

COVID-19 Scenario Modeling Hub Report

07 April, 2021

Scenario Modeling Hub Team¹

Executive Summary

This report presents the results of the fourth round of projections from the COVID-19 Scenario Modeling Hub. A consortium of six modeling groups convened to generate week ahead projections of COVID-19 cases, deaths, and hospitalizations for a period of six months (weeks ending 2021-04-03 to 2021-09-25), given four scenarios. A full list of contributors is included at the end of the report. Detailed scenario descriptions and setting assumptions are provided [here](#).

The fourth round scenarios can be summarized as follows:

	Moderate NPI (moderate NPI reduction)	Low NPI (high NPI reduction)
High Vaccination (high administration and VE, high vaccine coverage)	Scenario A Vaccination: <ul style="list-style-type: none">- M/P:<ul style="list-style-type: none">- 75%/95% VE against symptoms*- 50M 1st doses administered monthly, April-September**- J&J:<ul style="list-style-type: none">- 70% VE against symptoms- 10-20M doses administered monthly (April: 10M, May: 15M, June-Sept: 20M)***- At most 90% vaccination coverage per group NPIs: <ul style="list-style-type: none">- 50% reduction from March 2021 to September 2021	Scenario B Vaccination: <ul style="list-style-type: none">- M/P:<ul style="list-style-type: none">- 75%/95% VE against symptoms*- 50M 1st doses administered monthly, April-September**- J&J:<ul style="list-style-type: none">- 70% VE against symptoms- 10-20M doses administered monthly (April: 10M, May: 15M, June-Sept: 20M)***- At most 90% vaccination coverage per group NPIs: <ul style="list-style-type: none">- 80% reduction from March 2021 to September 2021
Low Vaccination (low administration and VE, low vaccine coverage)	Scenario C Vaccination: <ul style="list-style-type: none">- M/P:<ul style="list-style-type: none">- 50%/85% VE against symptoms*- 45M 1st doses administered monthly, April-September**- J&J:<ul style="list-style-type: none">- 60% VE against symptoms- 5M doses administered monthly, April-September- At most 75% vaccination coverage per group NPIs: <ul style="list-style-type: none">- 50% reduction from March 2021 to September 2021	Scenario D Vaccination: <ul style="list-style-type: none">- M/P:<ul style="list-style-type: none">- 50%/85% VE against symptoms*- 45M 1st doses administered, monthly, April-September**- J&J:<ul style="list-style-type: none">- 60% VE against symptoms- 5M doses administered monthly, April-September- At most 75% vaccination coverage per group NPIs: <ul style="list-style-type: none">- 80% reduction from March 2021 to September 2021

* VE is defined here as vaccine effectiveness against symptomatic disease. Teams should make their own informed assumptions about effectiveness and impacts on other outcomes (e.g., infection, hospitalization, death). Data on VE studies of infection and symptomatic disease are included below.

** If the maximum level of vaccination specified (e.g., 75%, 90%) is reached in a population group during the projection period, assume that no more vaccination occurs in that group (i.e., do not model new doses beyond this amount). Includes all available vaccines. Past empirical (i.e., true vaccination coverage) can exceed these levels.

*** Increasing J&J: Doses increase monthly due to manufacturing capacity increases.

¹Compiled by Justin Lessler, Rebecca Borchering, and Claire Smith.

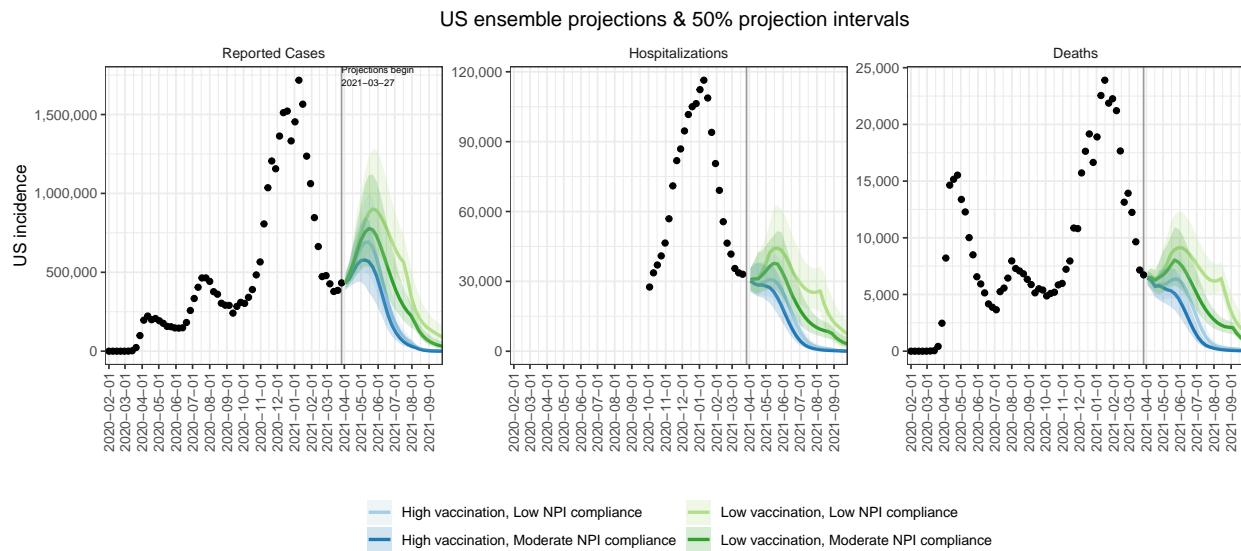
Key Takeaways From Fourth Round

- In all scenarios, cases are predicted to rebound in late May to early June at the national level. A moderate rebound in deaths and hospitalizations is also predicted, except in the most optimistic scenario.
- There is substantial variation in the trajectory of individuals states.
- Model differences highlight key areas of uncertainty, including: locations with high vaccine hesitancy and B.1.1.7 variant prevalence, duration of immunity from natural infection, state-level management practices.

Note: This report is developed for specific stakeholders and should not be shared externally.

National ensemble projections

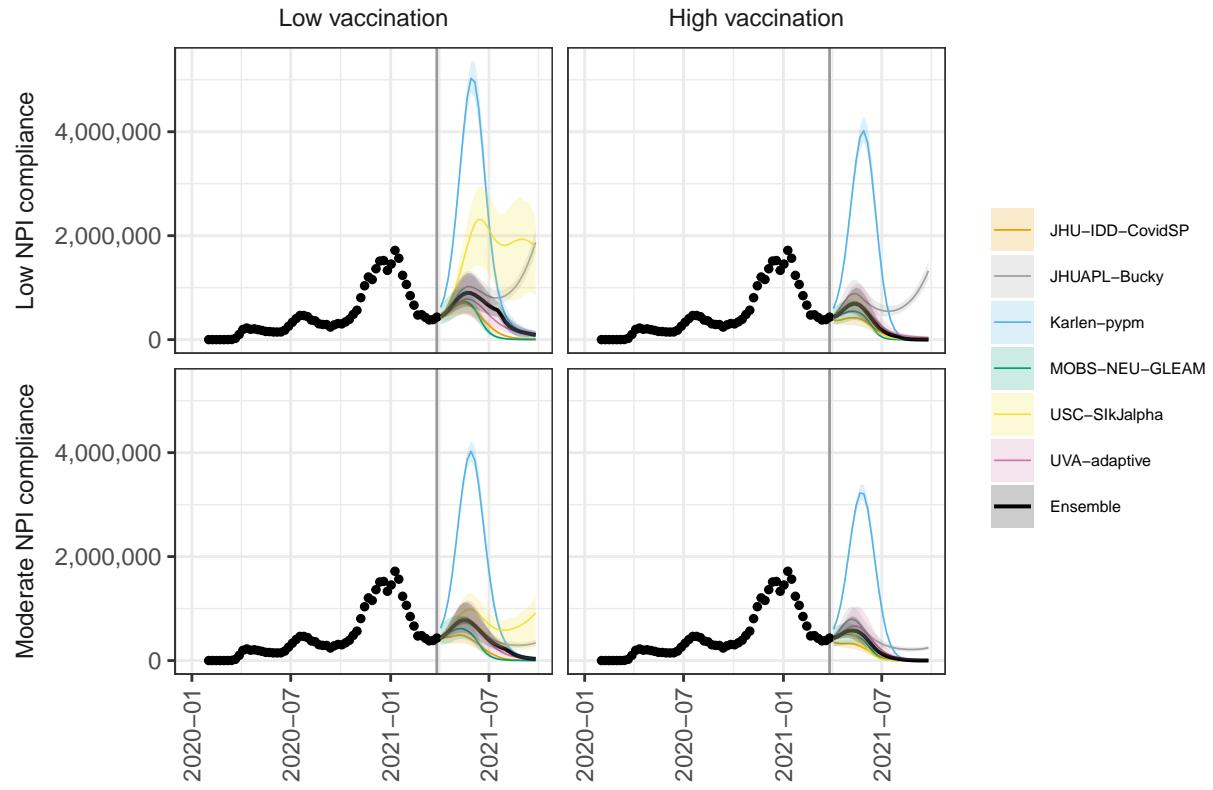
Ensemble projections for national cases, hospitalizations and deaths separated by scenario.



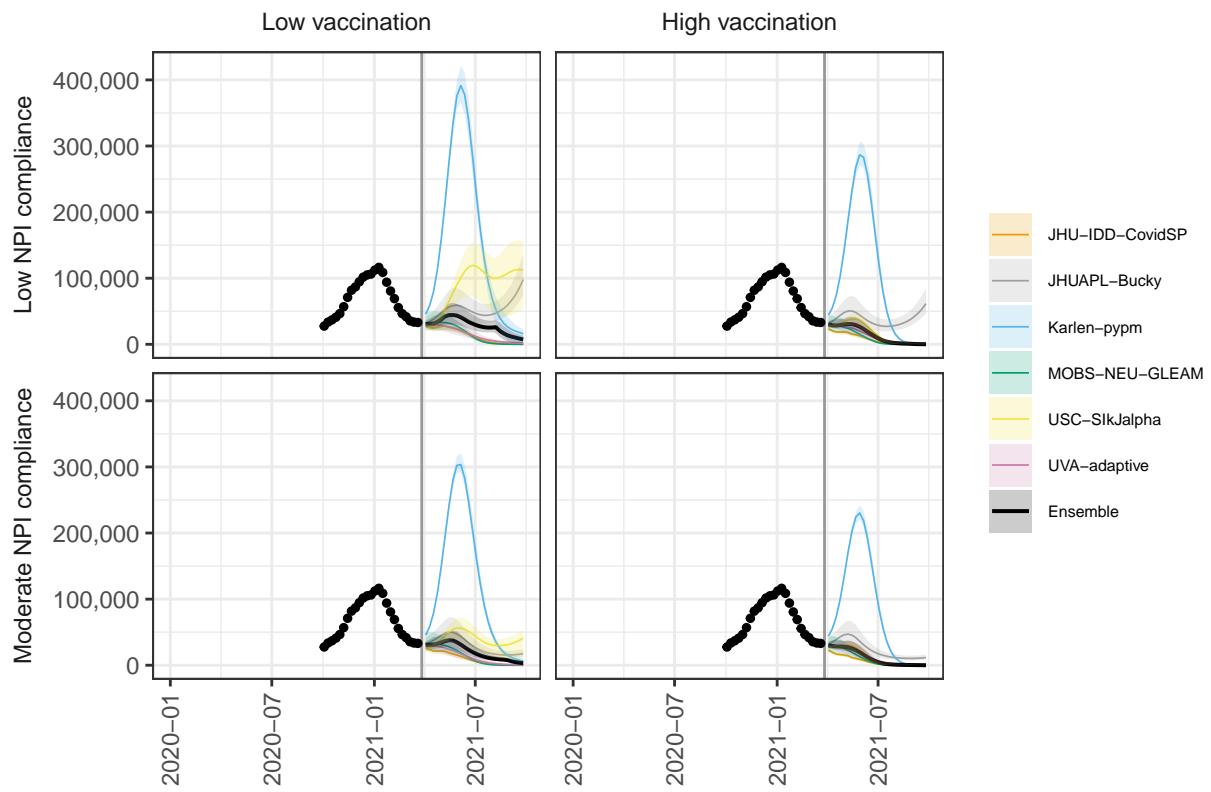
National individual model projections

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

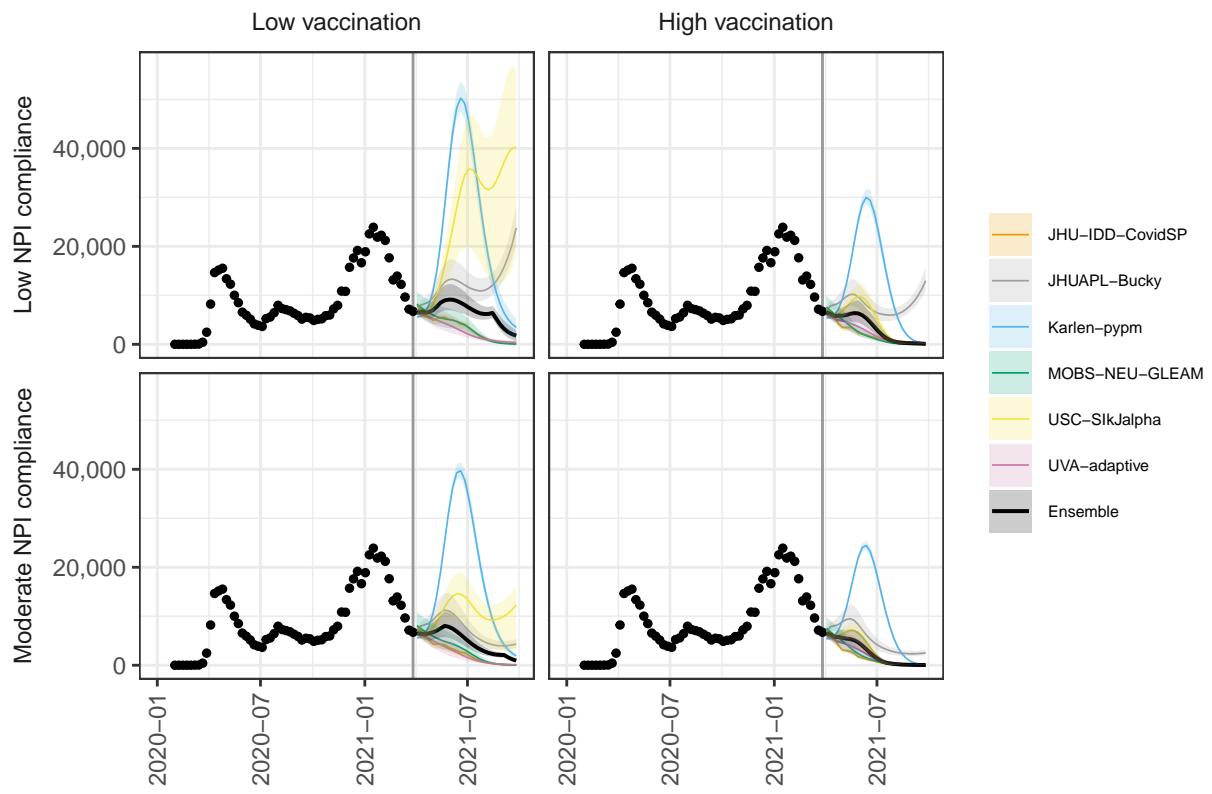
Individual model projections & 50% projection intervals – Reported Cases



