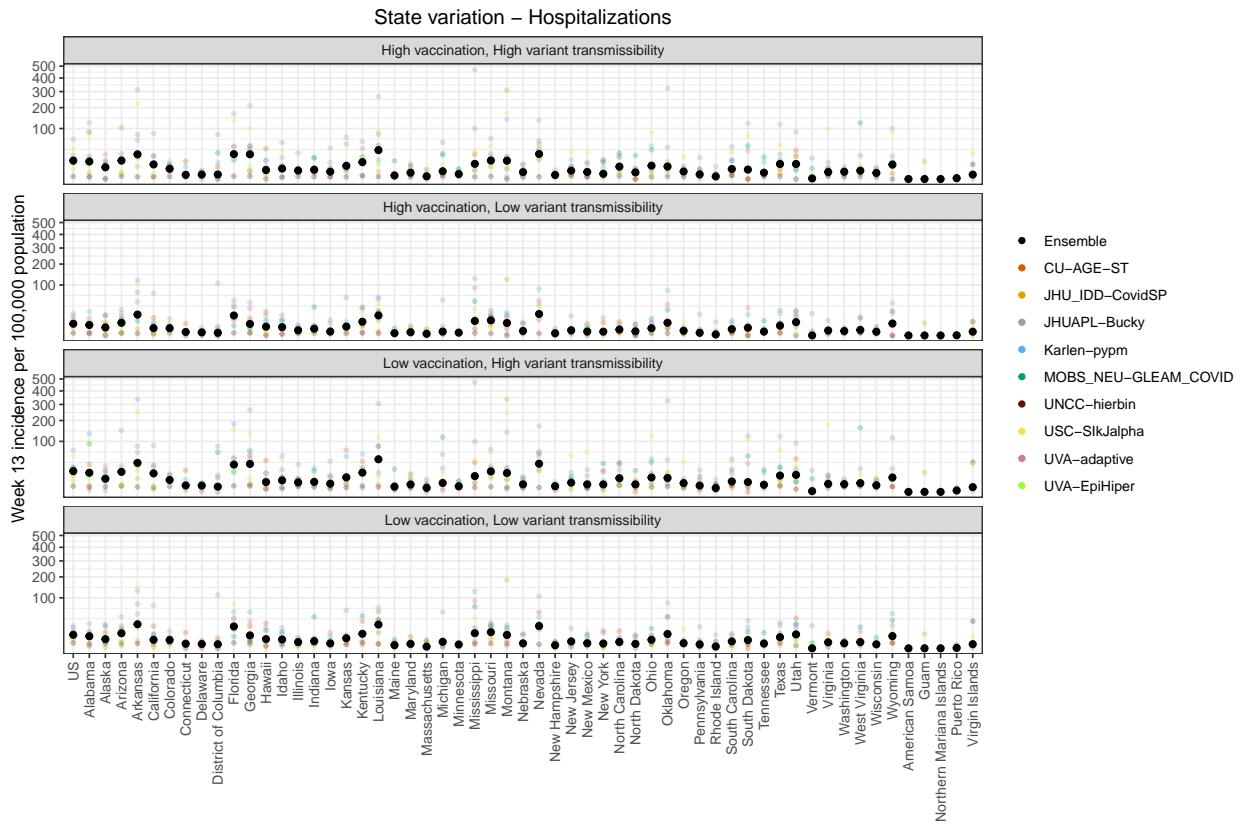
### State variation – Hospitalizations

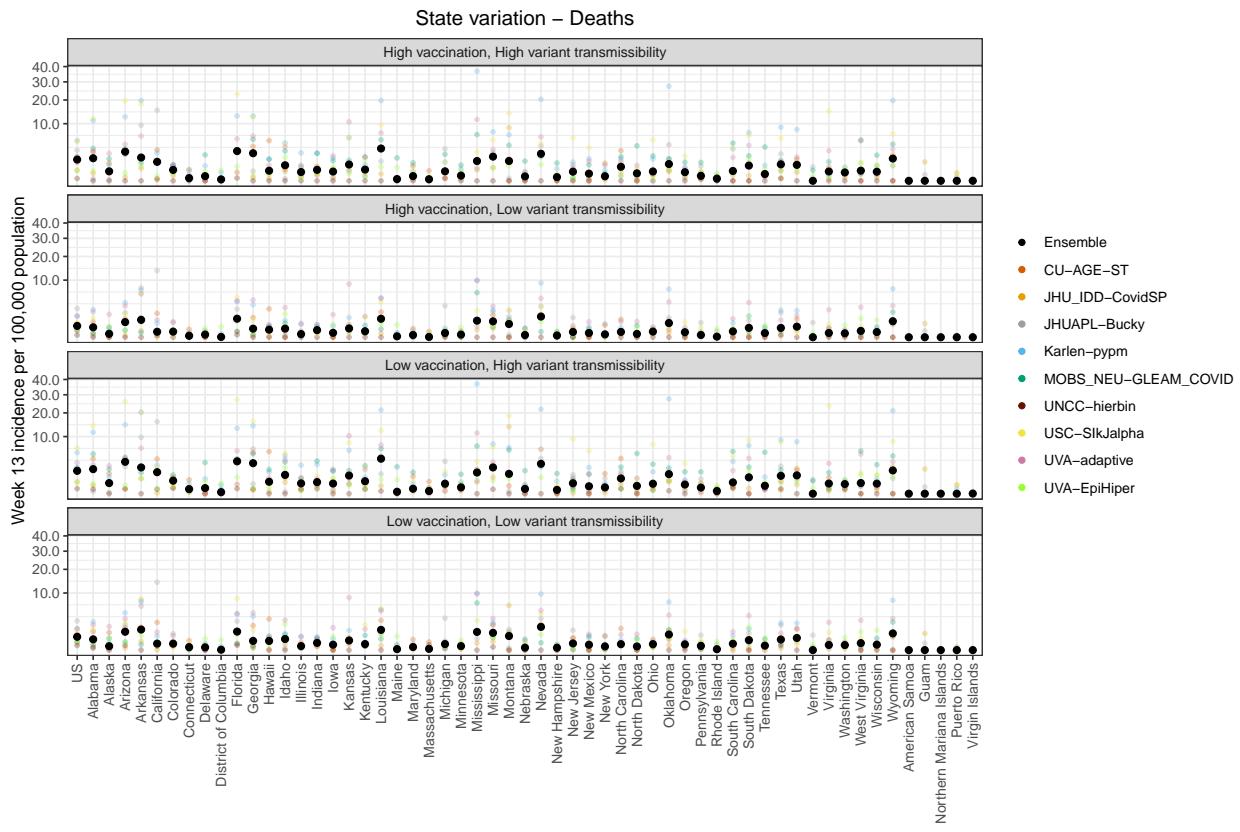


### State variation – Deaths

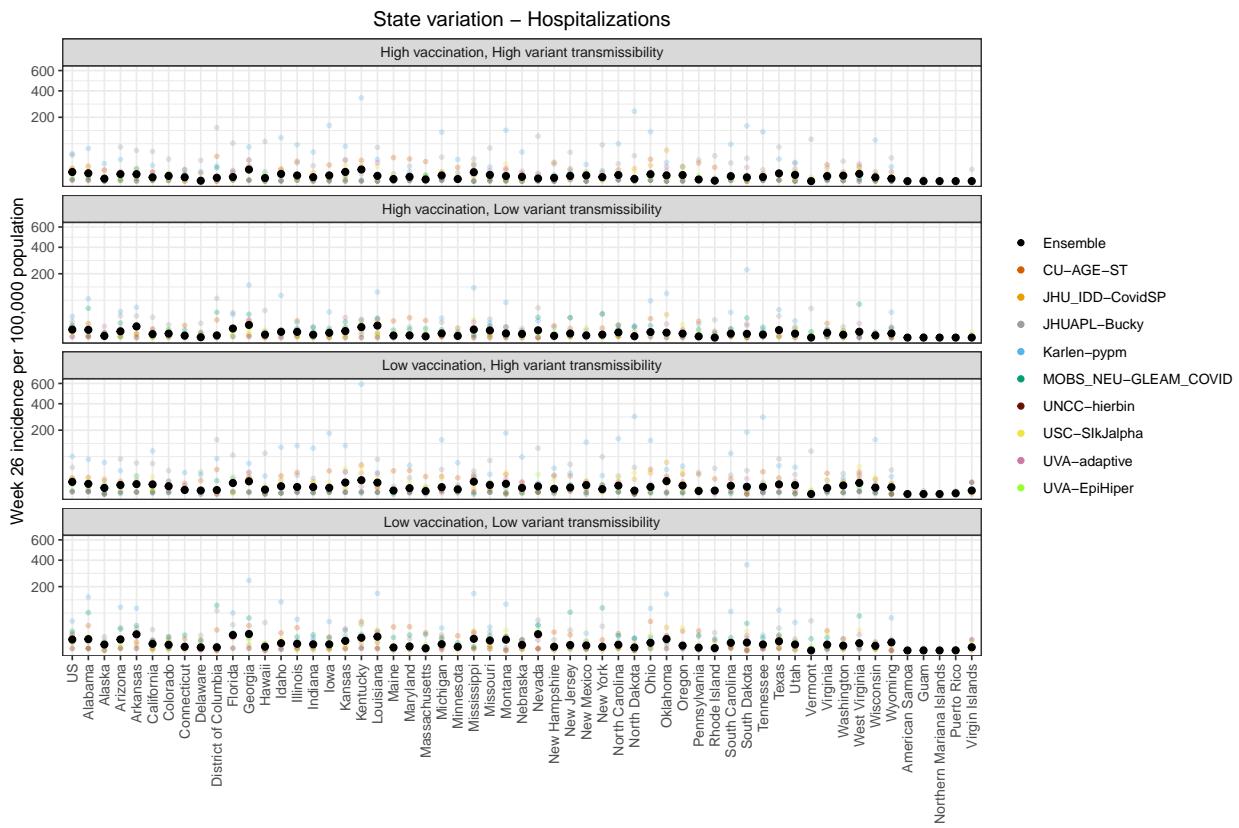


Individual model and ensembles projections for state-level death and hospitalization incidence per 100,000 population at week 13.

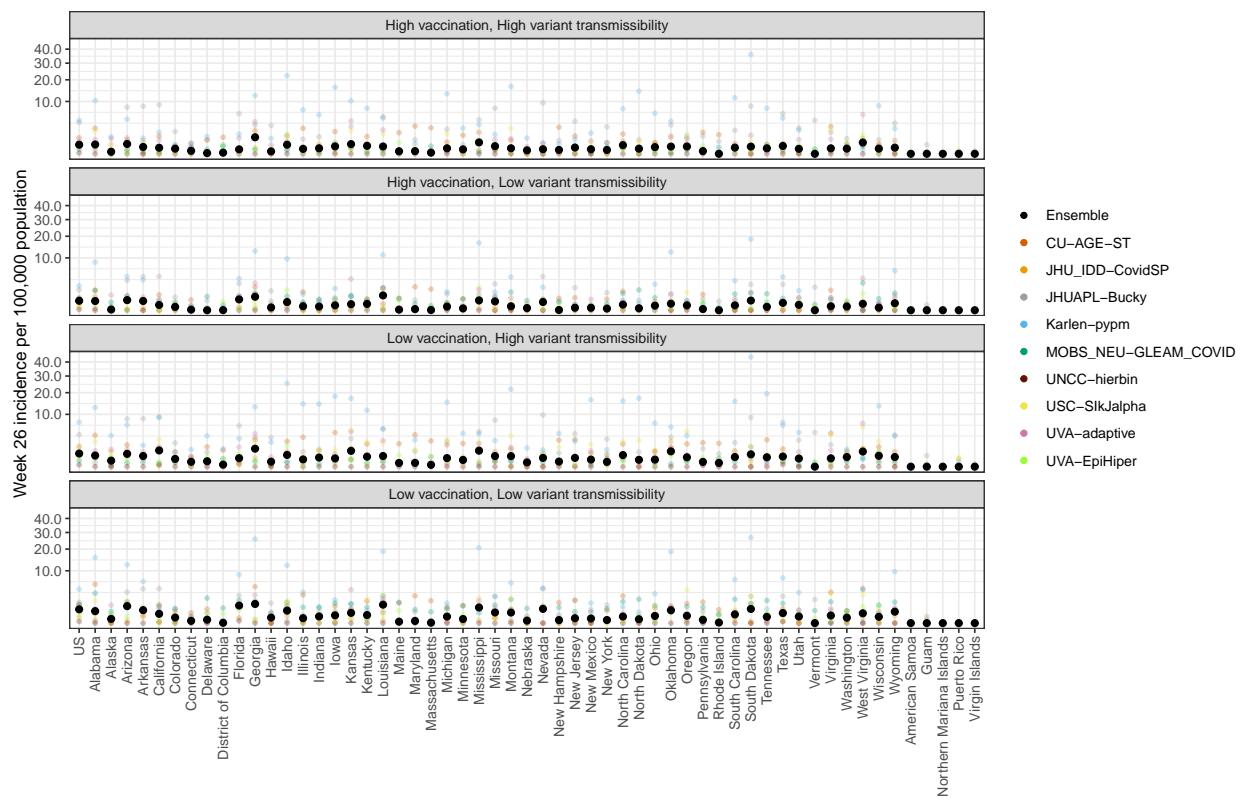




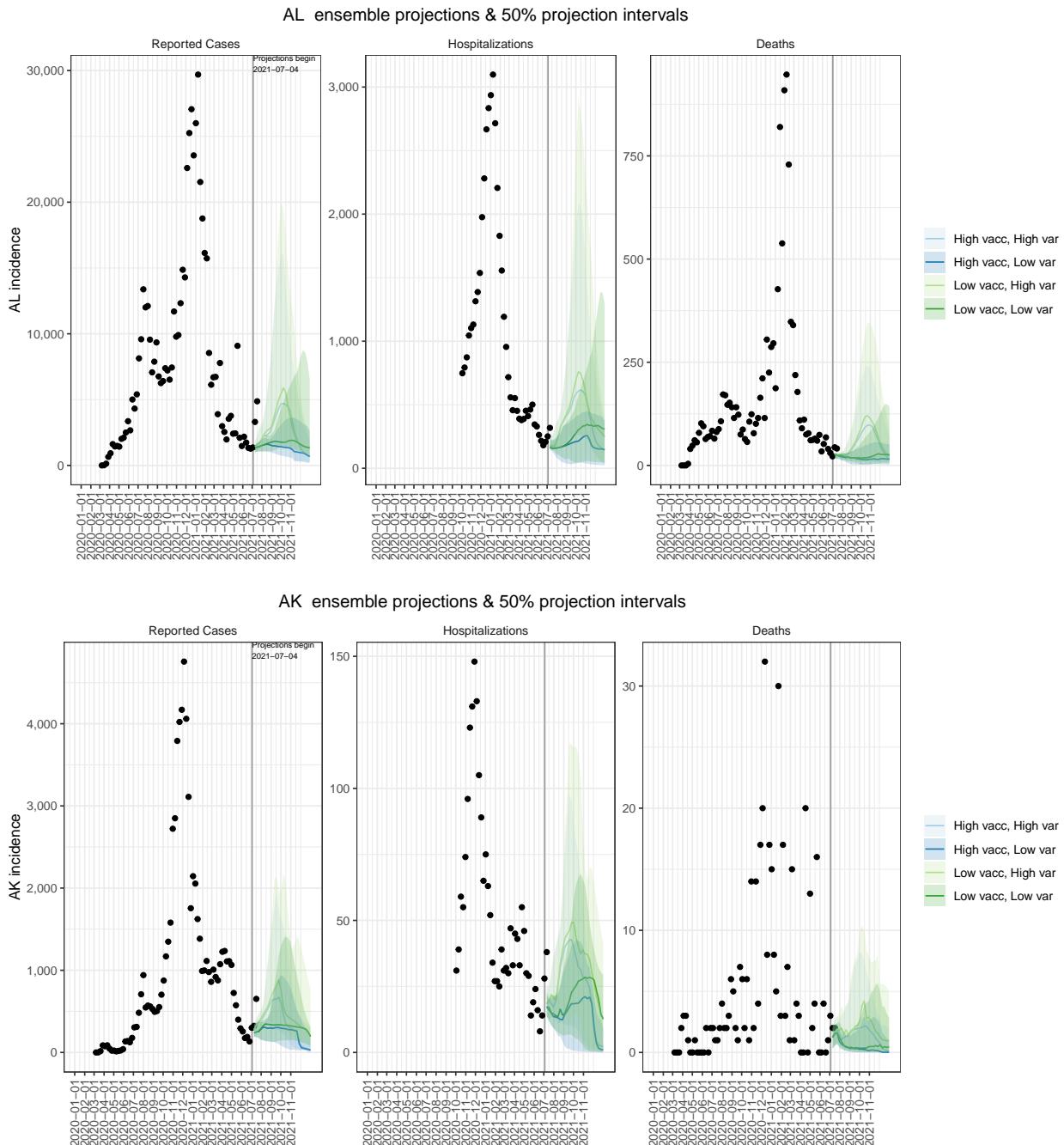
Individual model and ensembles projections for state-level incidence per 100,000 population at week 26.



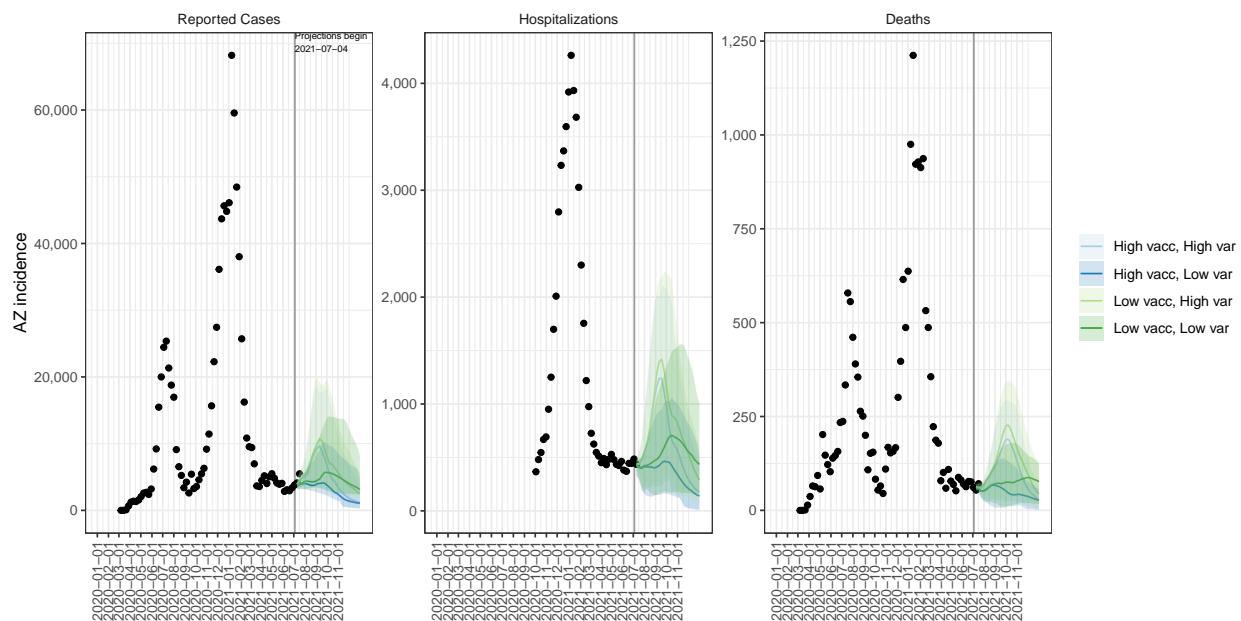
### State variation – Deaths



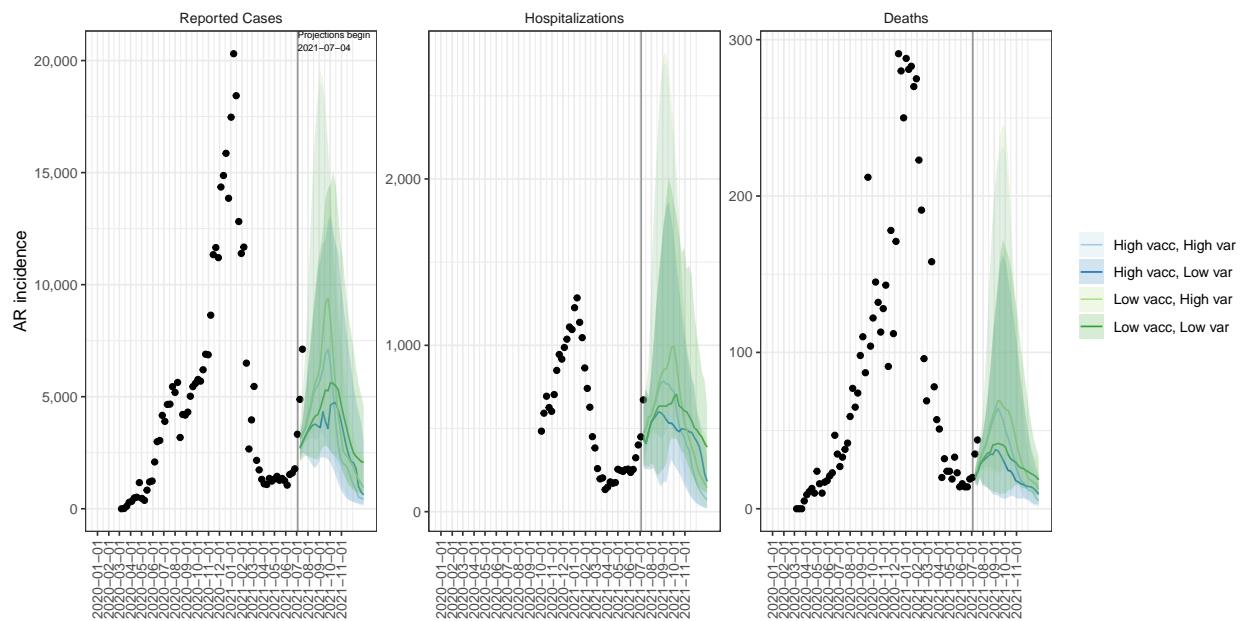
## State-level ensemble plots



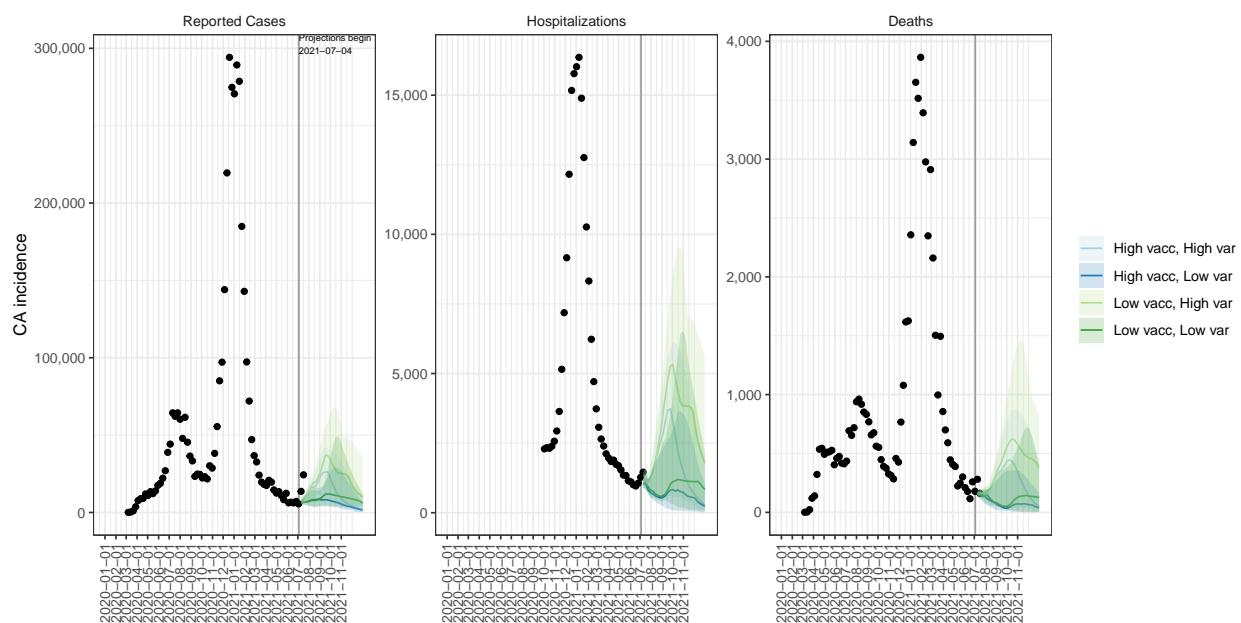
### AZ ensemble projections & 50% projection intervals



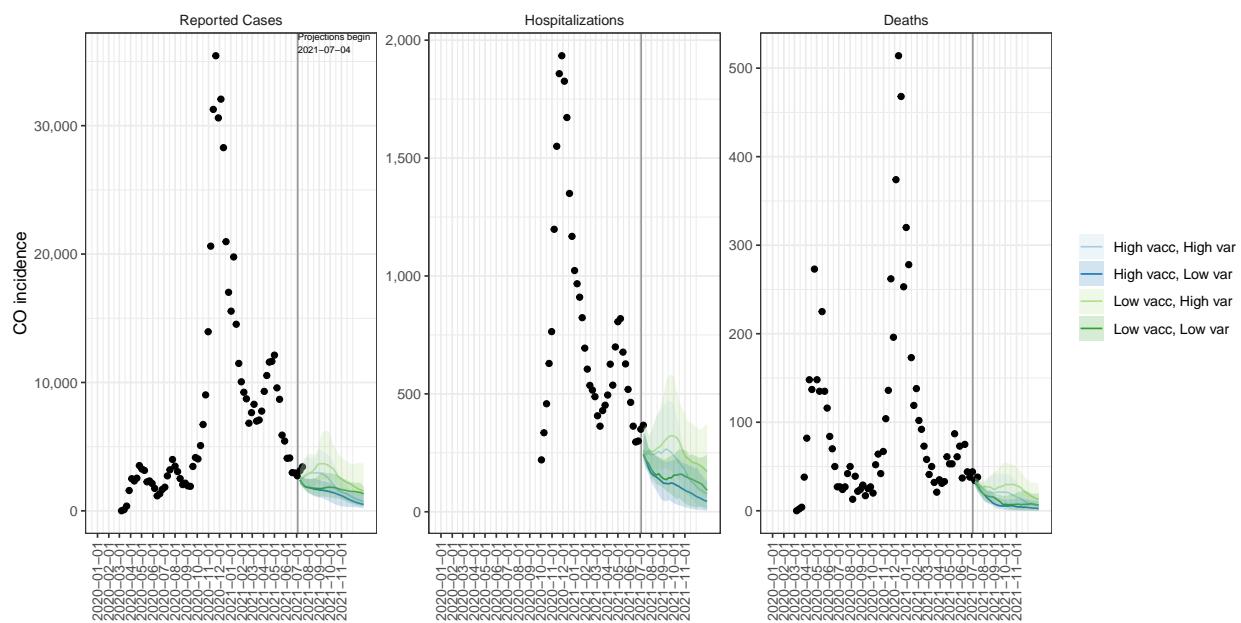
### AR ensemble projections & 50% projection intervals



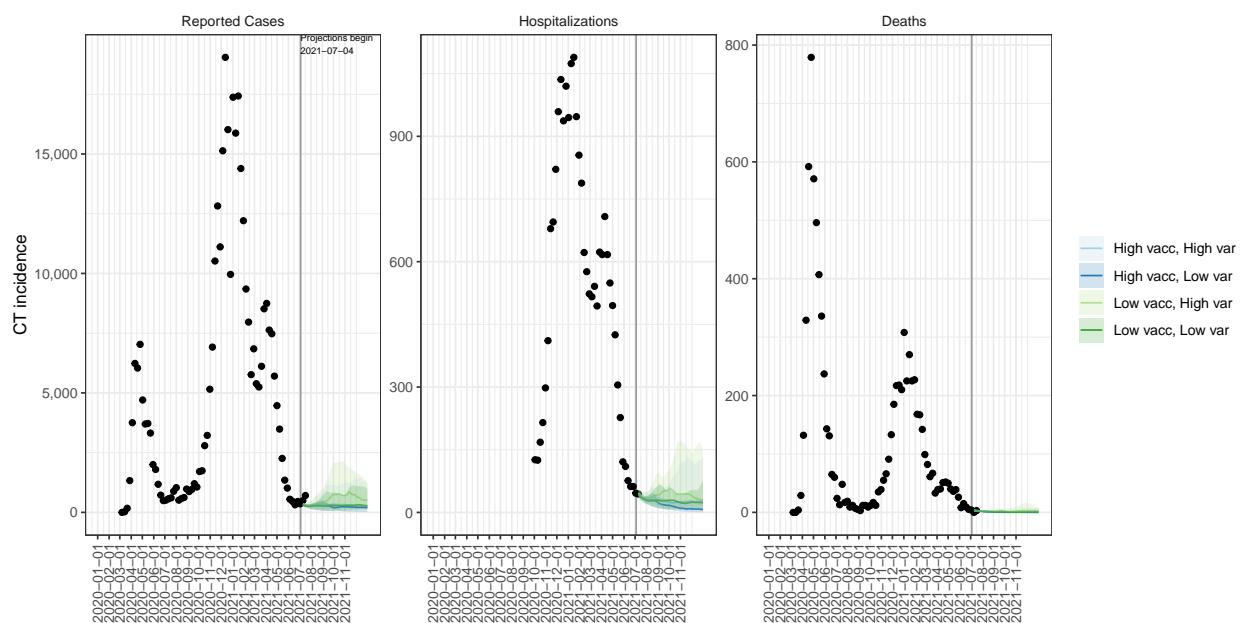
### CA ensemble projections & 50% projection intervals



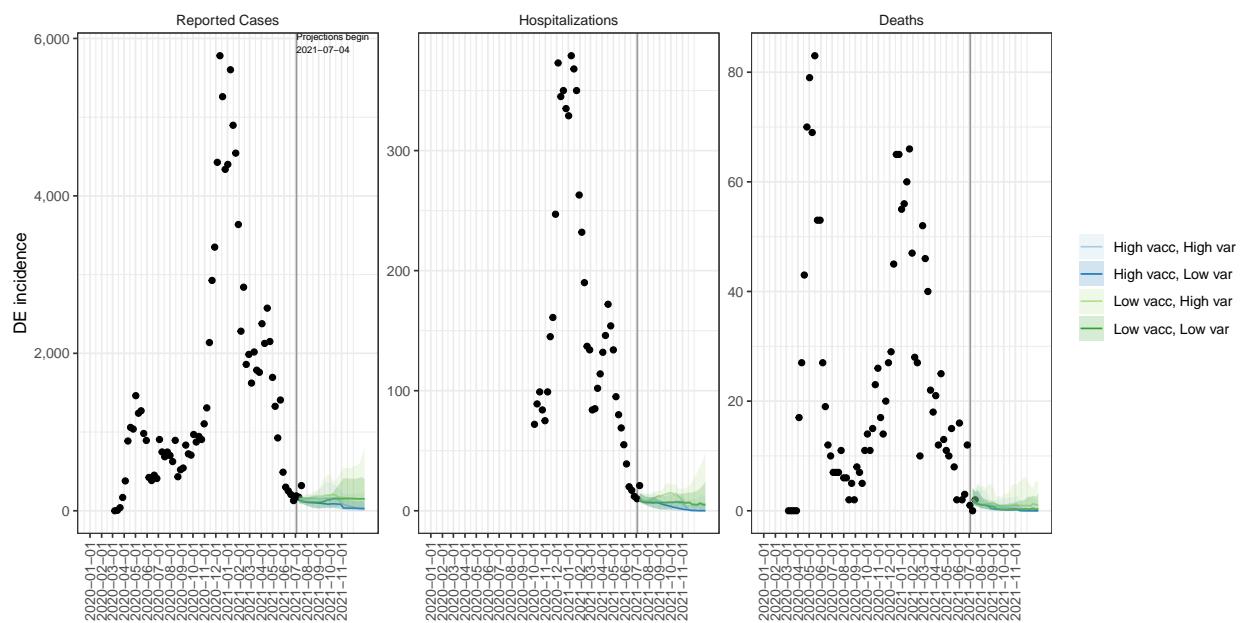
### CO ensemble projections & 50% projection intervals



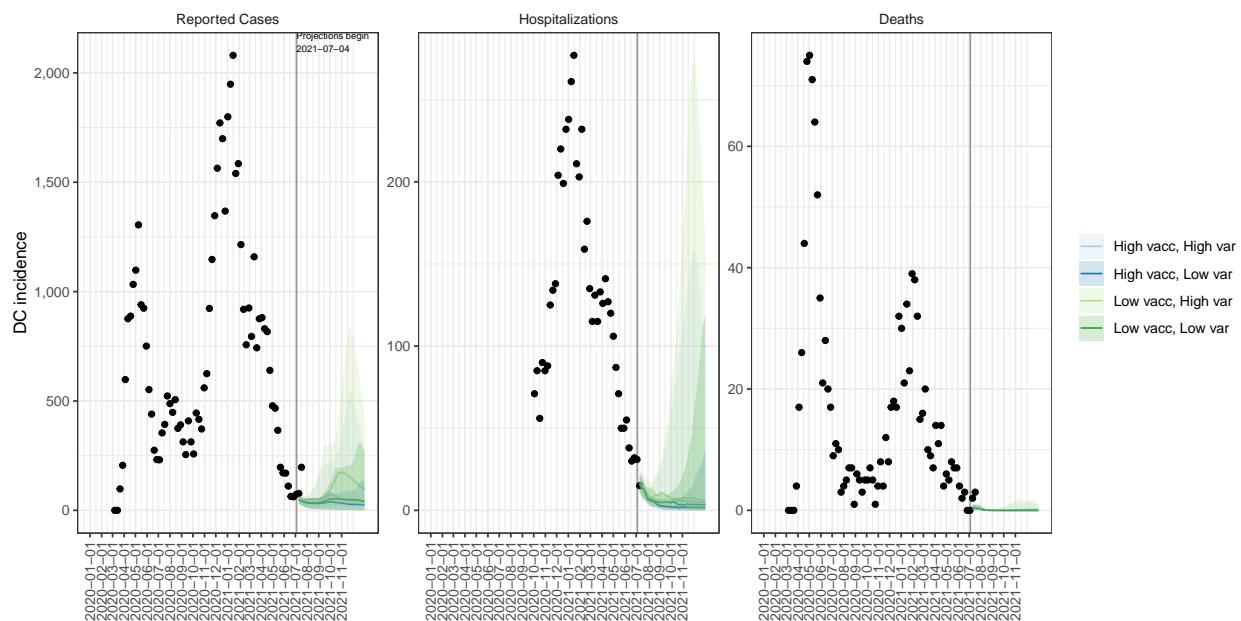
### CT ensemble projections & 50% projection intervals



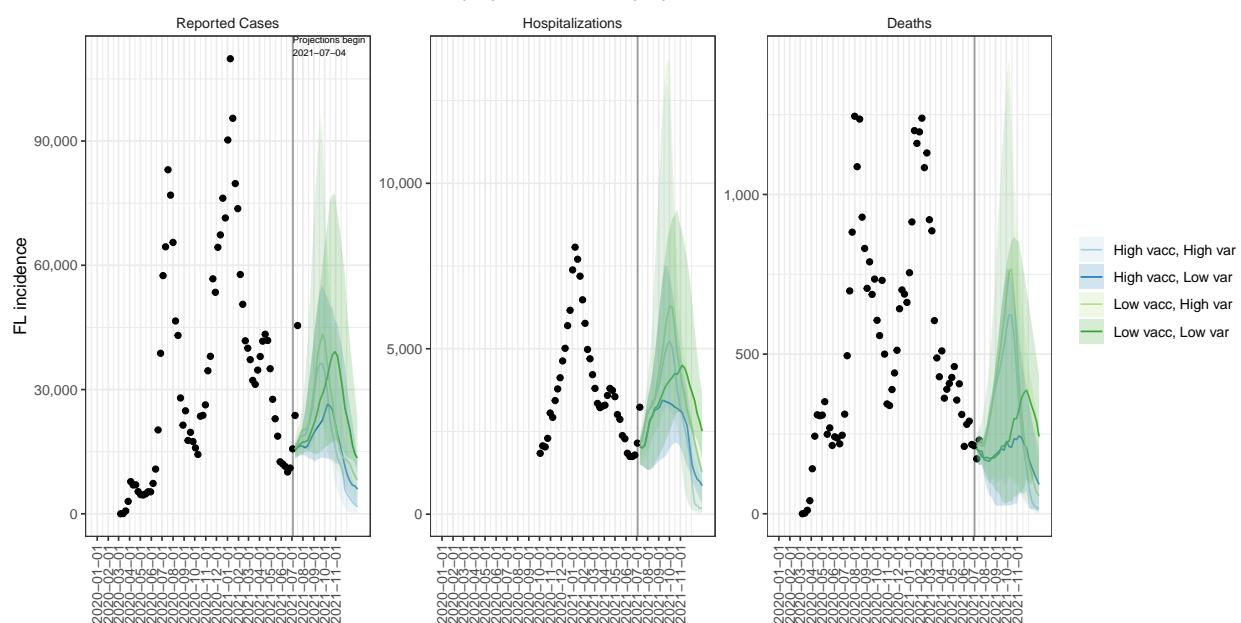
### DE ensemble projections & 50% projection intervals



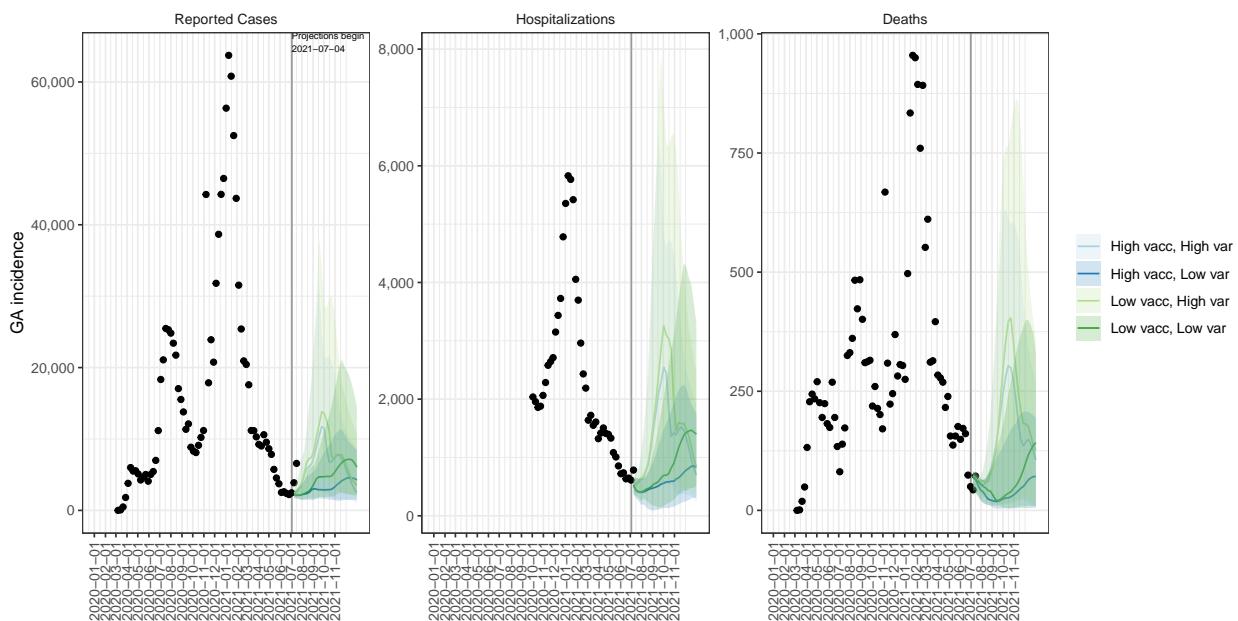
### DC ensemble projections & 50% projection intervals



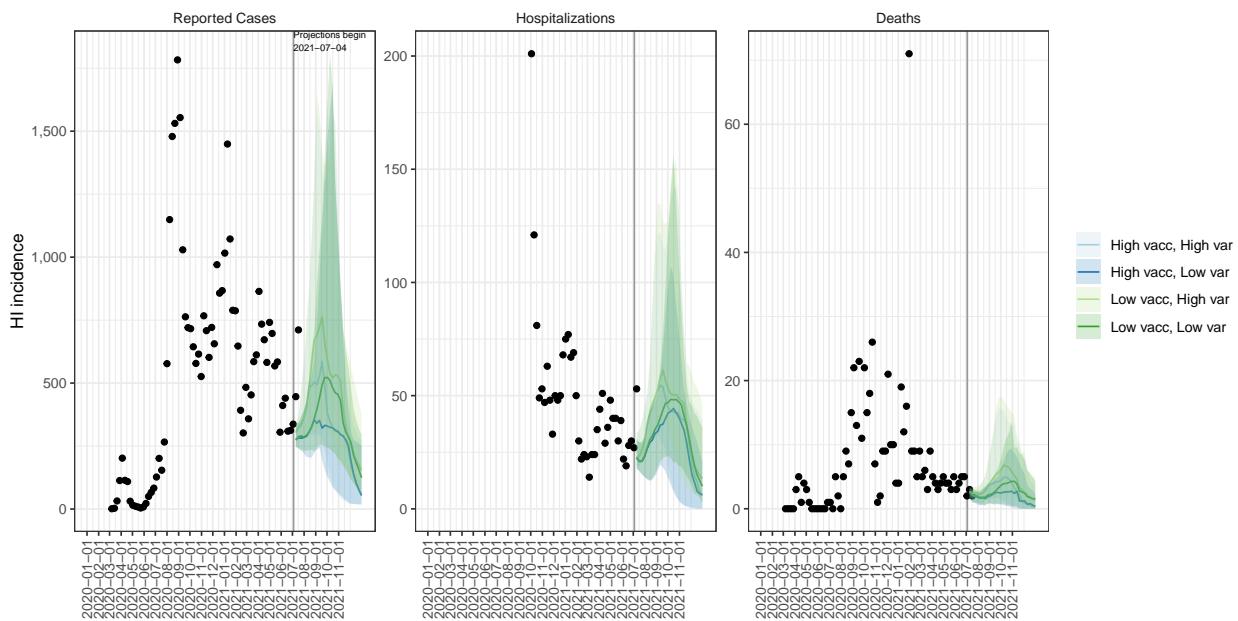
### FL ensemble projections & 50% projection intervals



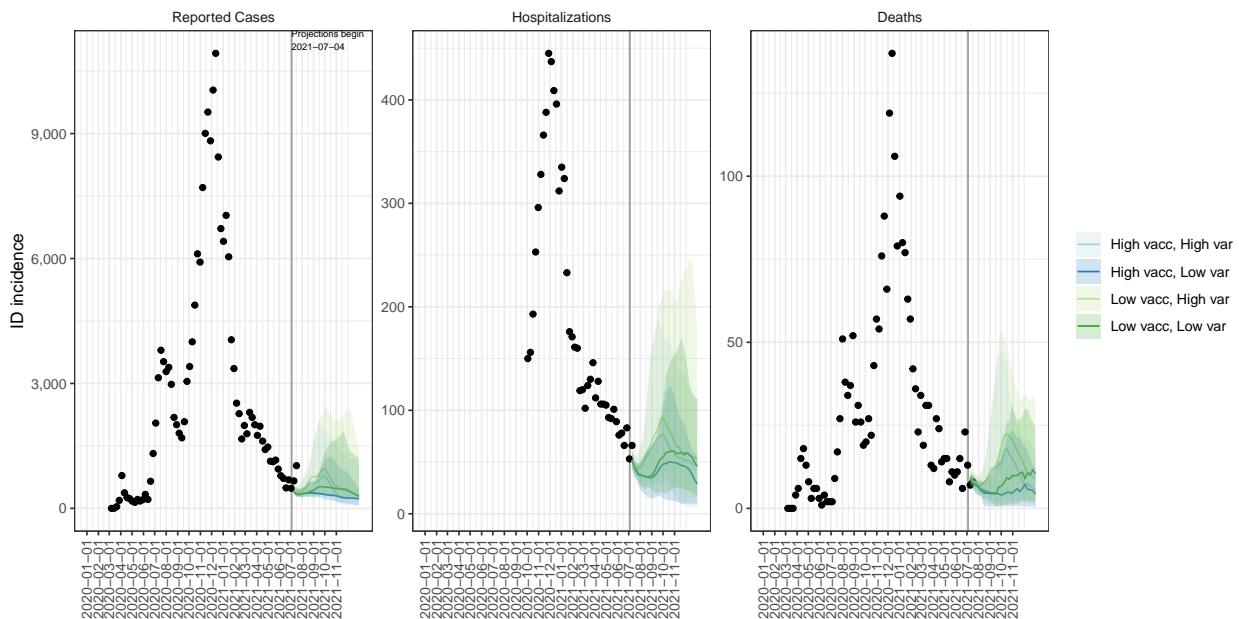
### GA ensemble projections & 50% projection intervals



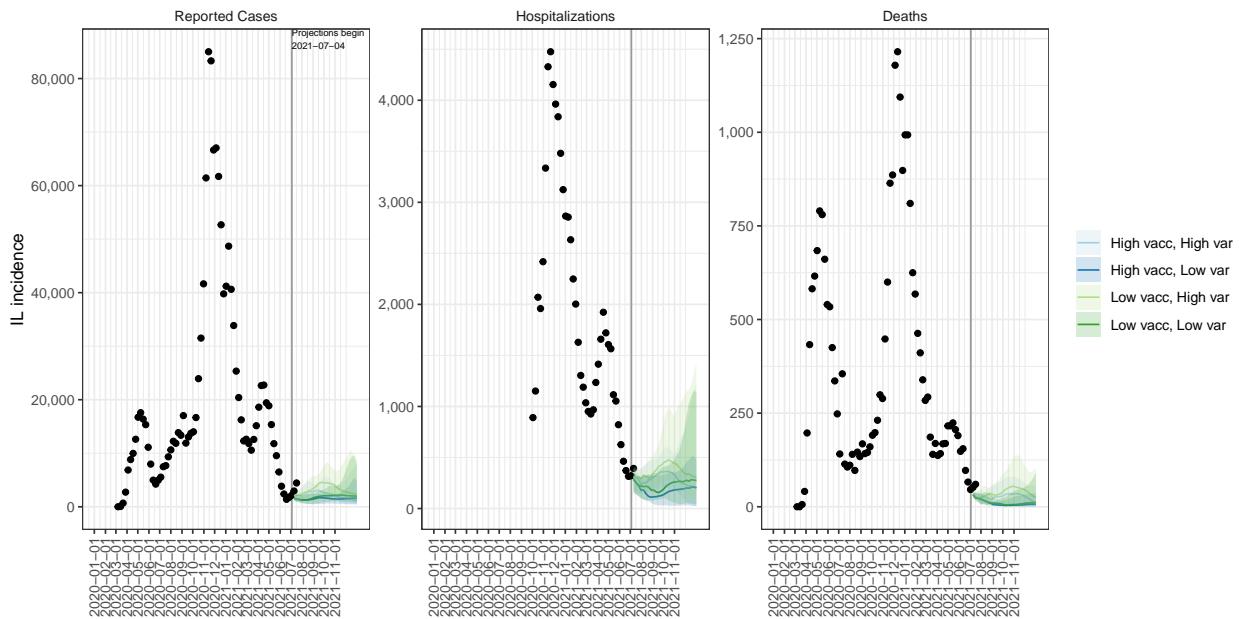
### HI ensemble projections & 50% projection intervals



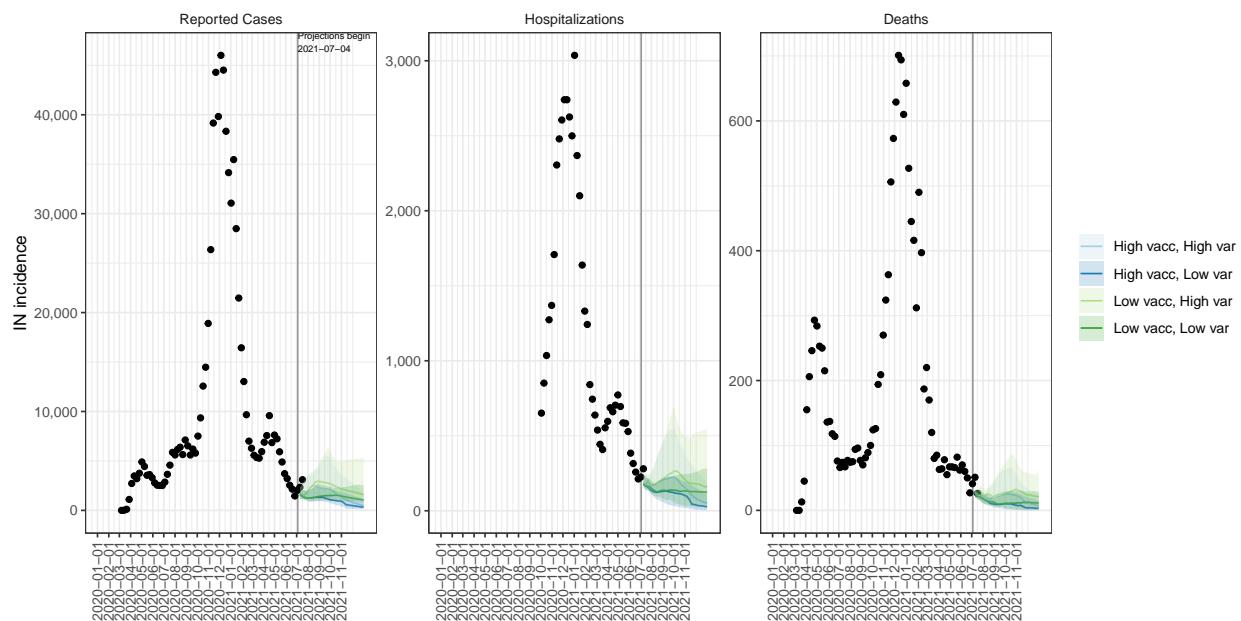
### ID ensemble projections & 50% projection intervals



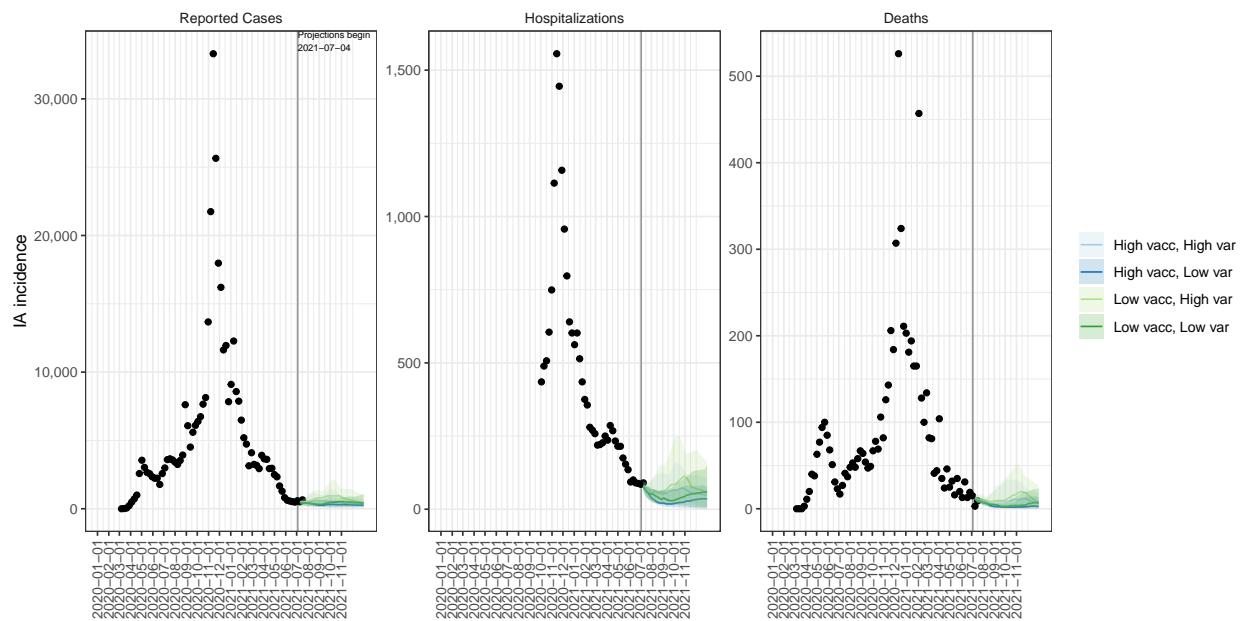
### IL ensemble projections & 50% projection intervals



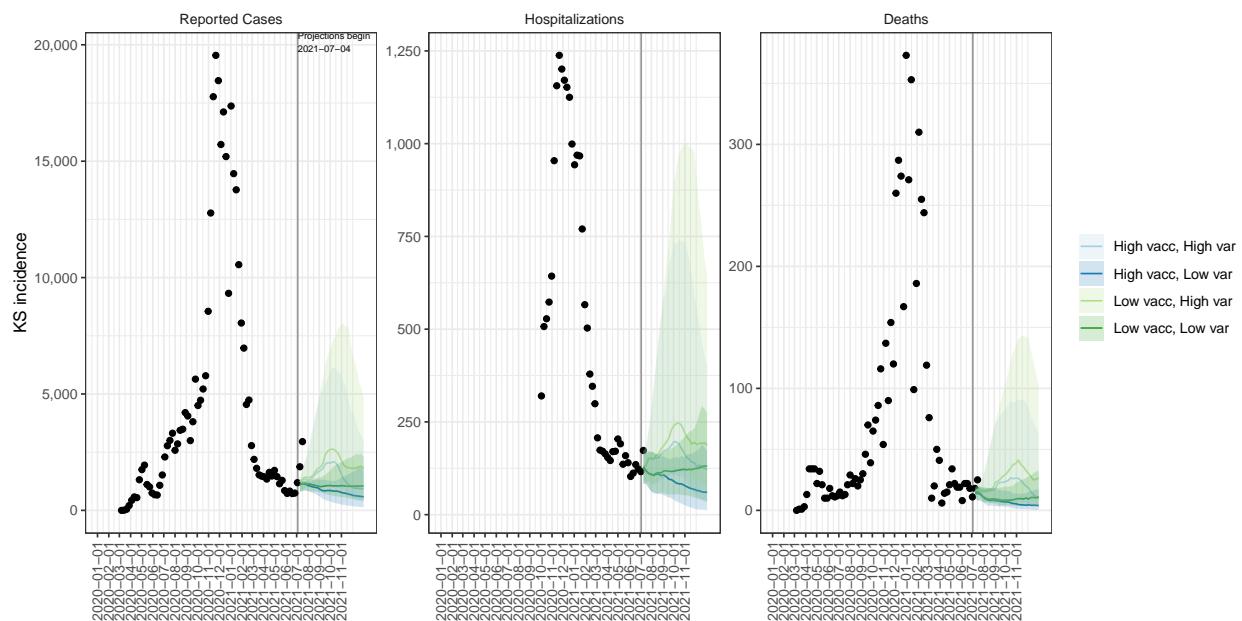
### IN ensemble projections & 50% projection intervals



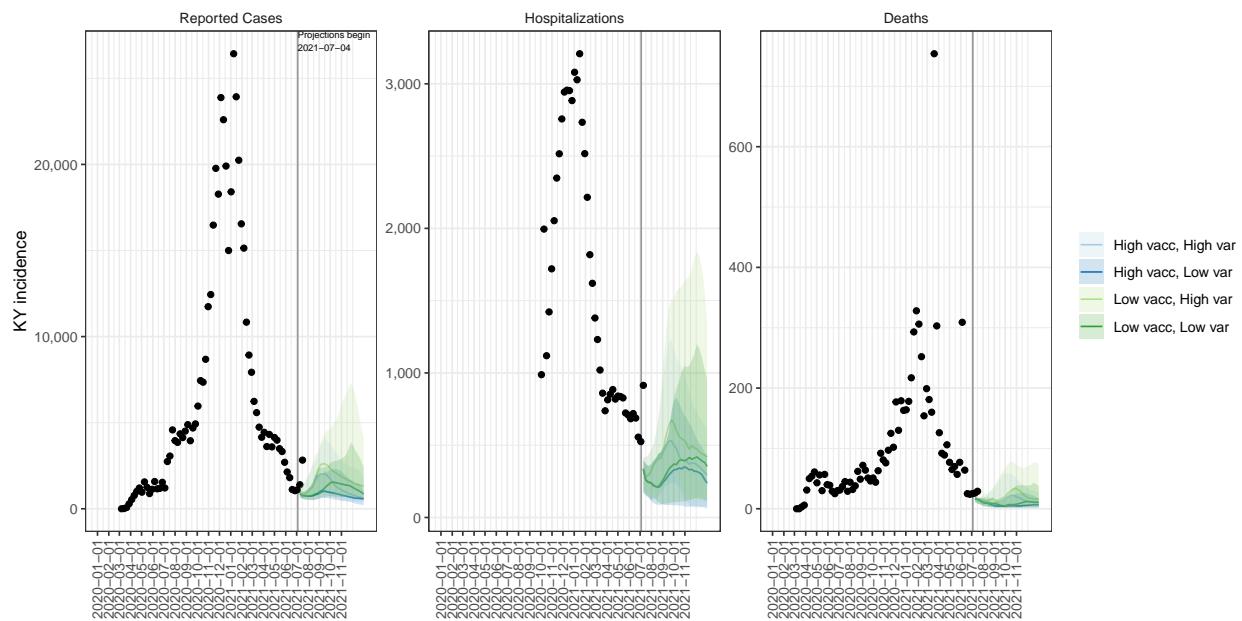
### IA ensemble projections & 50% projection intervals



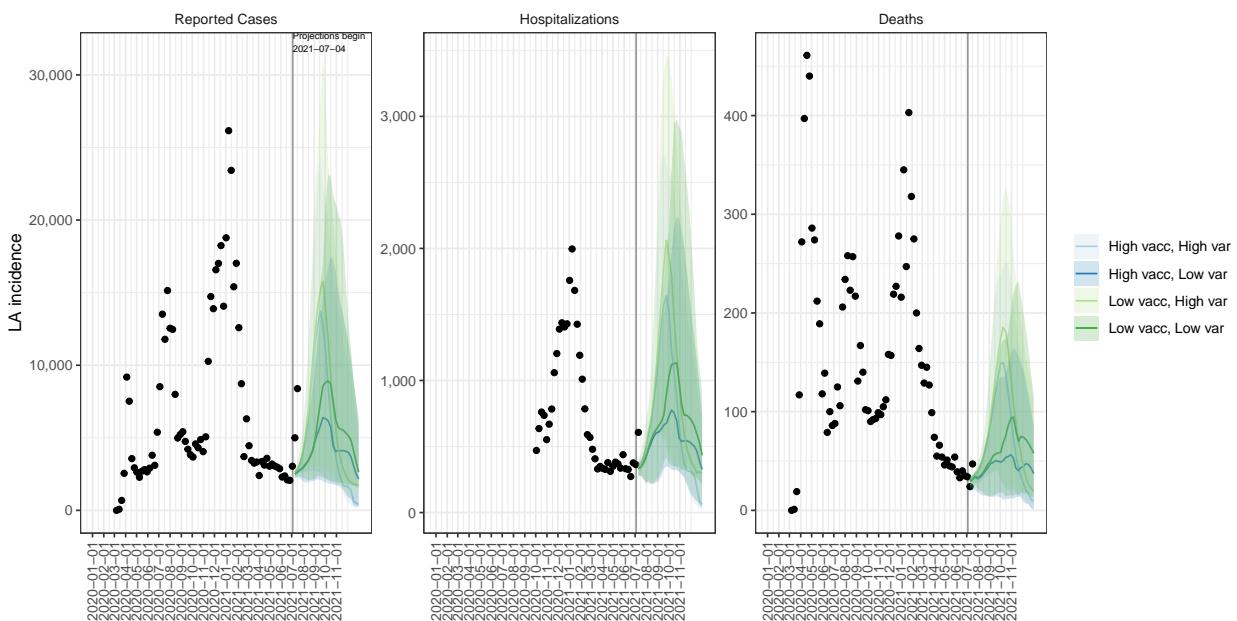
### KS ensemble projections & 50% projection intervals



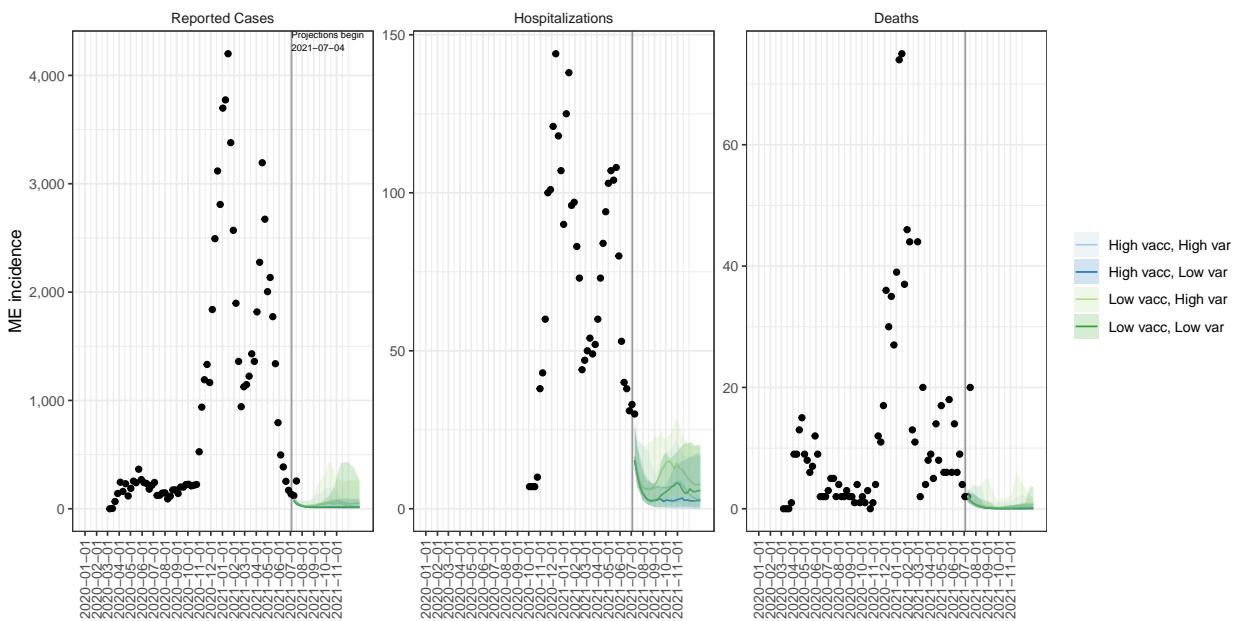
### KY ensemble projections & 50% projection intervals



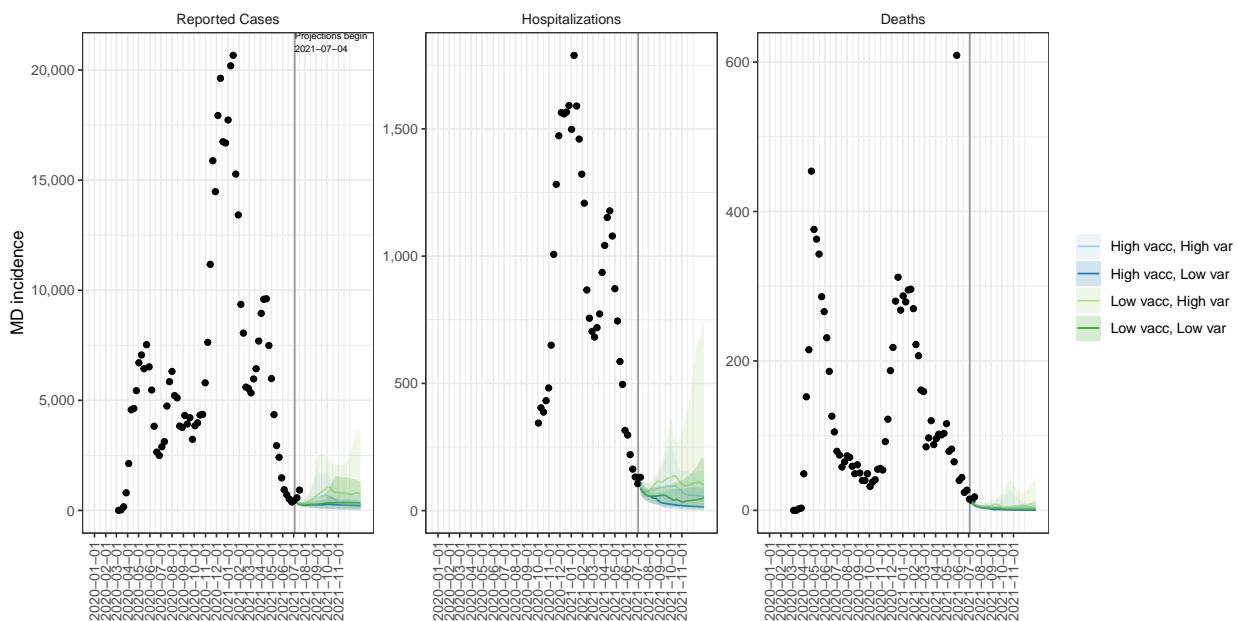
### LA ensemble projections & 50% projection intervals



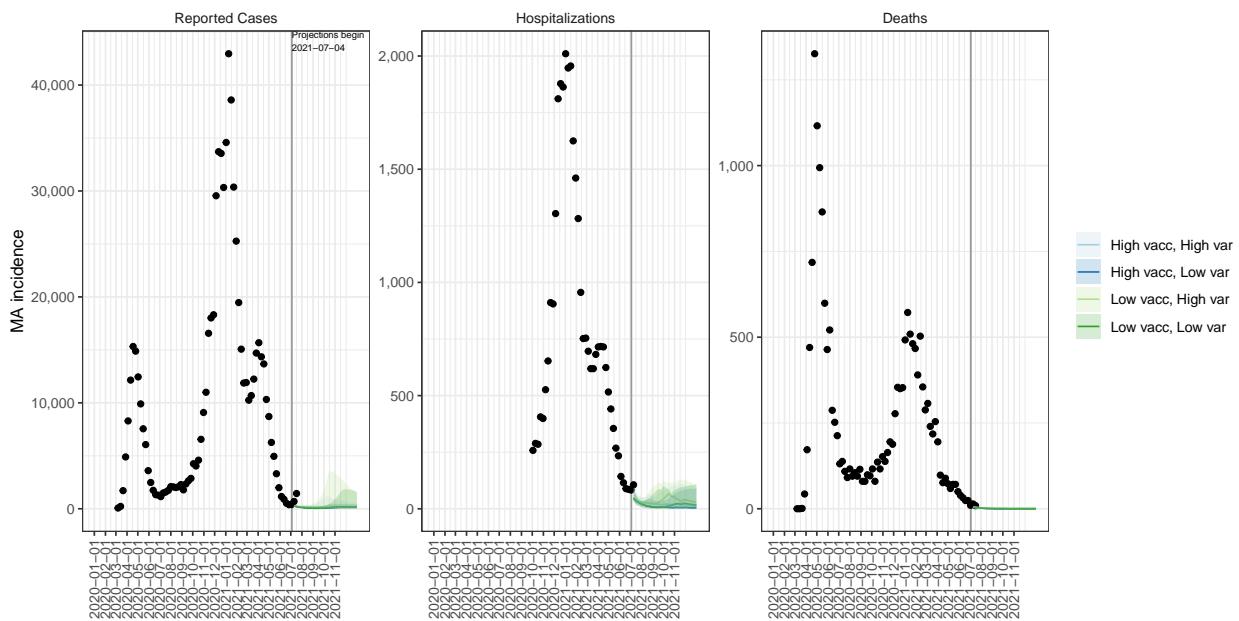
### ME ensemble projections & 50% projection intervals



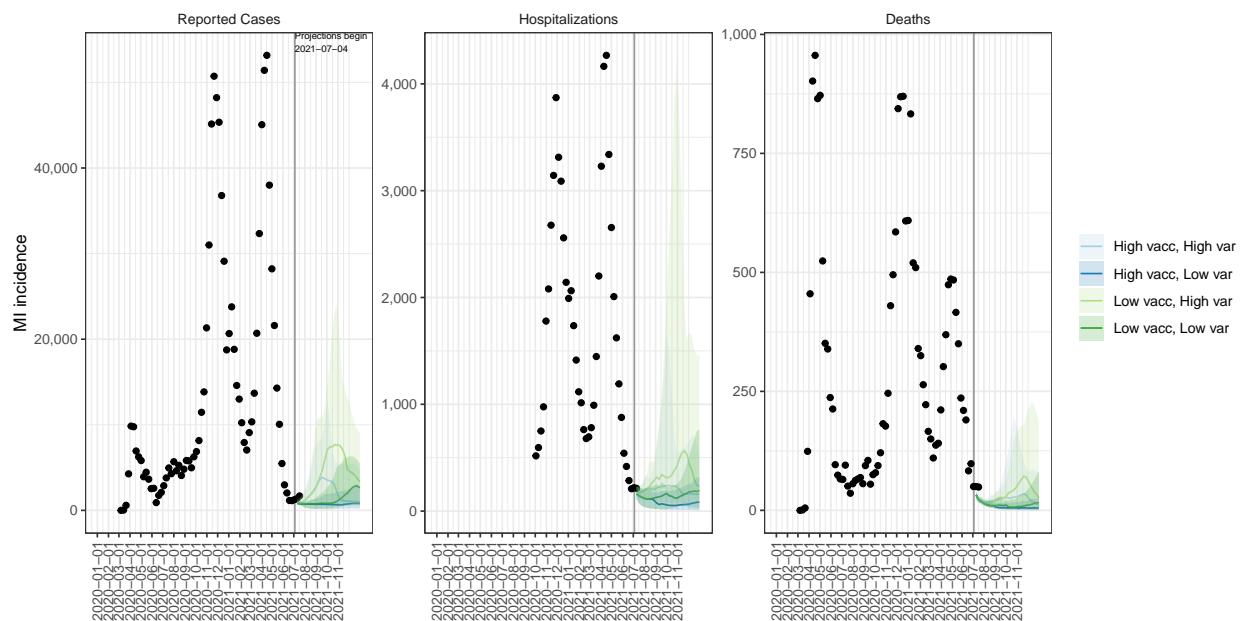
### MD ensemble projections & 50% projection intervals



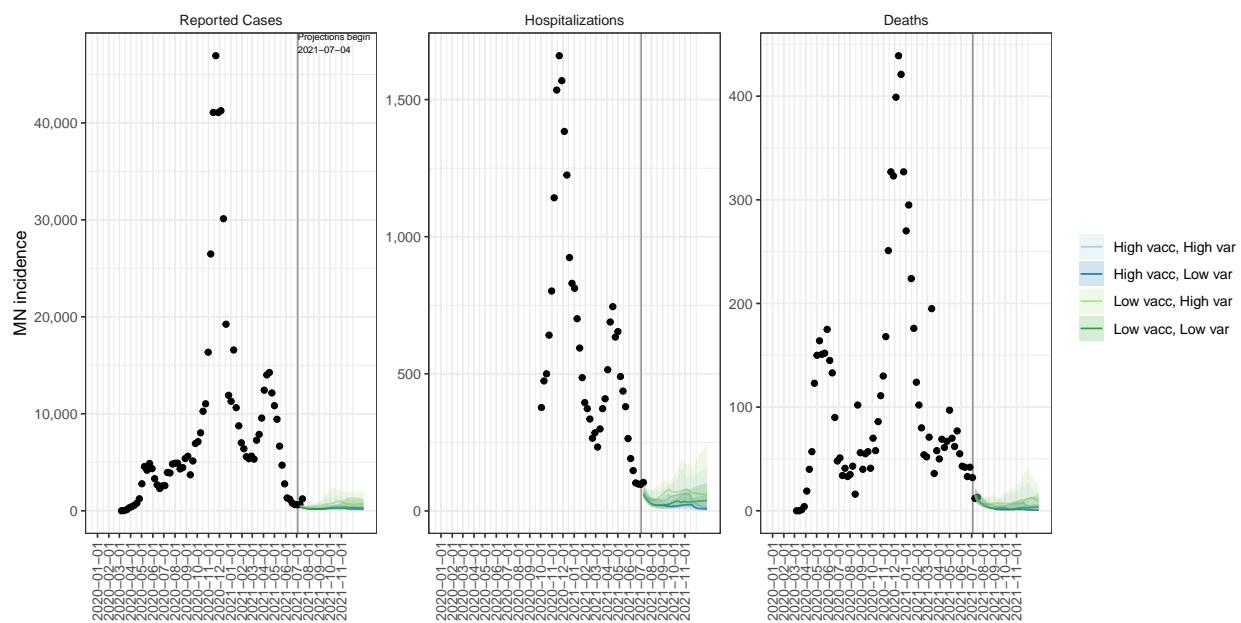
### MA ensemble projections & 50% projection intervals



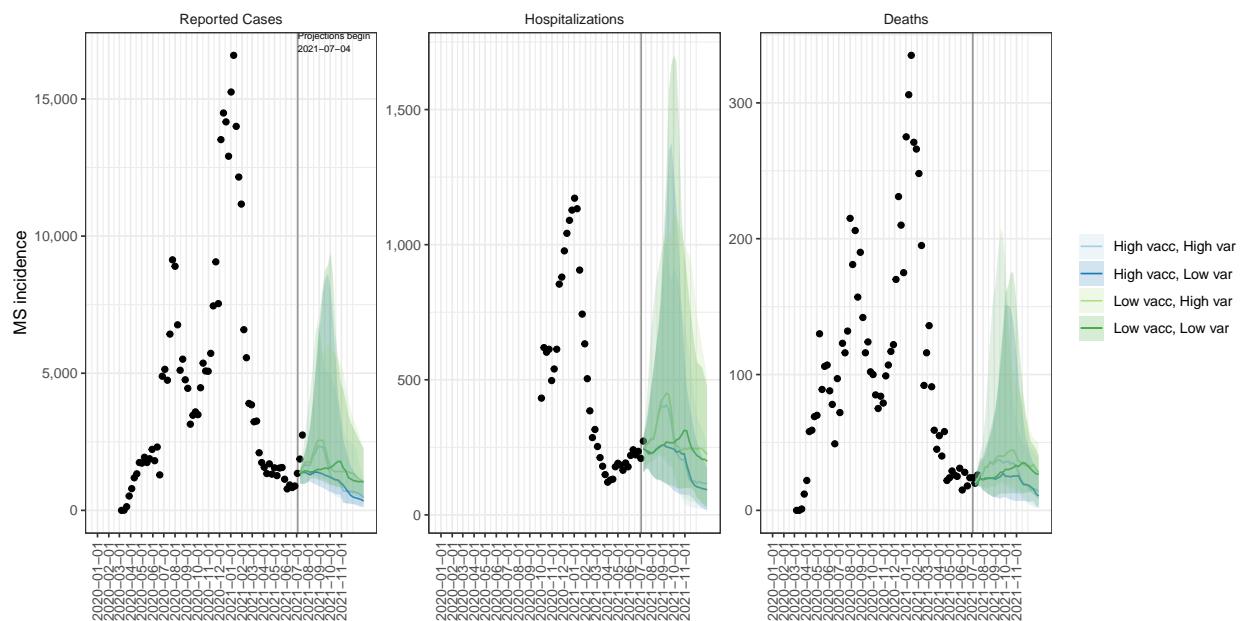
### MI ensemble projections & 50% projection intervals



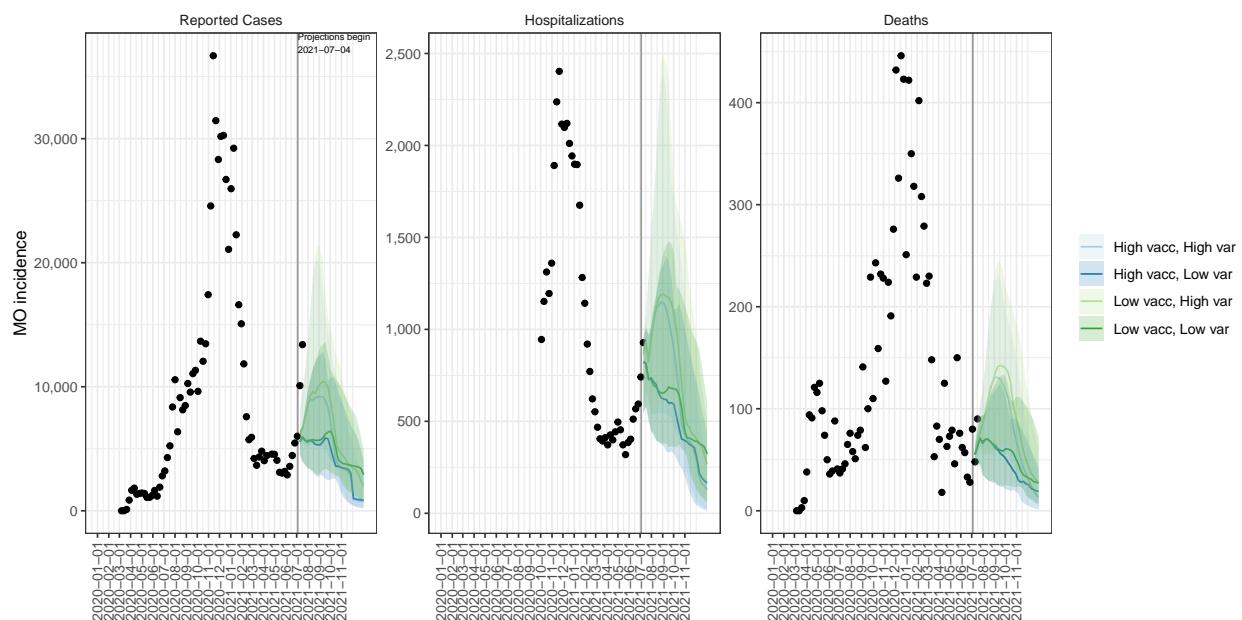
### MN ensemble projections & 50% projection intervals



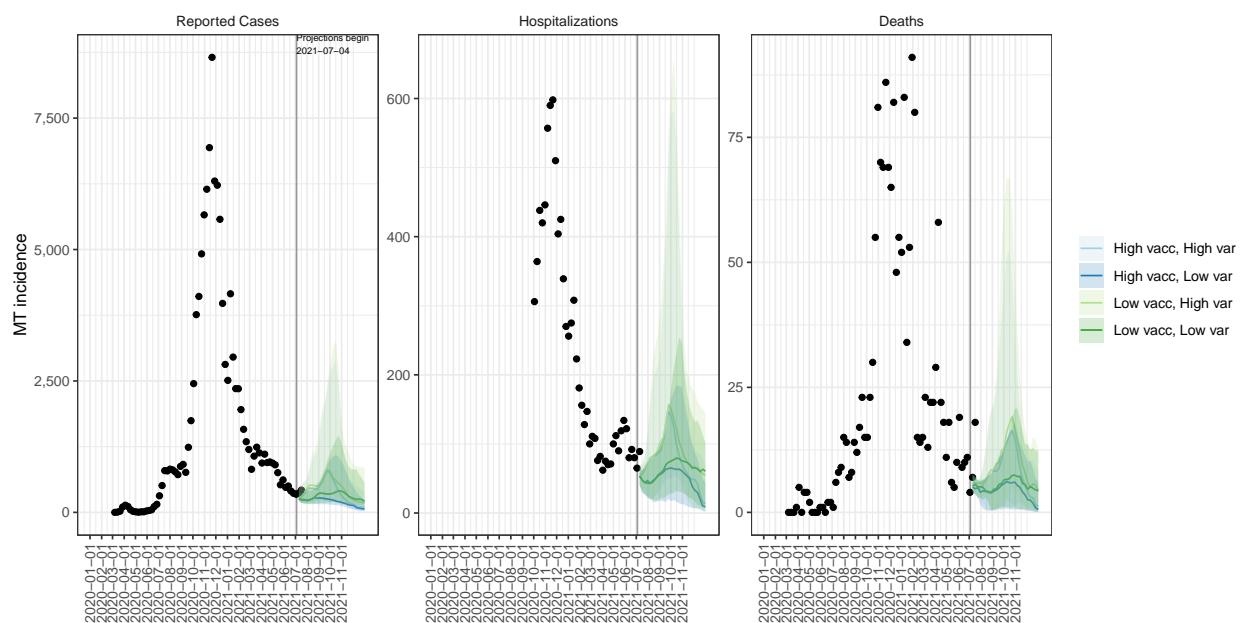
### MS ensemble projections & 50% projection intervals



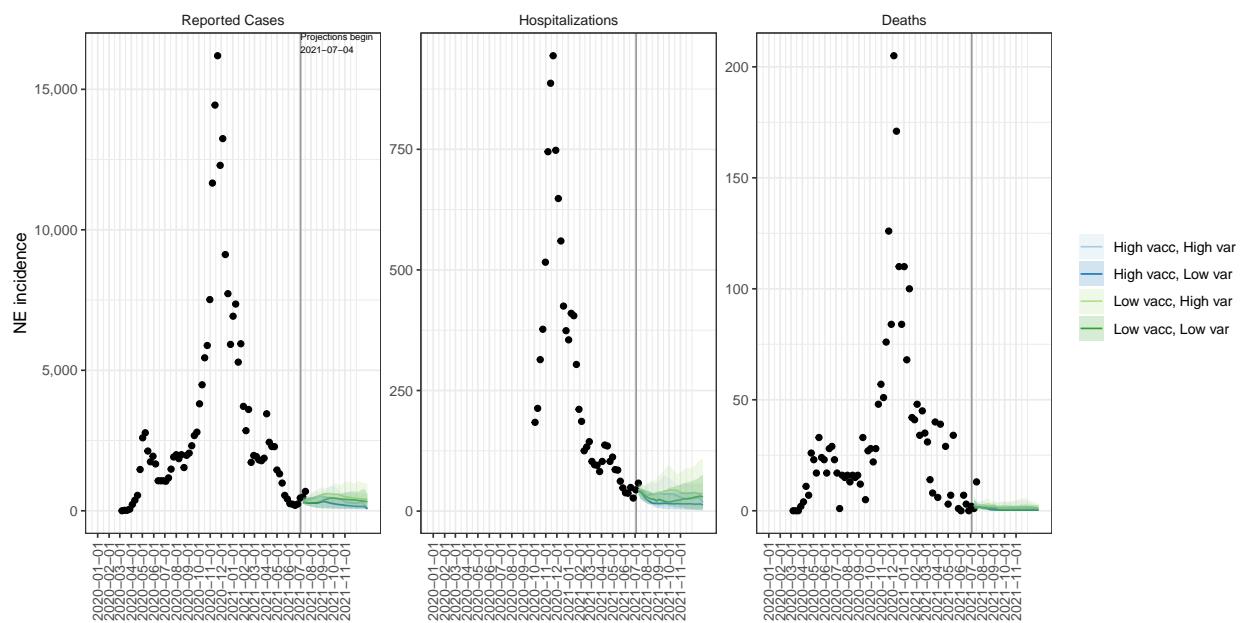
### MO ensemble projections & 50% projection intervals



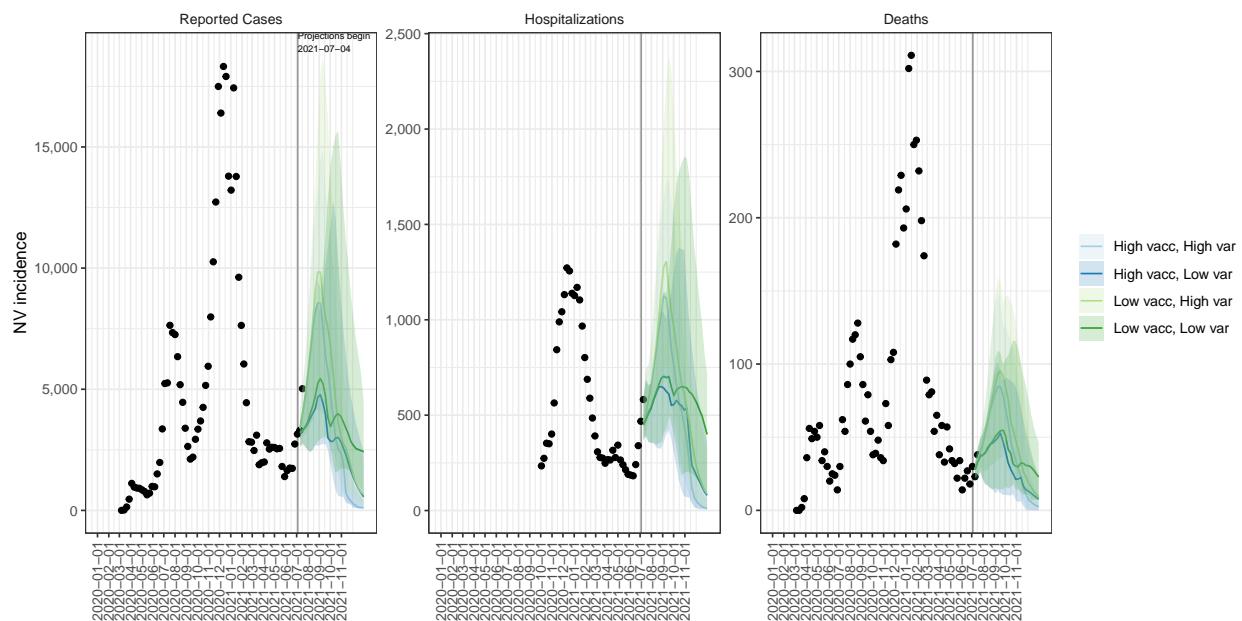
### MT ensemble projections & 50% projection intervals



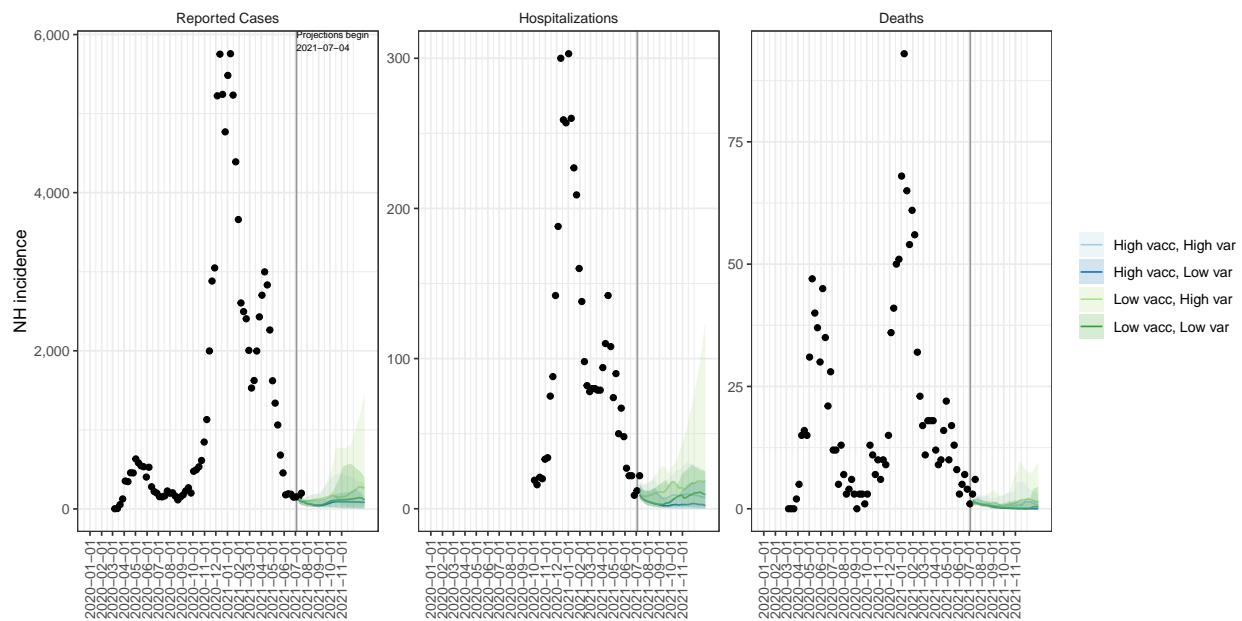
### NE ensemble projections & 50% projection intervals



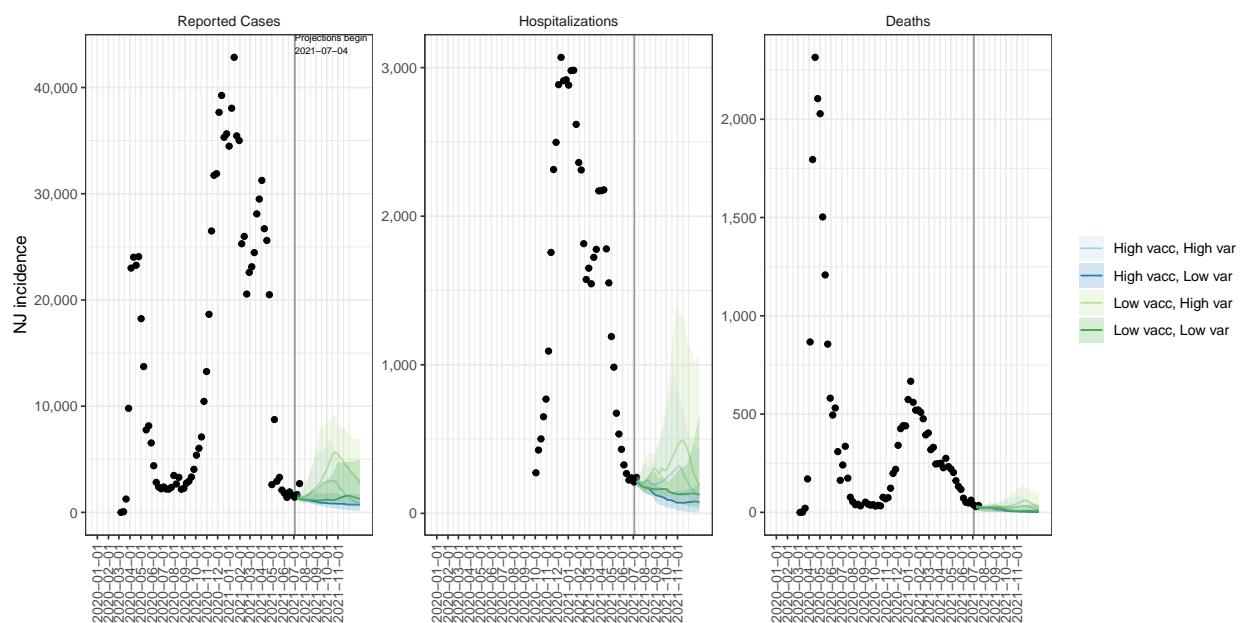
### NV ensemble projections & 50% projection intervals



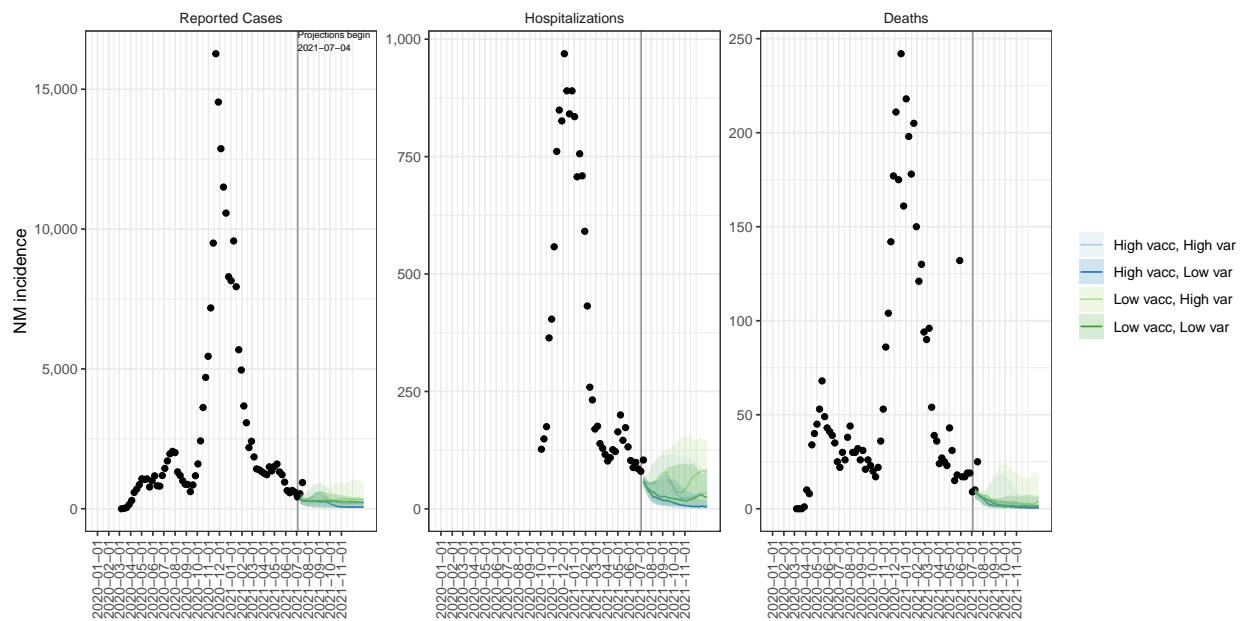
### NH ensemble projections & 50% projection intervals



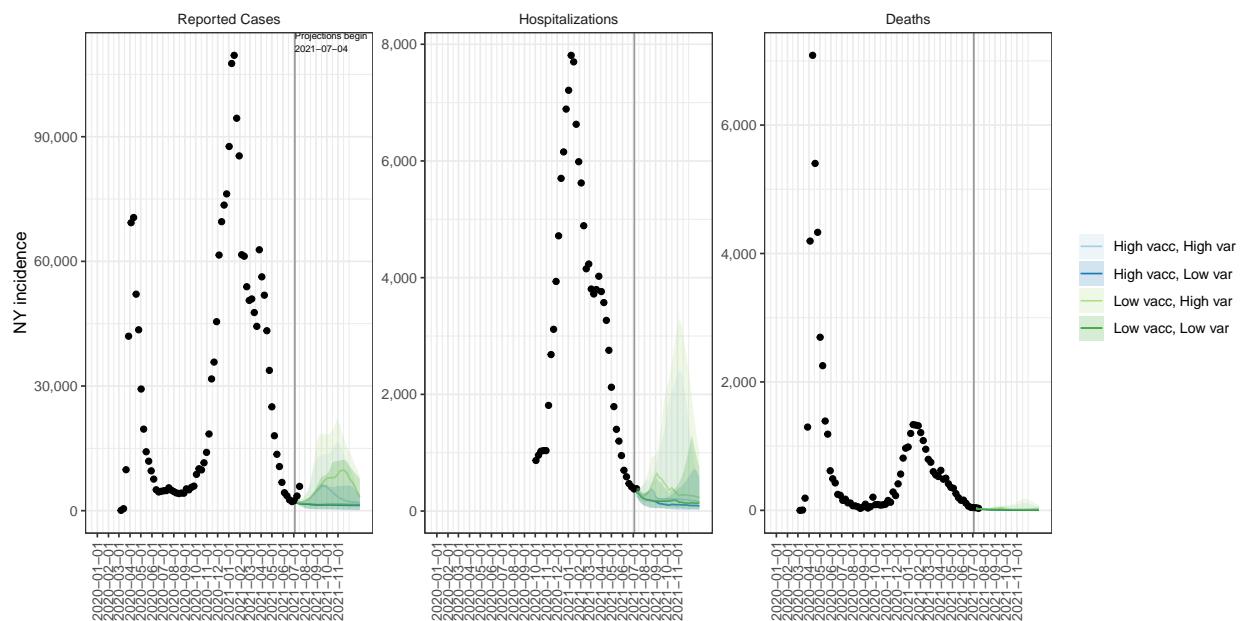
### NJ ensemble projections & 50% projection intervals



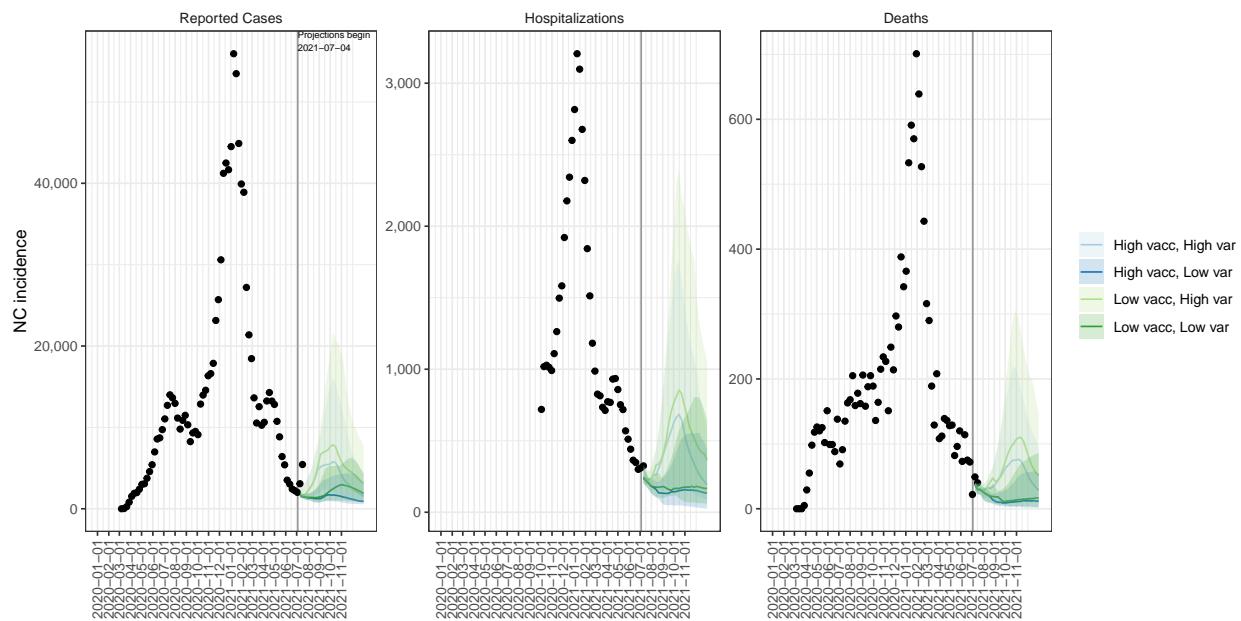
### NM ensemble projections & 50% projection intervals



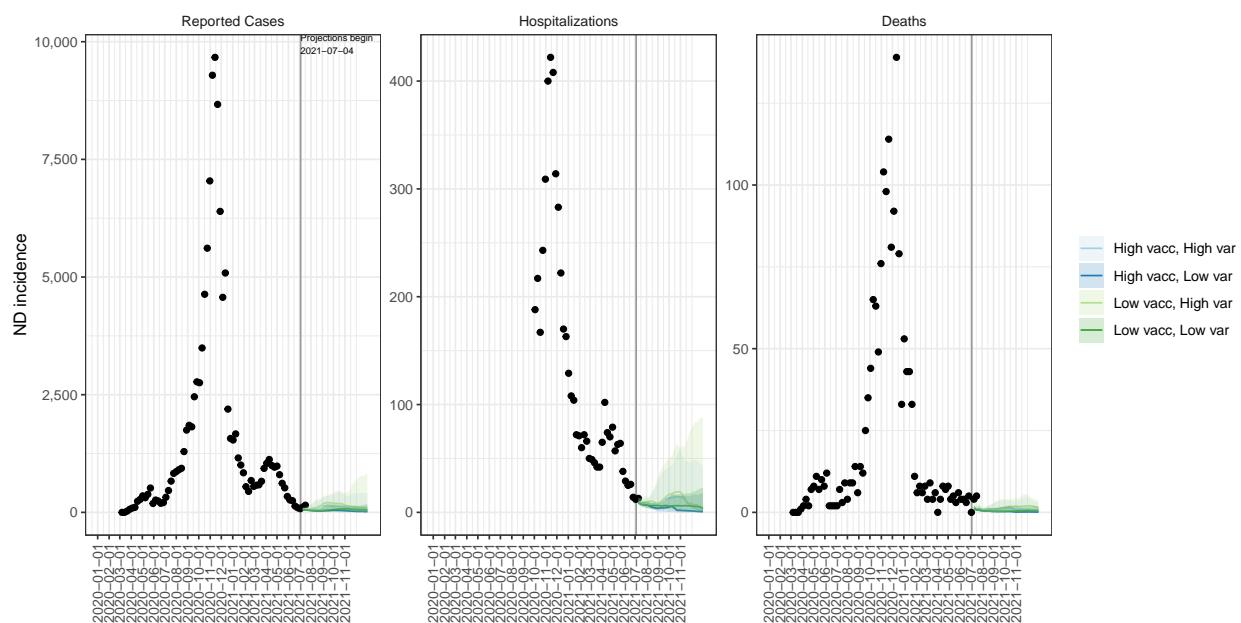
### NY ensemble projections & 50% projection intervals



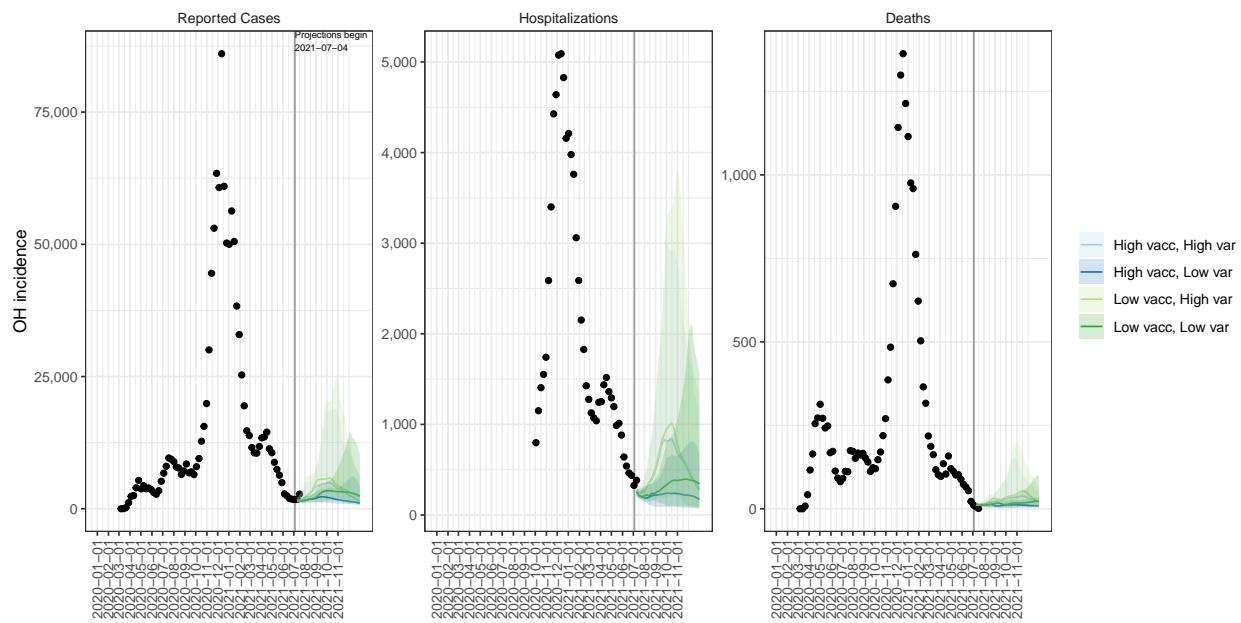
### NC ensemble projections & 50% projection intervals



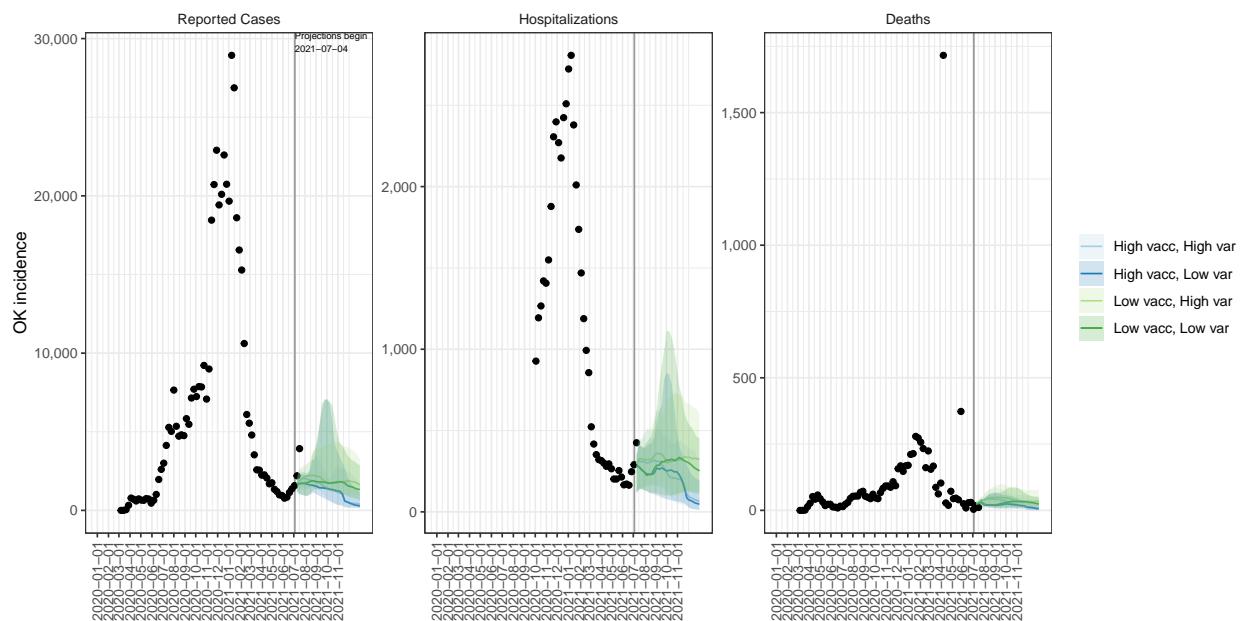
### ND ensemble projections & 50% projection intervals



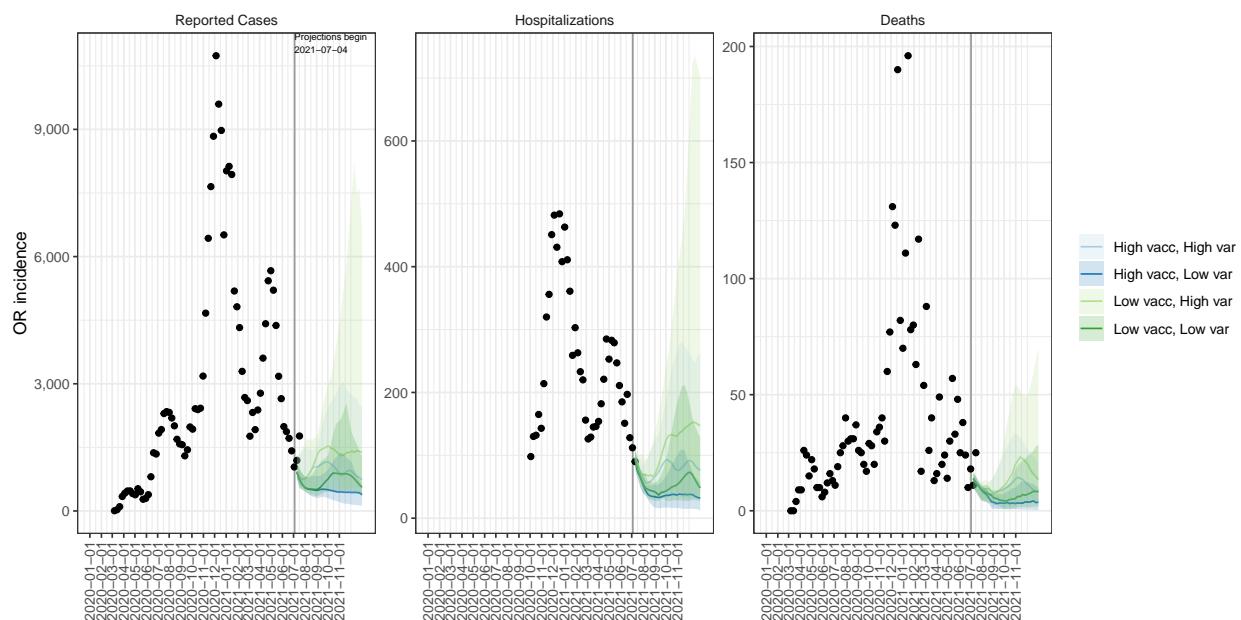
### OH ensemble projections & 50% projection intervals



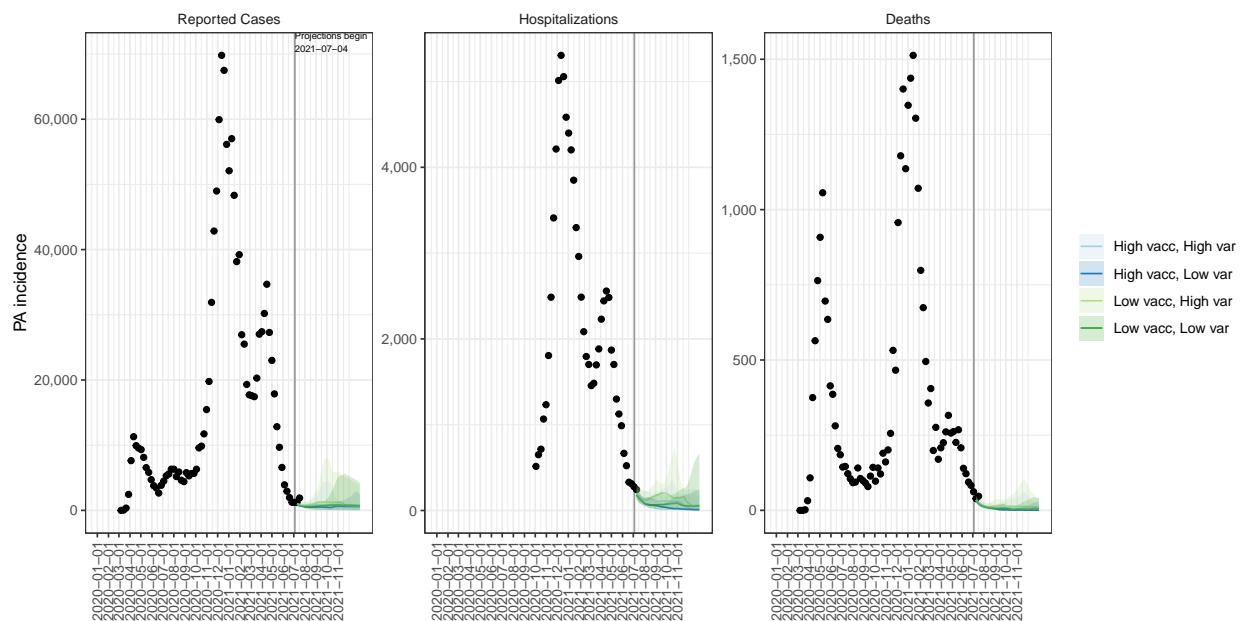
### OK ensemble projections & 50% projection intervals



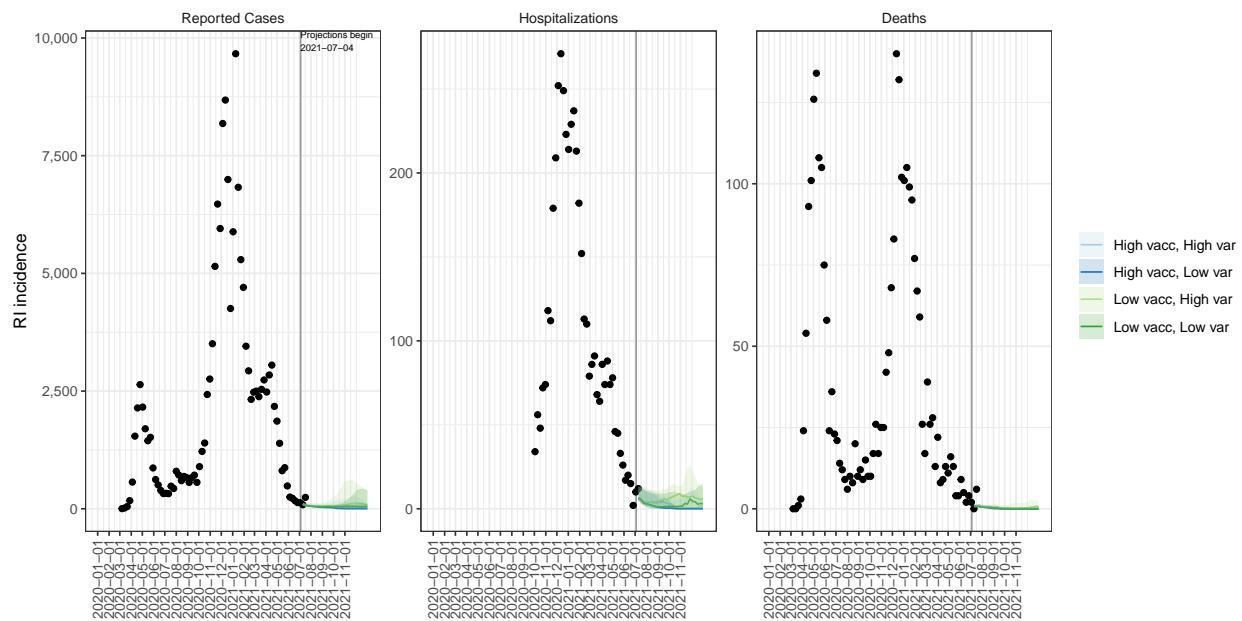
### OR ensemble projections & 50% projection intervals



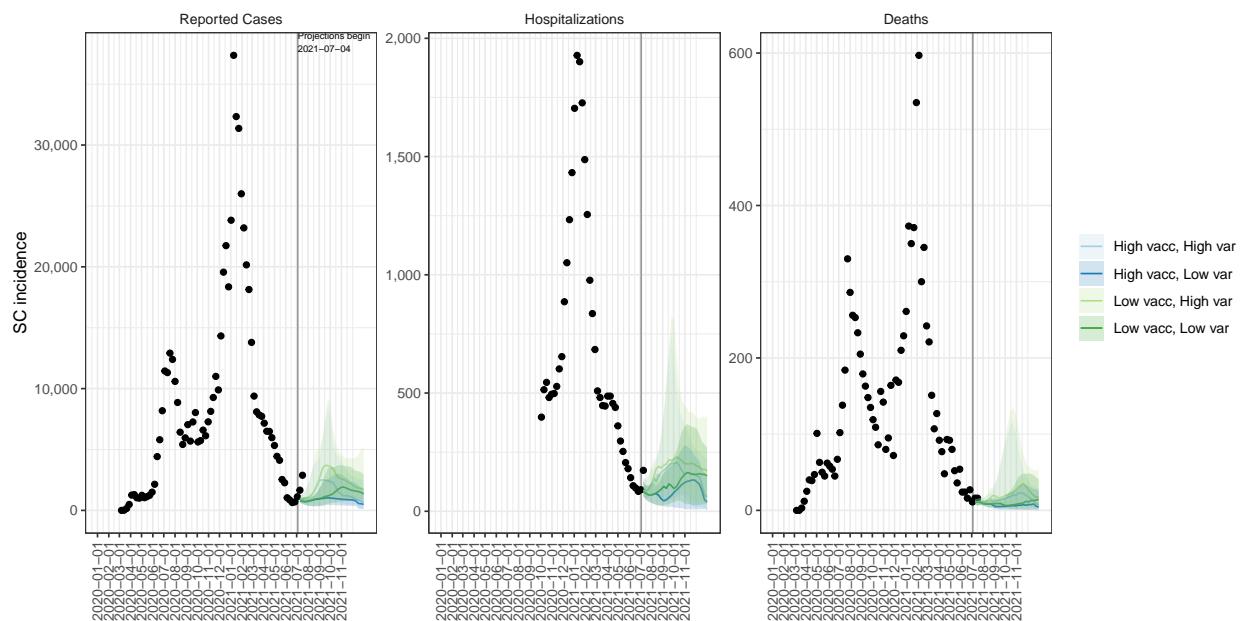
PA ensemble projections & 50% projection intervals



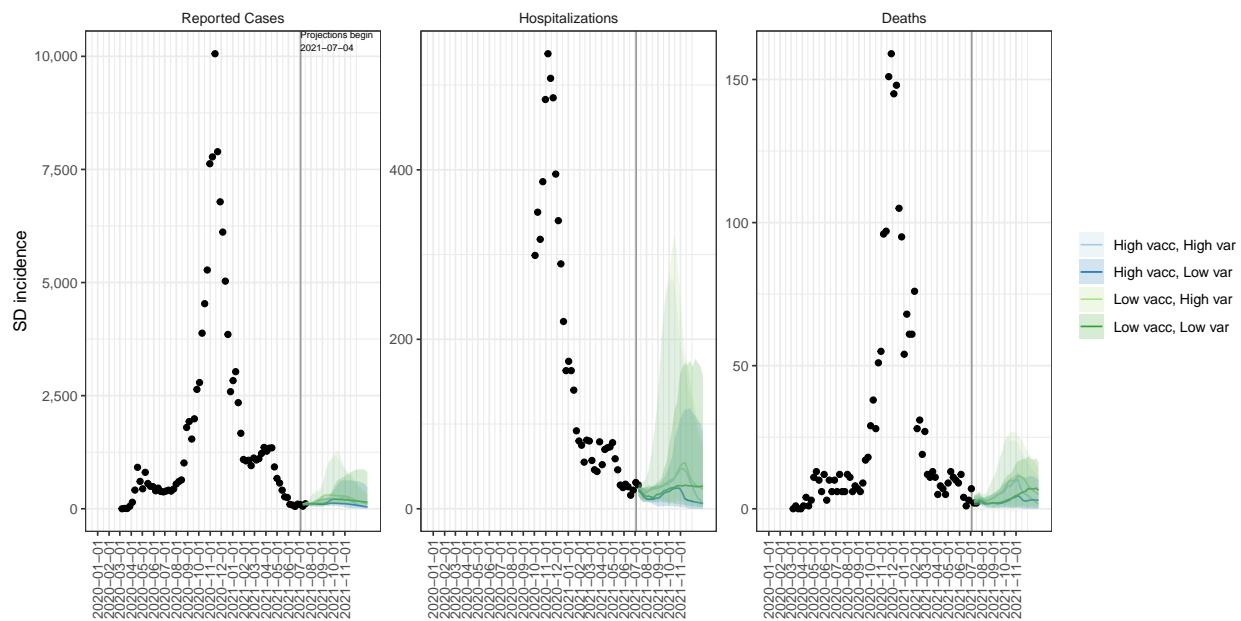
RI ensemble projections & 50% projection intervals



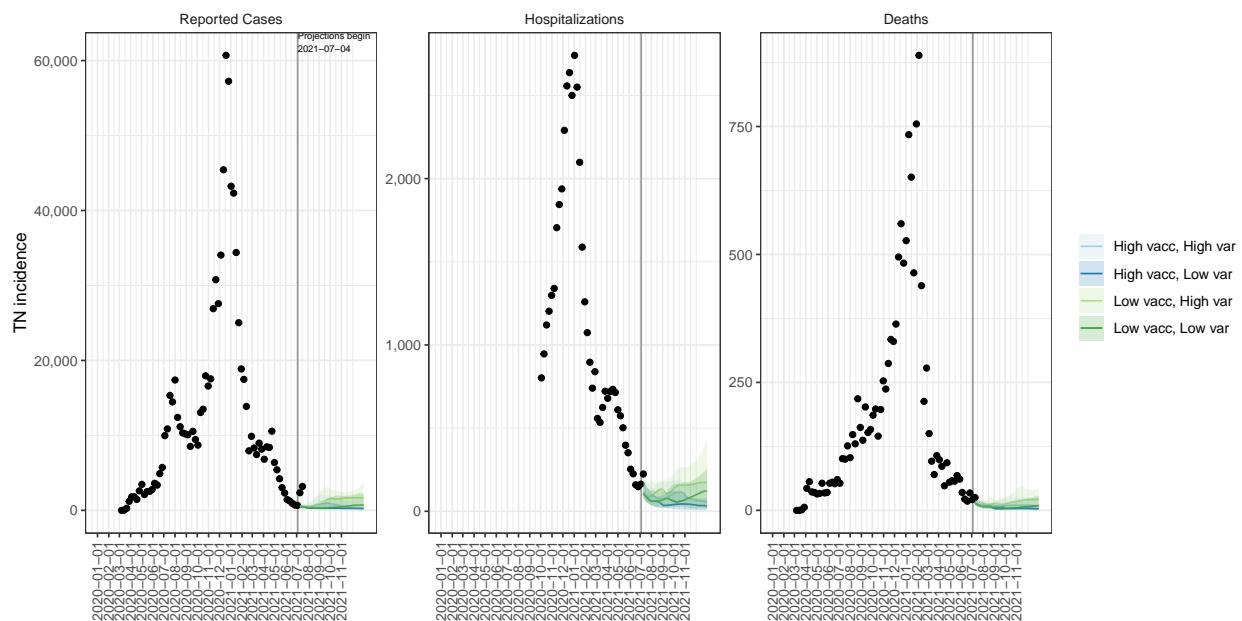
### SC ensemble projections & 50% projection intervals



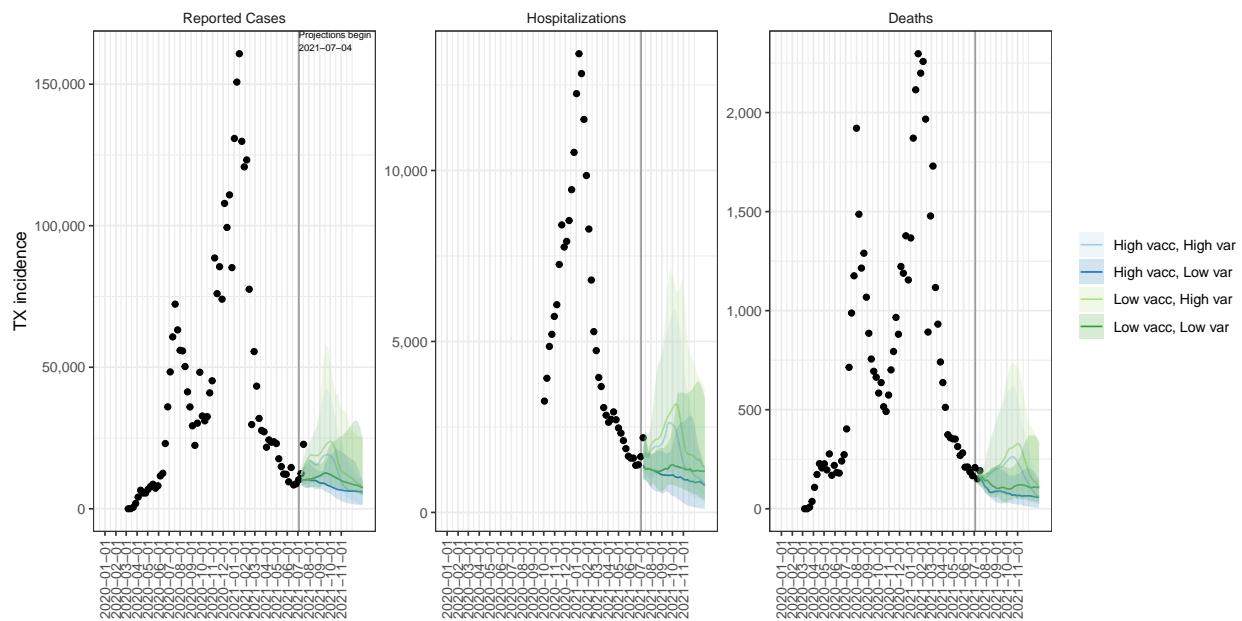
### SD ensemble projections & 50% projection intervals



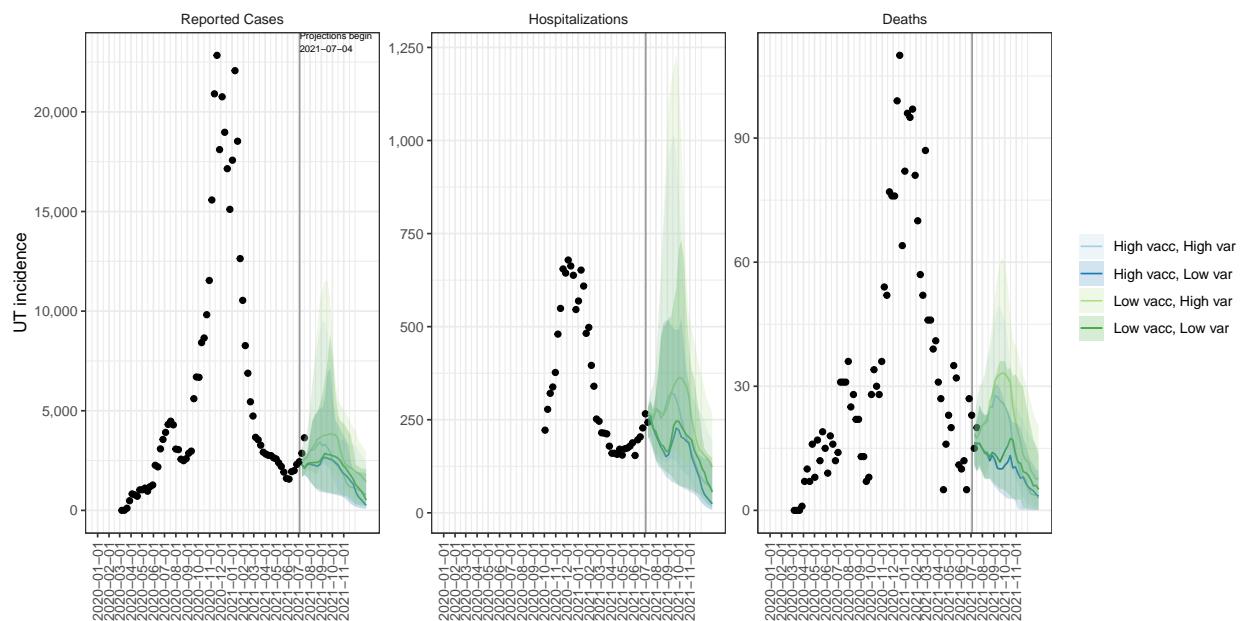
### TN ensemble projections & 50% projection intervals



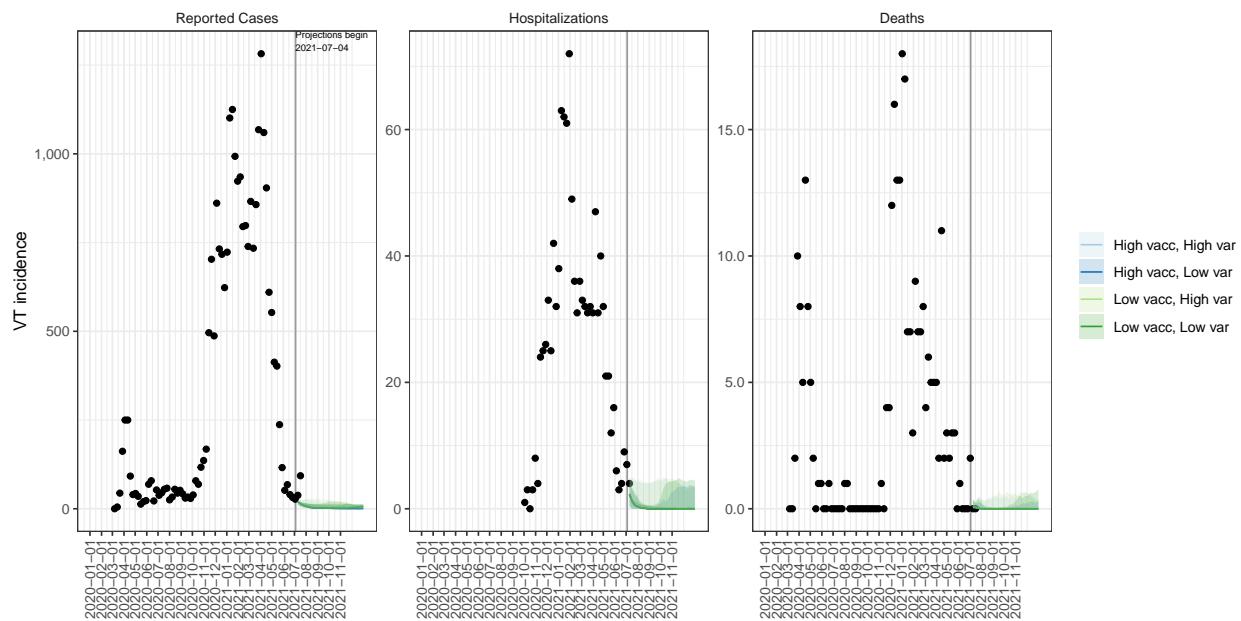
### TX ensemble projections & 50% projection intervals



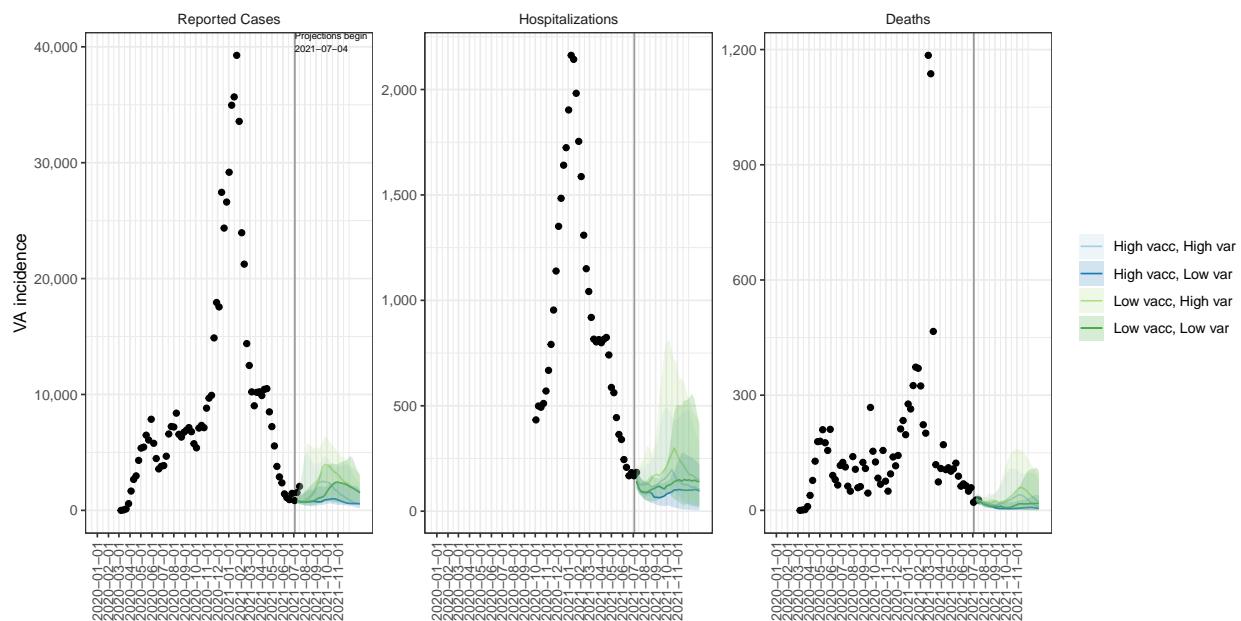
### UT ensemble projections & 50% projection intervals



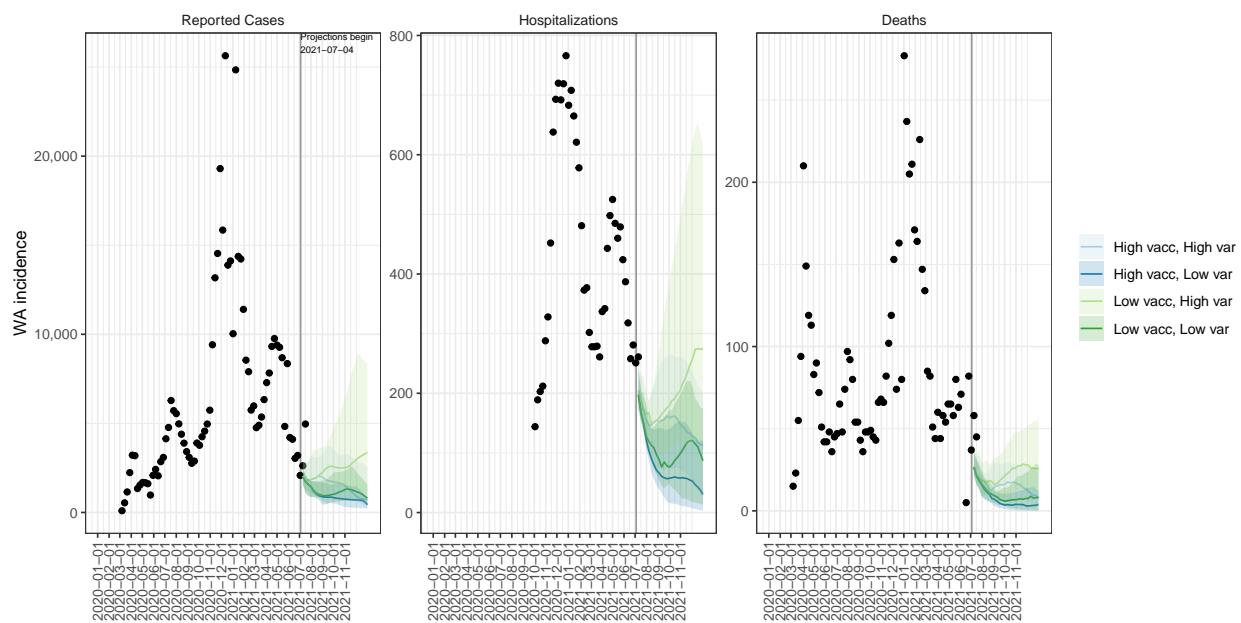
### VT ensemble projections & 50% projection intervals



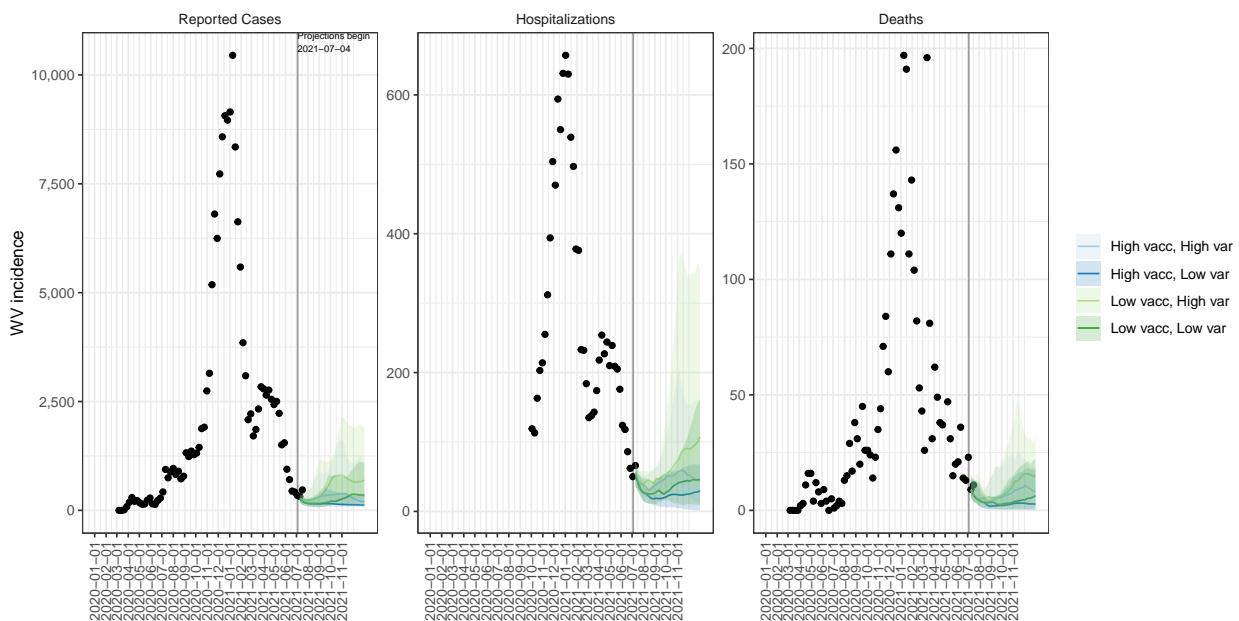
### VA ensemble projections & 50% projection intervals



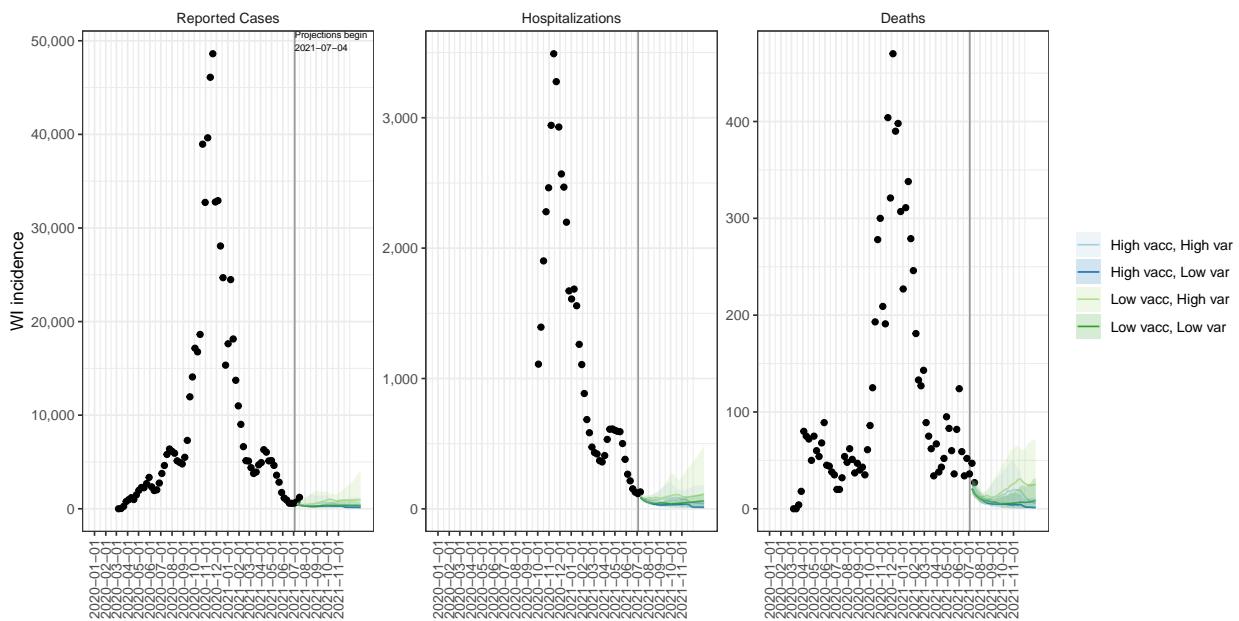
### WA ensemble projections & 50% projection intervals



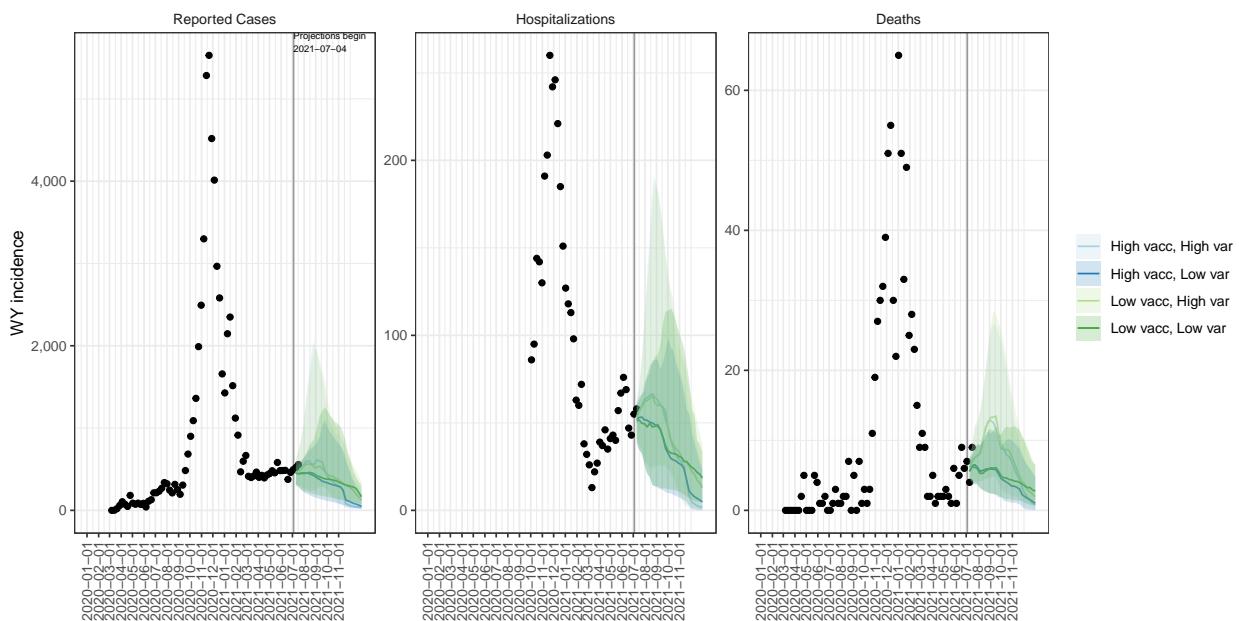
### WV ensemble projections & 50% projection intervals



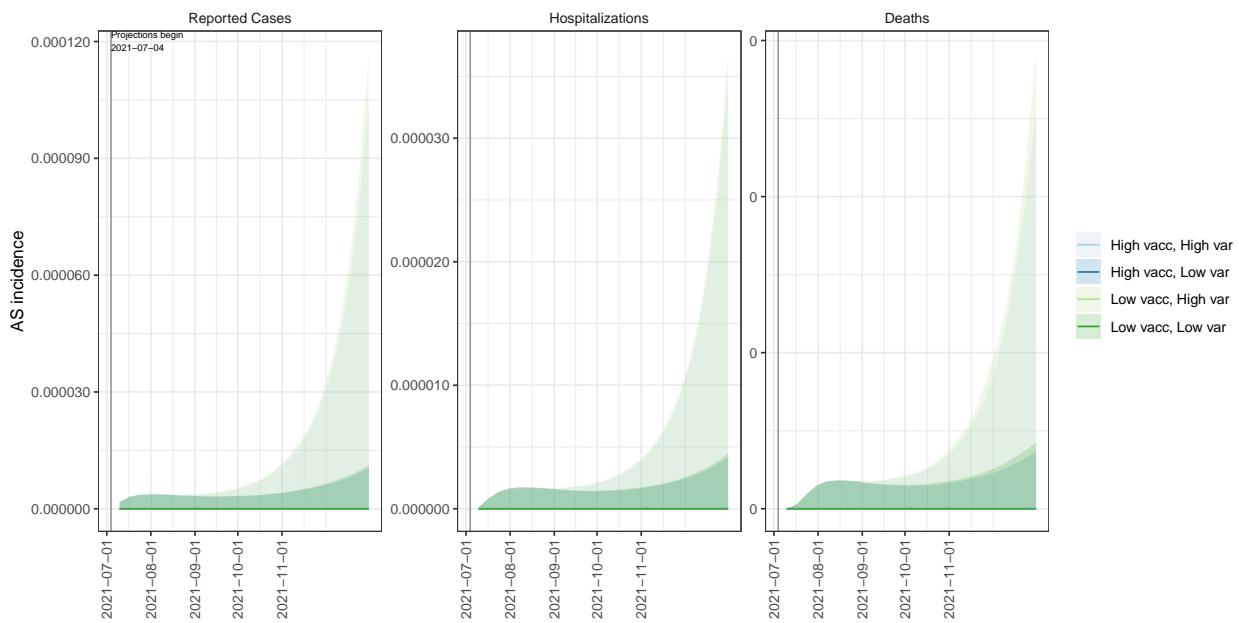
### WI ensemble projections & 50% projection intervals



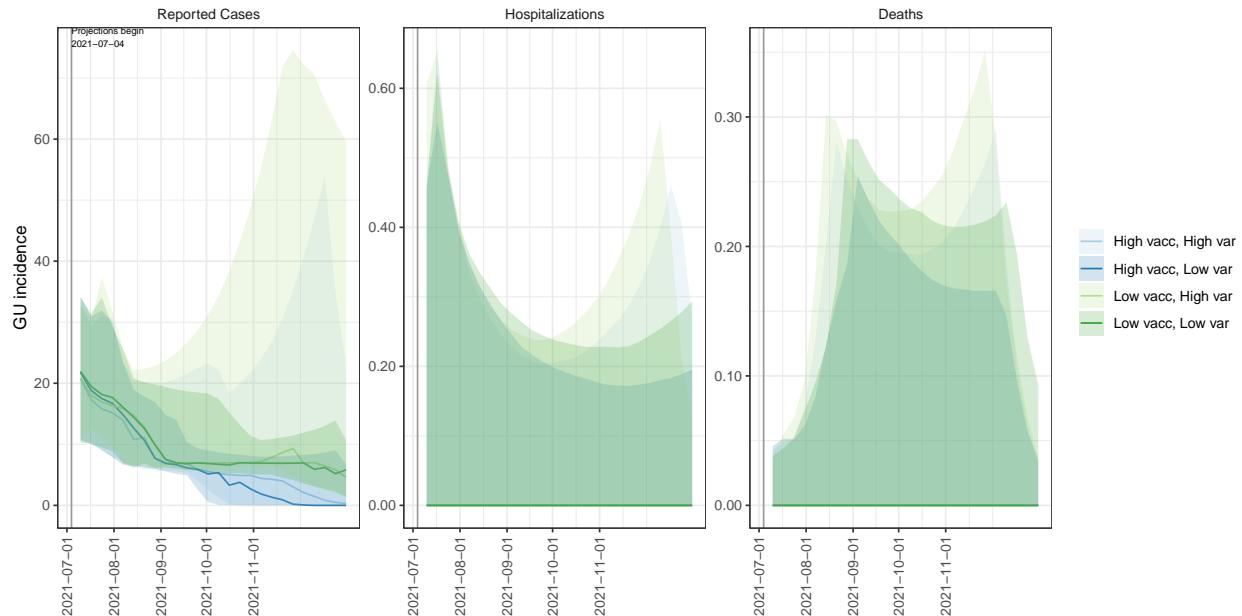
### WY ensemble projections & 50% projection intervals



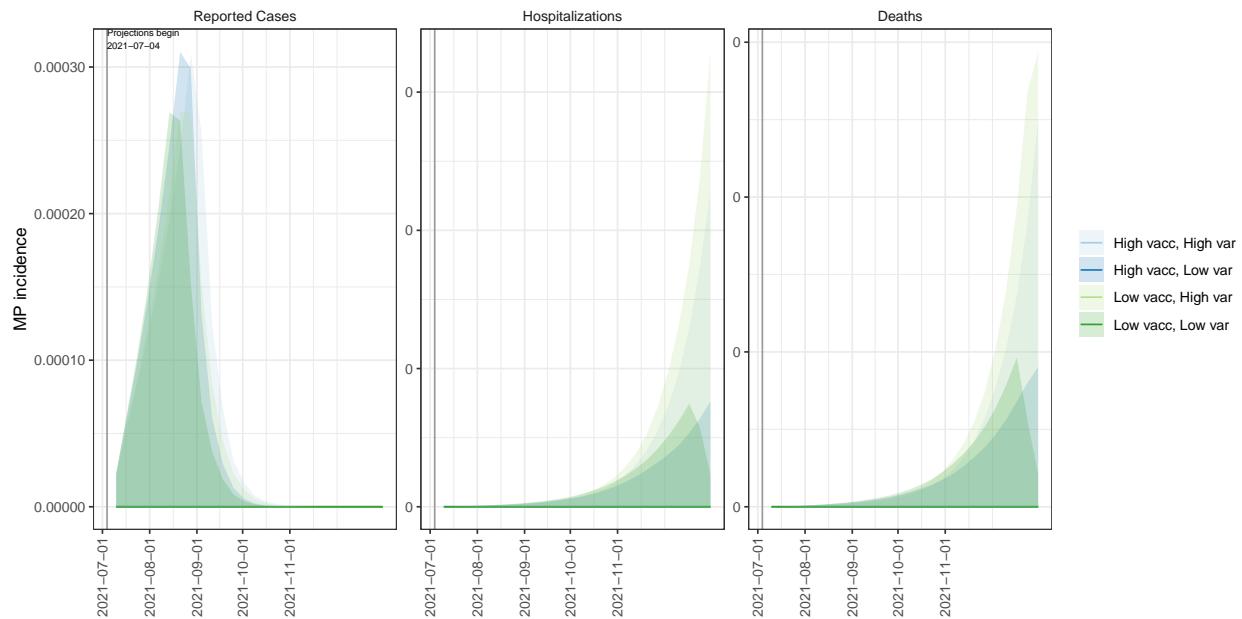
### AS ensemble projections & 50% projection intervals



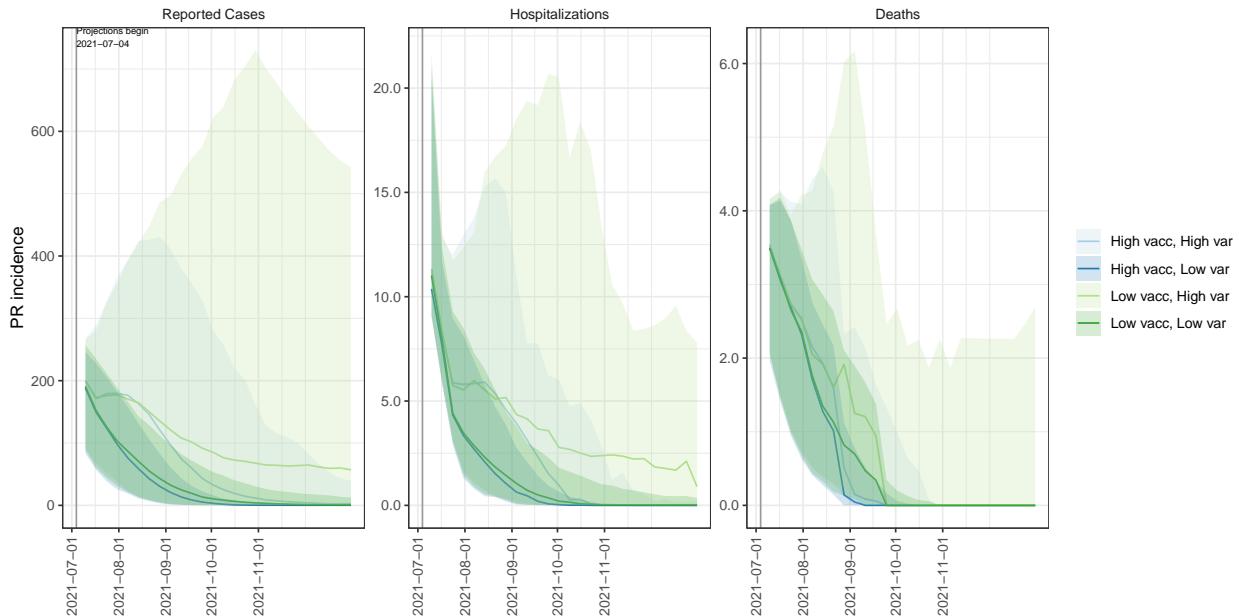
### GU ensemble projections & 50% projection intervals



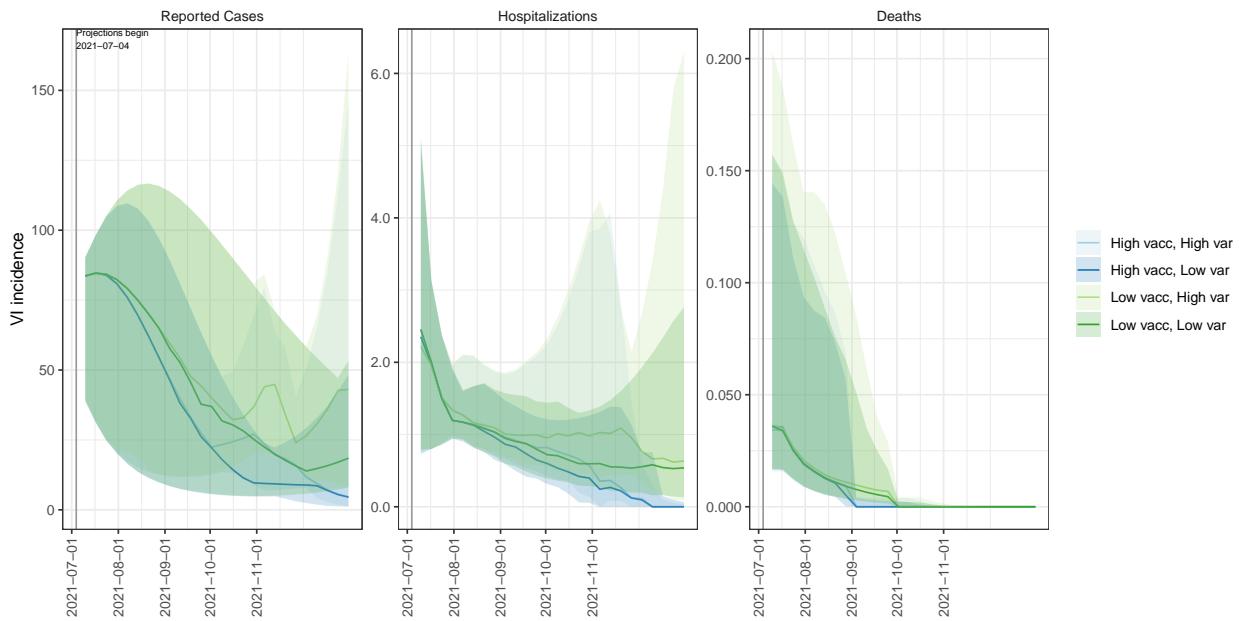
### MP ensemble projections & 50% projection intervals



PR ensemble projections & 50% projection intervals



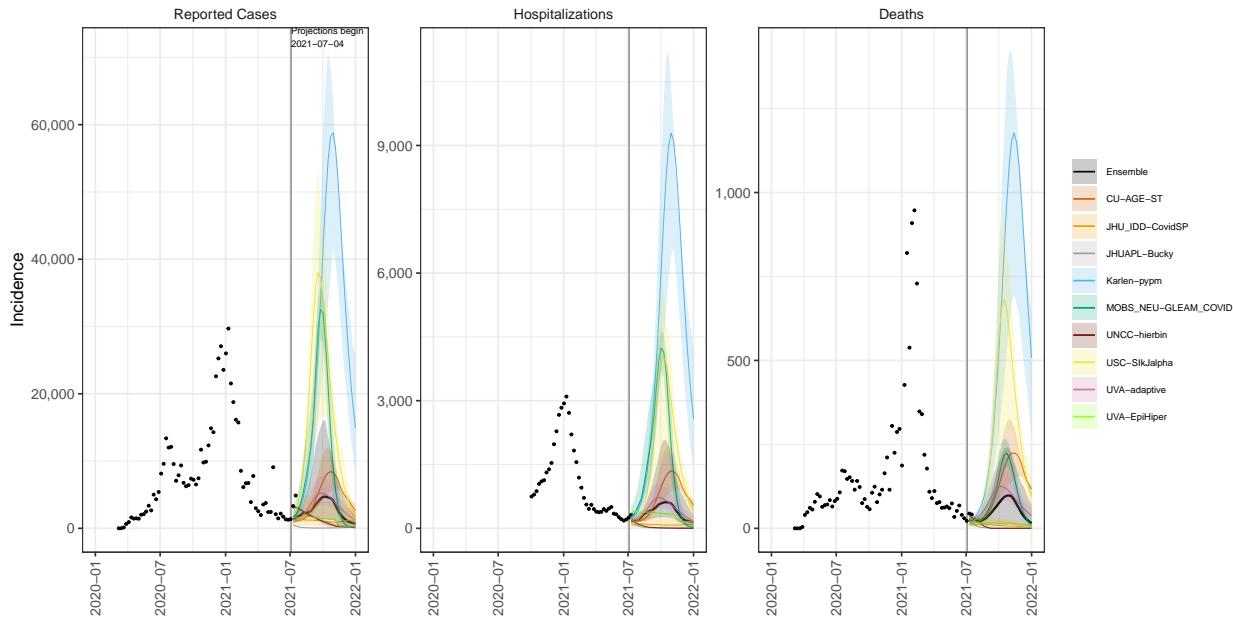
VI ensemble projections & 50% projection intervals



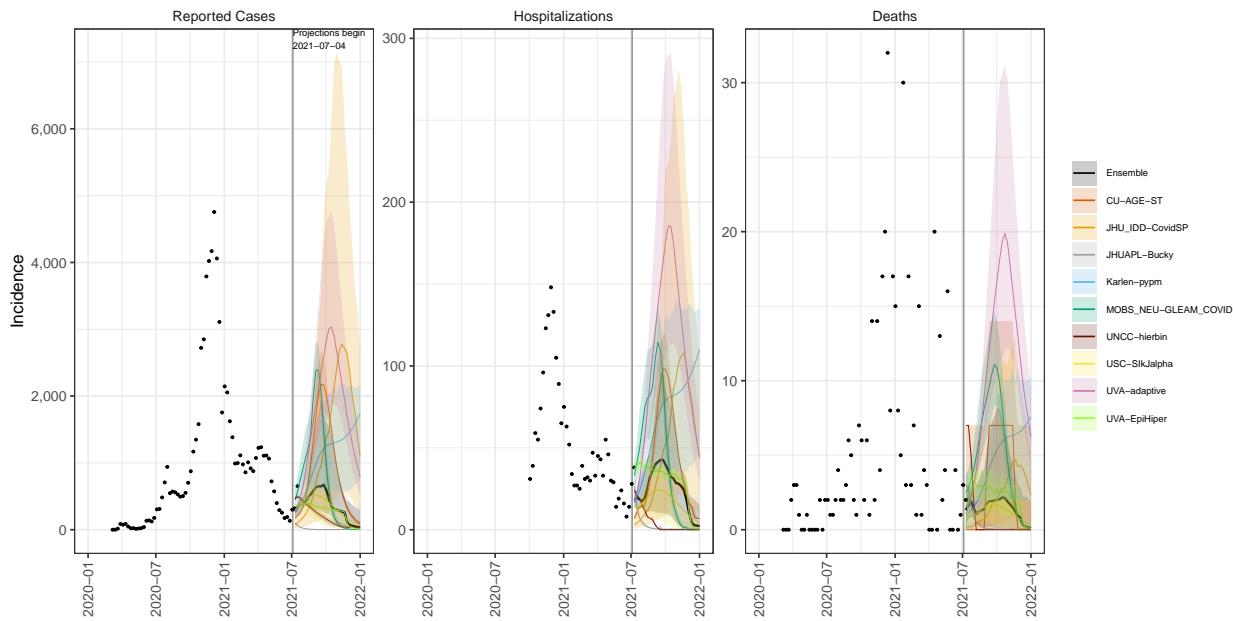
## State-level model variation

National model variation for the high vaccination, high variant transmissibility scenario

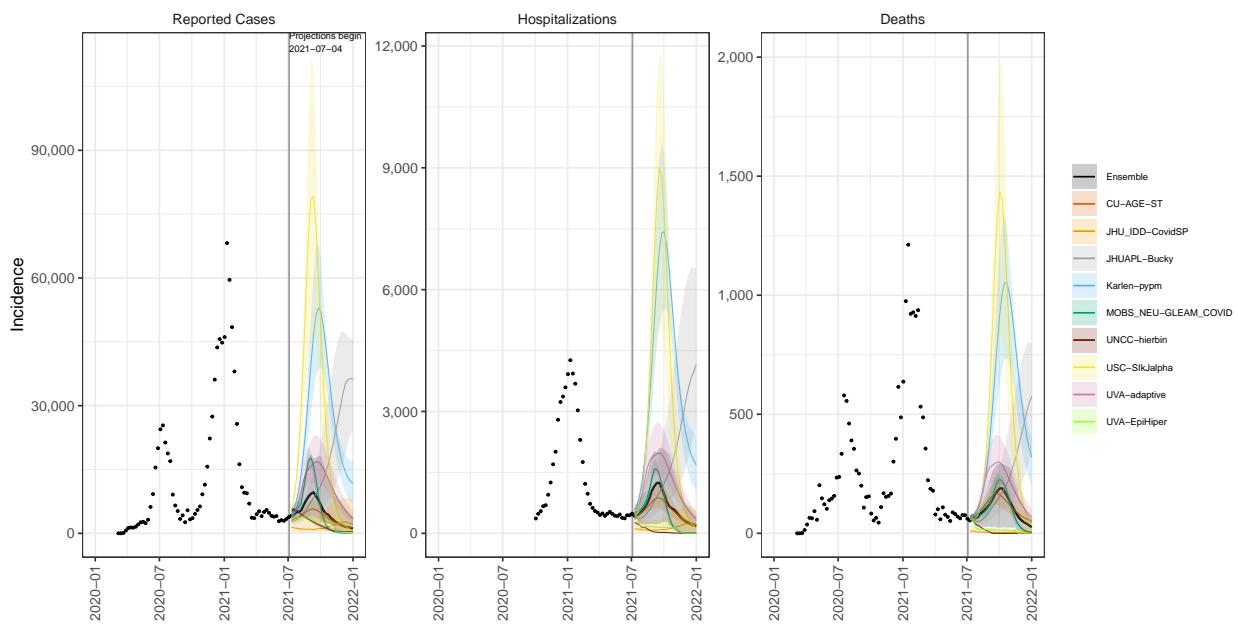
AL model variance & 50% projection intervals – High vaccination, High variant transmissibility



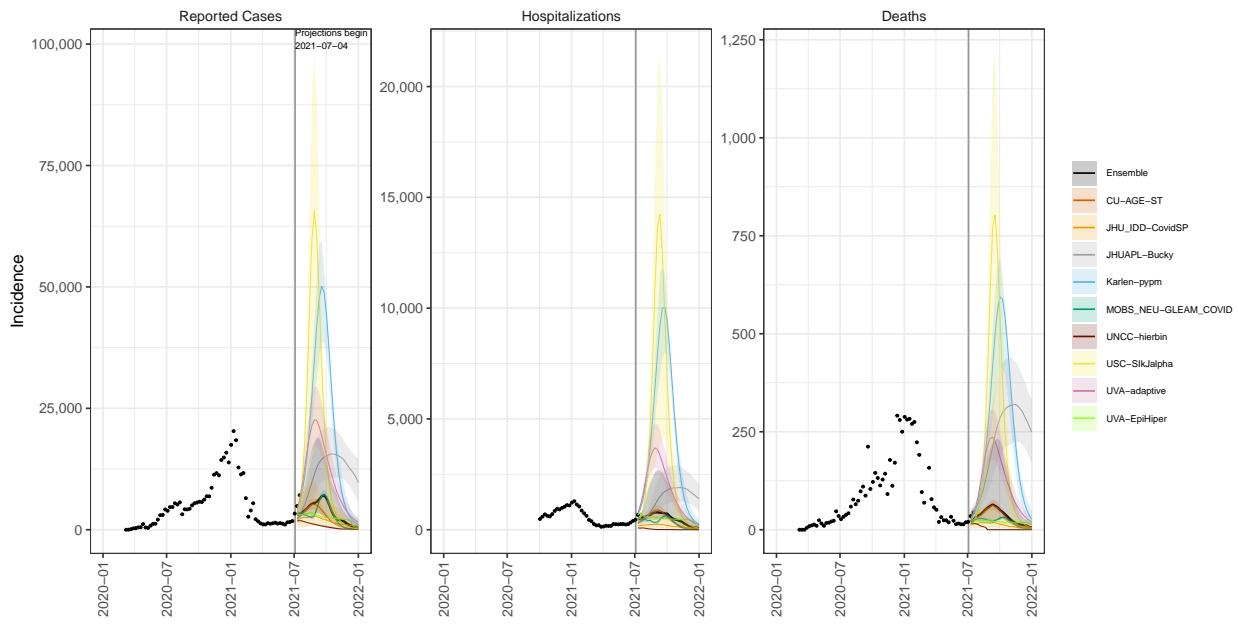
AK model variance & 50% projection intervals – High vaccination, High variant transmissibility



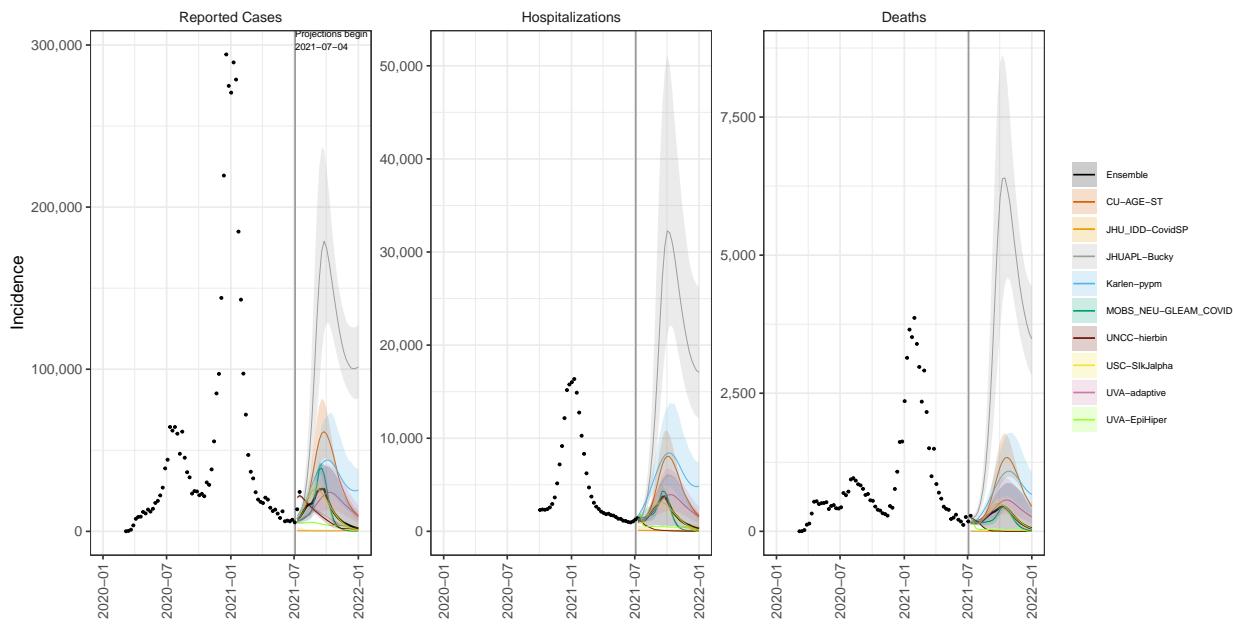
### AZ model variance & 50% projection intervals – High vaccination, High variant transmissibility



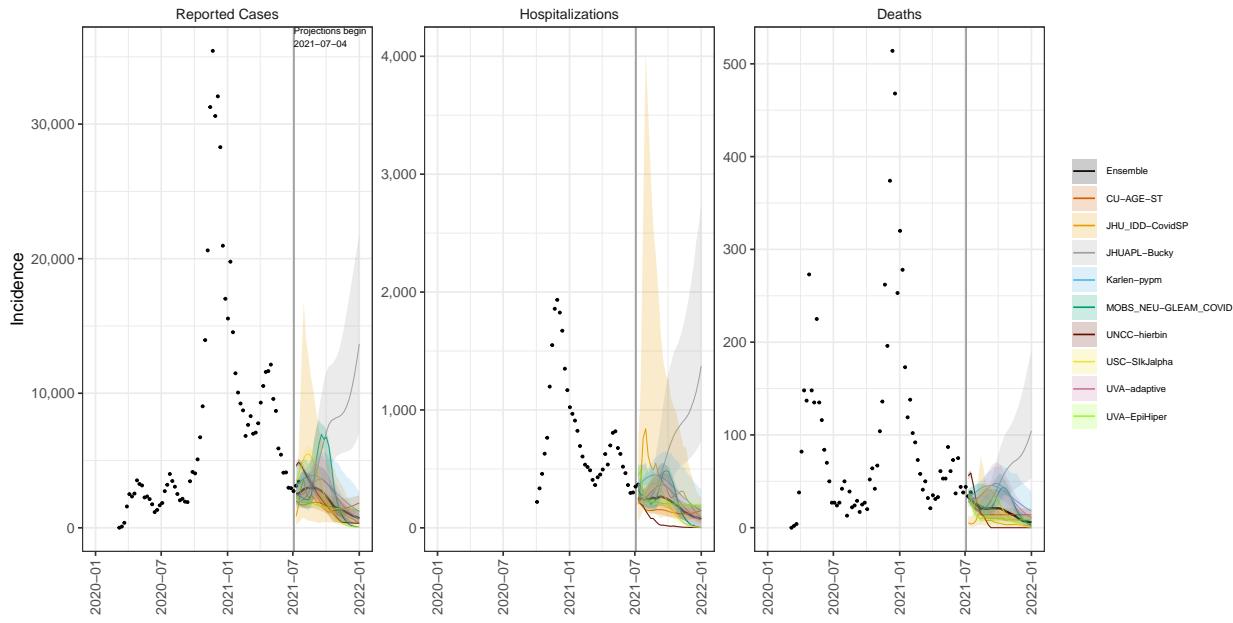
### AR model variance & 50% projection intervals – High vaccination, High variant transmissibility



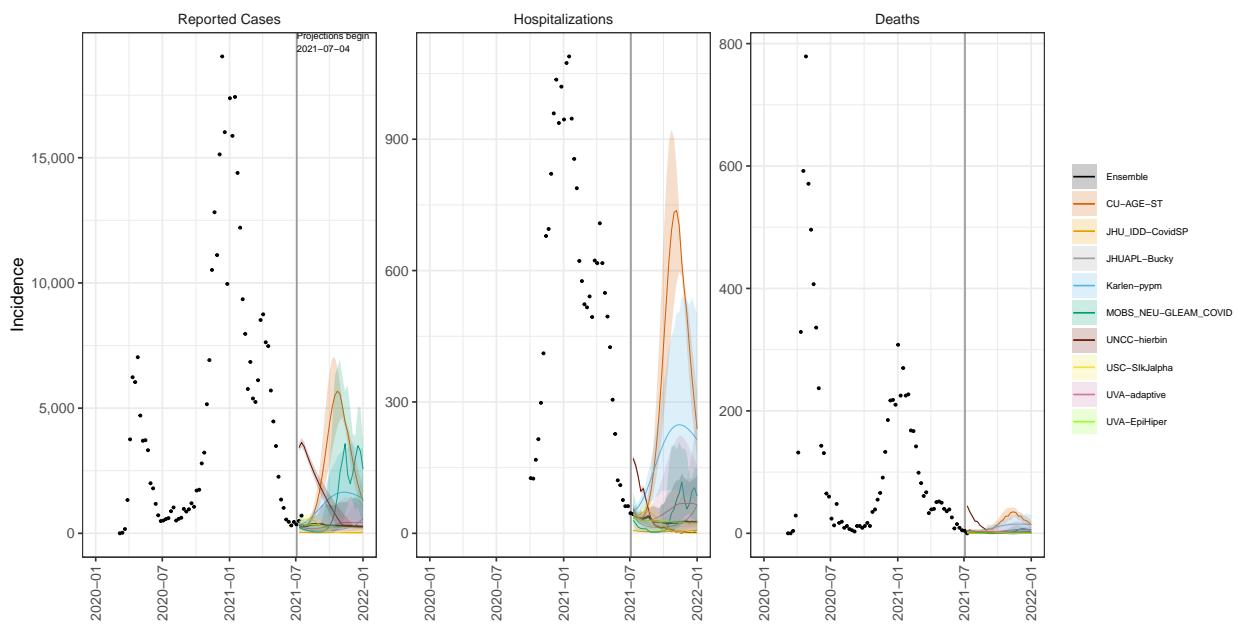
### CA model variance & 50% projection intervals – High vaccination, High variant transmissibility



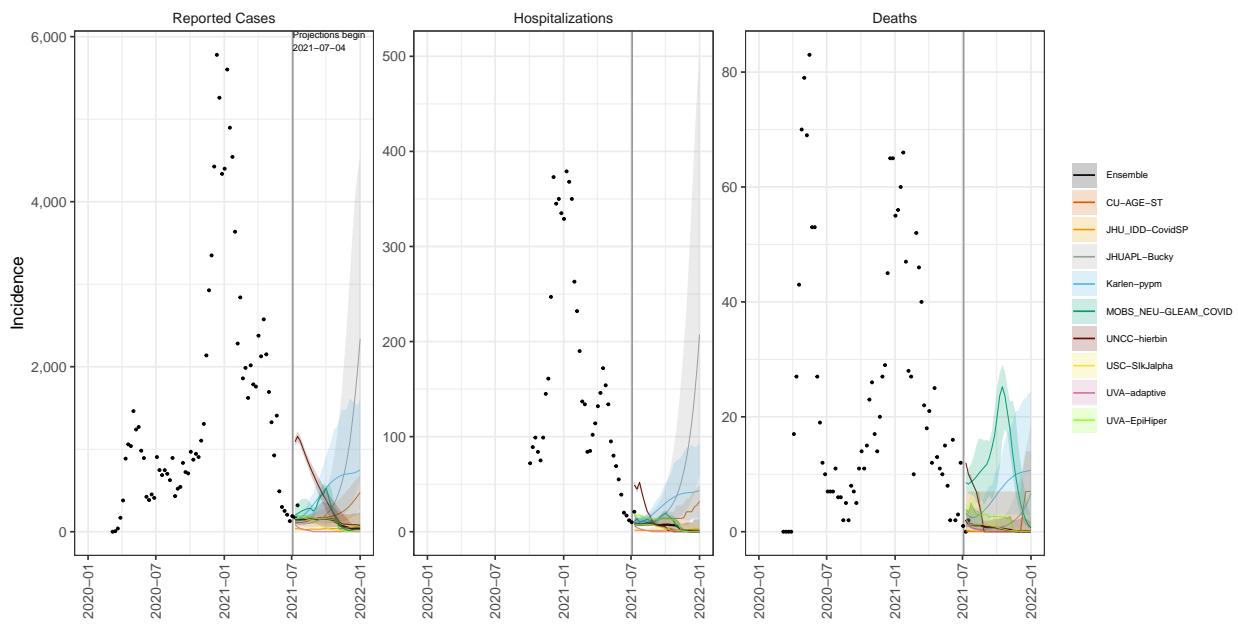
### CO model variance & 50% projection intervals – High vaccination, High variant transmissibility



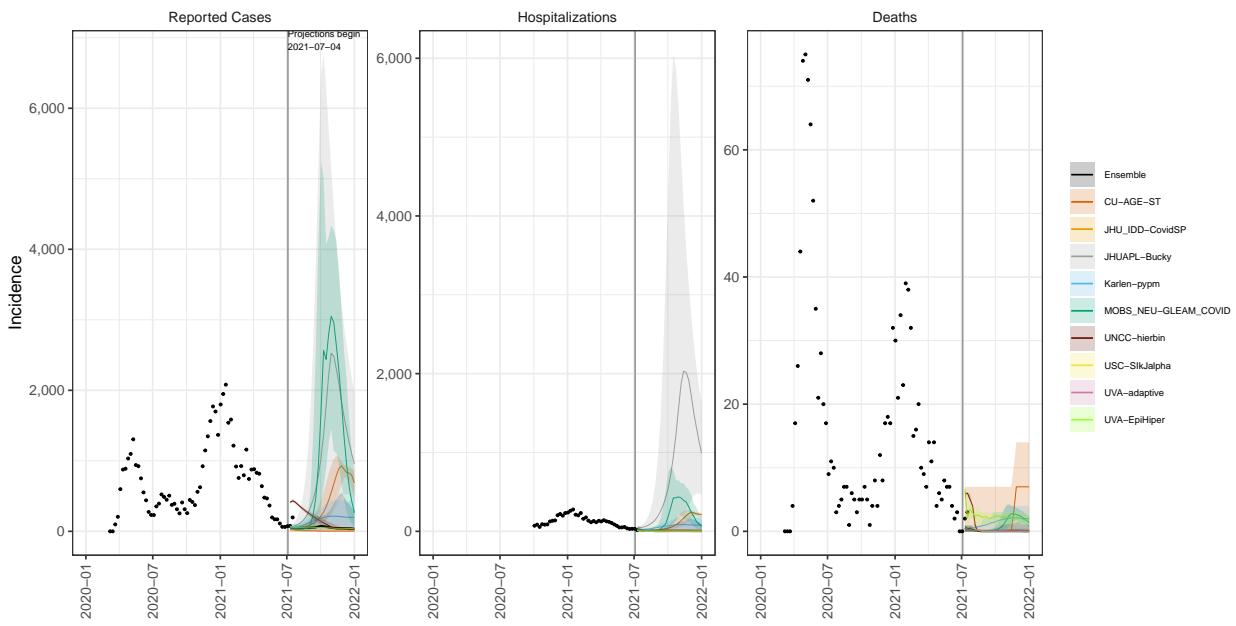
### CT model variance & 50% projection intervals – High vaccination, High variant transmissibility



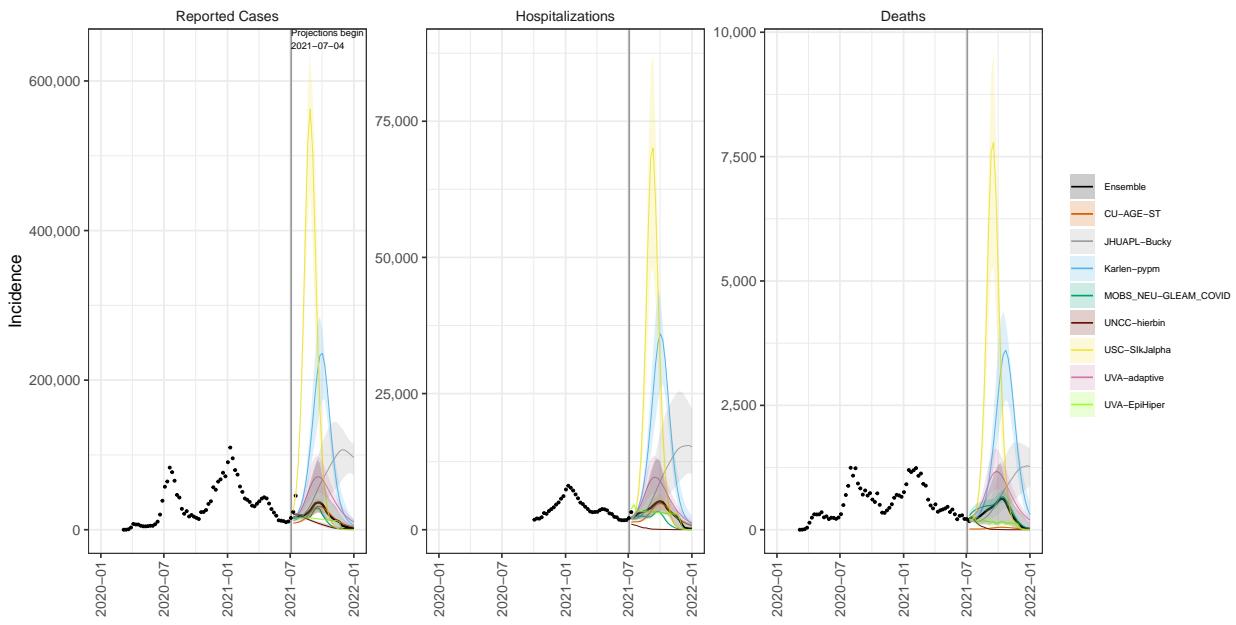
### DE model variance & 50% projection intervals – High vaccination, High variant transmissibility



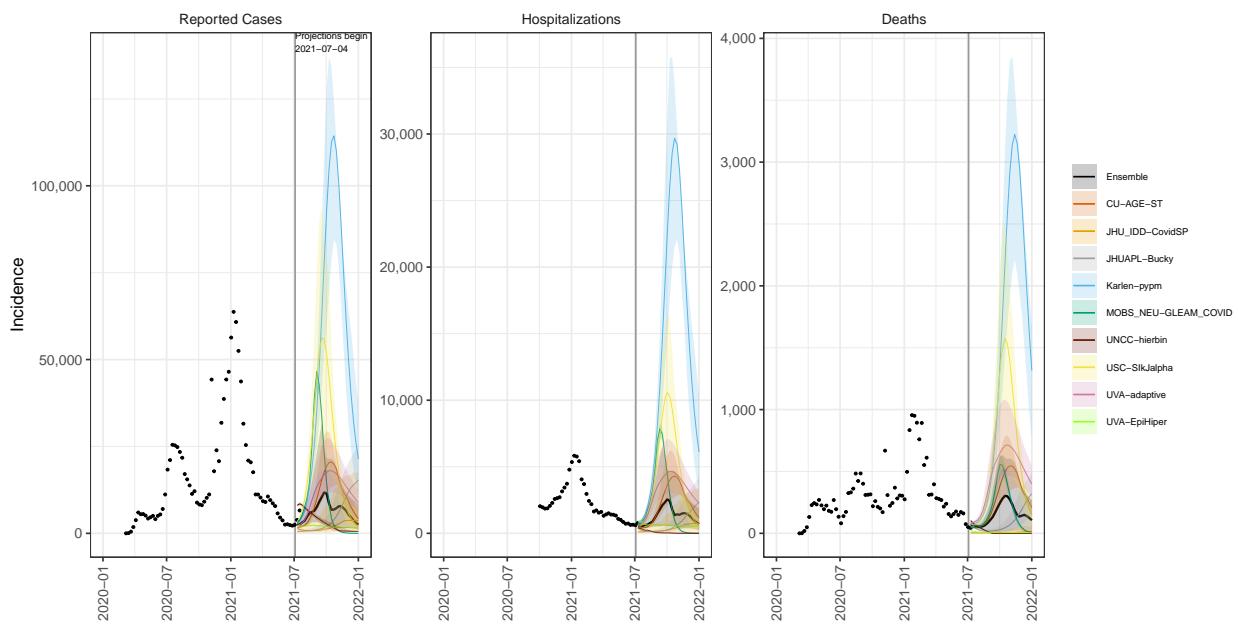
DC model variance & 50% projection intervals – High vaccination, High variant transmissibility