Individual model projections & 50% projection intervals – Hospitalizations

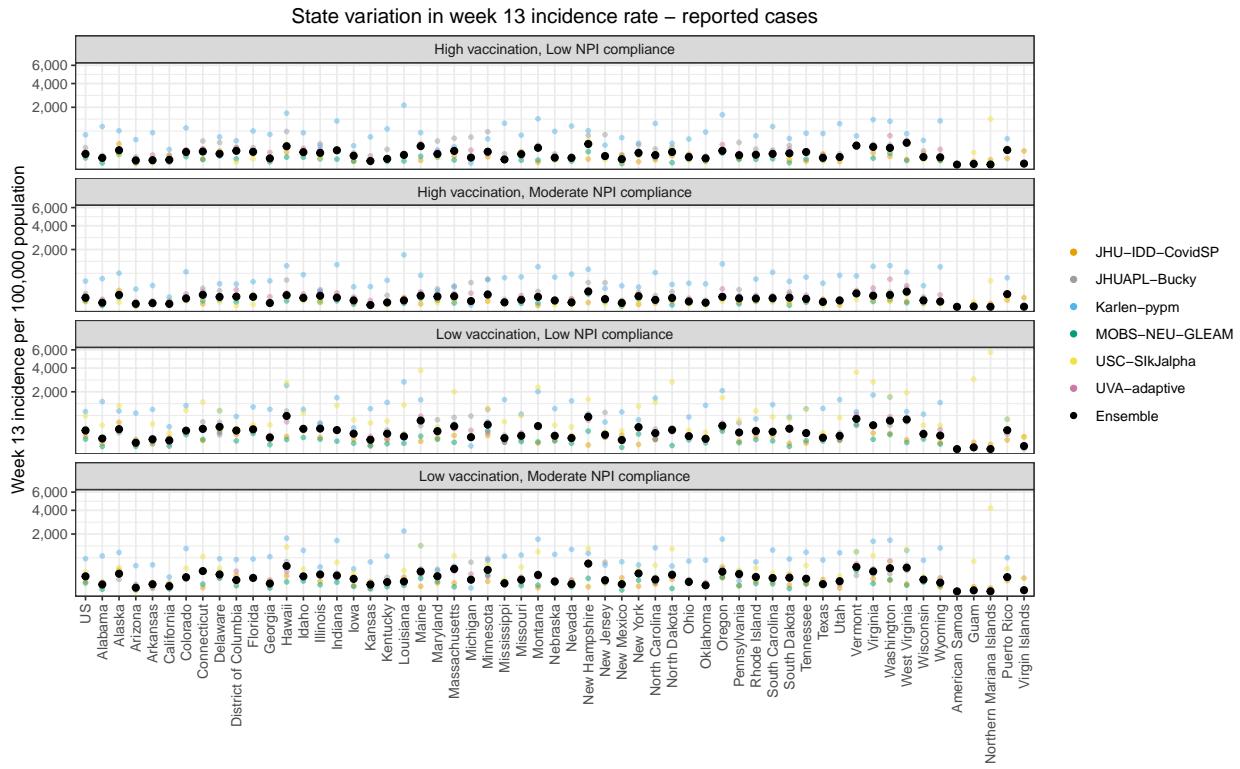


Individual model projections & 50% projection intervals – Deaths

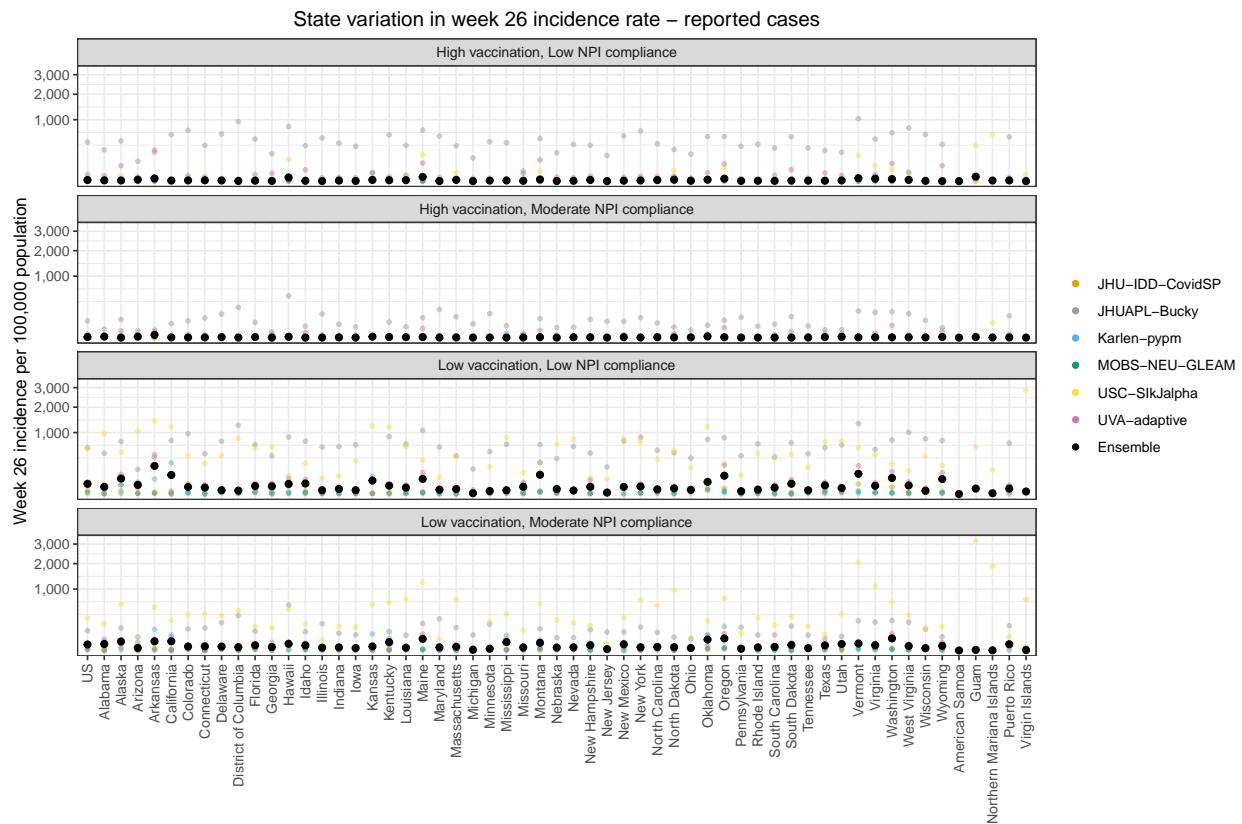


State-level deviation from national

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



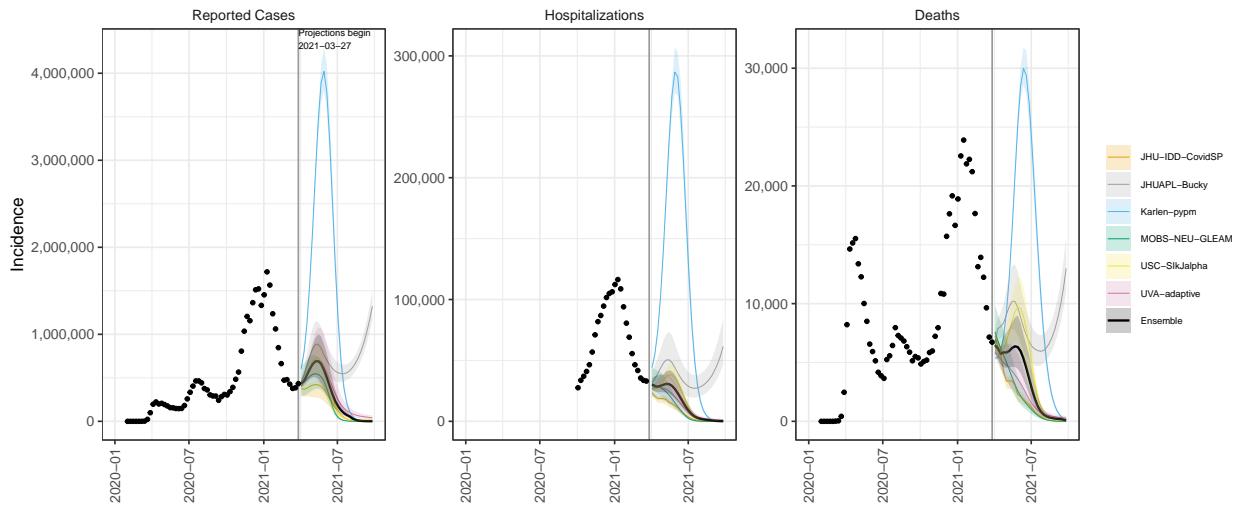
Individual model and ensembles projections for state-level incidence per 100,000 population at week 26.



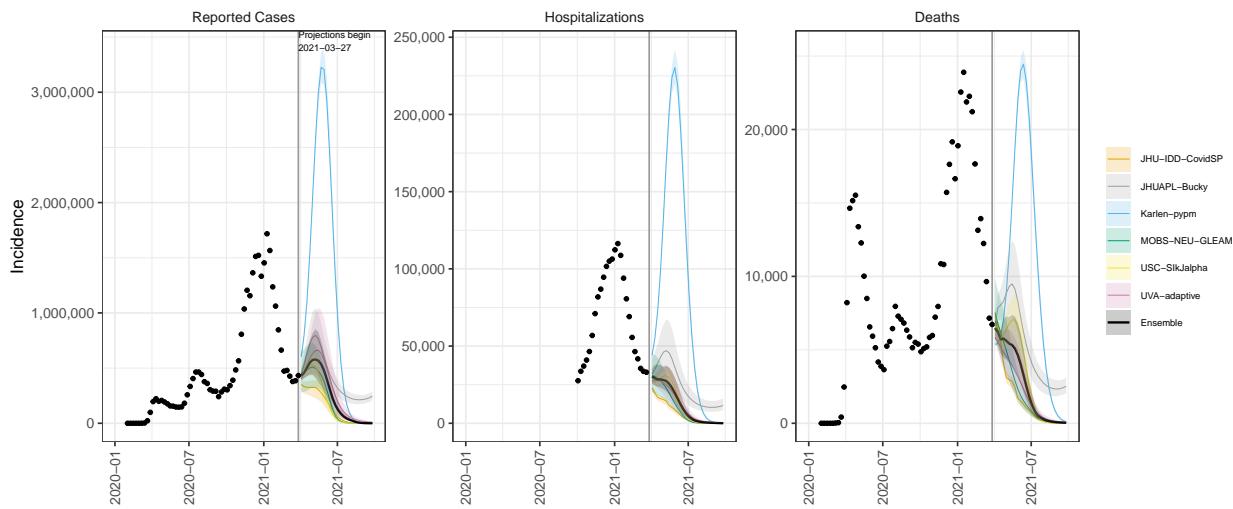
National model variation

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

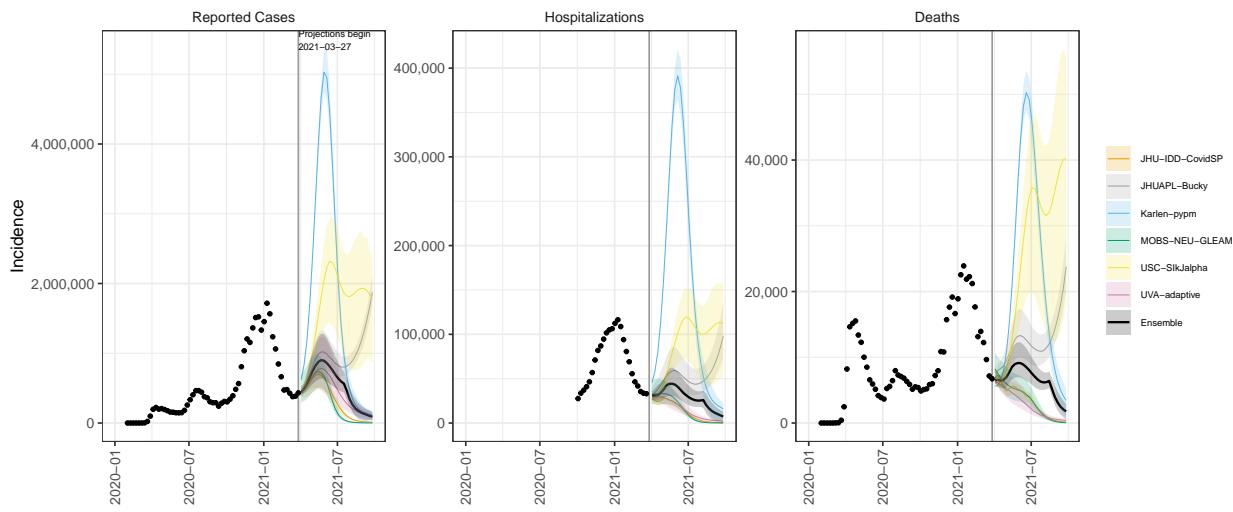
Individual model projections & 50% projection intervals – High vaccination, Low NPI compliance



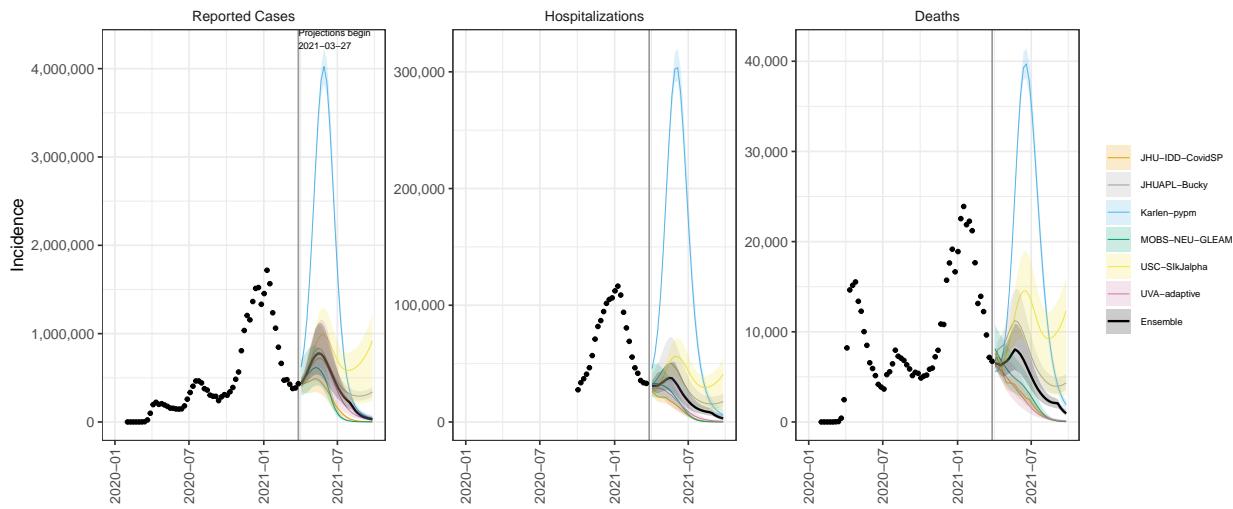
Individual model projections & 50% projection intervals – High vaccination, Moderate NPI compliance



Individual model projections & 50% projection intervals – Low vaccination, Low NPI compliance

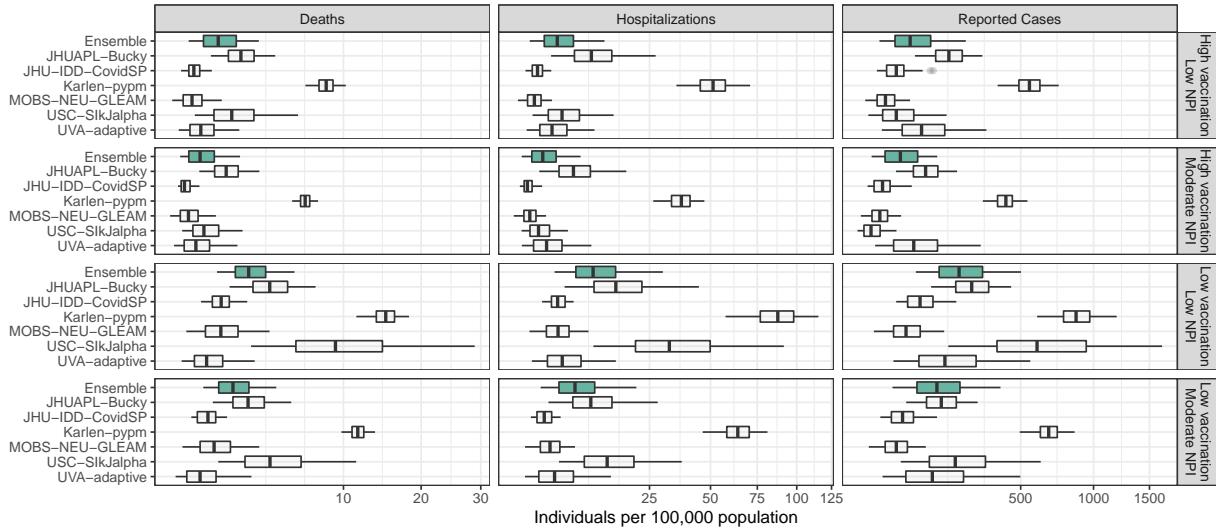


Individual model projections & 50% projection intervals – Low vaccination, Moderate NPI compliance