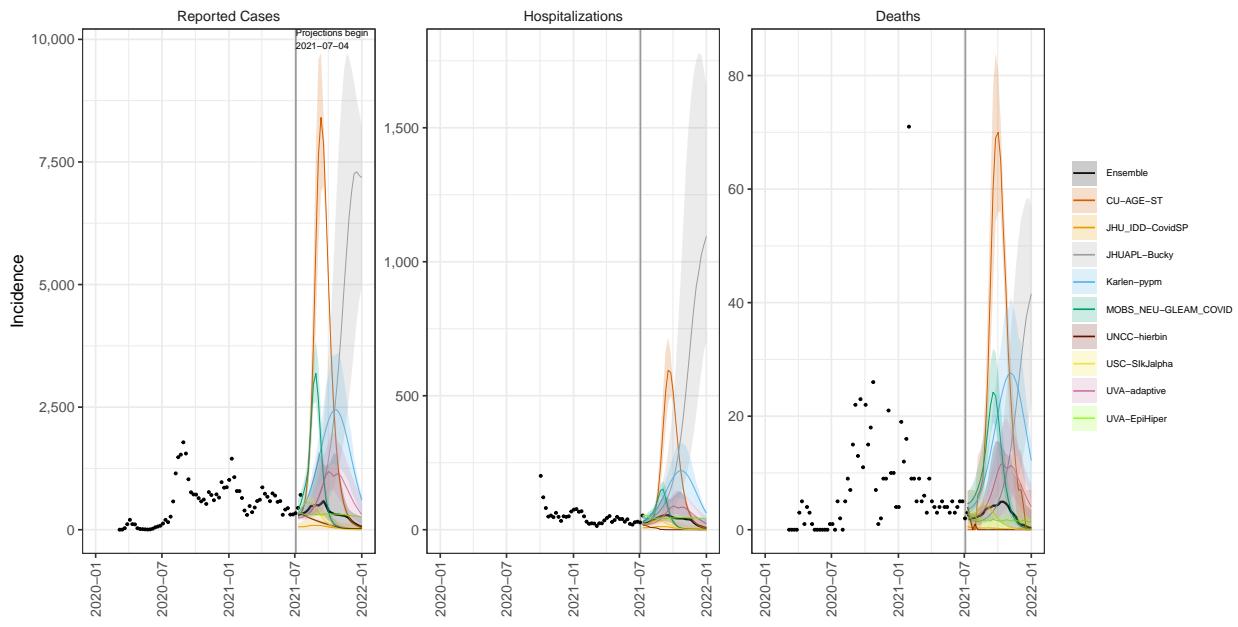
FL model variance & 50% projection intervals – High vaccination, High variant transmissibility



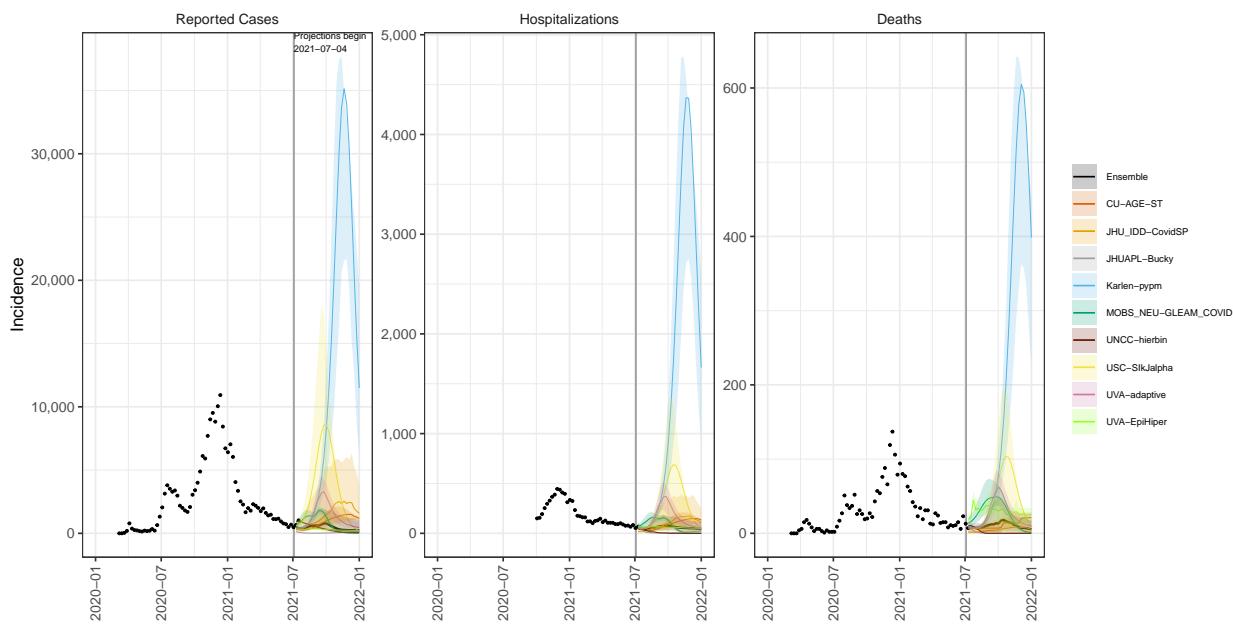
### GA model variance & 50% projection intervals – High vaccination, High variant transmissibility



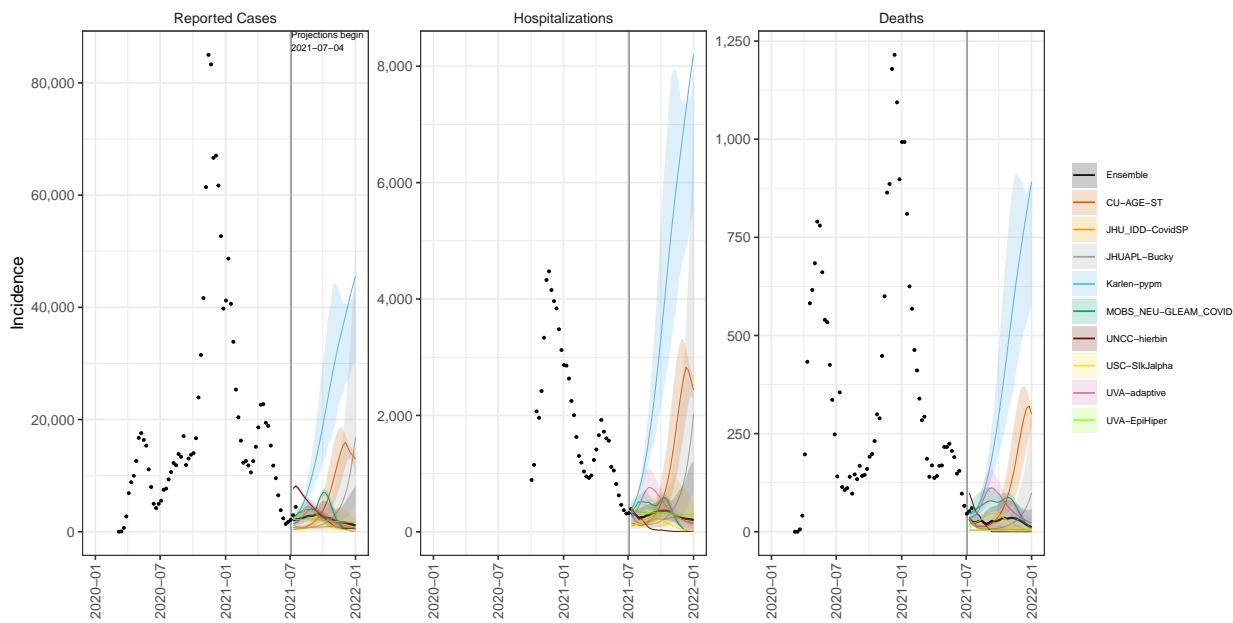
### HI model variance & 50% projection intervals – High vaccination, High variant transmissibility



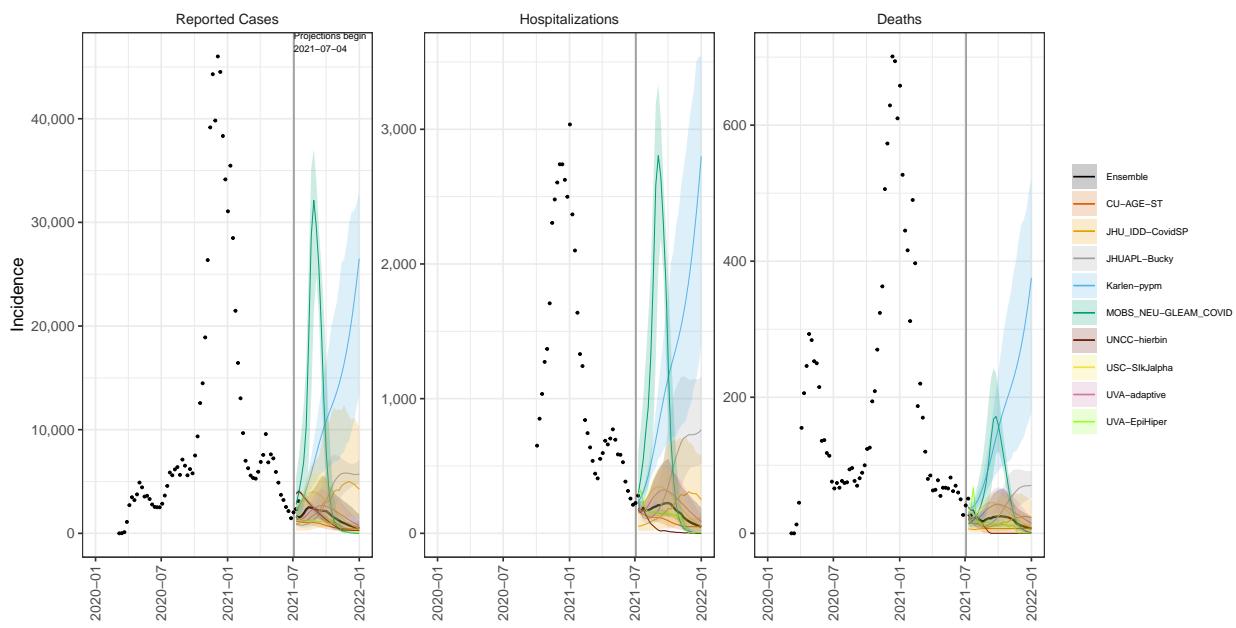
ID model variance & 50% projection intervals – High vaccination, High variant transmissibility



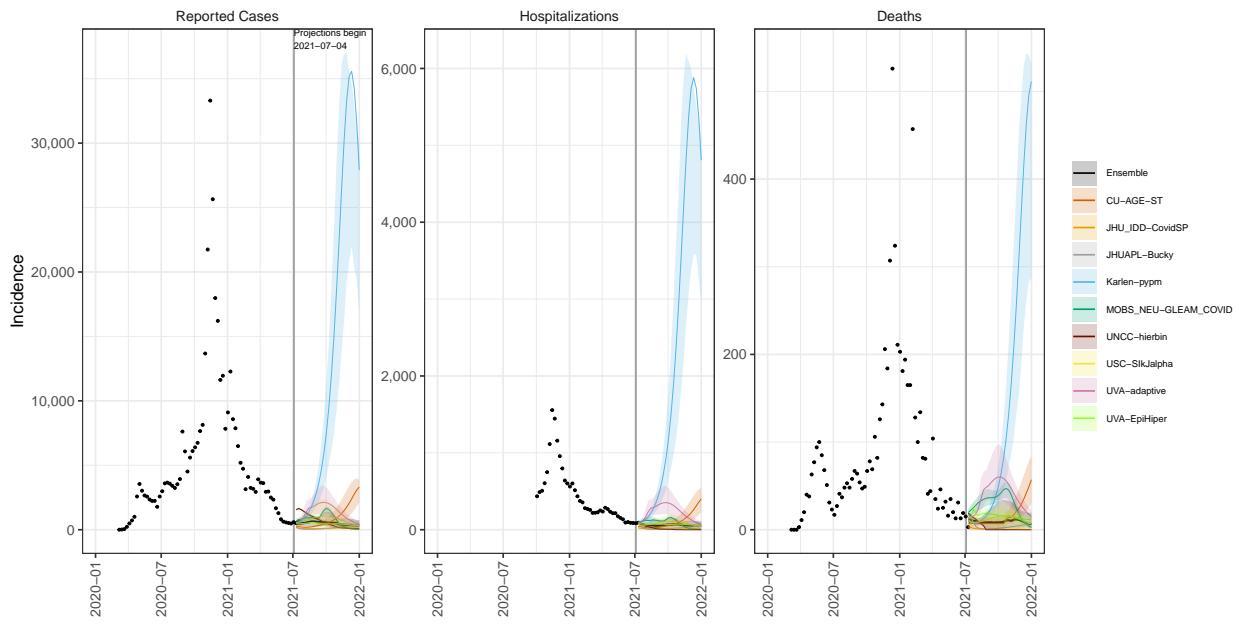
IL model variance & 50% projection intervals – High vaccination, High variant transmissibility



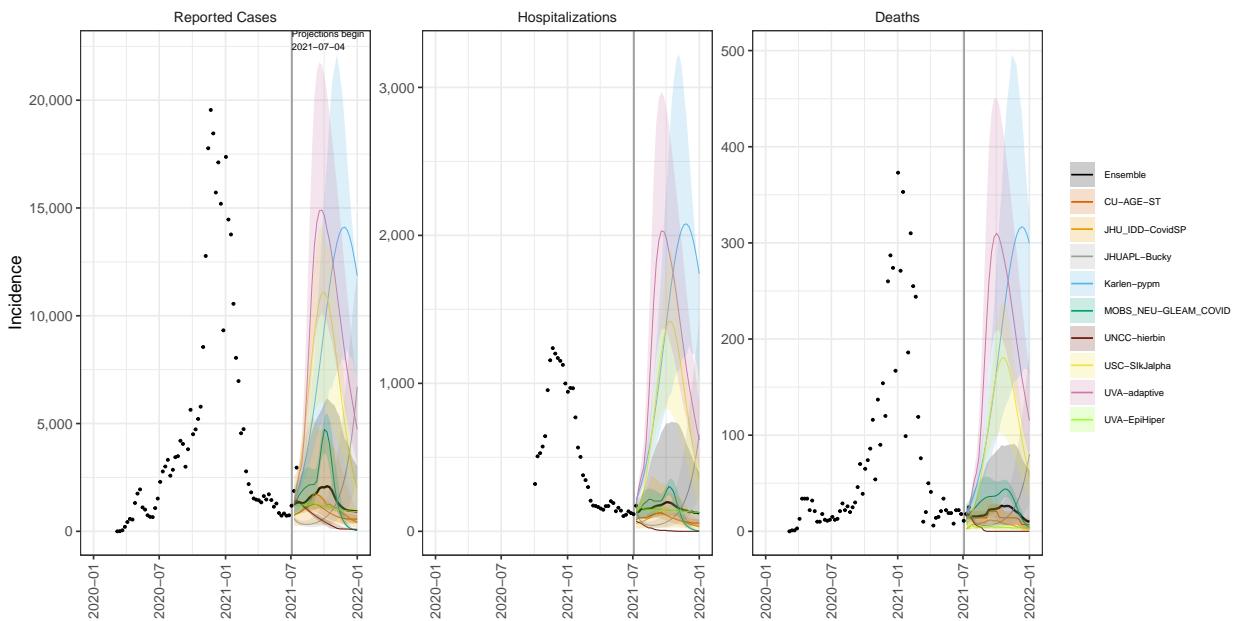
IN model variance & 50% projection intervals – High vaccination, High variant transmissibility



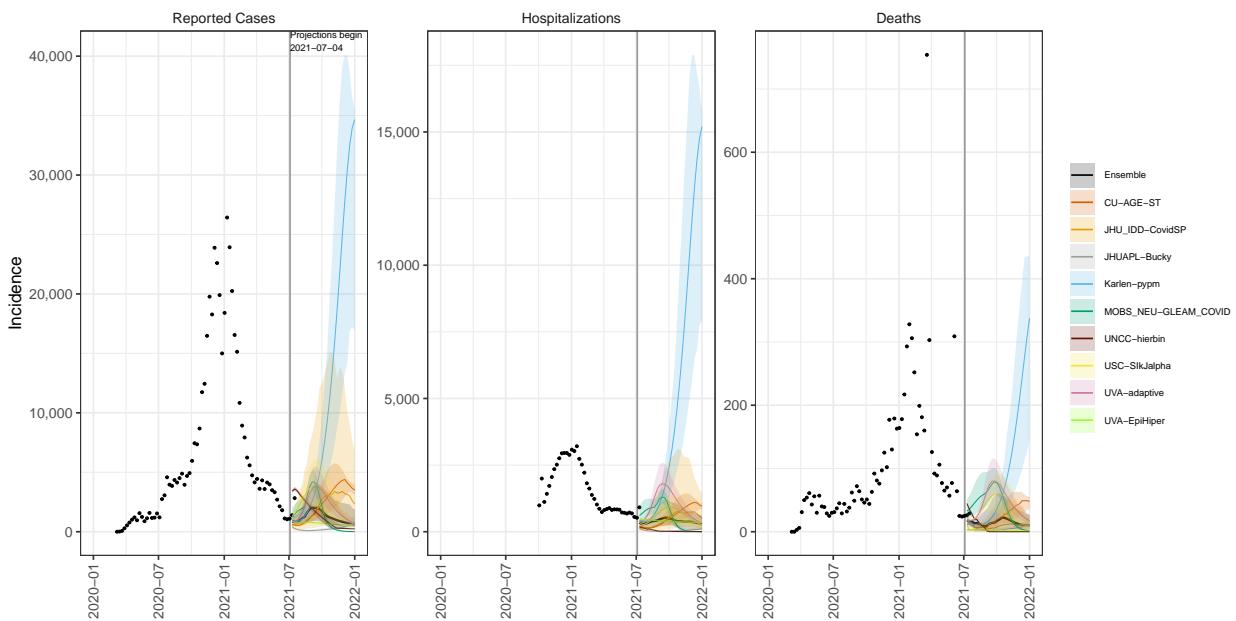
IA model variance & 50% projection intervals – High vaccination, High variant transmissibility



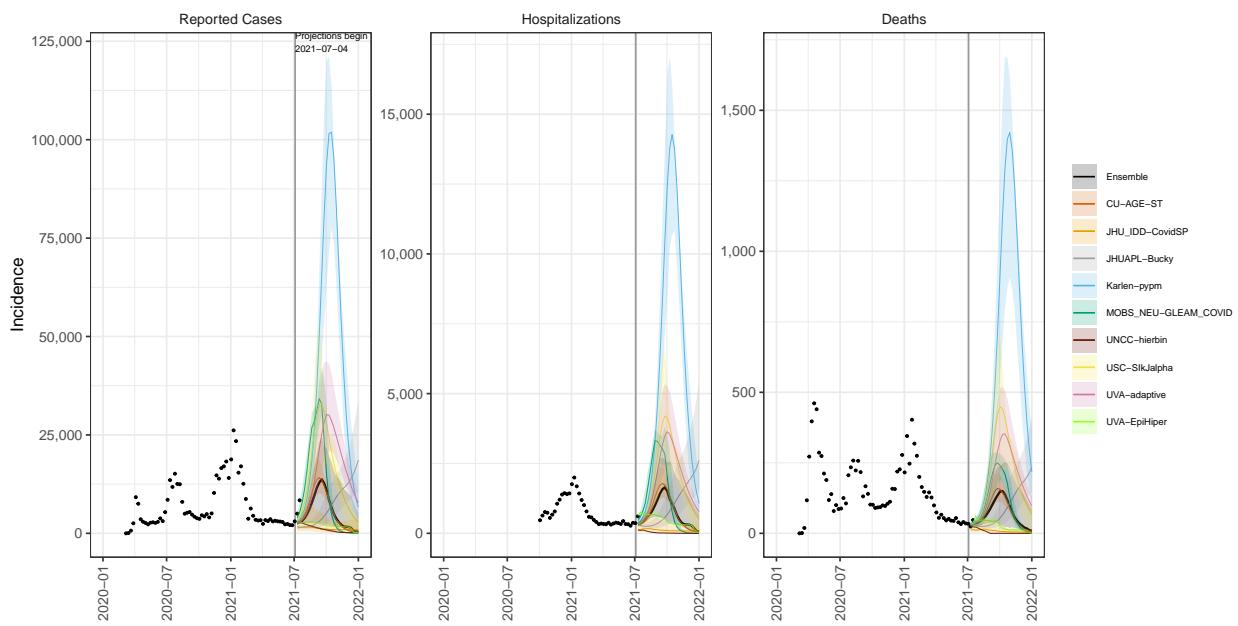
### KS model variance & 50% projection intervals – High vaccination, High variant transmissibility



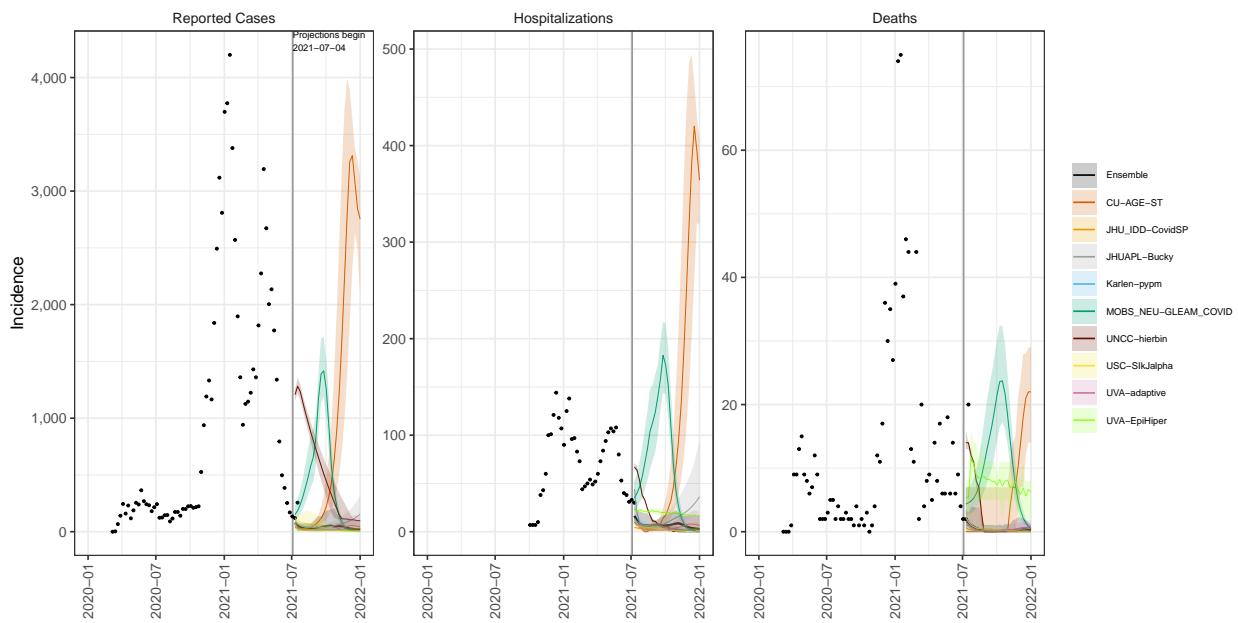
### KY model variance & 50% projection intervals – High vaccination, High variant transmissibility



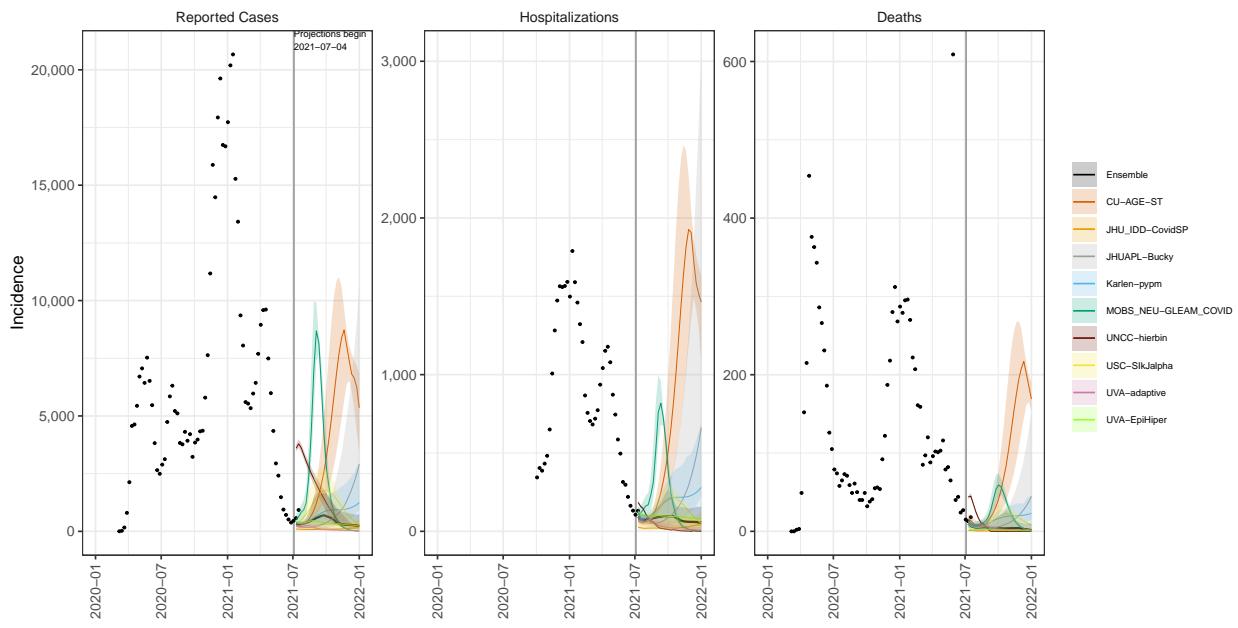
LA model variance & 50% projection intervals – High vaccination, High variant transmissibility



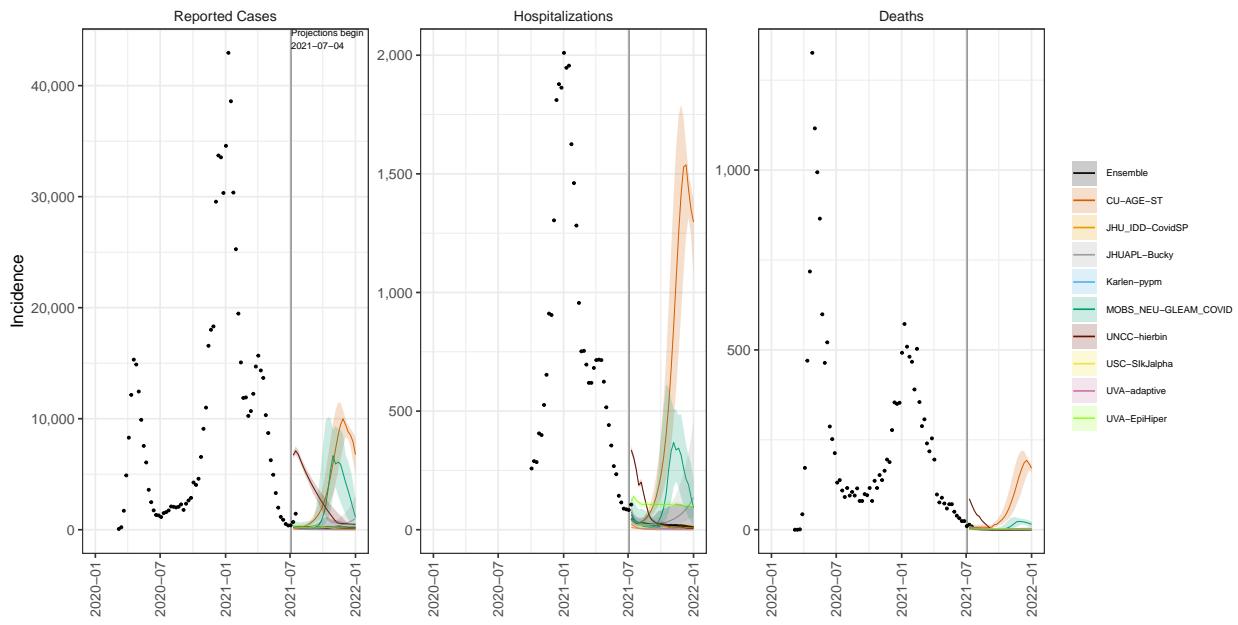
ME model variance & 50% projection intervals – High vaccination, High variant transmissibility



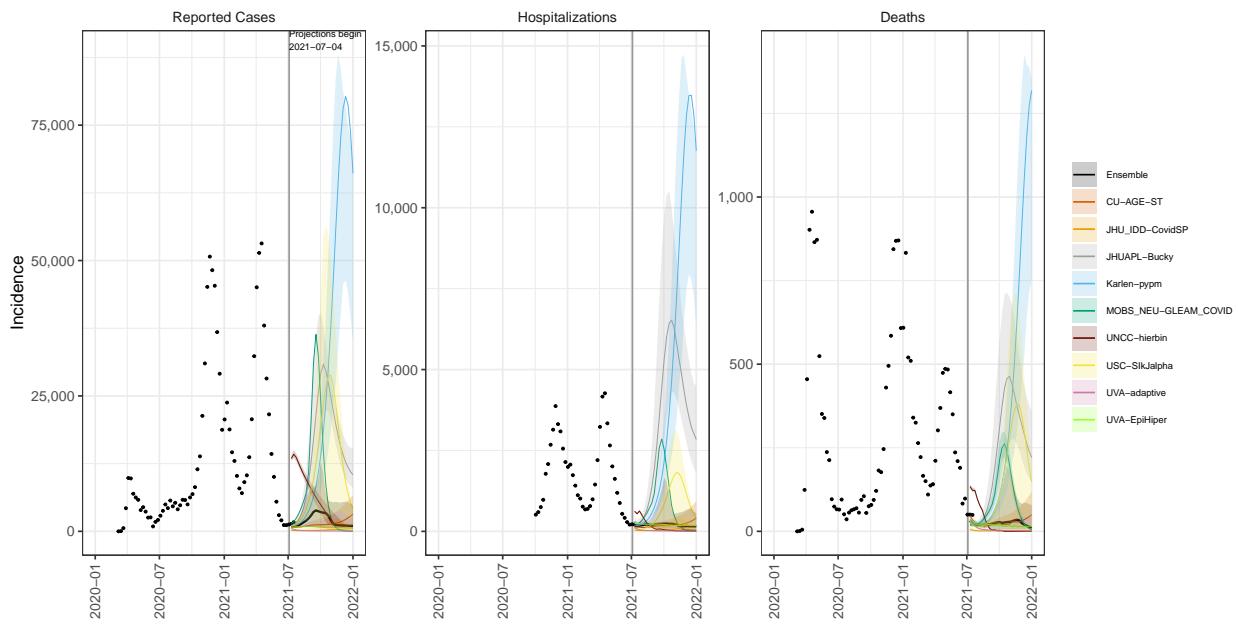
MD model variance & 50% projection intervals – High vaccination, High variant transmissibility



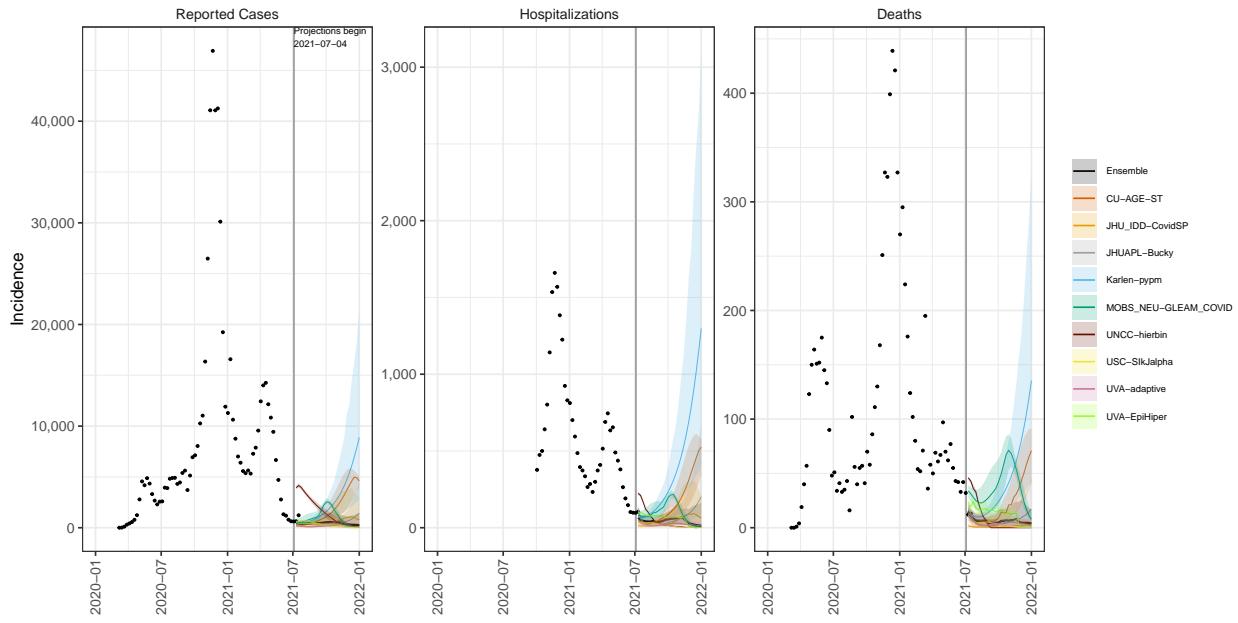
MA model variance & 50% projection intervals – High vaccination, High variant transmissibility



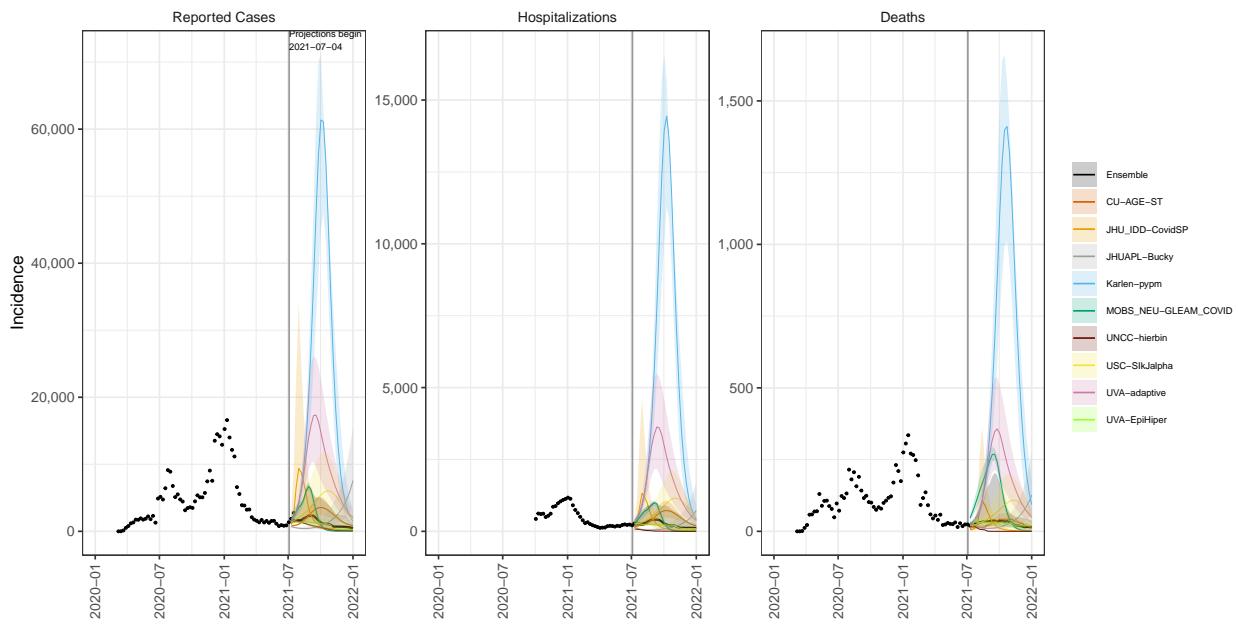
### MI model variance & 50% projection intervals – High vaccination, High variant transmissibility



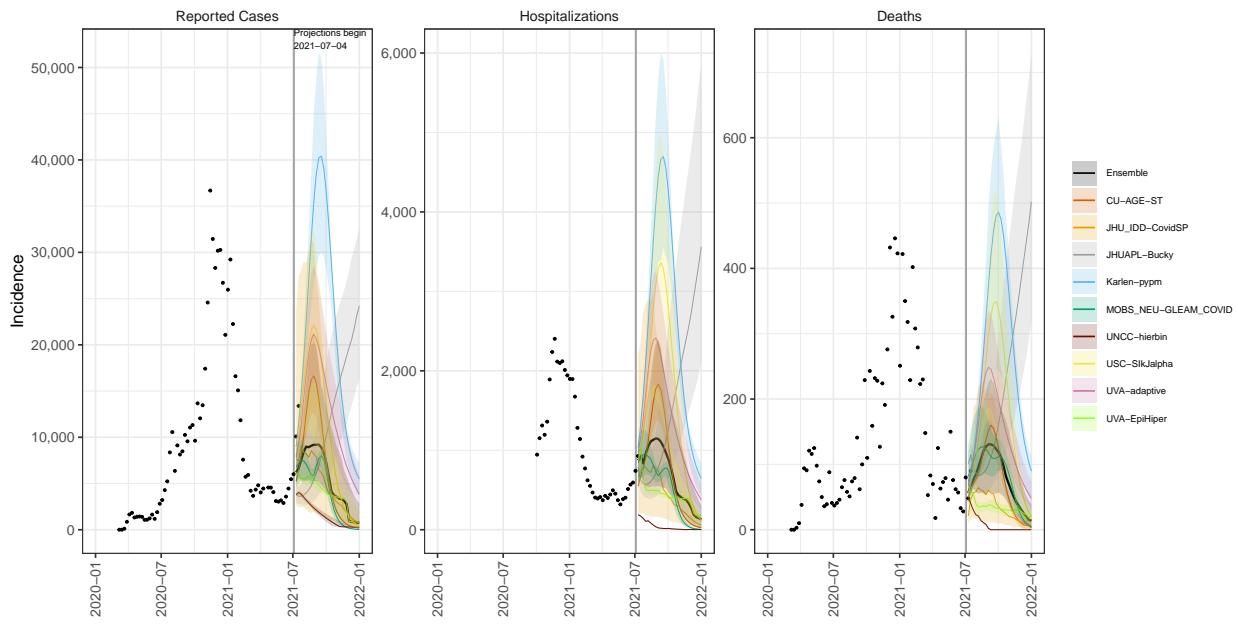
### MN model variance & 50% projection intervals – High vaccination, High variant transmissibility



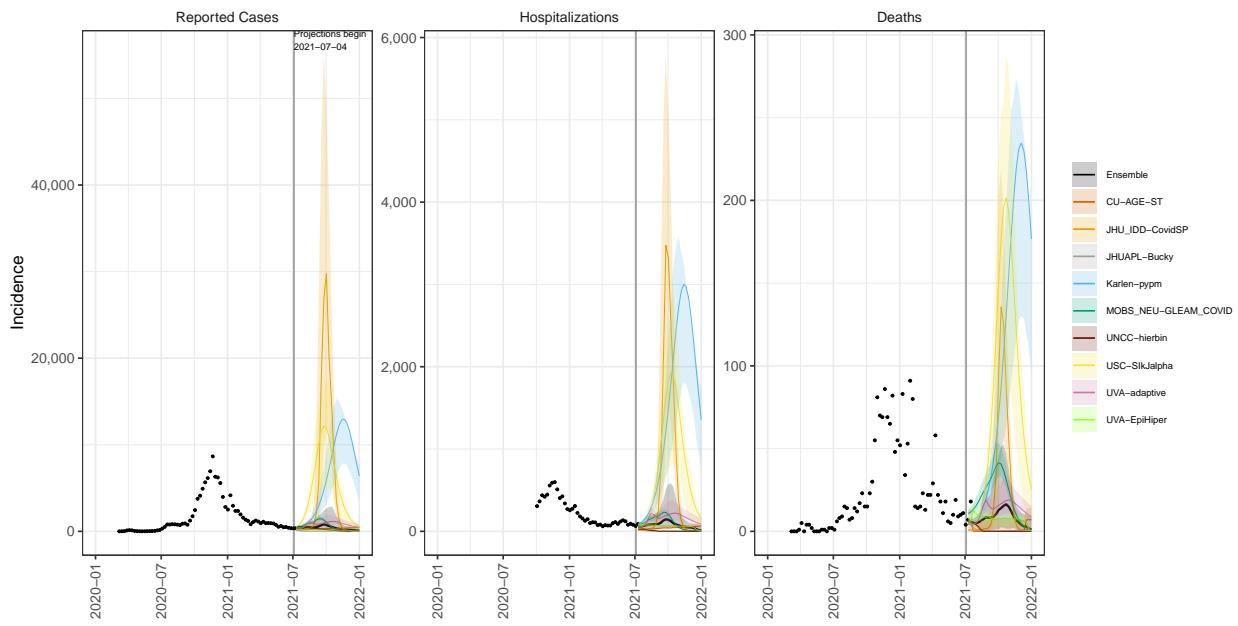
### MS model variance & 50% projection intervals – High vaccination, High variant transmissibility



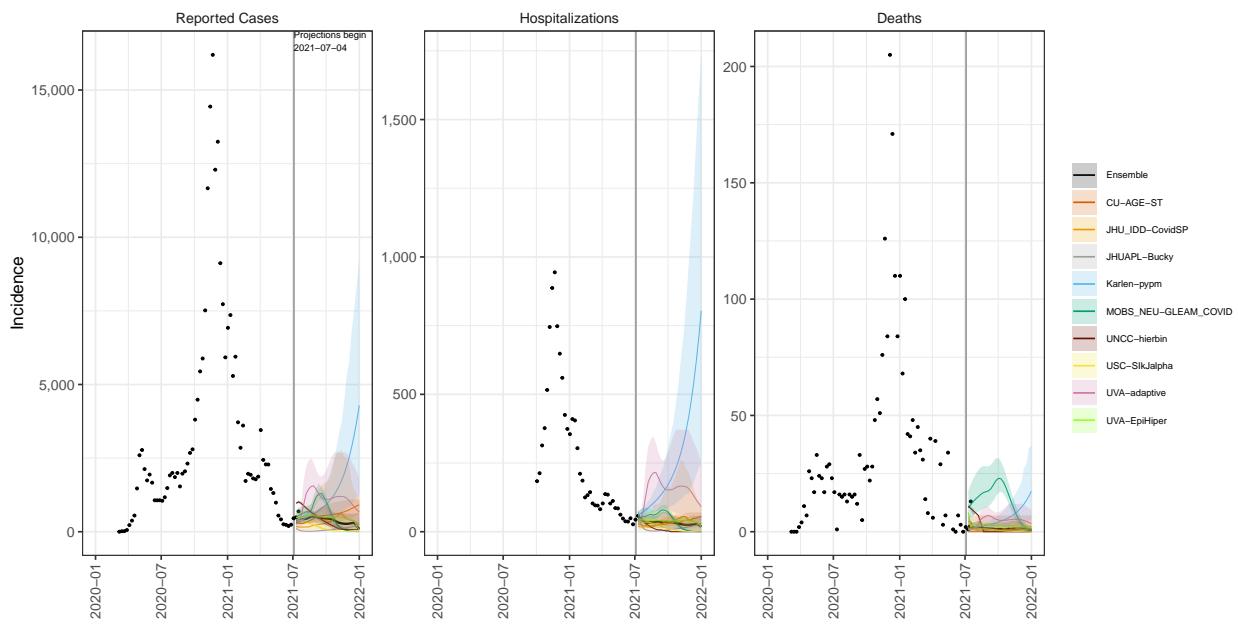
### MO model variance & 50% projection intervals – High vaccination, High variant transmissibility



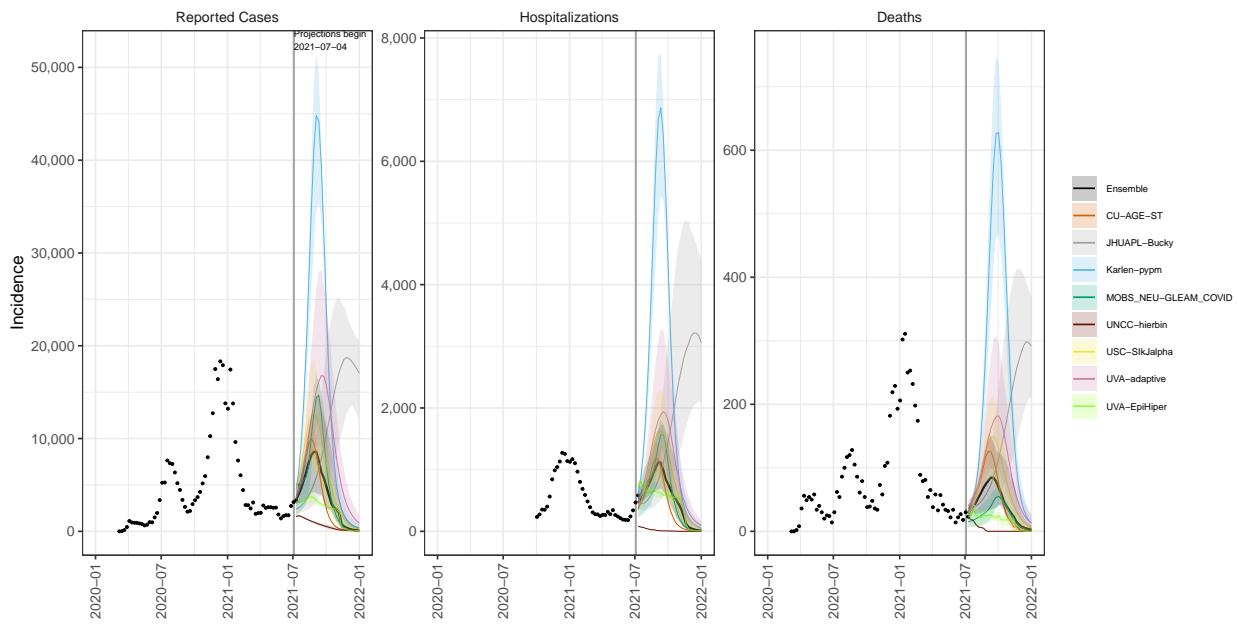
### MT model variance & 50% projection intervals – High vaccination, High variant transmissibility



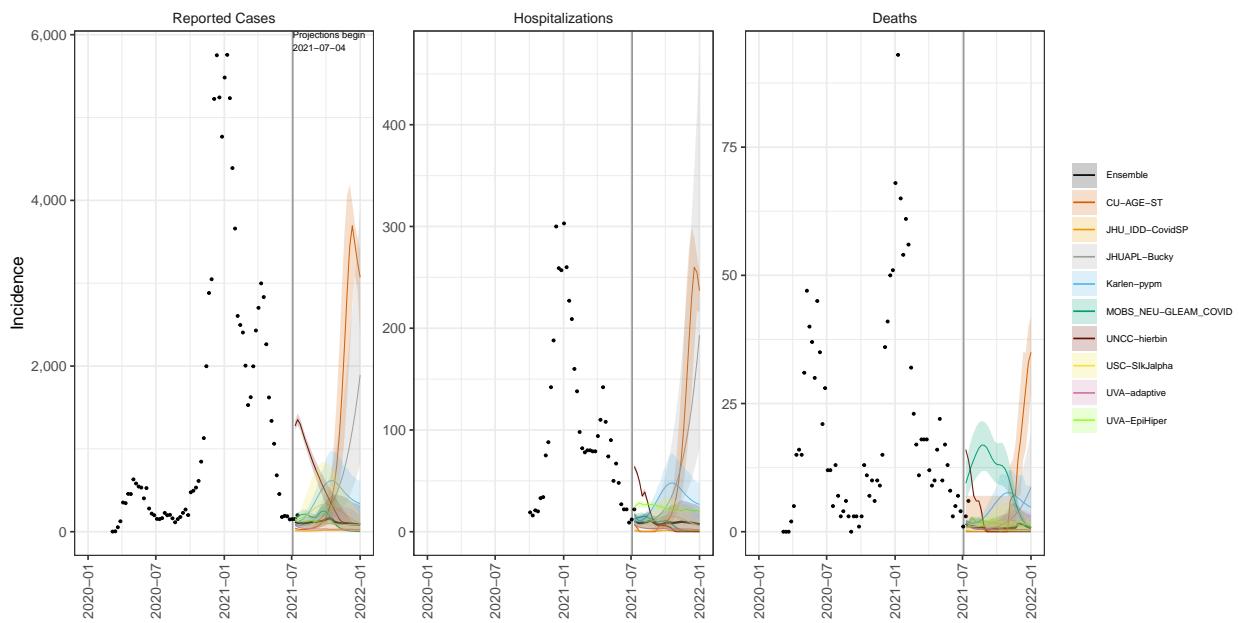
### NE model variance & 50% projection intervals – High vaccination, High variant transmissibility



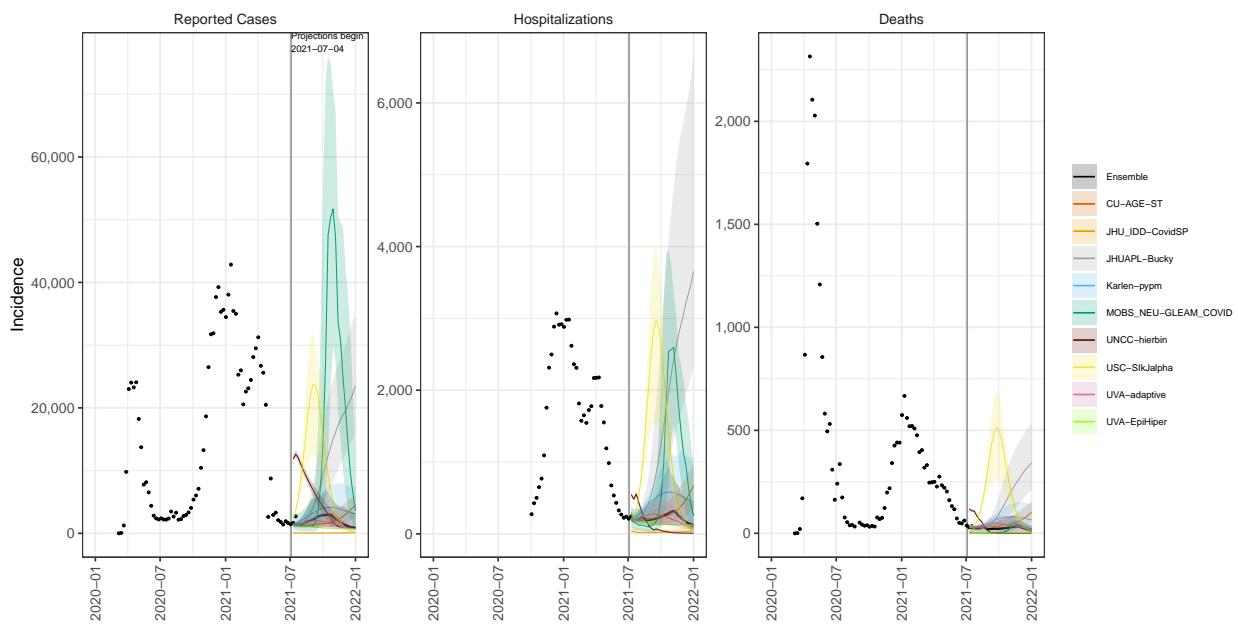
### NV model variance & 50% projection intervals – High vaccination, High variant transmissibility



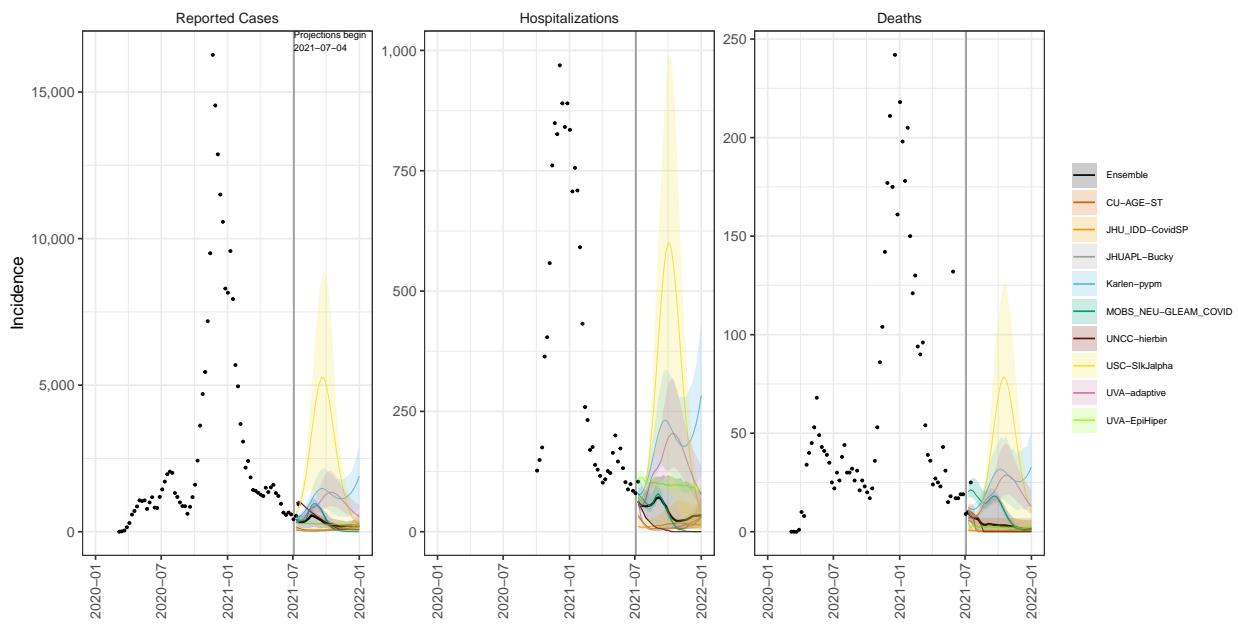
### NH model variance & 50% projection intervals – High vaccination, High variant transmissibility



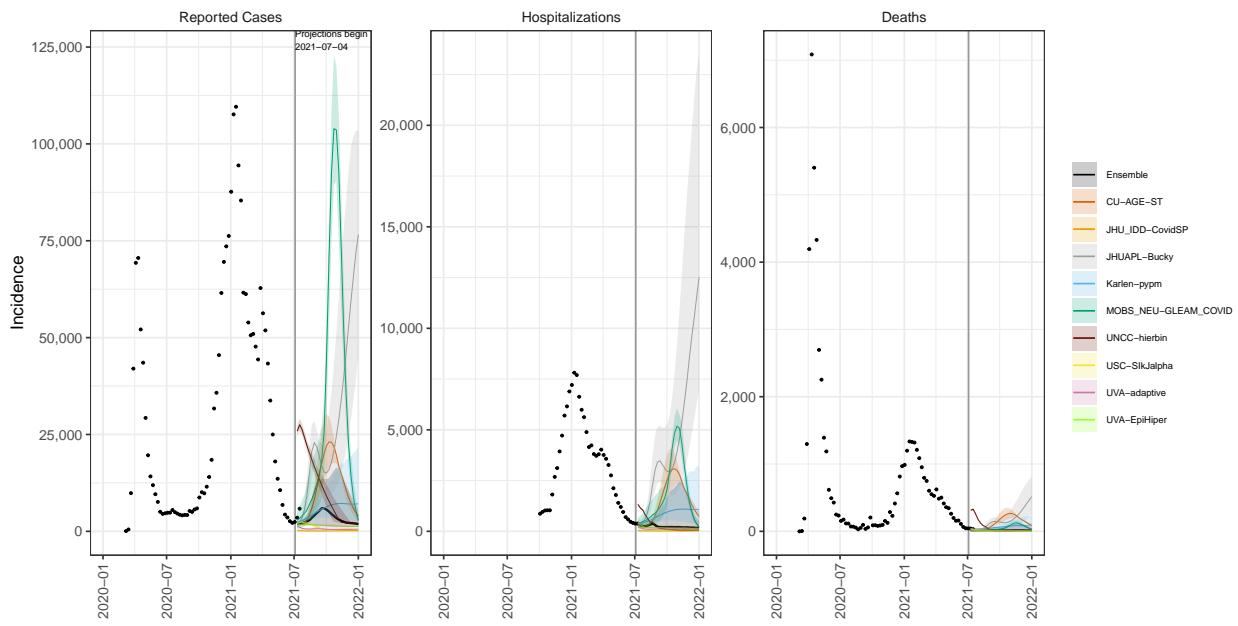
### NJ model variance & 50% projection intervals – High vaccination, High variant transmissibility



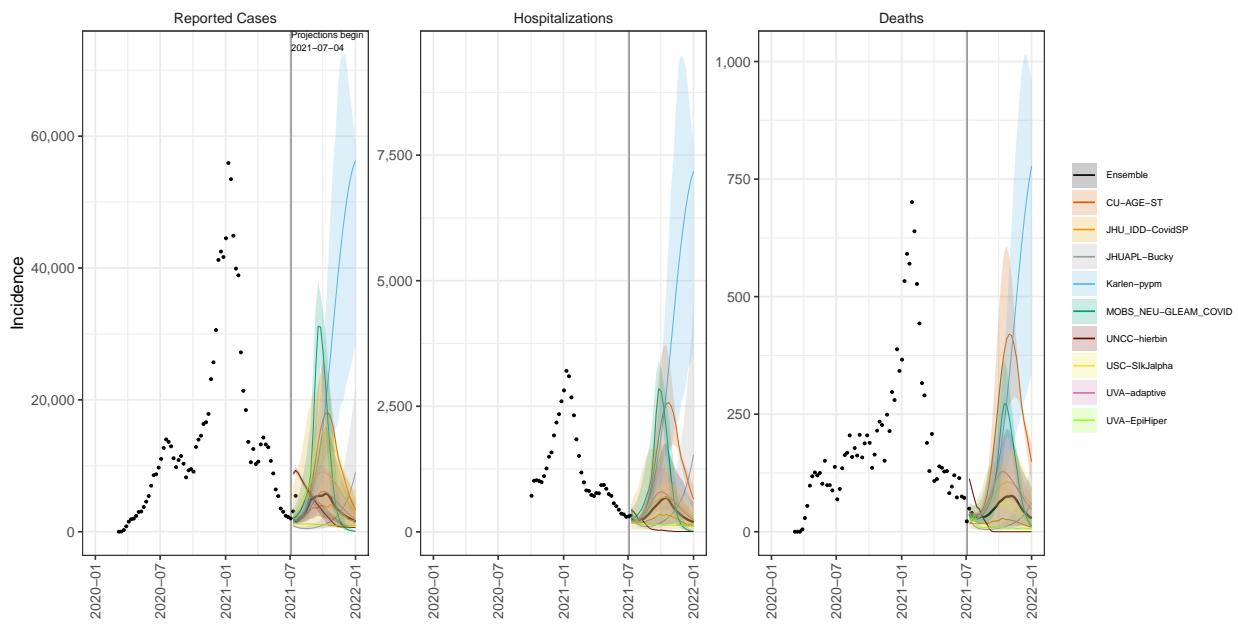
### NM model variance & 50% projection intervals – High vaccination, High variant transmissibility



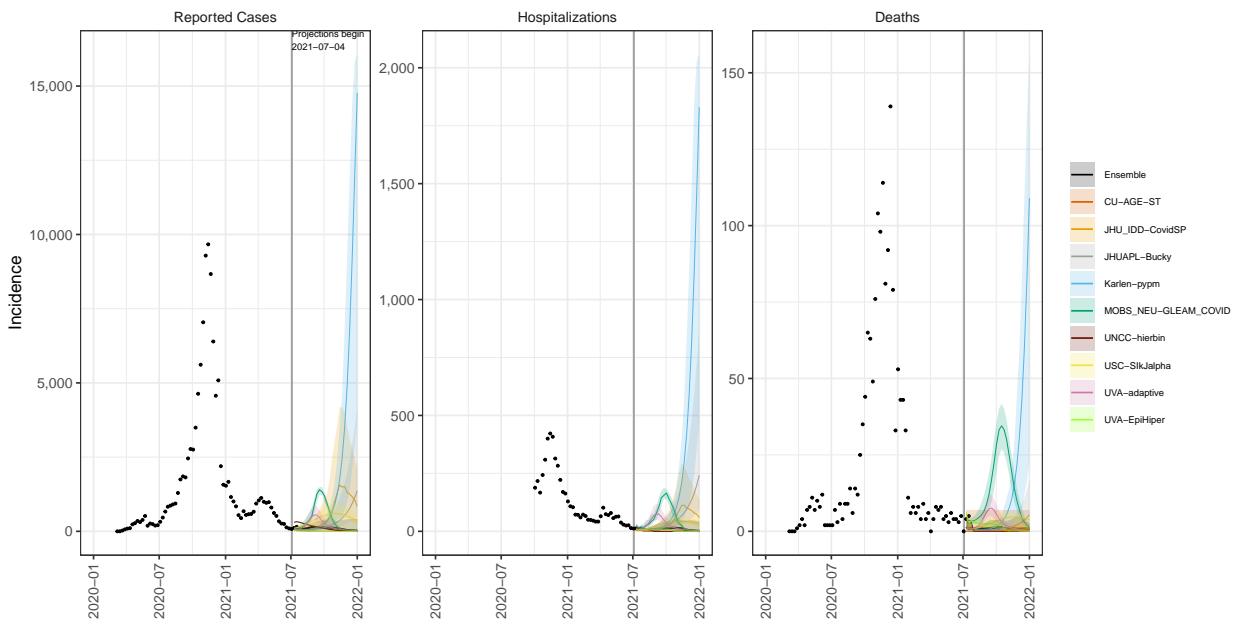
### NY model variance & 50% projection intervals – High vaccination, High variant transmissibility



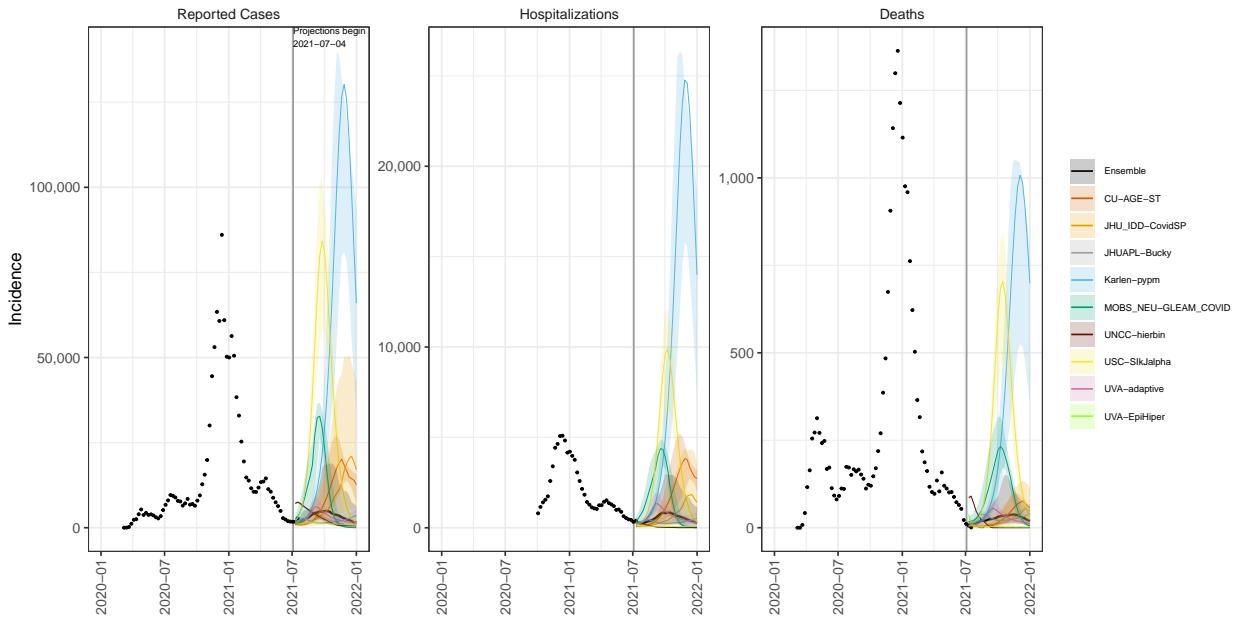
### NC model variance & 50% projection intervals – High vaccination, High variant transmissibility



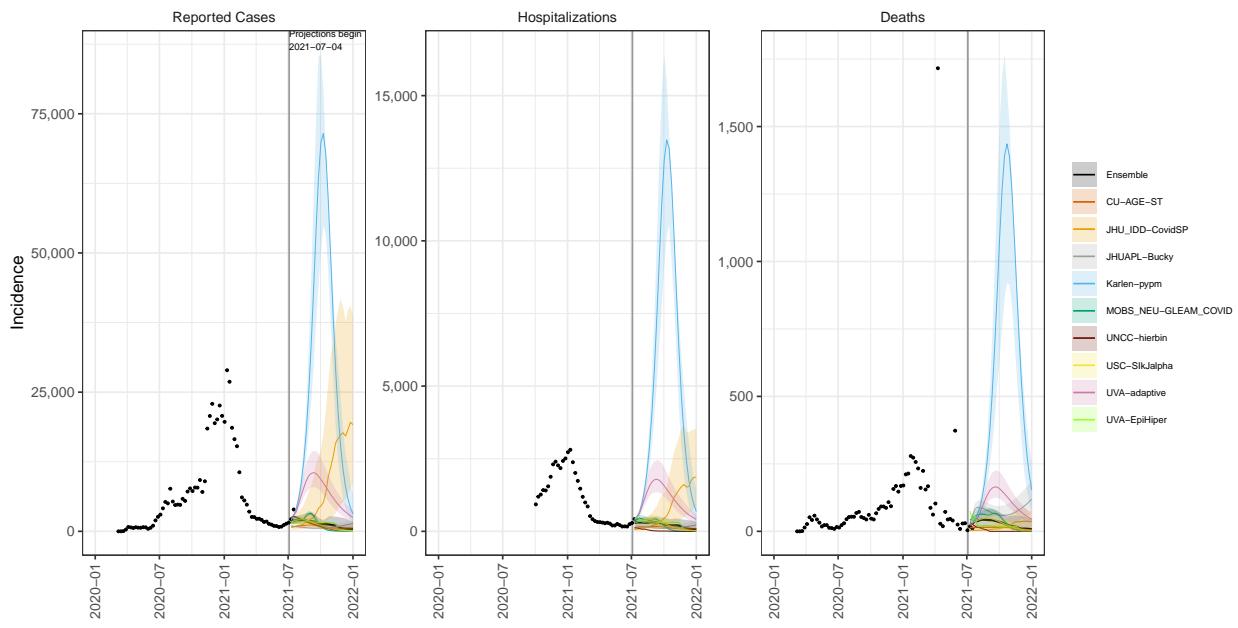
ND model variance & 50% projection intervals – High vaccination, High variant transmissibility



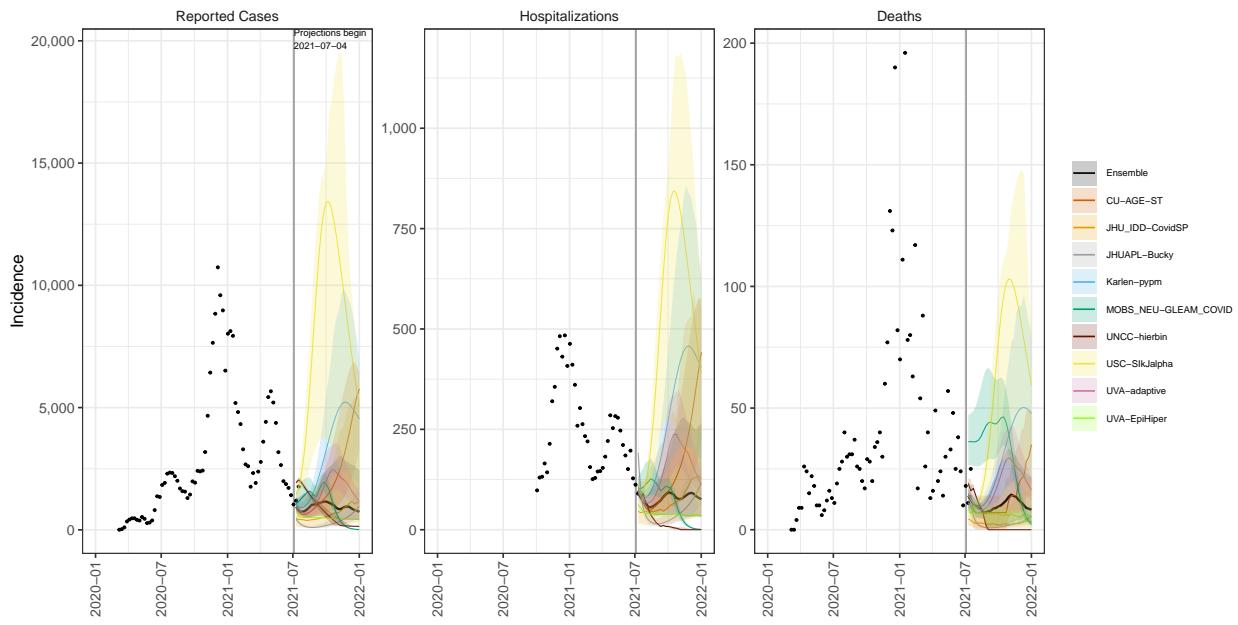
OH model variance & 50% projection intervals – High vaccination, High variant transmissibility



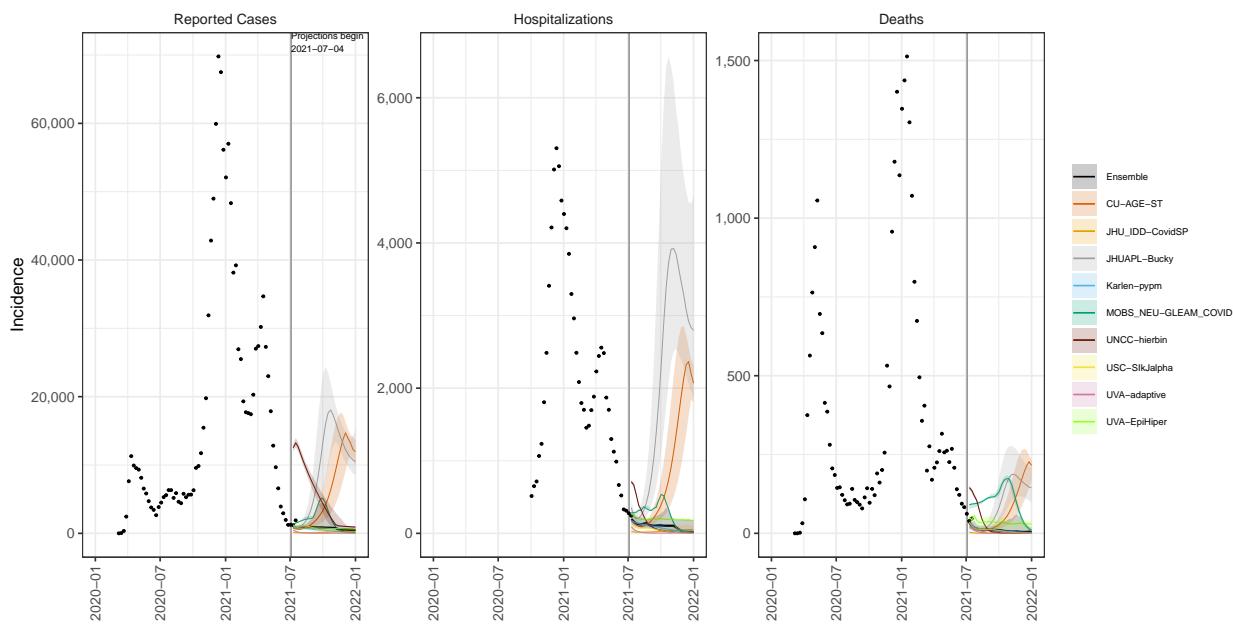
OK model variance & 50% projection intervals – High vaccination, High variant transmissibility



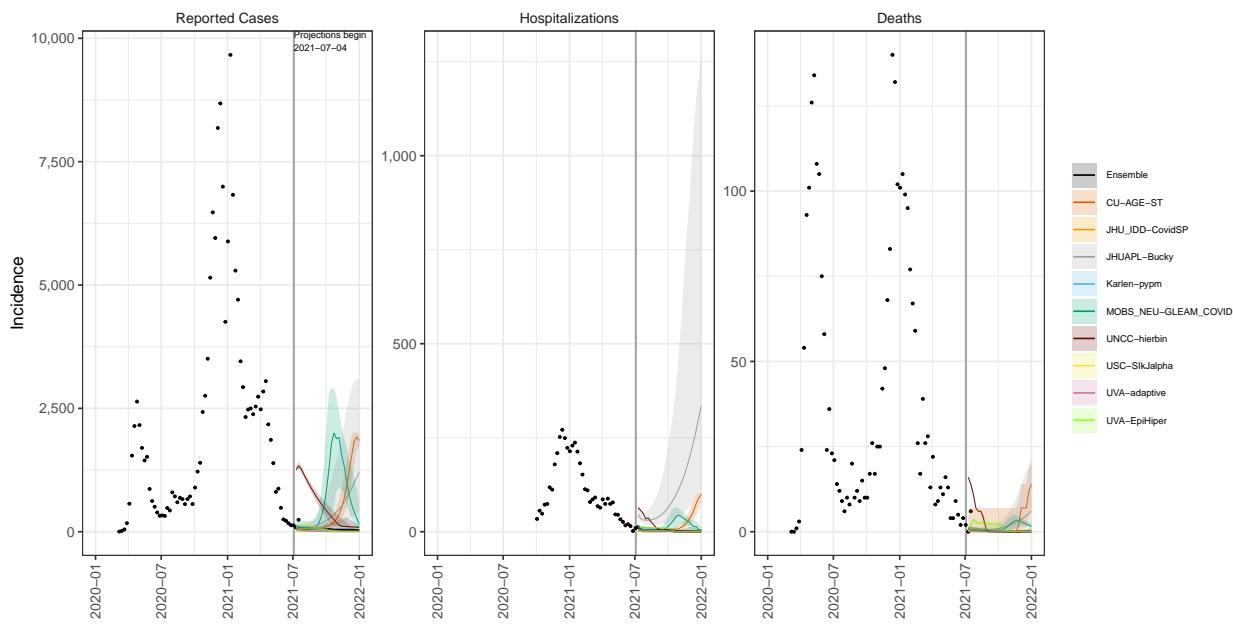
OR model variance & 50% projection intervals – High vaccination, High variant transmissibility



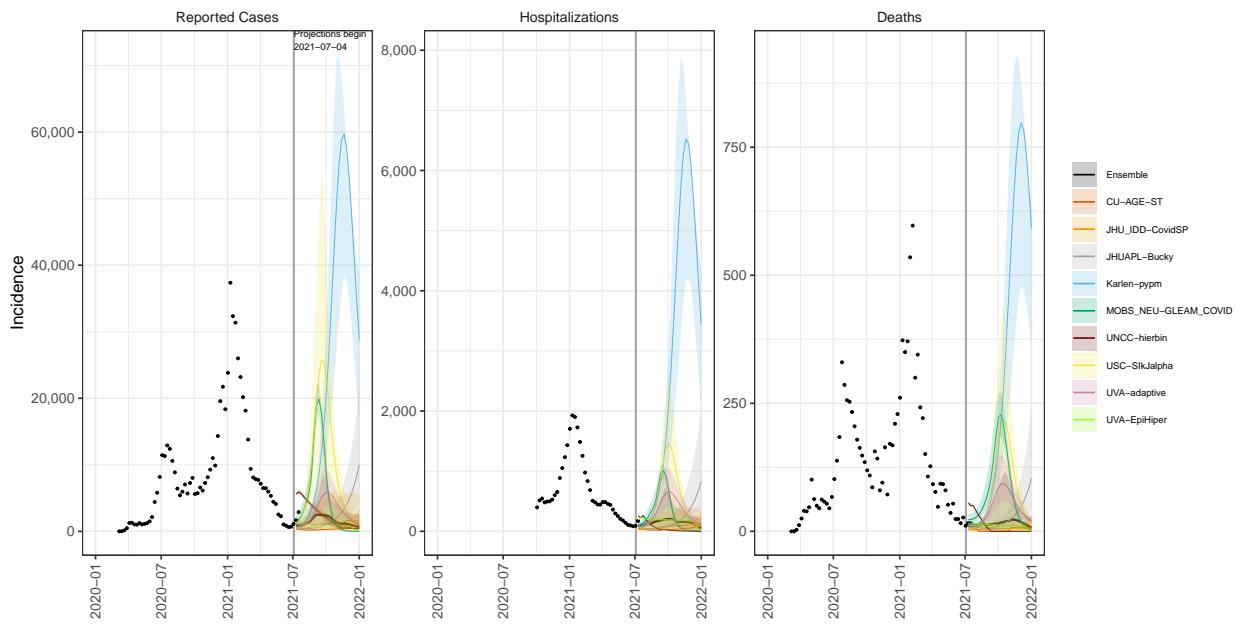
PA model variance & 50% projection intervals – High vaccination, High variant transmissibility



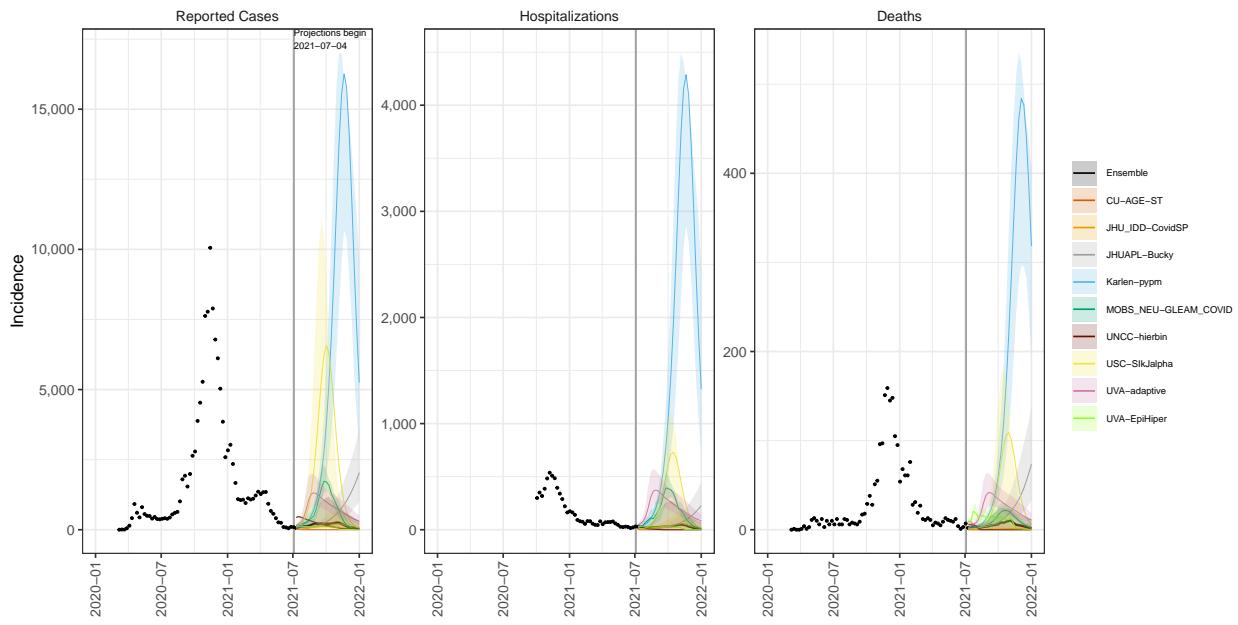
RI model variance & 50% projection intervals – High vaccination, High variant transmissibility



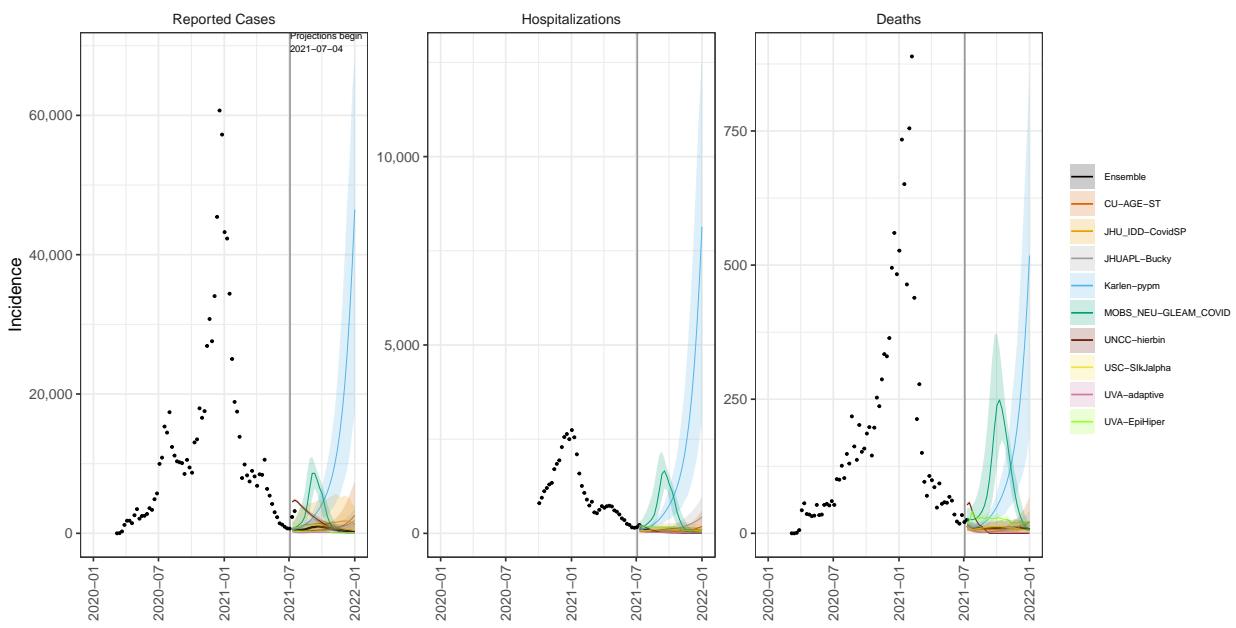
### SC model variance & 50% projection intervals – High vaccination, High variant transmissibility



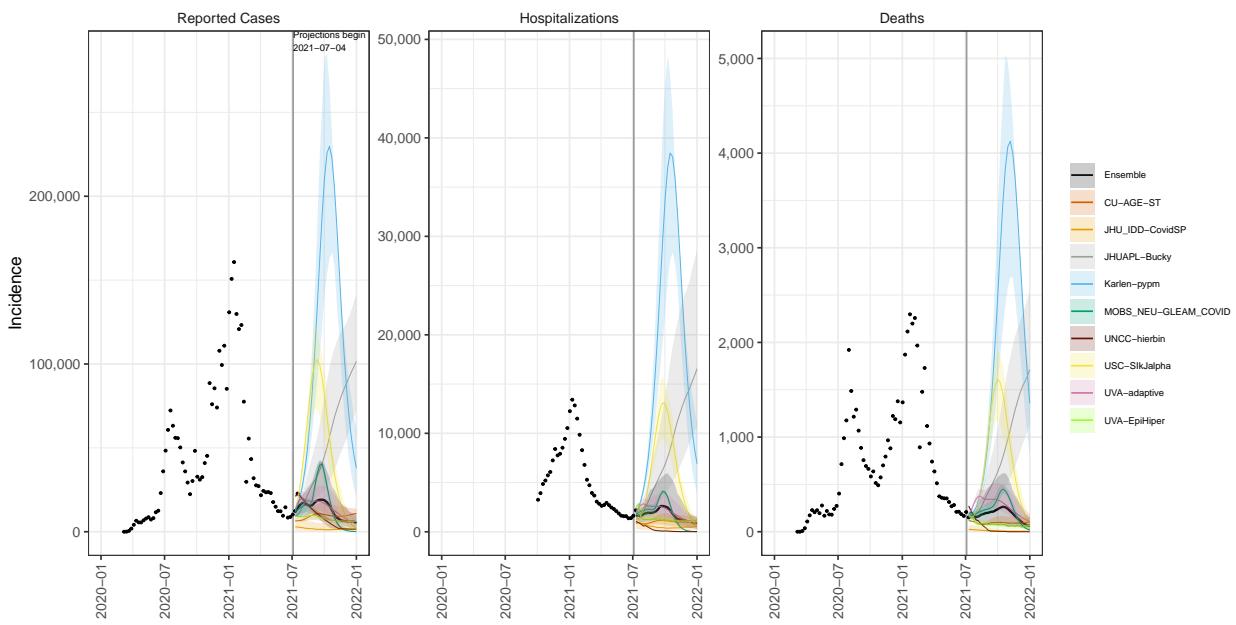
### SD model variance & 50% projection intervals – High vaccination, High variant transmissibility



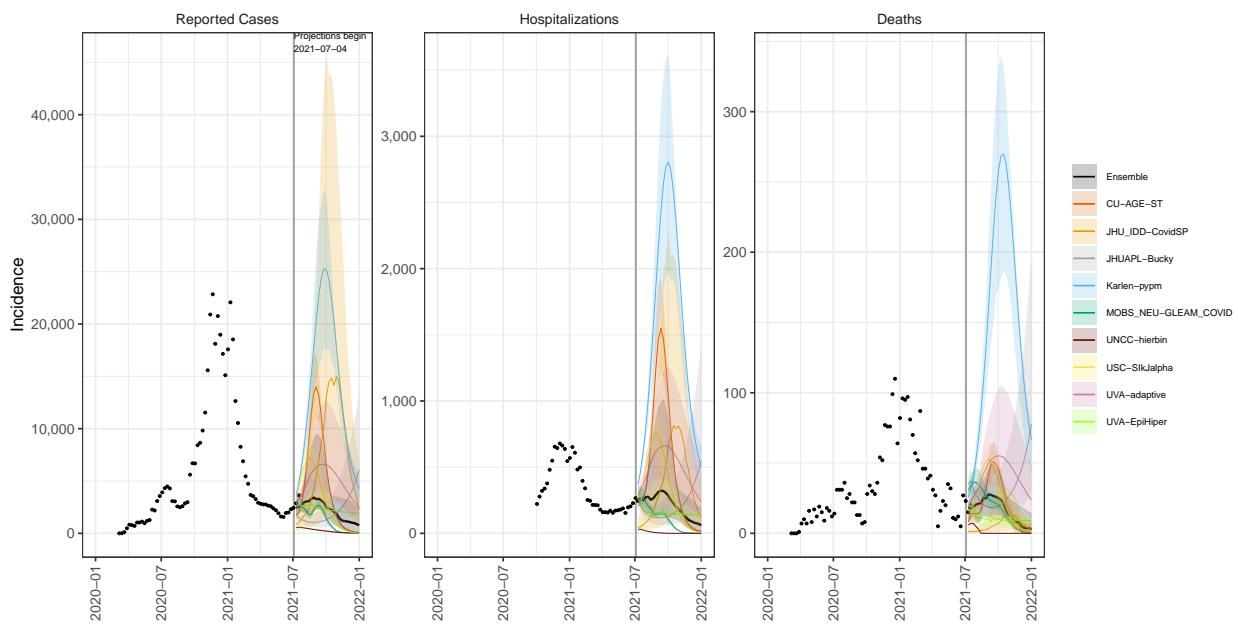
TN model variance & 50% projection intervals – High vaccination, High variant transmissibility



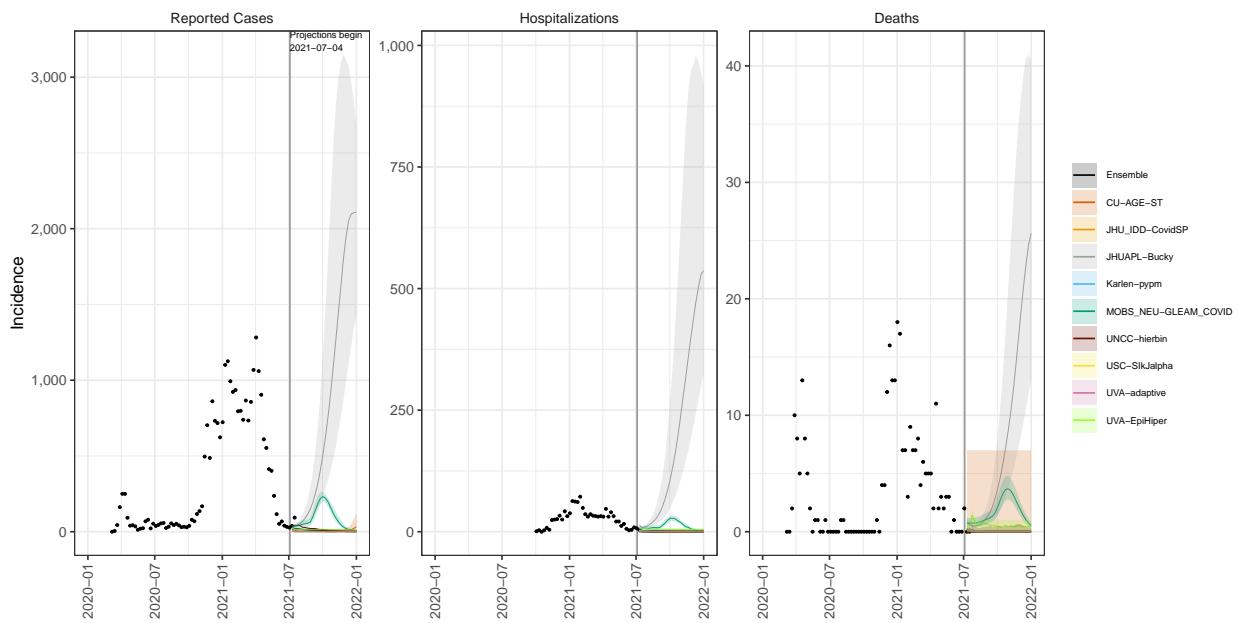
TX model variance & 50% projection intervals – High vaccination, High variant transmissibility



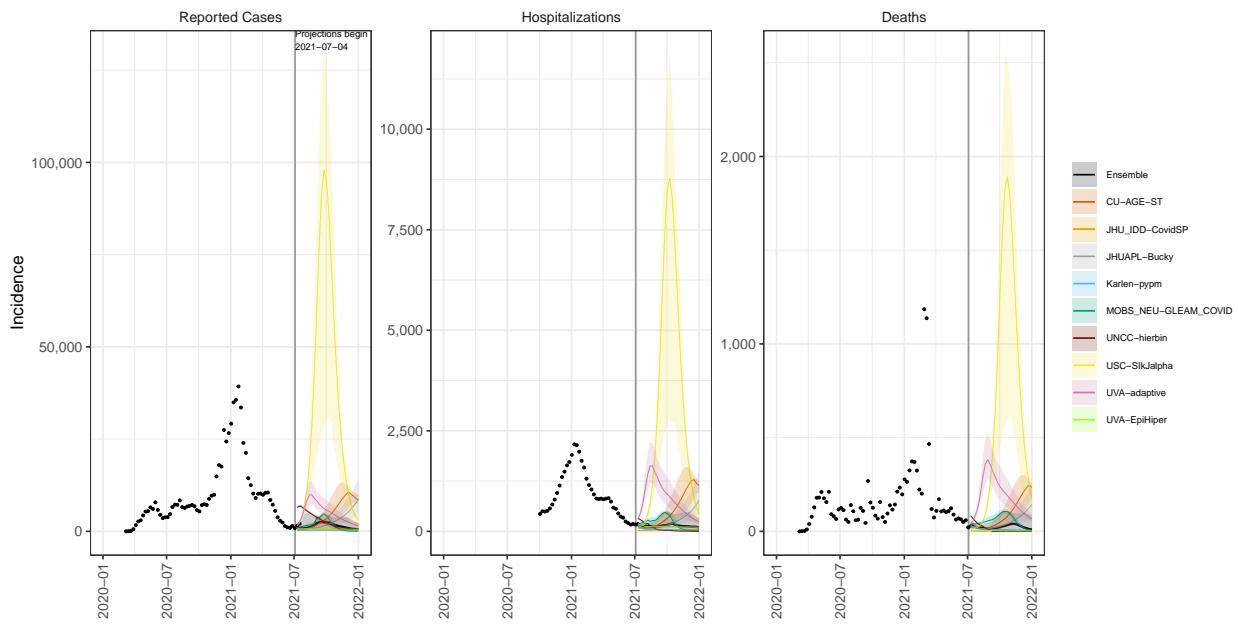
### UT model variance & 50% projection intervals – High vaccination, High variant transmissibility