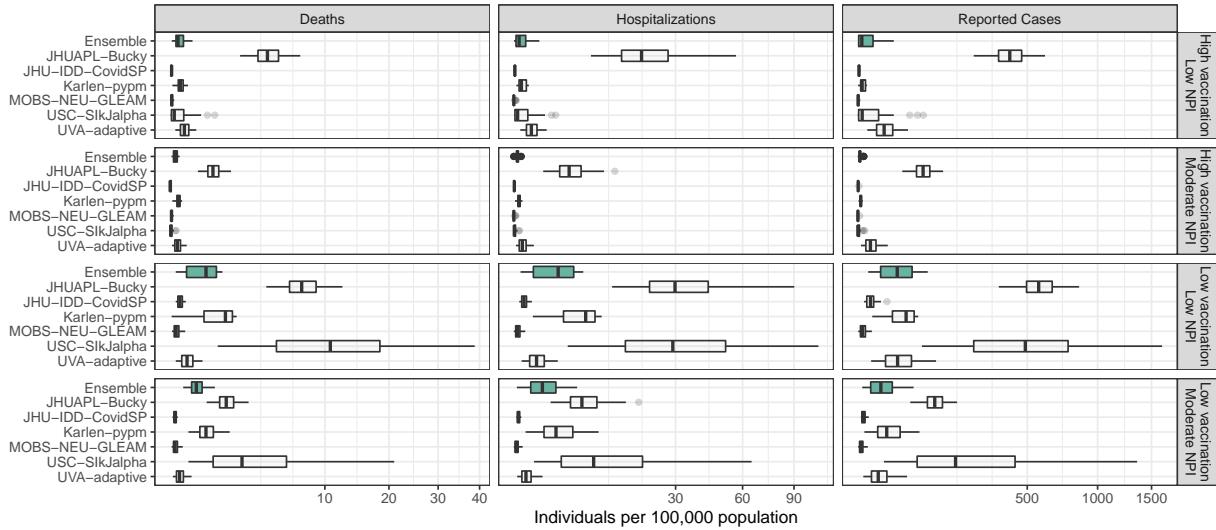


Projection distributions

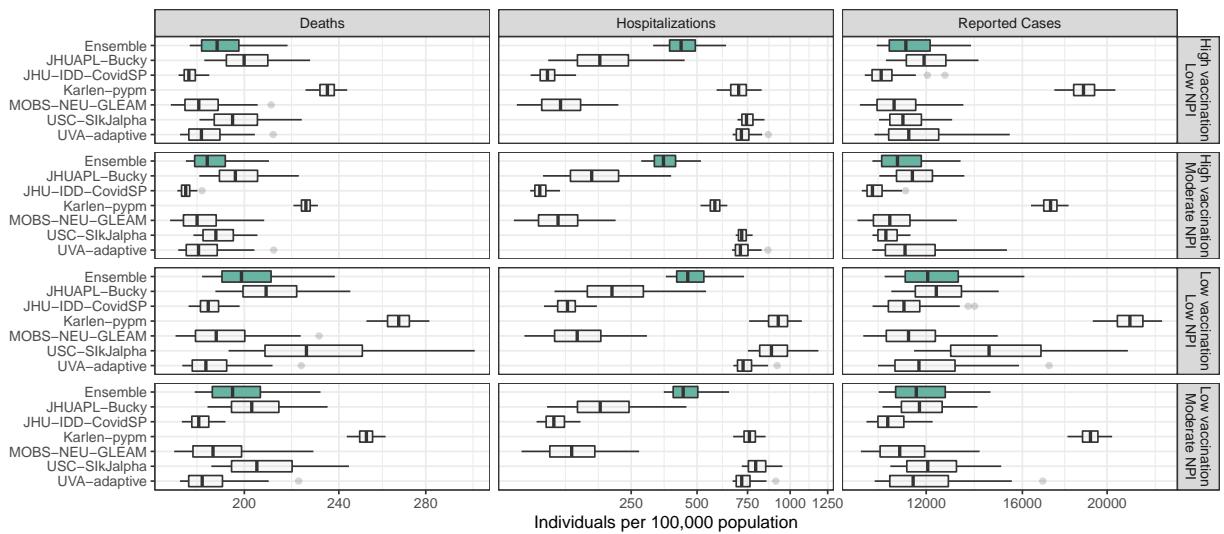
Model variation – 13 week ahead incidence



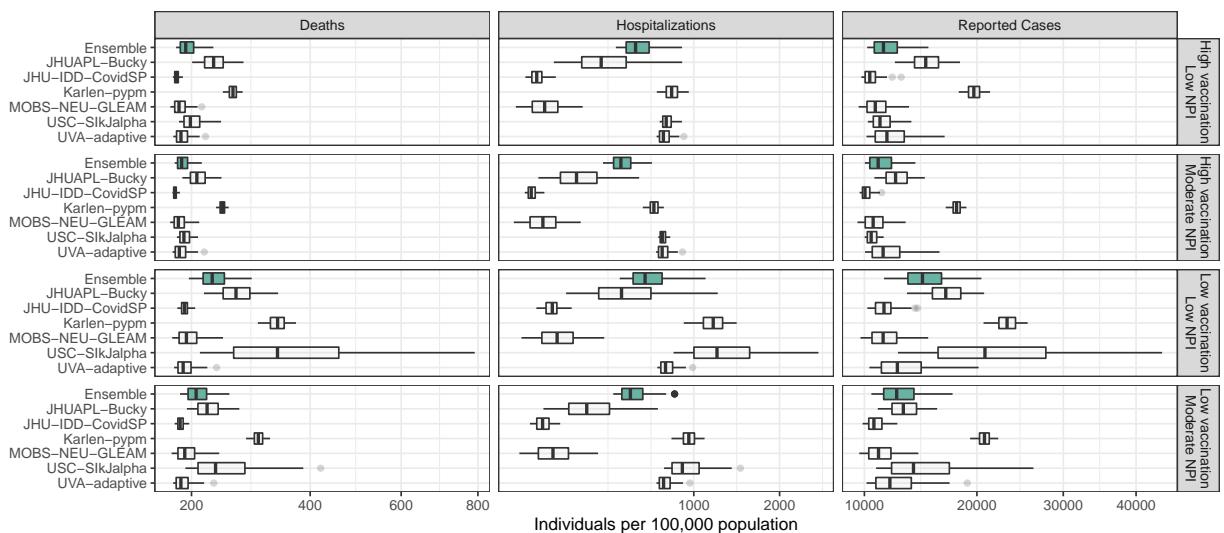
Model variation – 26 week ahead incidence



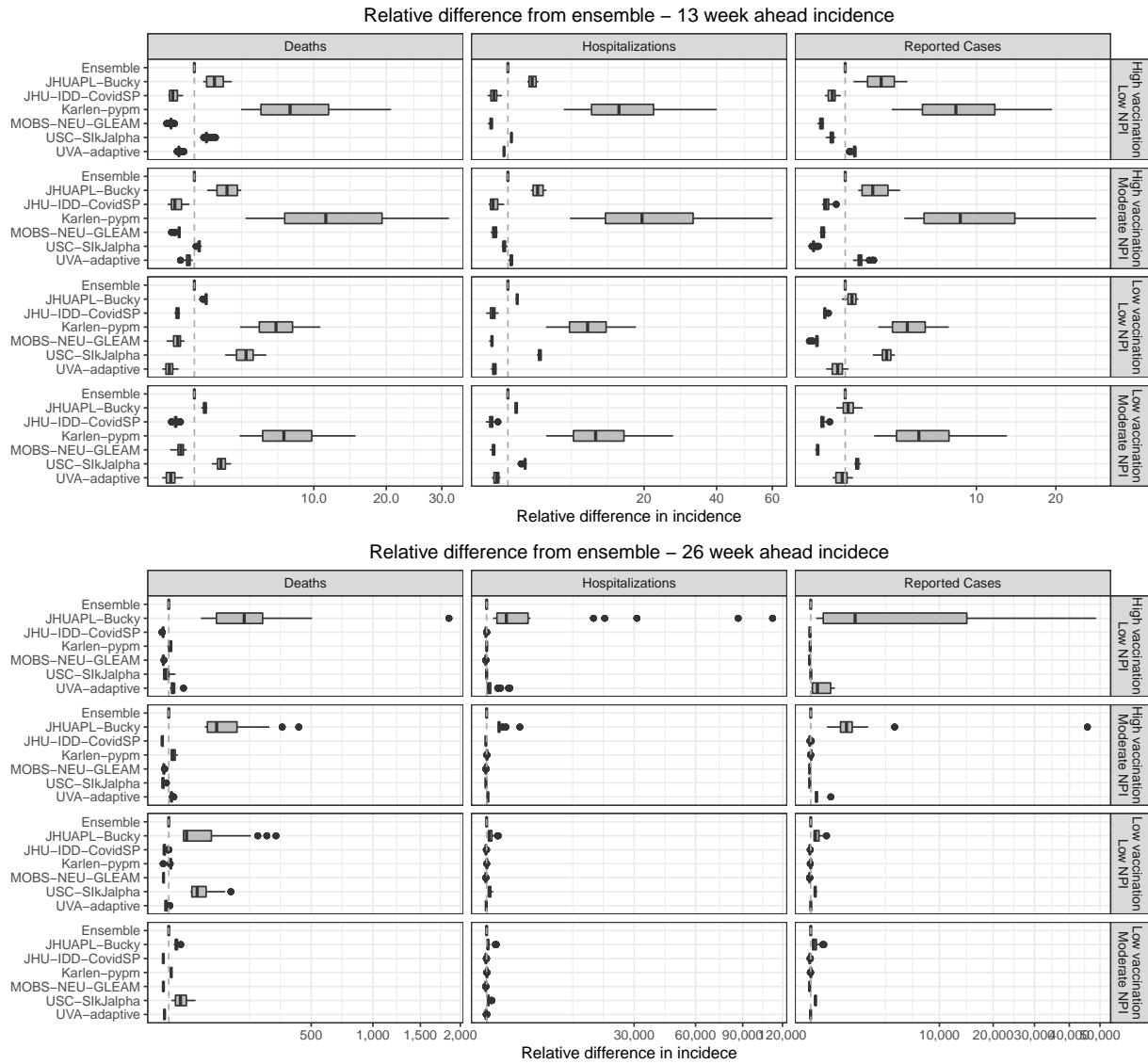
Model variation – 13 week ahead cumulative incidence



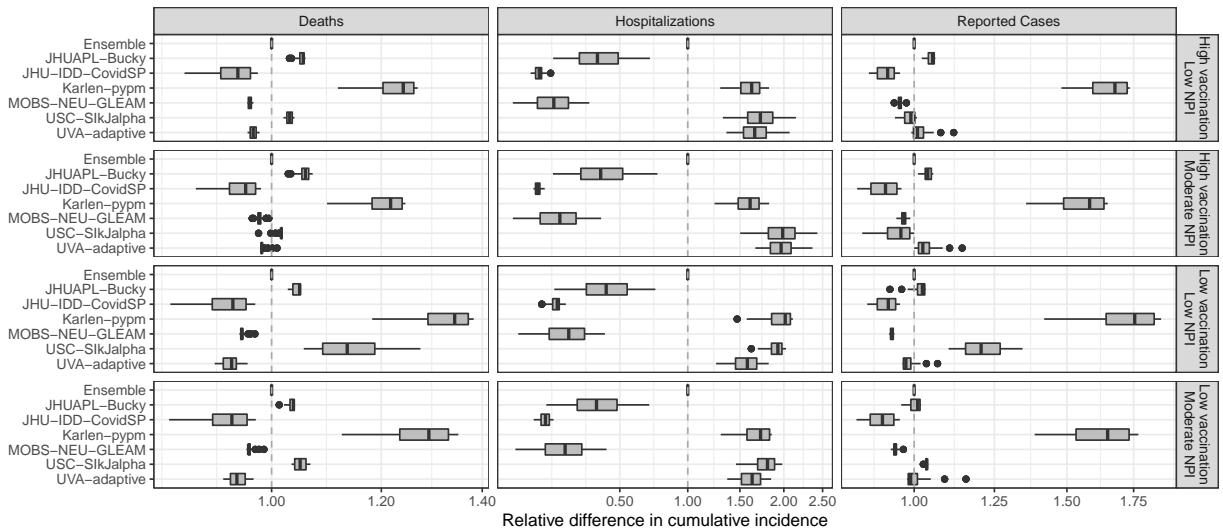
Model variation – 26 week ahead cumulative incidence



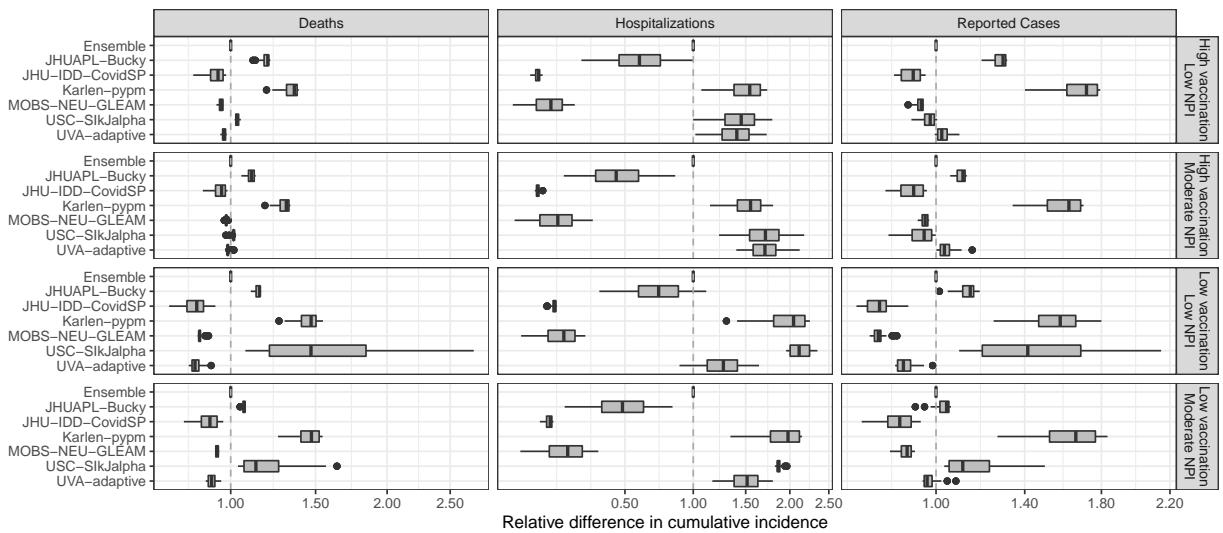
Difference between model and ensemble distributions



Relative difference from ensemble – 13 week ahead cumulative incidence



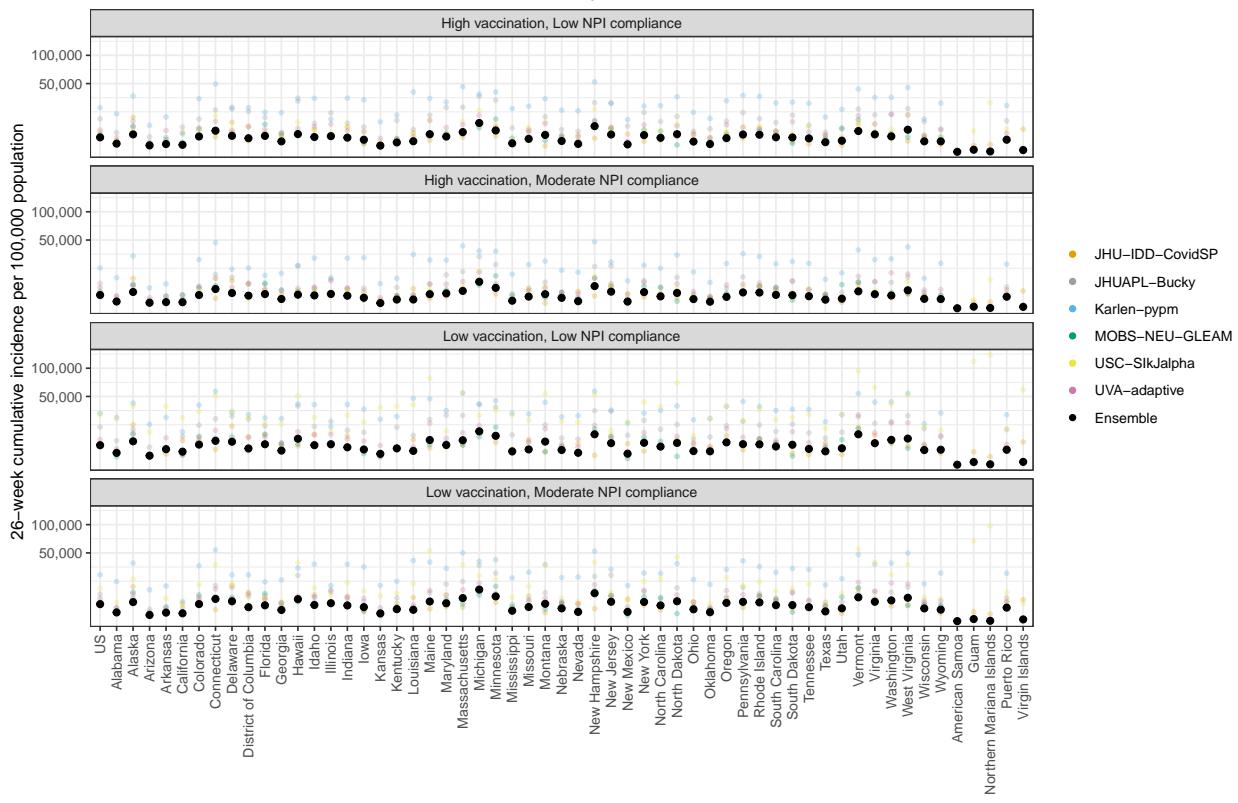
Relative difference from ensemble – 26 week ahead cumulative incidence