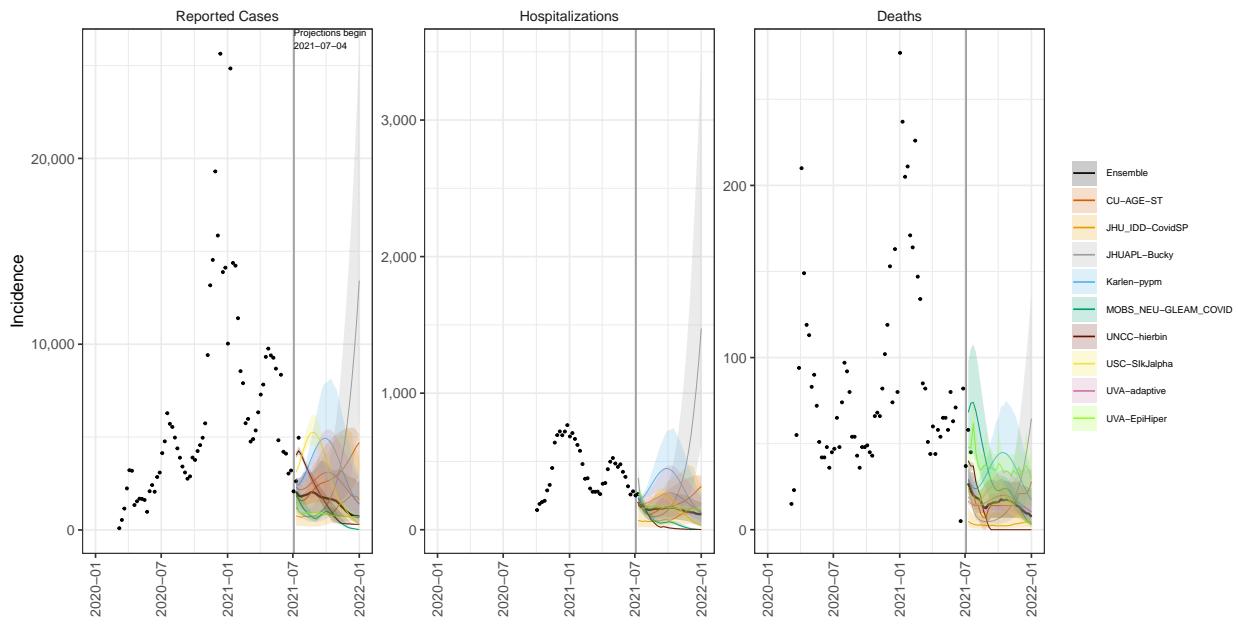
### VT model variance & 50% projection intervals – High vaccination, High variant transmissibility



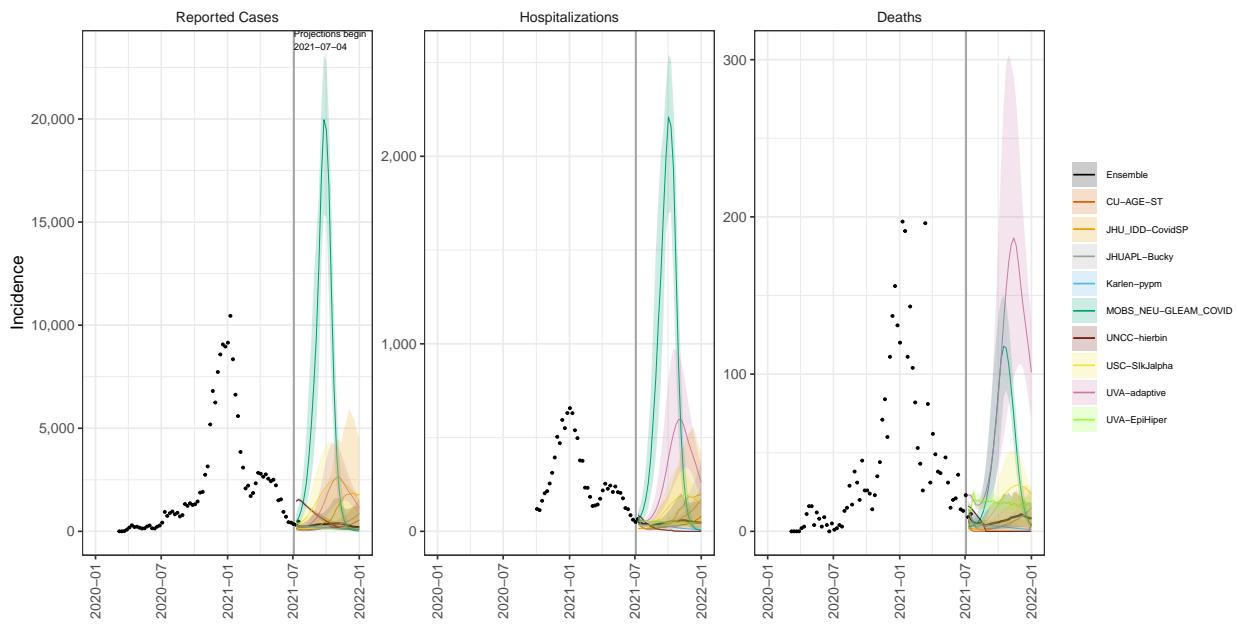
VA model variance & 50% projection intervals – High vaccination, High variant transmissibility



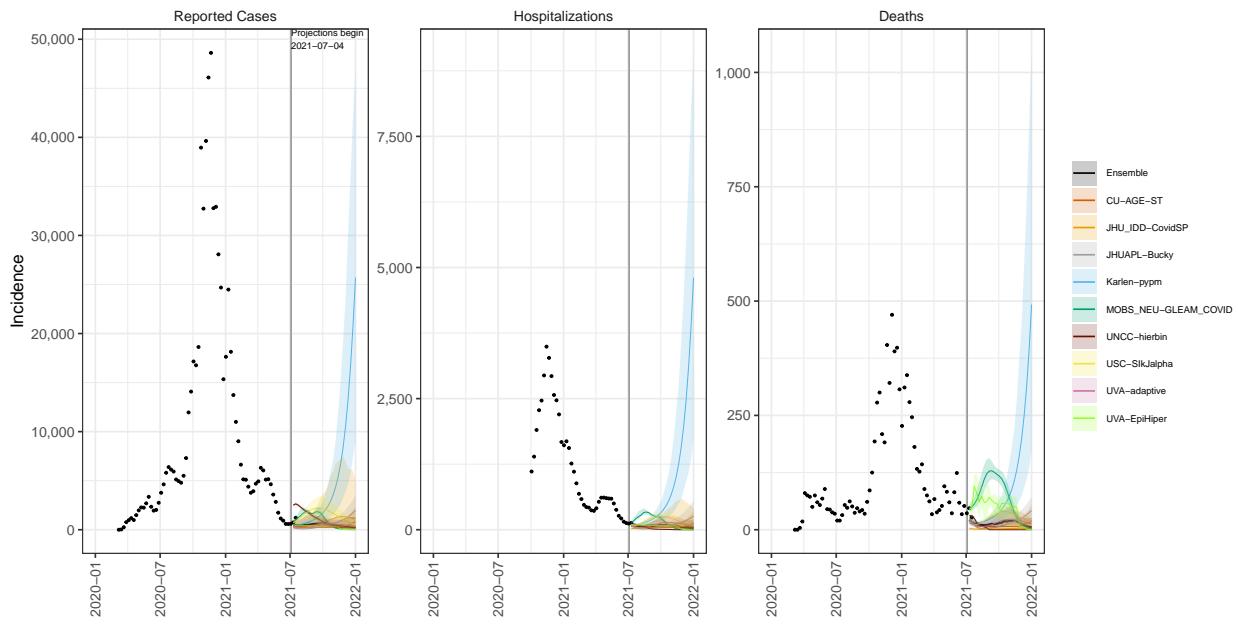
WA model variance & 50% projection intervals – High vaccination, High variant transmissibility



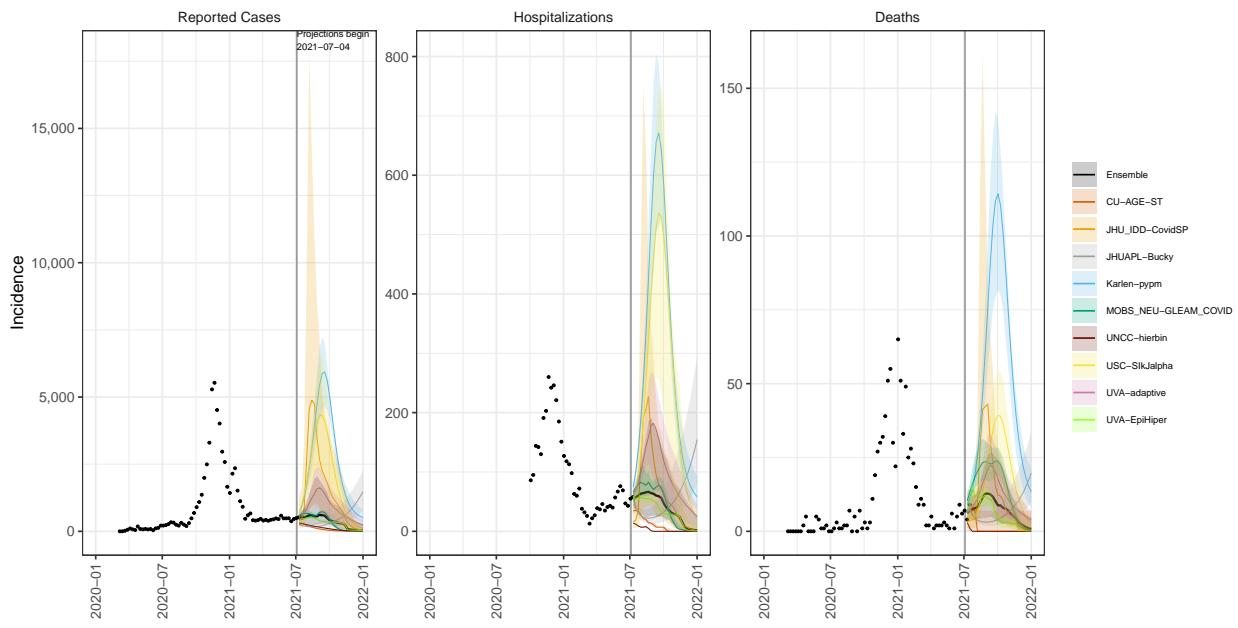
### WV model variance & 50% projection intervals – High vaccination, High variant transmissibility



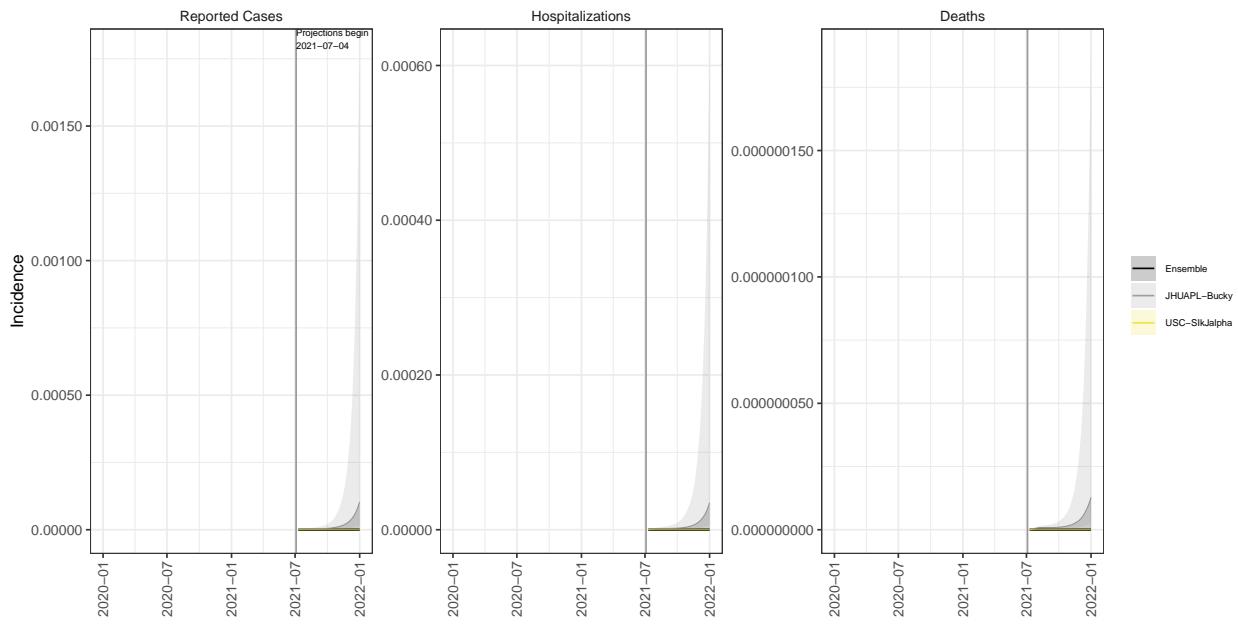
### WI model variance & 50% projection intervals – High vaccination, High variant transmissibility



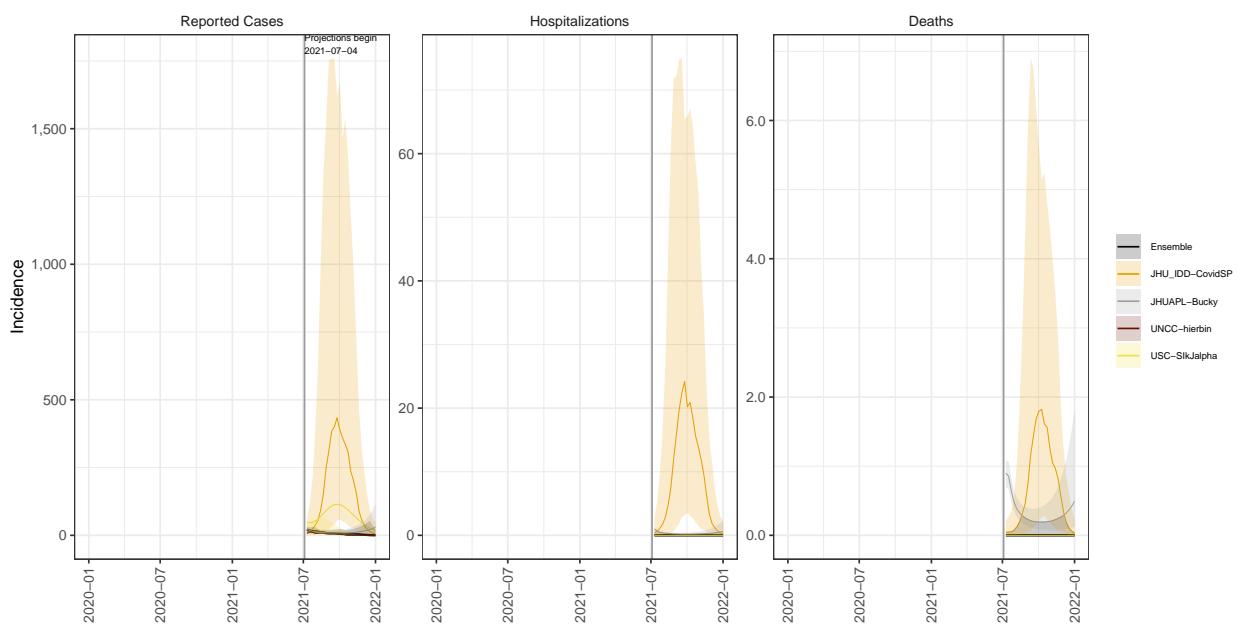
WY model variance & 50% projection intervals – High vaccination, High variant transmissibility



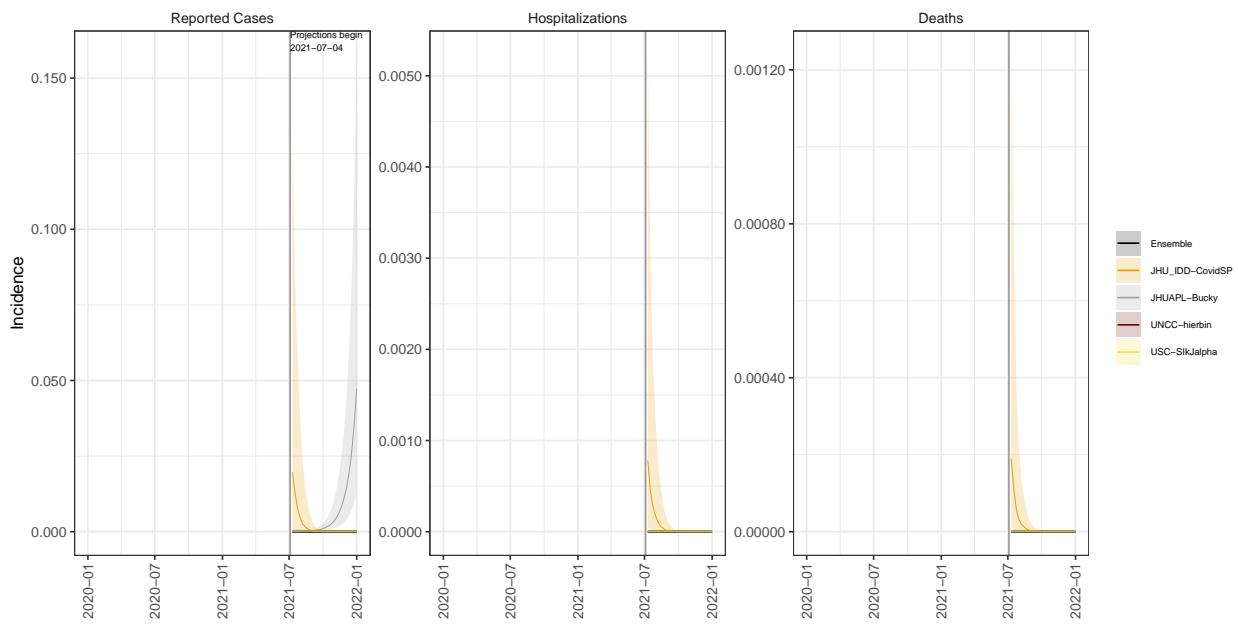
AS model variance & 50% projection intervals – High vaccination, High variant transmissibility



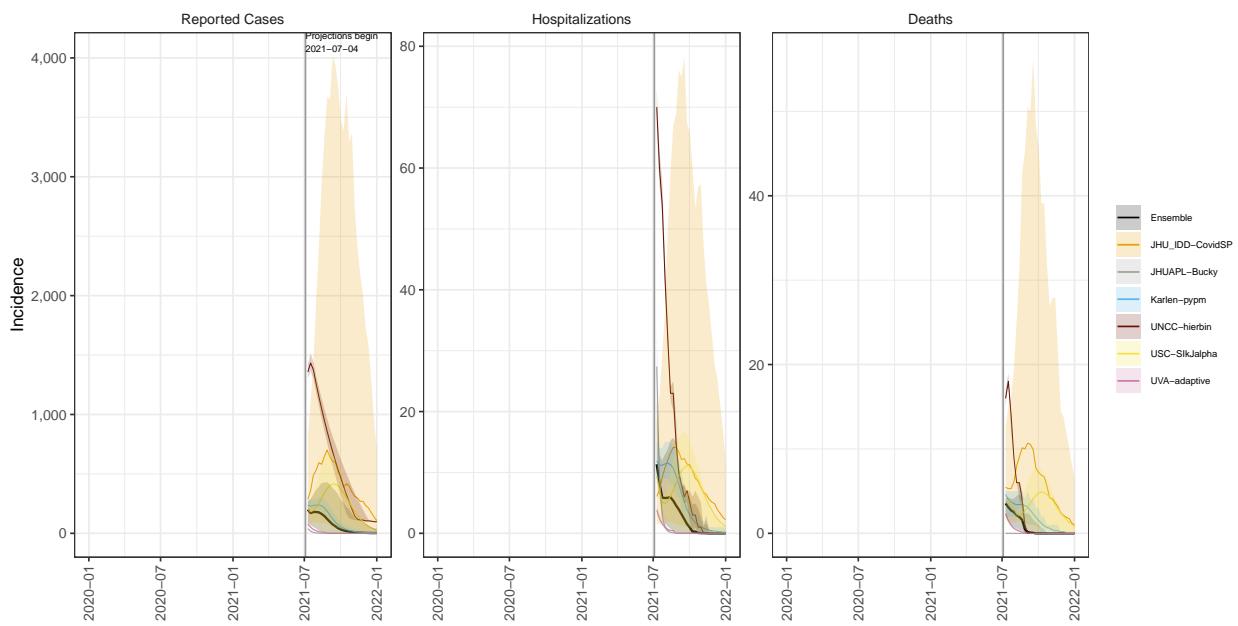
GU model variance & 50% projection intervals – High vaccination, High variant transmissibility



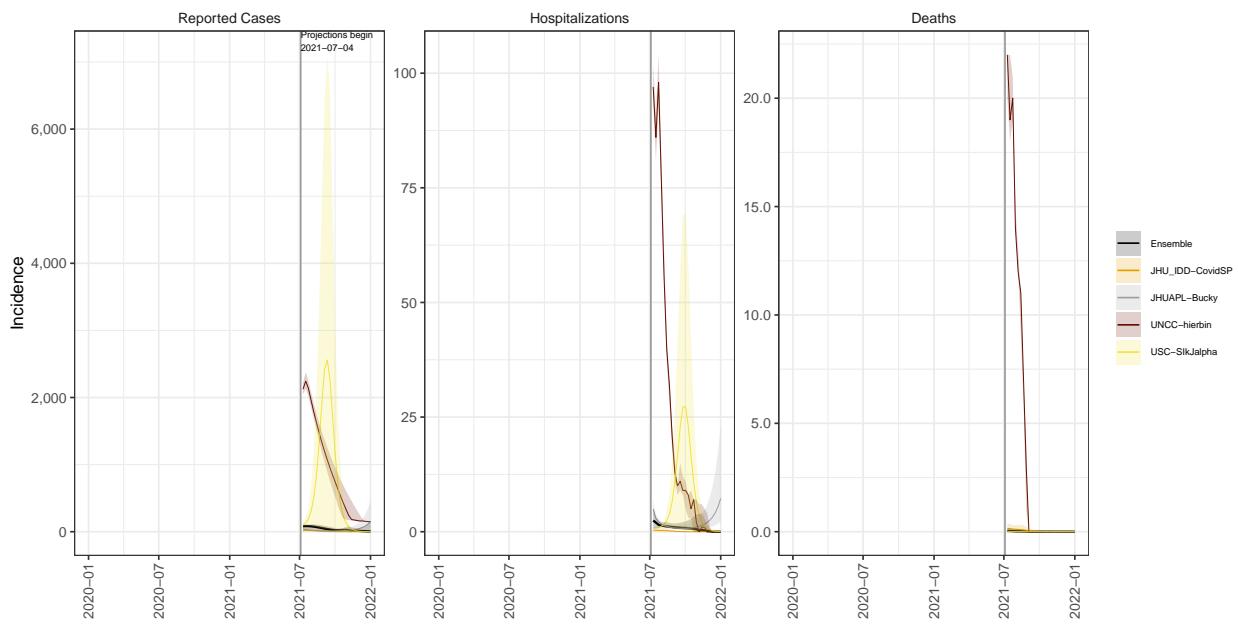
MP model variance & 50% projection intervals – High vaccination, High variant transmissibility



PR model variance & 50% projection intervals – High vaccination, High variant transmissibility

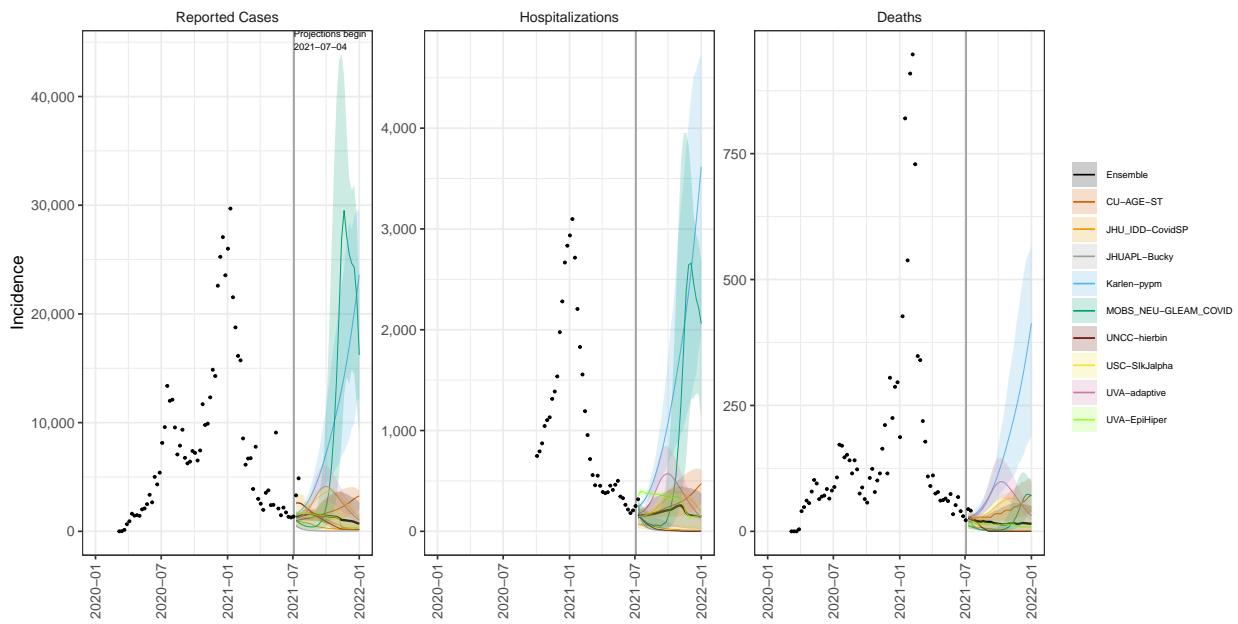


VI model variance & 50% projection intervals – High vaccination, High variant transmissibility

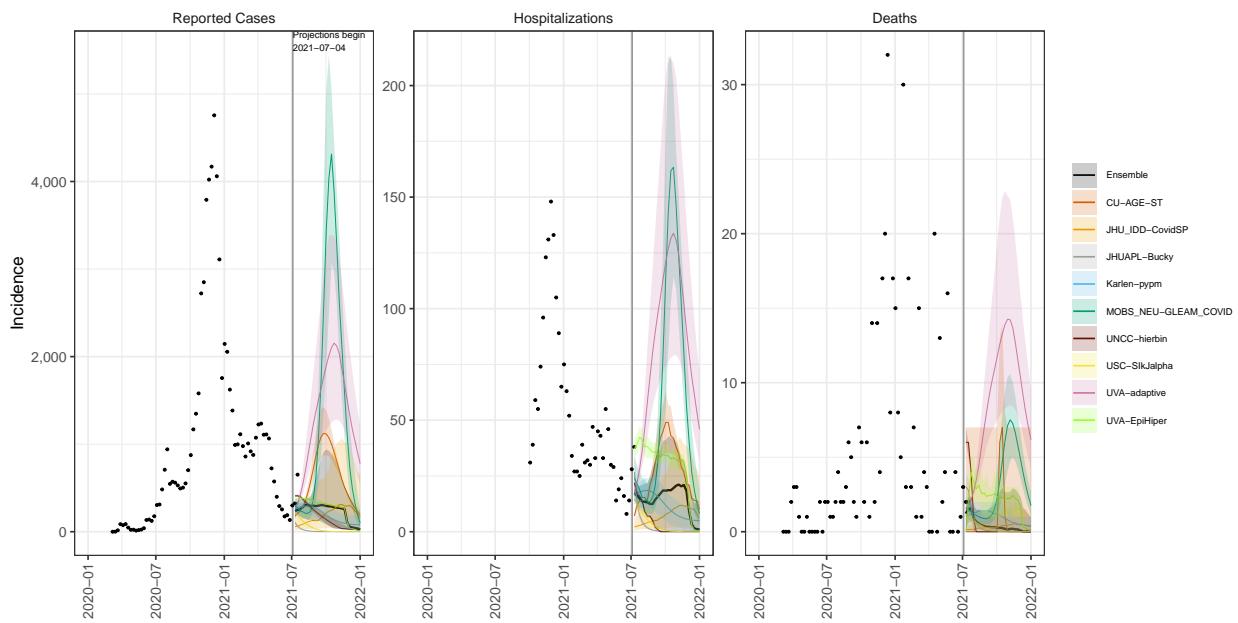


National model variation for the high vaccination, low variant transmissibility scenario

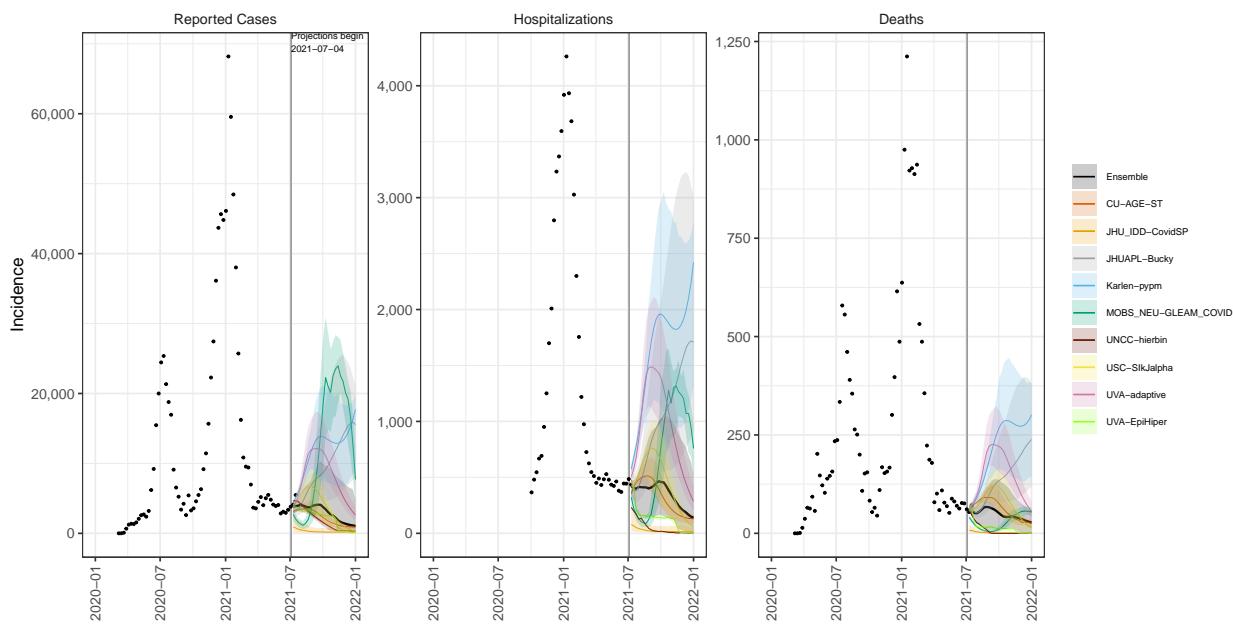
AL model variance & 50% projection intervals – High vaccination, Low variant transmissibility



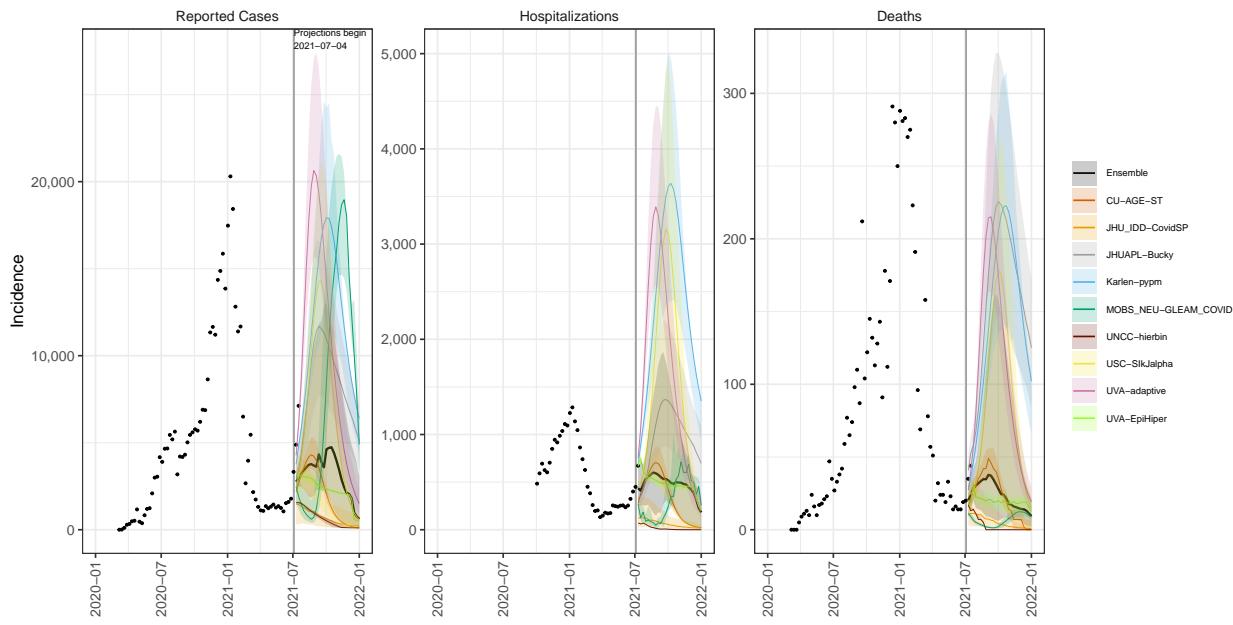
AK model variance & 50% projection intervals – High vaccination, Low variant transmissibility



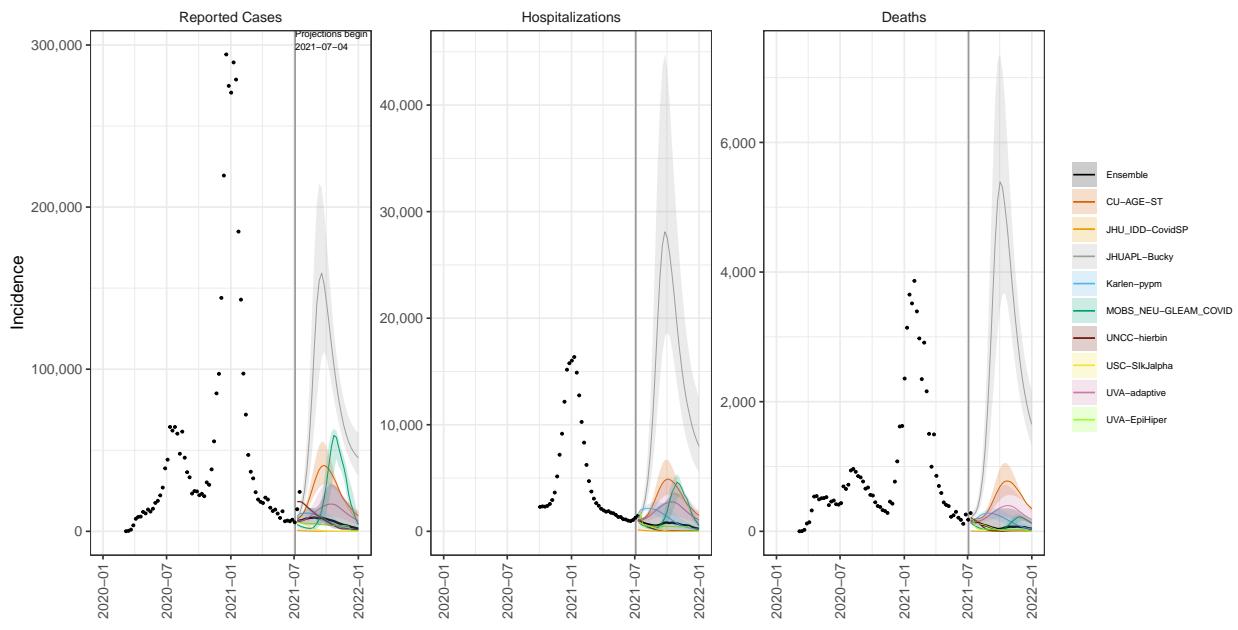
### AZ model variance & 50% projection intervals – High vaccination, Low variant transmissibility



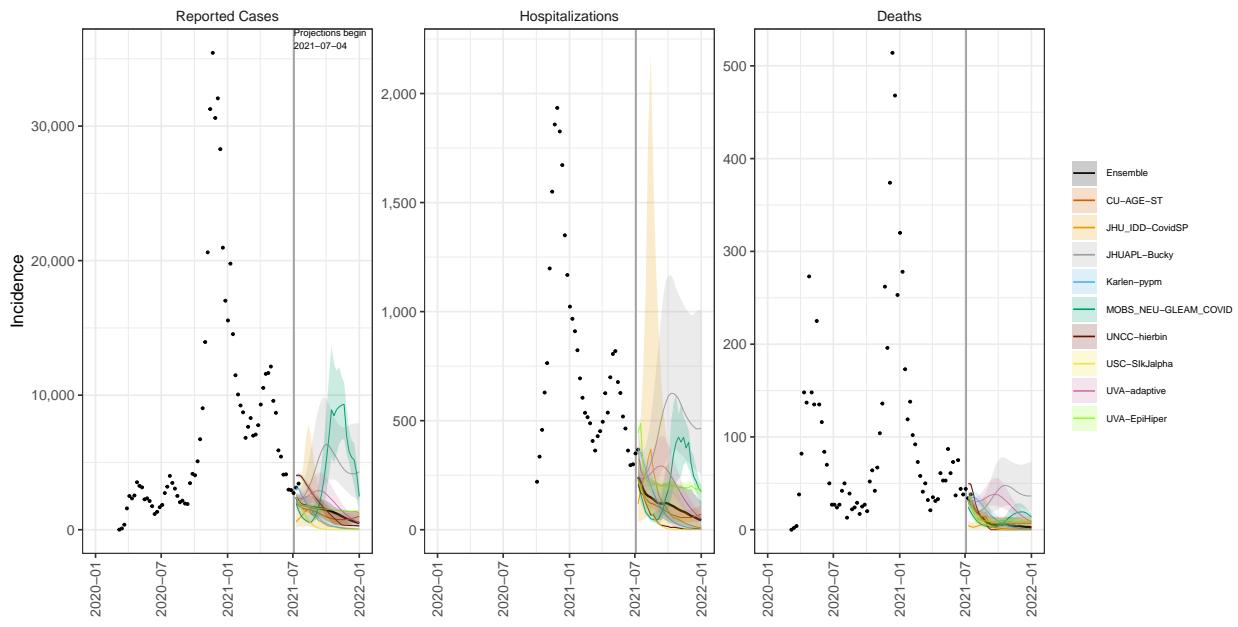
### AR model variance & 50% projection intervals – High vaccination, Low variant transmissibility



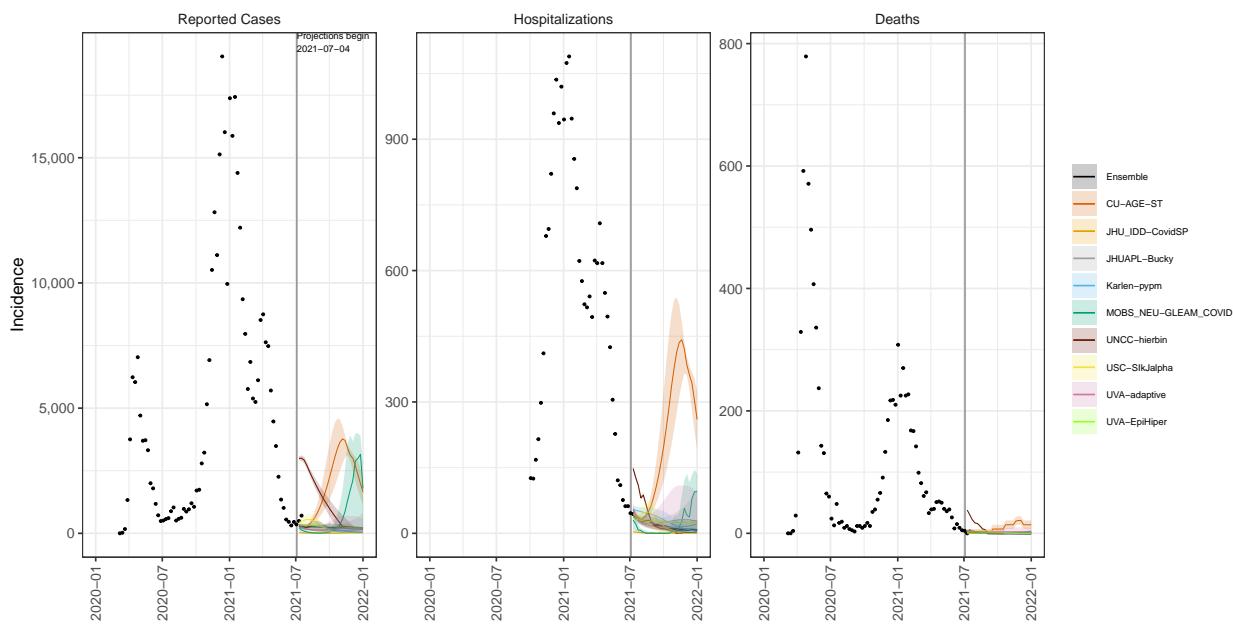
### CA model variance & 50% projection intervals – High vaccination, Low variant transmissibility



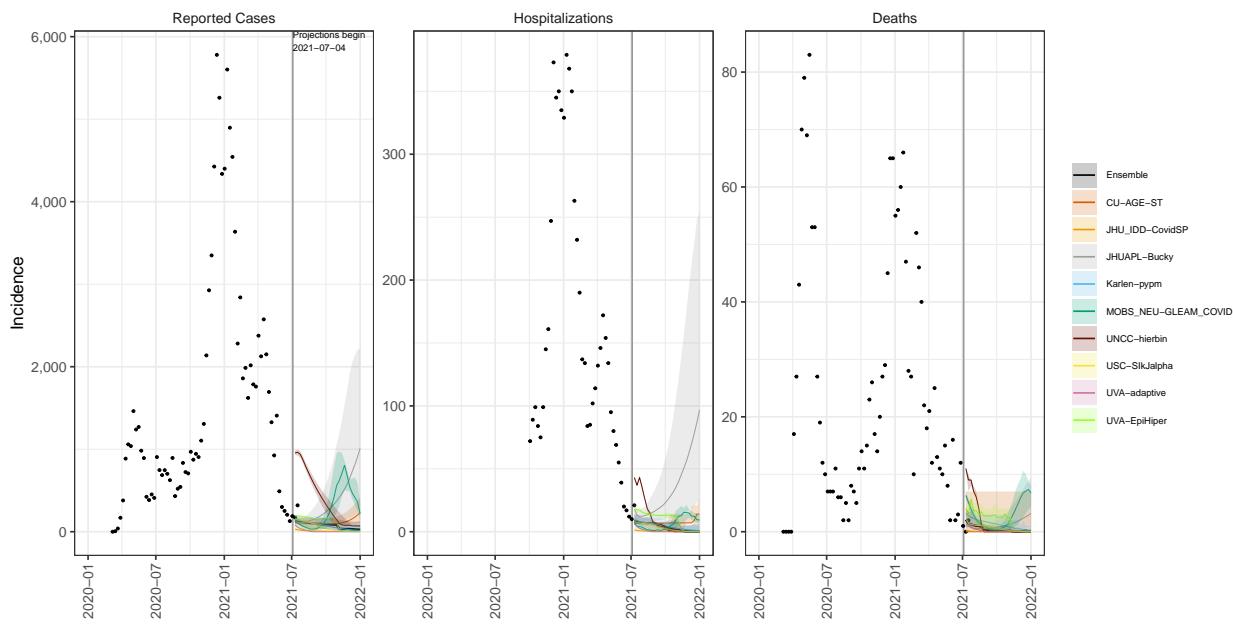
### CO model variance & 50% projection intervals – High vaccination, Low variant transmissibility



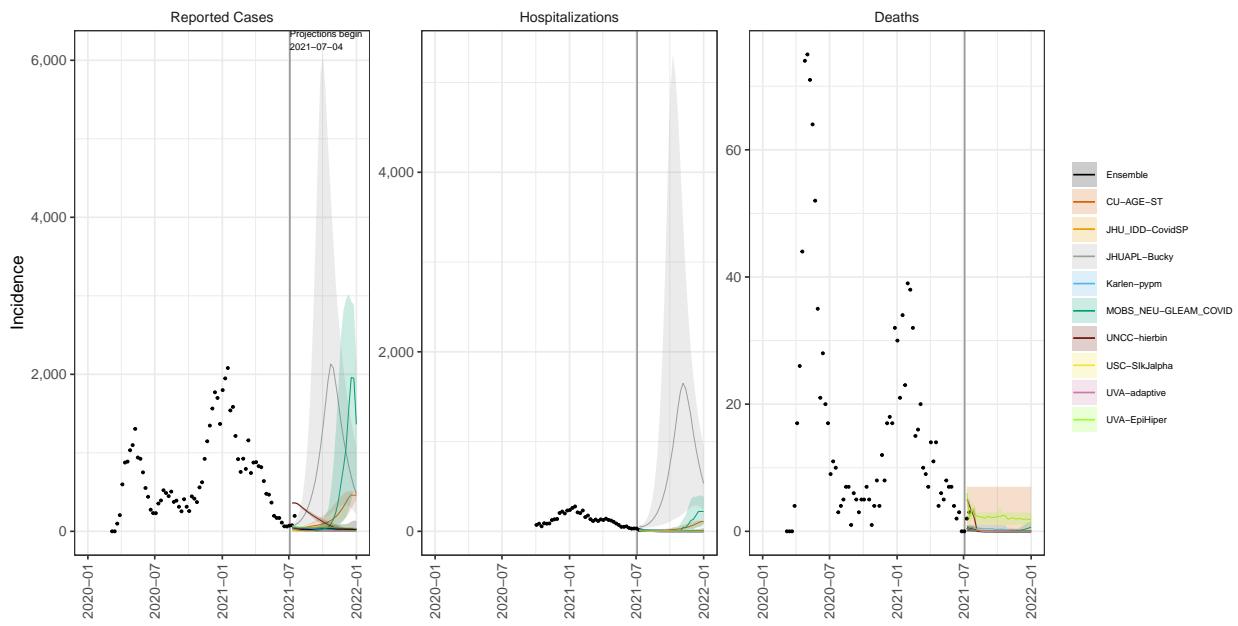
### CT model variance & 50% projection intervals – High vaccination, Low variant transmissibility



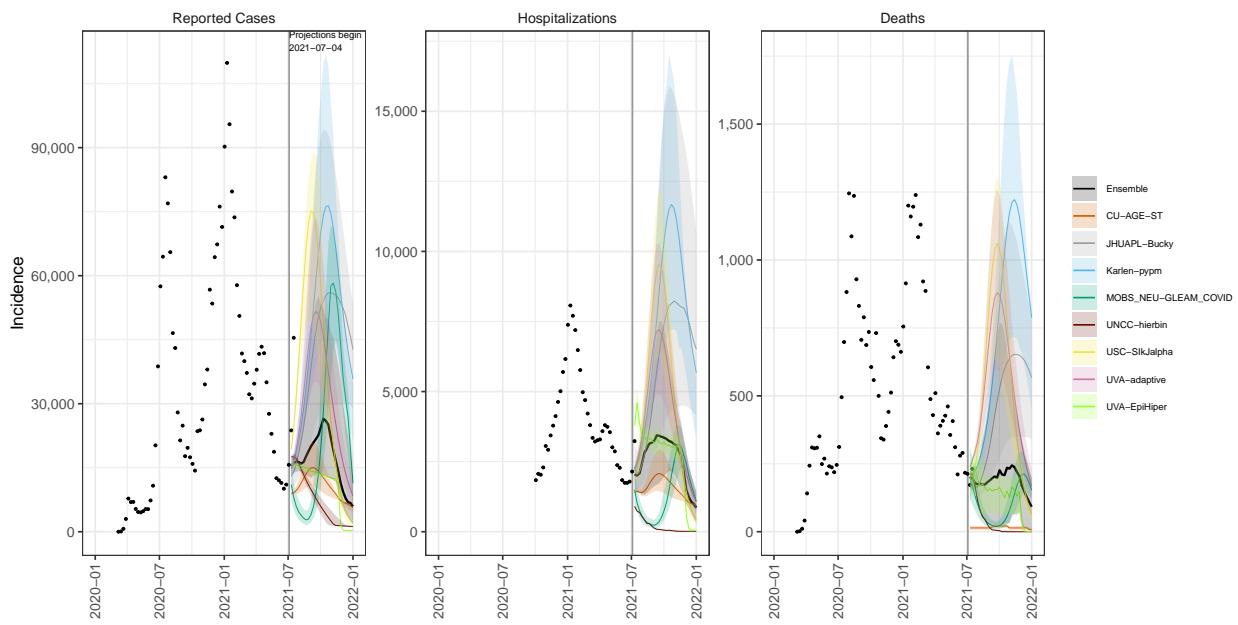
### DE model variance & 50% projection intervals – High vaccination, Low variant transmissibility



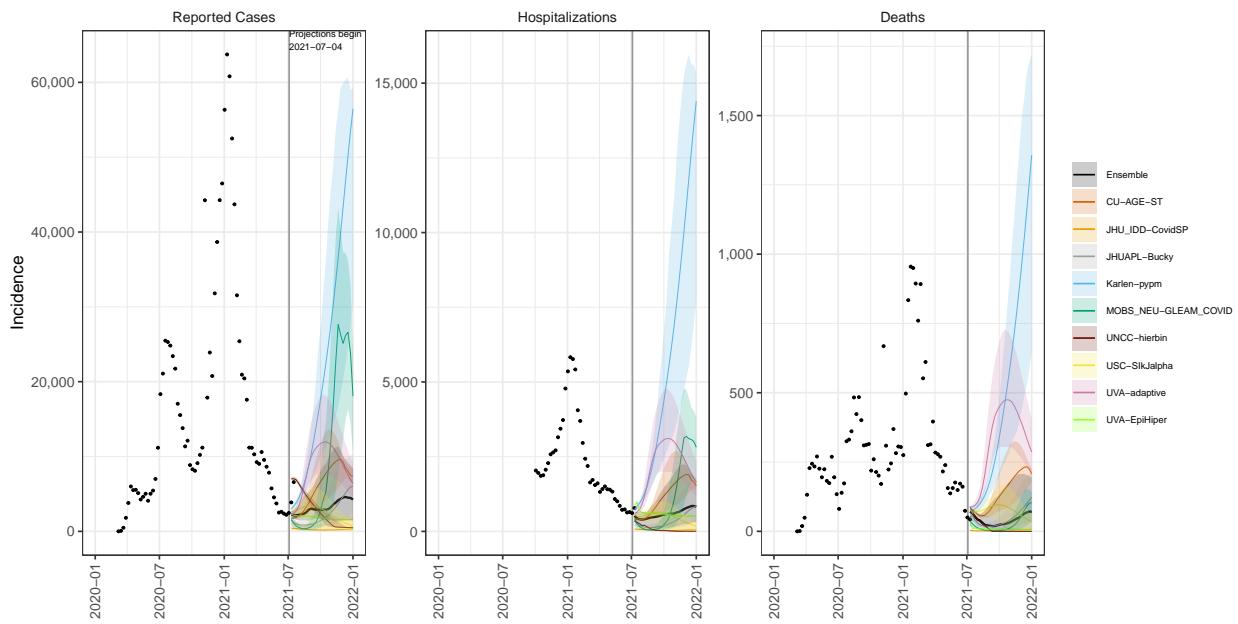
DC model variance & 50% projection intervals – High vaccination, Low variant transmissibility



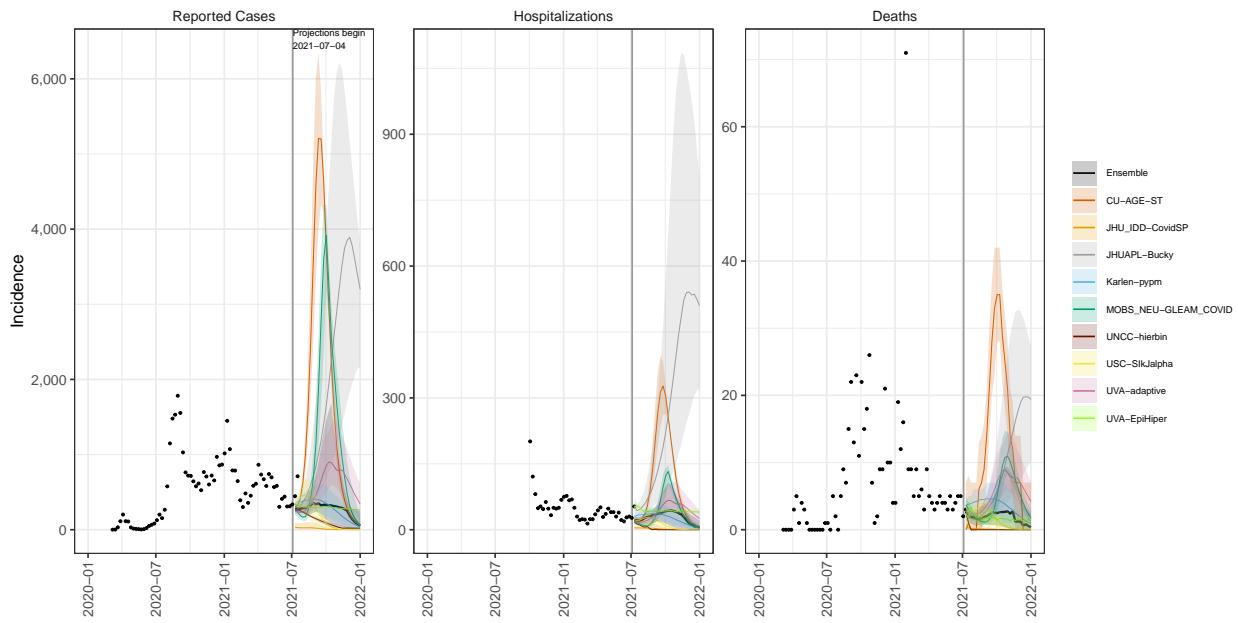
FL model variance & 50% projection intervals – High vaccination, Low variant transmissibility



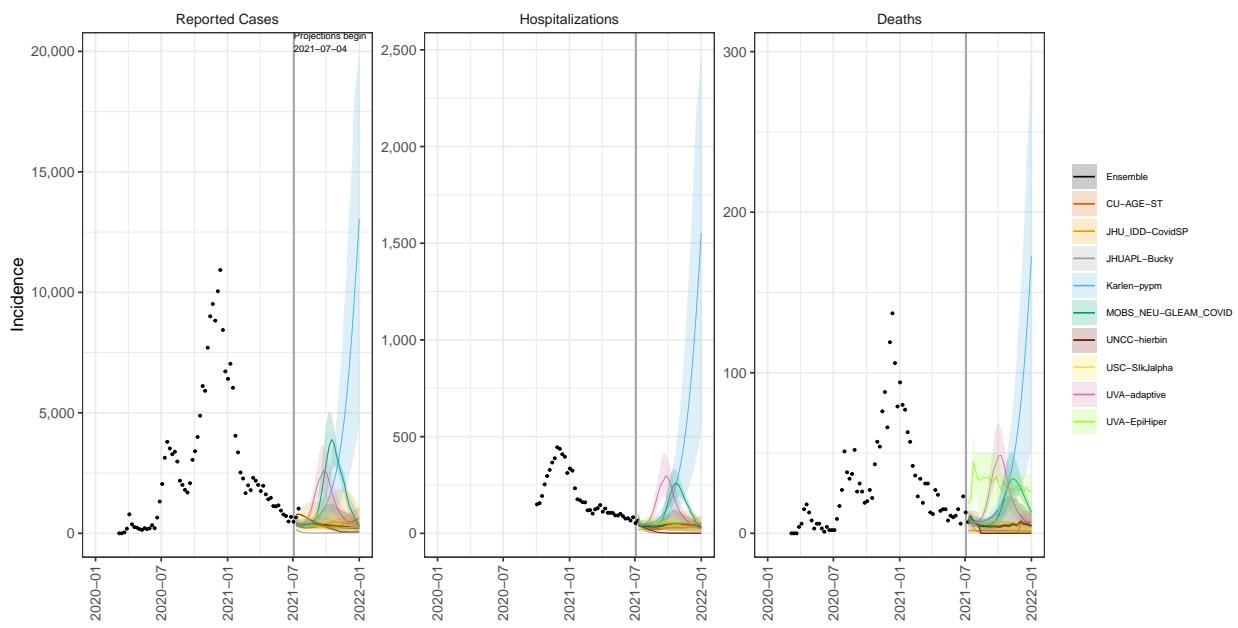
### GA model variance & 50% projection intervals – High vaccination, Low variant transmissibility



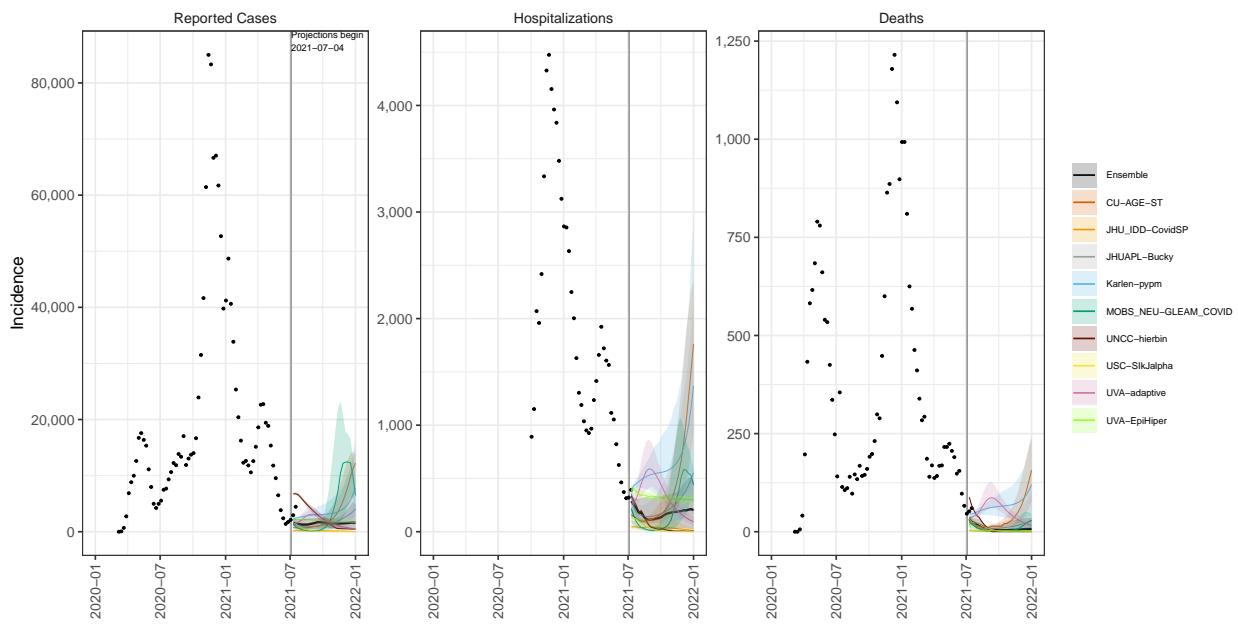
### HI model variance & 50% projection intervals – High vaccination, Low variant transmissibility



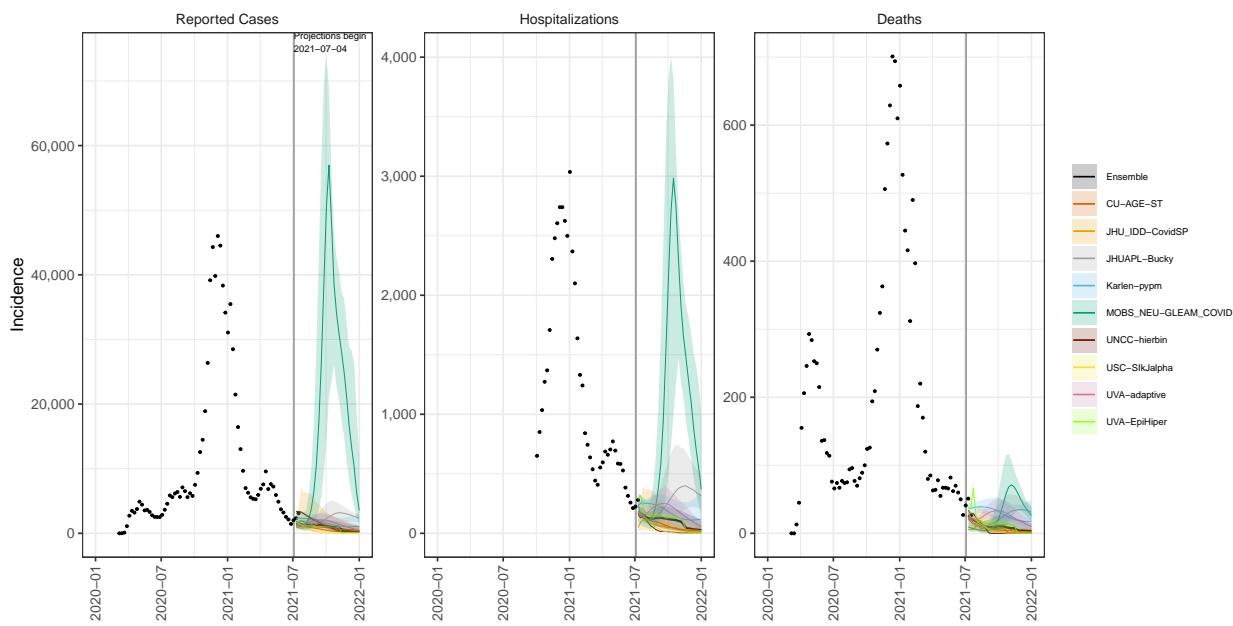
### ID model variance & 50% projection intervals – High vaccination, Low variant transmissibility



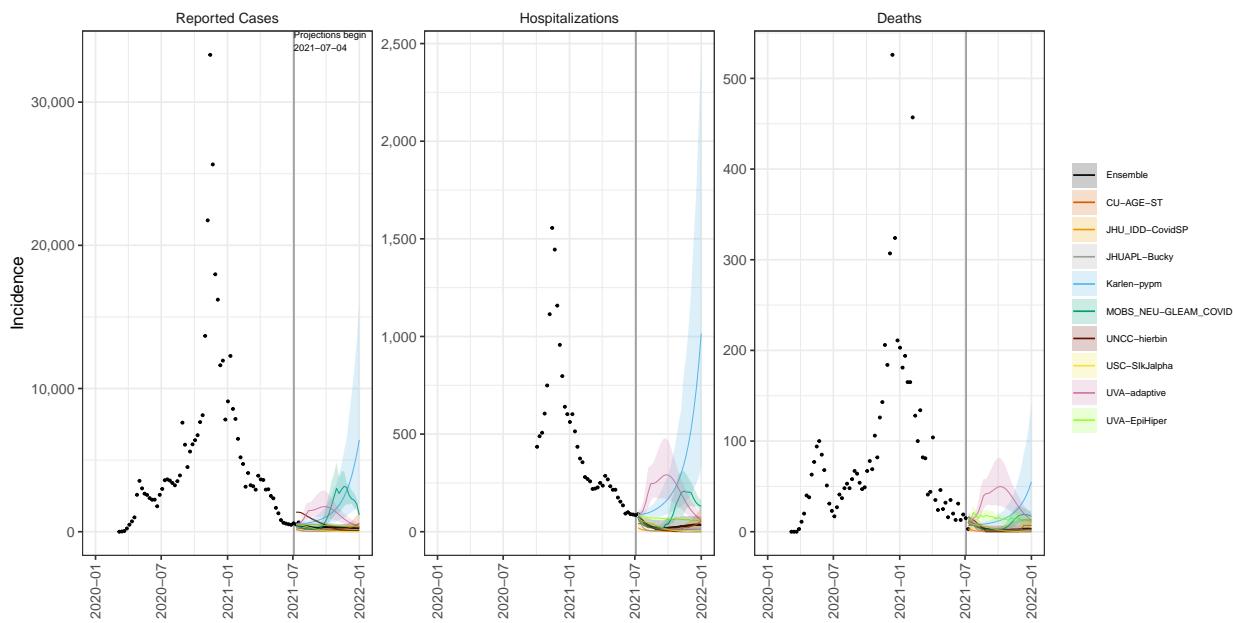
### IL model variance & 50% projection intervals – High vaccination, Low variant transmissibility



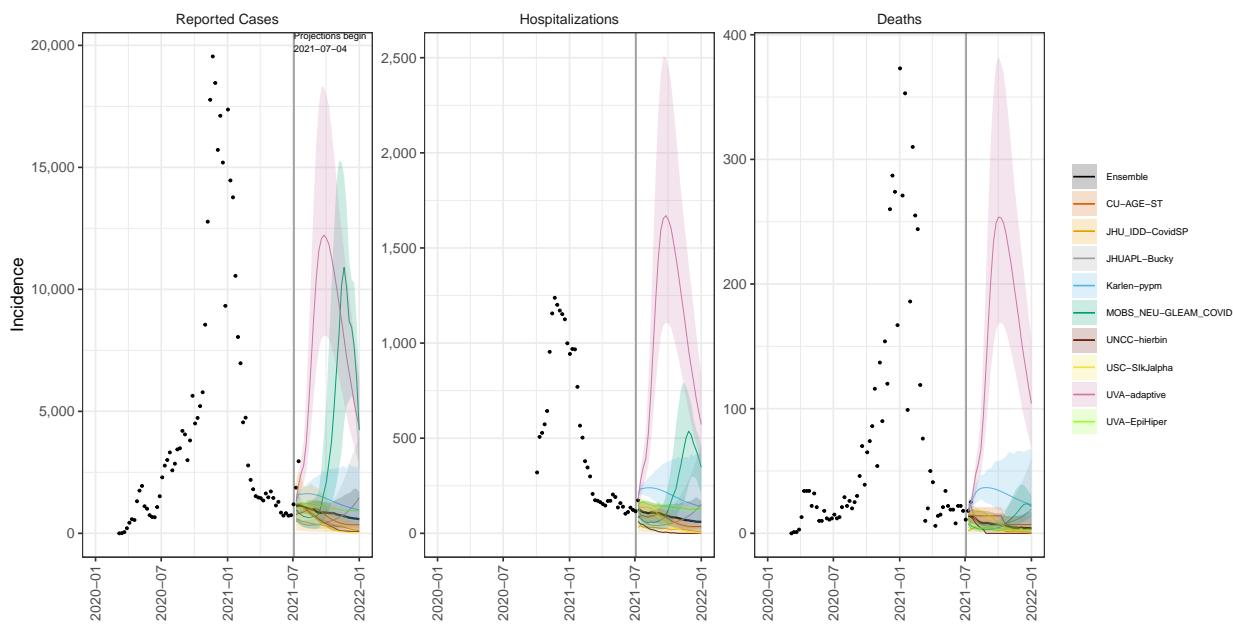
### IN model variance & 50% projection intervals – High vaccination, Low variant transmissibility



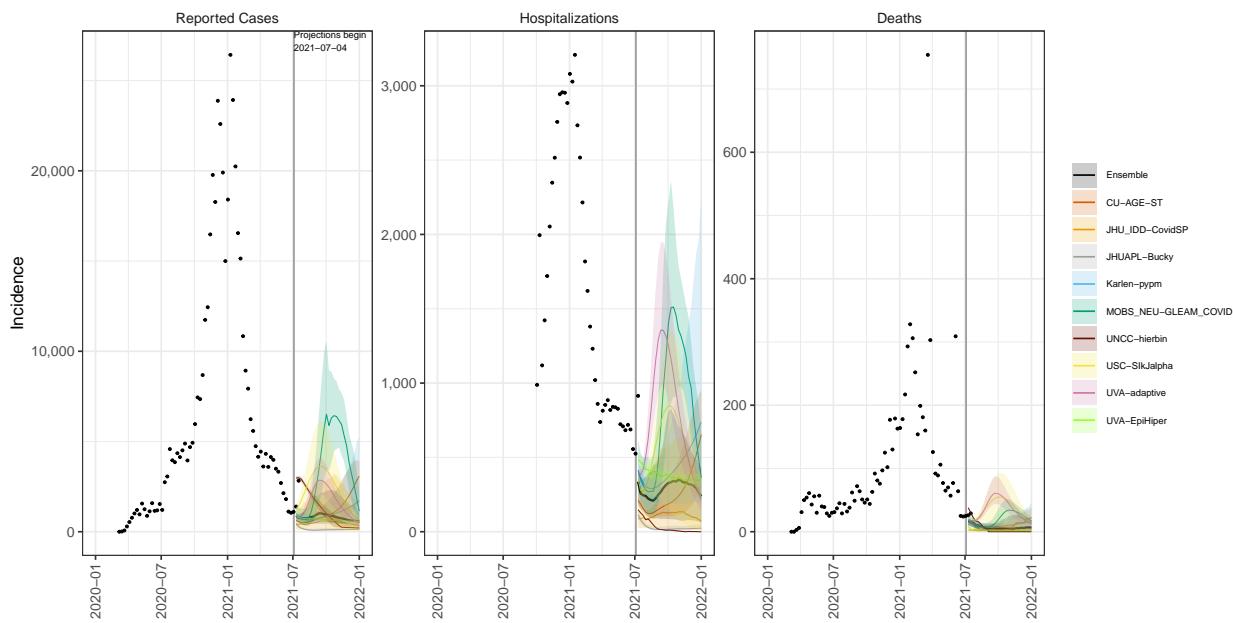
### IA model variance & 50% projection intervals – High vaccination, Low variant transmissibility



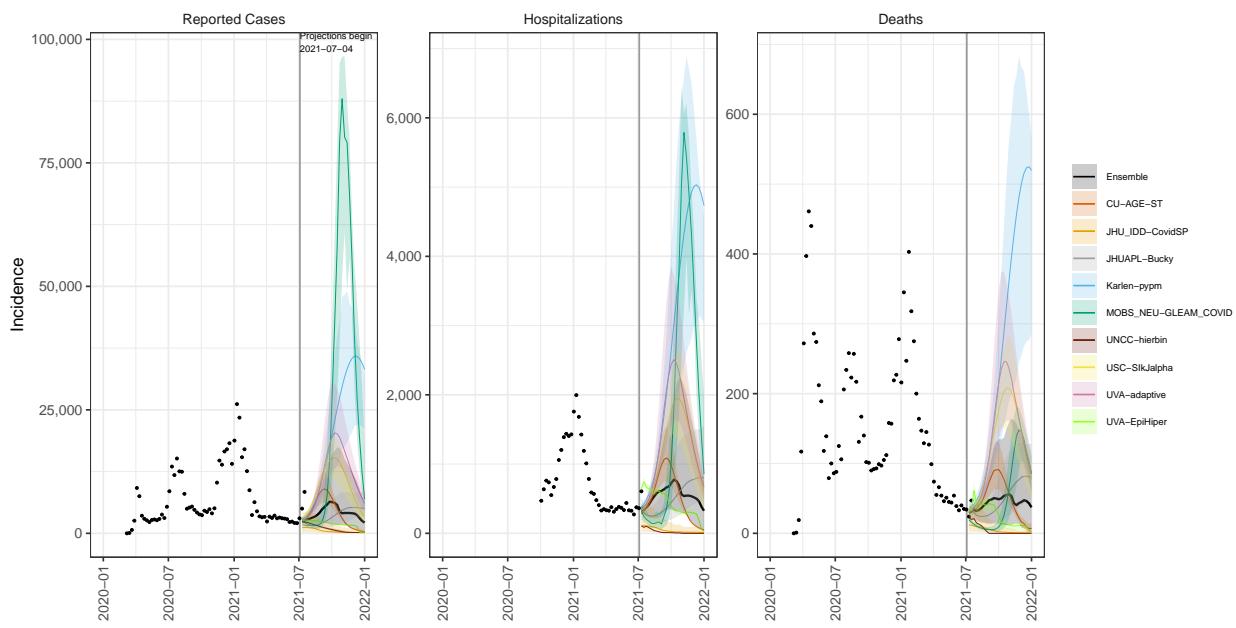
### KS model variance & 50% projection intervals – High vaccination, Low variant transmissibility



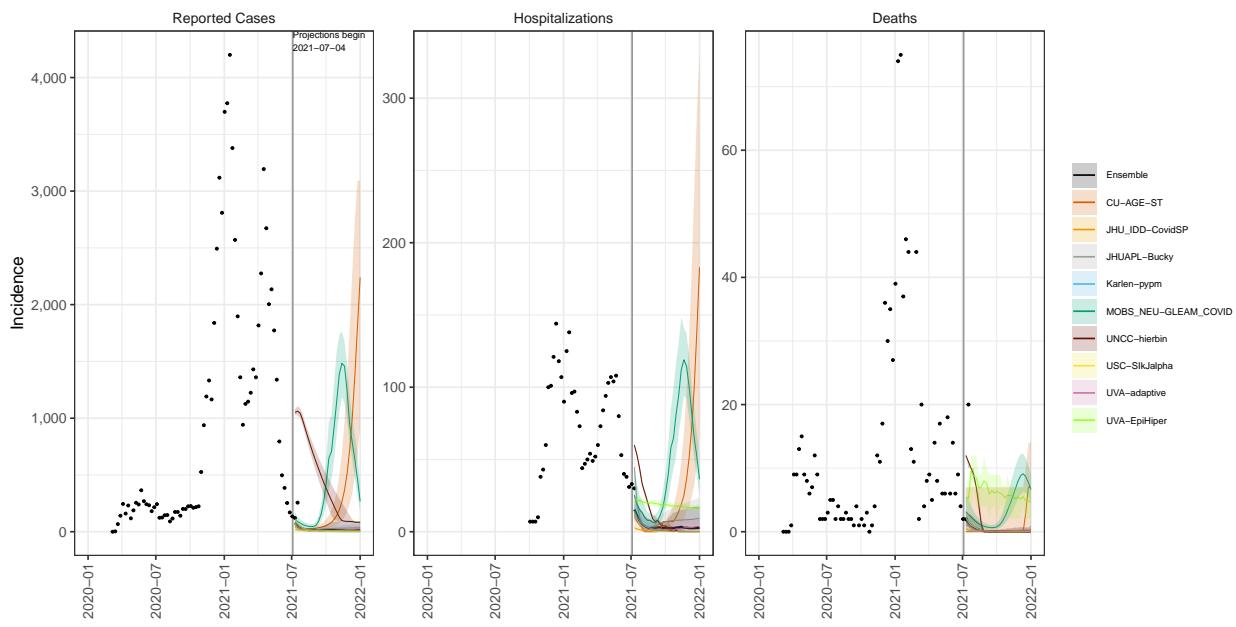
### KY model variance & 50% projection intervals – High vaccination, Low variant transmissibility



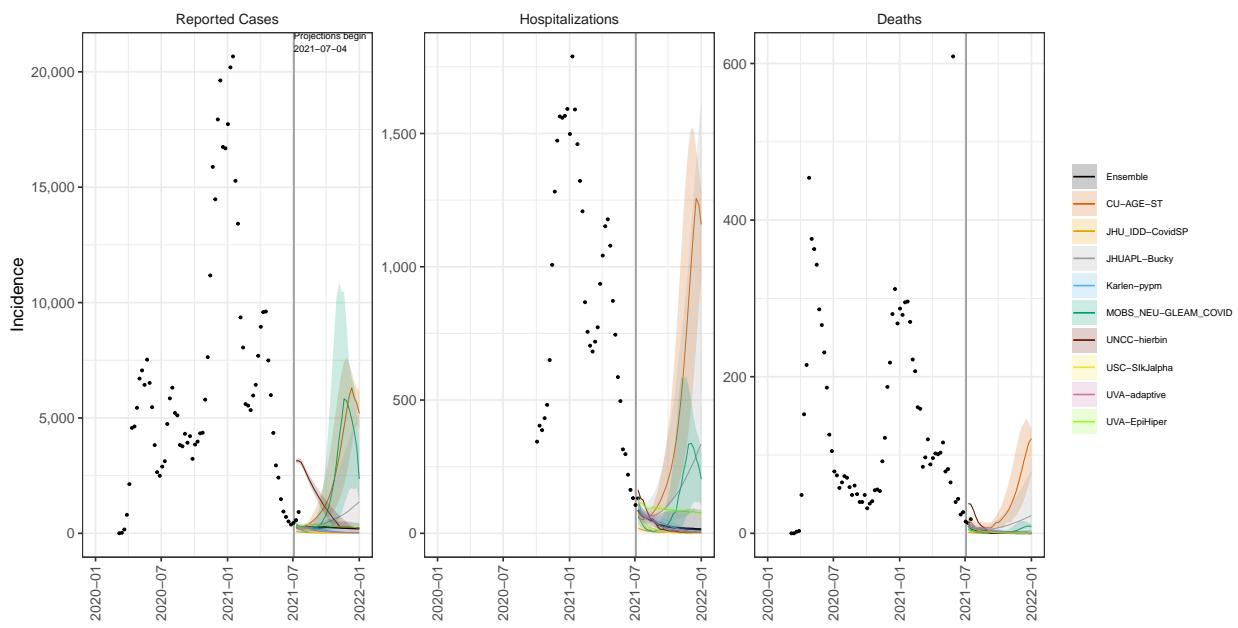
LA model variance & 50% projection intervals – High vaccination, Low variant transmissibility



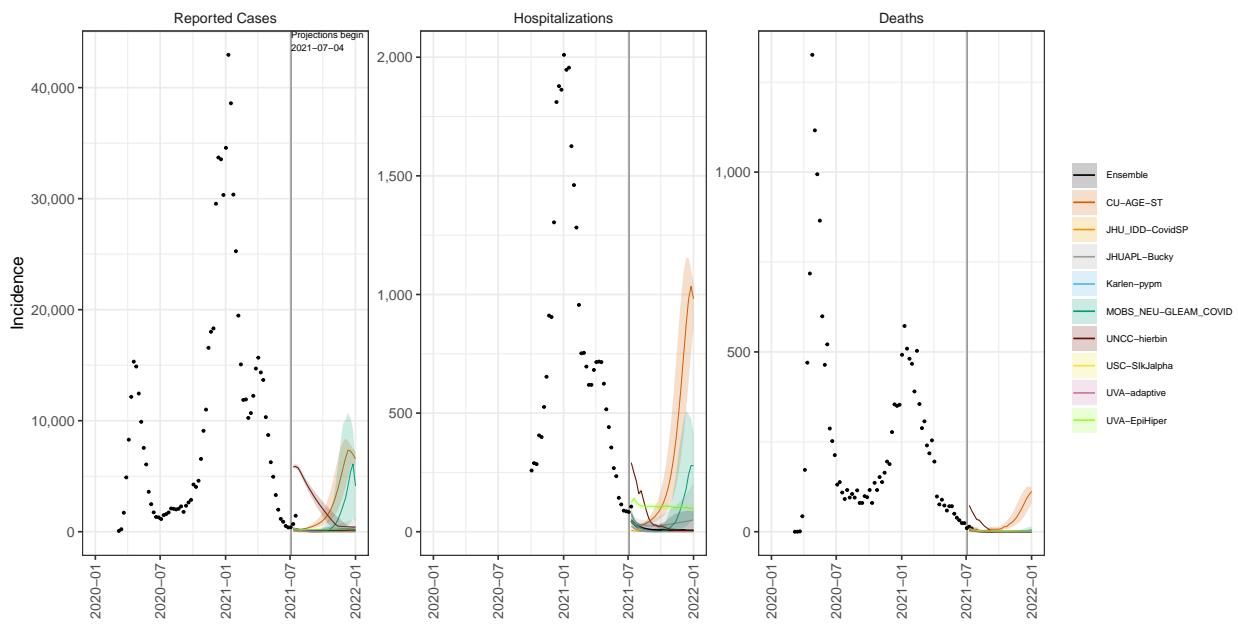
ME model variance & 50% projection intervals – High vaccination, Low variant transmissibility



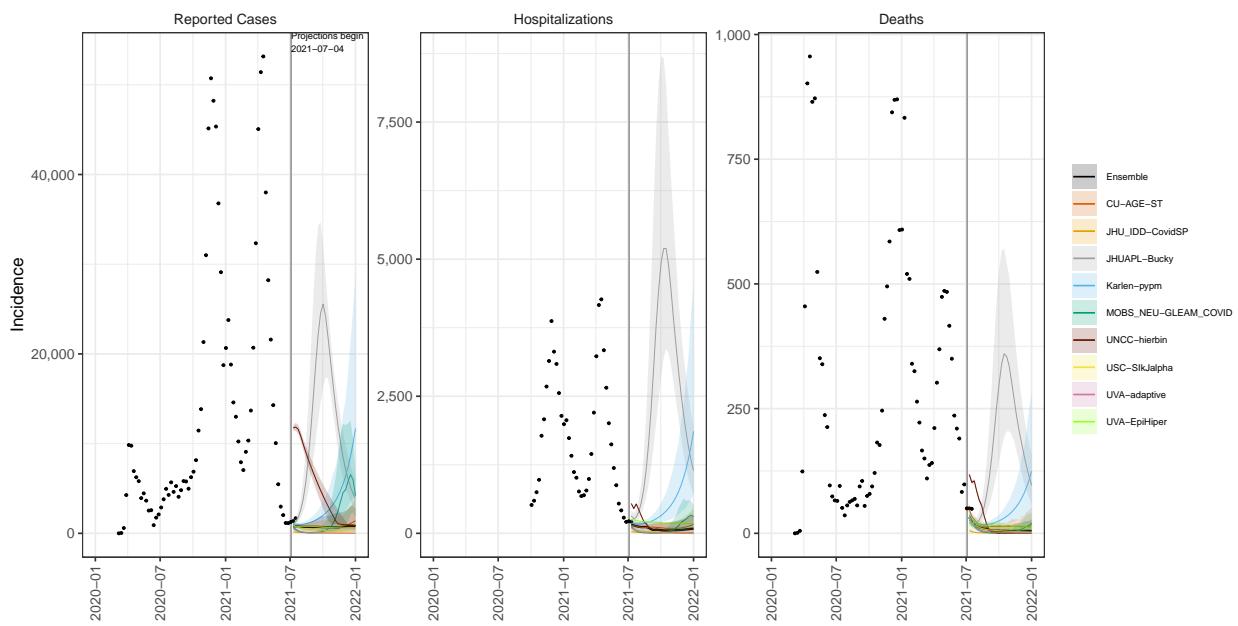
MD model variance & 50% projection intervals – High vaccination, Low variant transmissibility



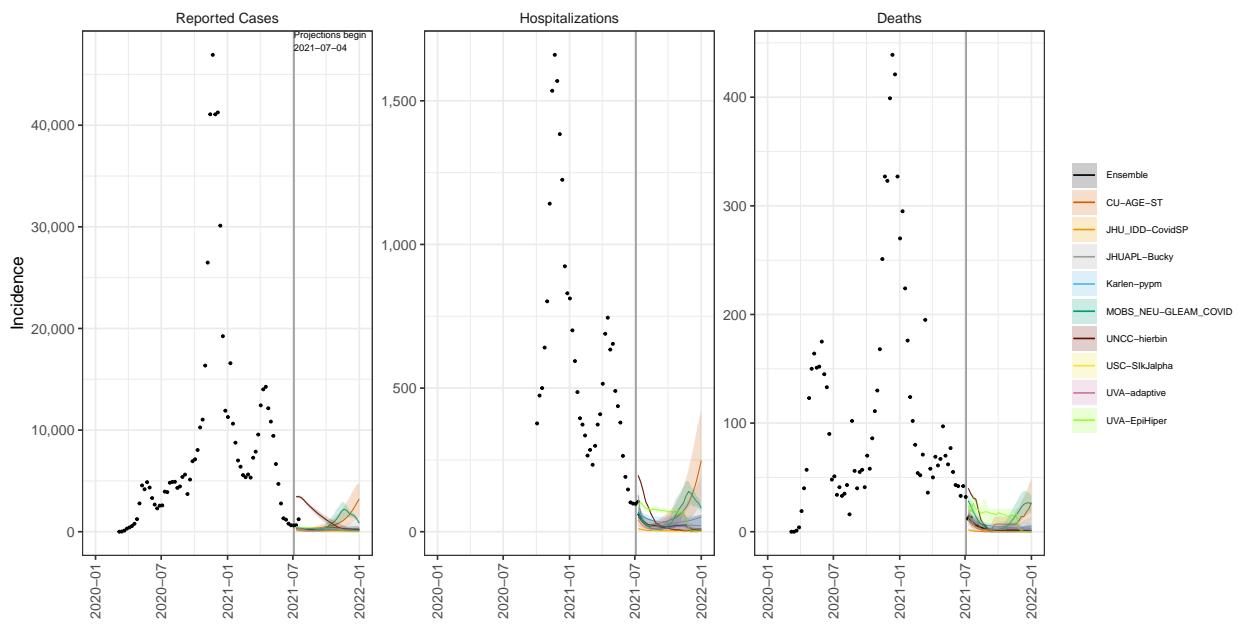
MA model variance & 50% projection intervals – High vaccination, Low variant transmissibility



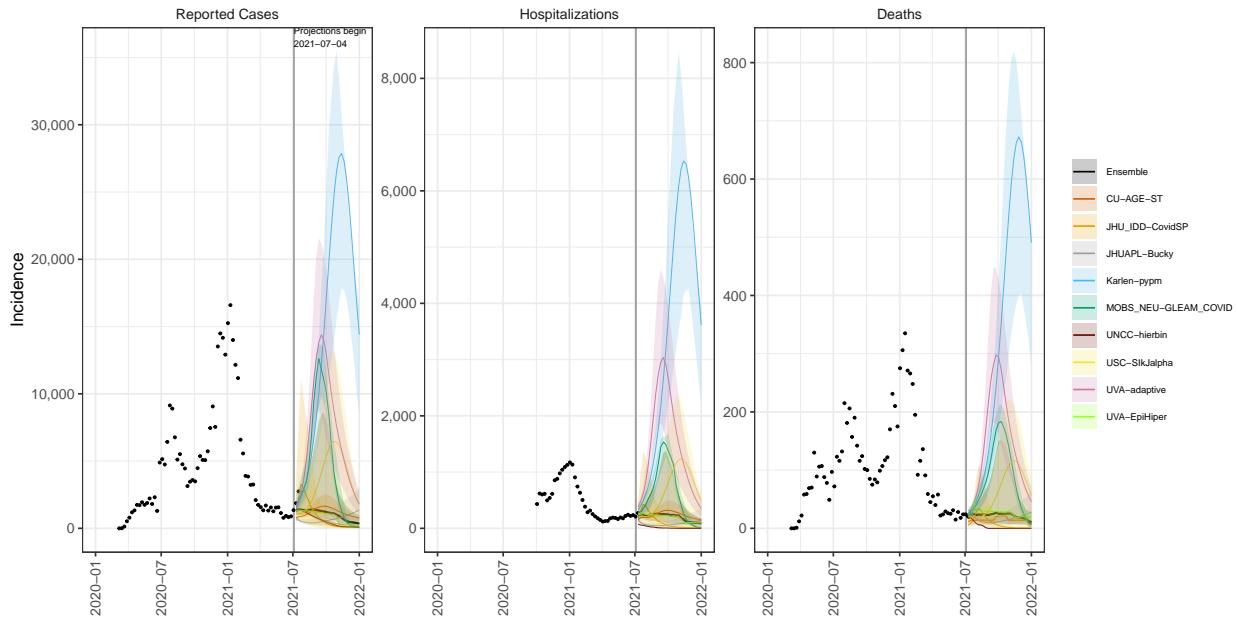
### MI model variance & 50% projection intervals – High vaccination, Low variant transmissibility



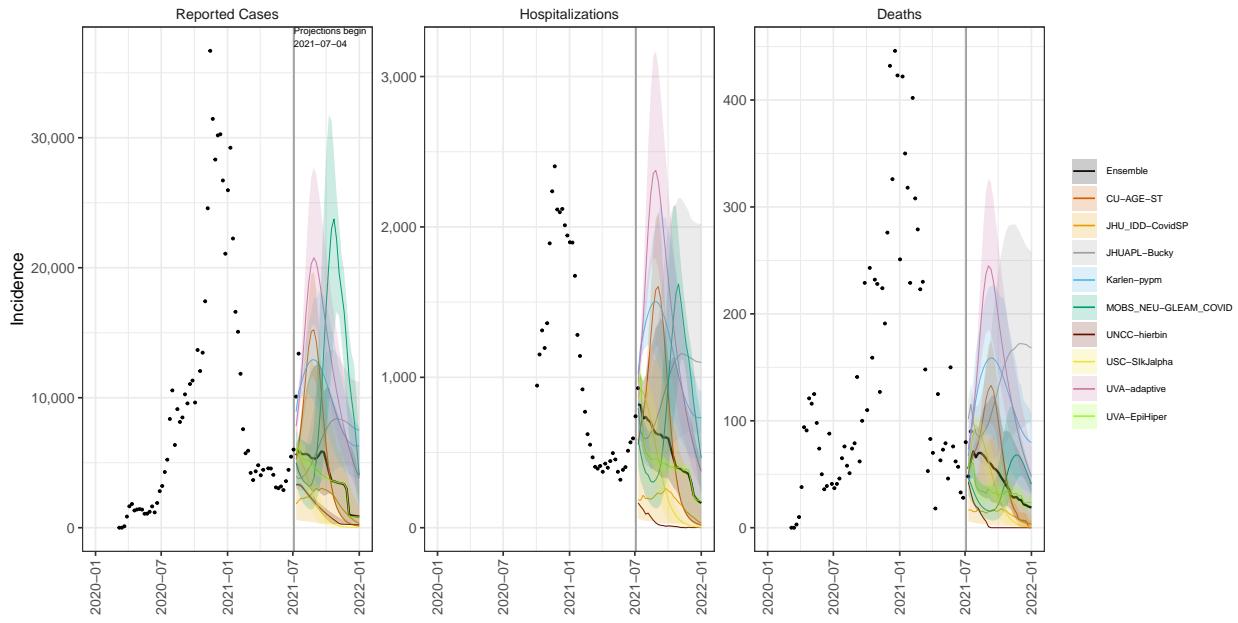
### MN model variance & 50% projection intervals – High vaccination, Low variant transmissibility



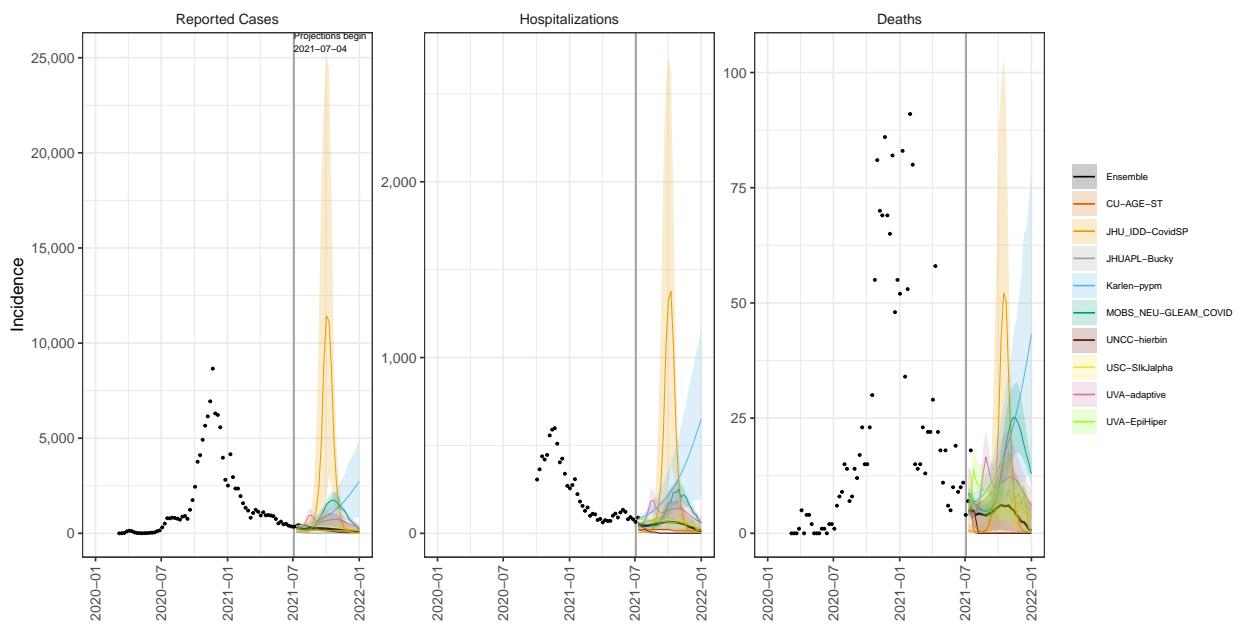
MS model variance & 50% projection intervals – High vaccination, Low variant transmissibility



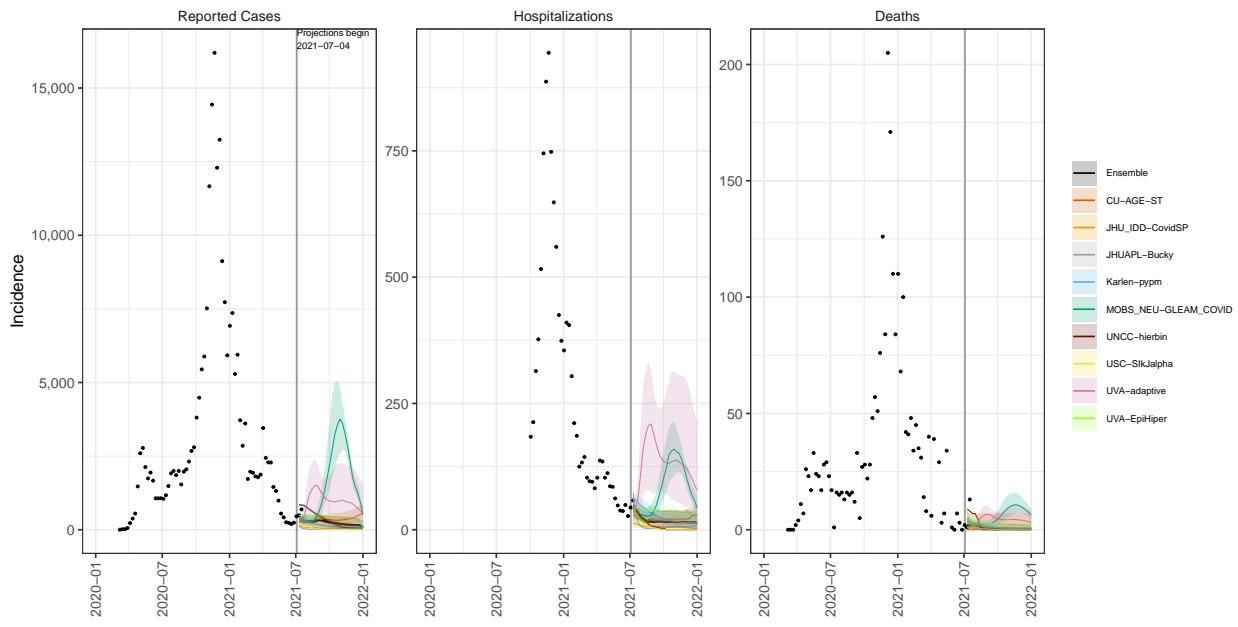
MO model variance & 50% projection intervals – High vaccination, Low variant transmissibility



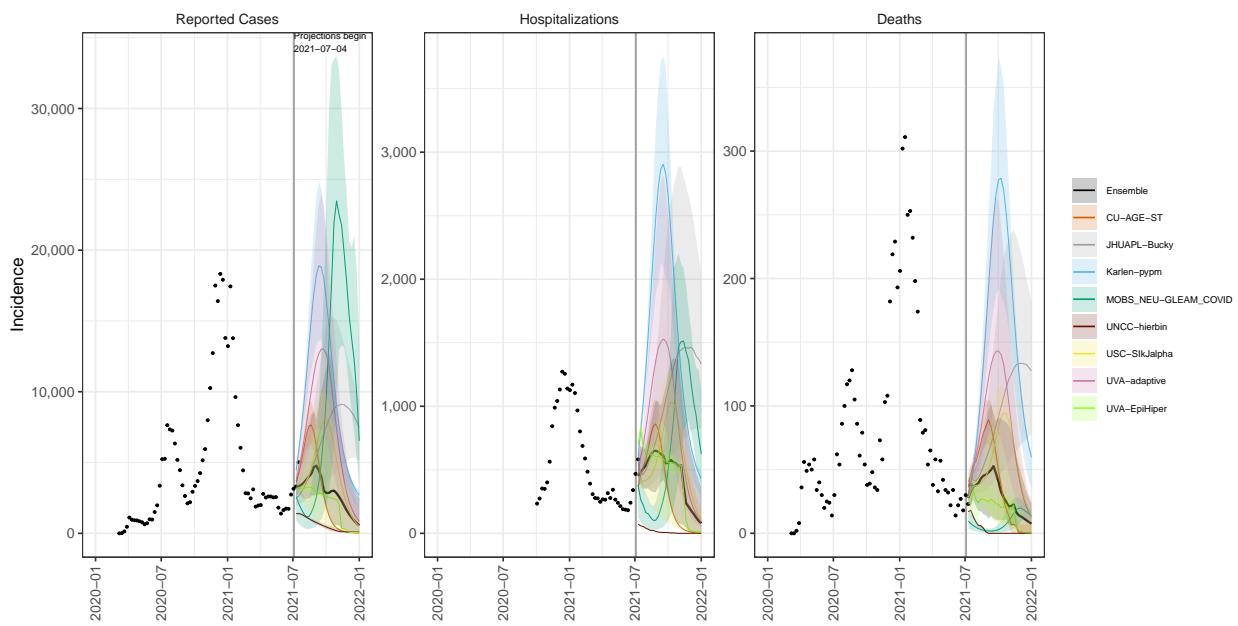
### MT model variance & 50% projection intervals – High vaccination, Low variant transmissibility



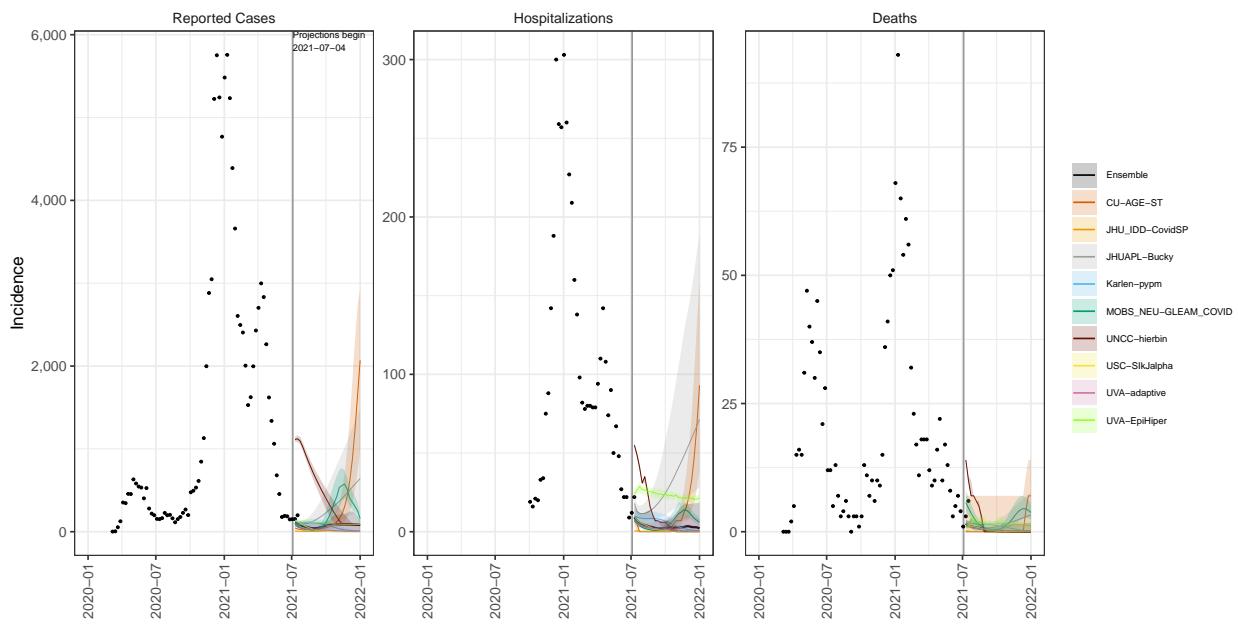
### NE model variance & 50% projection intervals – High vaccination, Low variant transmissibility



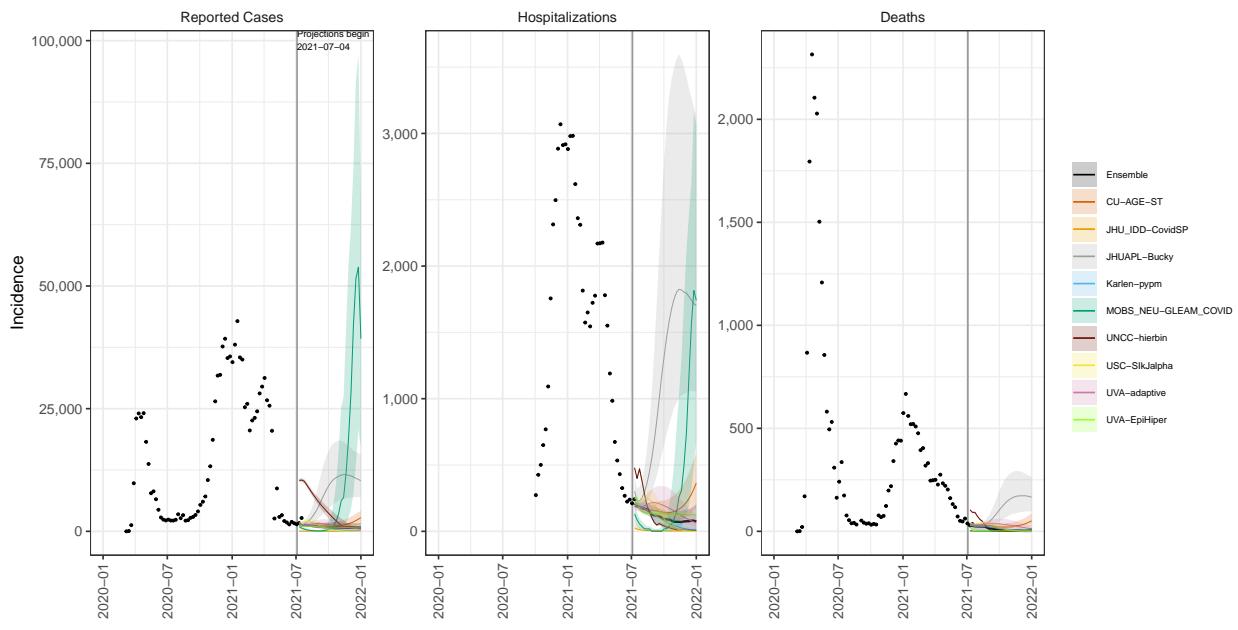
### NV model variance & 50% projection intervals – High vaccination, Low variant transmissibility



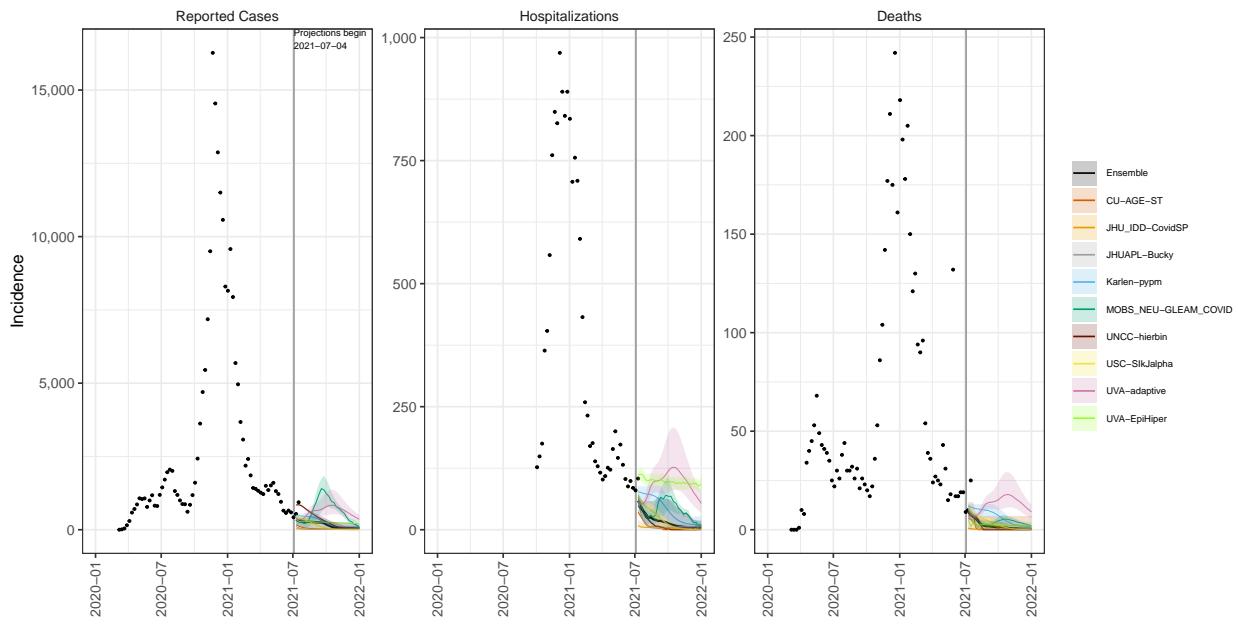
### NH model variance & 50% projection intervals – High vaccination, Low variant transmissibility



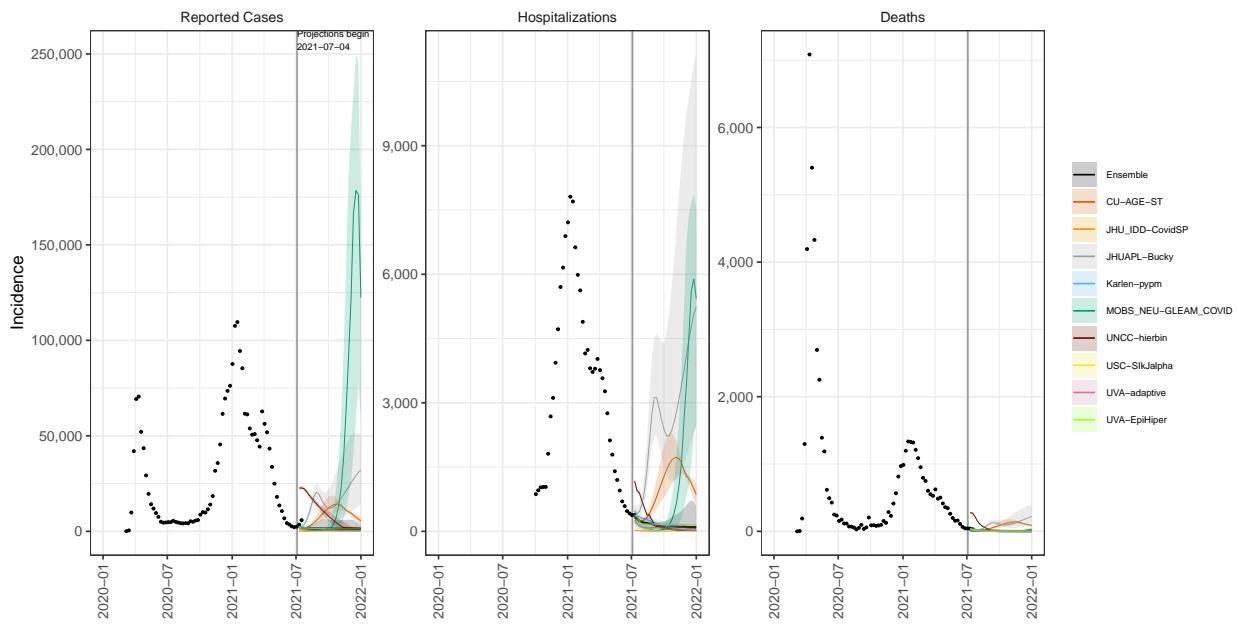
NJ model variance & 50% projection intervals – High vaccination, Low variant transmissibility



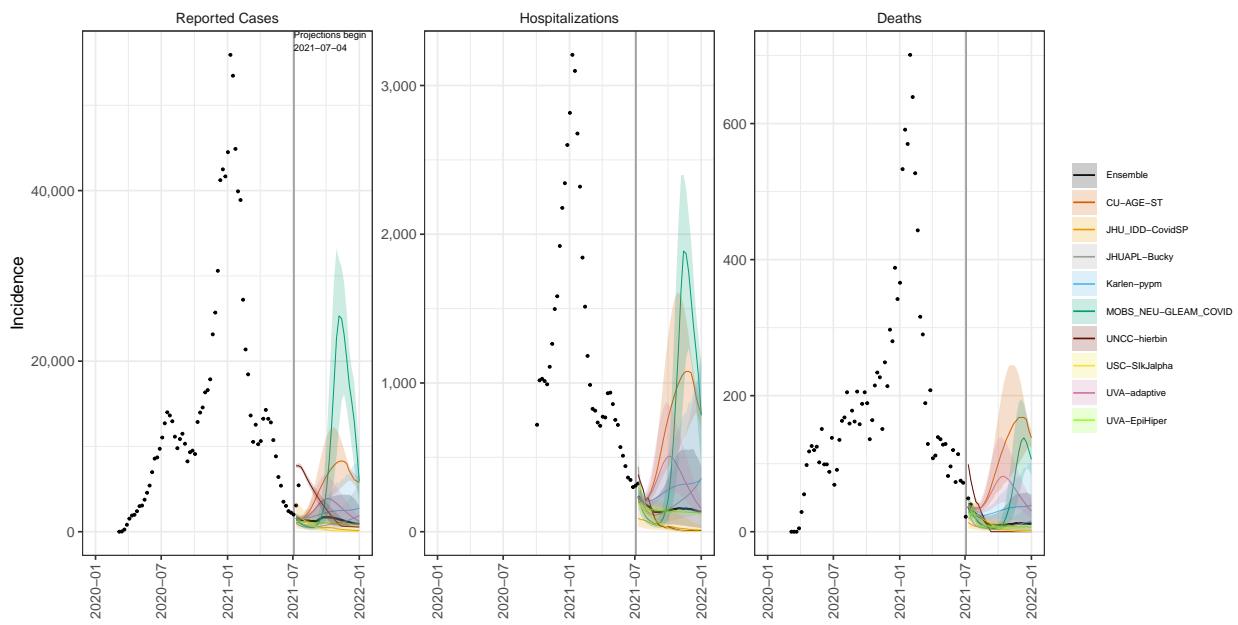
NM model variance & 50% projection intervals – High vaccination, Low variant transmissibility



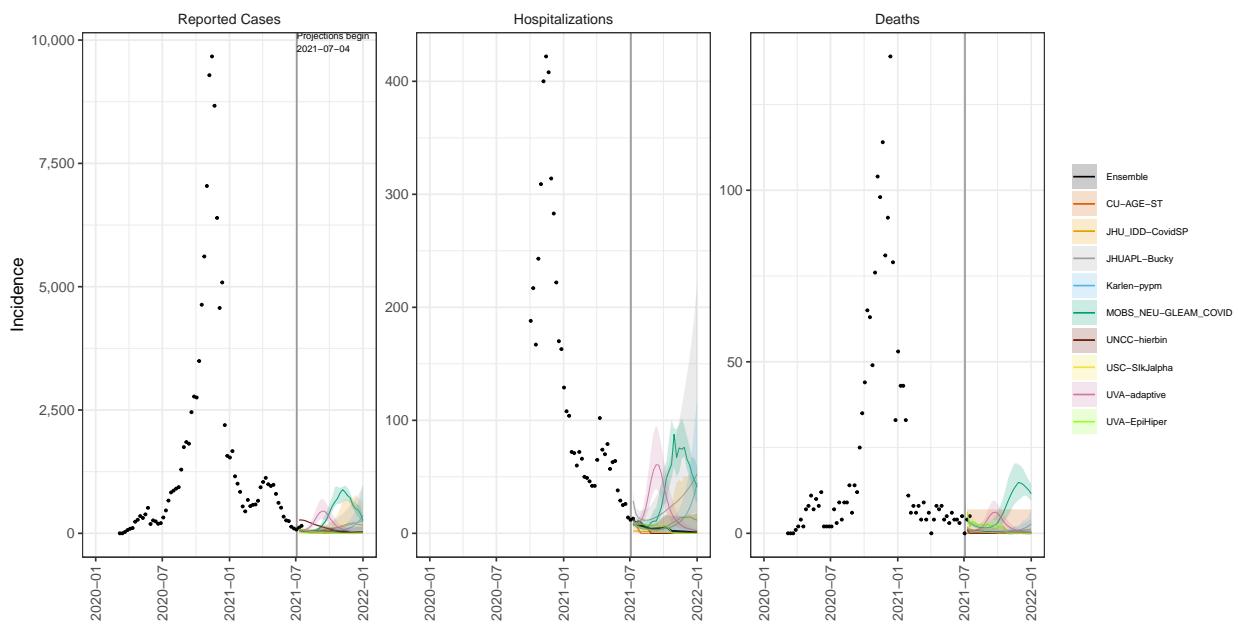
### NY model variance & 50% projection intervals – High vaccination, Low variant transmissibility



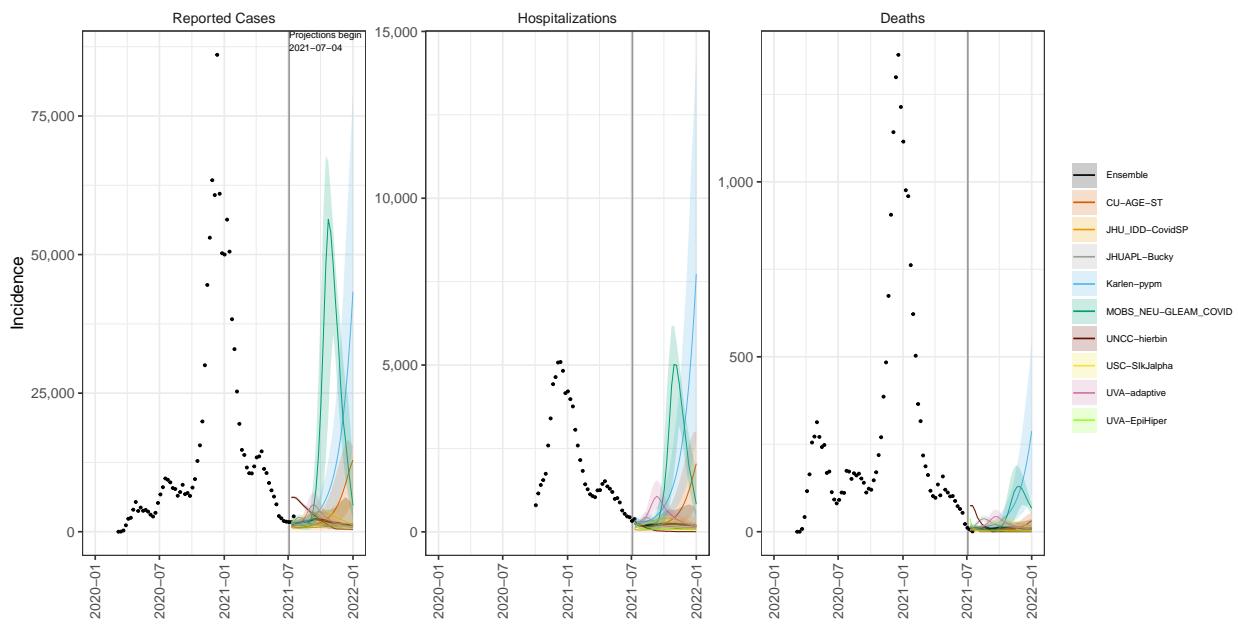
### NC model variance & 50% projection intervals – High vaccination, Low variant transmissibility



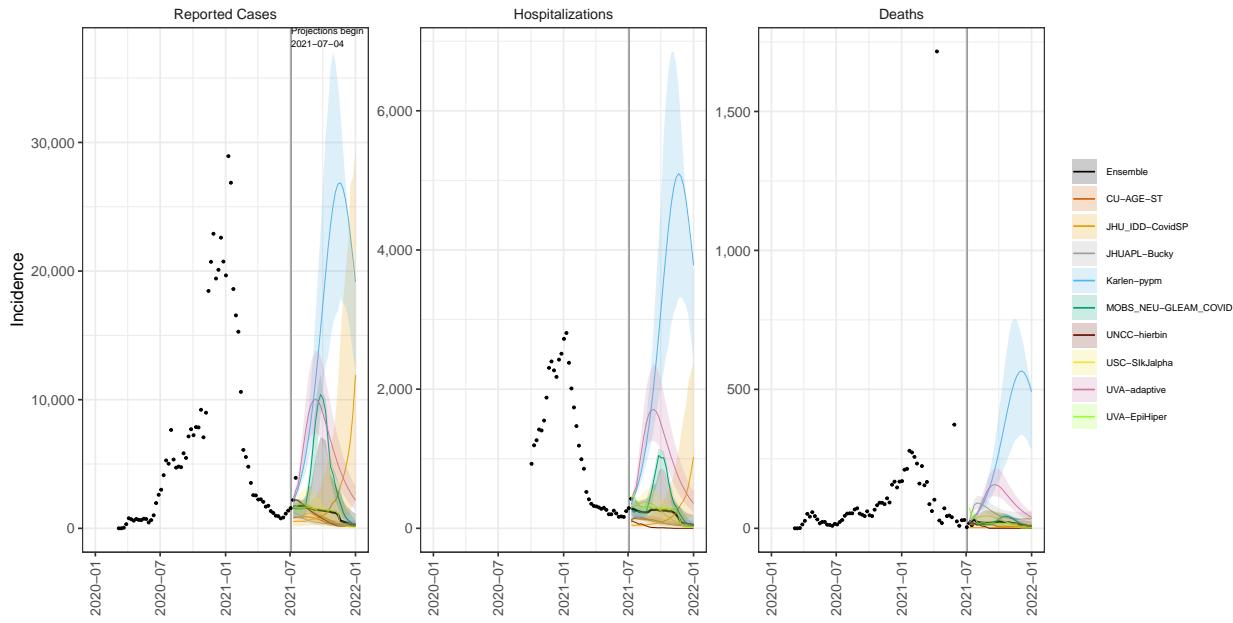
### ND model variance & 50% projection intervals – High vaccination, Low variant transmissibility



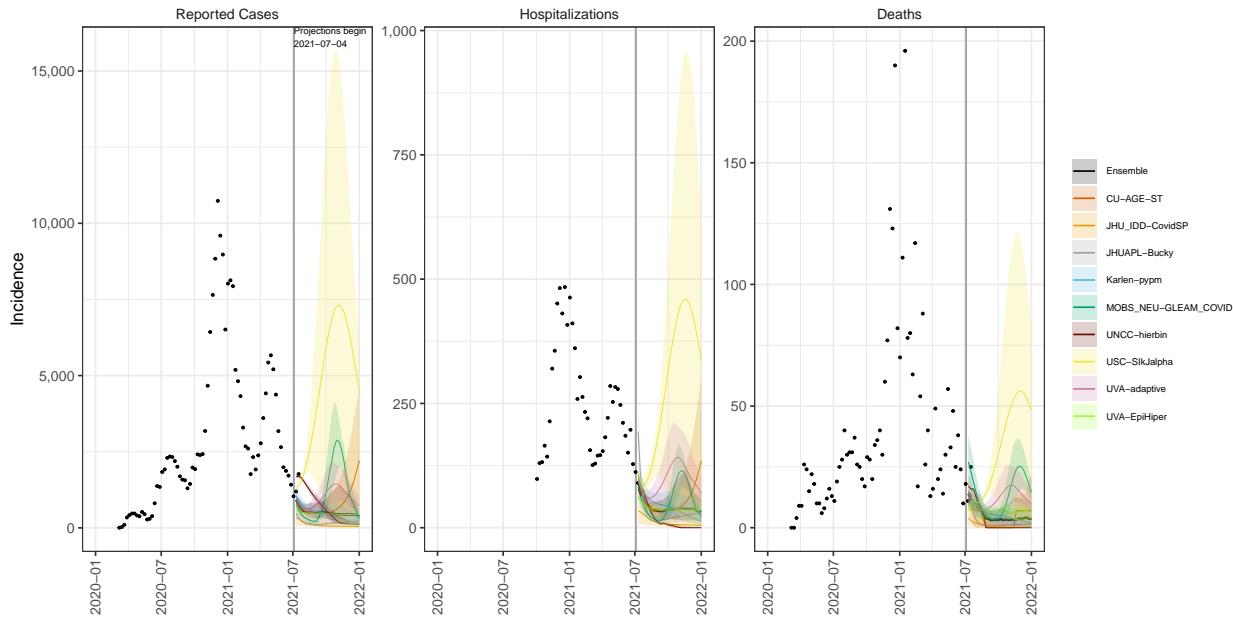
### OH model variance & 50% projection intervals – High vaccination, Low variant transmissibility



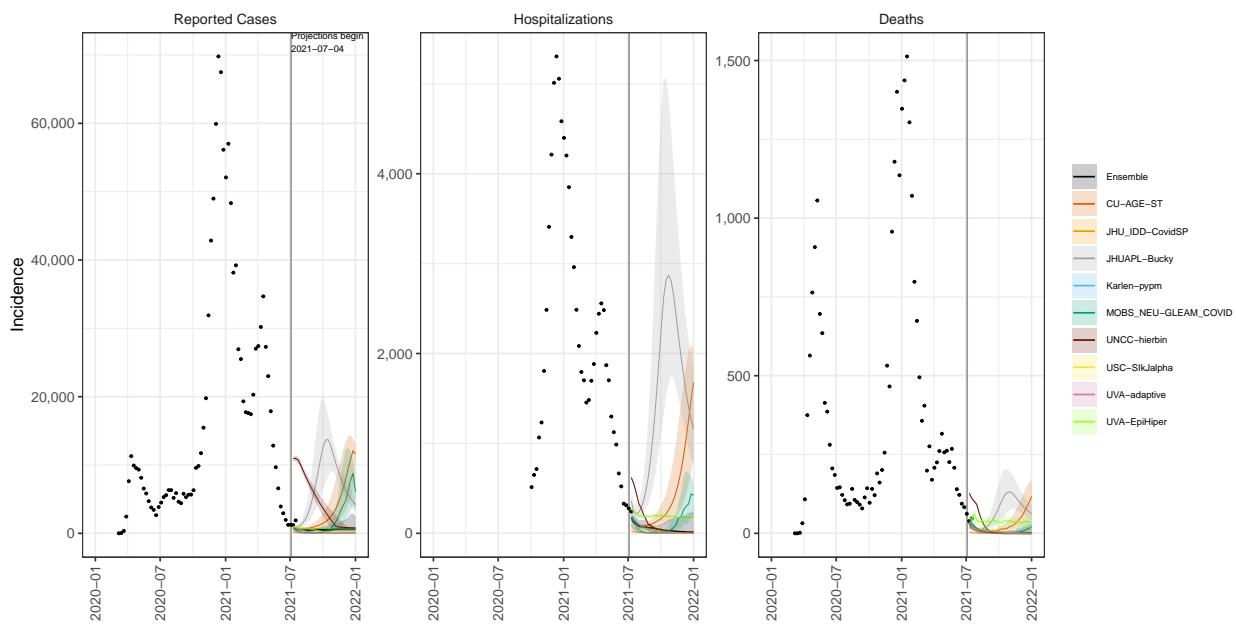
OK model variance & 50% projection intervals – High vaccination, Low variant transmissibility



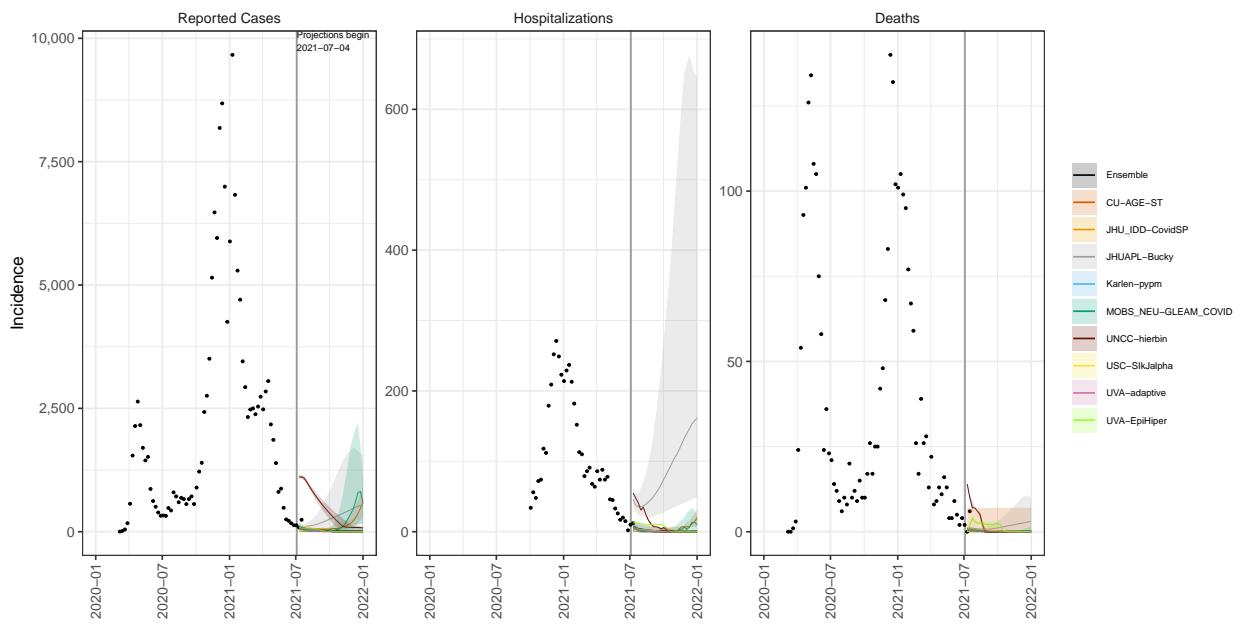
OR model variance & 50% projection intervals – High vaccination, Low variant transmissibility



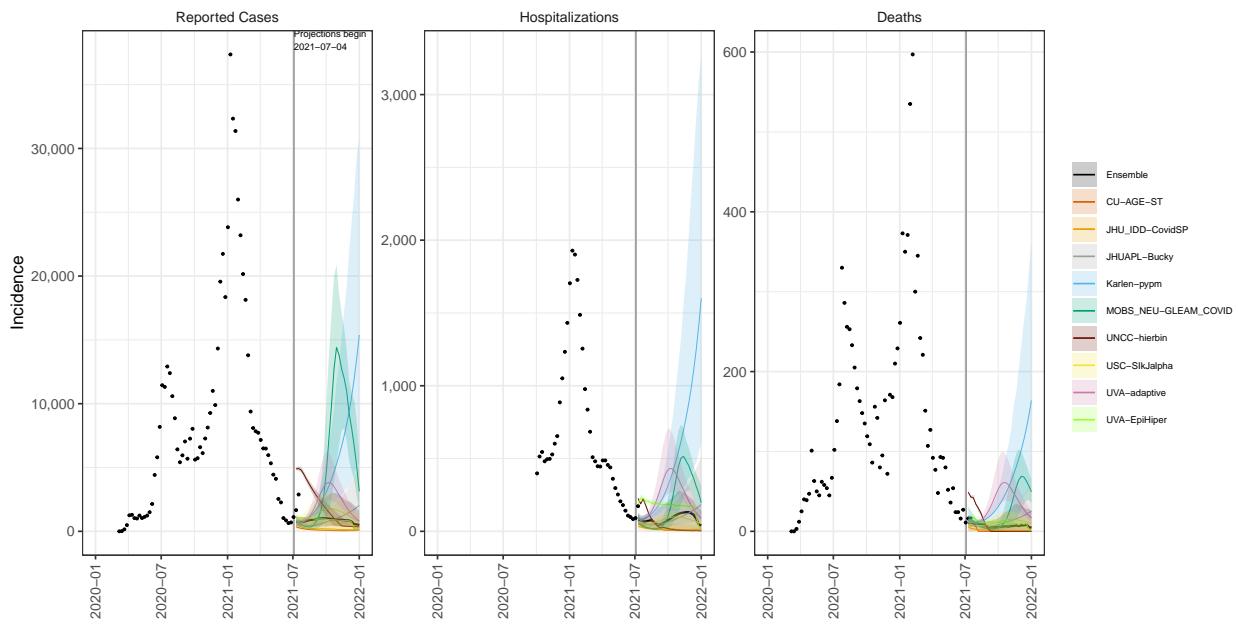
PA model variance & 50% projection intervals – High vaccination, Low variant transmissibility



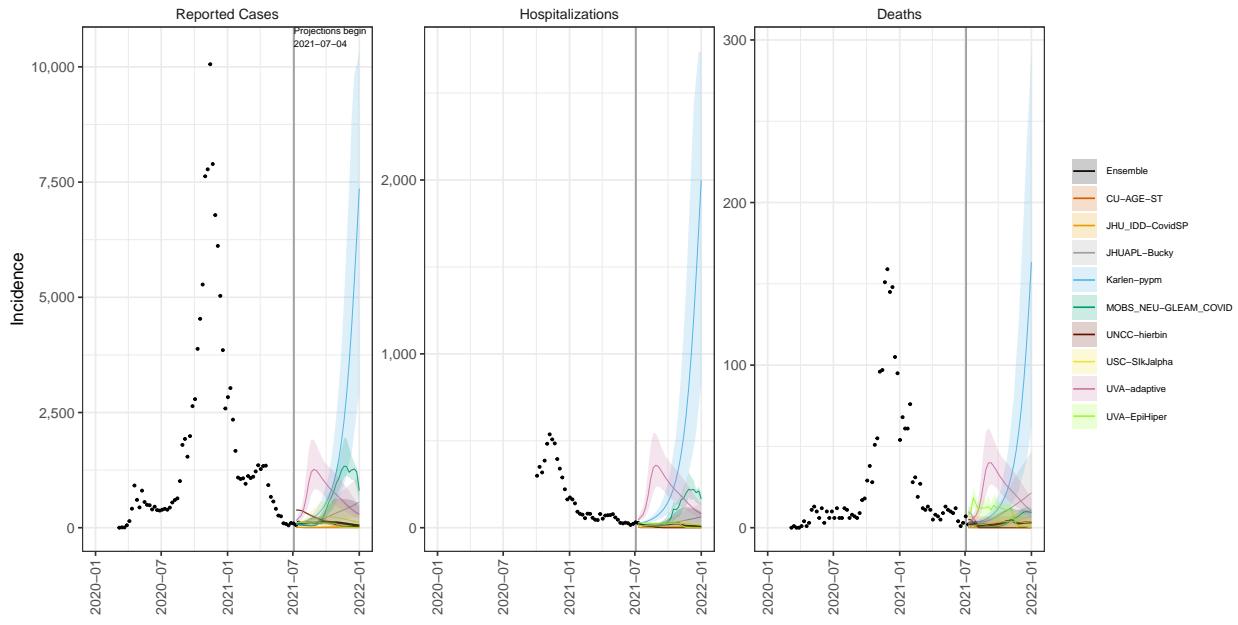
RI model variance & 50% projection intervals – High vaccination, Low variant transmissibility



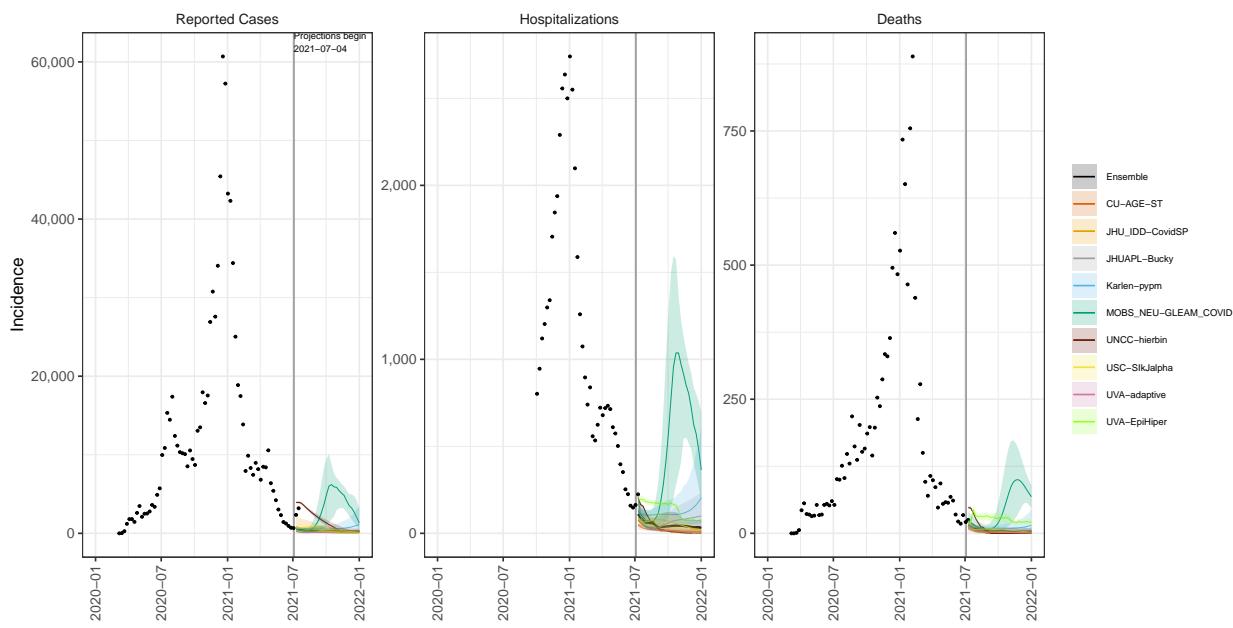
SC model variance & 50% projection intervals – High vaccination, Low variant transmissibility



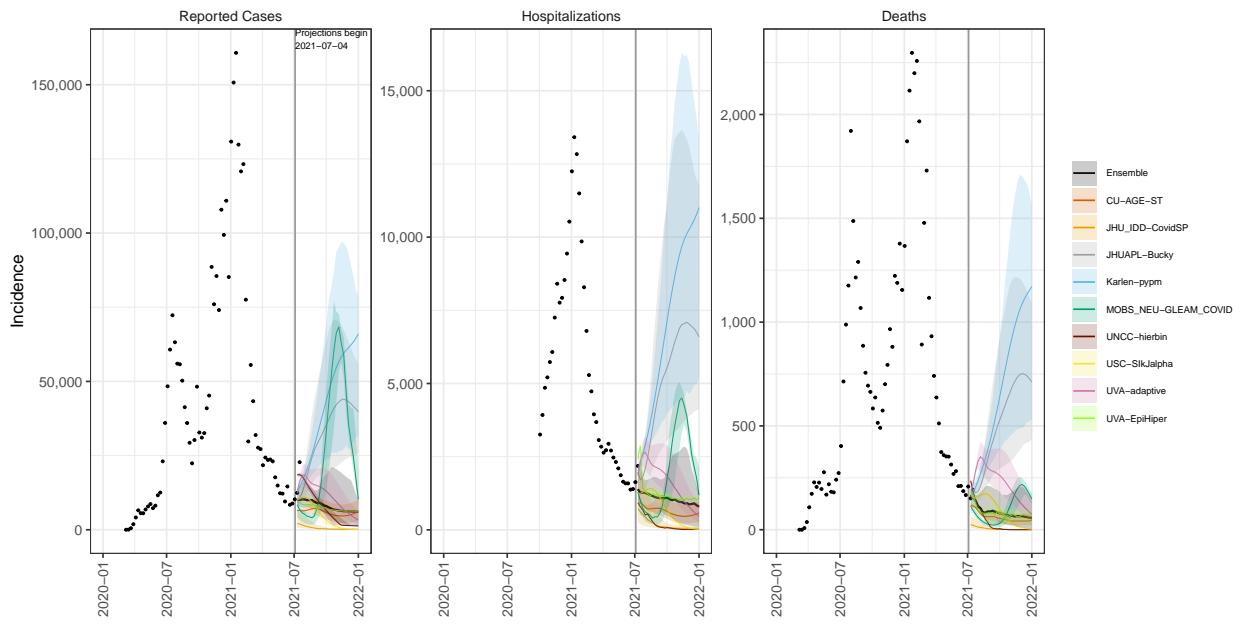
SD model variance & 50% projection intervals – High vaccination, Low variant transmissibility



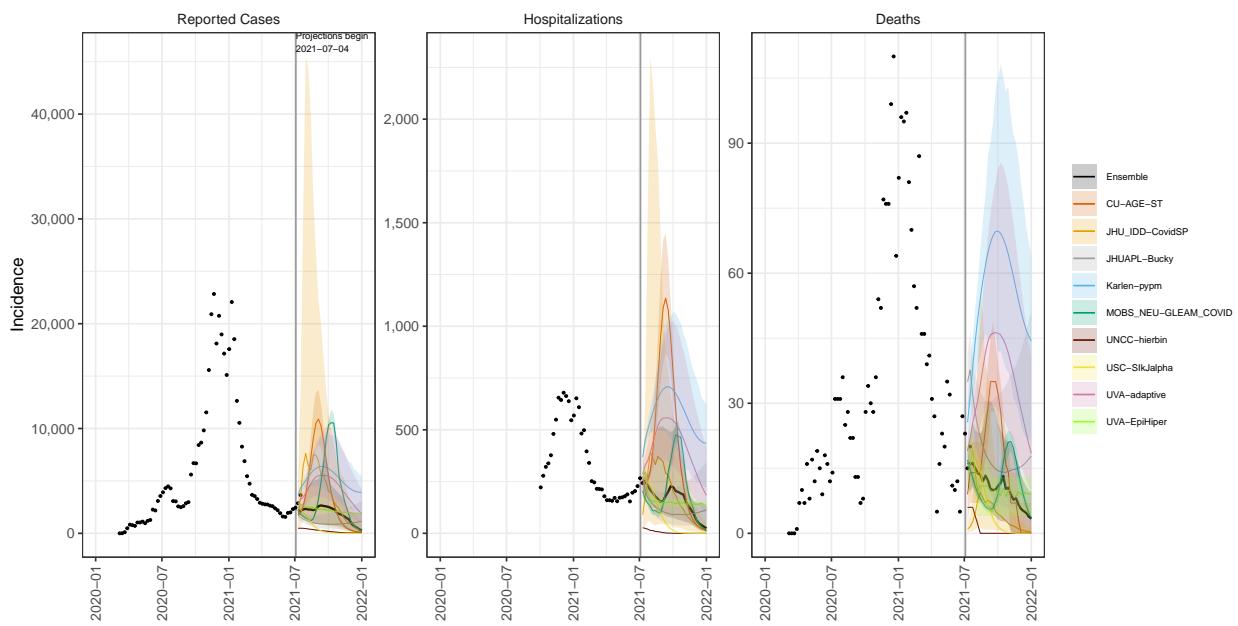
### TN model variance & 50% projection intervals – High vaccination, Low variant transmissibility



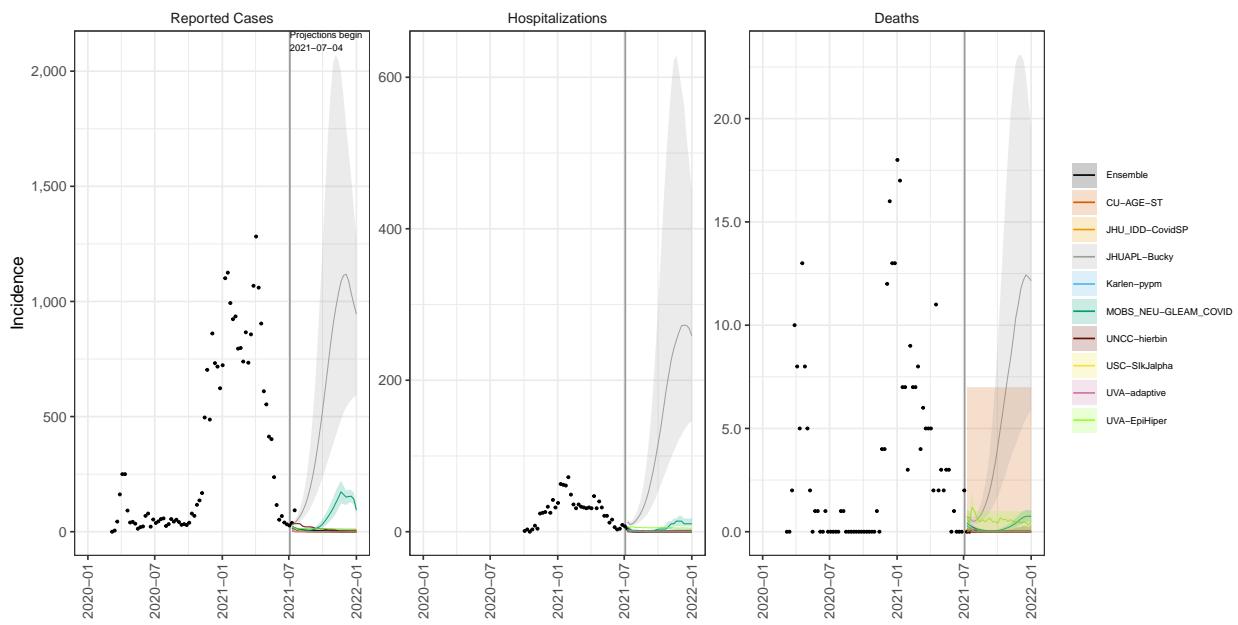
### TX model variance & 50% projection intervals – High vaccination, Low variant transmissibility



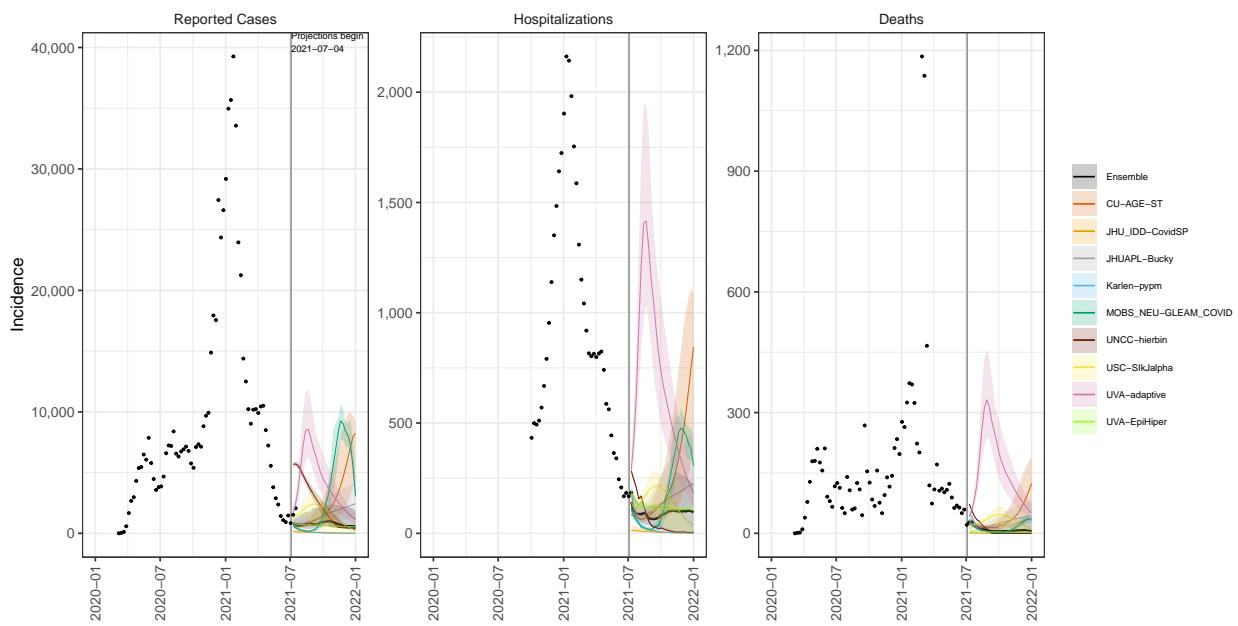
UT model variance & 50% projection intervals – High vaccination, Low variant transmissibility



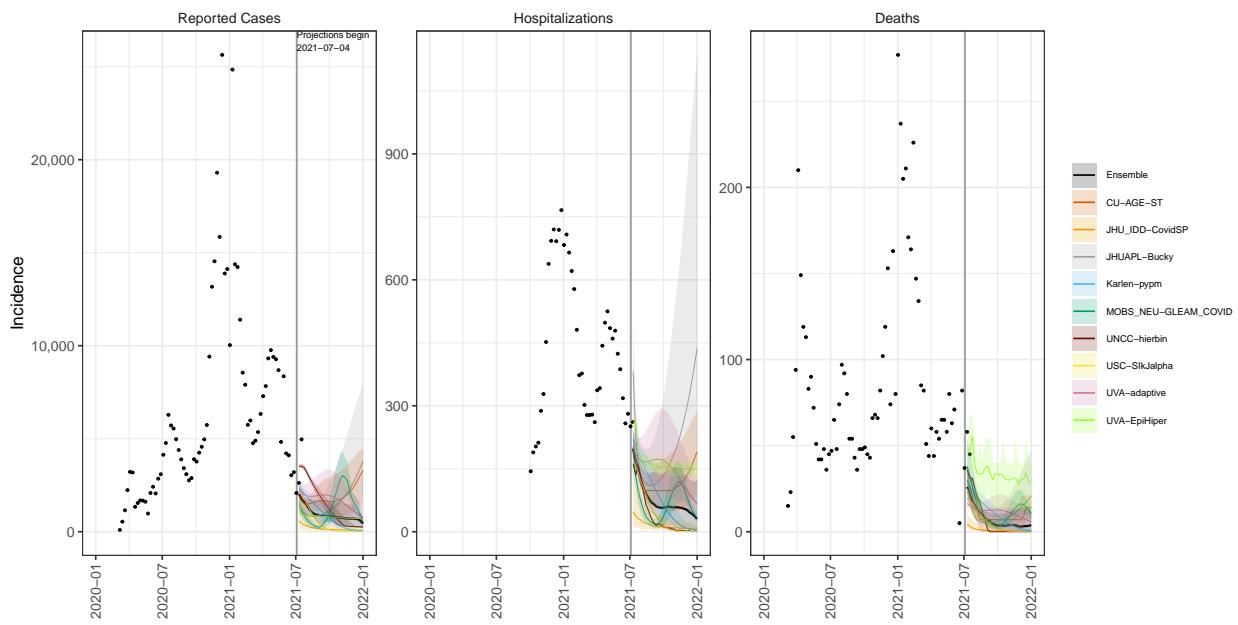
VT model variance & 50% projection intervals – High vaccination, Low variant transmissibility



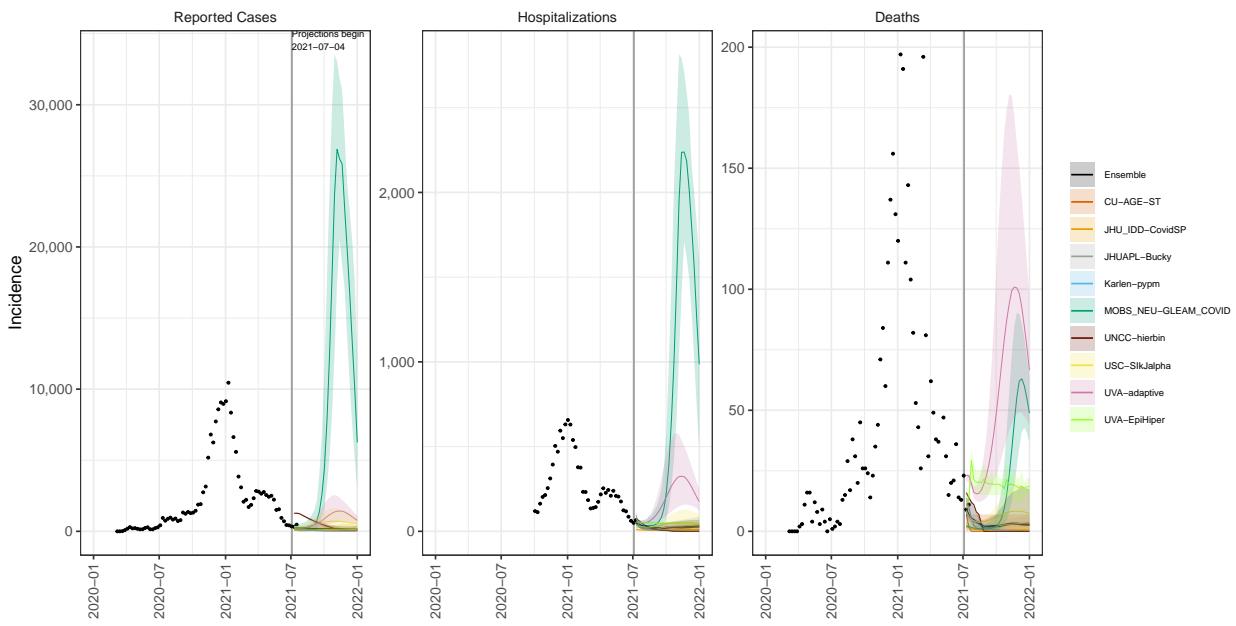
VA model variance & 50% projection intervals – High vaccination, Low variant transmissibility



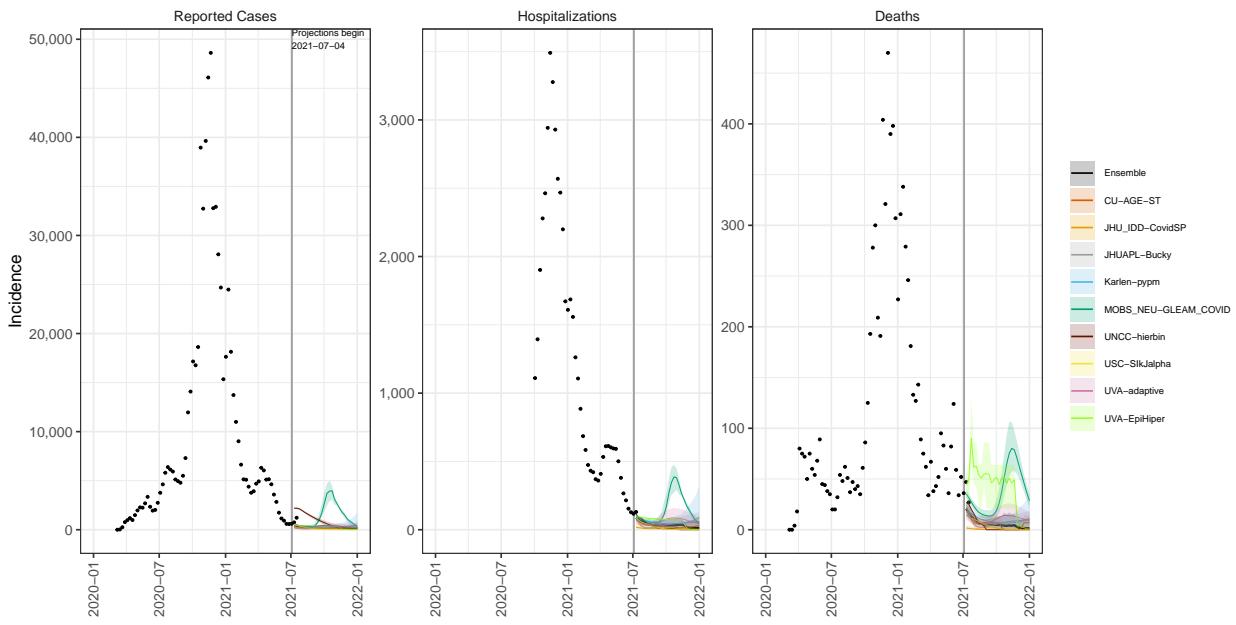
WA model variance & 50% projection intervals – High vaccination, Low variant transmissibility



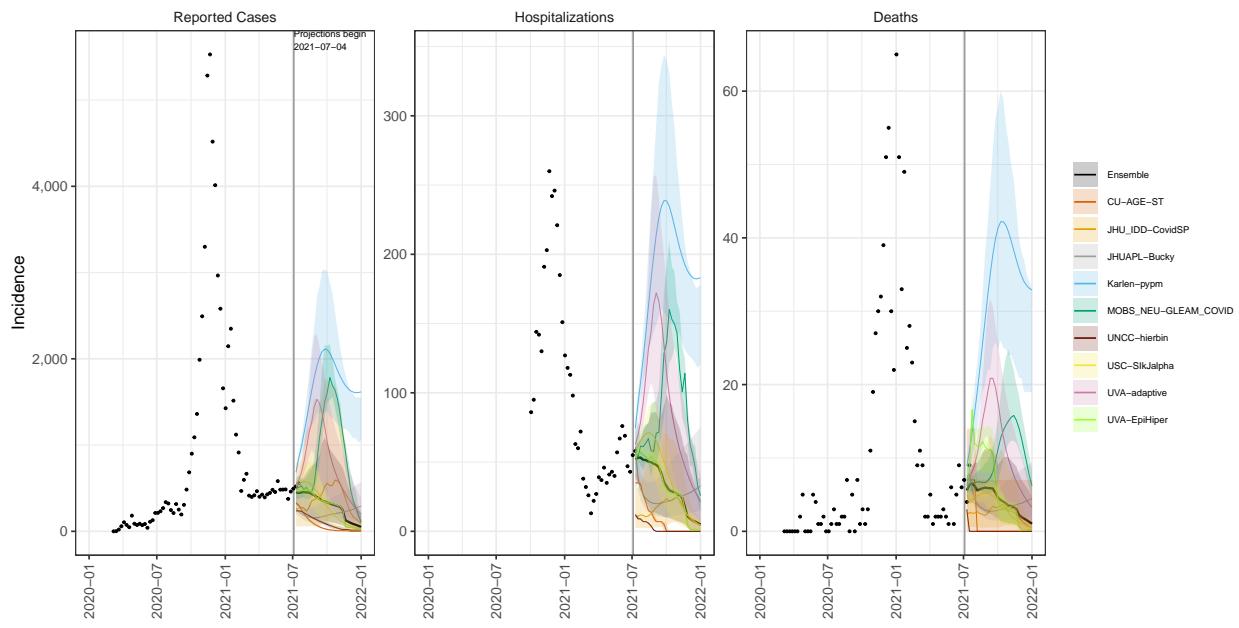
WV model variance & 50% projection intervals – High vaccination, Low variant transmissibility



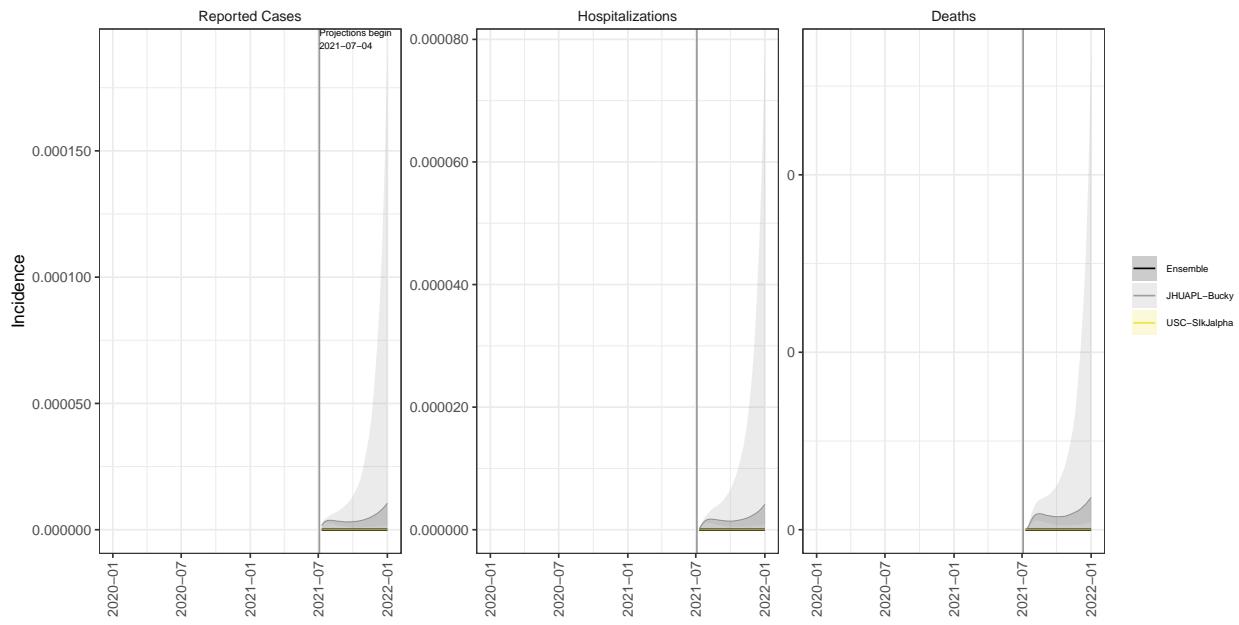
WI model variance & 50% projection intervals – High vaccination, Low variant transmissibility



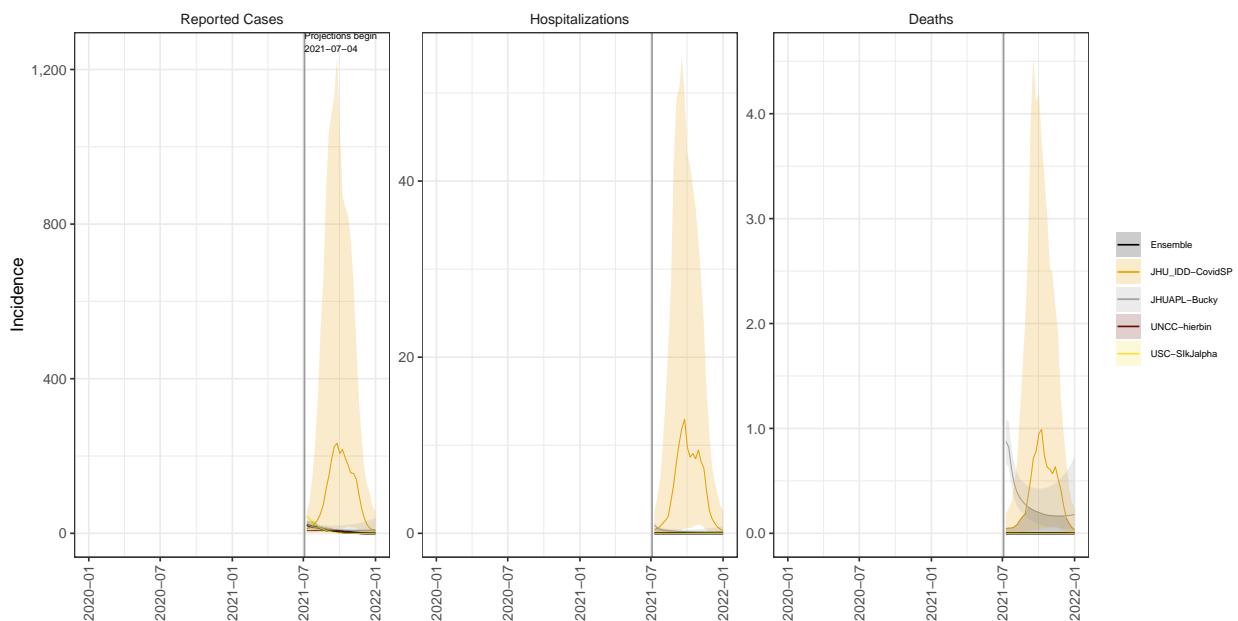
WY model variance & 50% projection intervals – High vaccination, Low variant transmissibility



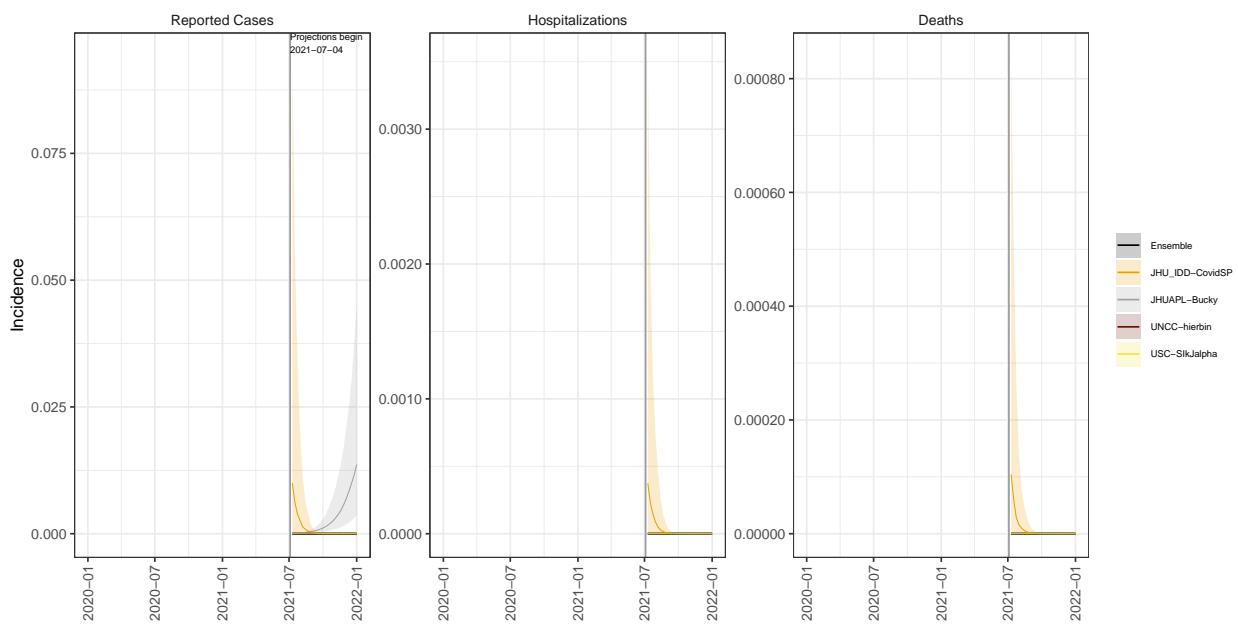
AS model variance & 50% projection intervals – High vaccination, Low variant transmissibility



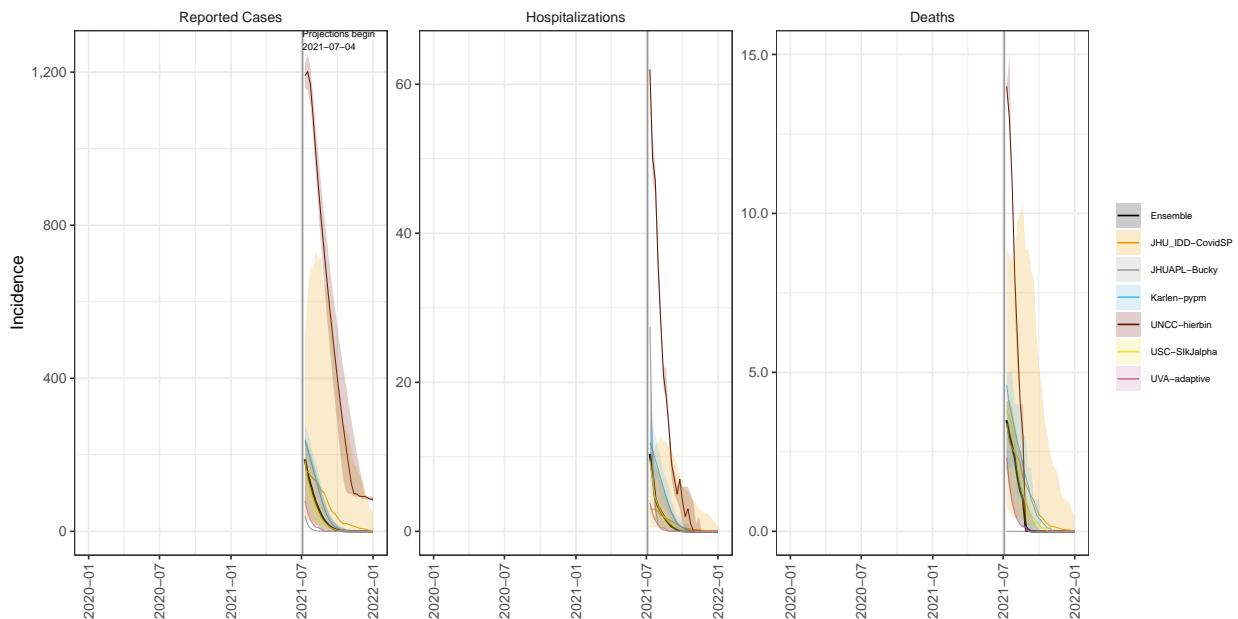
GU model variance & 50% projection intervals – High vaccination, Low variant transmissibility



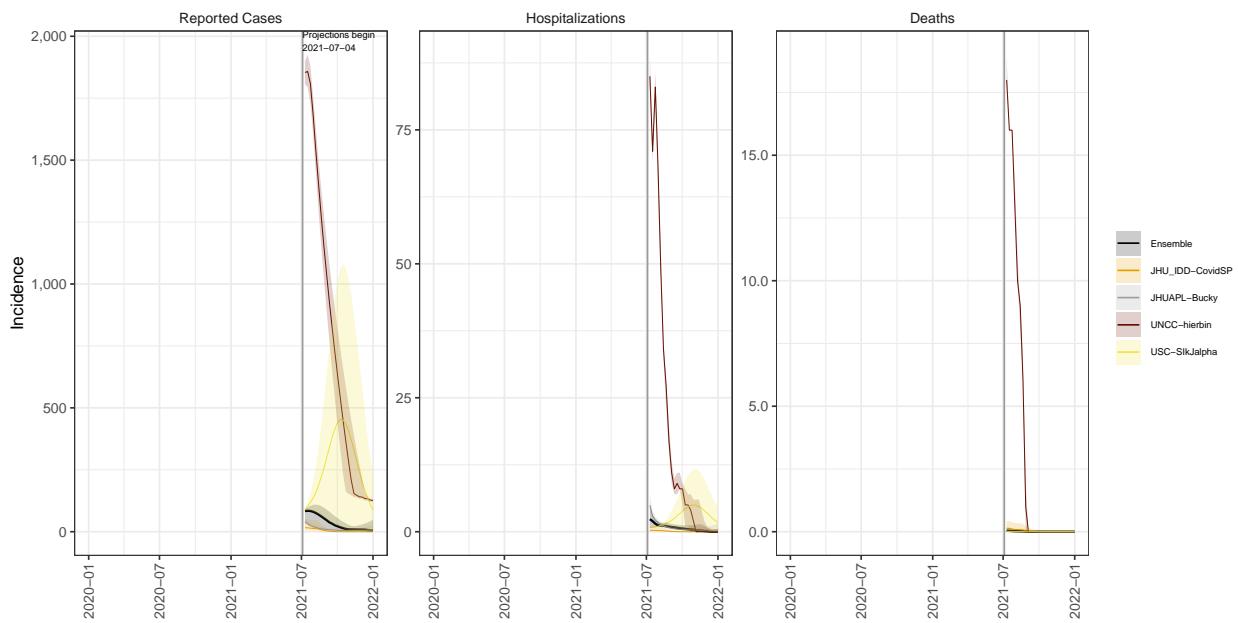
MP model variance & 50% projection intervals – High vaccination, Low variant transmissibility



PR model variance & 50% projection intervals – High vaccination, Low variant transmissibility

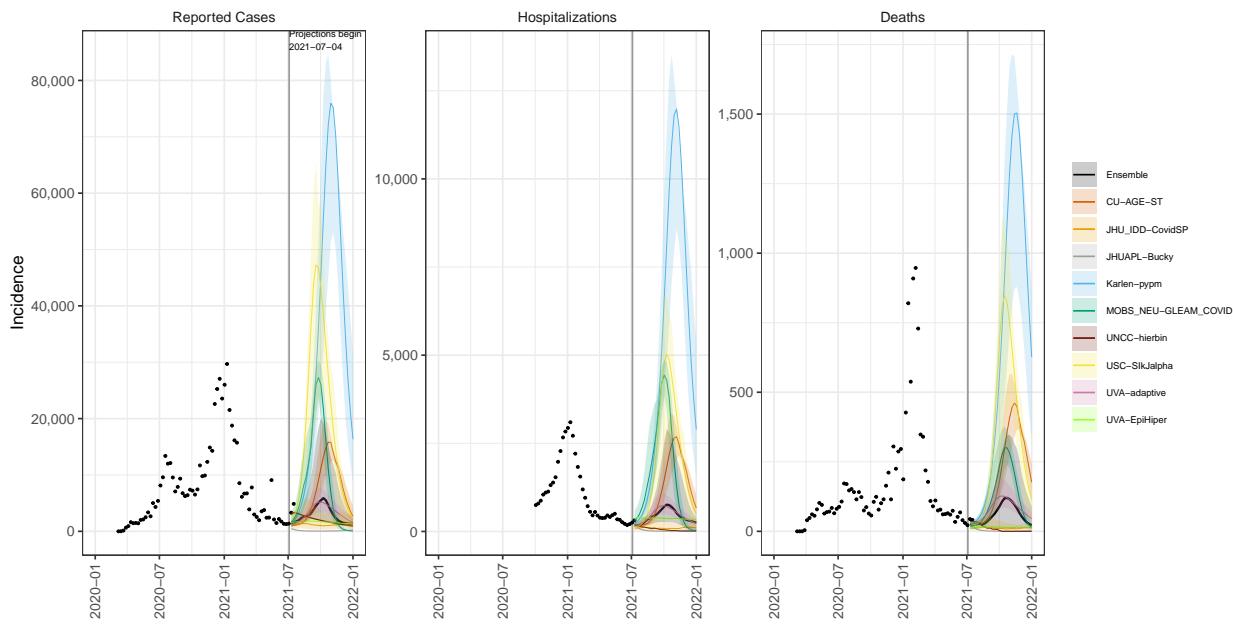


VI model variance & 50% projection intervals – High vaccination, Low variant transmissibility

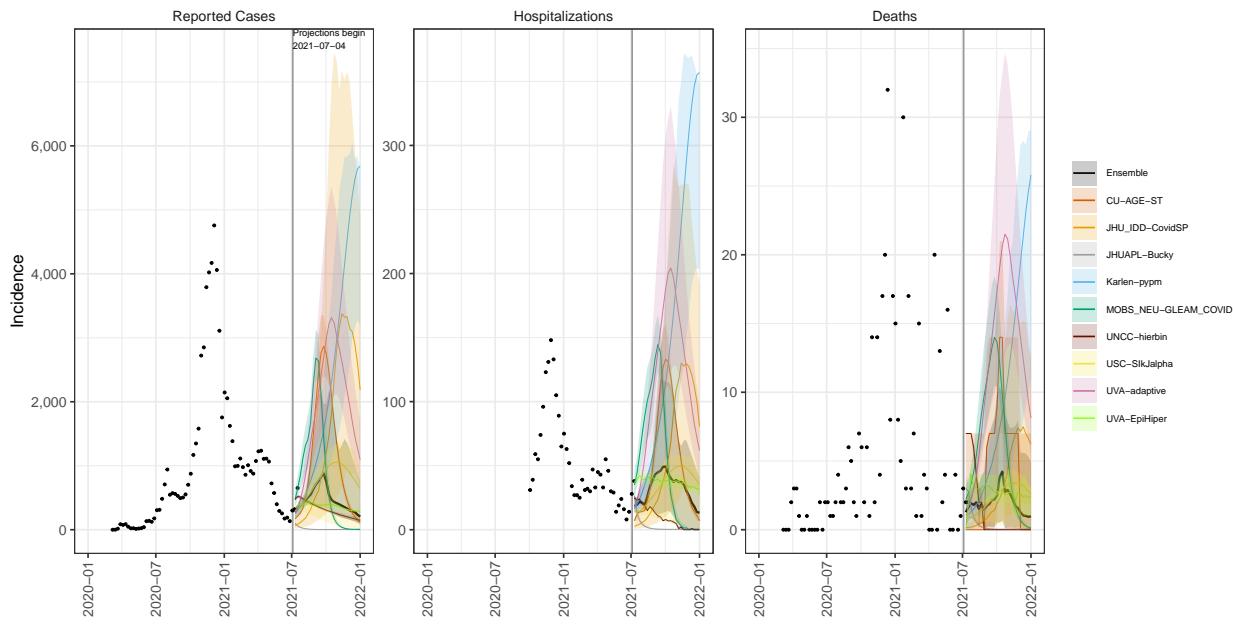


National model variation for the low vaccination, high variant transmissibility scenario

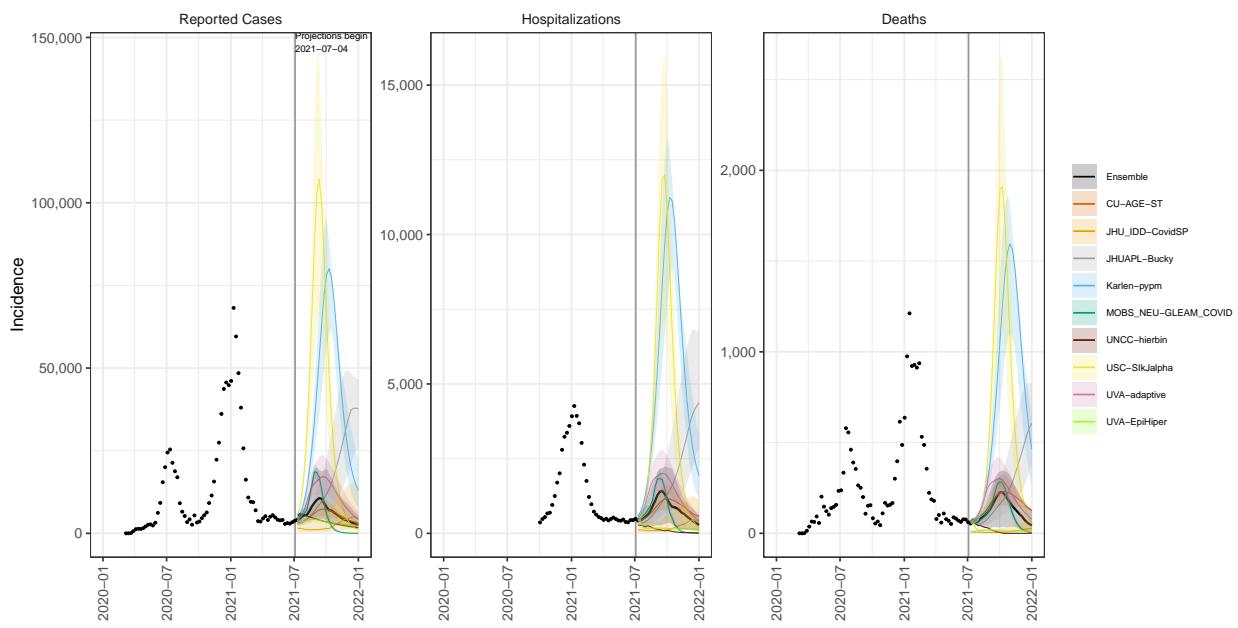
AL model variance & 50% projection intervals – Low vaccination, High variant transmissibility



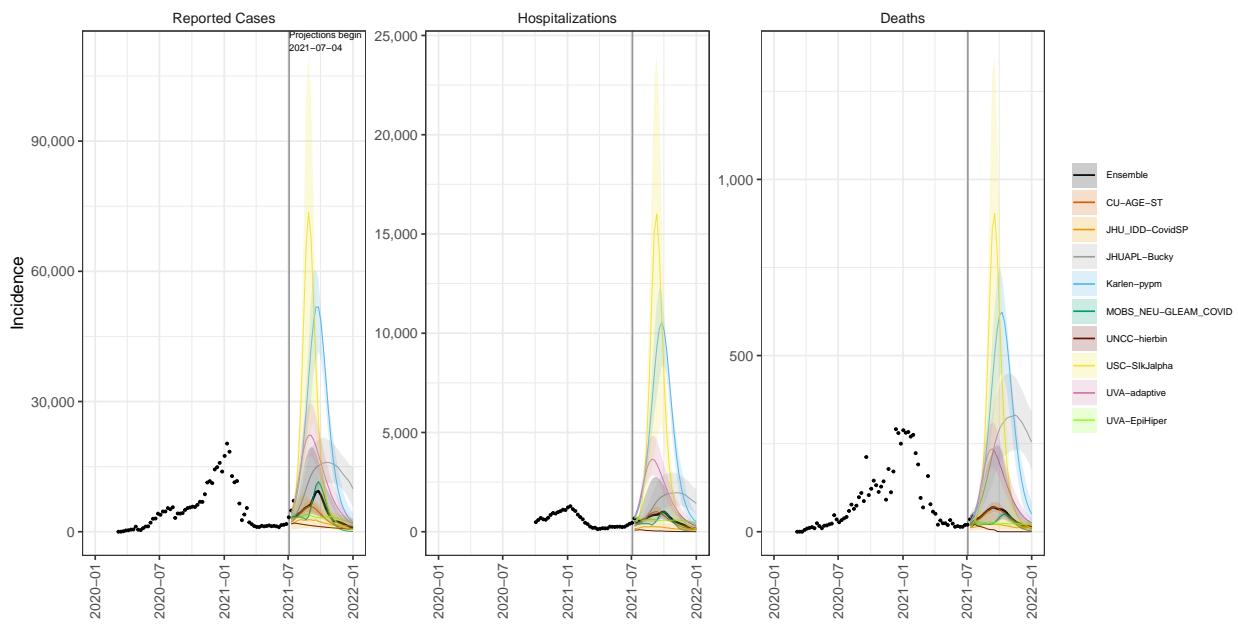
AK model variance & 50% projection intervals – Low vaccination, High variant transmissibility



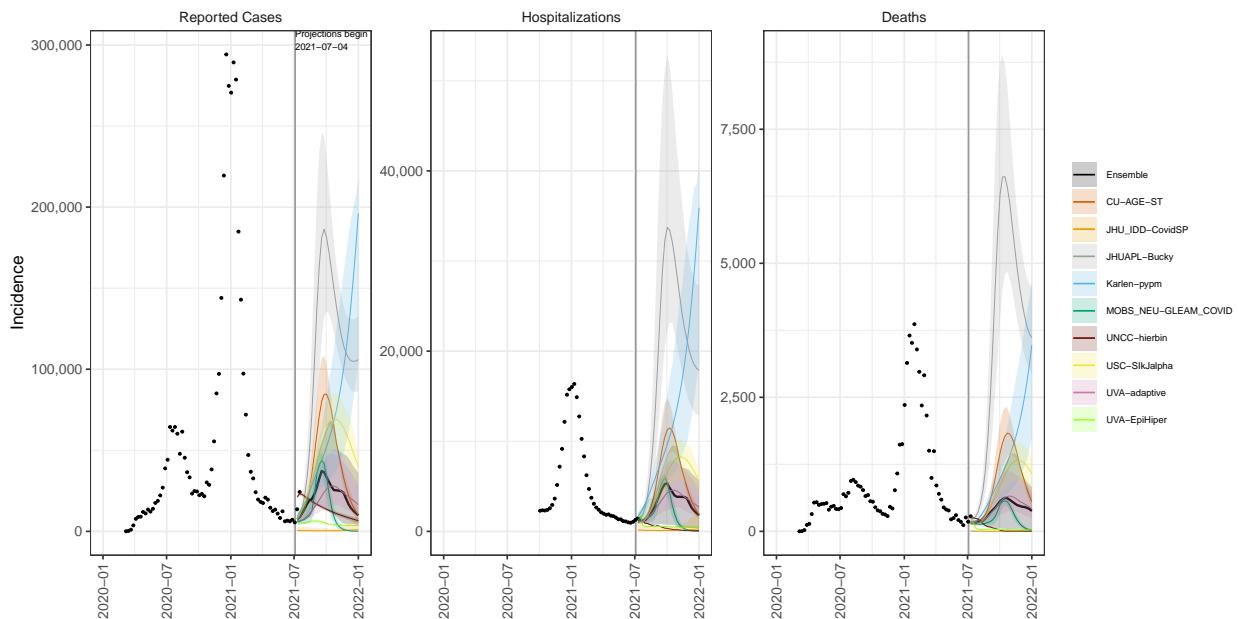
AZ model variance & 50% projection intervals – Low vaccination, High variant transmissibility



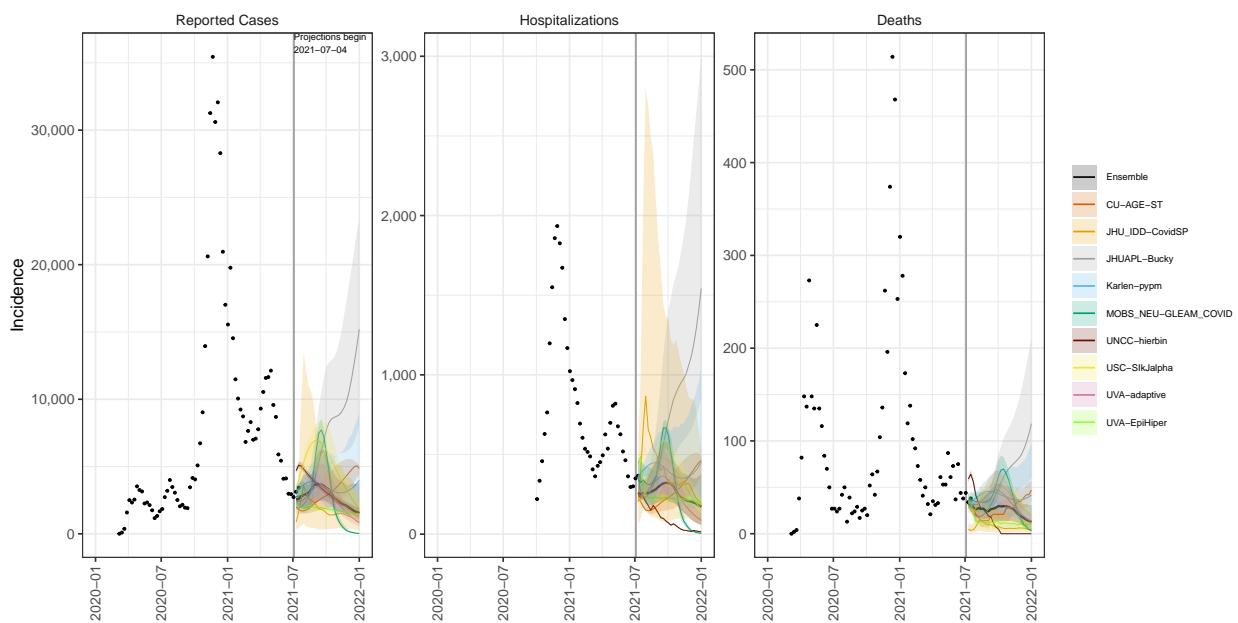
AR model variance & 50% projection intervals – Low vaccination, High variant transmissibility