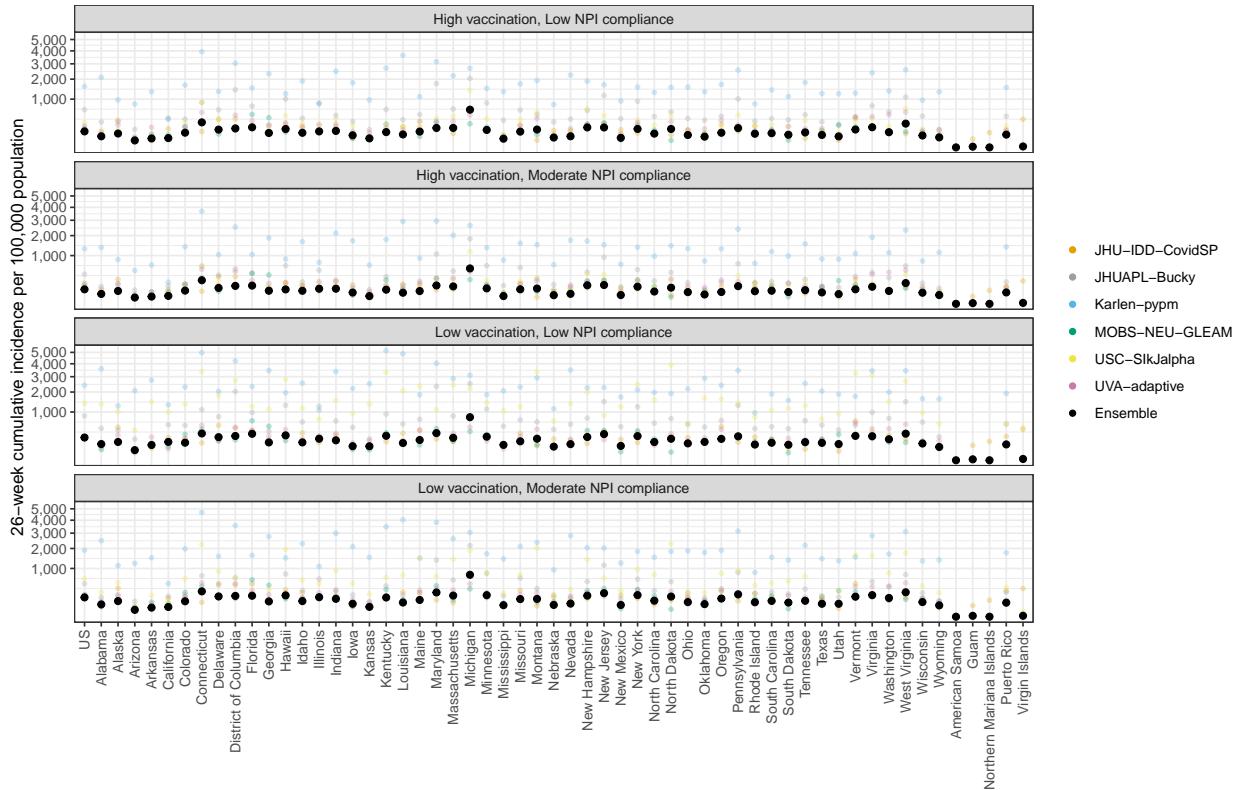
Supplemental Plots

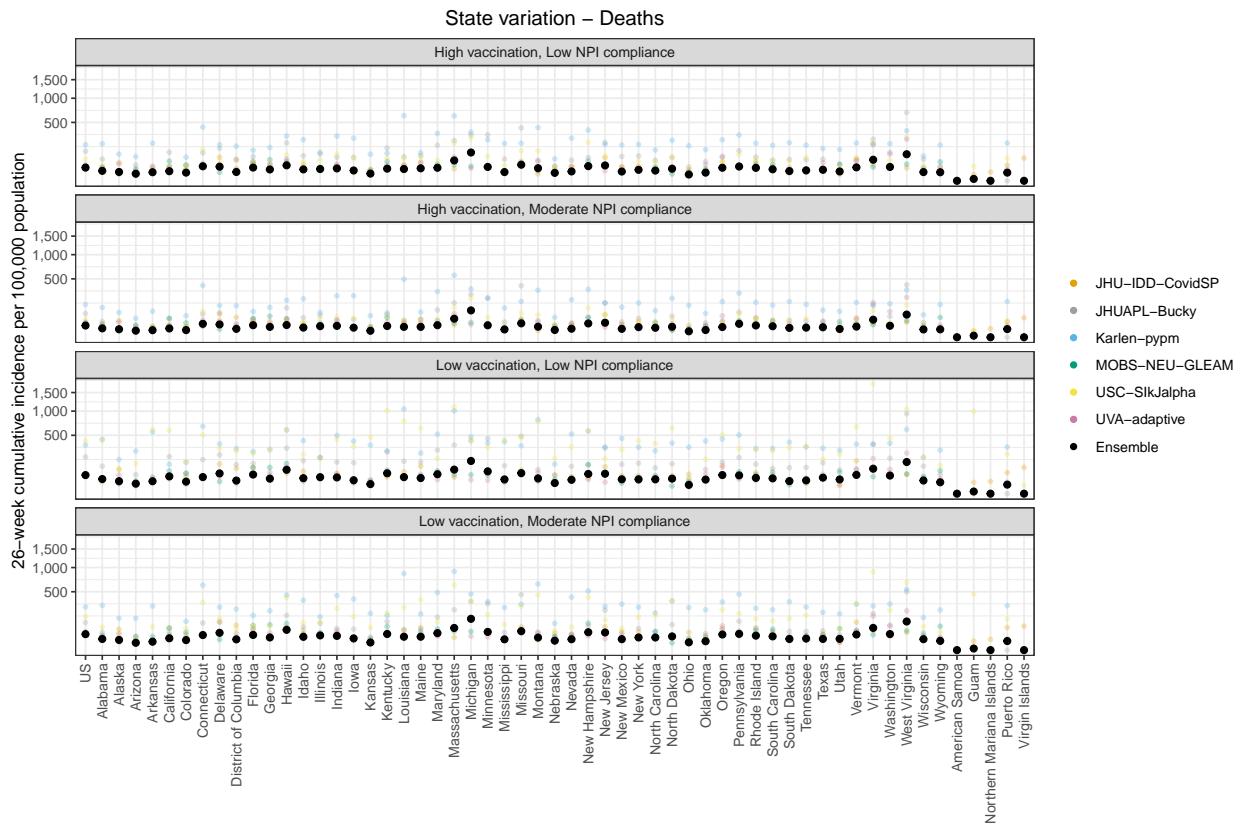
Individual model and ensembles projections for state-level cumulative incidence per 100,000 population over 26-week projection period. Please note the relatively small number of models incorporated in the ensemble at this stage, particularly states and territories for which only one or two models have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

State variation – Reported Cases

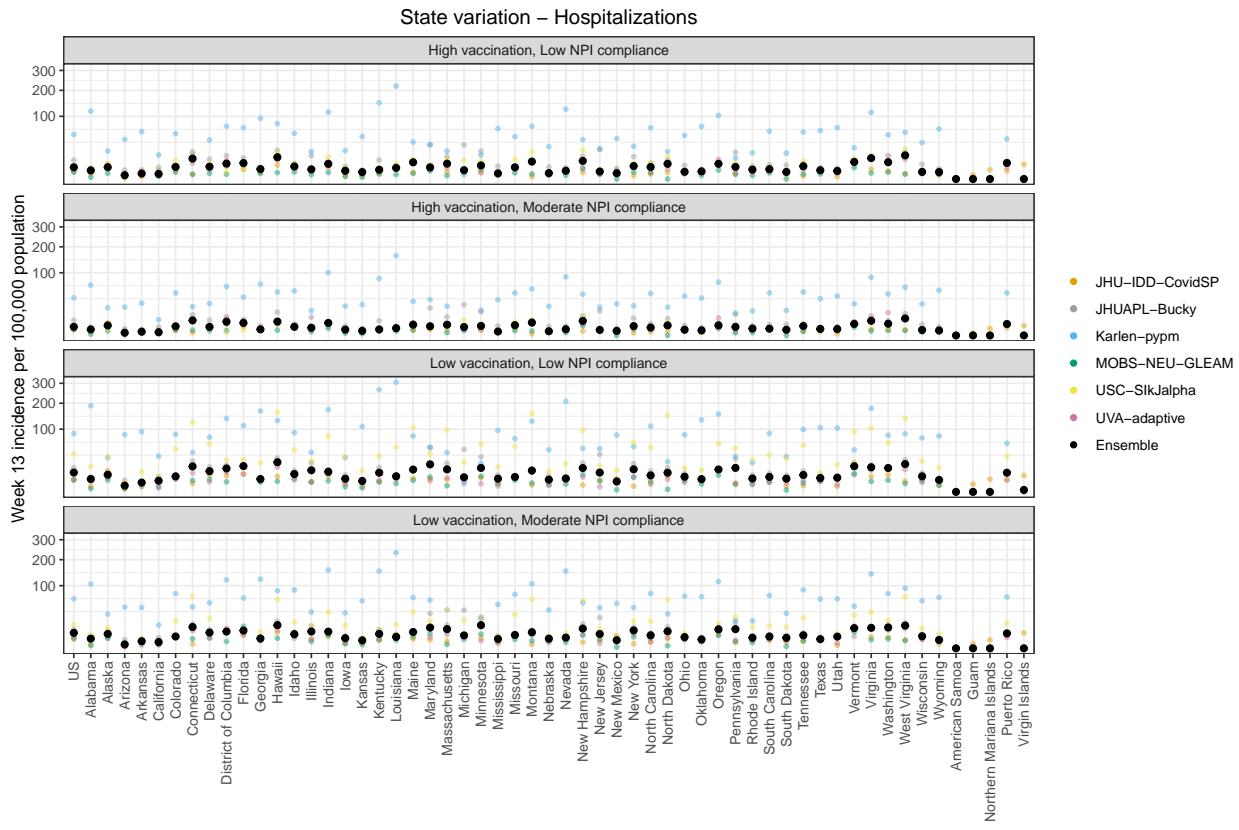


State variation – Hospitalizations

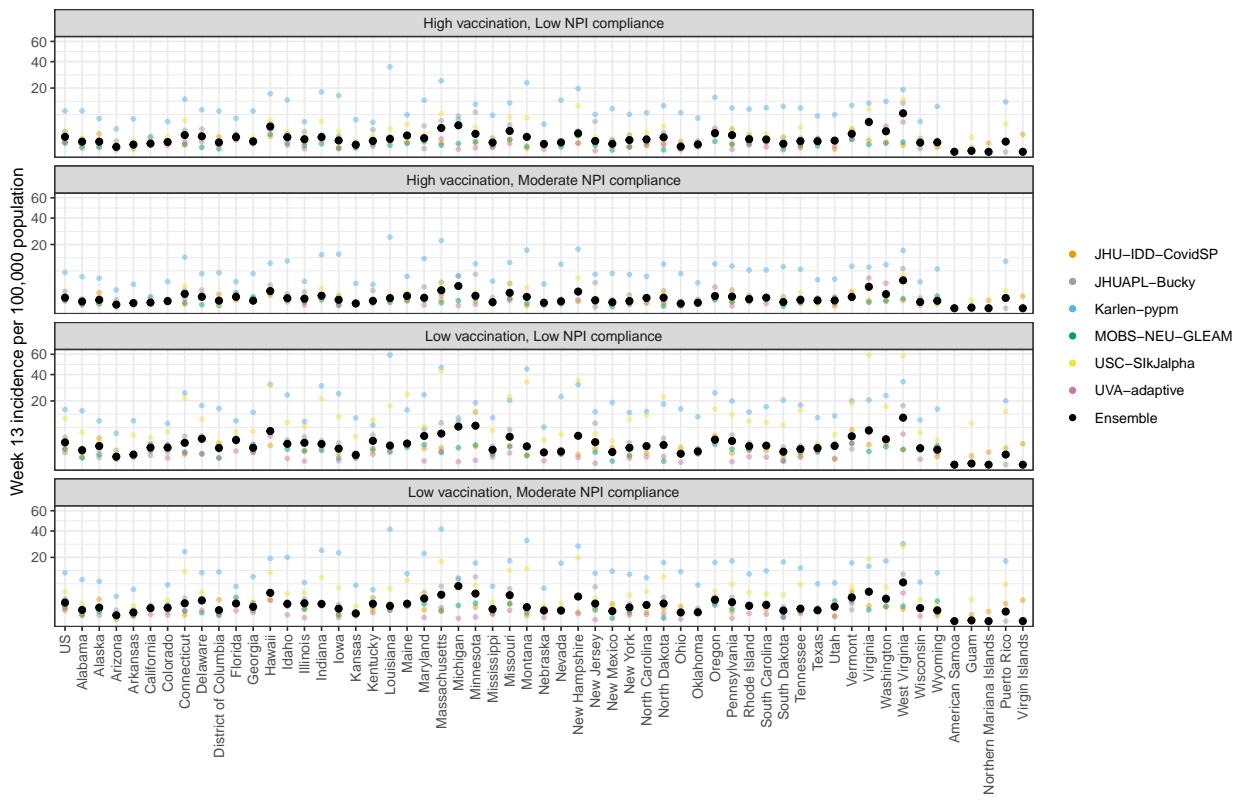




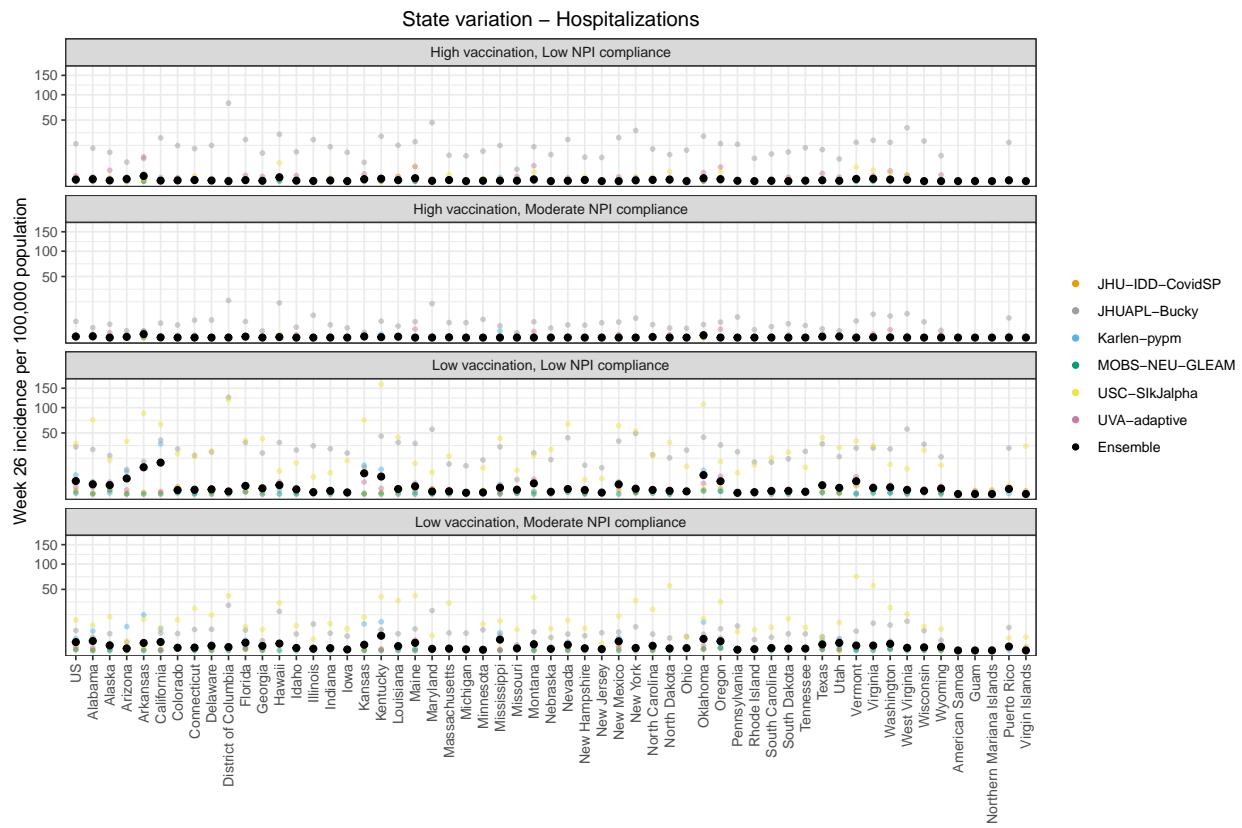
Individual model and ensembles projections for state-level death and hospitalization incidence per 100,000 population at week 13.