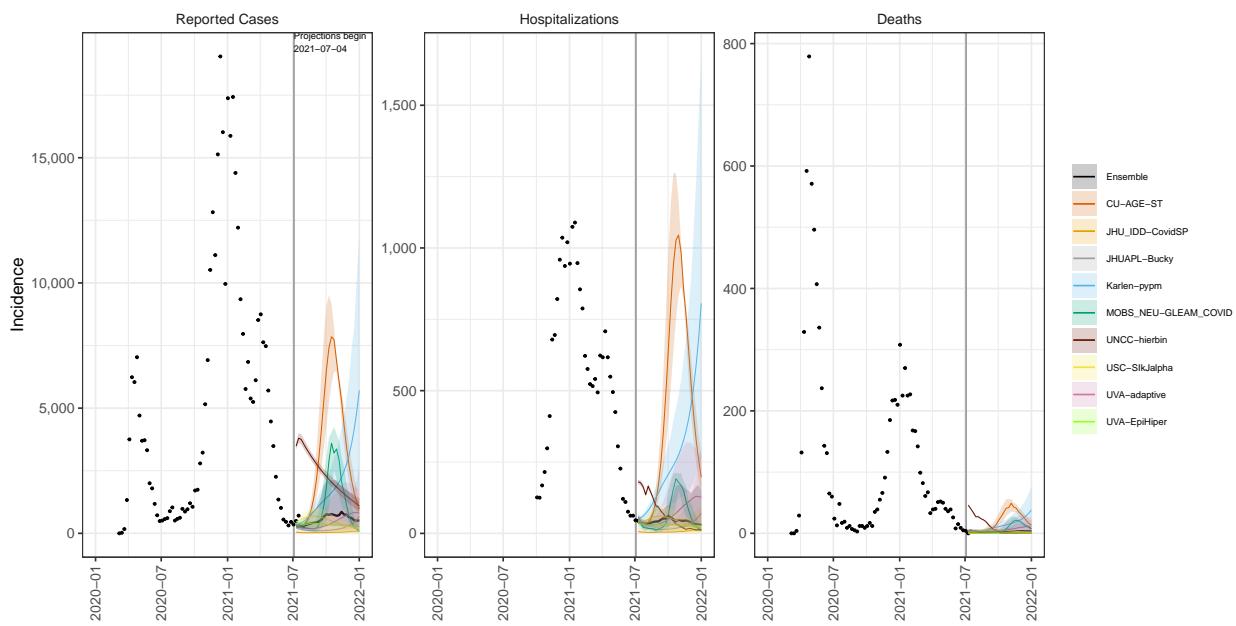
### CA model variance & 50% projection intervals – Low vaccination, High variant transmissibility



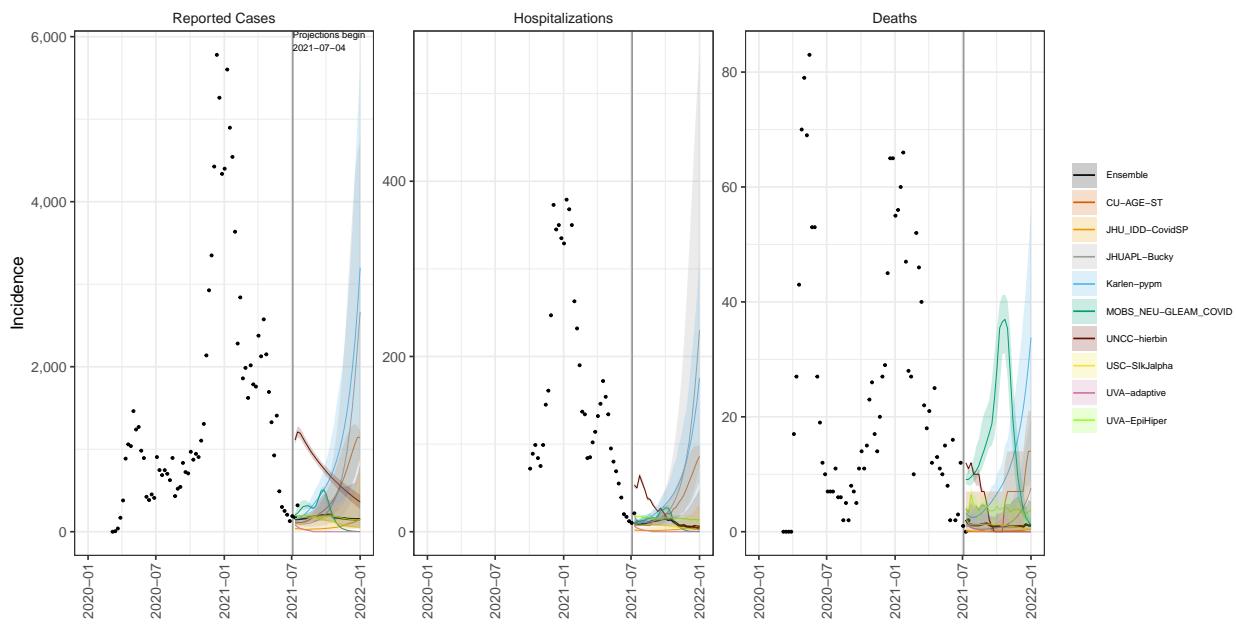
### CO model variance & 50% projection intervals – Low vaccination, High variant transmissibility



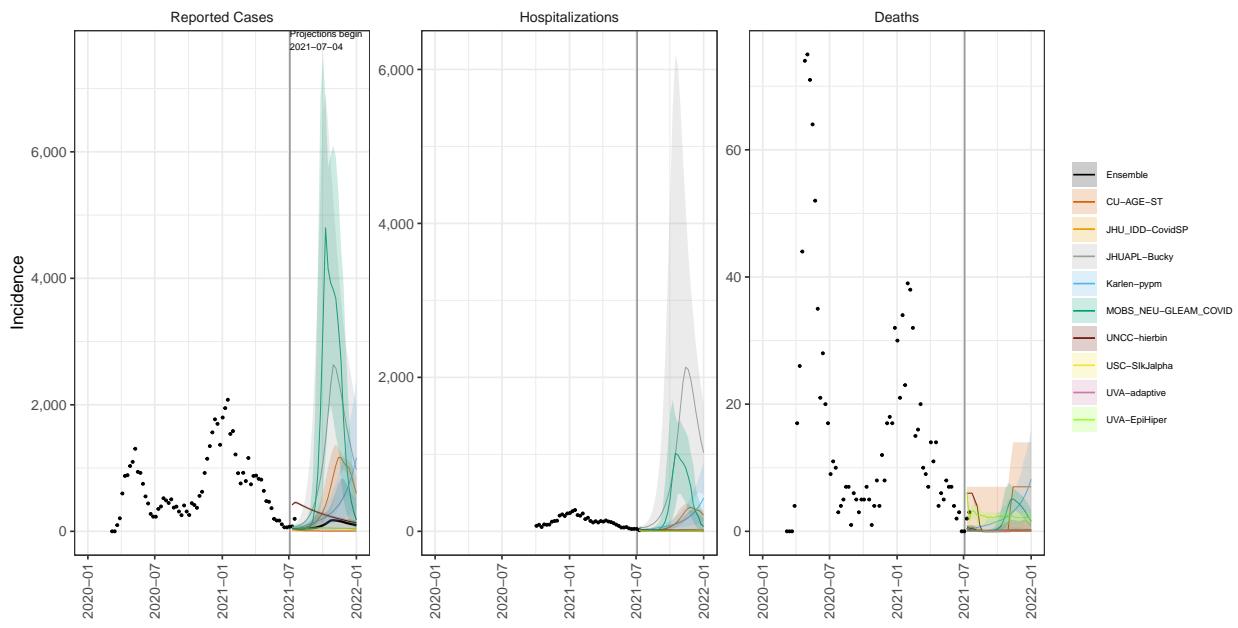
### CT model variance & 50% projection intervals – Low vaccination, High variant transmissibility



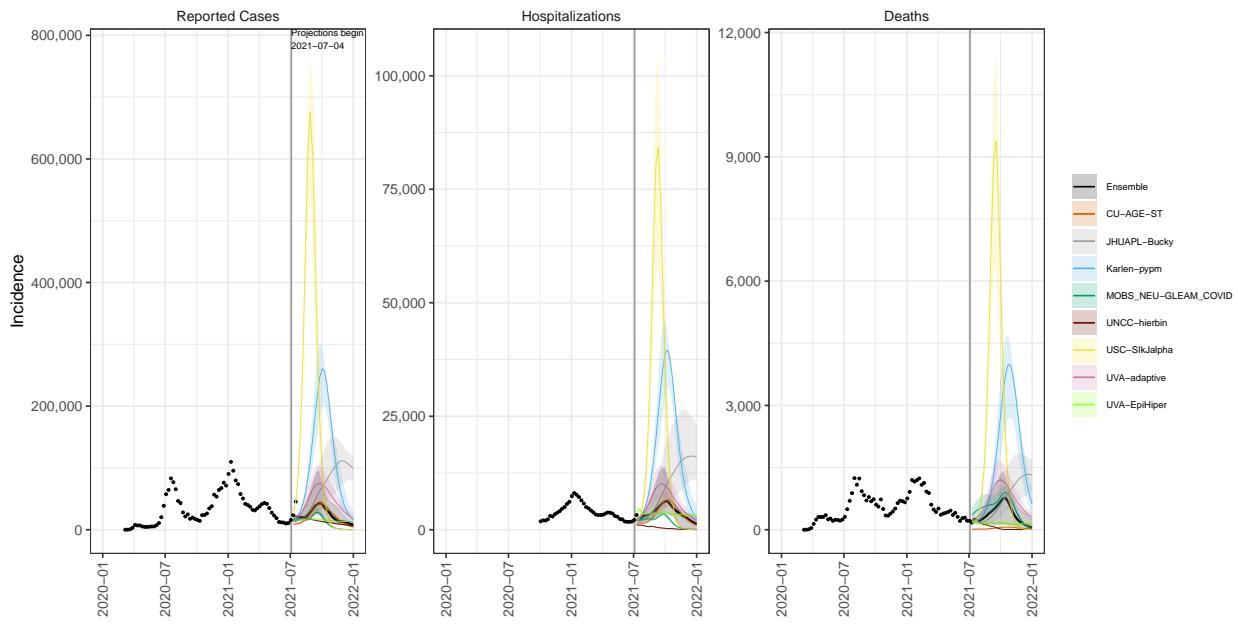
### DE model variance & 50% projection intervals – Low vaccination, High variant transmissibility



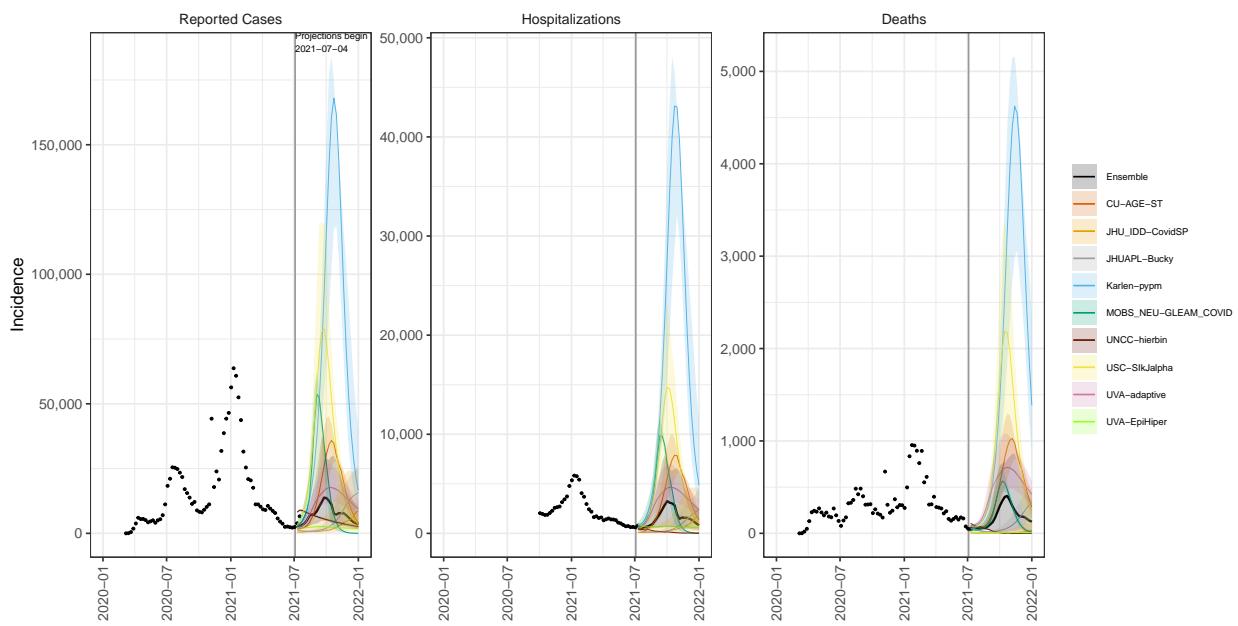
DC model variance & 50% projection intervals – Low vaccination, High variant transmissibility



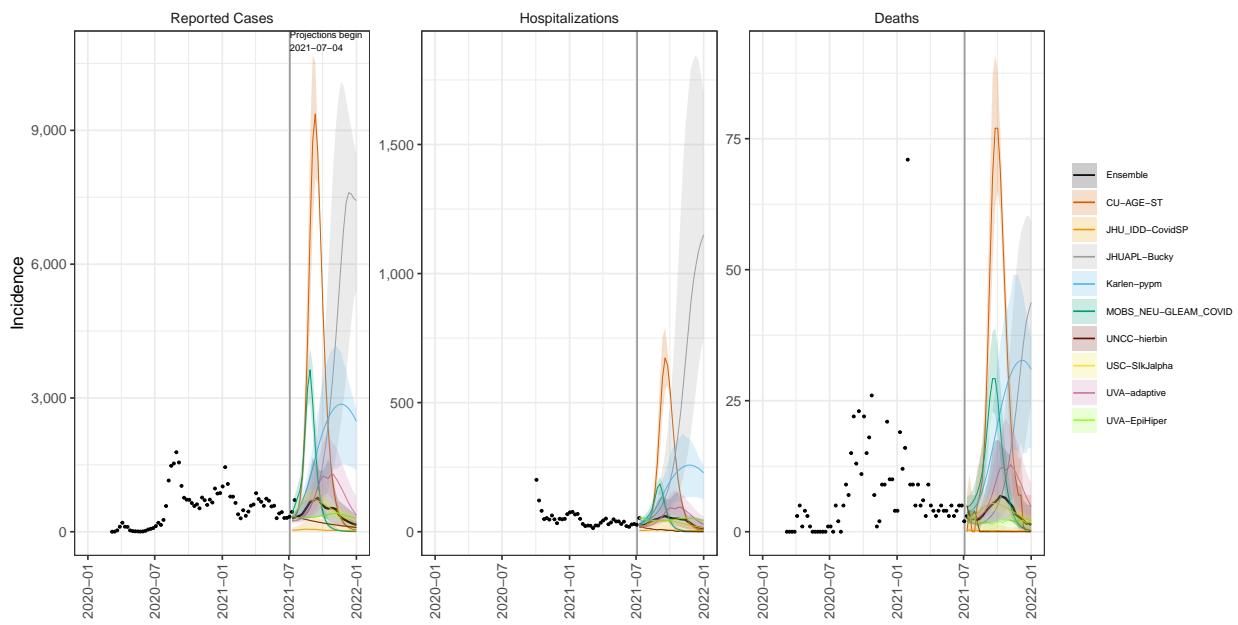
FL model variance & 50% projection intervals – Low vaccination, High variant transmissibility



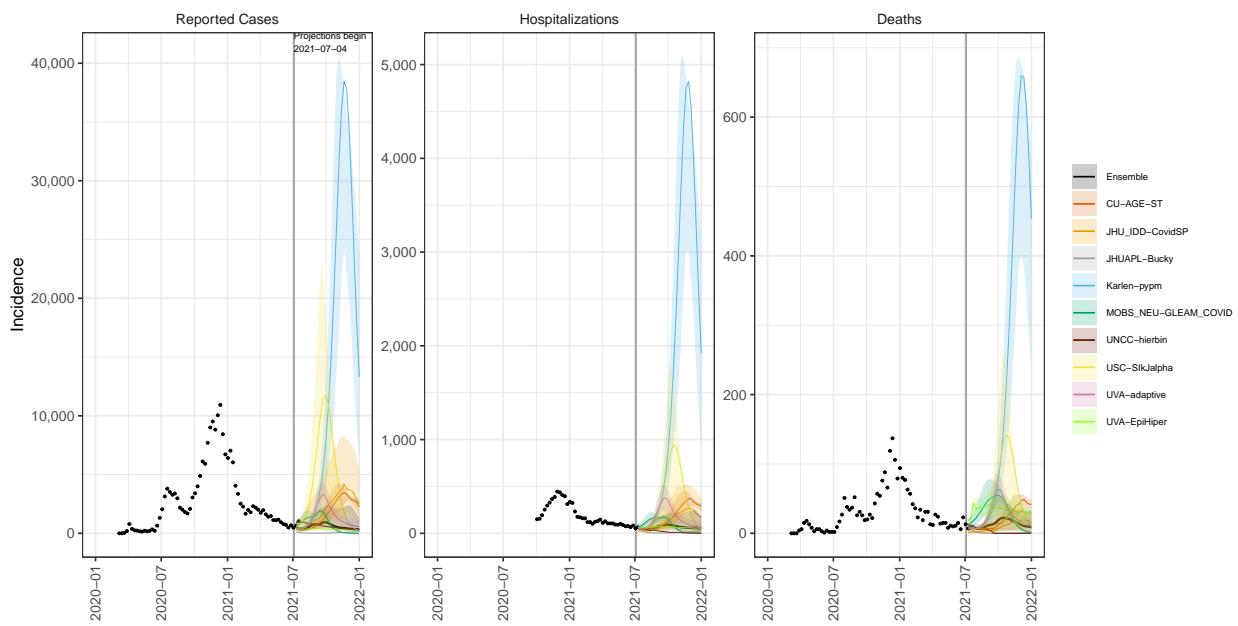
### GA model variance & 50% projection intervals – Low vaccination, High variant transmissibility



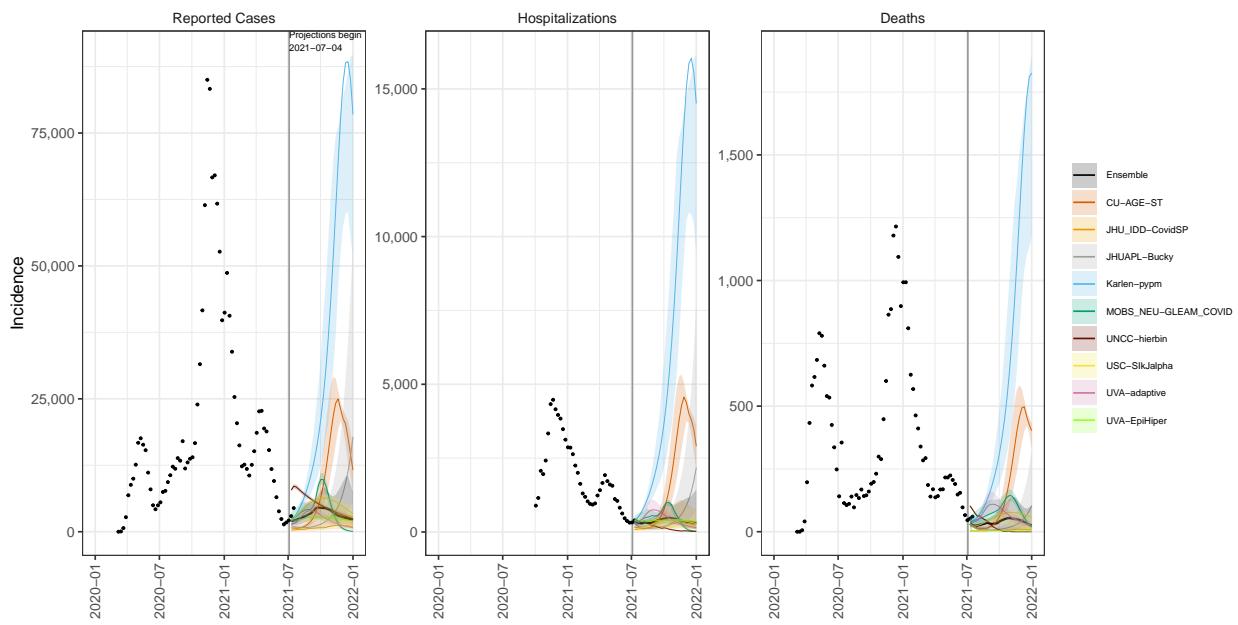
### HI model variance & 50% projection intervals – Low vaccination, High variant transmissibility



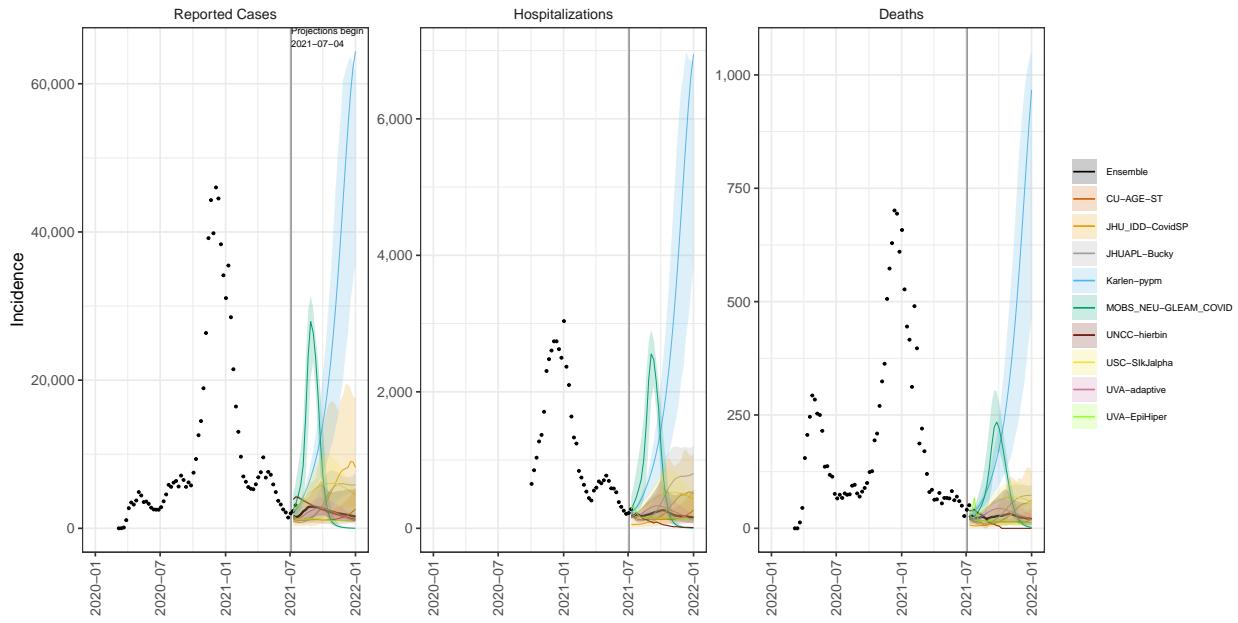
ID model variance & 50% projection intervals – Low vaccination, High variant transmissibility



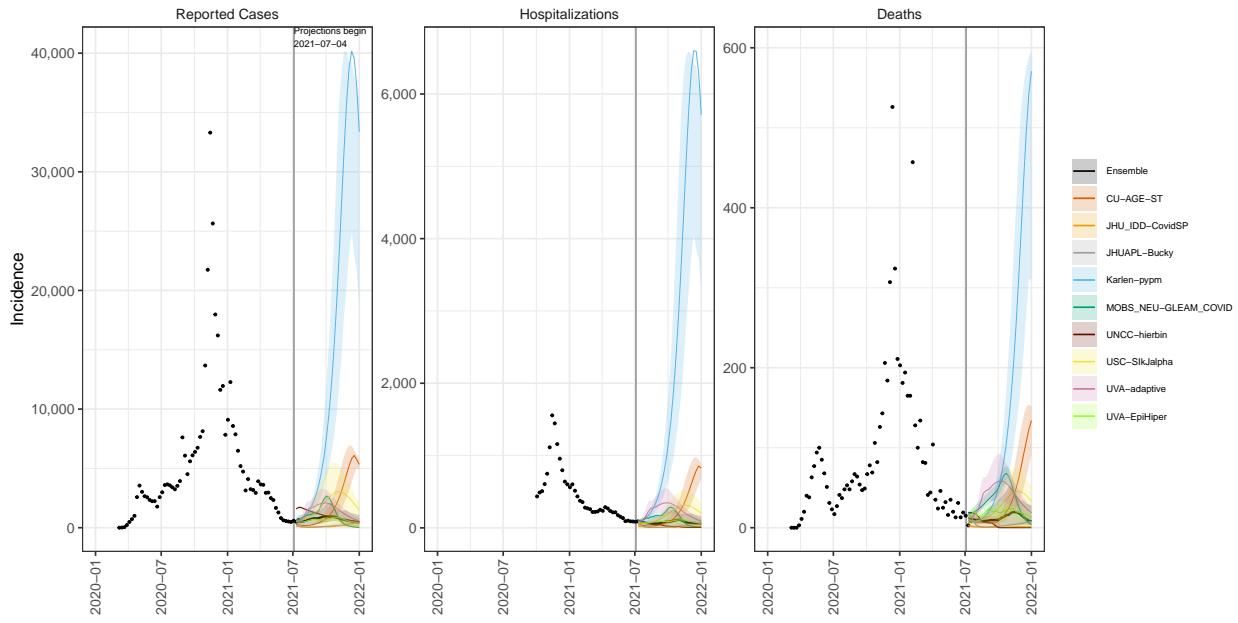
IL model variance & 50% projection intervals – Low vaccination, High variant transmissibility



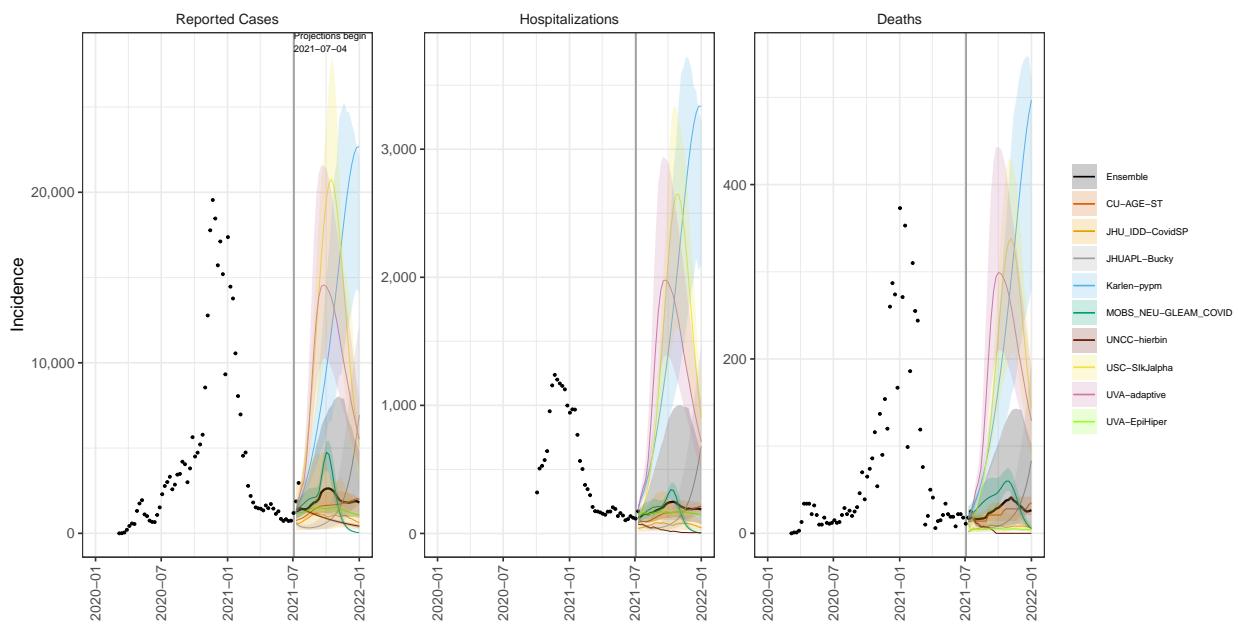
IN model variance & 50% projection intervals – Low vaccination, High variant transmissibility



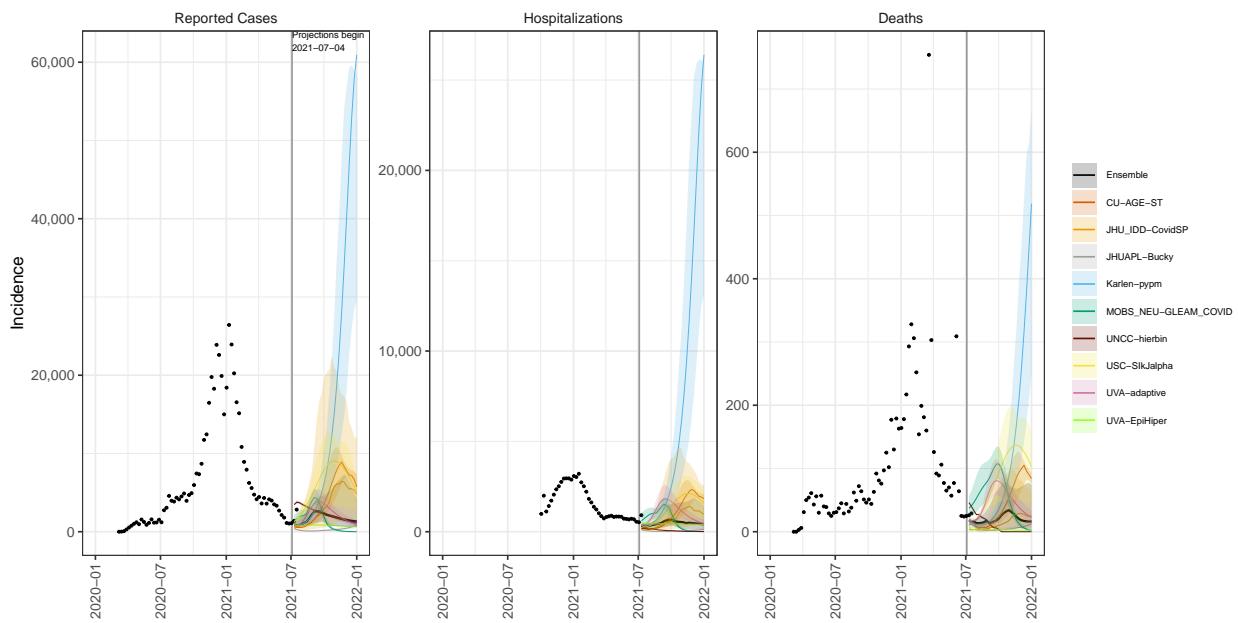
IA model variance & 50% projection intervals – Low vaccination, High variant transmissibility



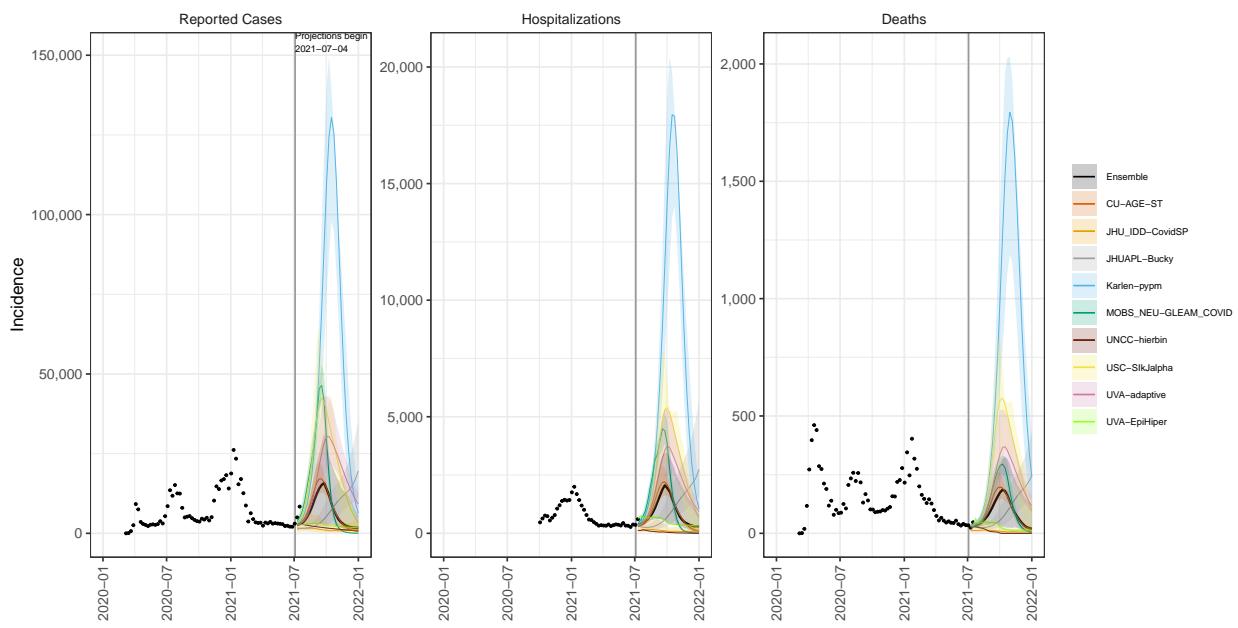
### KS model variance & 50% projection intervals – Low vaccination, High variant transmissibility



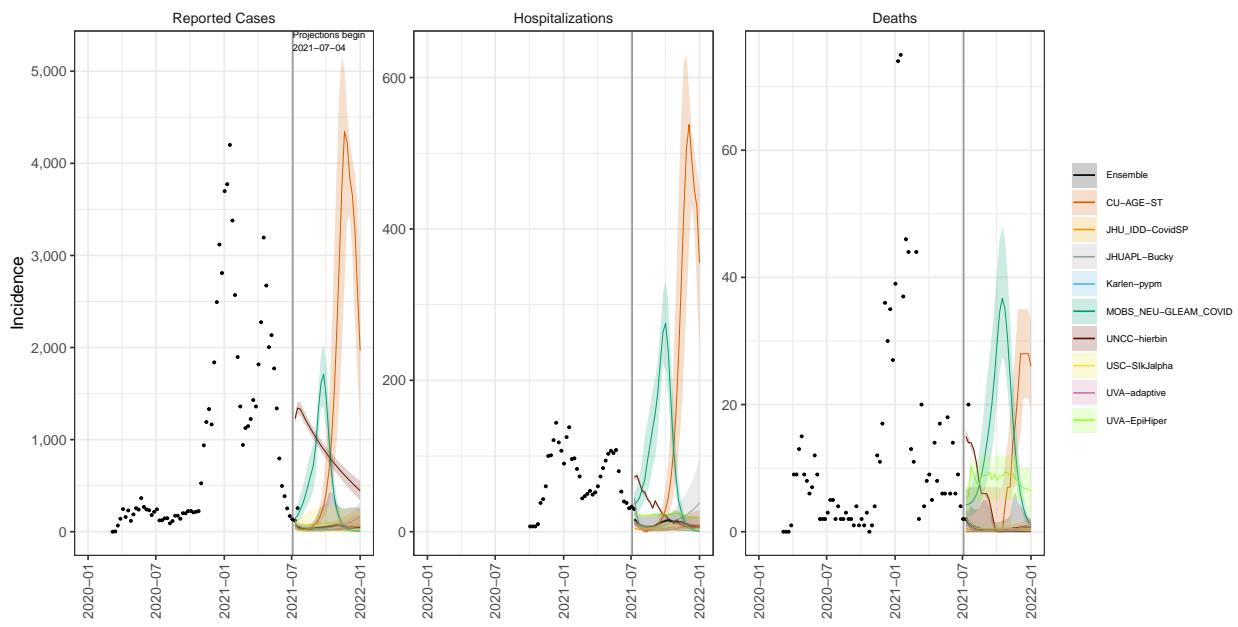
### KY model variance & 50% projection intervals – Low vaccination, High variant transmissibility



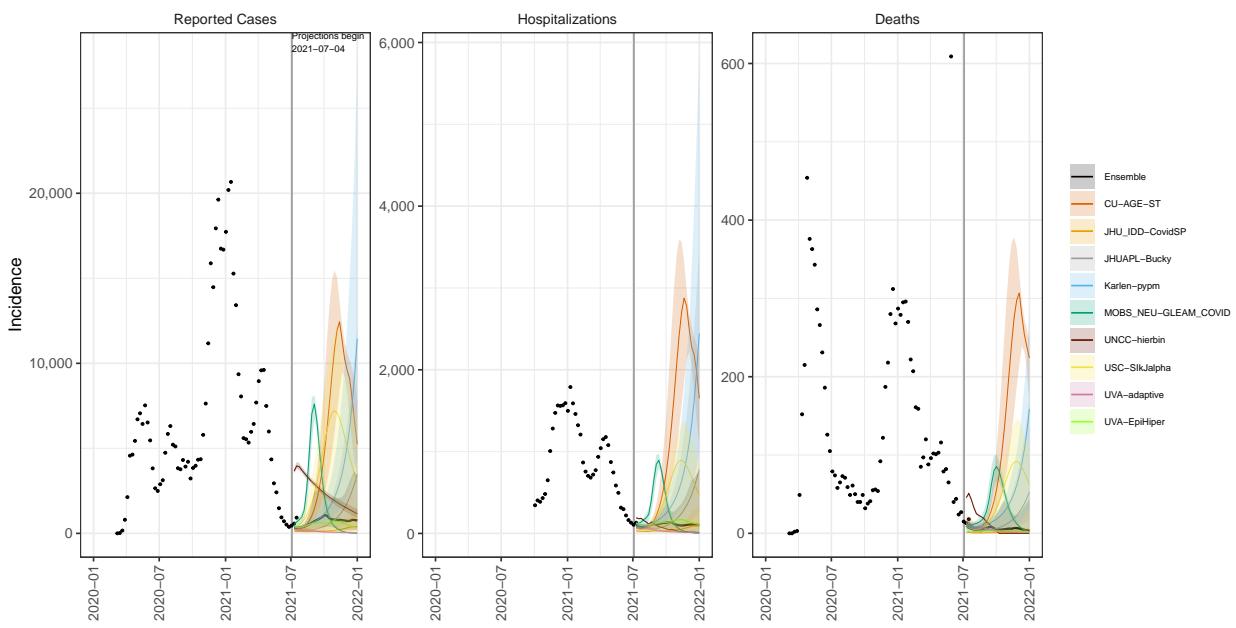
LA model variance & 50% projection intervals – Low vaccination, High variant transmissibility



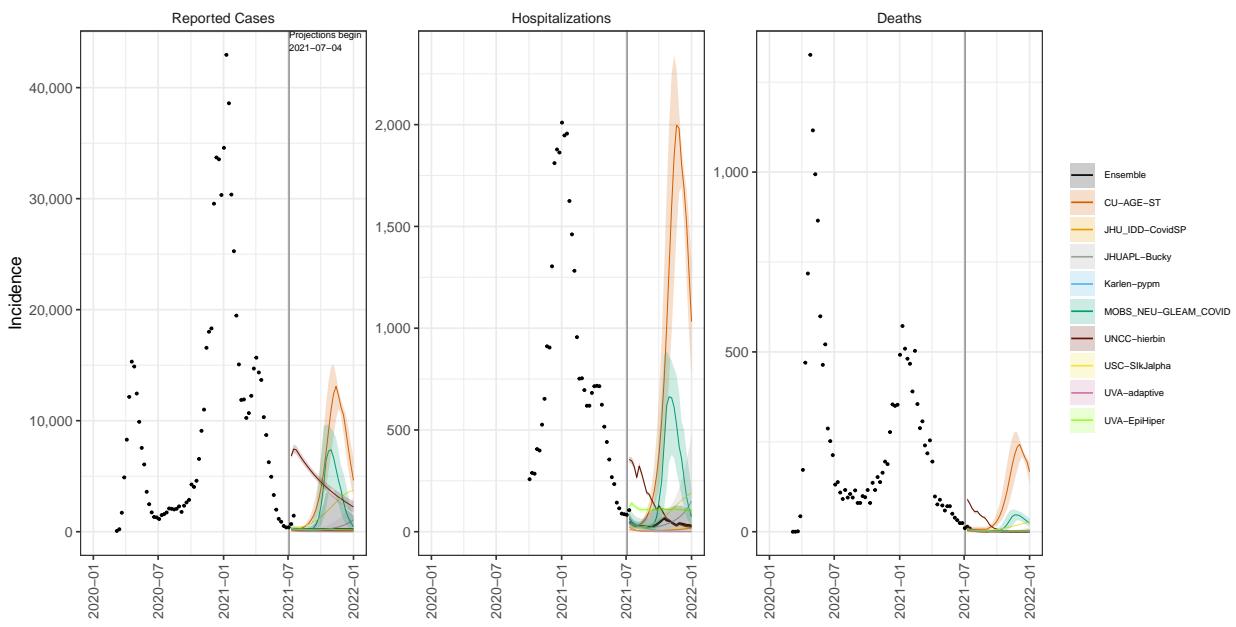
ME model variance & 50% projection intervals – Low vaccination, High variant transmissibility



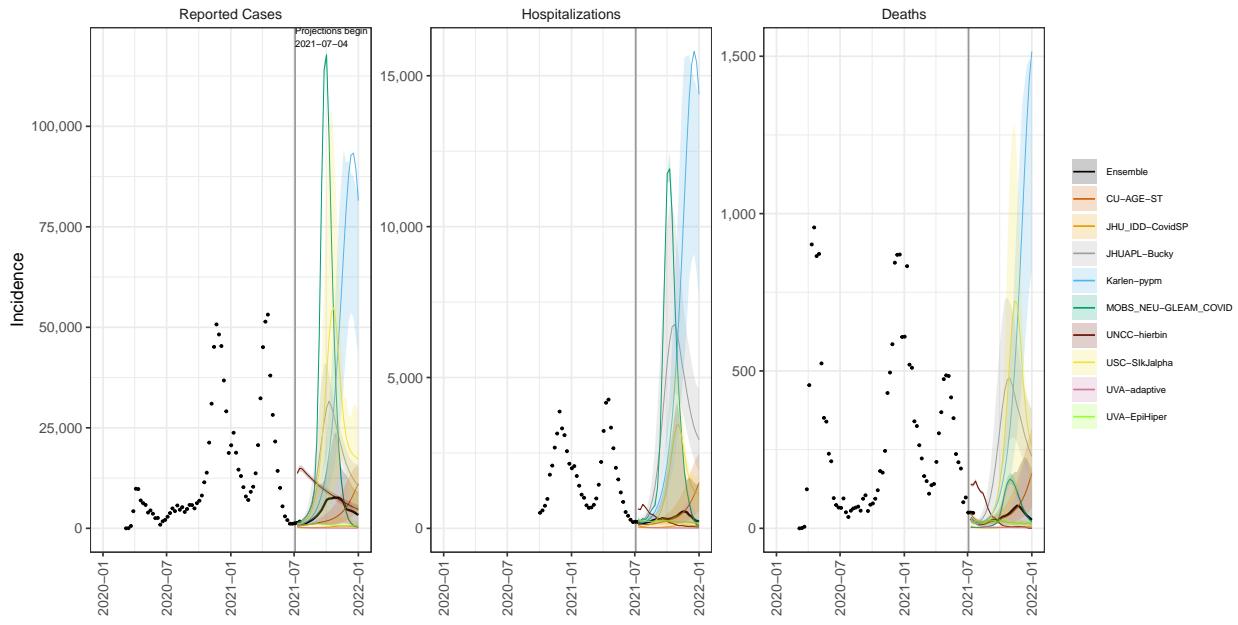
MD model variance & 50% projection intervals – Low vaccination, High variant transmissibility



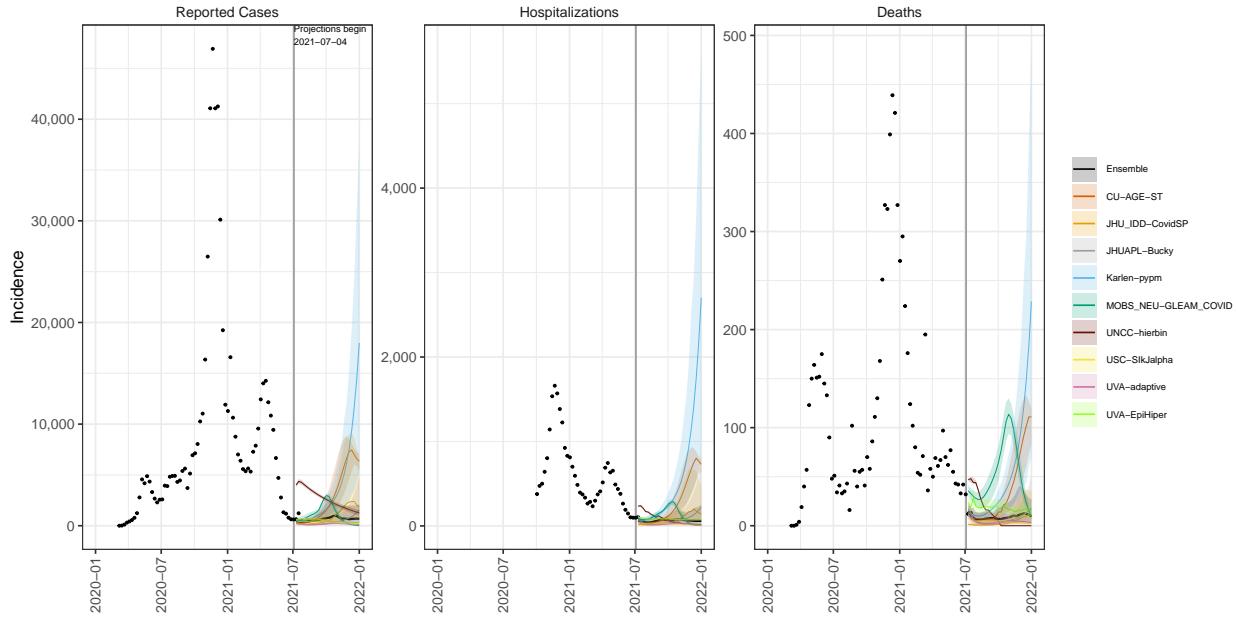
MA model variance & 50% projection intervals – Low vaccination, High variant transmissibility



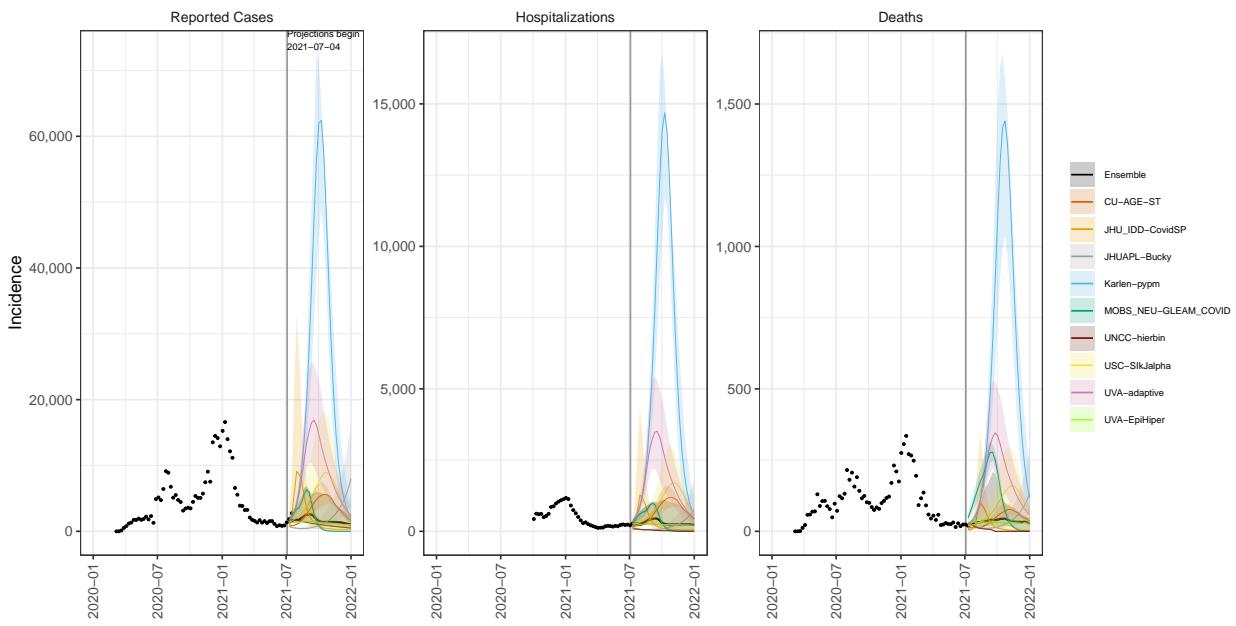
### MI model variance & 50% projection intervals – Low vaccination, High variant transmissibility



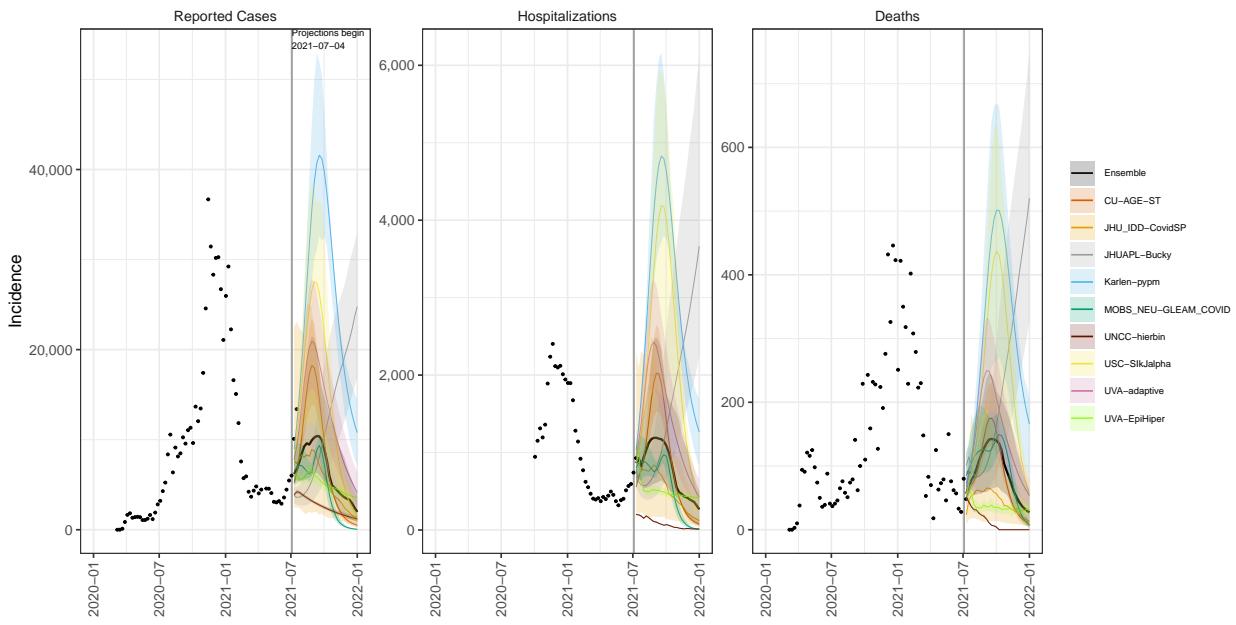
### MN model variance & 50% projection intervals – Low vaccination, High variant transmissibility



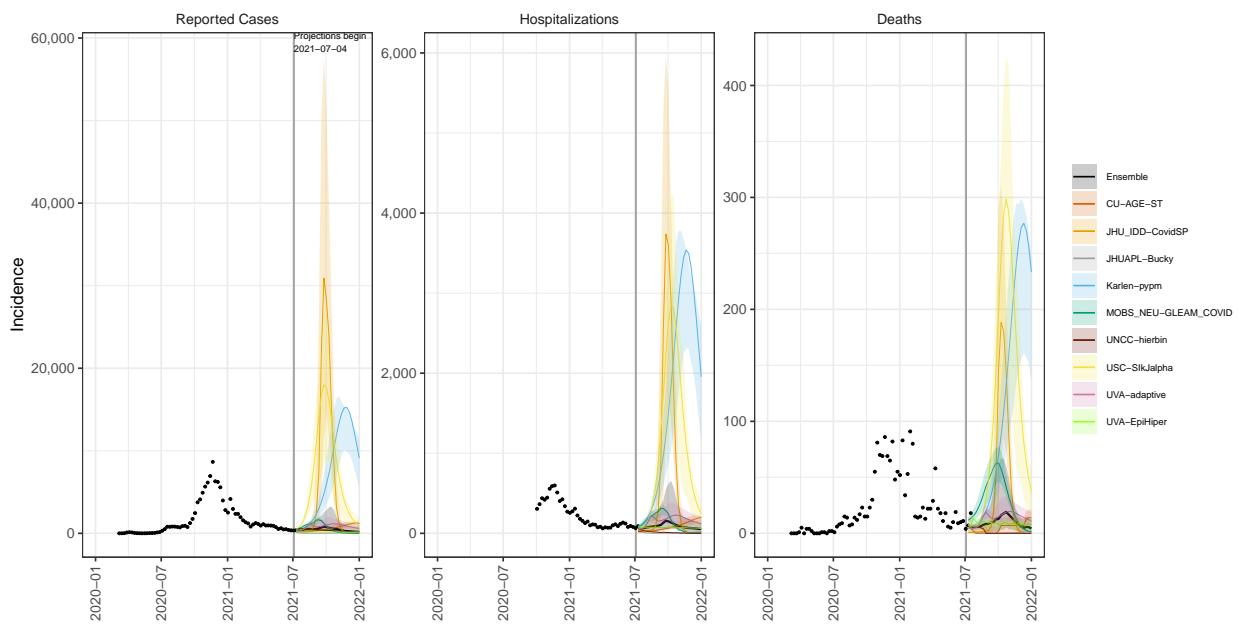
### MS model variance & 50% projection intervals – Low vaccination, High variant transmissibility



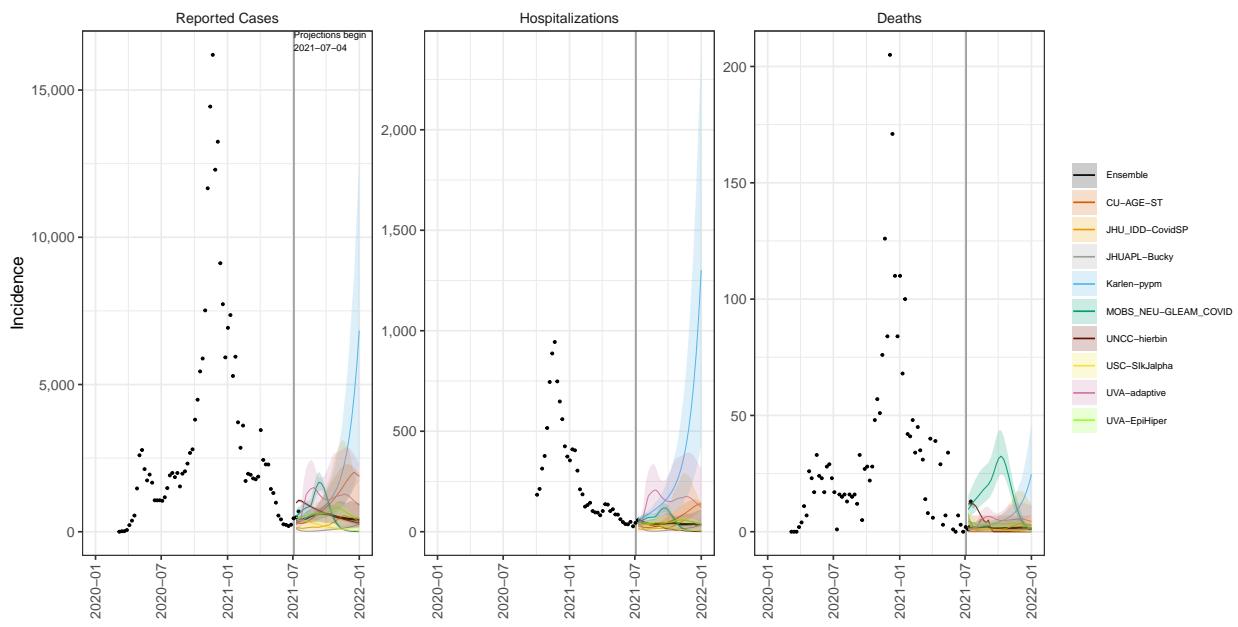
### MO model variance & 50% projection intervals – Low vaccination, High variant transmissibility



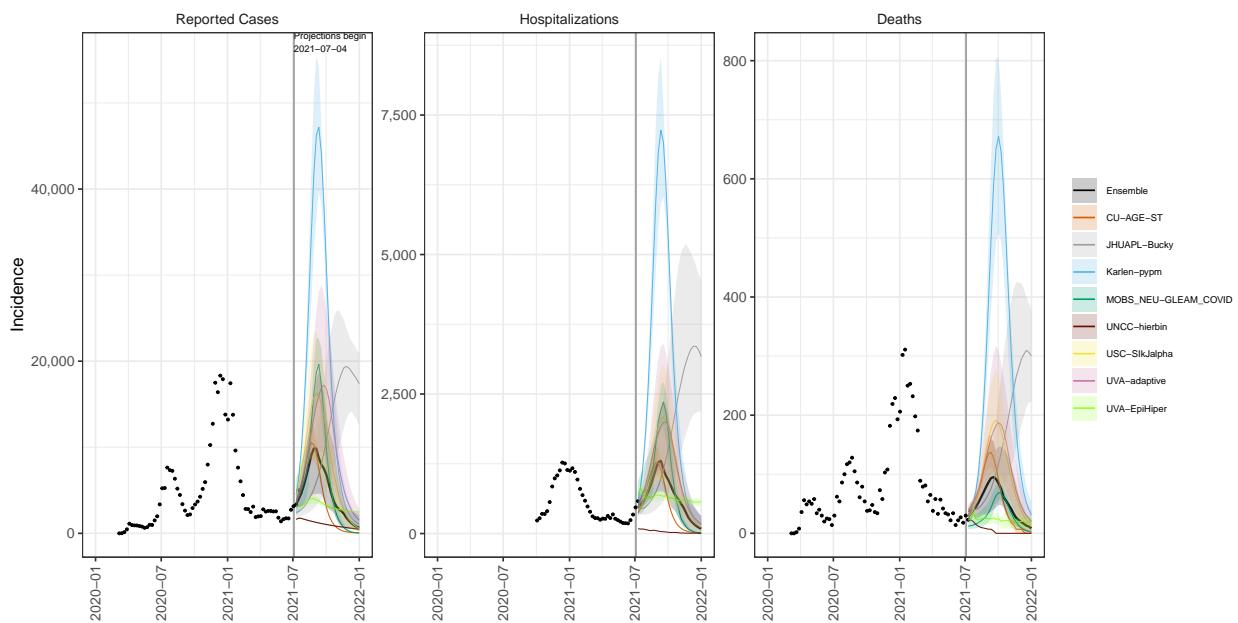
### MT model variance & 50% projection intervals – Low vaccination, High variant transmissibility



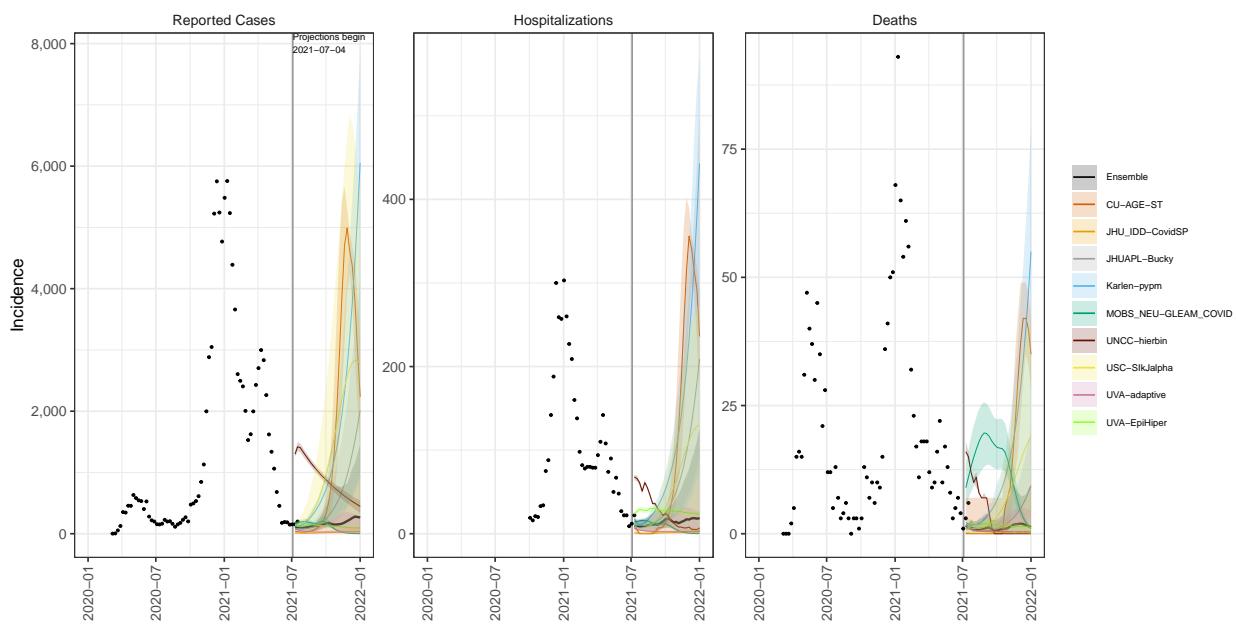
### NE model variance & 50% projection intervals – Low vaccination, High variant transmissibility



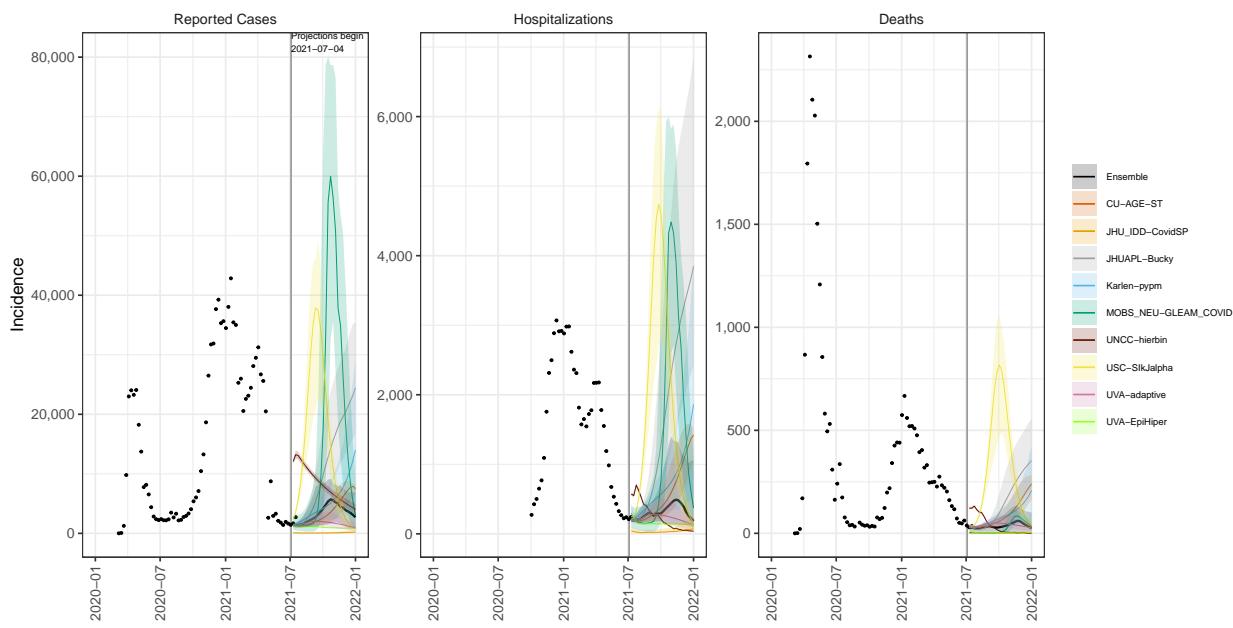
### NV model variance & 50% projection intervals – Low vaccination, High variant transmissibility



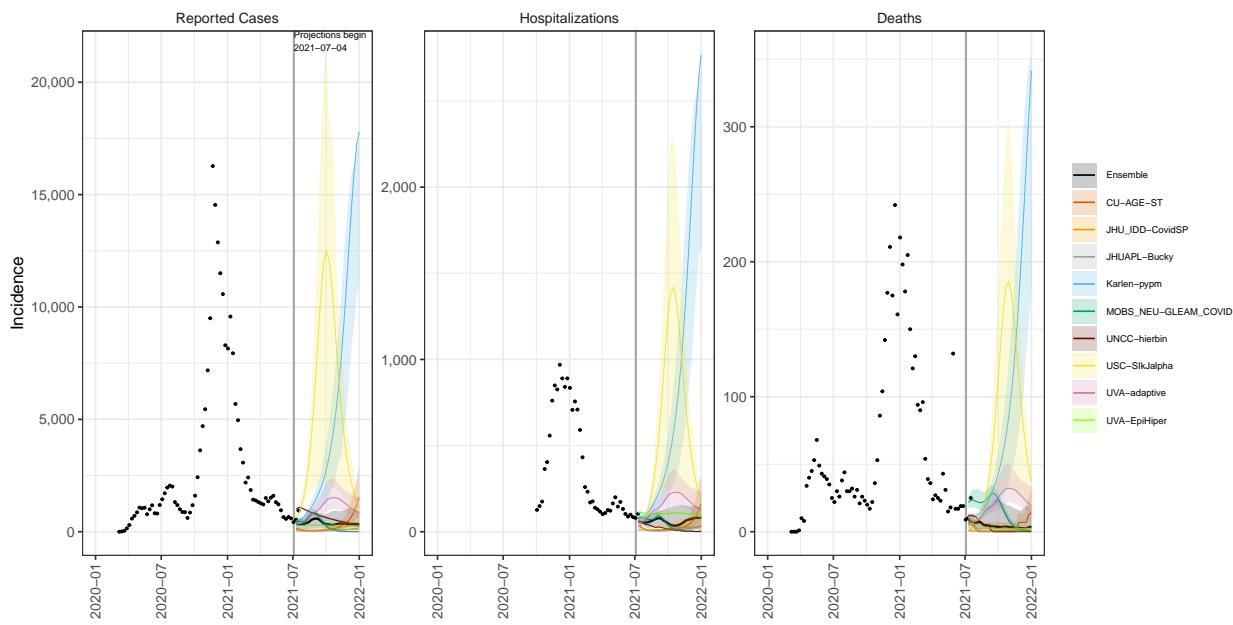
### NH model variance & 50% projection intervals – Low vaccination, High variant transmissibility



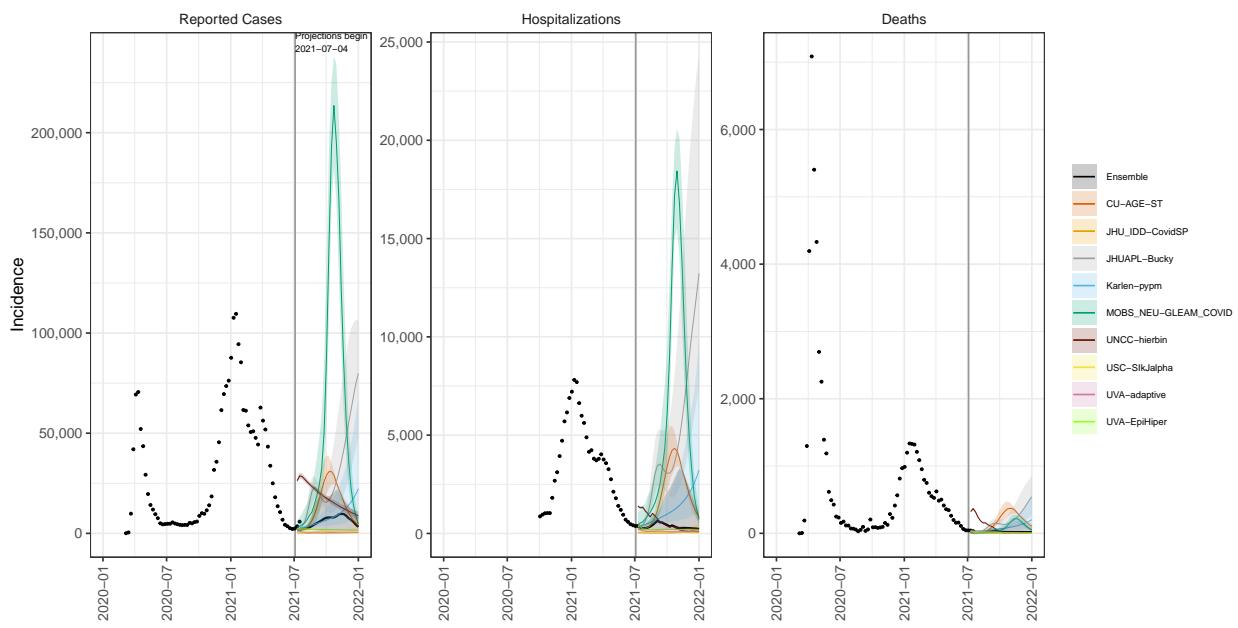
### NJ model variance & 50% projection intervals – Low vaccination, High variant transmissibility



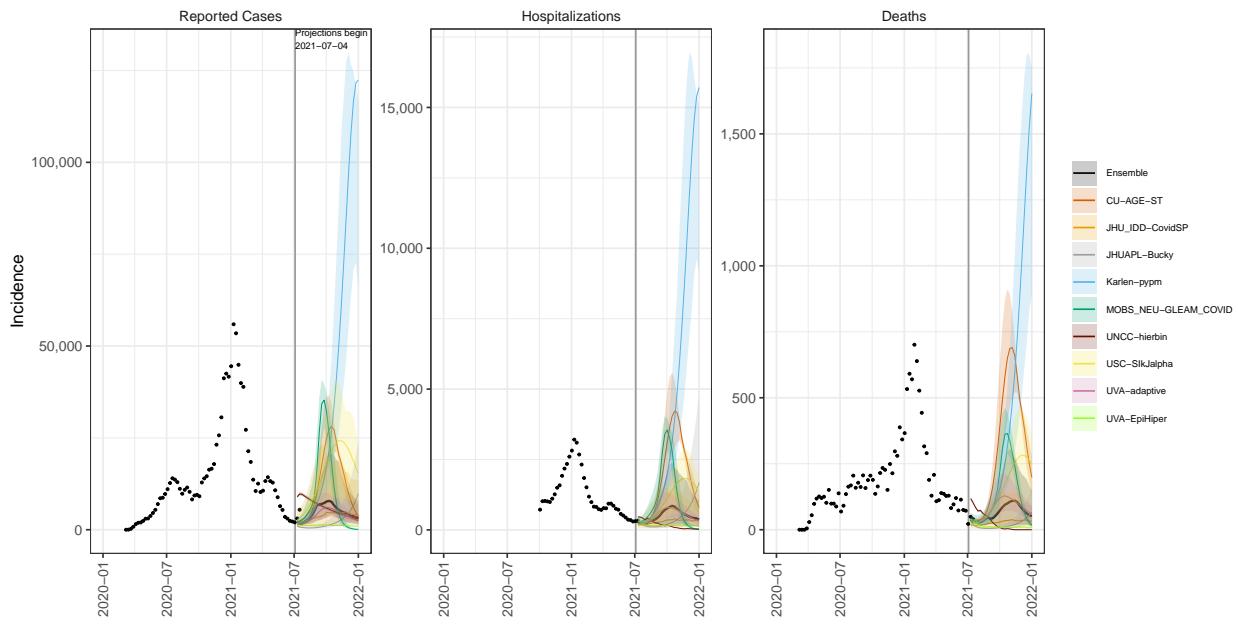
### NM model variance & 50% projection intervals – Low vaccination, High variant transmissibility



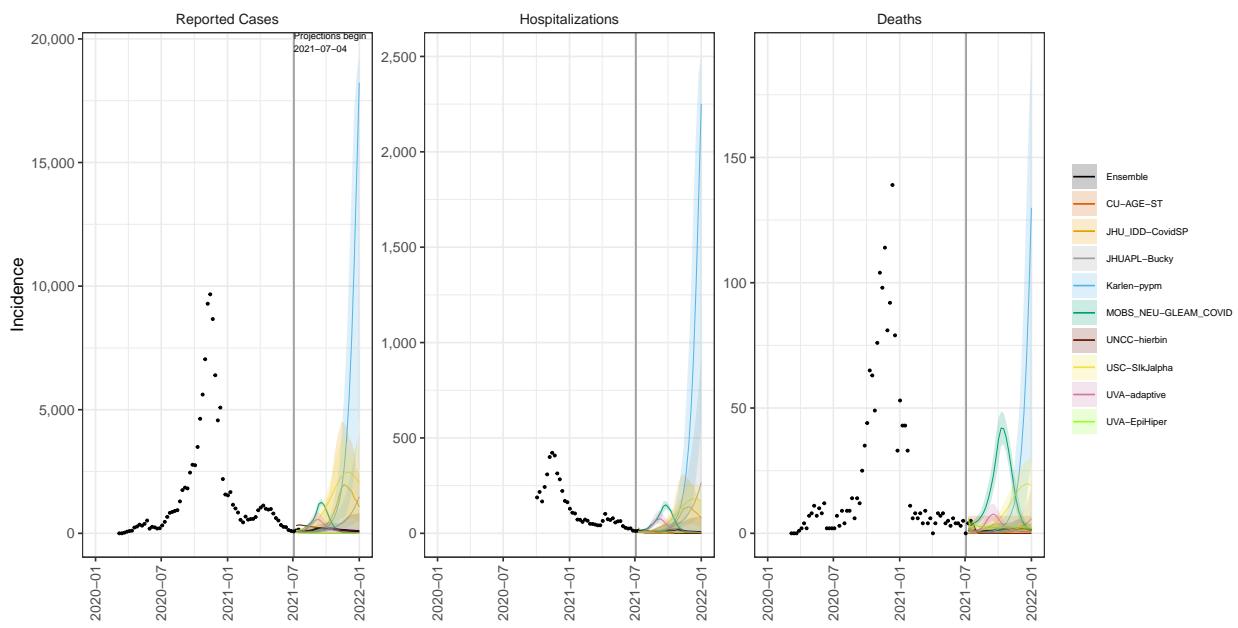
NY model variance & 50% projection intervals – Low vaccination, High variant transmissibility



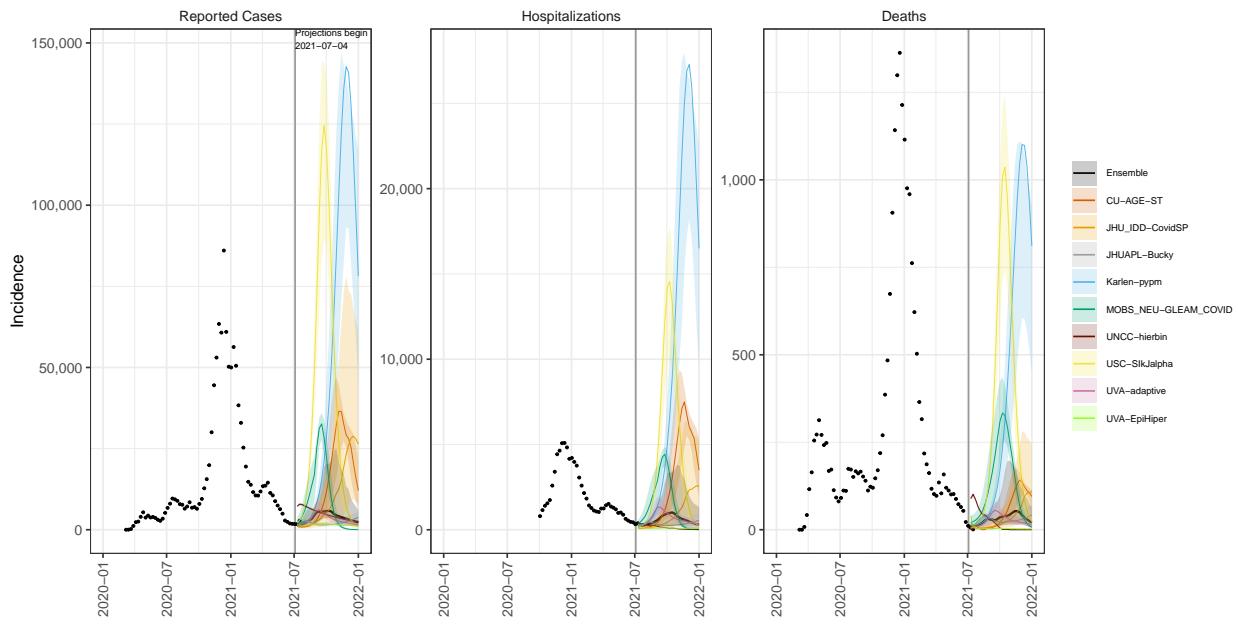
NC model variance & 50% projection intervals – Low vaccination, High variant transmissibility



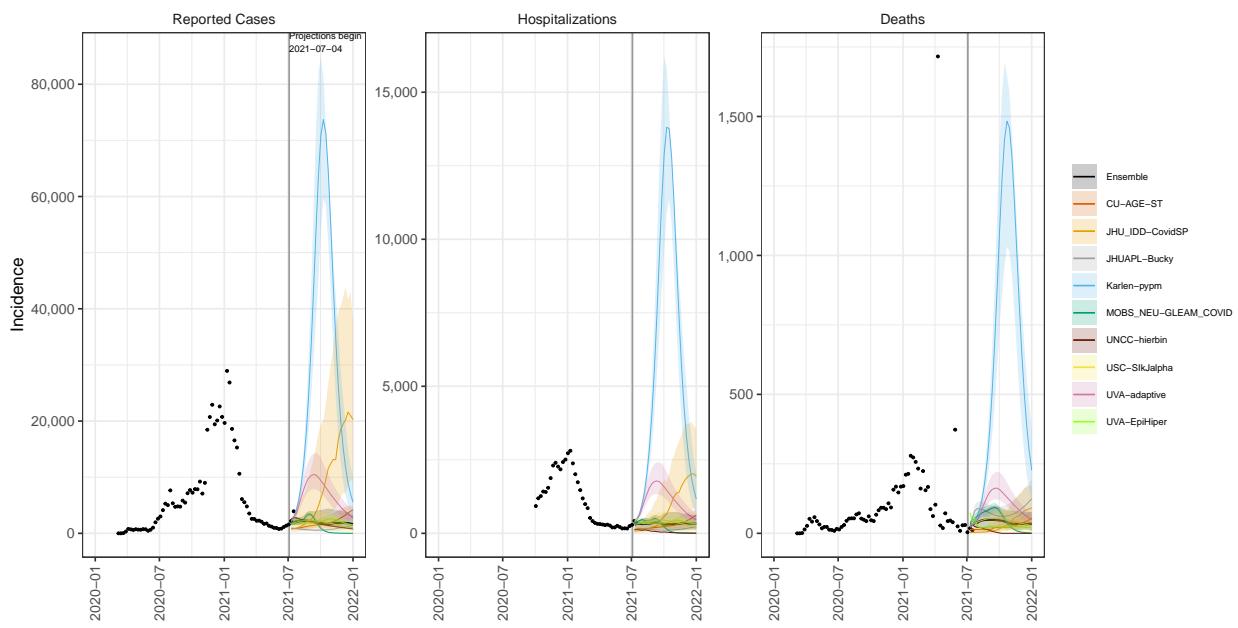
ND model variance & 50% projection intervals – Low vaccination, High variant transmissibility



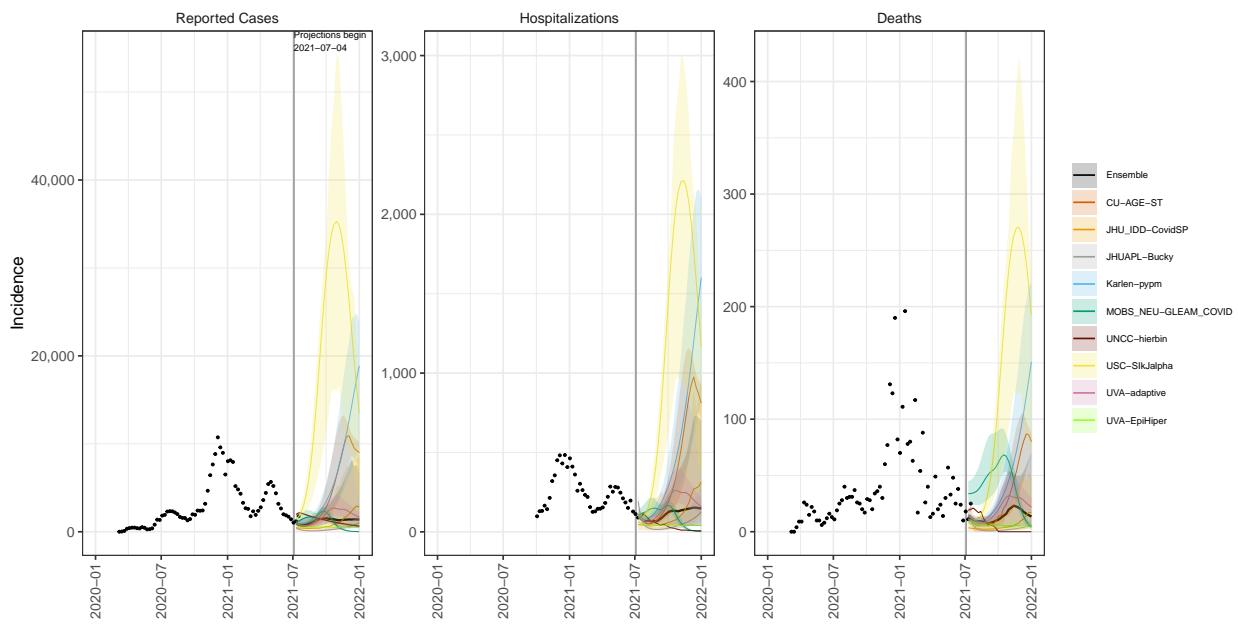
OH model variance & 50% projection intervals – Low vaccination, High variant transmissibility



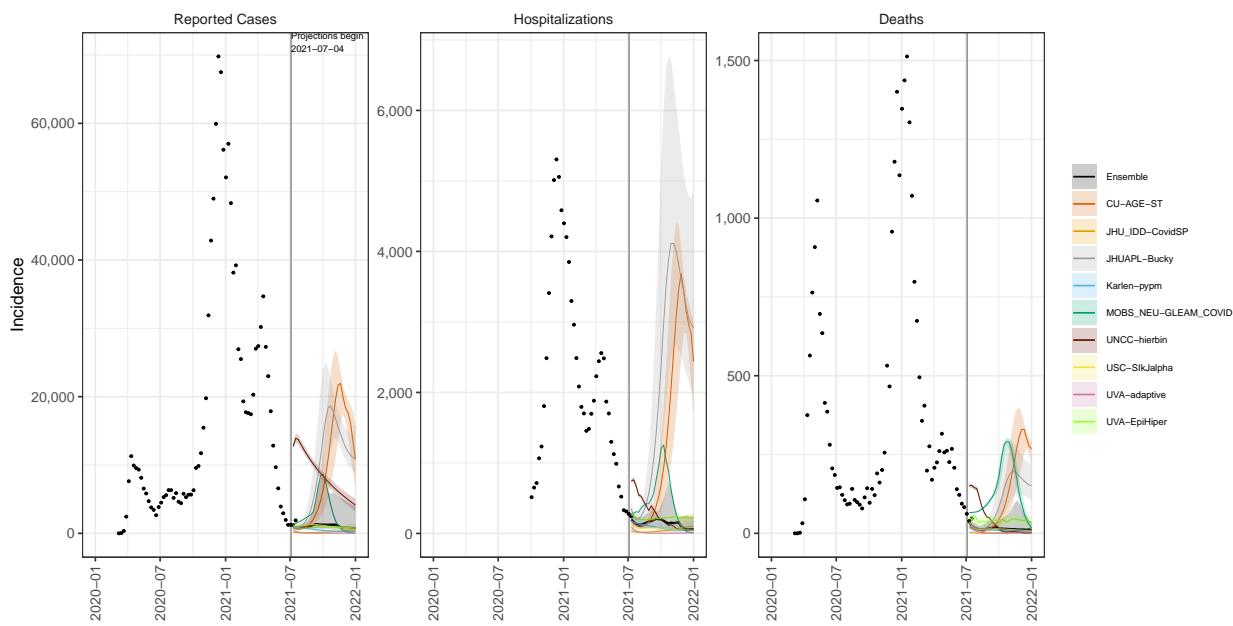
OK model variance & 50% projection intervals – Low vaccination, High variant transmissibility



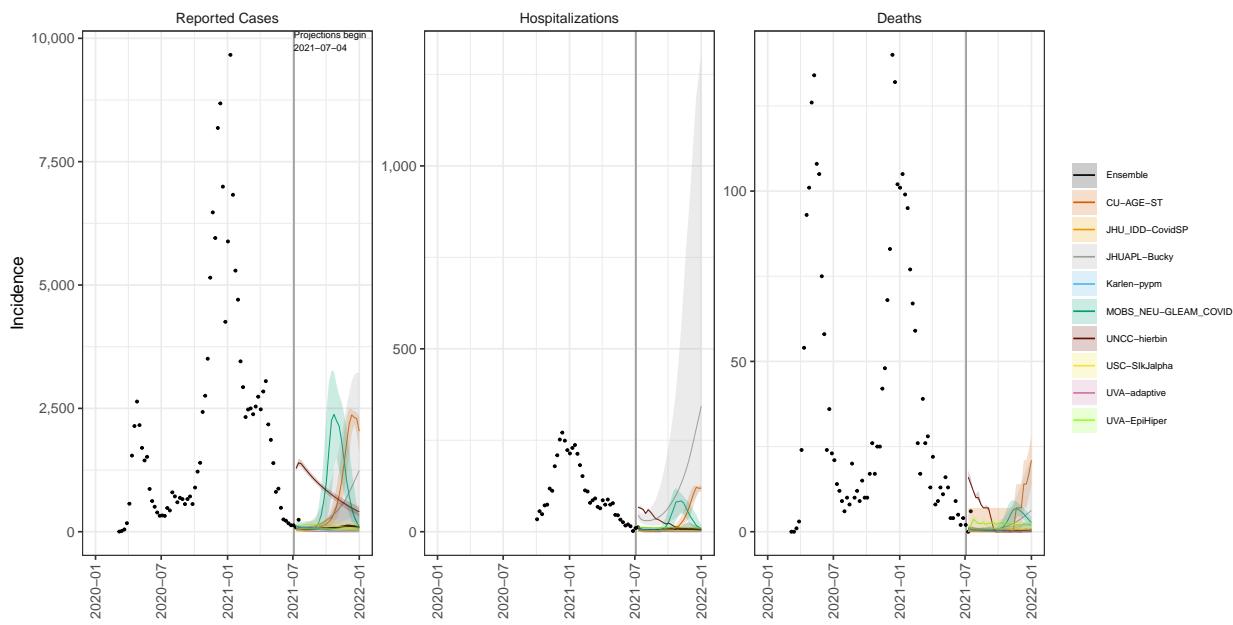
OR model variance & 50% projection intervals – Low vaccination, High variant transmissibility



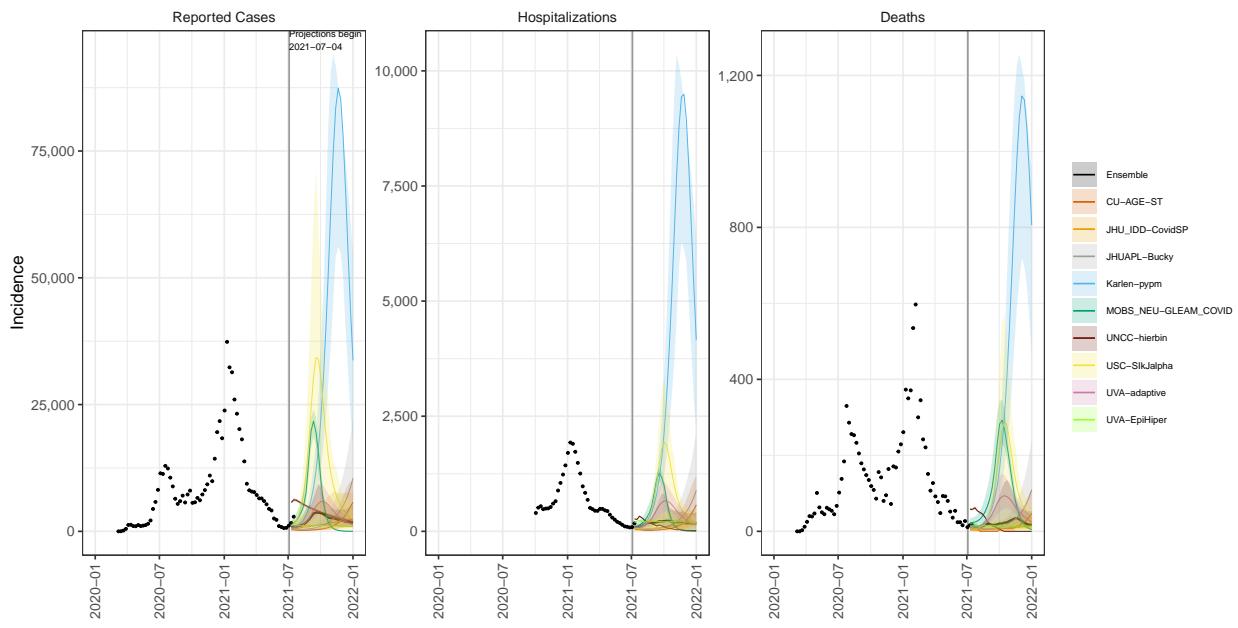
PA model variance & 50% projection intervals – Low vaccination, High variant transmissibility



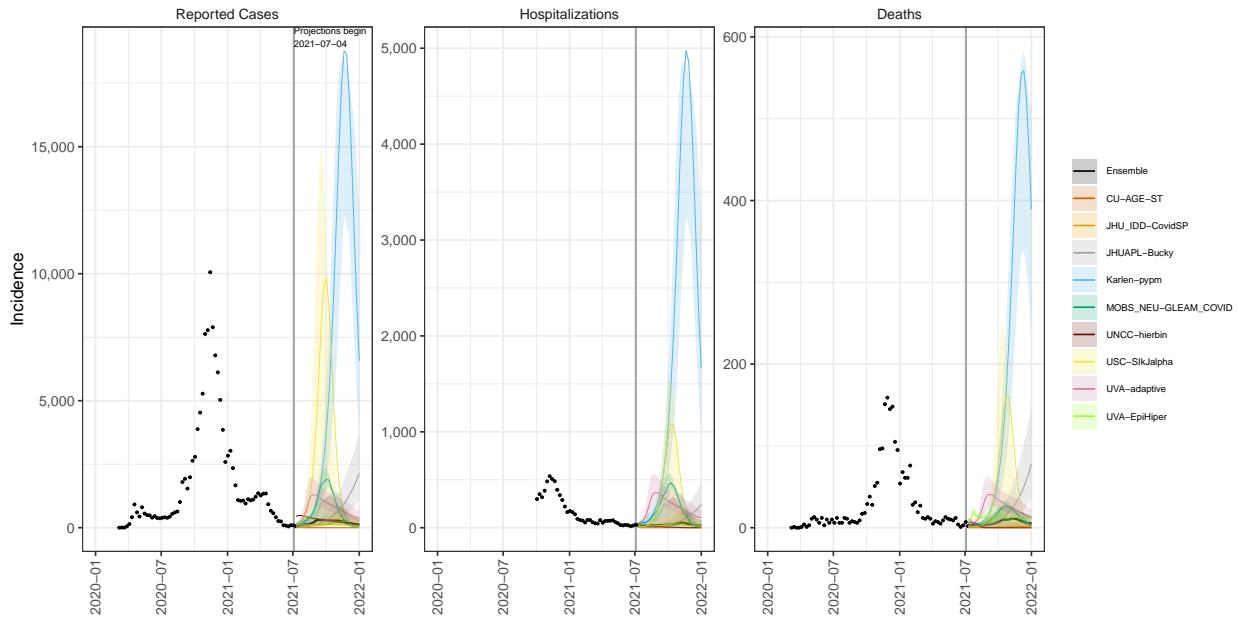
RI model variance & 50% projection intervals – Low vaccination, High variant transmissibility



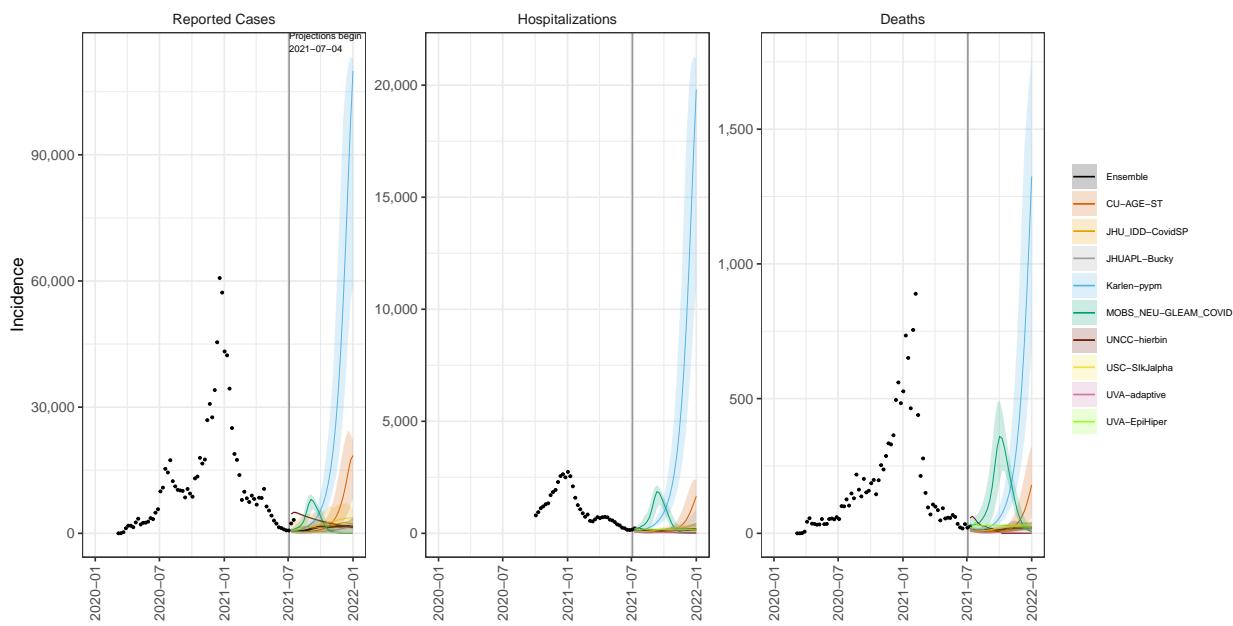
### SC model variance & 50% projection intervals – Low vaccination, High variant transmissibility



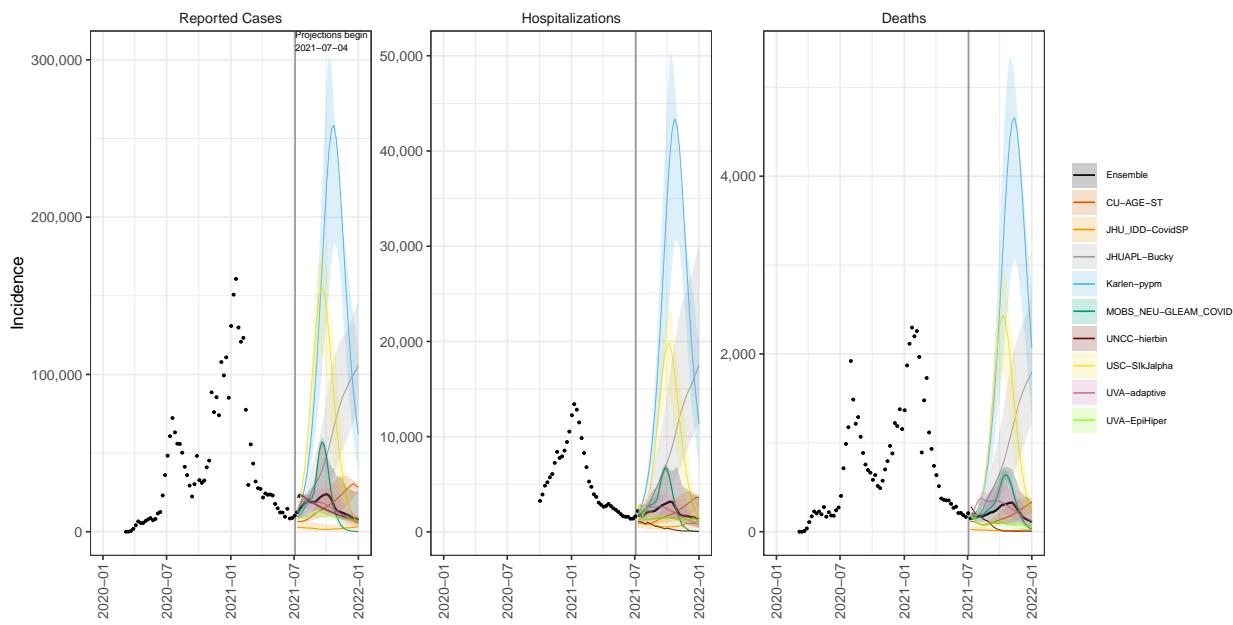
### SD model variance & 50% projection intervals – Low vaccination, High variant transmissibility



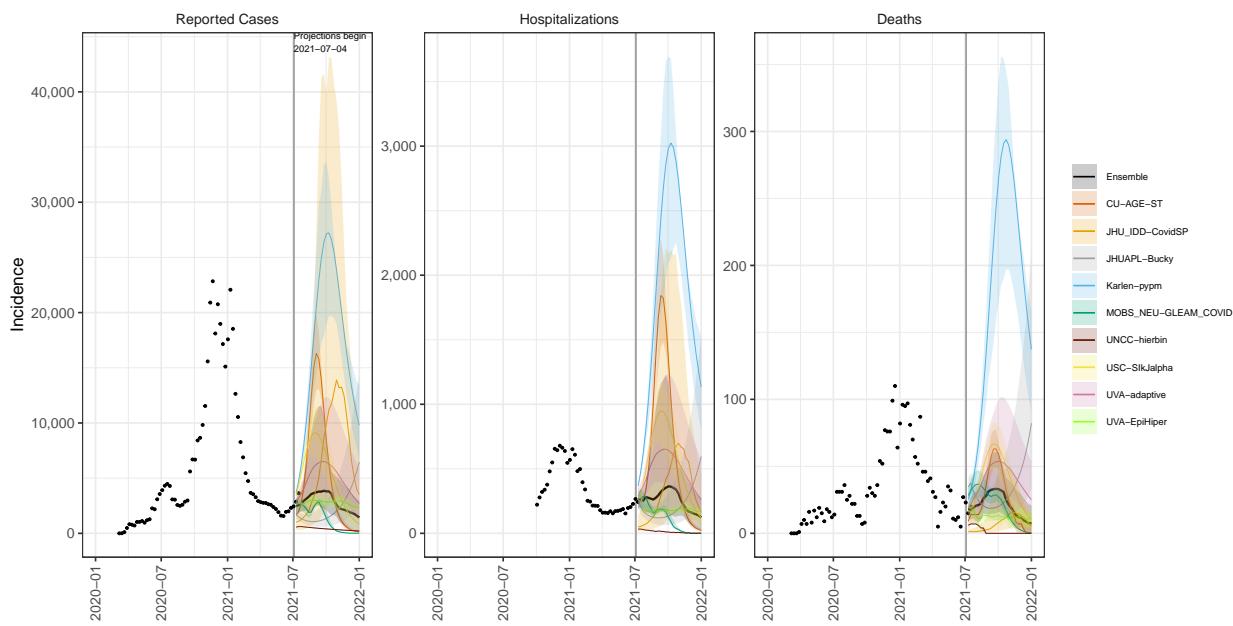
TN model variance & 50% projection intervals – Low vaccination, High variant transmissibility



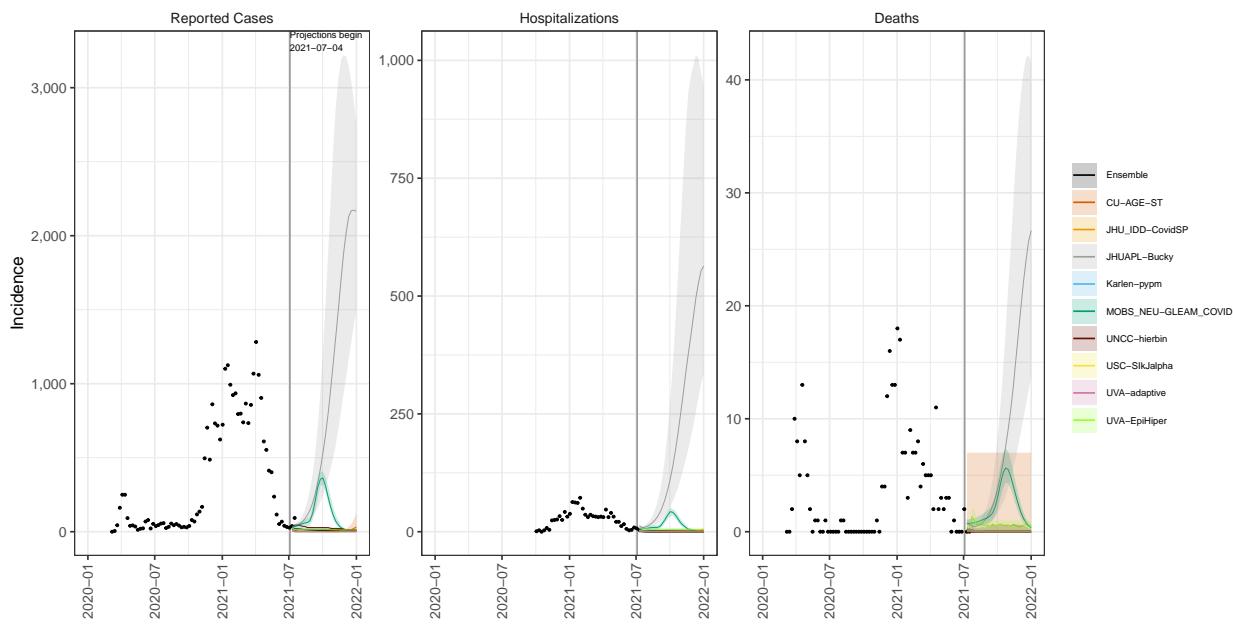
TX model variance & 50% projection intervals – Low vaccination, High variant transmissibility



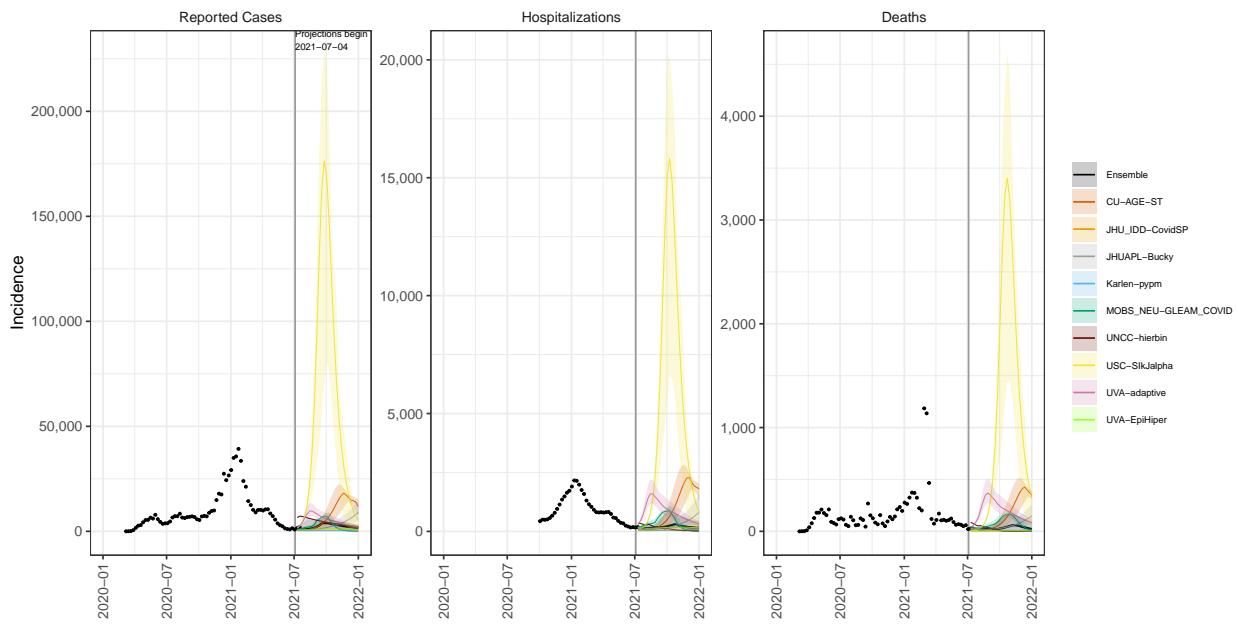
UT model variance & 50% projection intervals – Low vaccination, High variant transmissibility



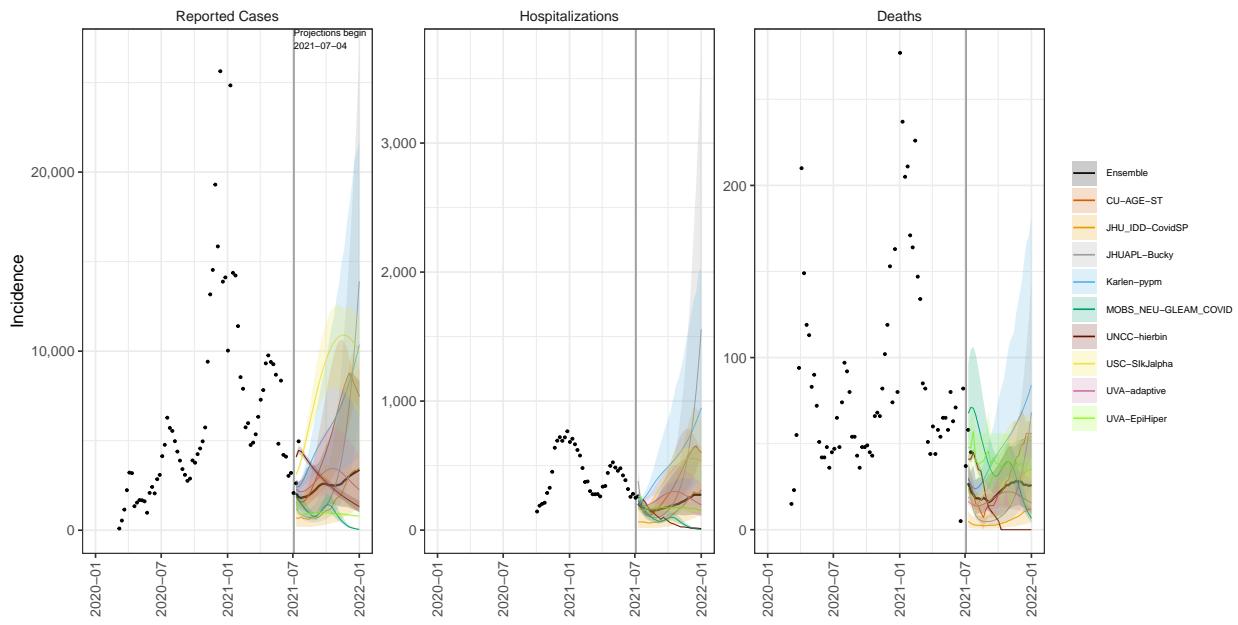
VT model variance & 50% projection intervals – Low vaccination, High variant transmissibility



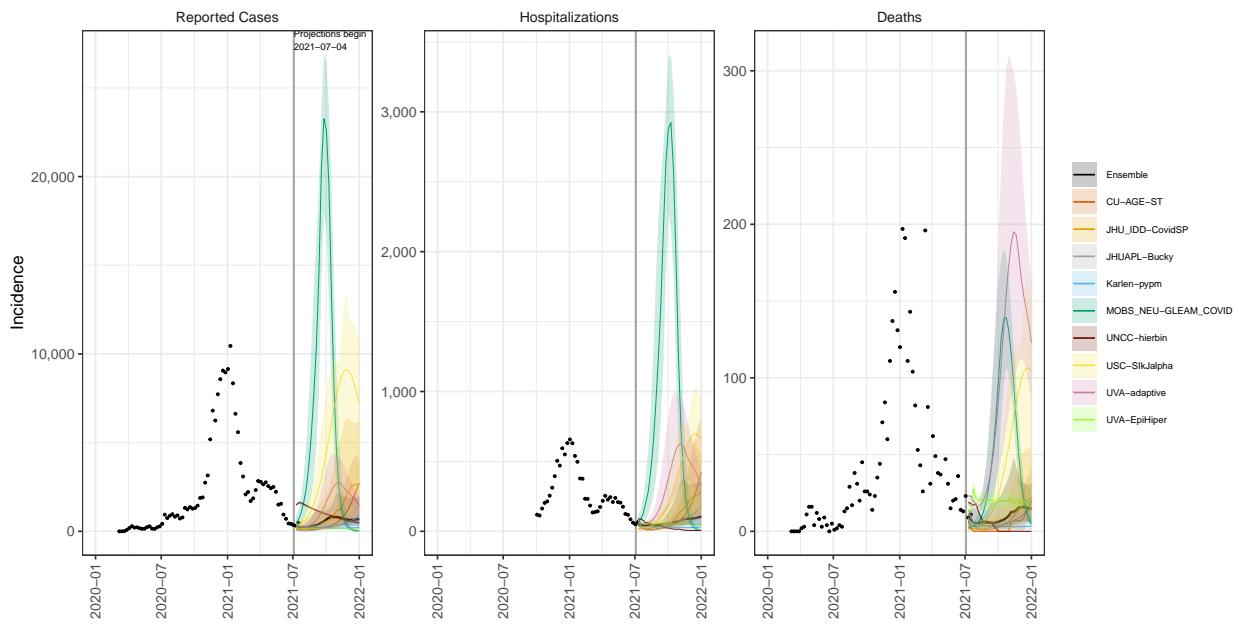
VA model variance & 50% projection intervals – Low vaccination, High variant transmissibility



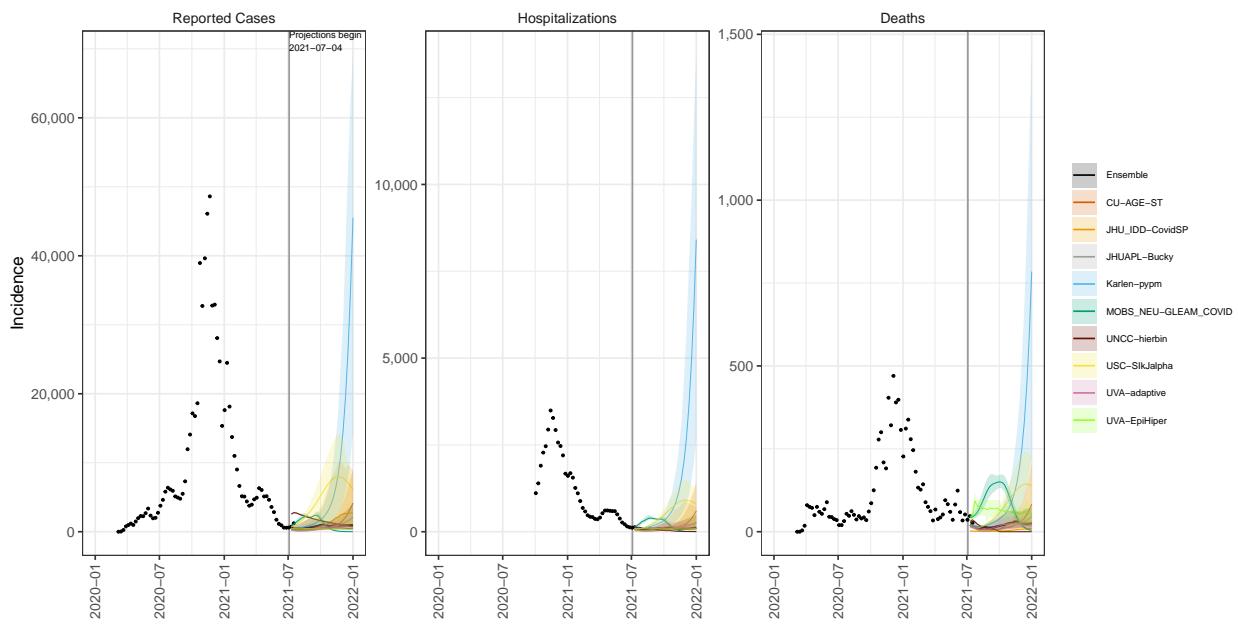
WA model variance & 50% projection intervals – Low vaccination, High variant transmissibility



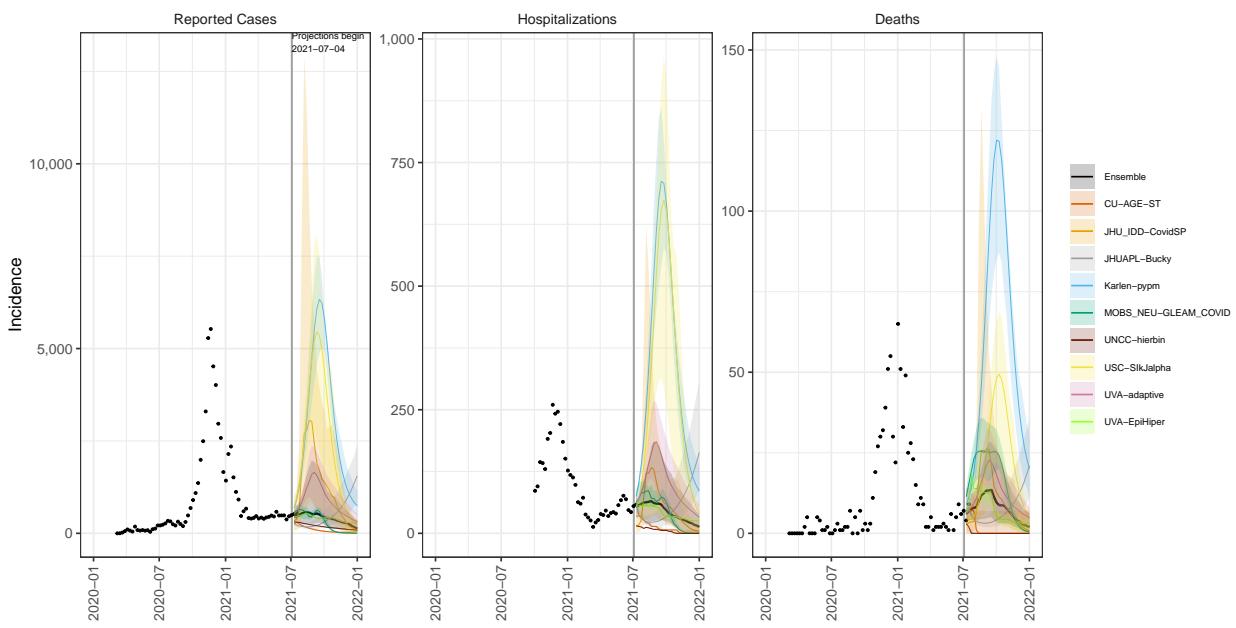
WV model variance & 50% projection intervals – Low vaccination, High variant transmissibility



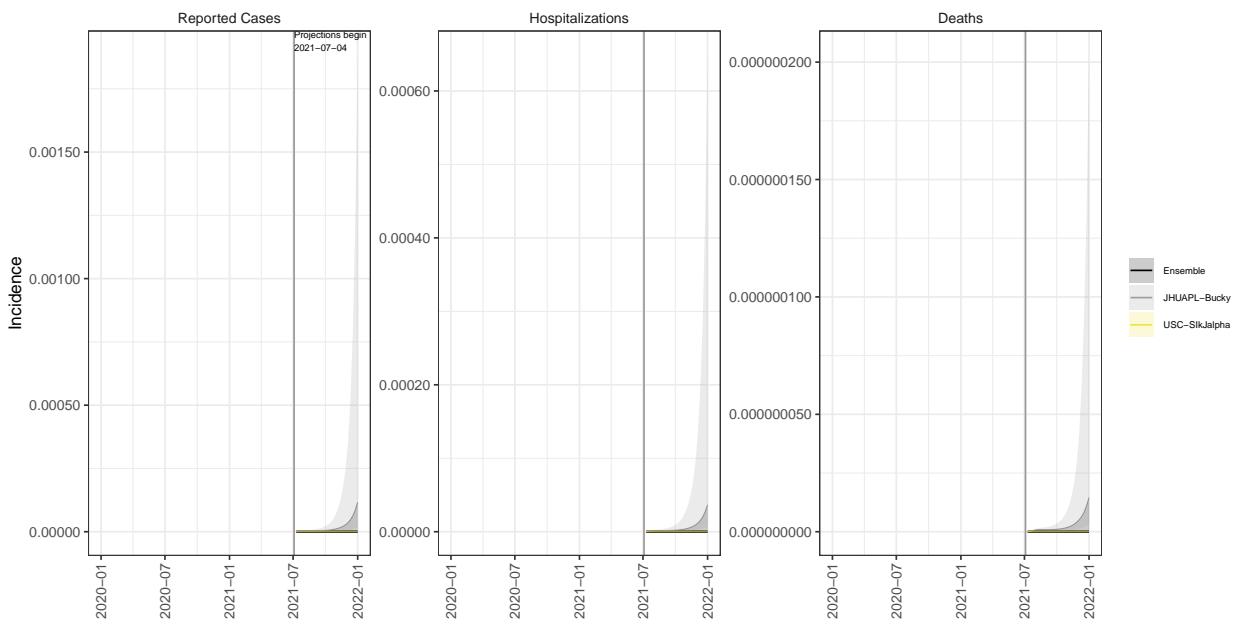
WI model variance & 50% projection intervals – Low vaccination, High variant transmissibility



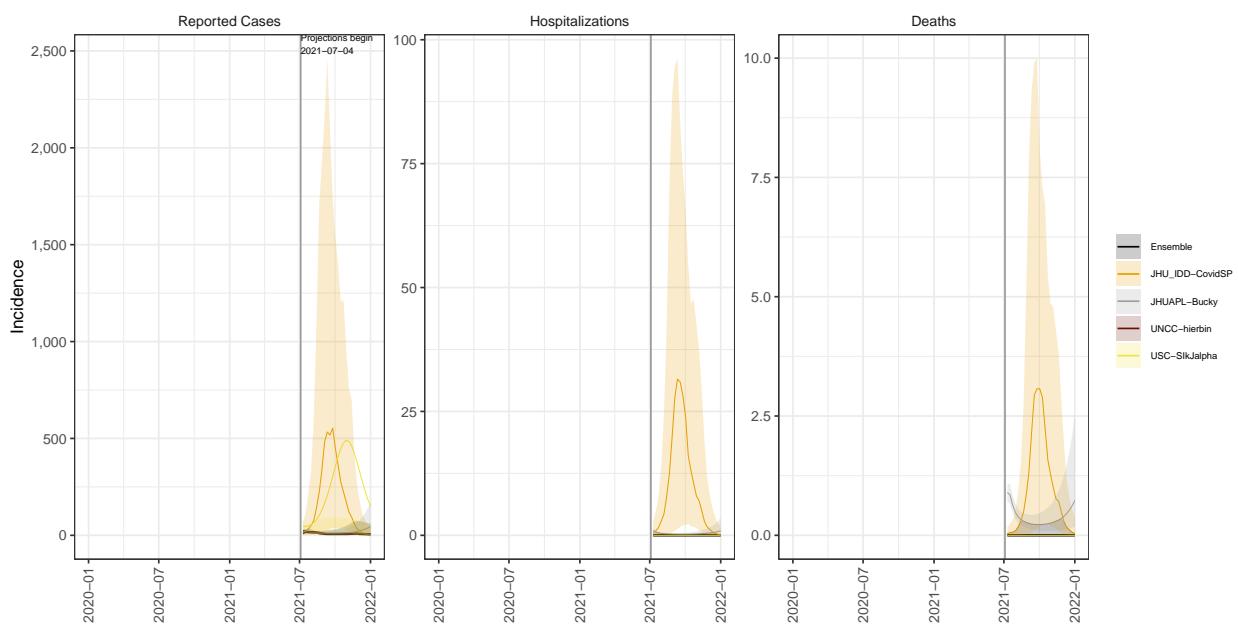
### WY model variance & 50% projection intervals – Low vaccination, High variant transmissibility



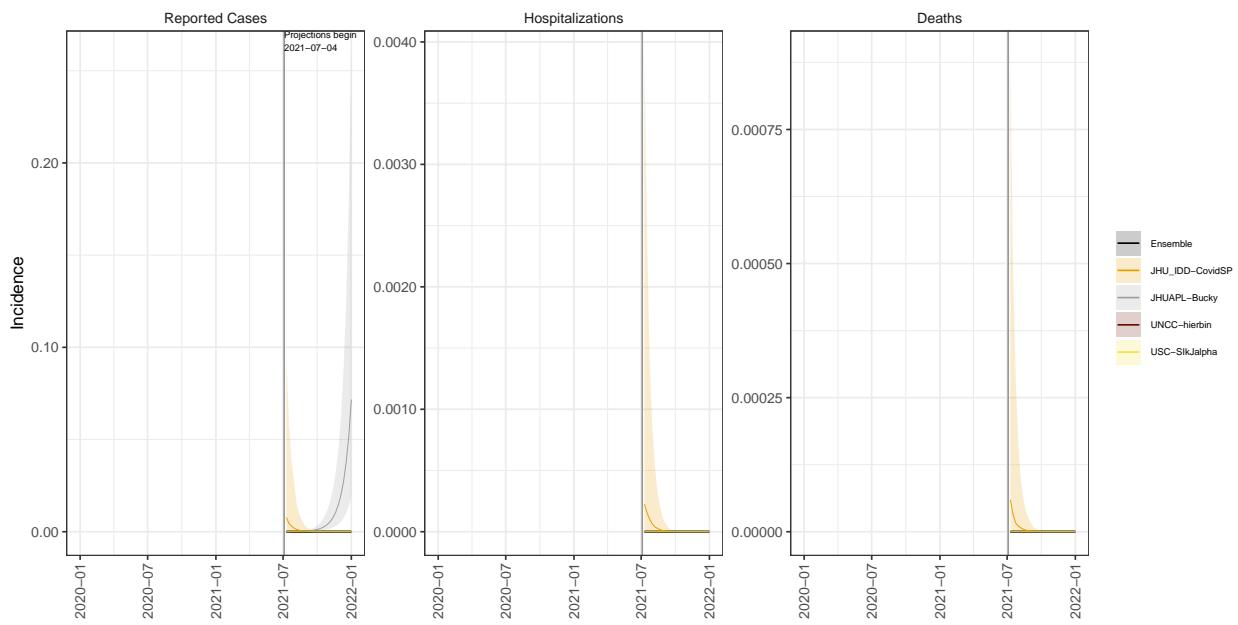
### AS model variance & 50% projection intervals – Low vaccination, High variant transmissibility



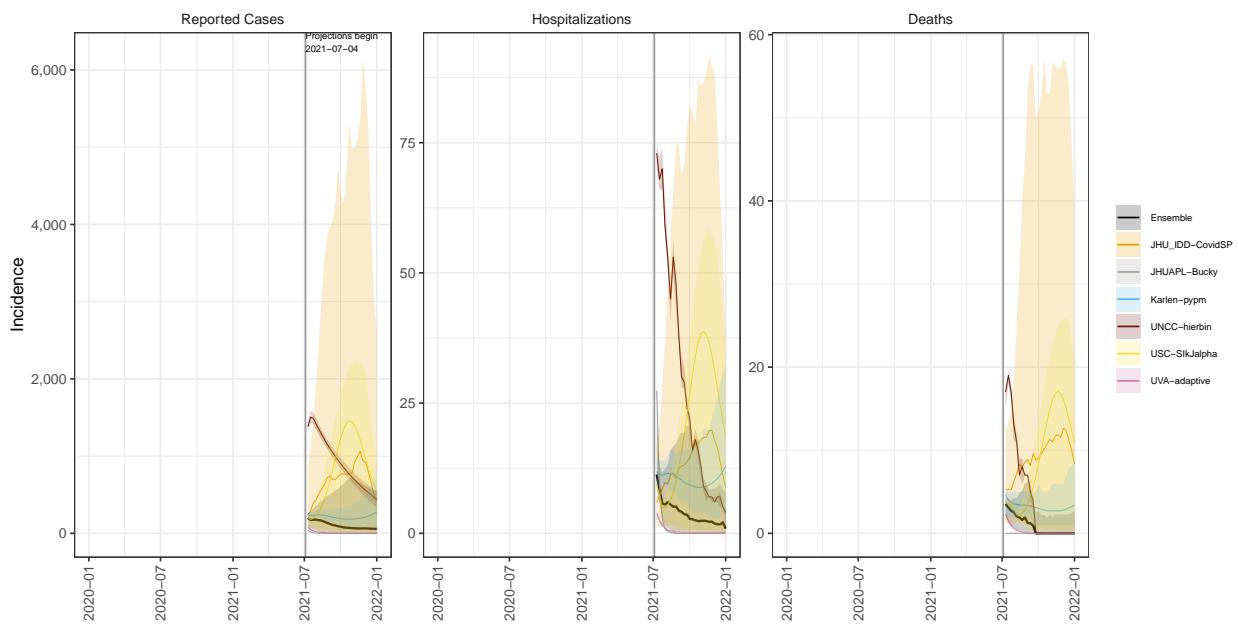
GU model variance & 50% projection intervals – Low vaccination, High variant transmissibility



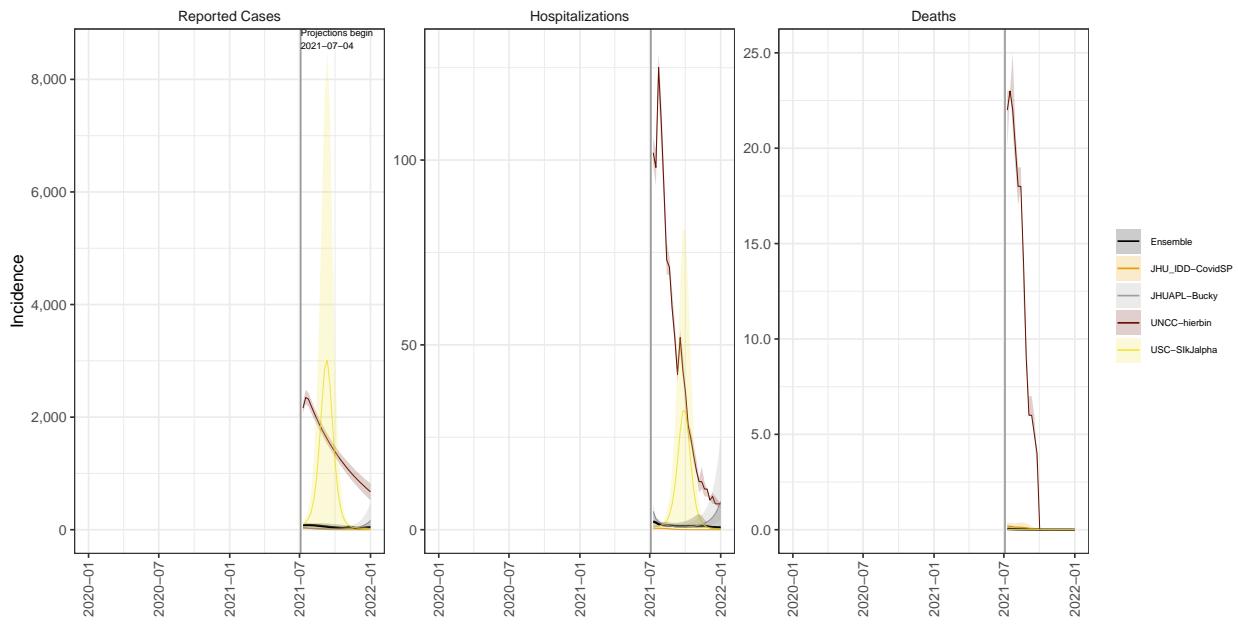
MP model variance & 50% projection intervals – Low vaccination, High variant transmissibility



PR model variance & 50% projection intervals – Low vaccination, High variant transmissibility

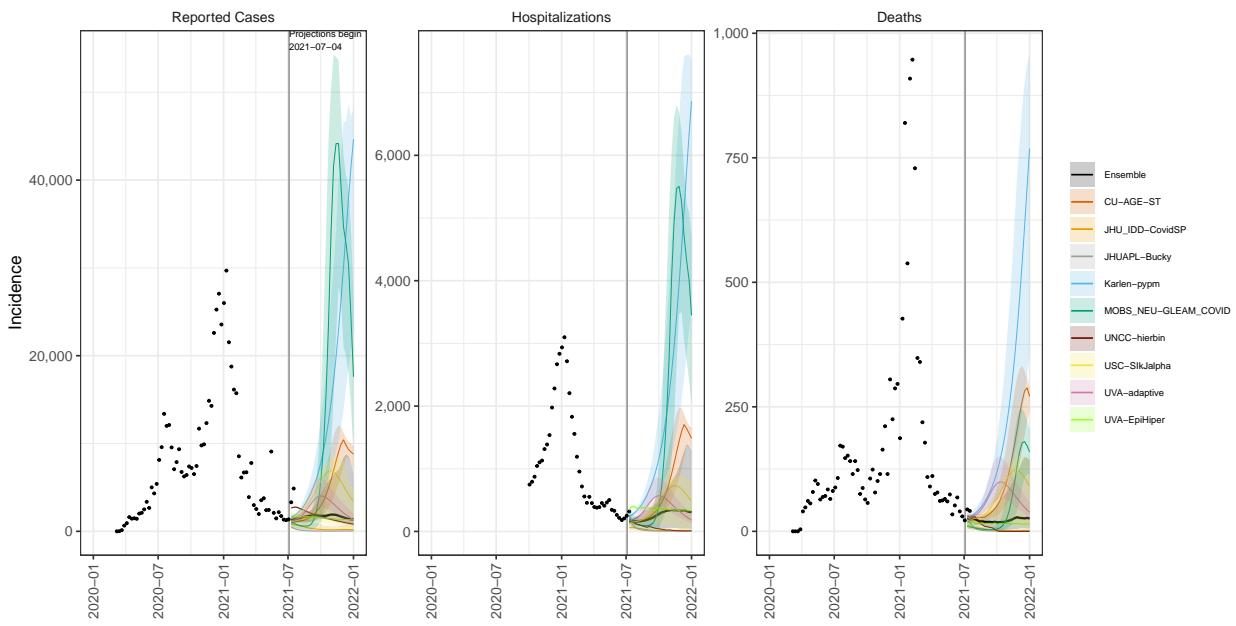


VI model variance & 50% projection intervals – Low vaccination, High variant transmissibility

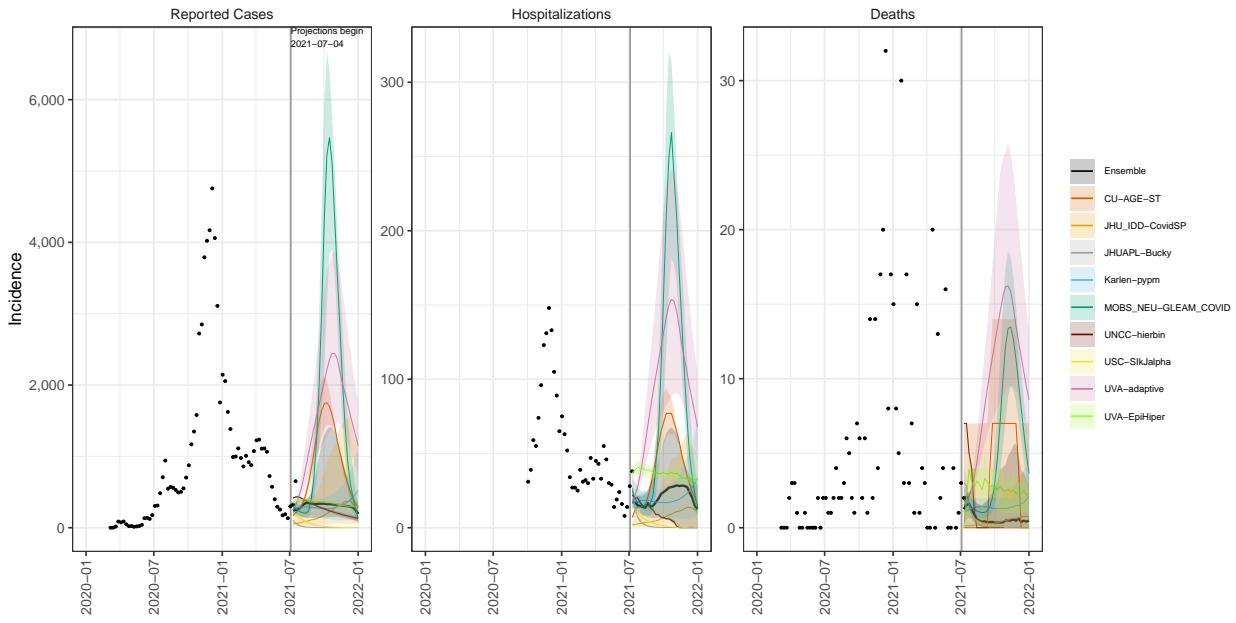


National model variation for the low vaccination, low variant transmissibility scenario

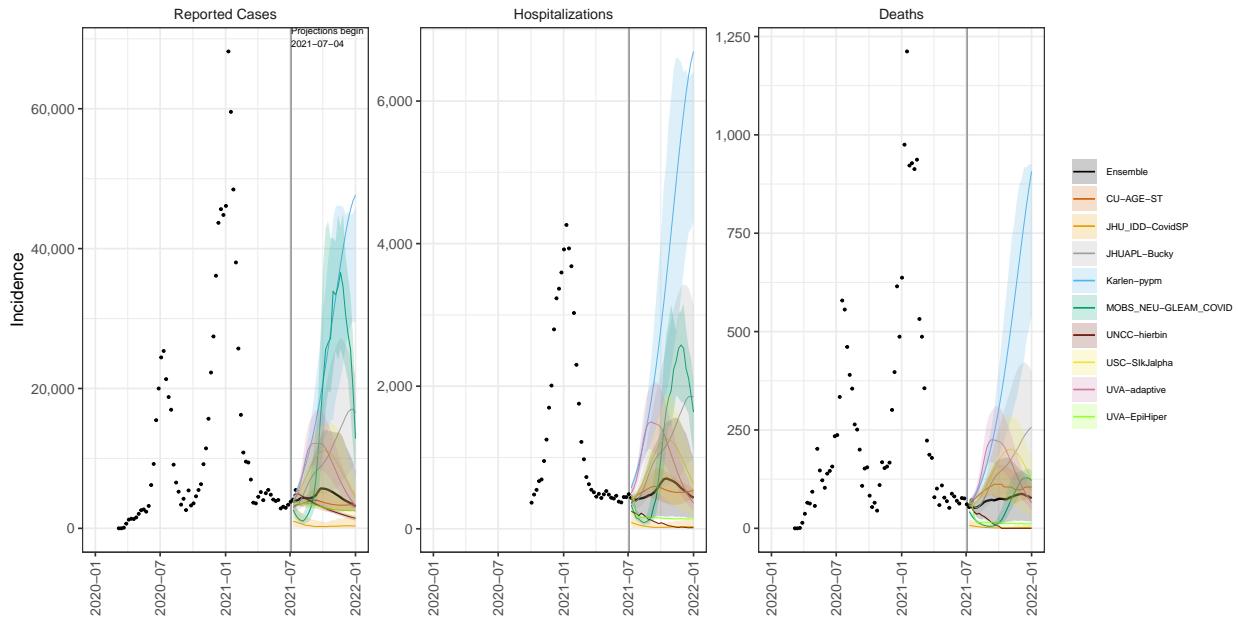
AL model variance & 50% projection intervals – Low vaccination, Low variant transmissibility



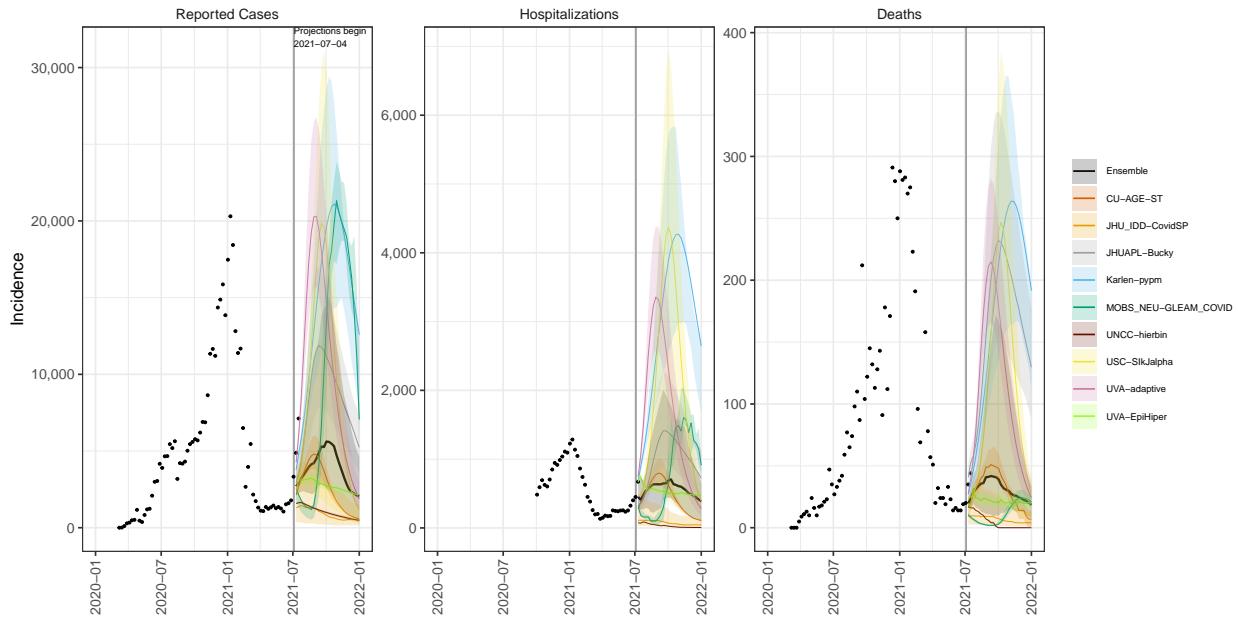
AK model variance & 50% projection intervals – Low vaccination, Low variant transmissibility



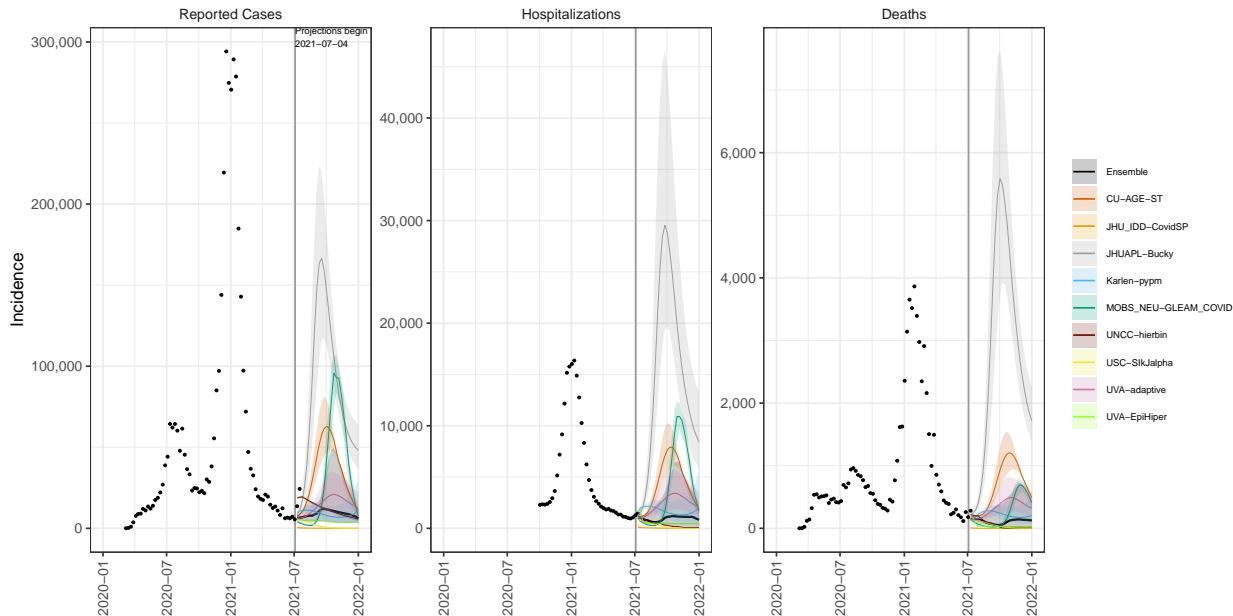
AZ model variance & 50% projection intervals – Low vaccination, Low variant transmissibility



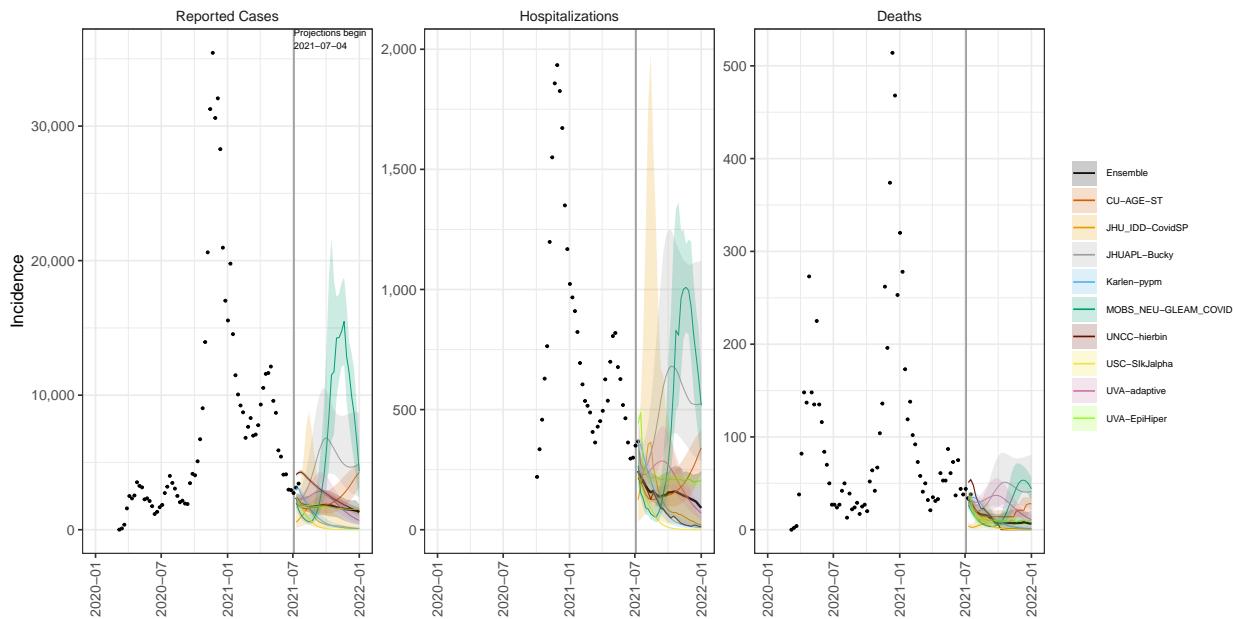
AR model variance & 50% projection intervals – Low vaccination, Low variant transmissibility



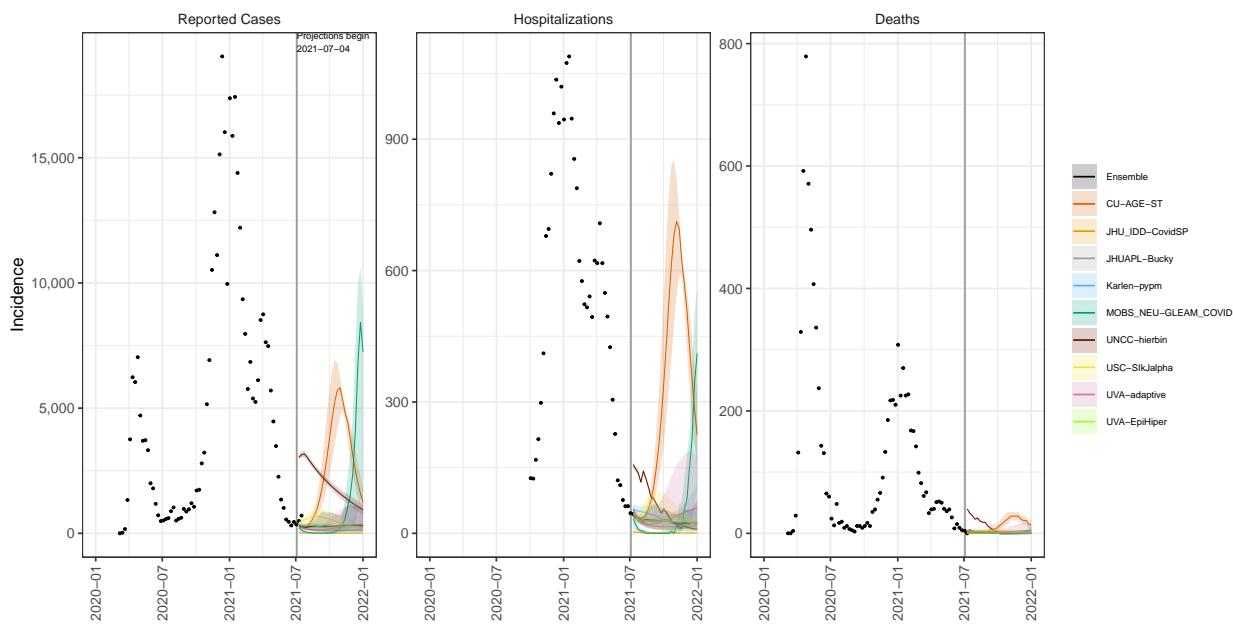
CA model variance & 50% projection intervals – Low vaccination, Low variant transmissibility



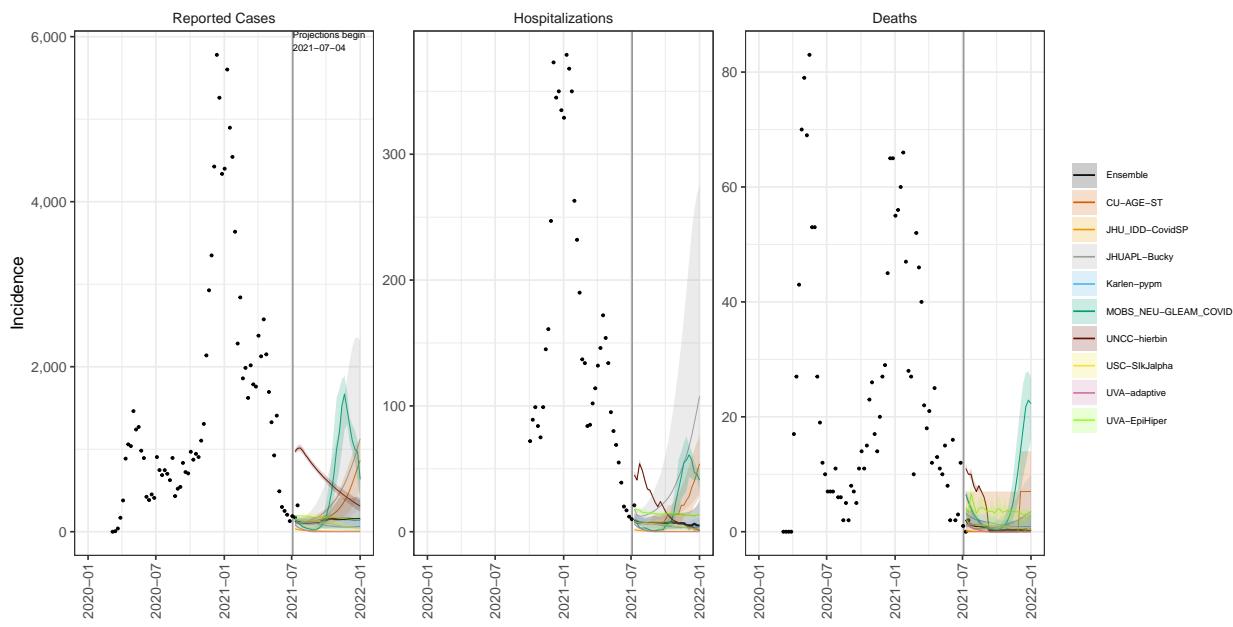
CO model variance & 50% projection intervals – Low vaccination, Low variant transmissibility



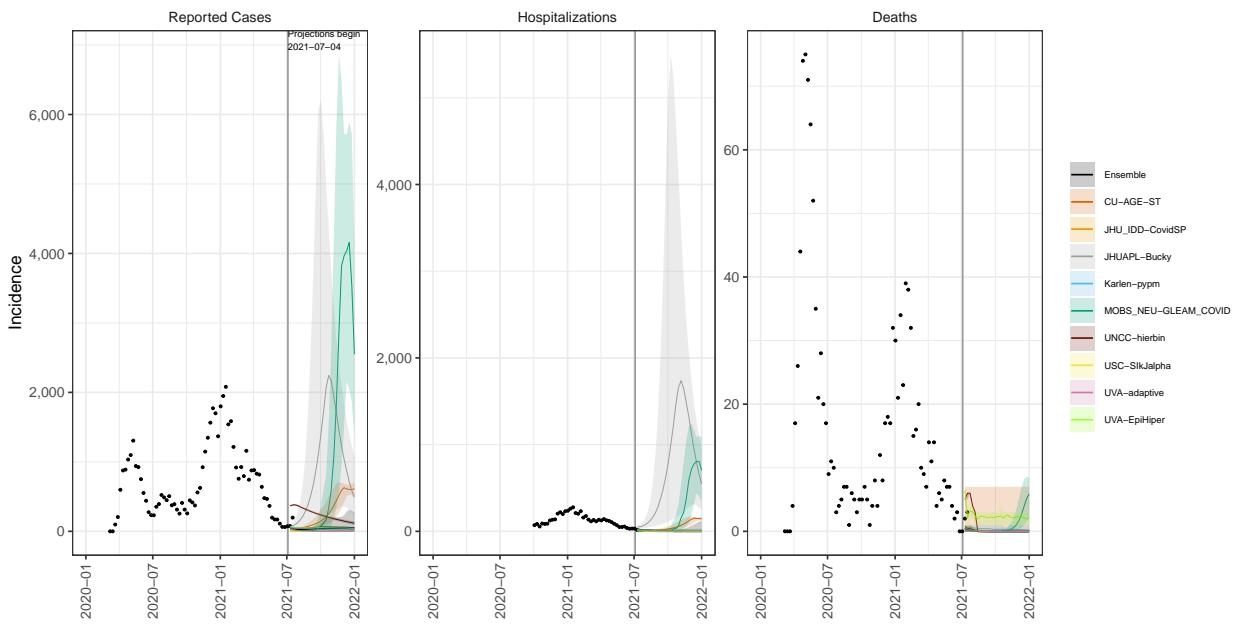
### CT model variance & 50% projection intervals – Low vaccination, Low variant transmissibility



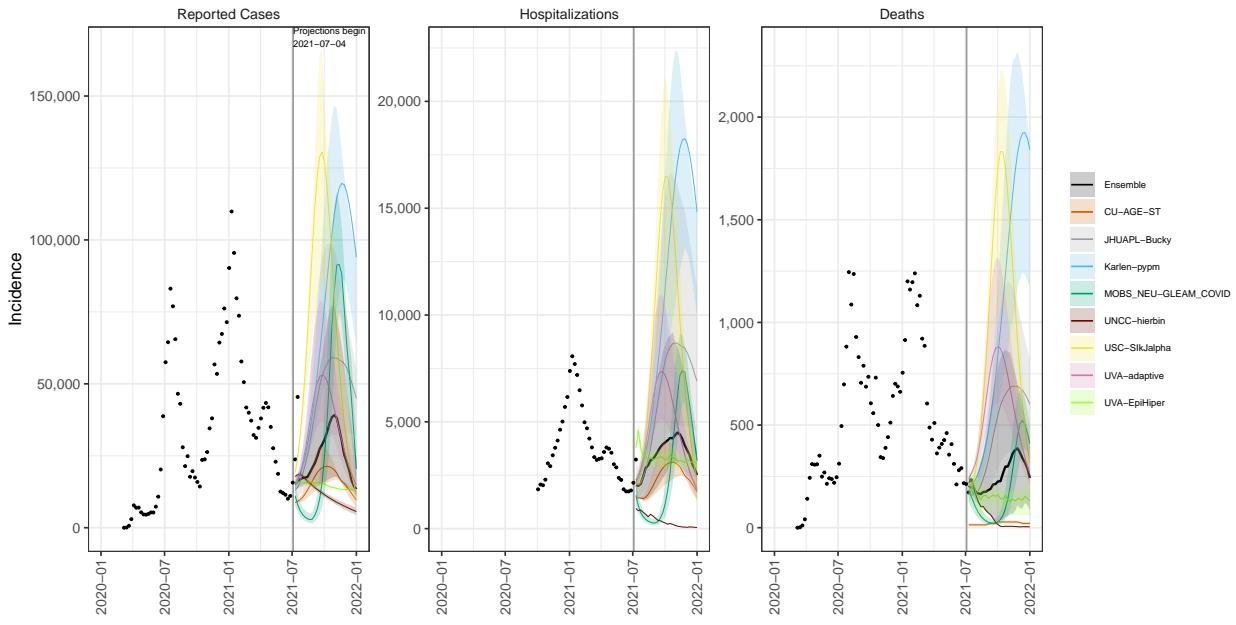
### DE model variance & 50% projection intervals – Low vaccination, Low variant transmissibility



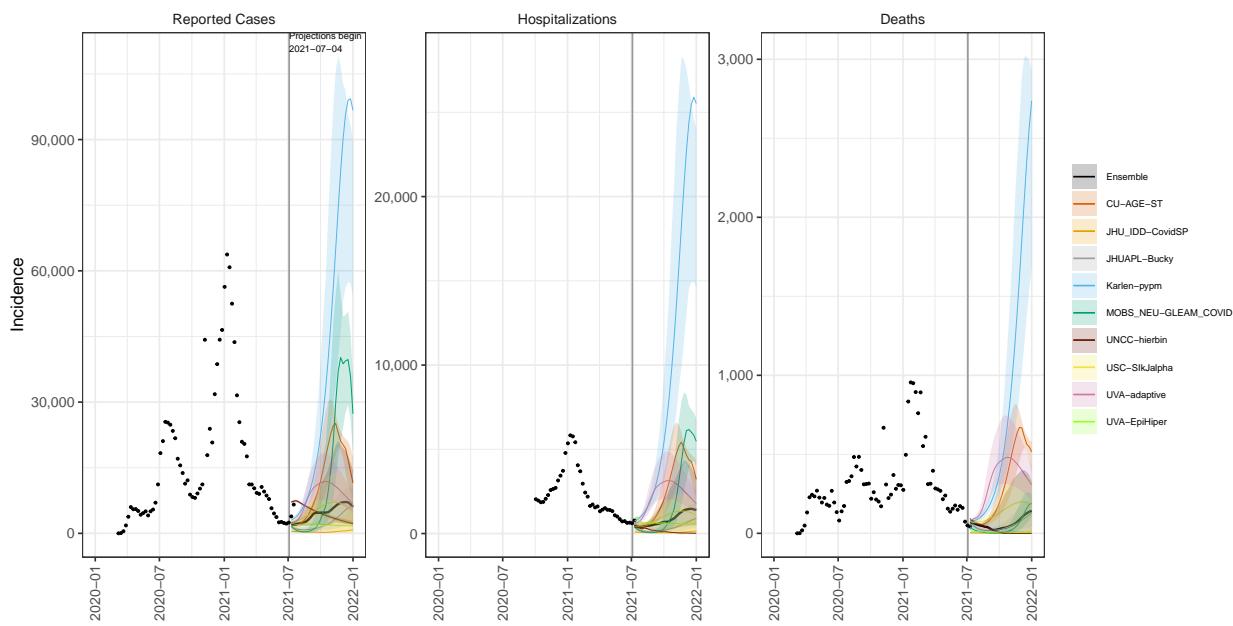
DC model variance & 50% projection intervals – Low vaccination, Low variant transmissibility



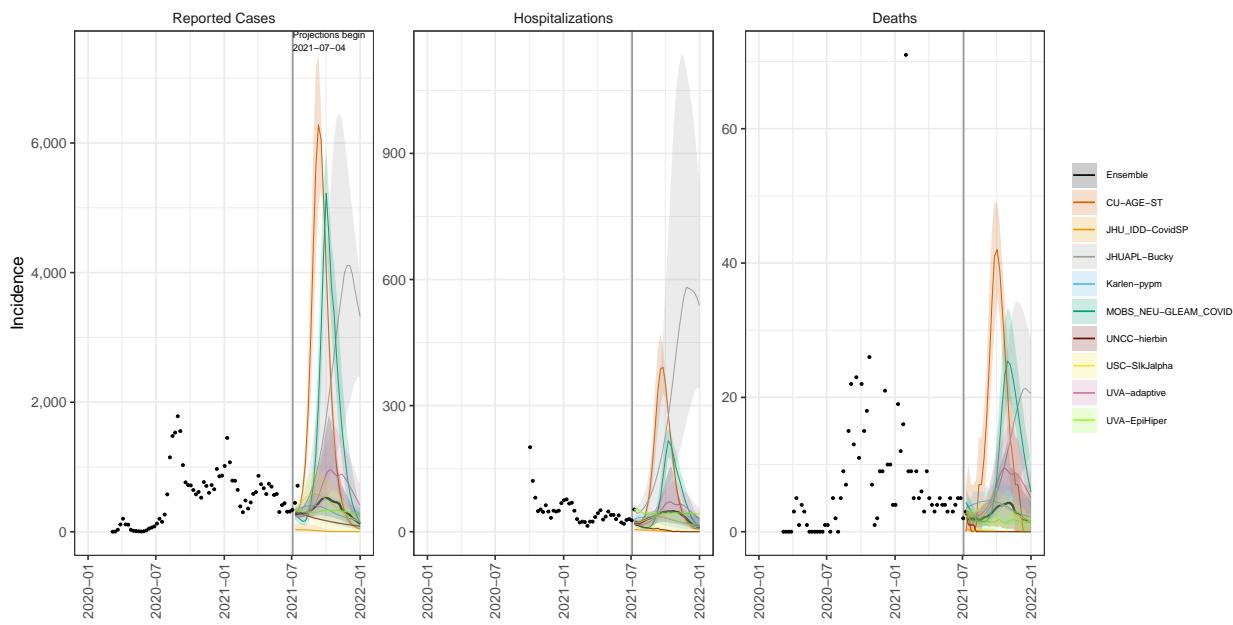
FL model variance & 50% projection intervals – Low vaccination, Low variant transmissibility



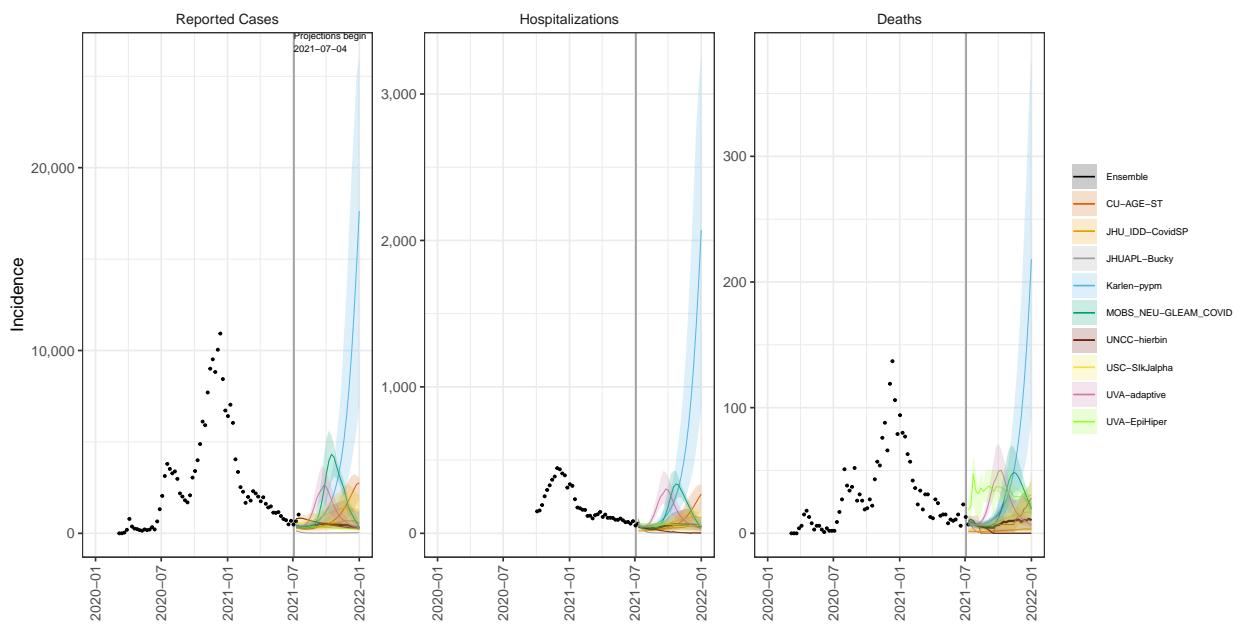
### GA model variance & 50% projection intervals – Low vaccination, Low variant transmissibility



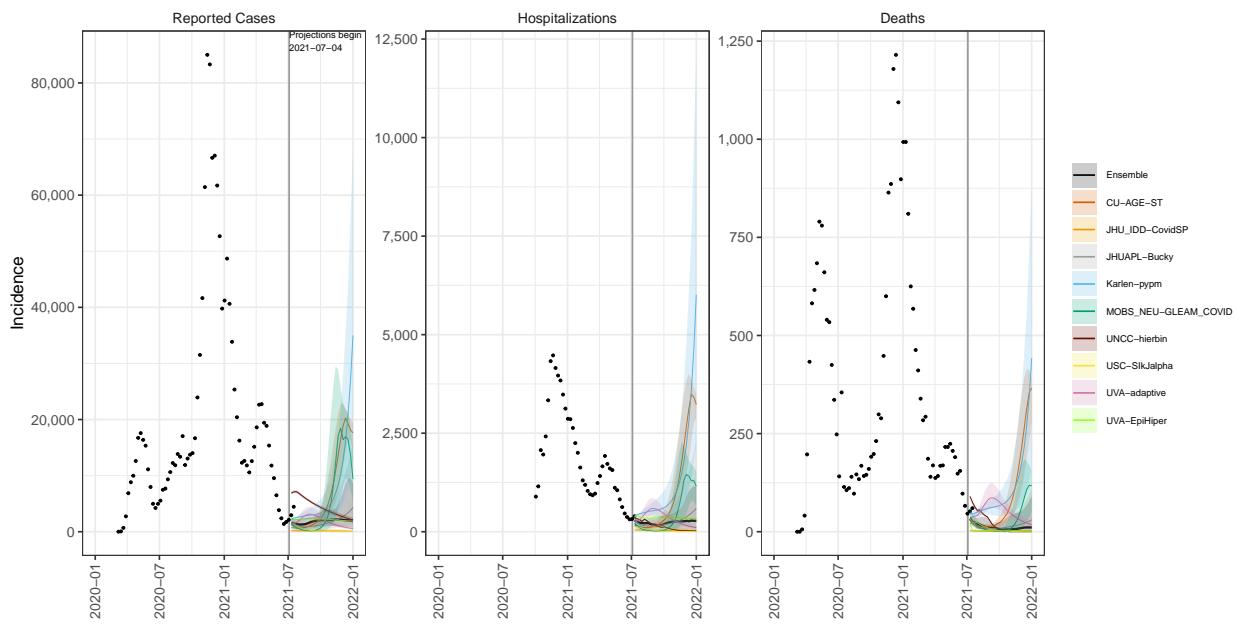
### HI model variance & 50% projection intervals – Low vaccination, Low variant transmissibility



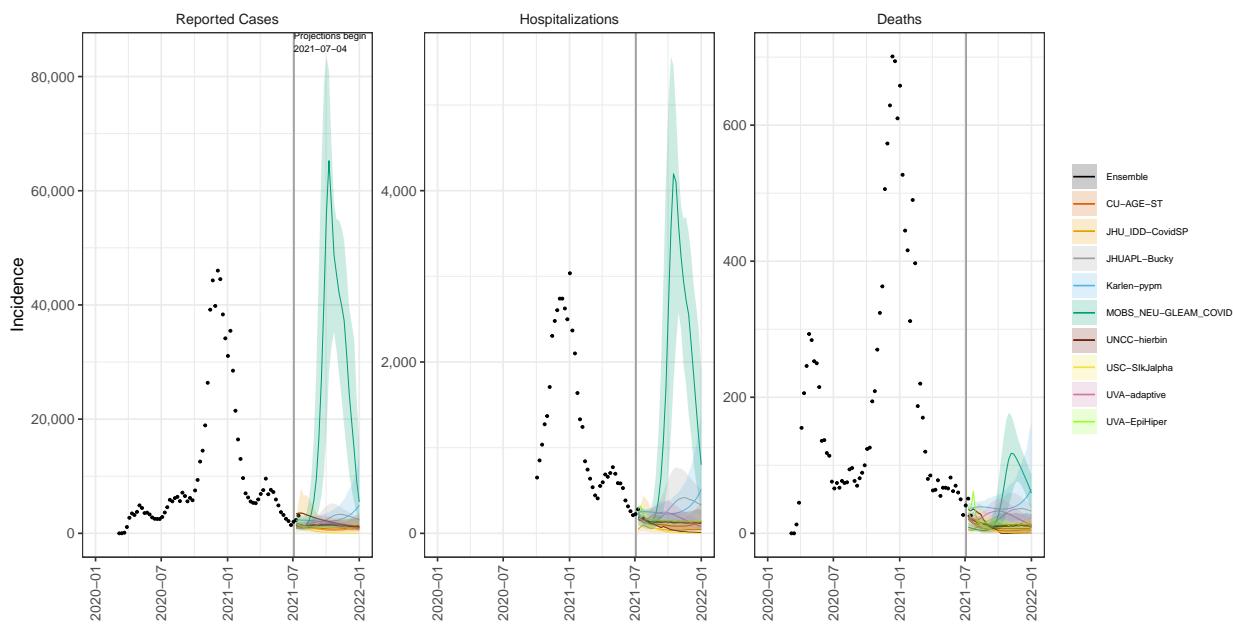
ID model variance & 50% projection intervals – Low vaccination, Low variant transmissibility



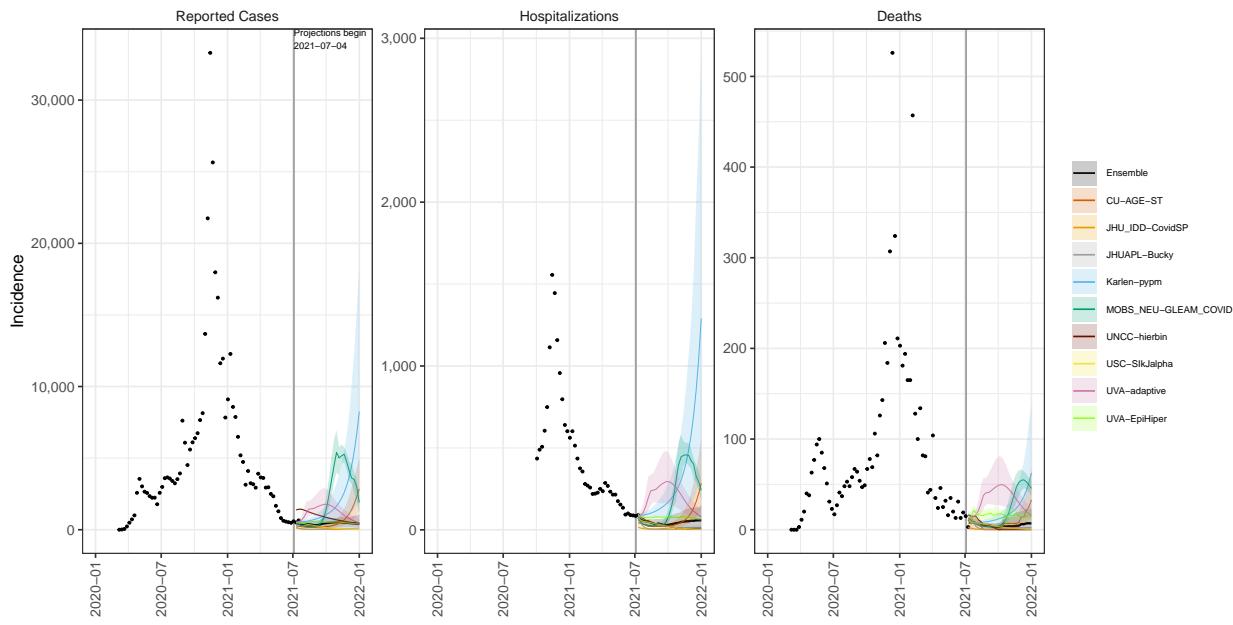
IL model variance & 50% projection intervals – Low vaccination, Low variant transmissibility



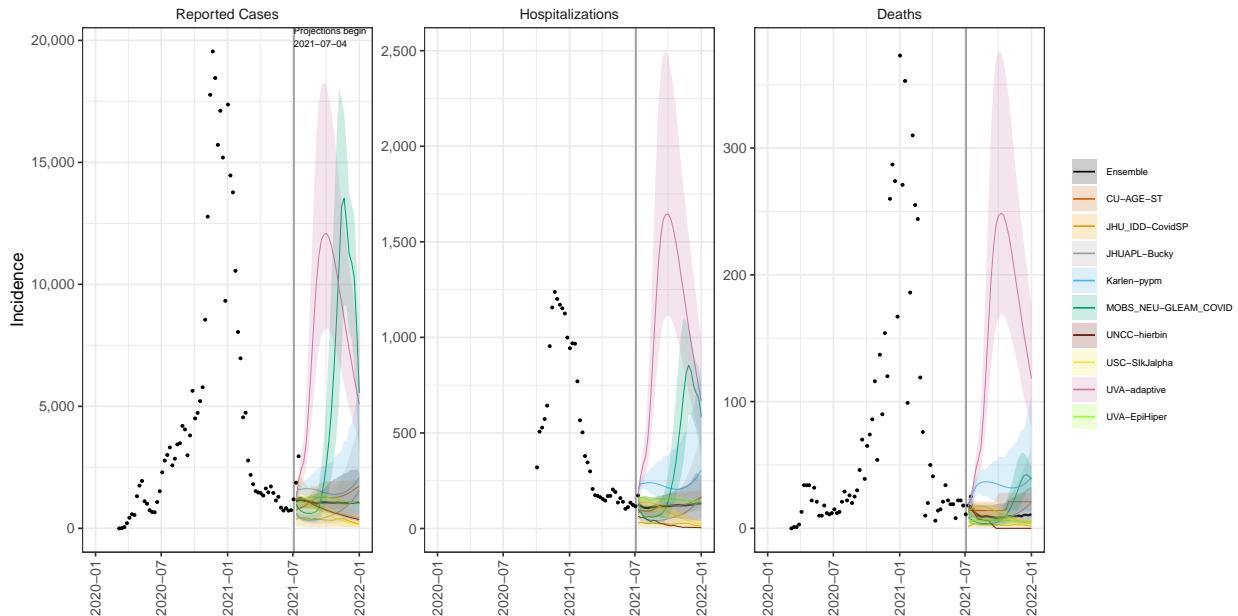
IN model variance & 50% projection intervals – Low vaccination, Low variant transmissibility



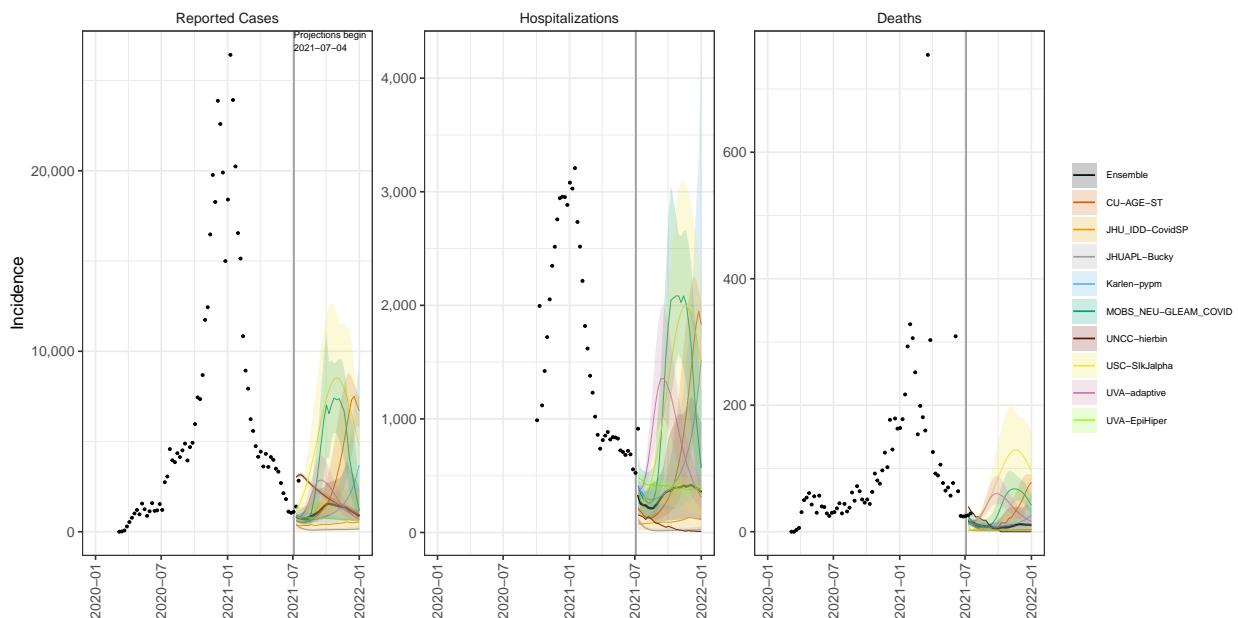
IA model variance & 50% projection intervals – Low vaccination, Low variant transmissibility



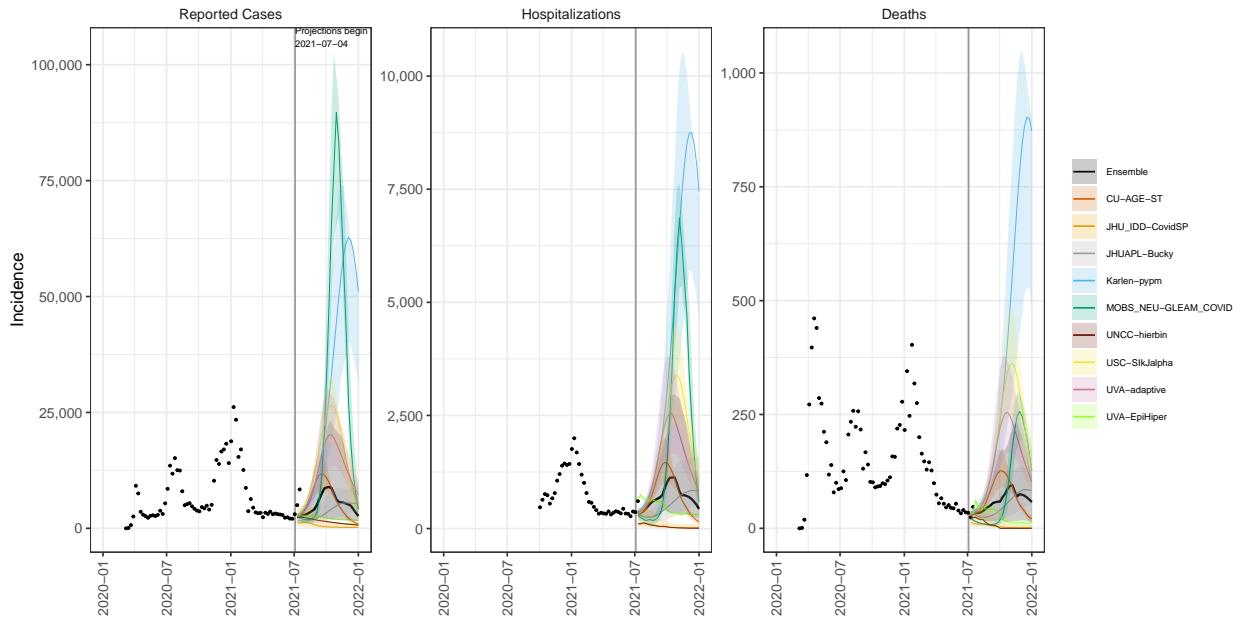
KS model variance & 50% projection intervals – Low vaccination, Low variant transmissibility



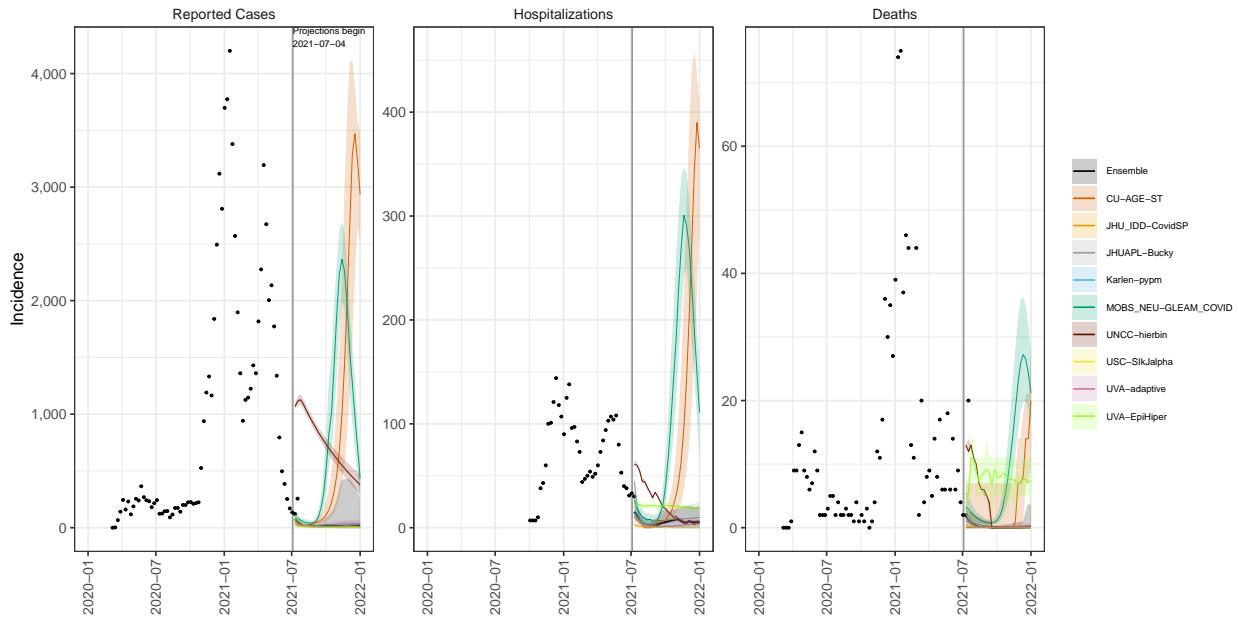
KY model variance & 50% projection intervals – Low vaccination, Low variant transmissibility



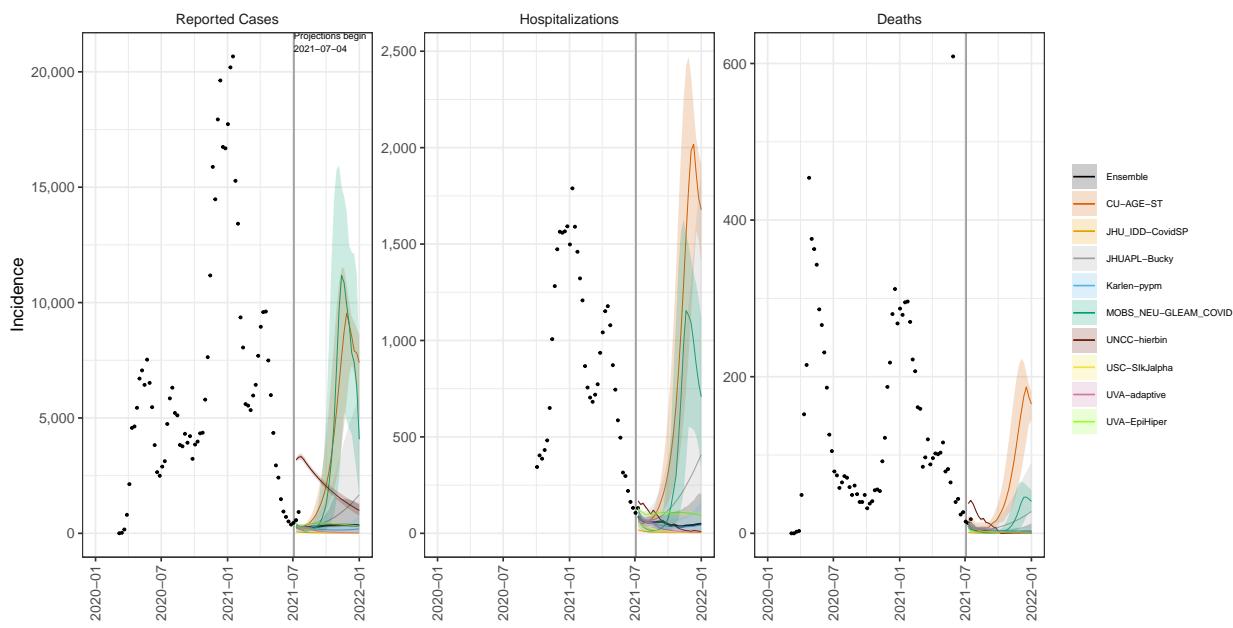
LA model variance & 50% projection intervals – Low vaccination, Low variant transmissibility