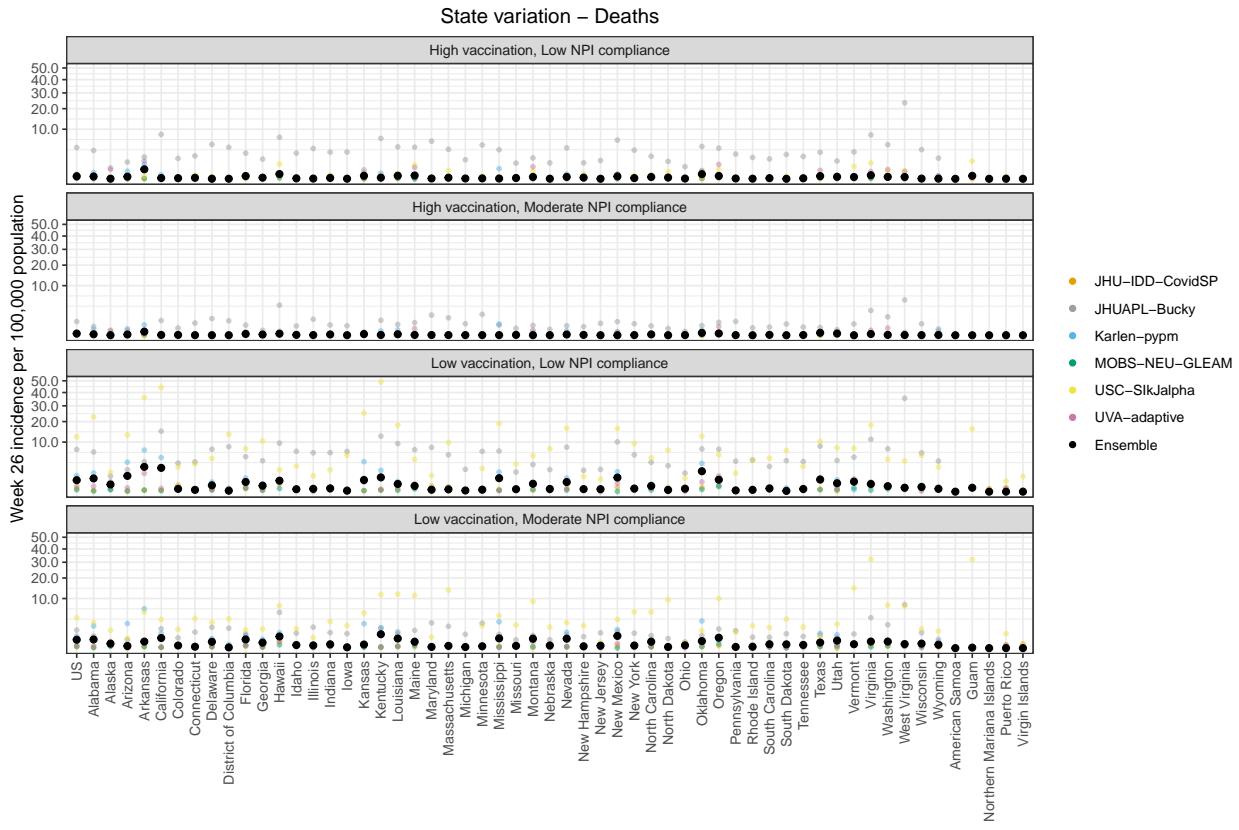


State variation – Deaths

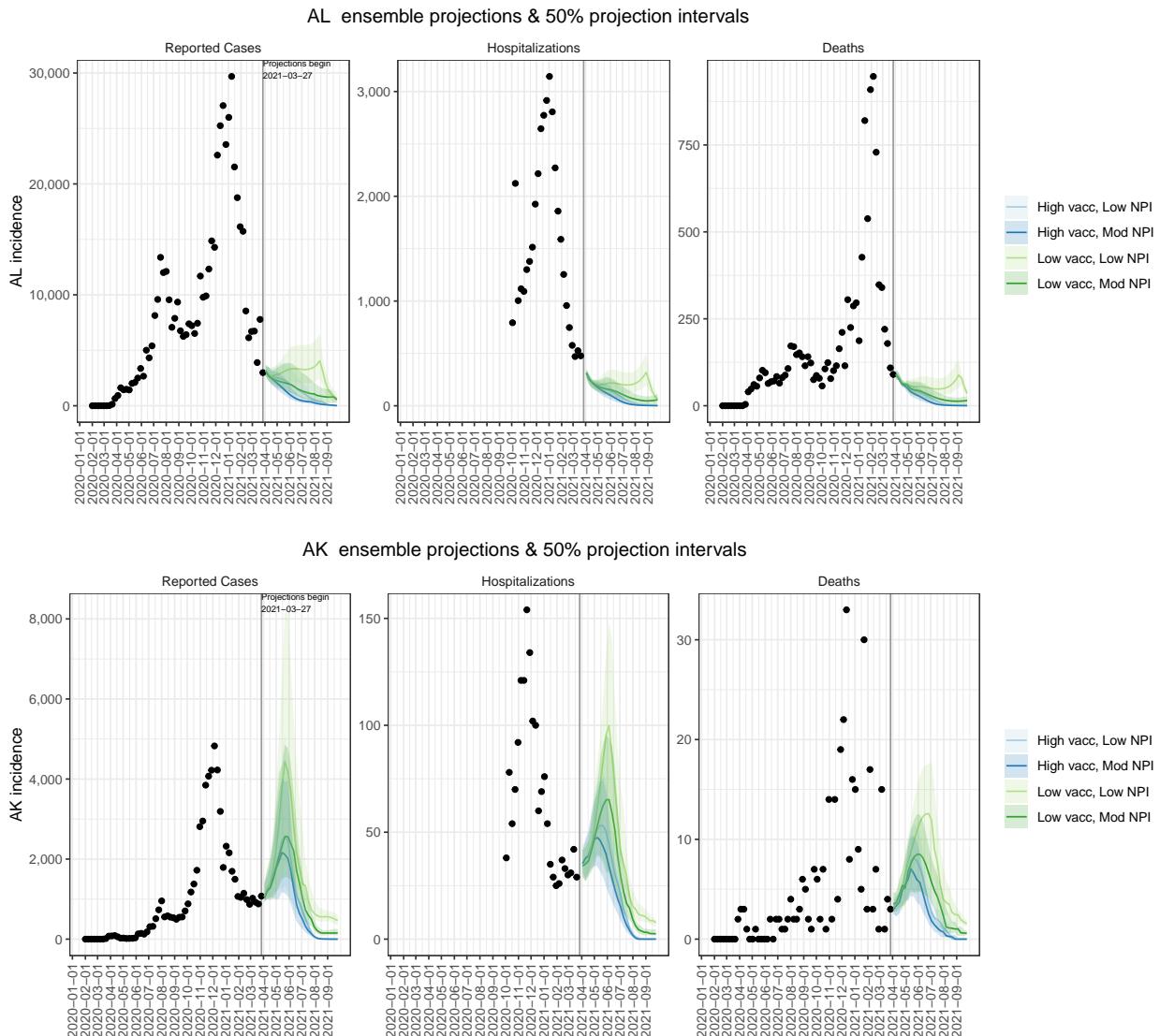


Individual model and ensembles projections for state-level incidence per 100,000 population at week 26.

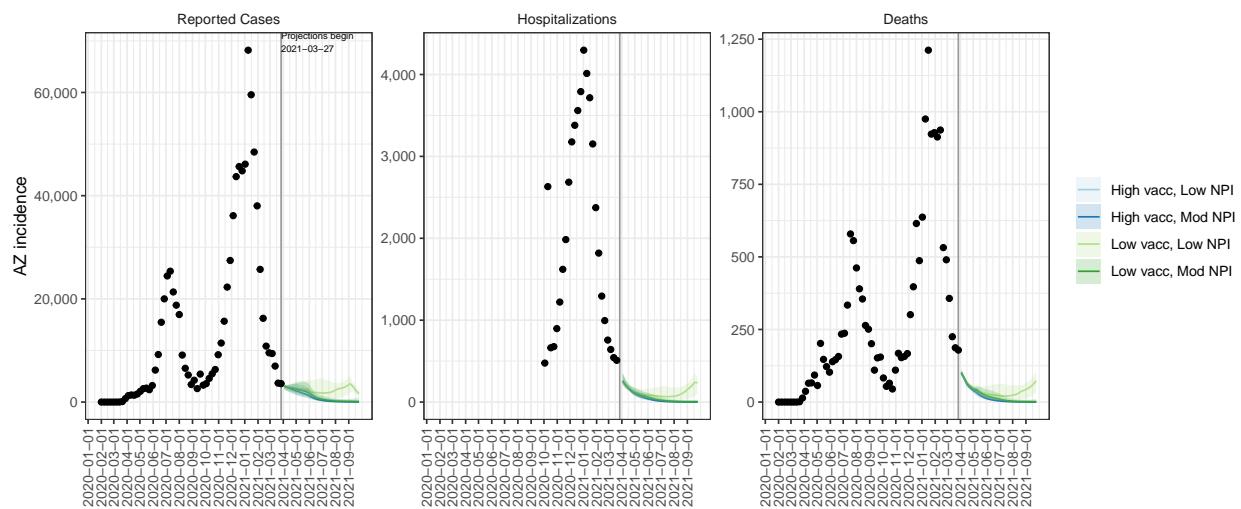




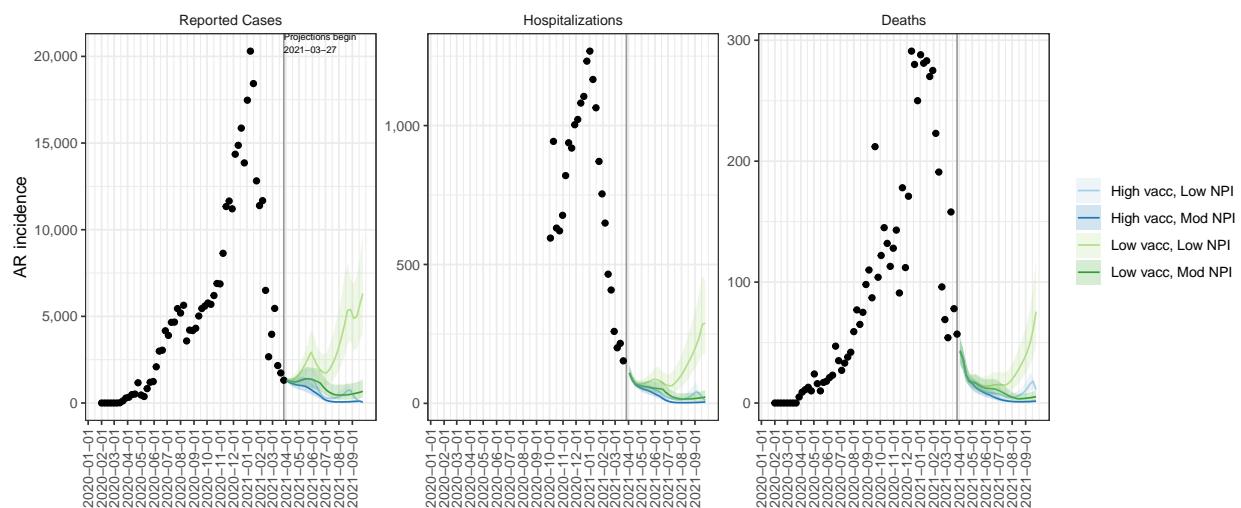
State-level ensemble plots



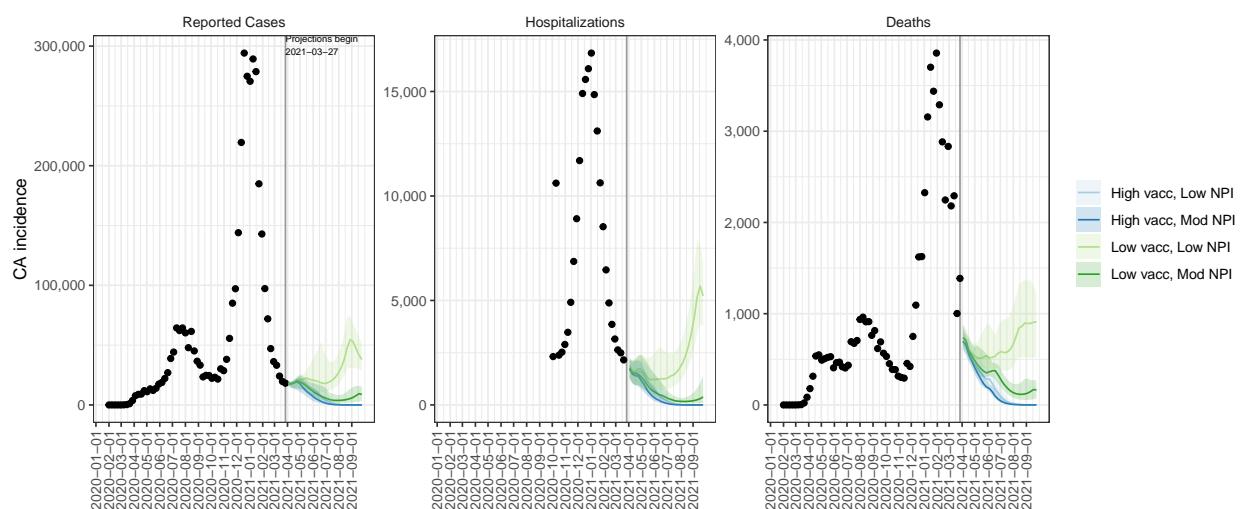
AZ ensemble projections & 50% projection intervals



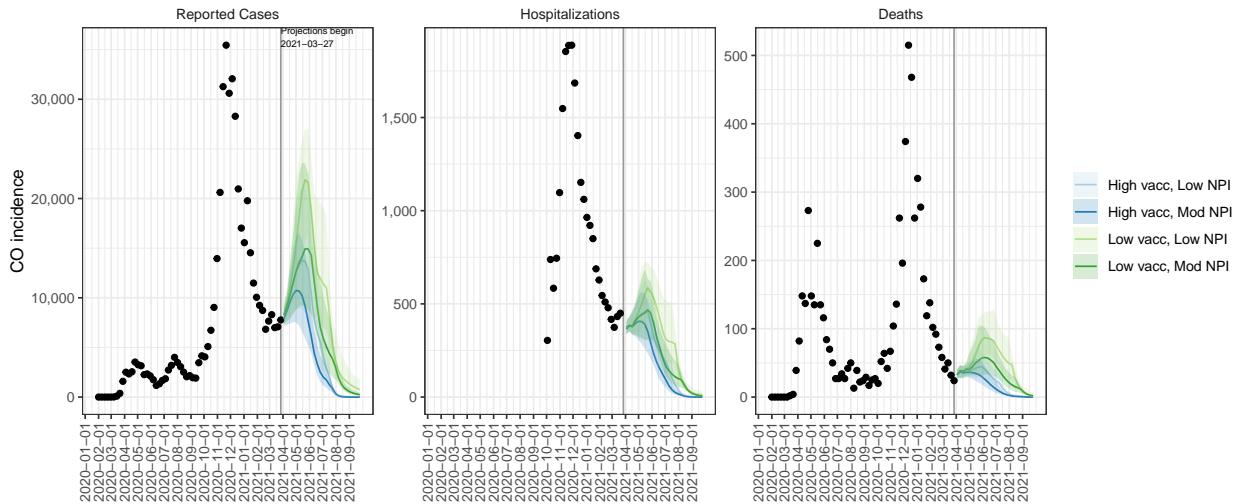
AR ensemble projections & 50% projection intervals



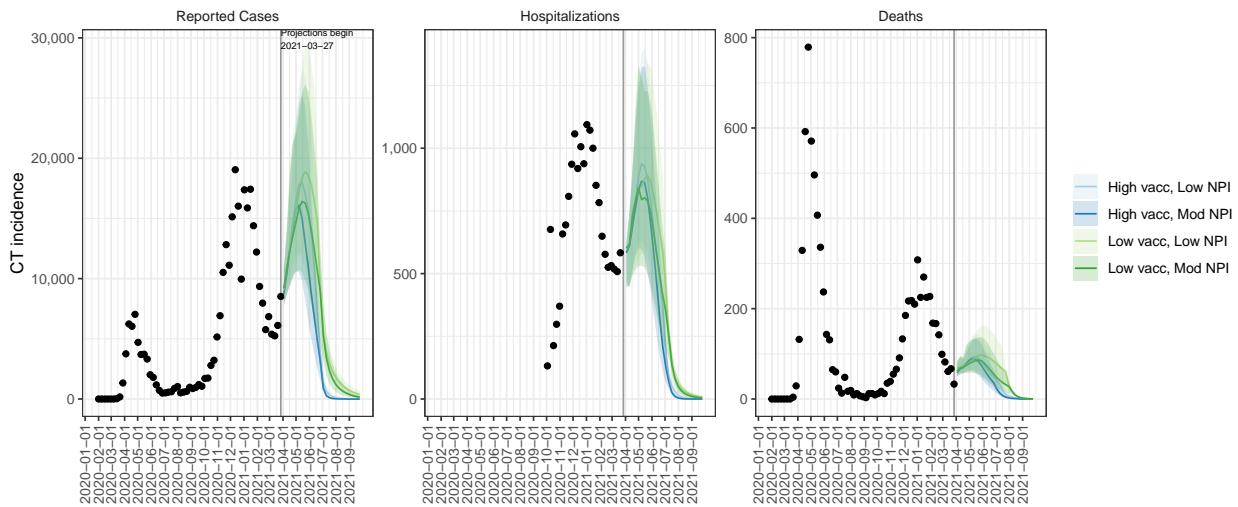
CA ensemble projections & 50% projection intervals



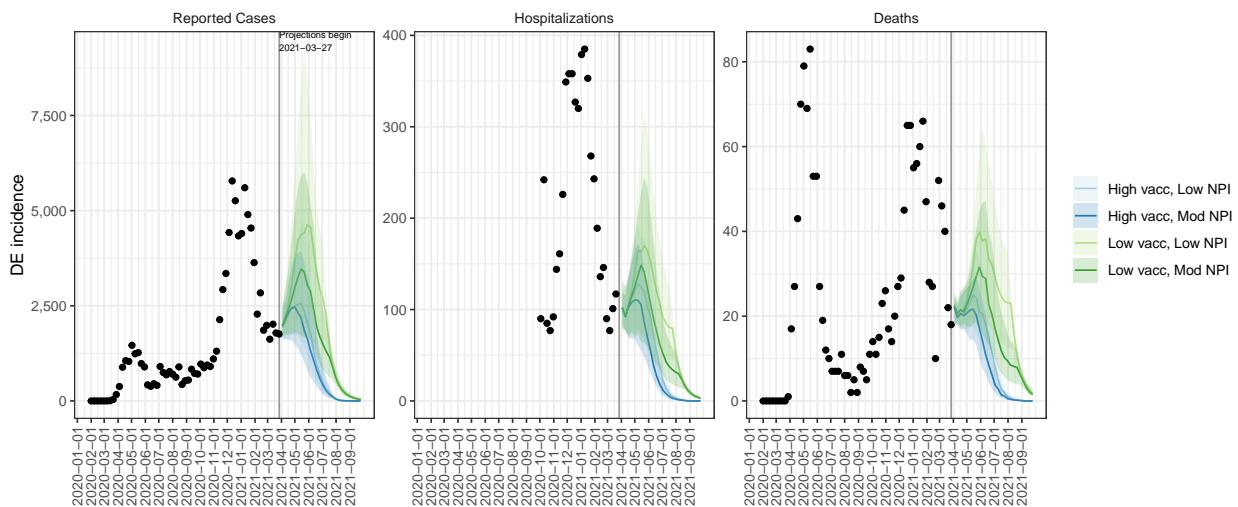
CO ensemble projections & 50% projection intervals