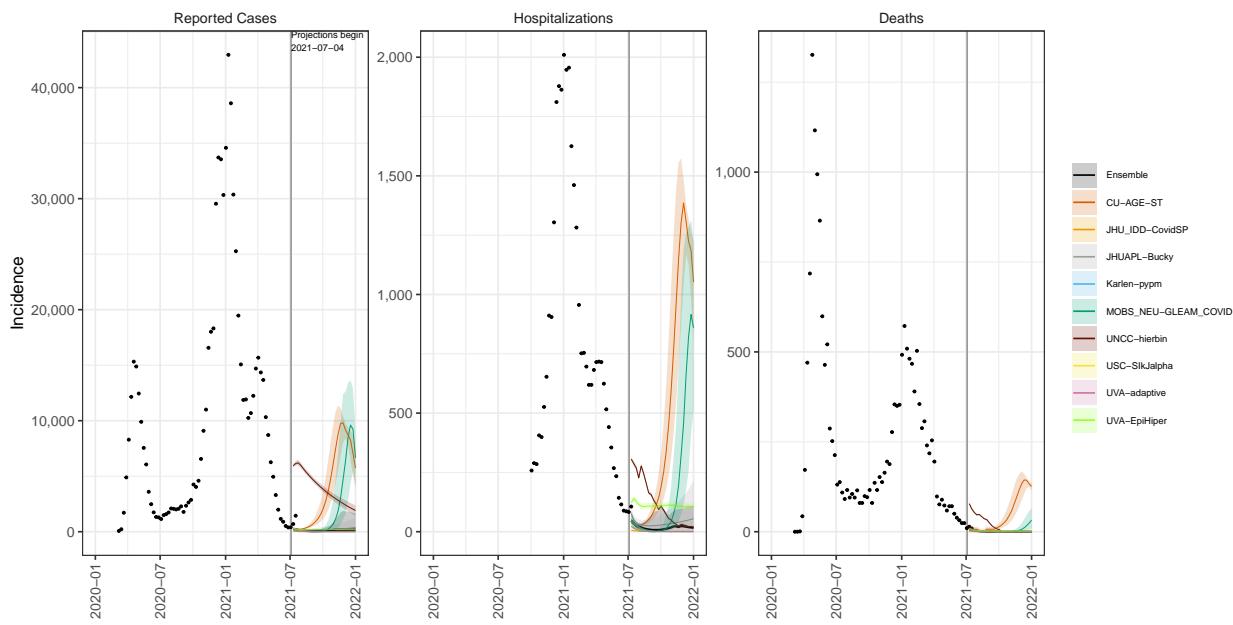
ME model variance & 50% projection intervals – Low vaccination, Low variant transmissibility



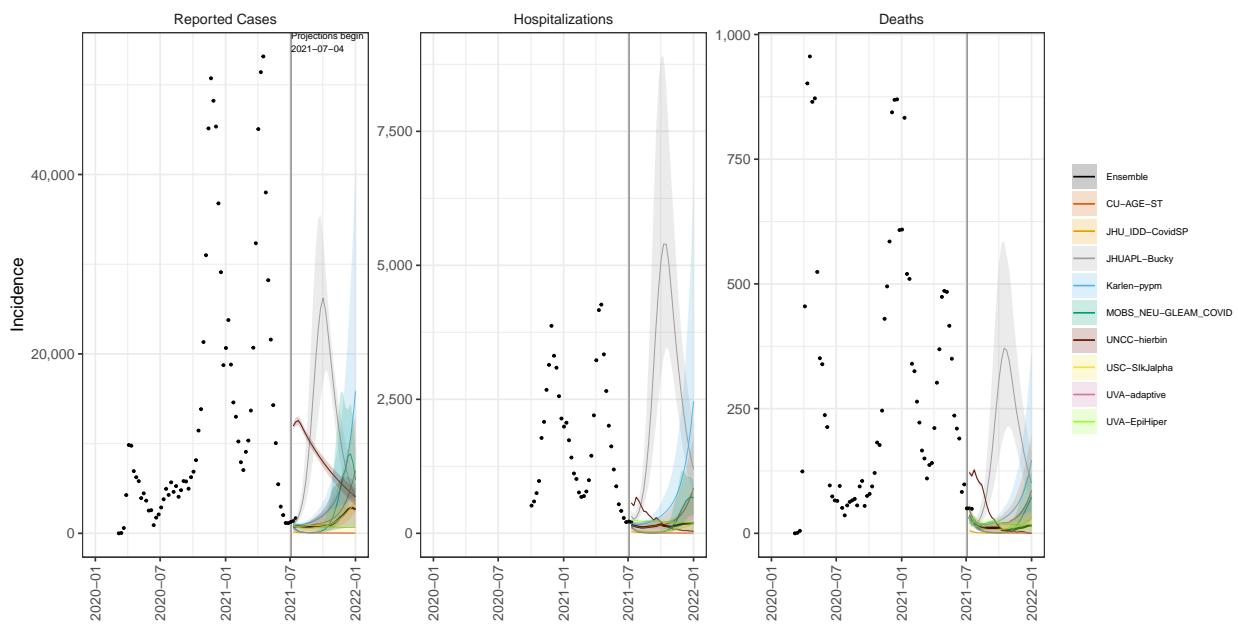
### MD model variance & 50% projection intervals – Low vaccination, Low variant transmissibility



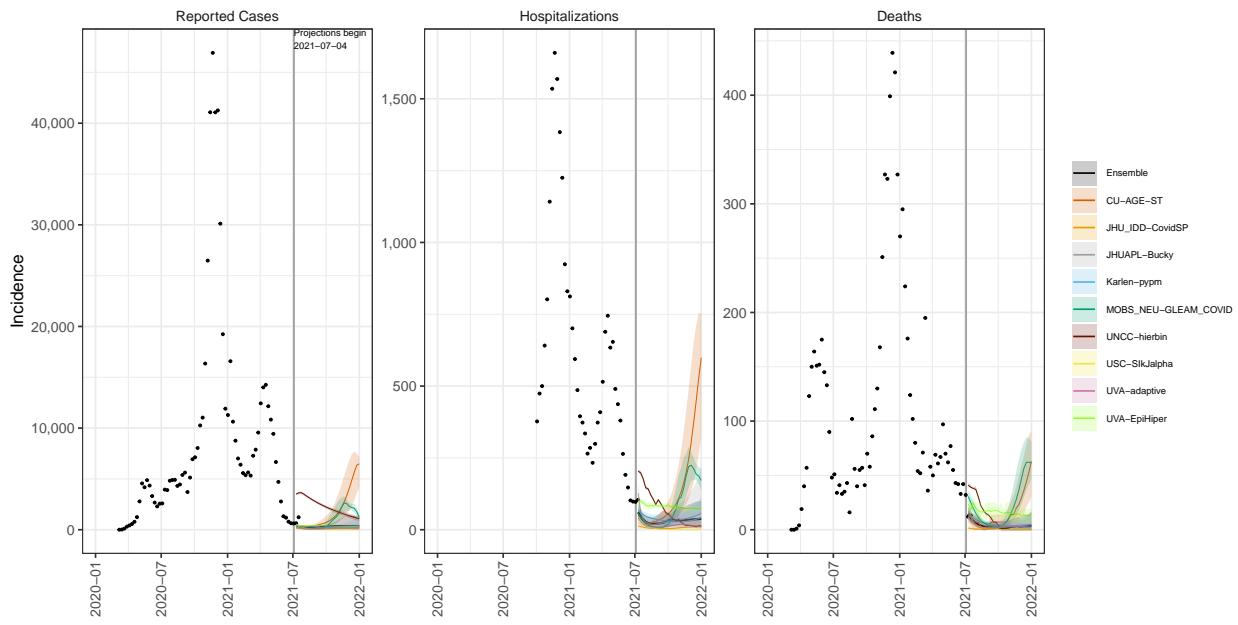
### MA model variance & 50% projection intervals – Low vaccination, Low variant transmissibility



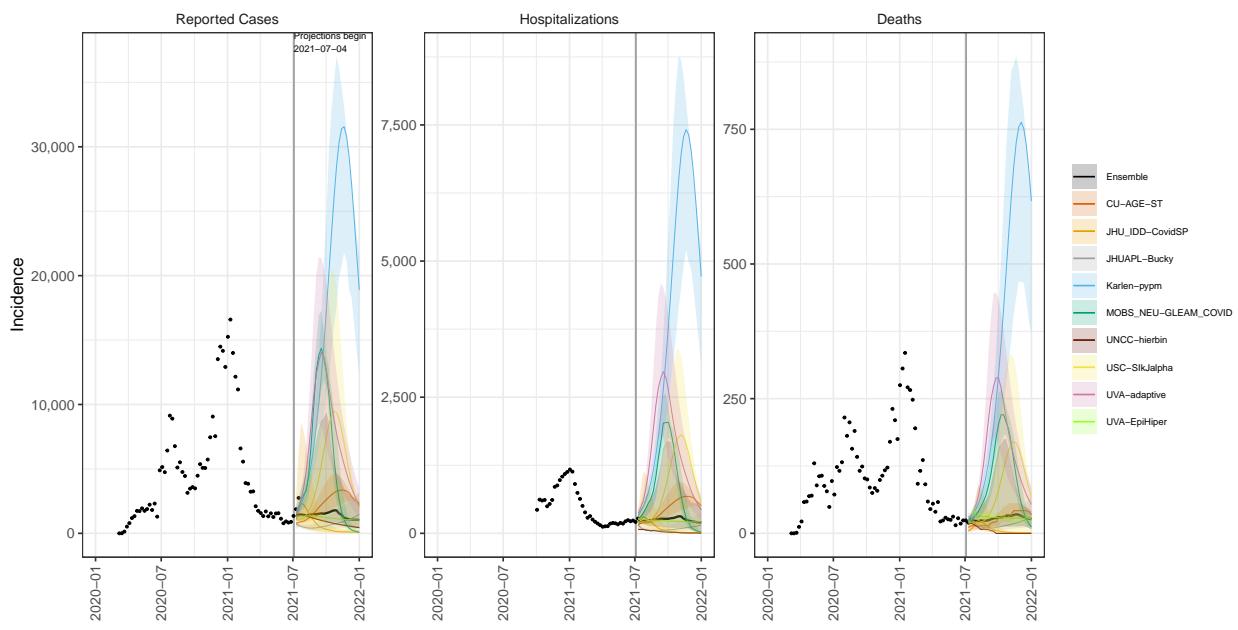
### MI model variance & 50% projection intervals – Low vaccination, Low variant transmissibility



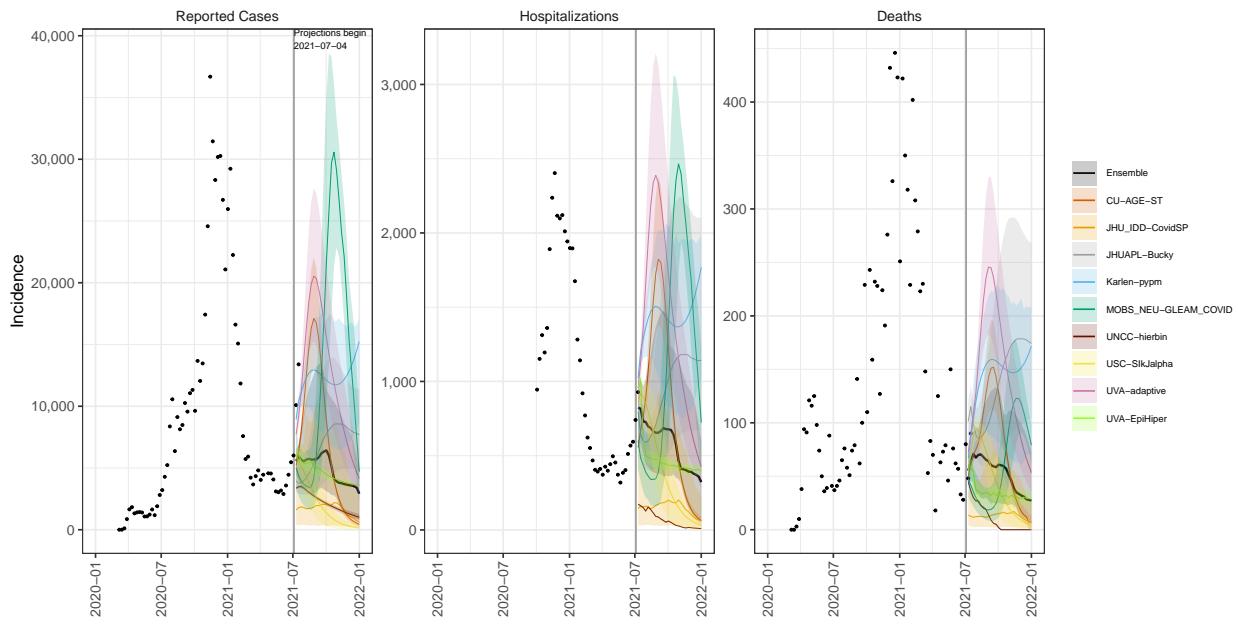
### MN model variance & 50% projection intervals – Low vaccination, Low variant transmissibility



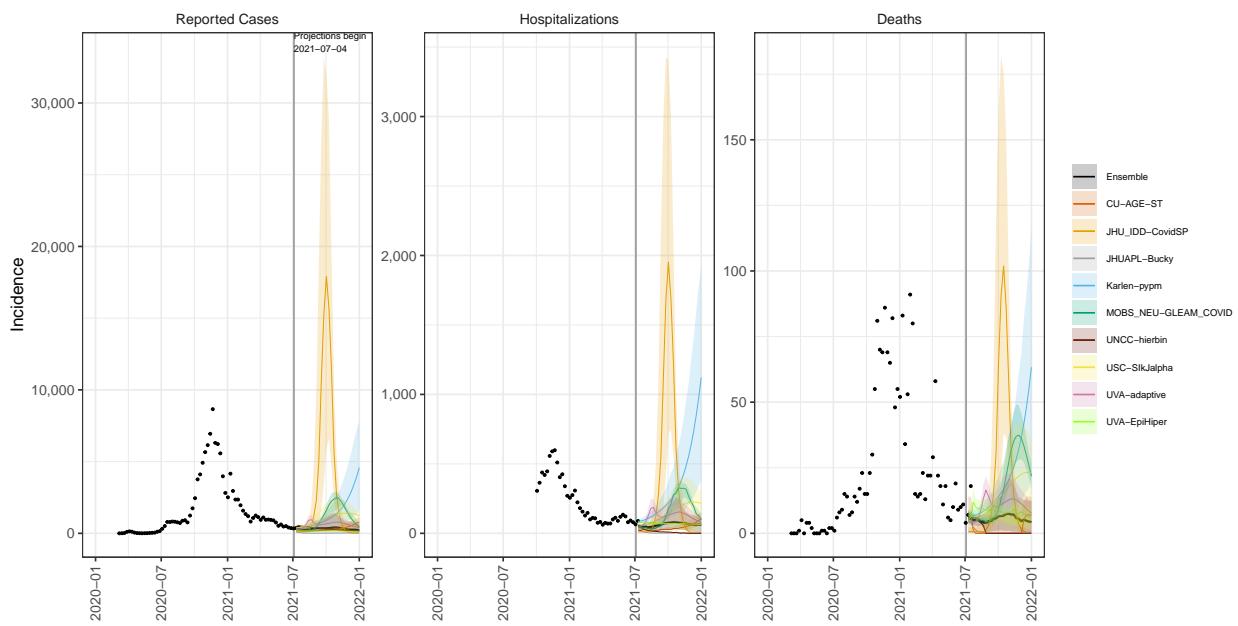
MS model variance & 50% projection intervals – Low vaccination, Low variant transmissibility



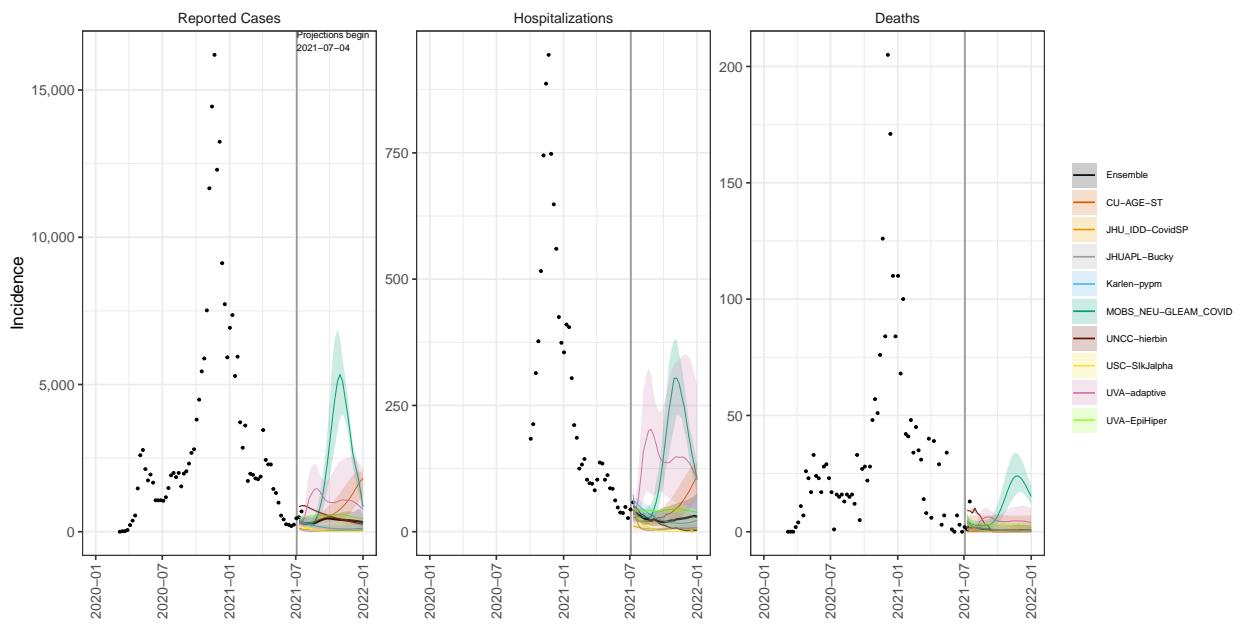
MO model variance & 50% projection intervals – Low vaccination, Low variant transmissibility



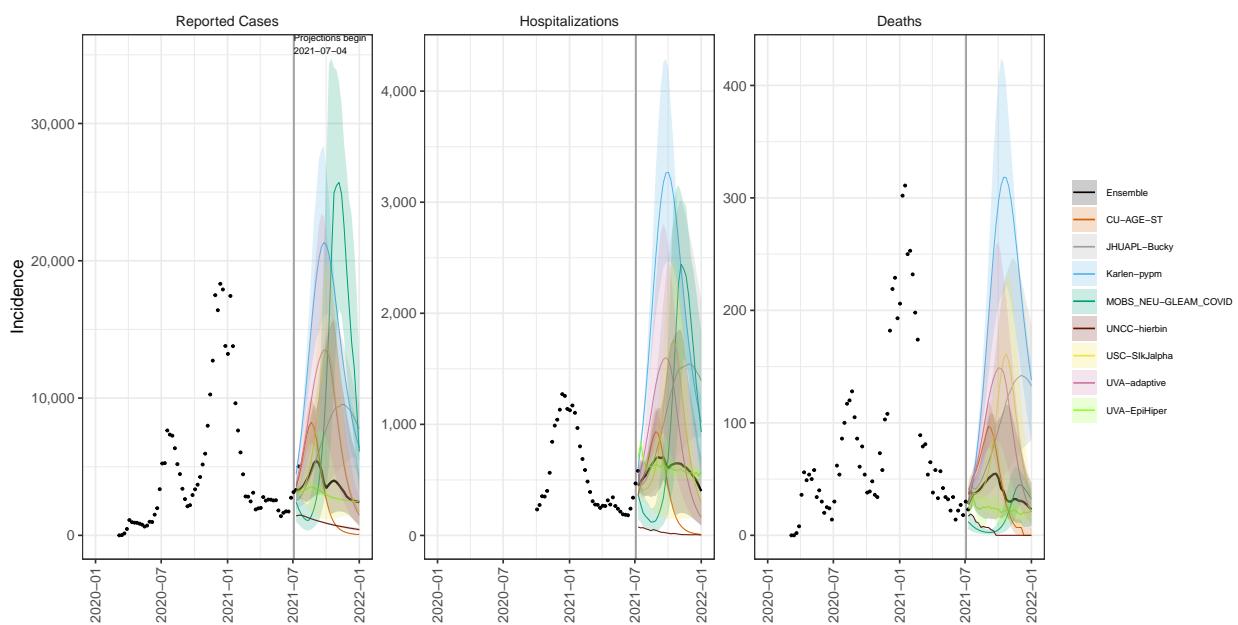
### MT model variance & 50% projection intervals – Low vaccination, Low variant transmissibility



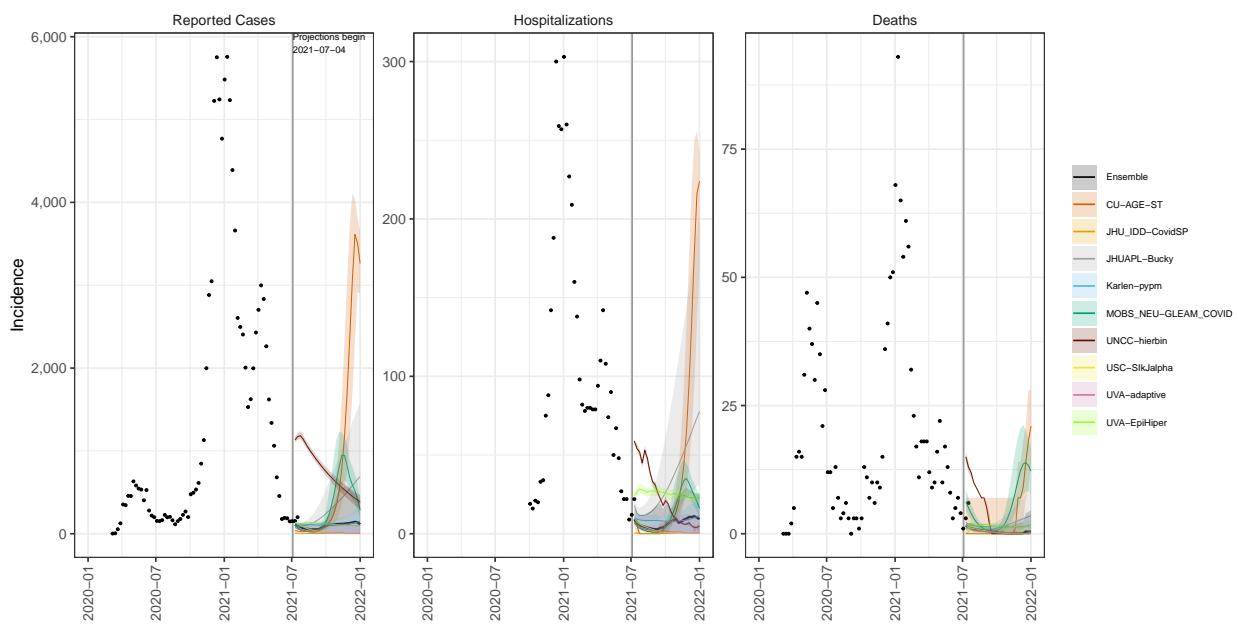
### NE model variance & 50% projection intervals – Low vaccination, Low variant transmissibility



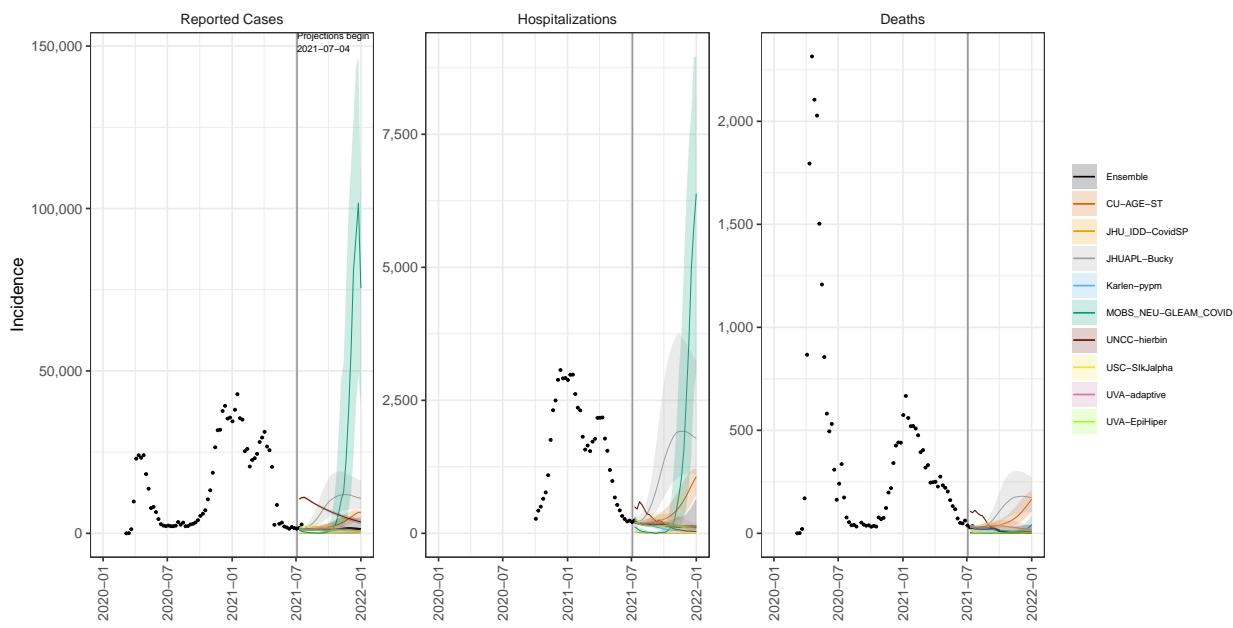
### NV model variance & 50% projection intervals – Low vaccination, Low variant transmissibility



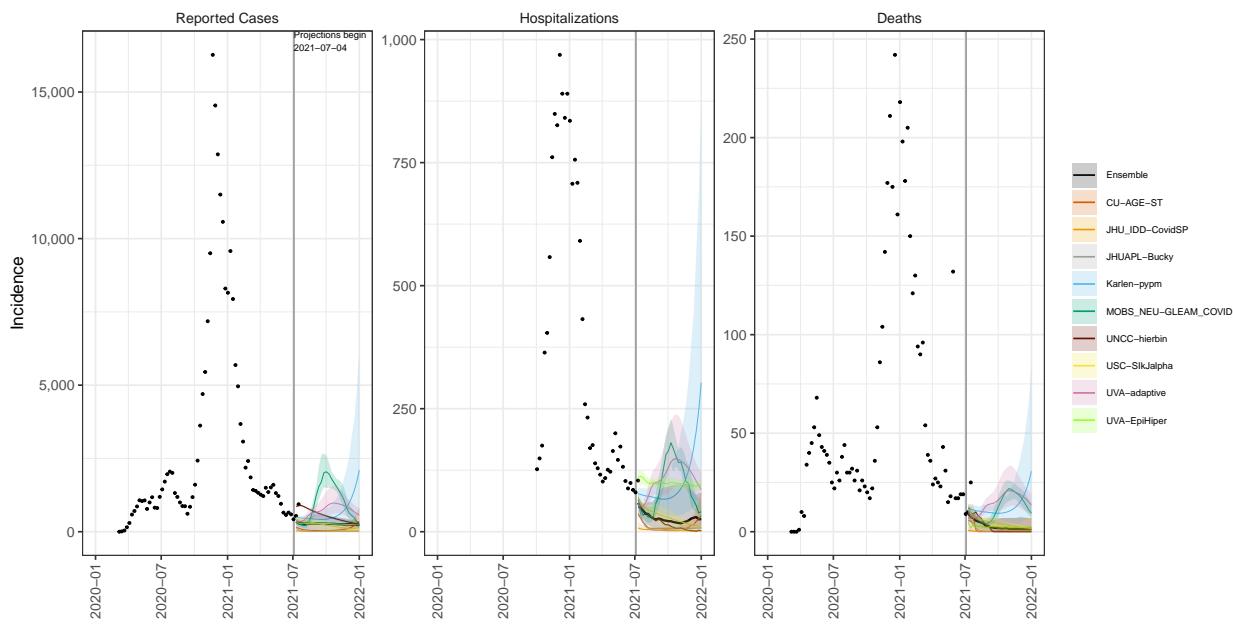
### NH model variance & 50% projection intervals – Low vaccination, Low variant transmissibility



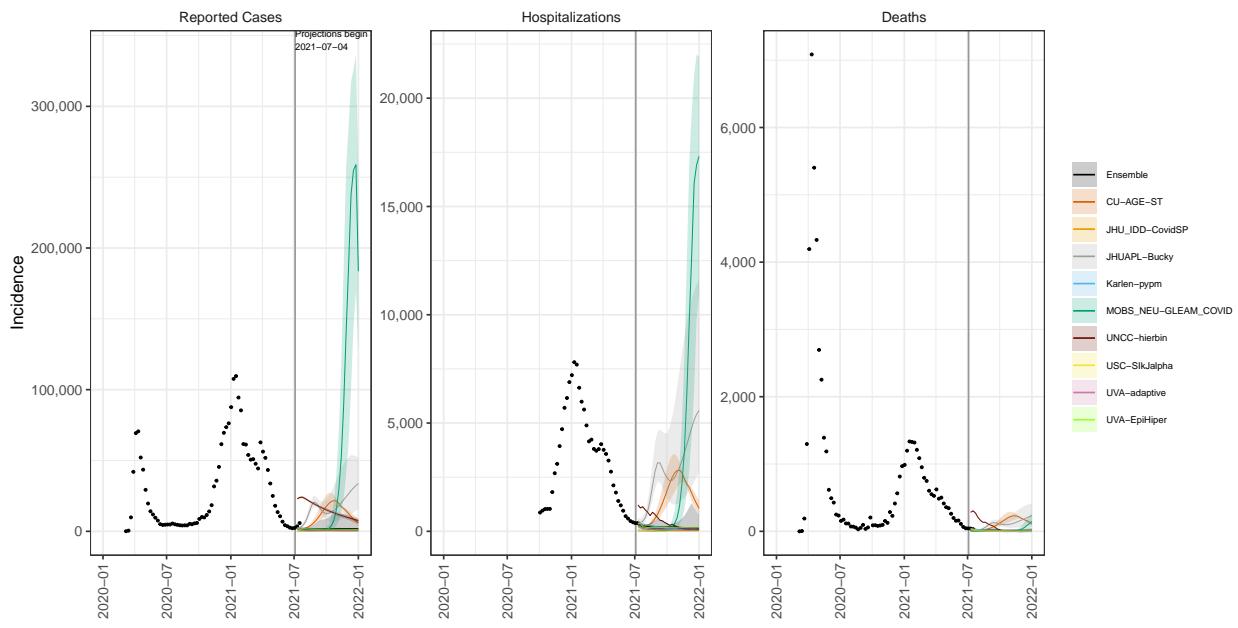
NJ model variance & 50% projection intervals – Low vaccination, Low variant transmissibility



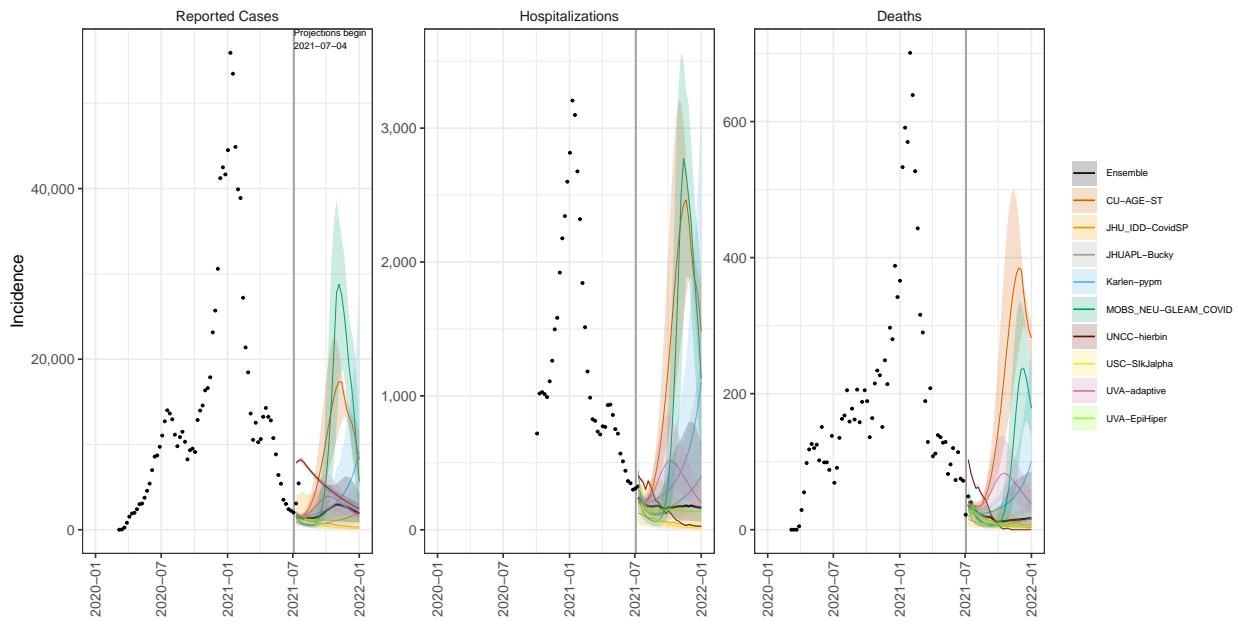
NM model variance & 50% projection intervals – Low vaccination, Low variant transmissibility



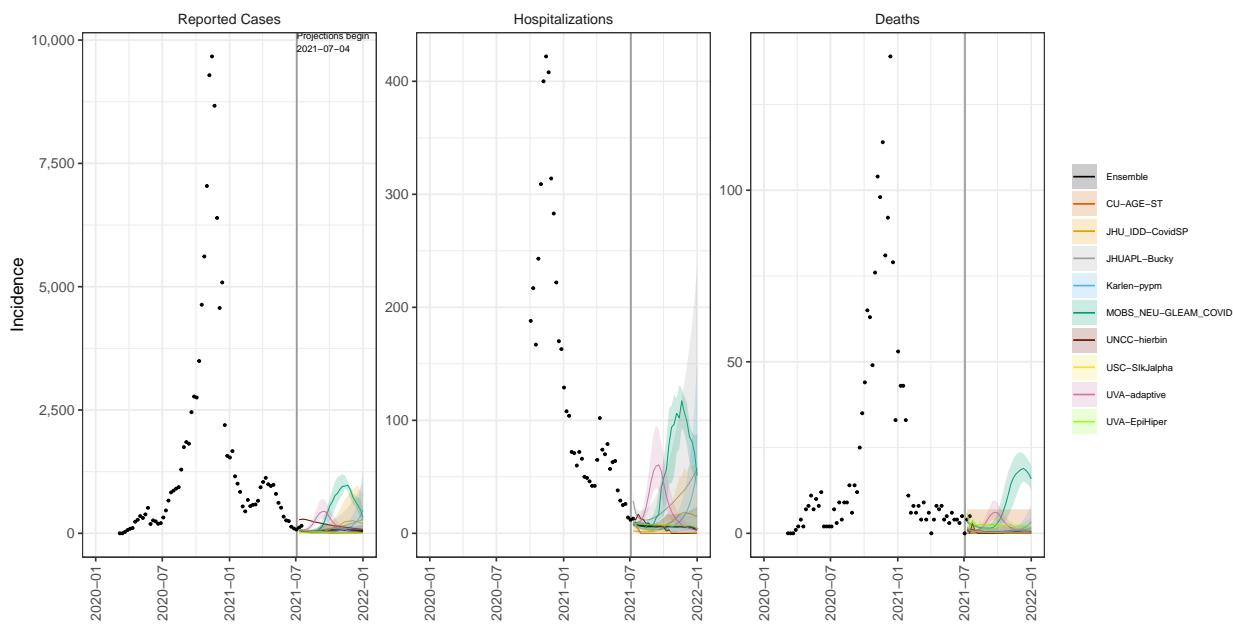
NY model variance & 50% projection intervals – Low vaccination, Low variant transmissibility



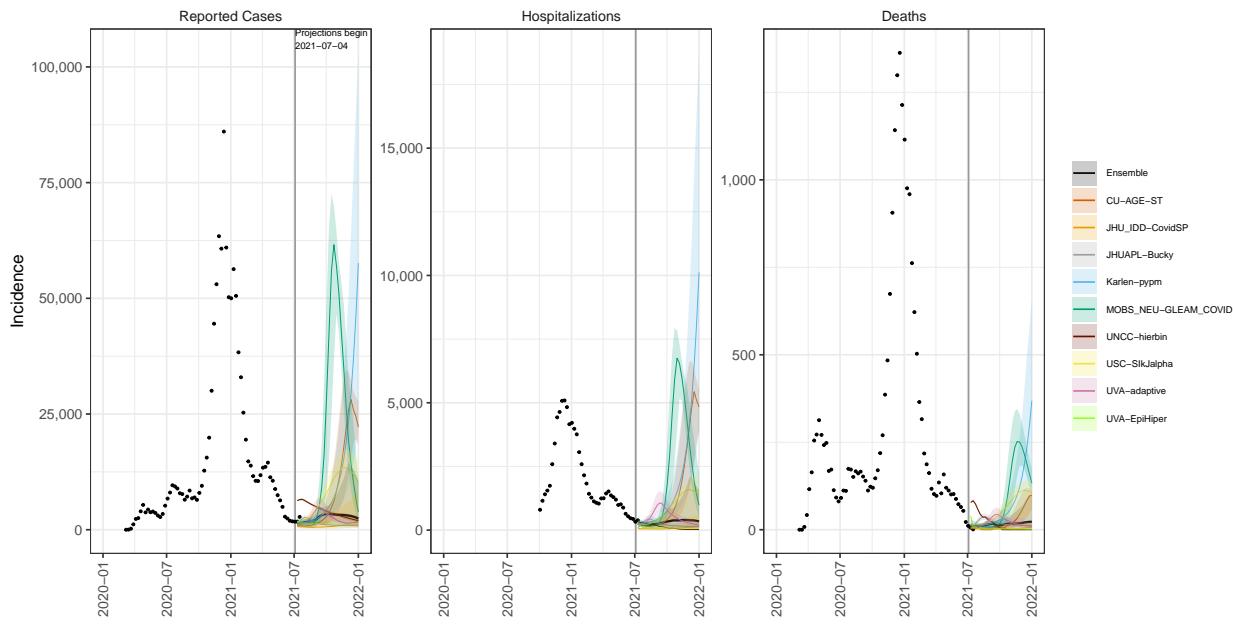
NC model variance & 50% projection intervals – Low vaccination, Low variant transmissibility



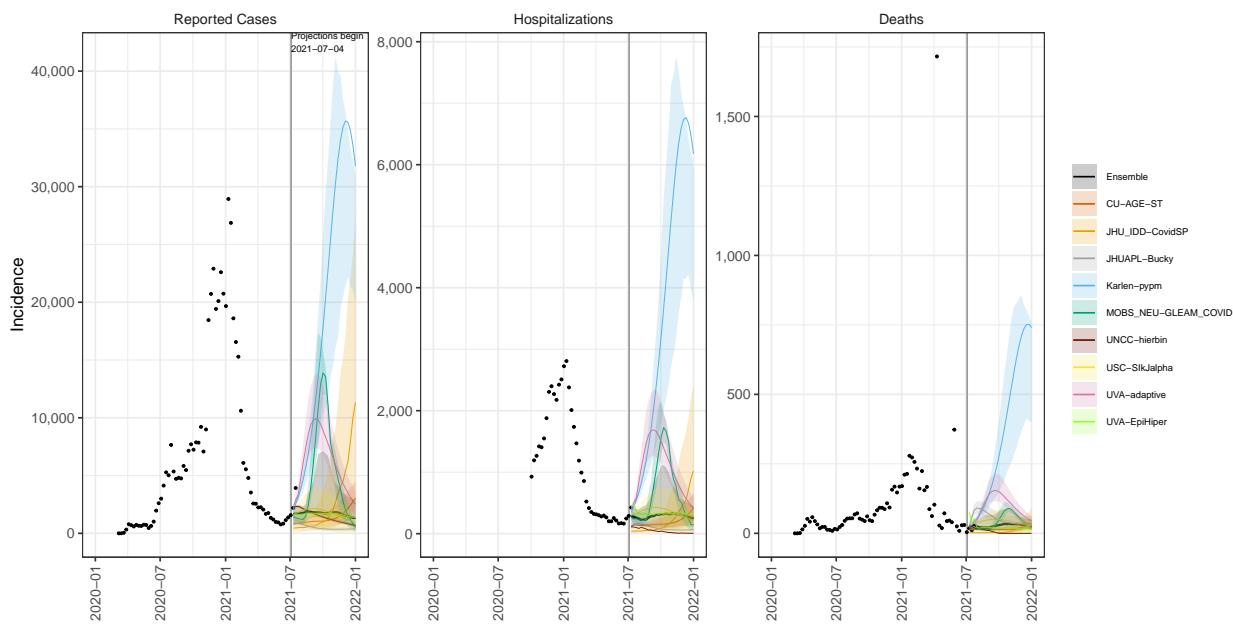
ND model variance & 50% projection intervals – Low vaccination, Low variant transmissibility



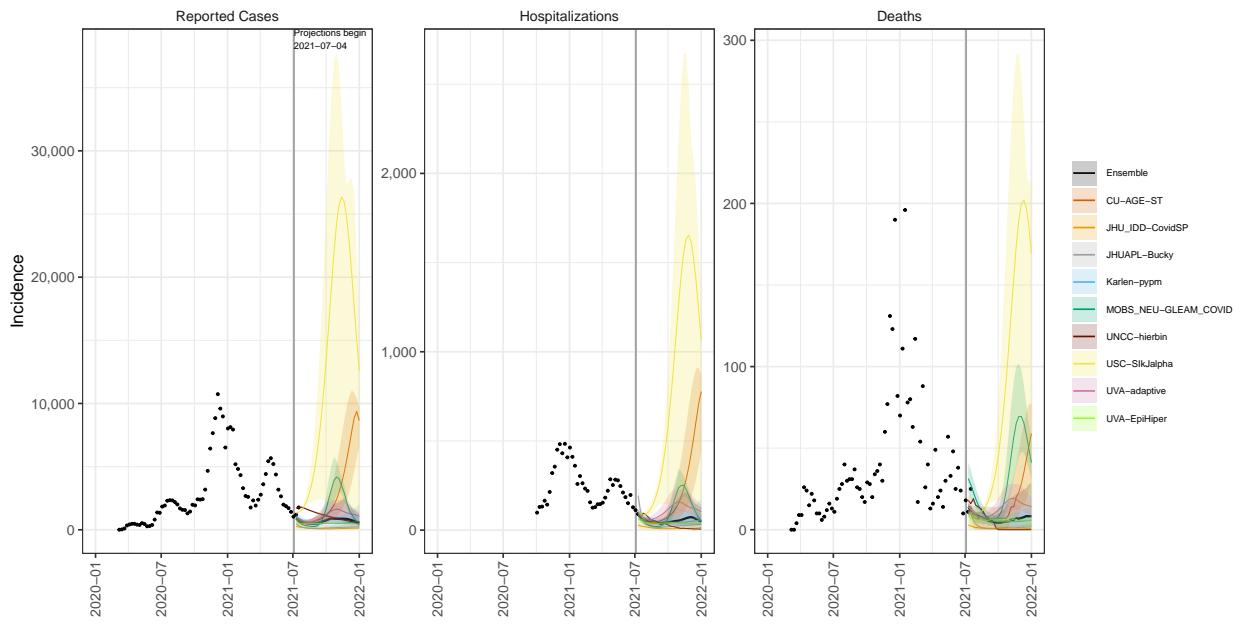
OH model variance & 50% projection intervals – Low vaccination, Low variant transmissibility



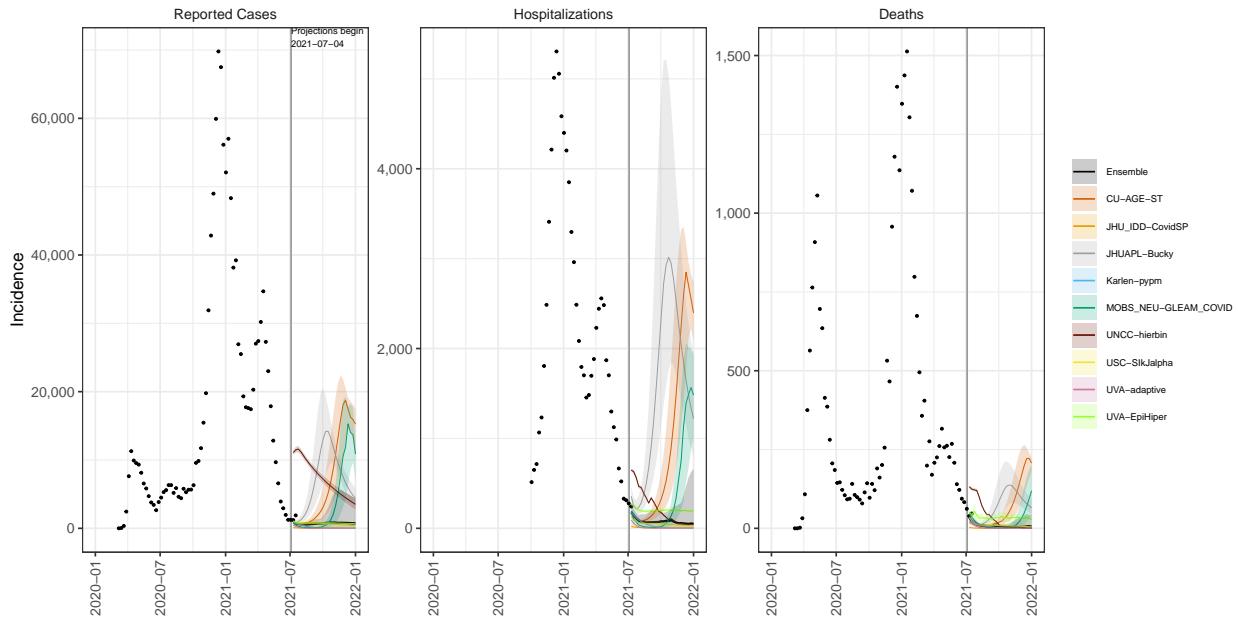
OK model variance & 50% projection intervals – Low vaccination, Low variant transmissibility



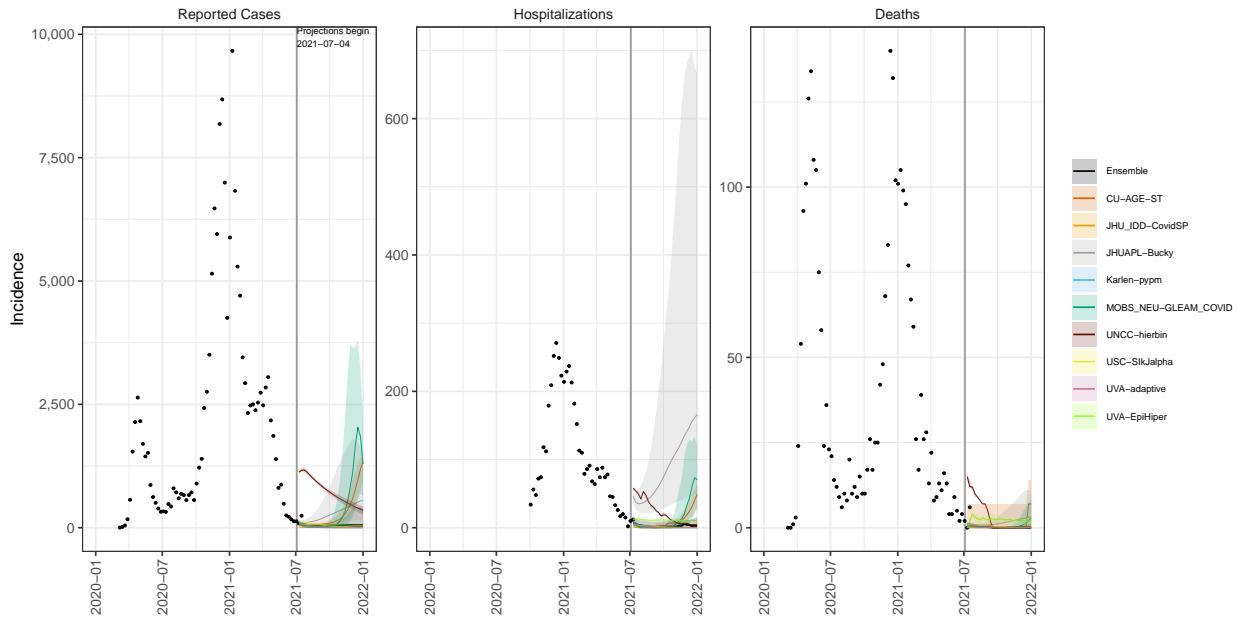
OR model variance & 50% projection intervals – Low vaccination, Low variant transmissibility



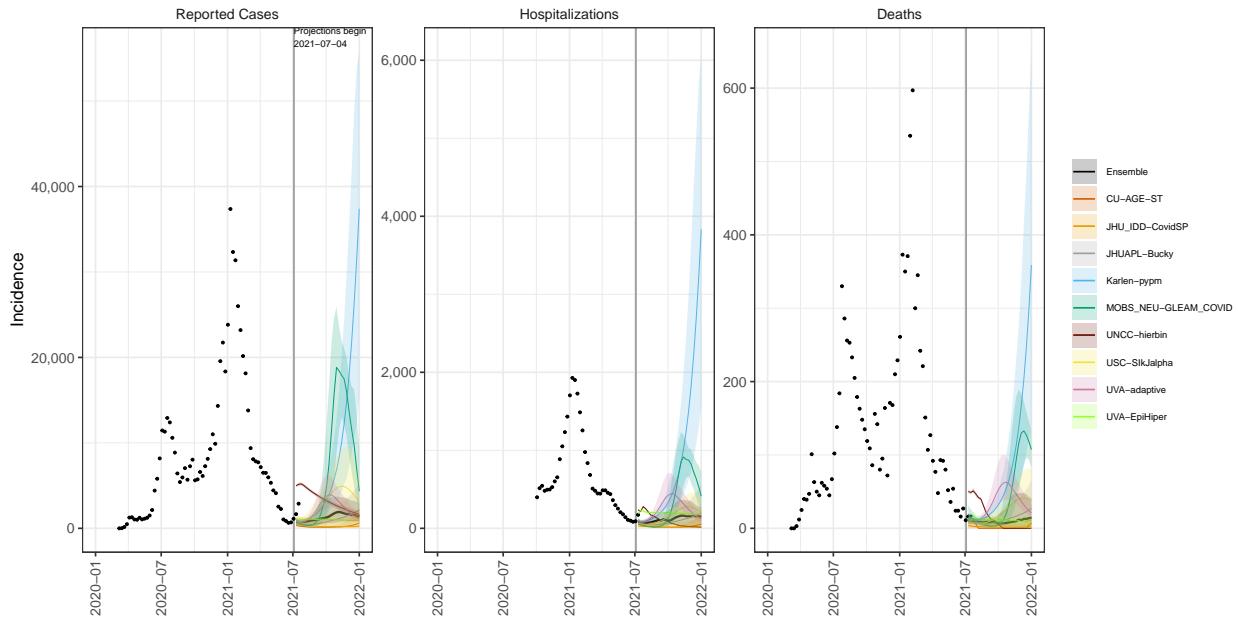
PA model variance & 50% projection intervals – Low vaccination, Low variant transmissibility



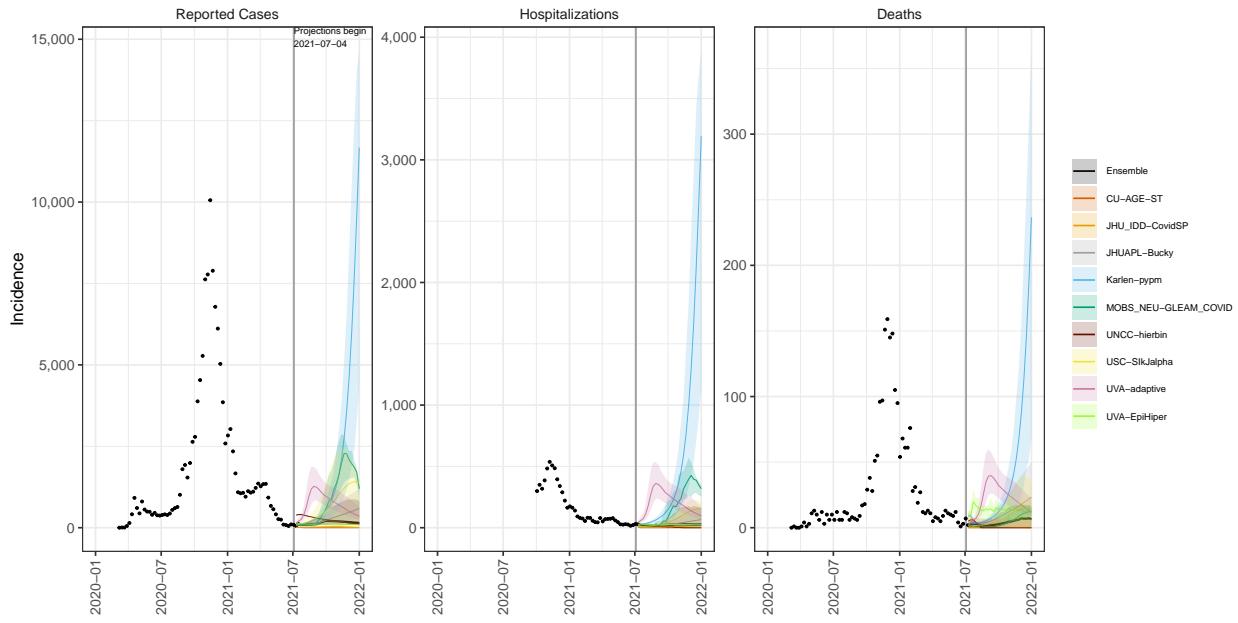
RI model variance & 50% projection intervals – Low vaccination, Low variant transmissibility



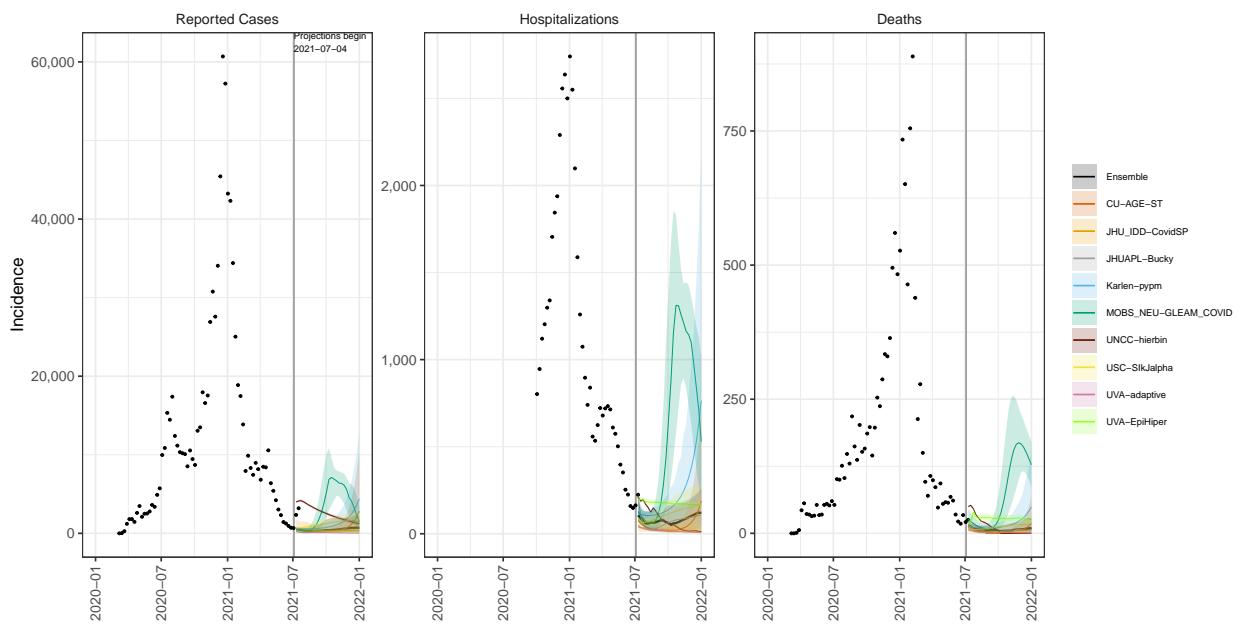
### SC model variance & 50% projection intervals – Low vaccination, Low variant transmissibility



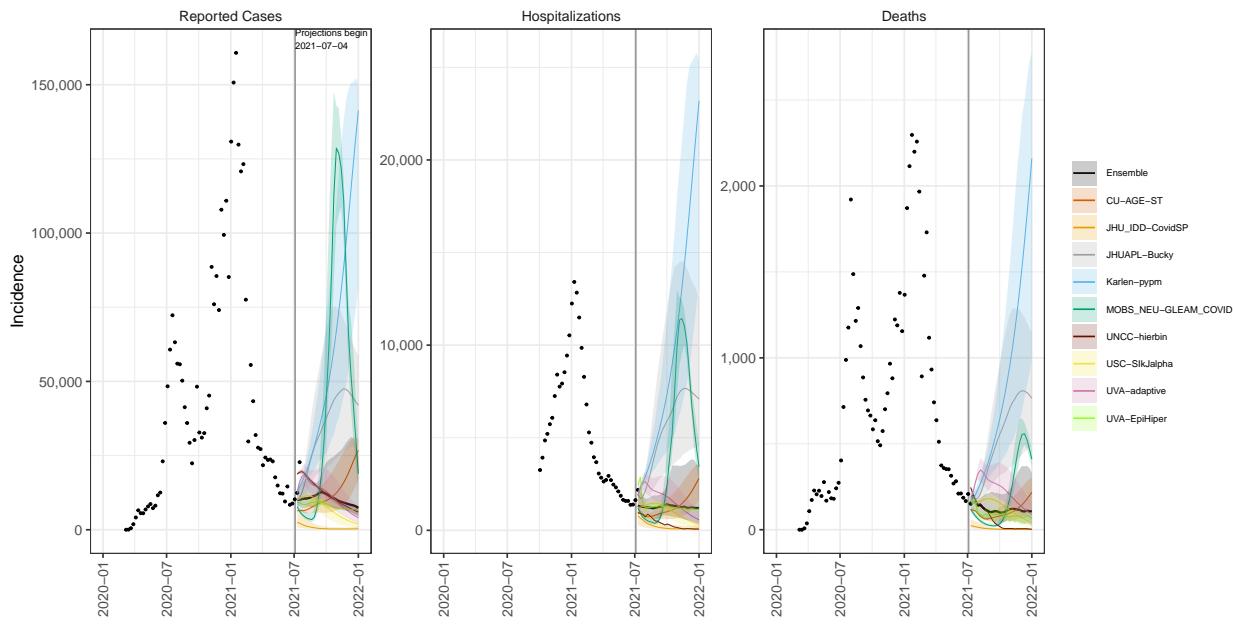
### SD model variance & 50% projection intervals – Low vaccination, Low variant transmissibility



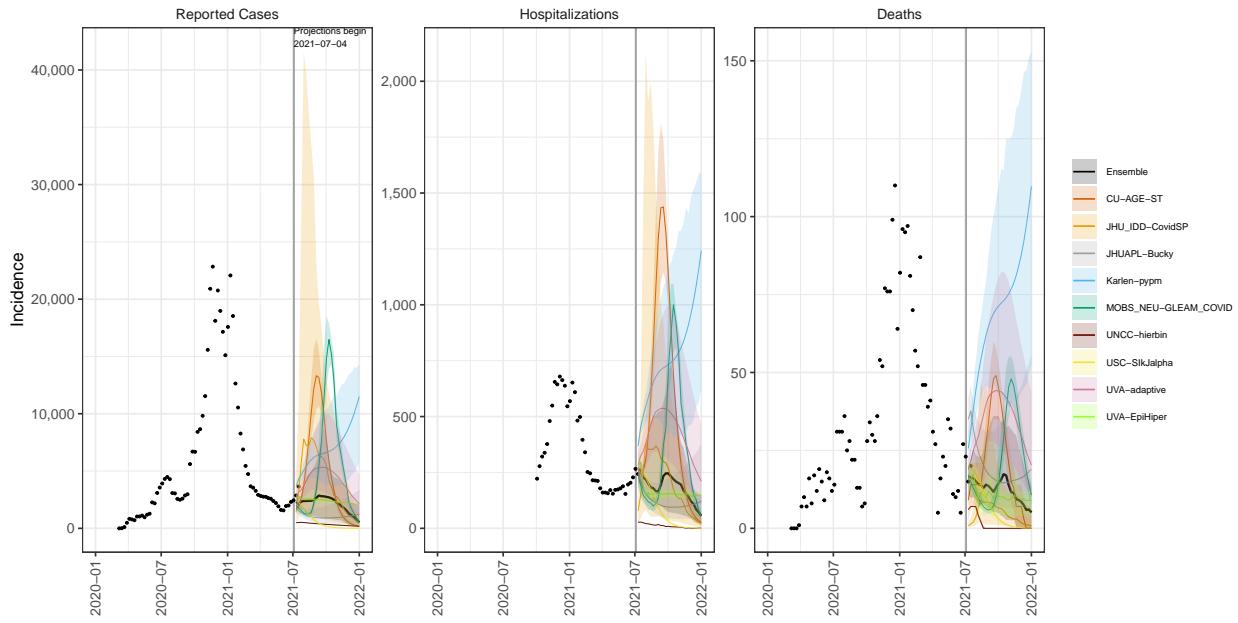
### TN model variance & 50% projection intervals – Low vaccination, Low variant transmissibility



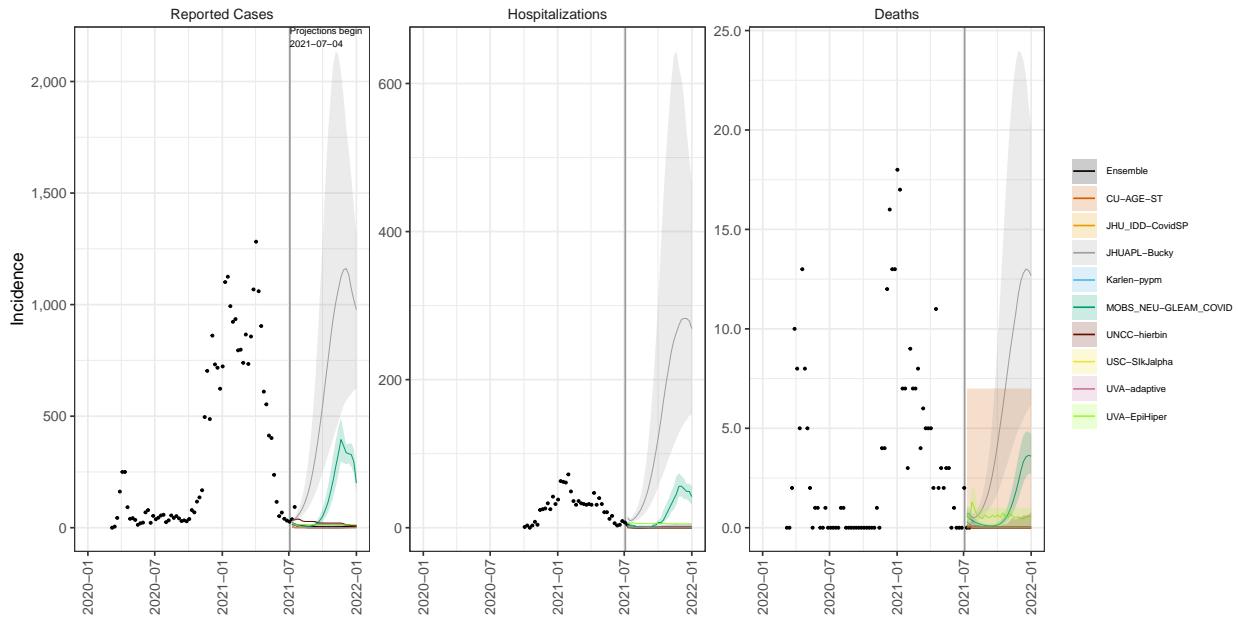
### TX model variance & 50% projection intervals – Low vaccination, Low variant transmissibility



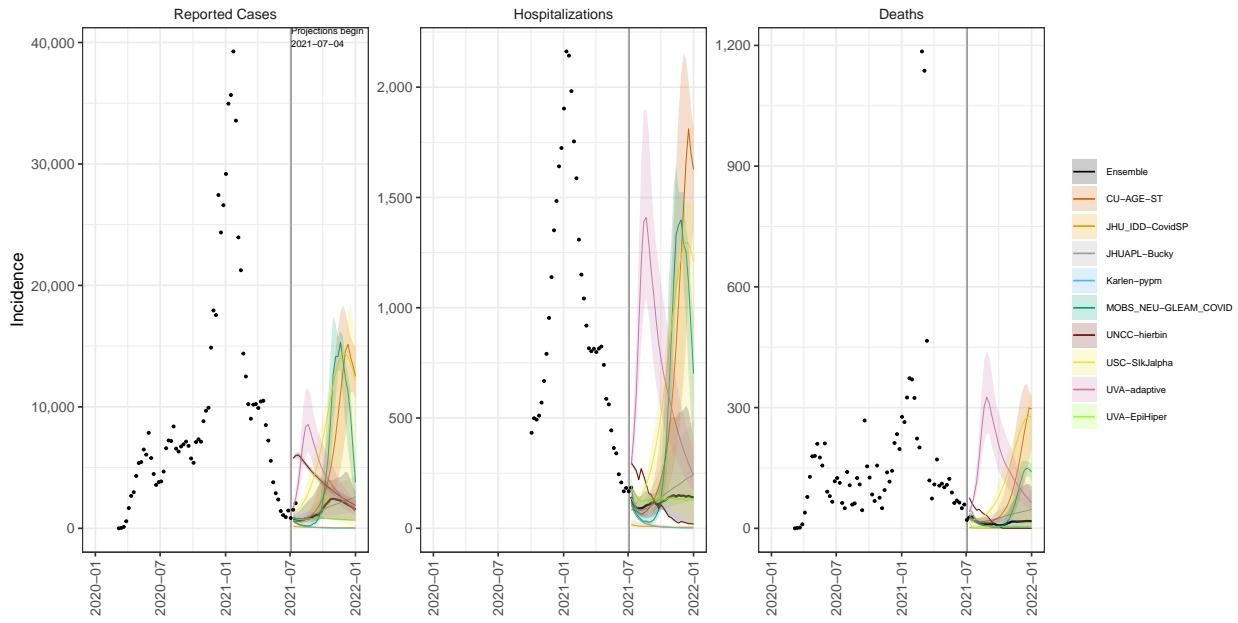
### UT model variance & 50% projection intervals – Low vaccination, Low variant transmissibility



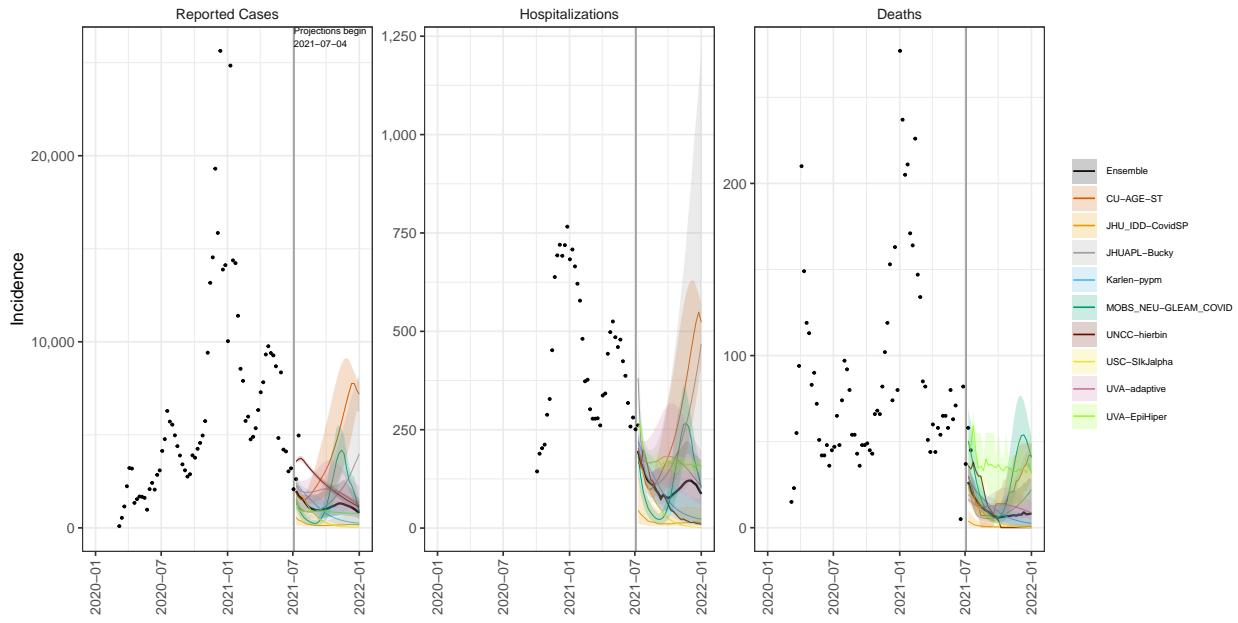
### VT model variance & 50% projection intervals – Low vaccination, Low variant transmissibility



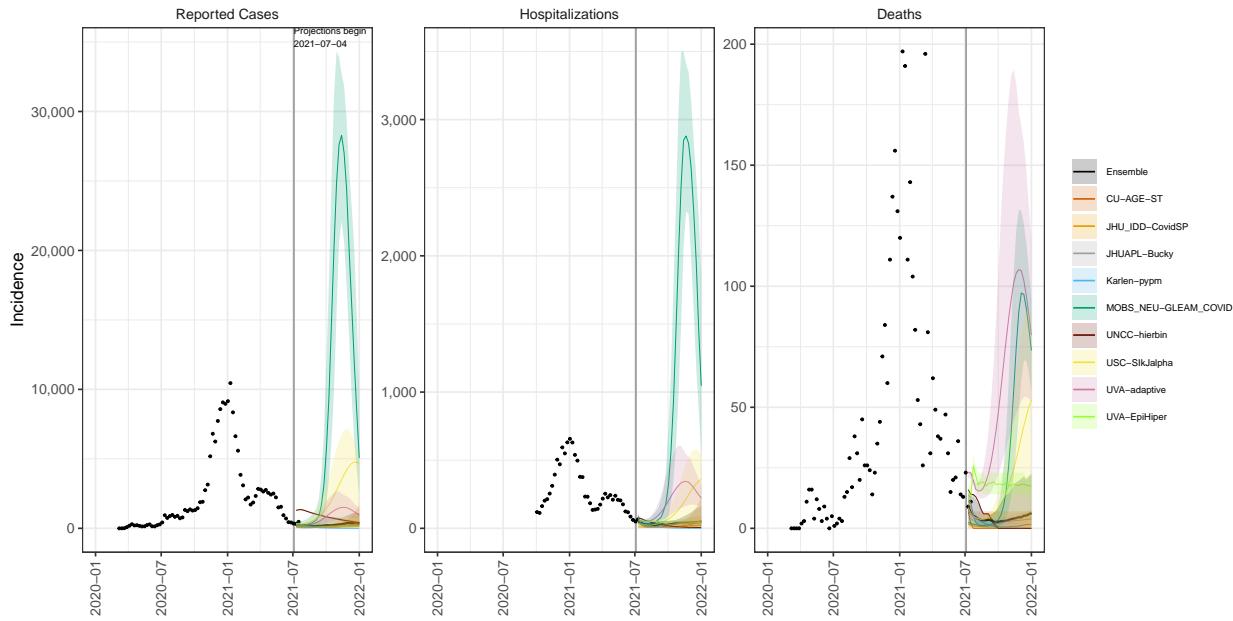
VA model variance & 50% projection intervals – Low vaccination, Low variant transmissibility



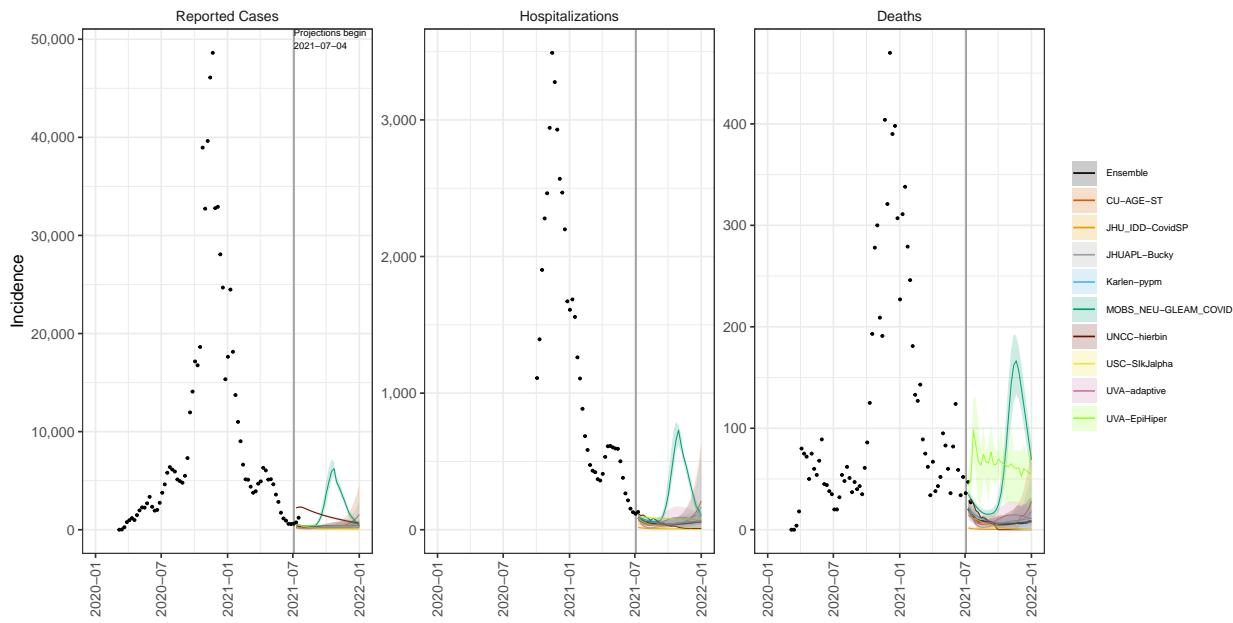
WA model variance & 50% projection intervals – Low vaccination, Low variant transmissibility



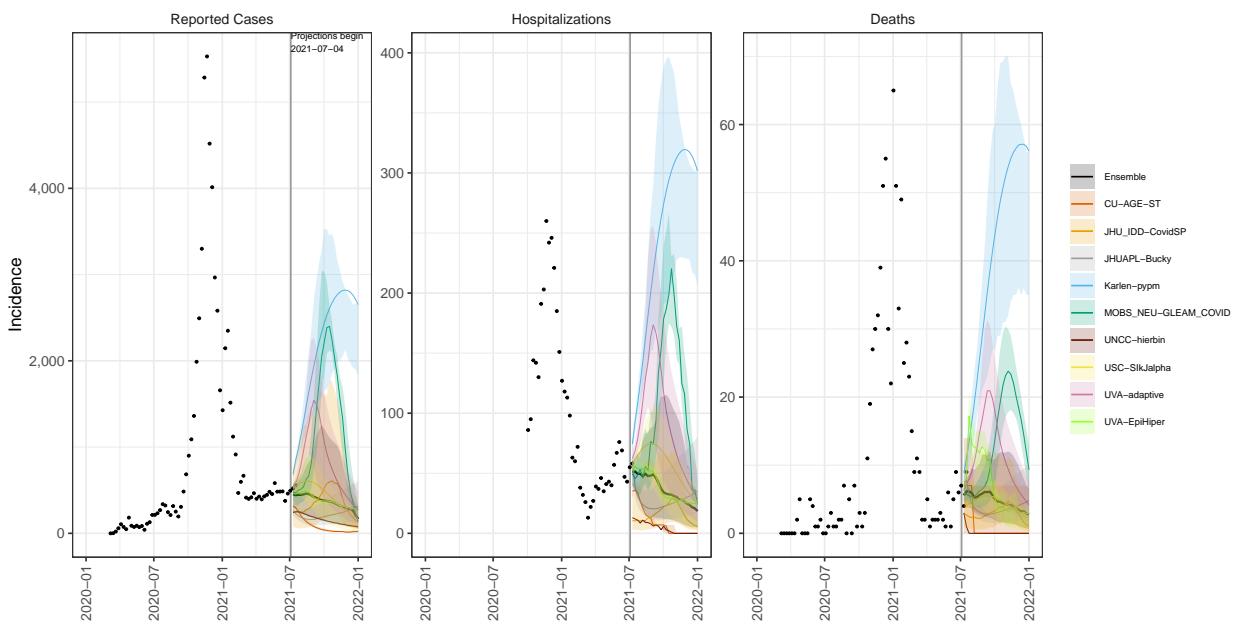
WV model variance & 50% projection intervals – Low vaccination, Low variant transmissibility



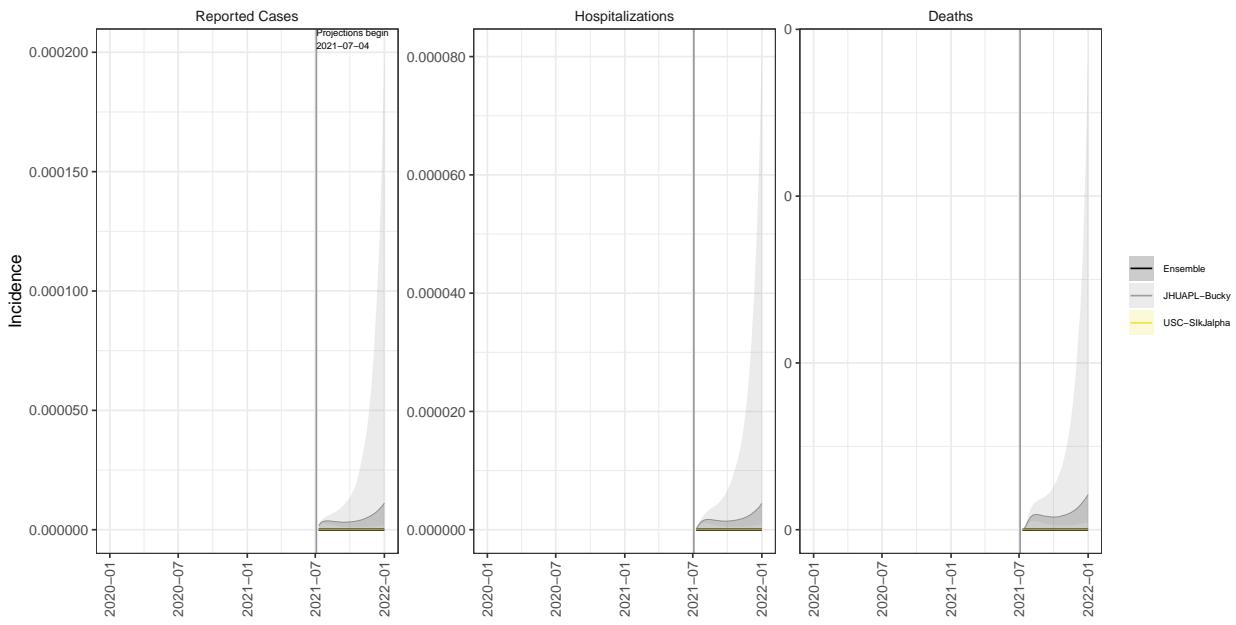
WI model variance & 50% projection intervals – Low vaccination, Low variant transmissibility



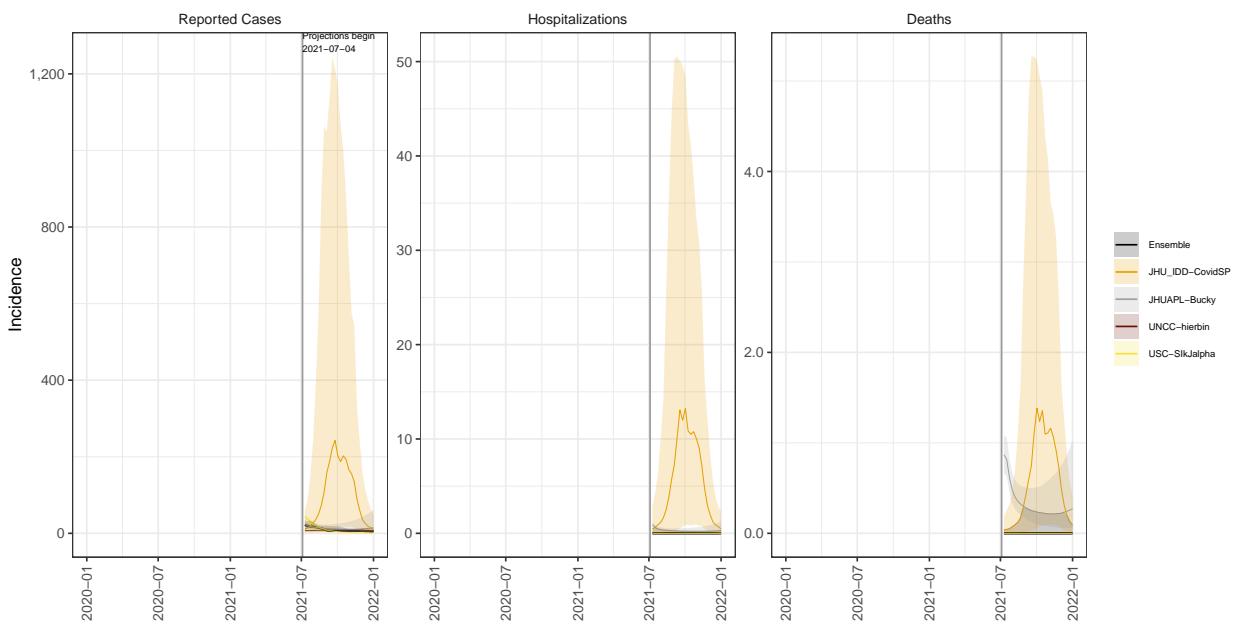
WY model variance & 50% projection intervals – Low vaccination, Low variant transmissibility



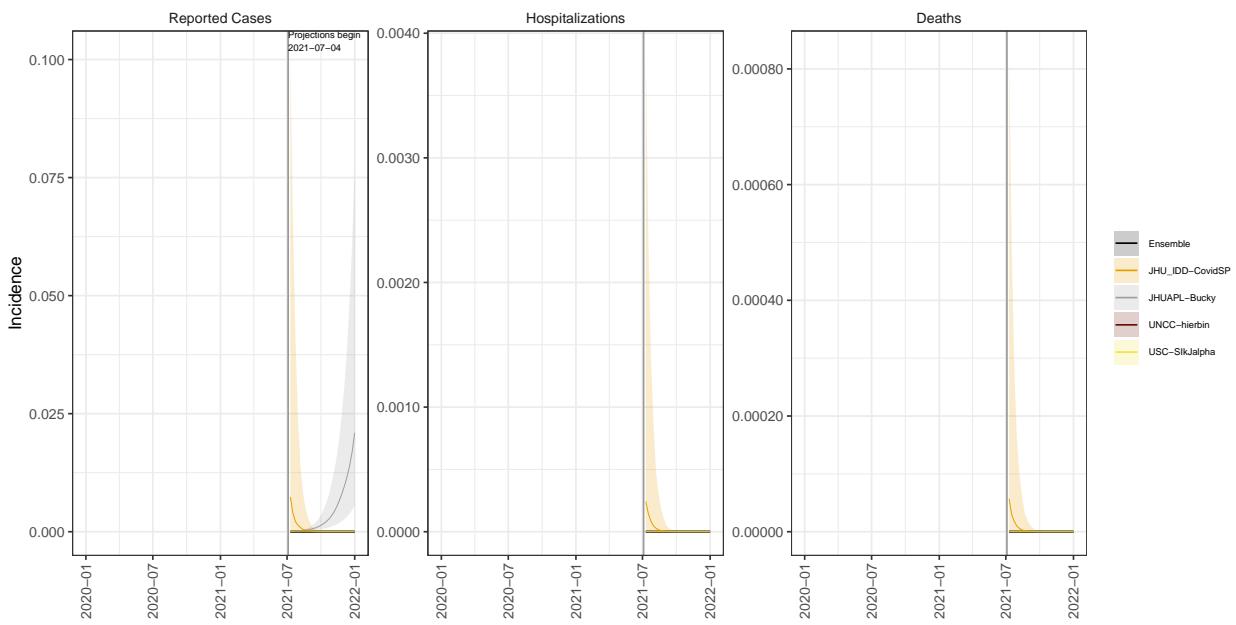
AS model variance & 50% projection intervals – Low vaccination, Low variant transmissibility



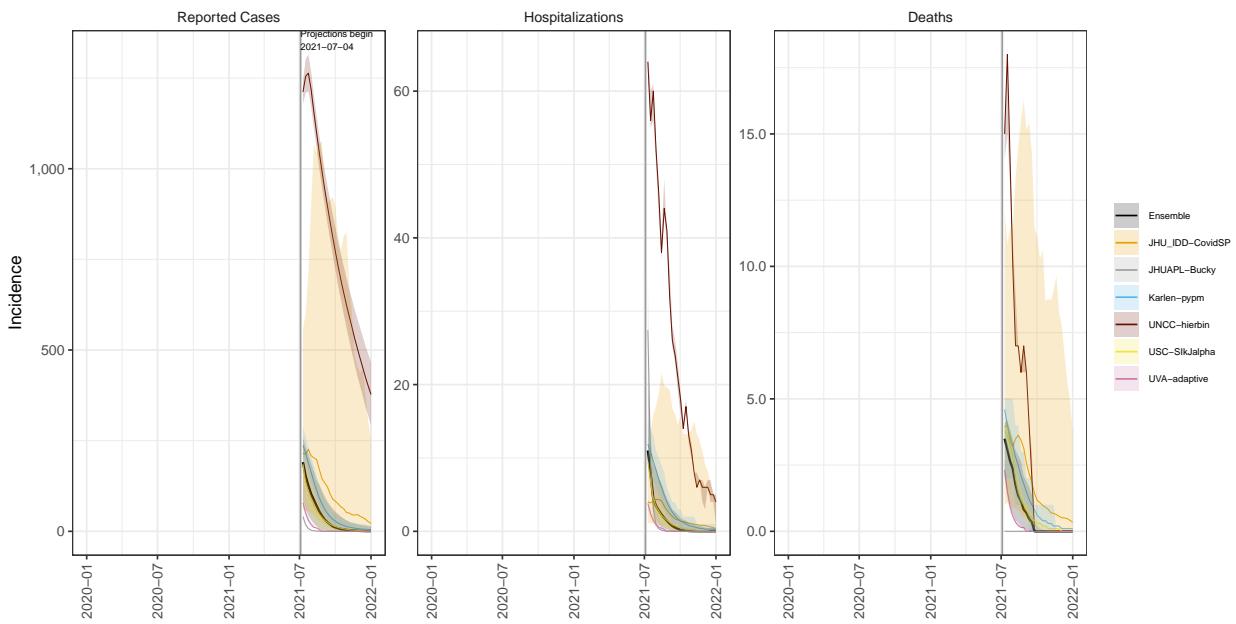
GU model variance & 50% projection intervals – Low vaccination, Low variant transmissibility



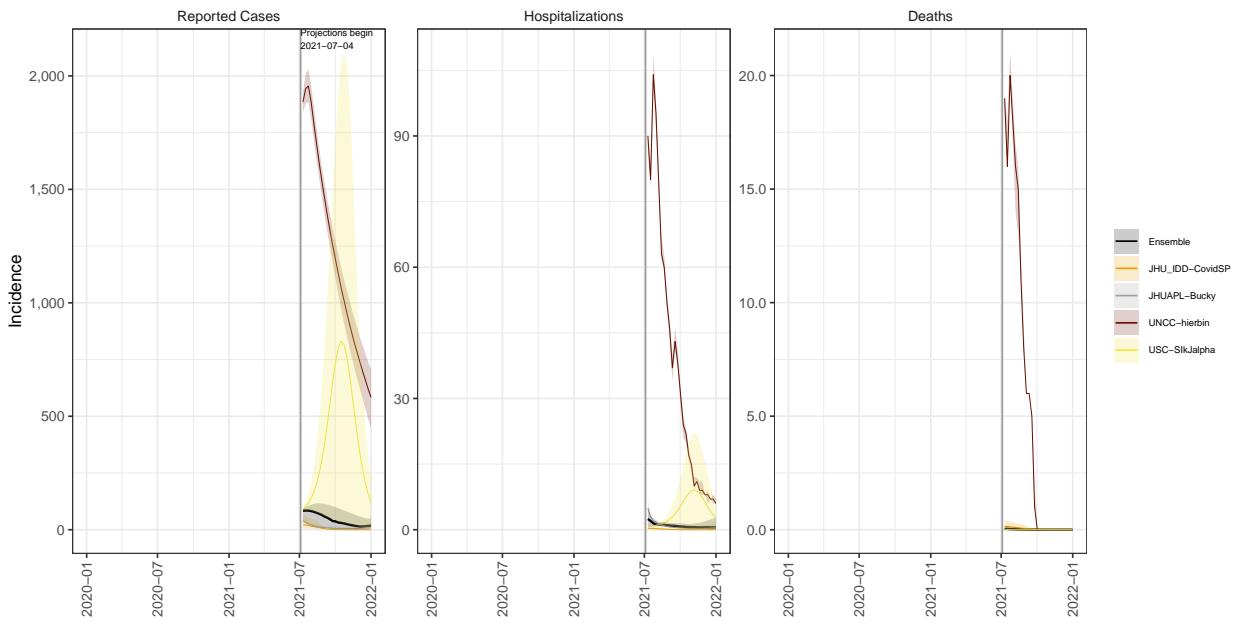
MP model variance & 50% projection intervals – Low vaccination, Low variant transmissibility



PR model variance & 50% projection intervals – Low vaccination, Low variant transmissibility



VI model variance & 50% projection intervals – Low vaccination, Low variant transmissibility



## Teams and models

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