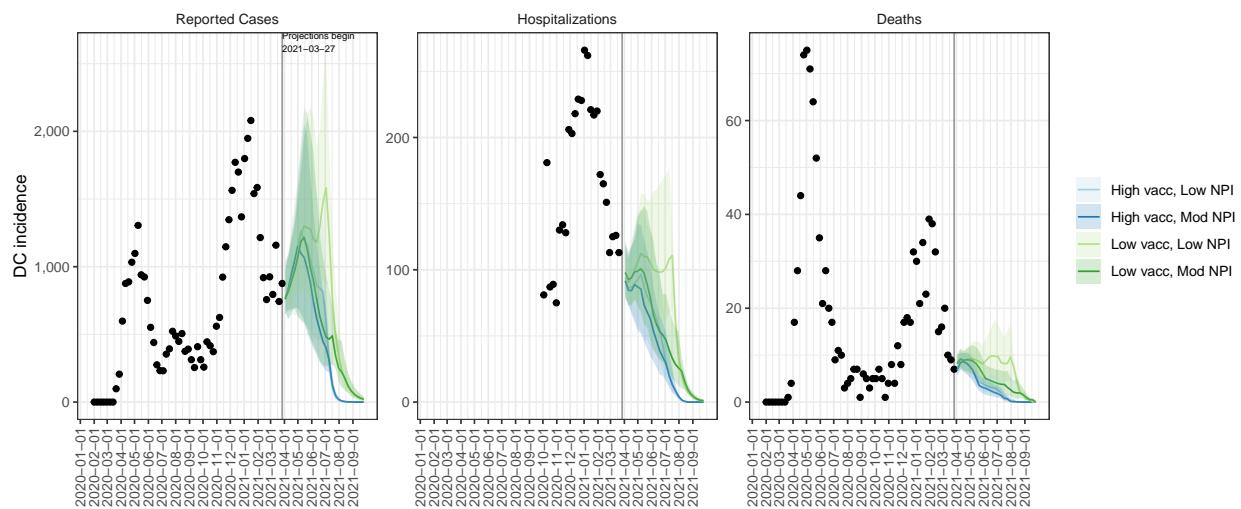
CT ensemble projections & 50% projection intervals



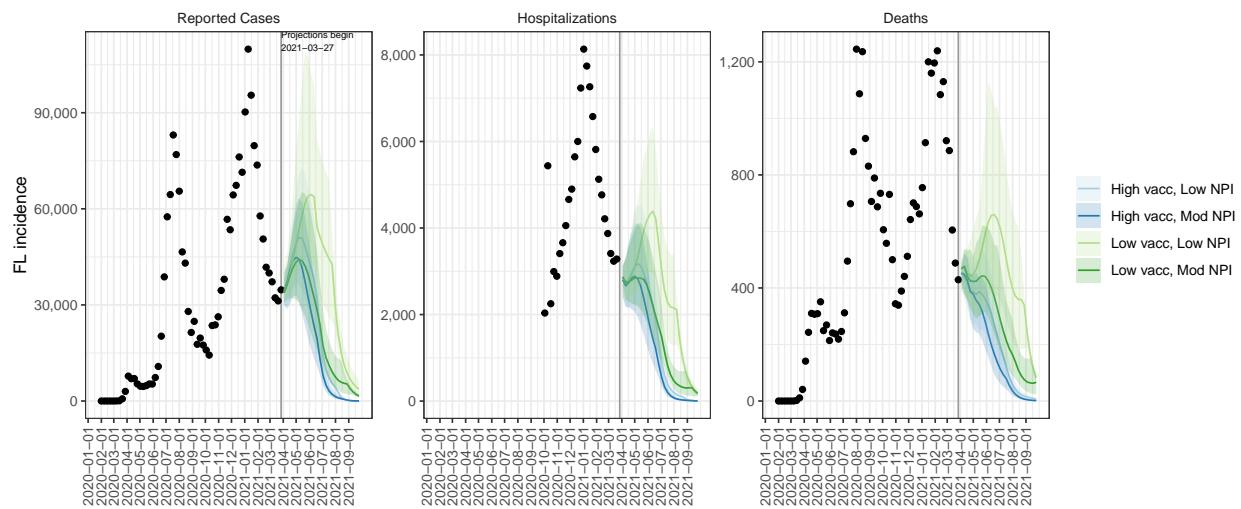
DE ensemble projections & 50% projection intervals



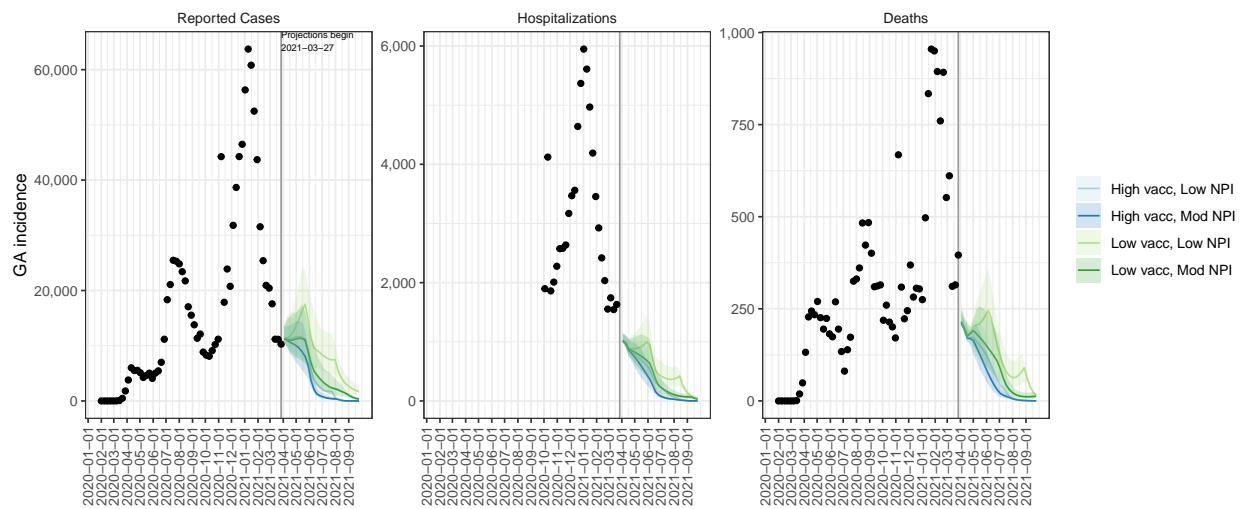
DC ensemble projections & 50% projection intervals



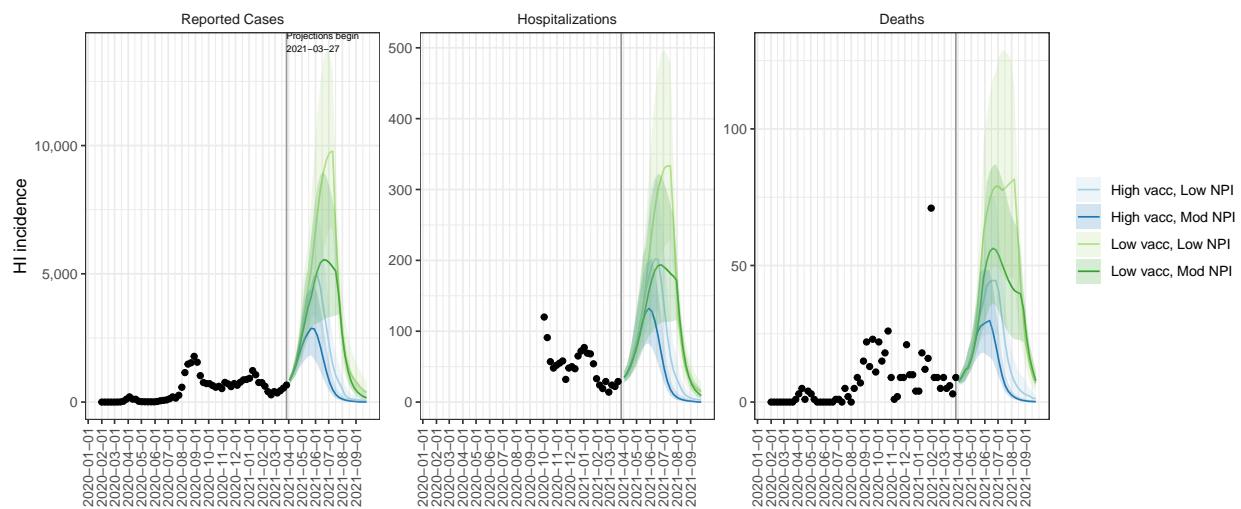
FL ensemble projections & 50% projection intervals



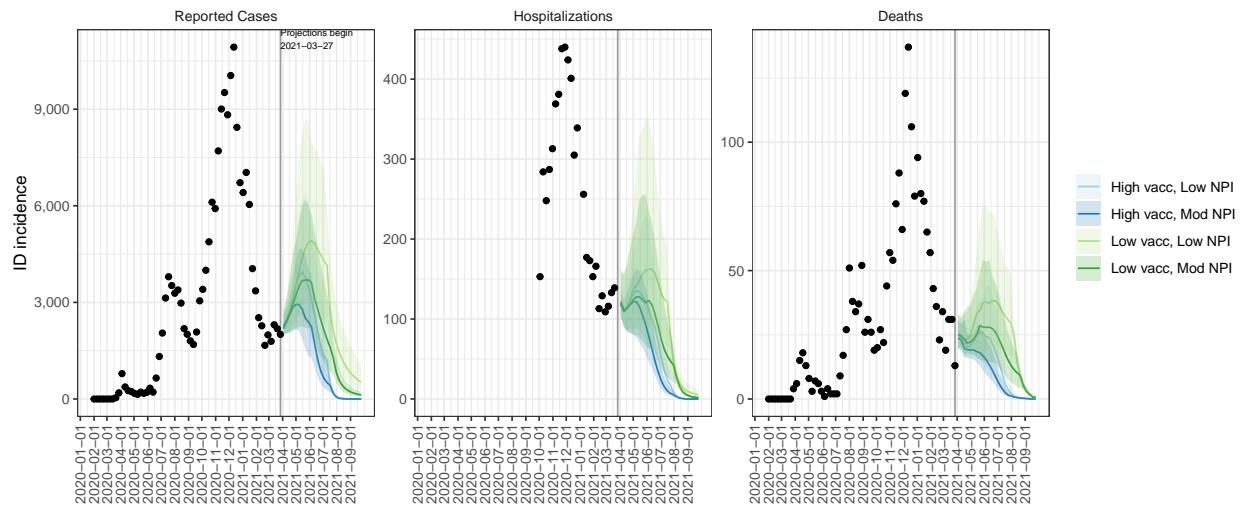
GA ensemble projections & 50% projection intervals



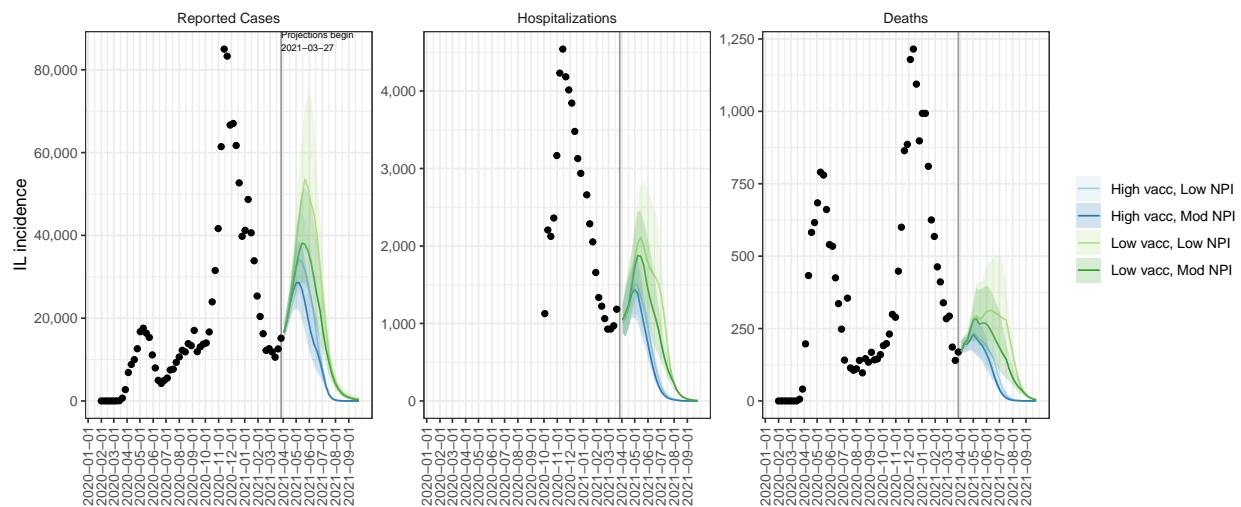
HI ensemble projections & 50% projection intervals



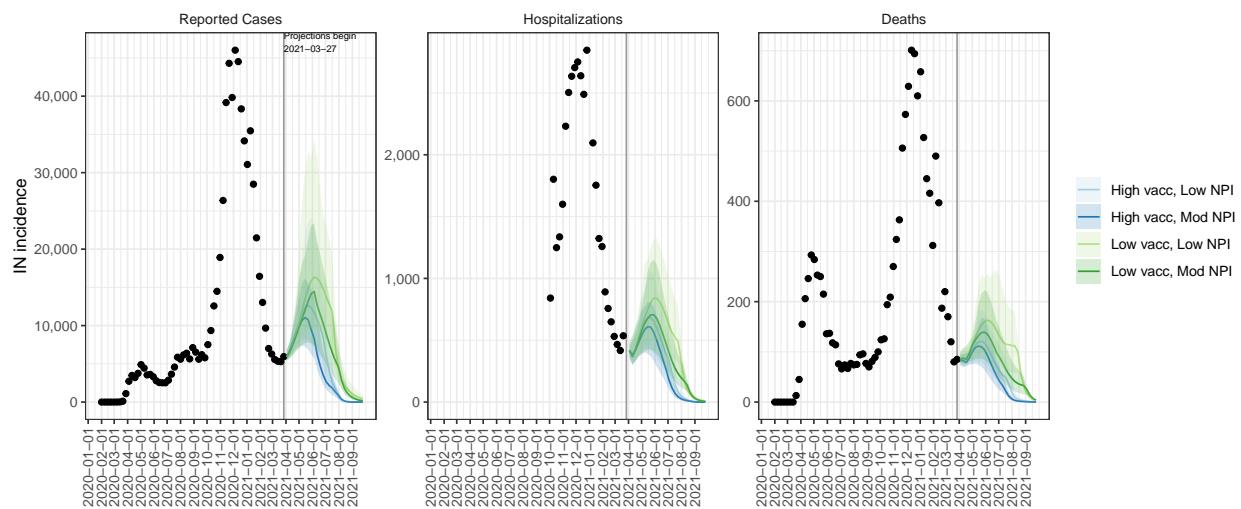
ID ensemble projections & 50% projection intervals



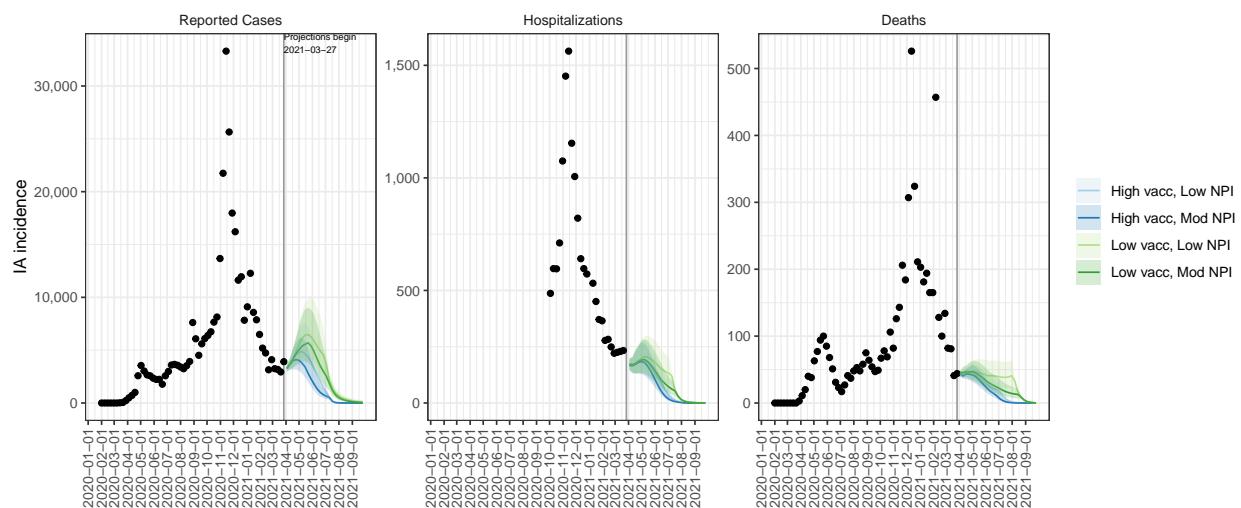
IL ensemble projections & 50% projection intervals



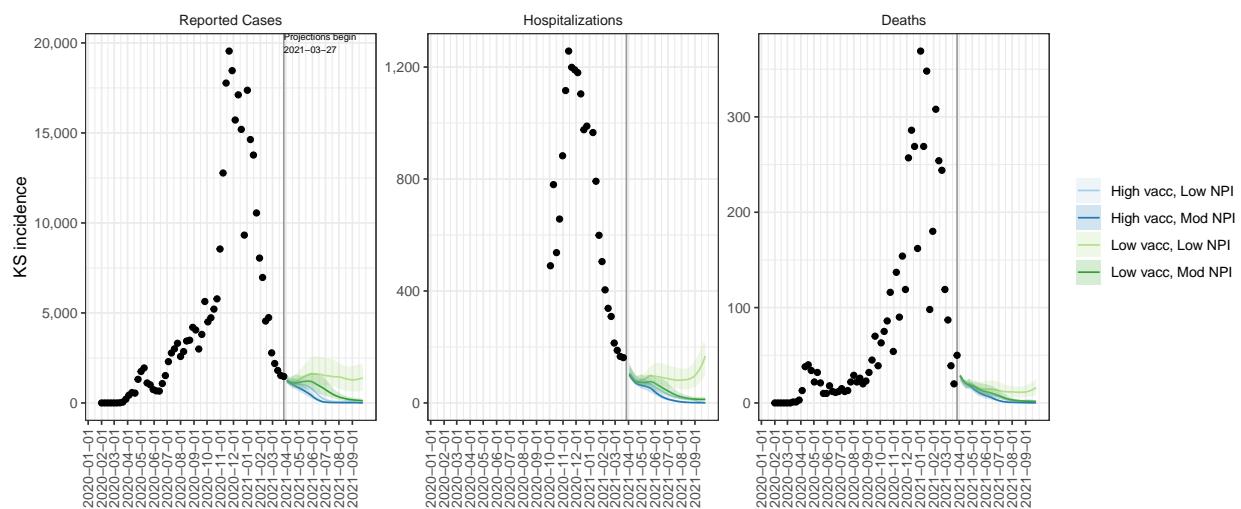
IN ensemble projections & 50% projection intervals



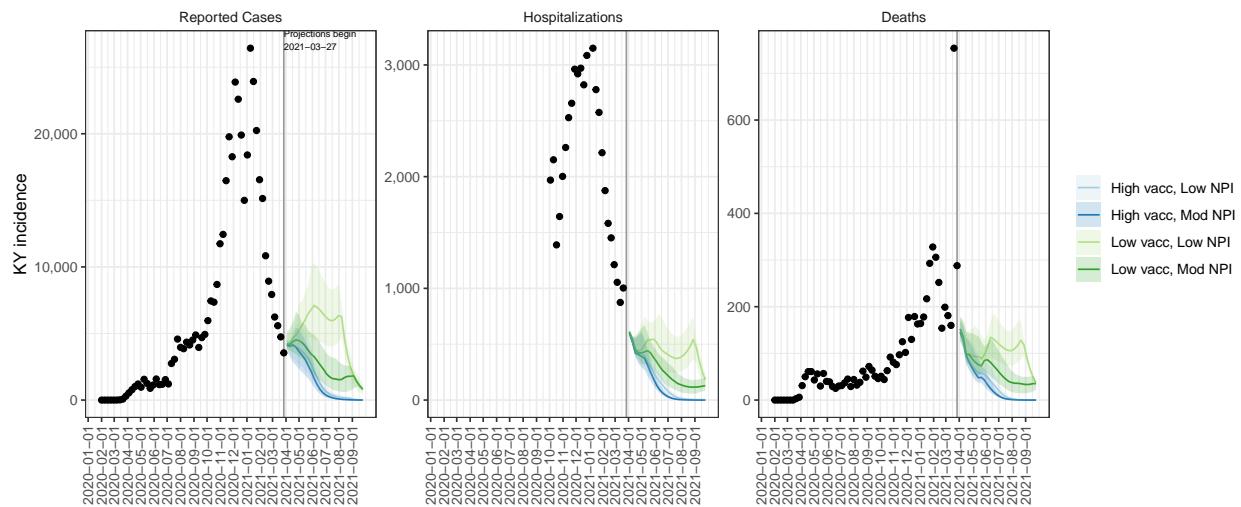
IA ensemble projections & 50% projection intervals



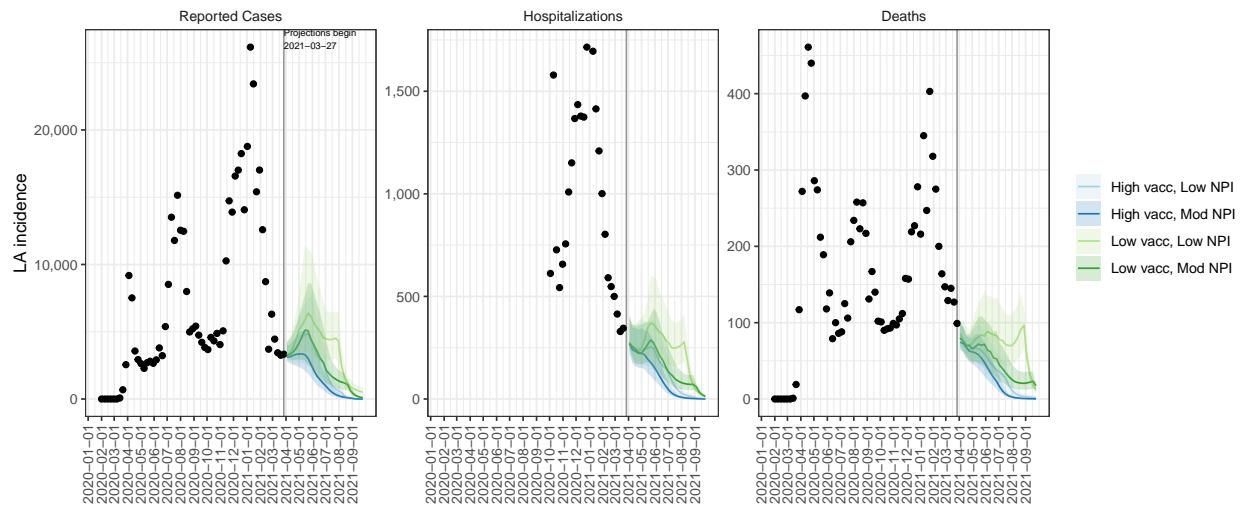
KS ensemble projections & 50% projection intervals



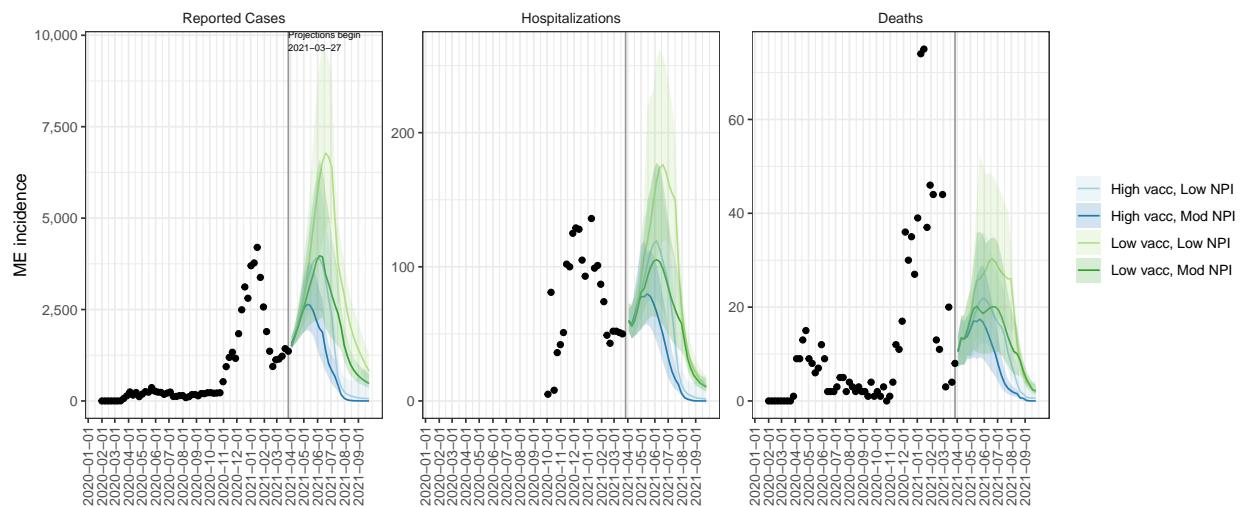
KY ensemble projections & 50% projection intervals



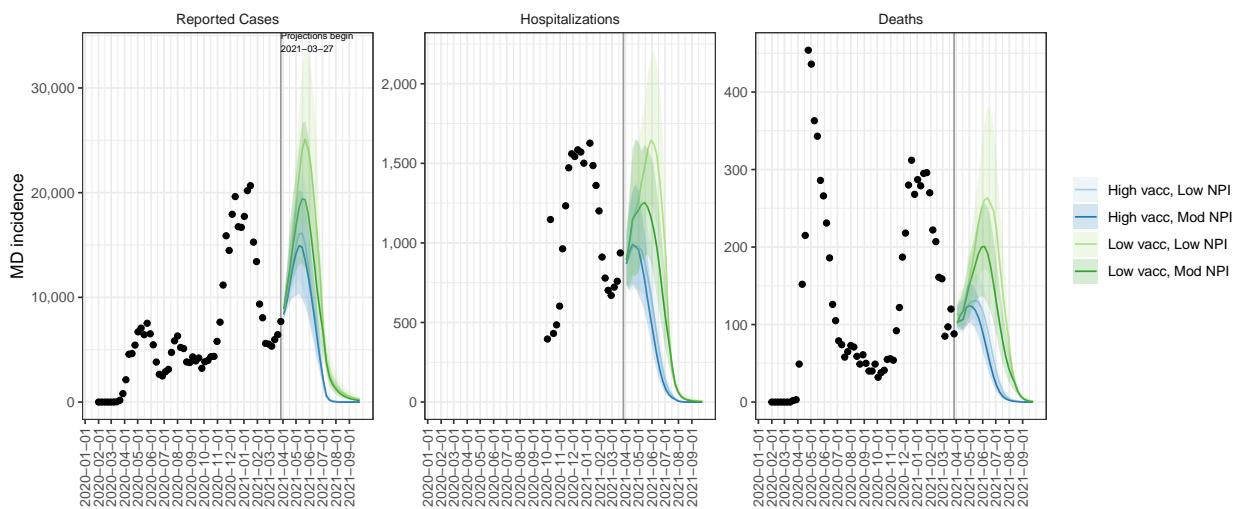
LA ensemble projections & 50% projection intervals



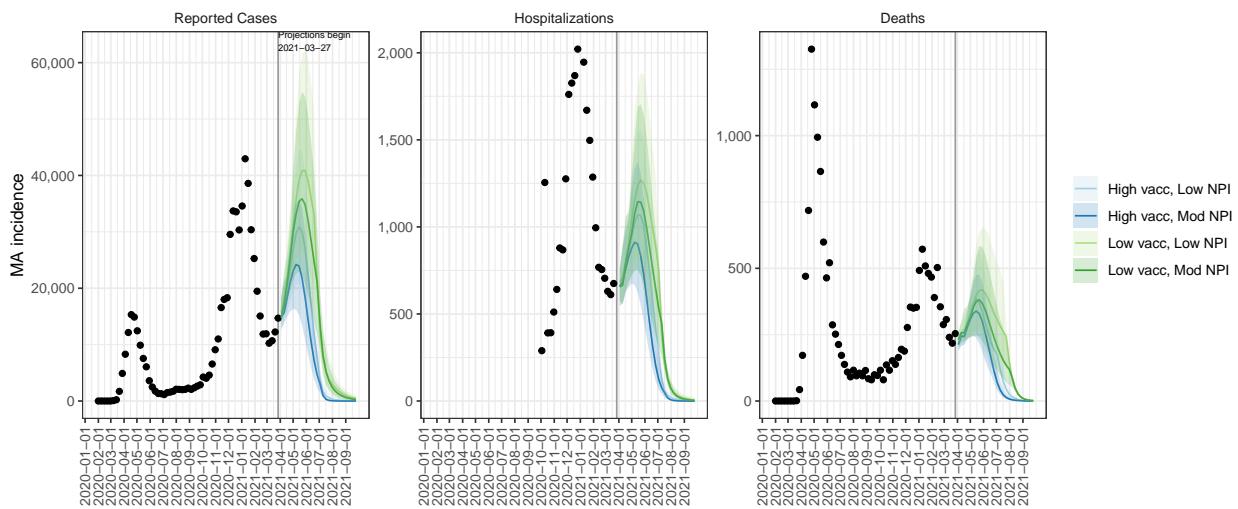
ME ensemble projections & 50% projection intervals



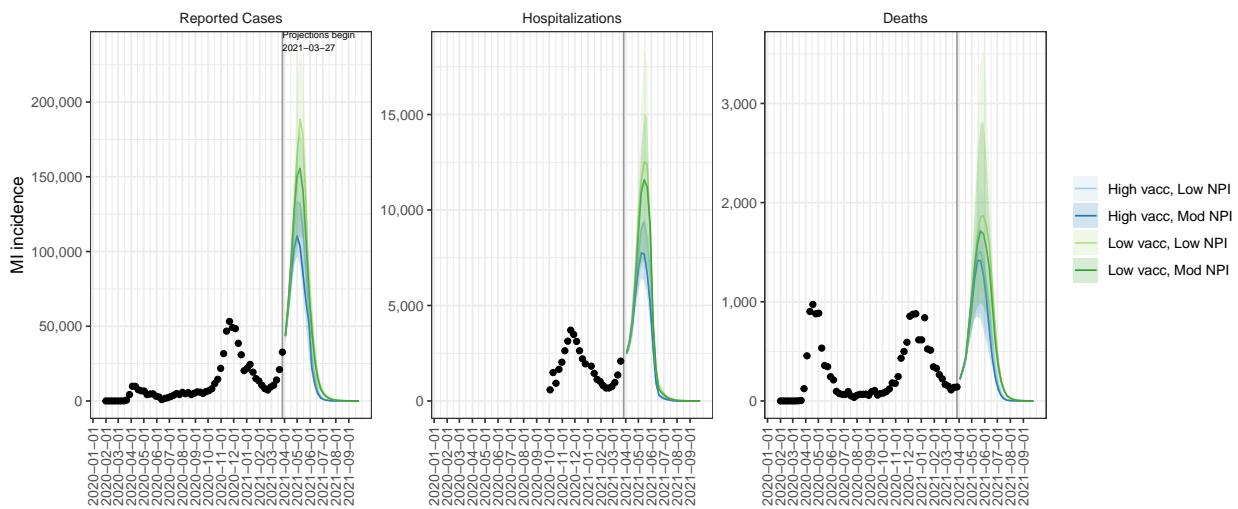
MD ensemble projections & 50% projection intervals



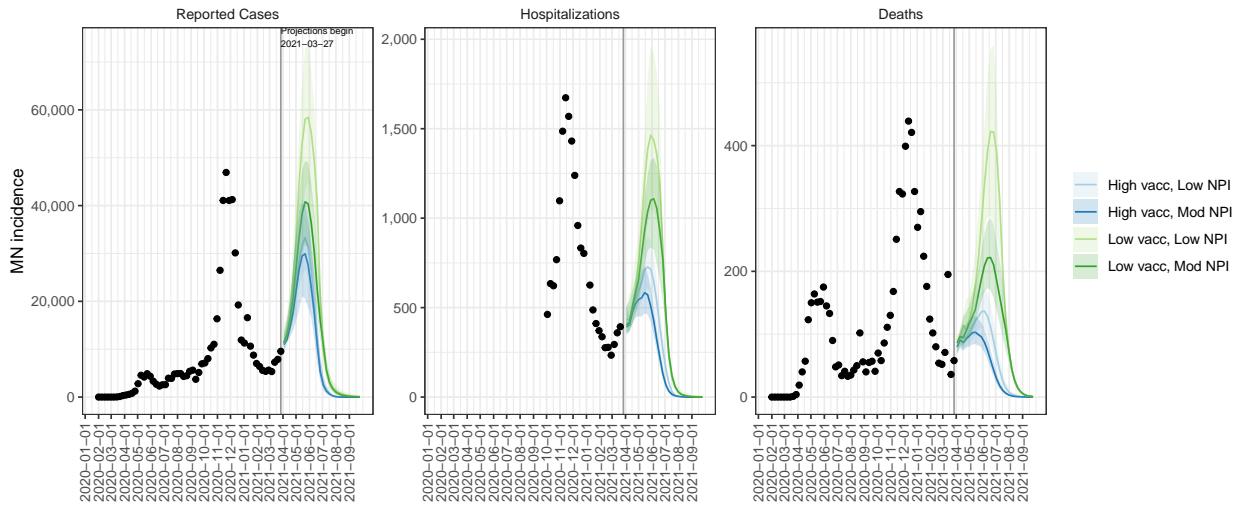
MA ensemble projections & 50% projection intervals



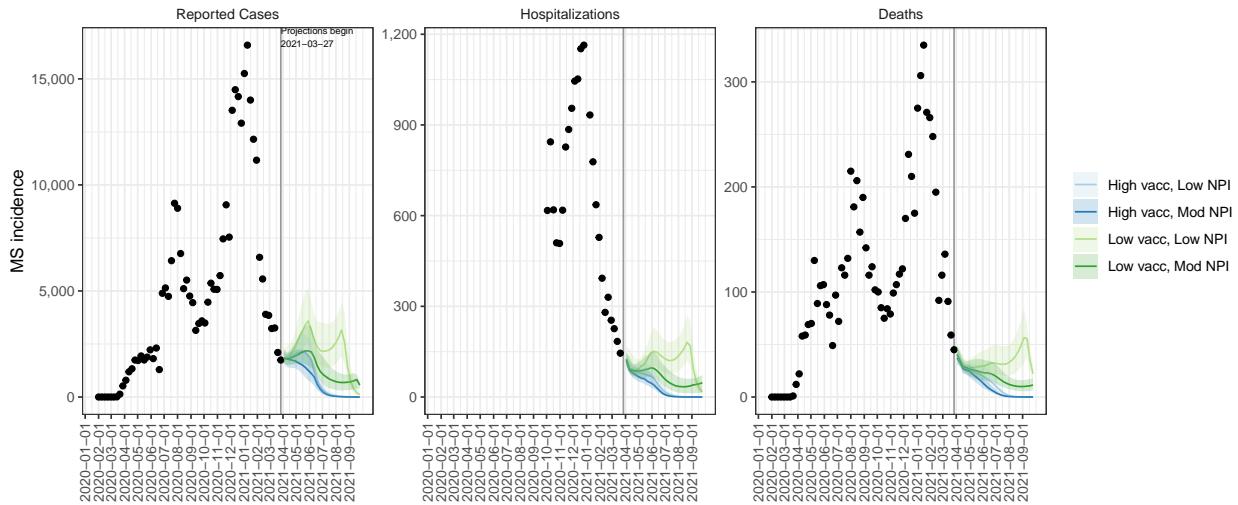
MI ensemble projections & 50% projection intervals



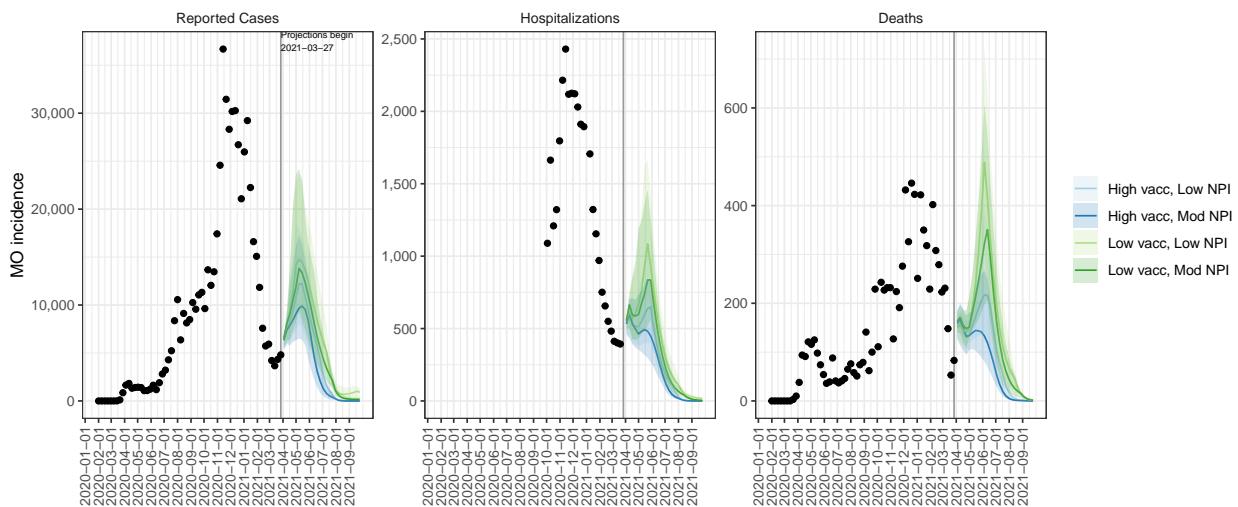
MN ensemble projections & 50% projection intervals



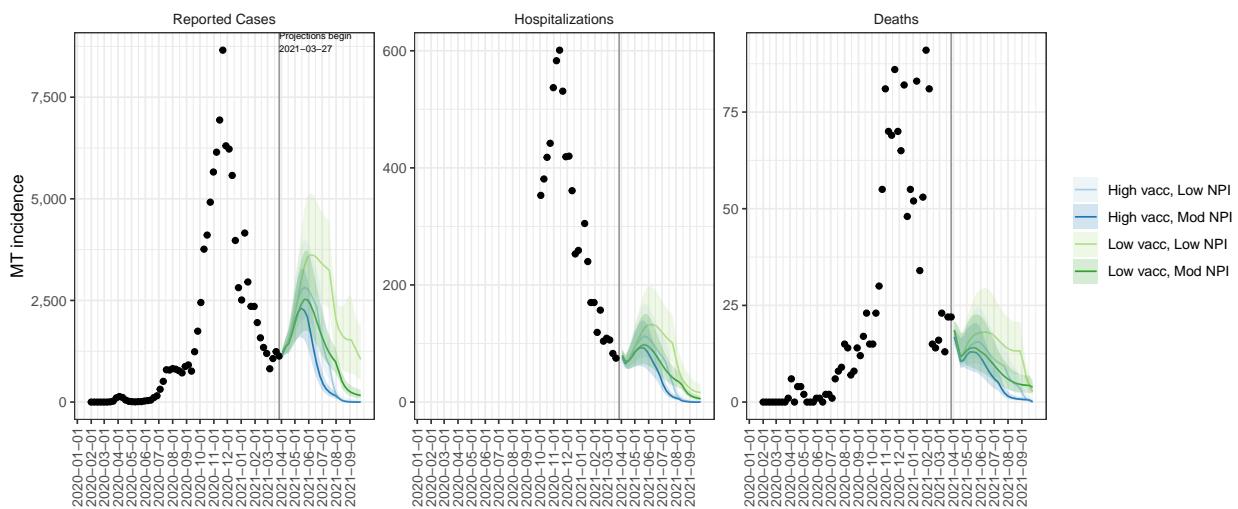
MS ensemble projections & 50% projection intervals



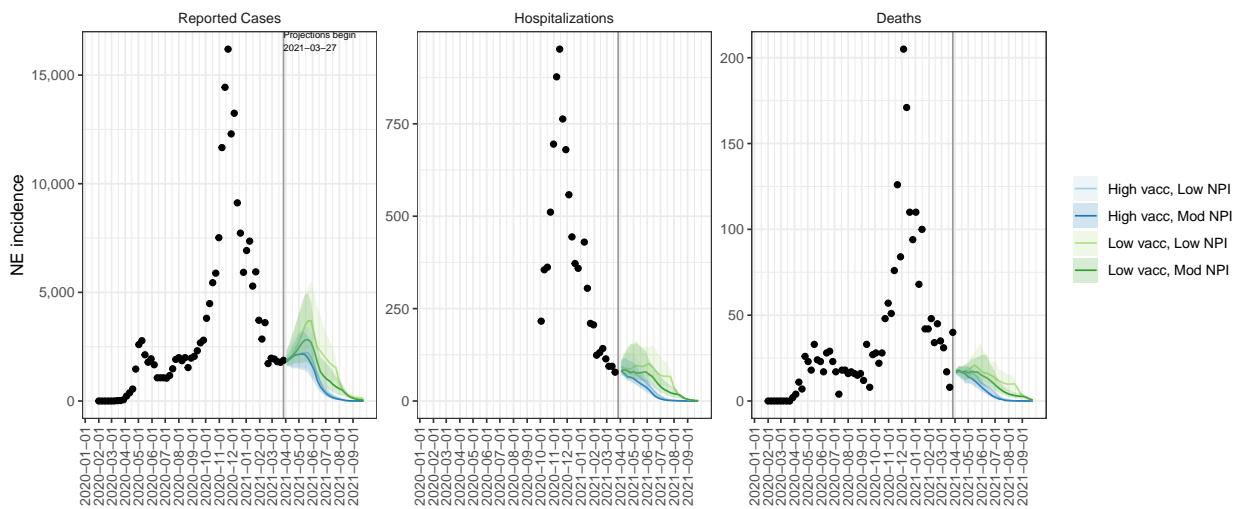
MO ensemble projections & 50% projection intervals



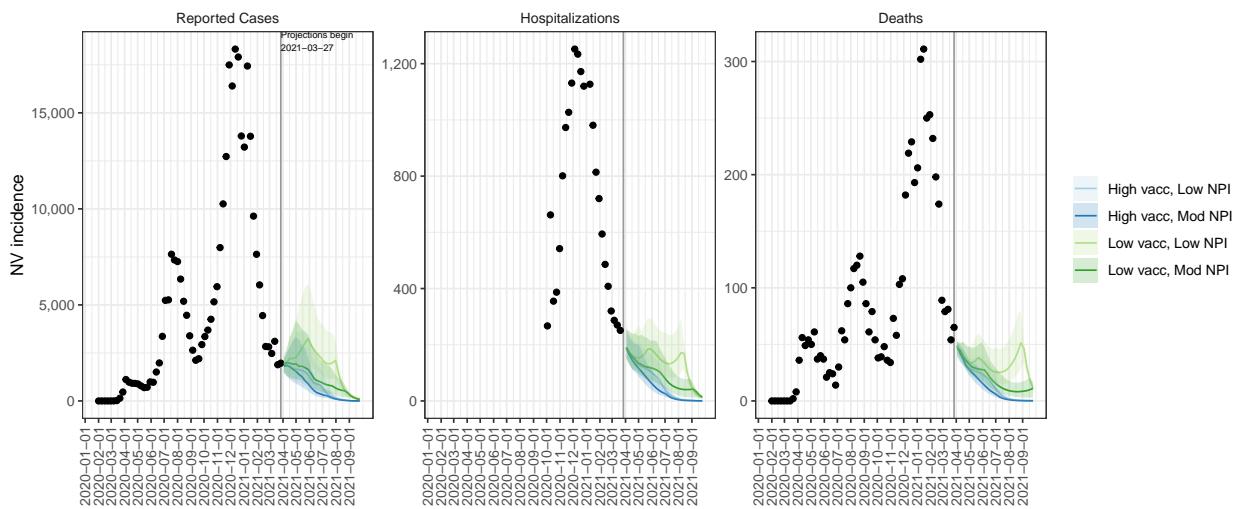
MT ensemble projections & 50% projection intervals



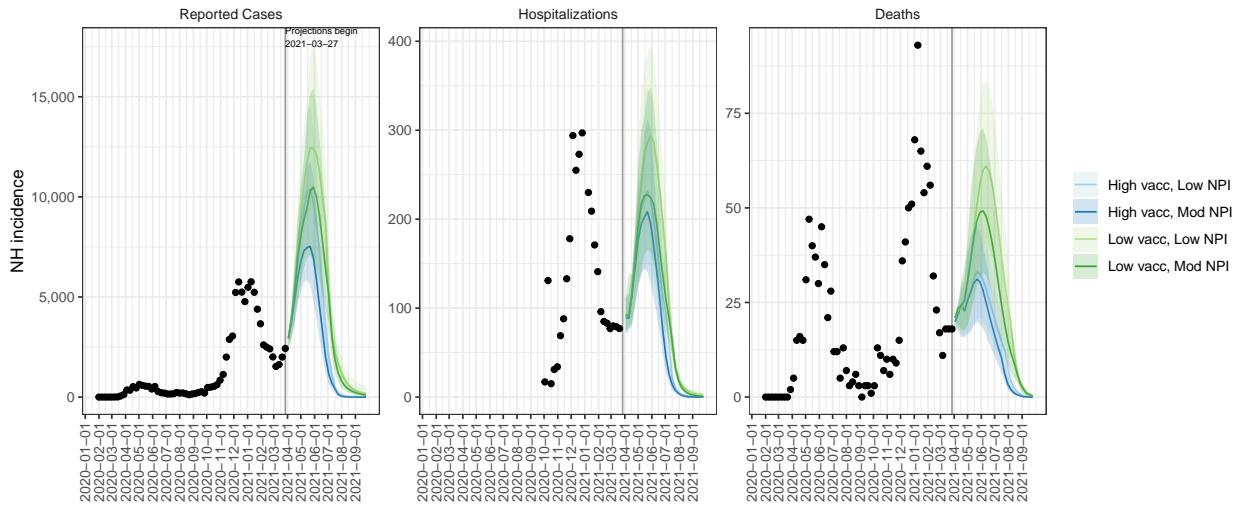
NE ensemble projections & 50% projection intervals



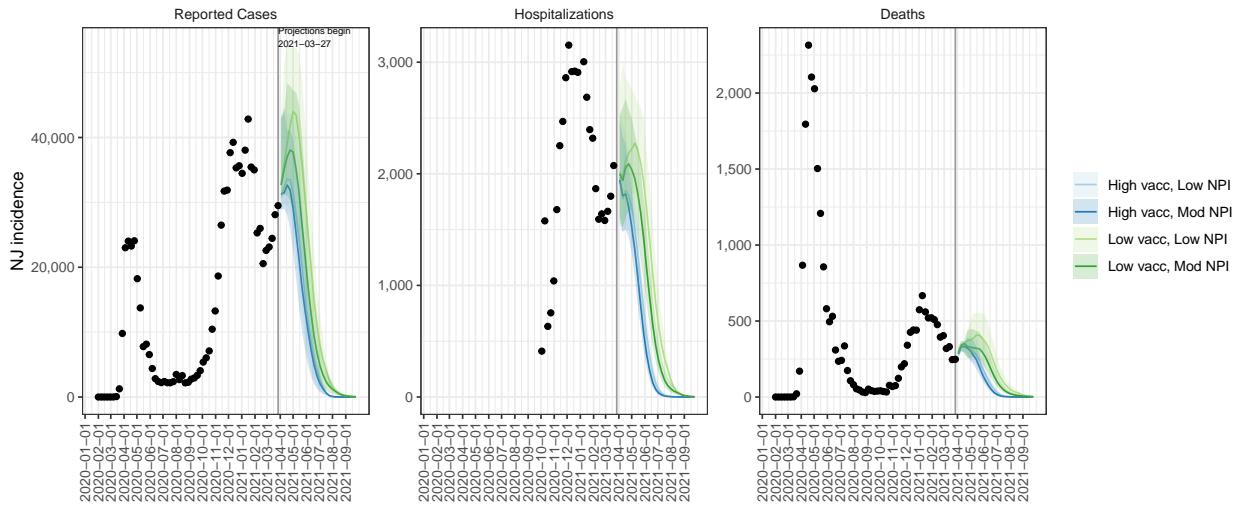
NV ensemble projections & 50% projection intervals



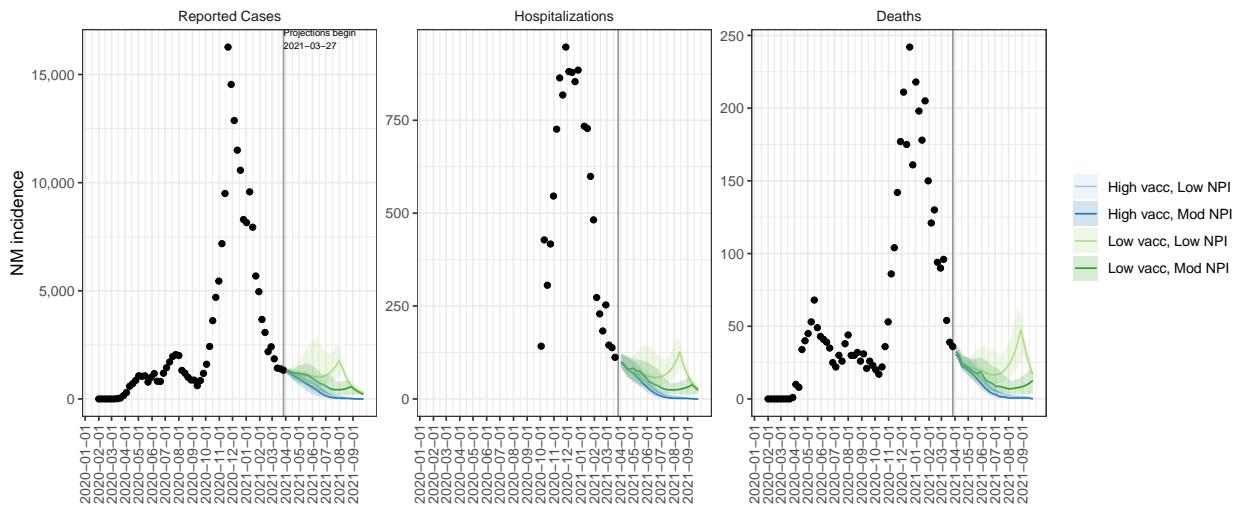
NH ensemble projections & 50% projection intervals



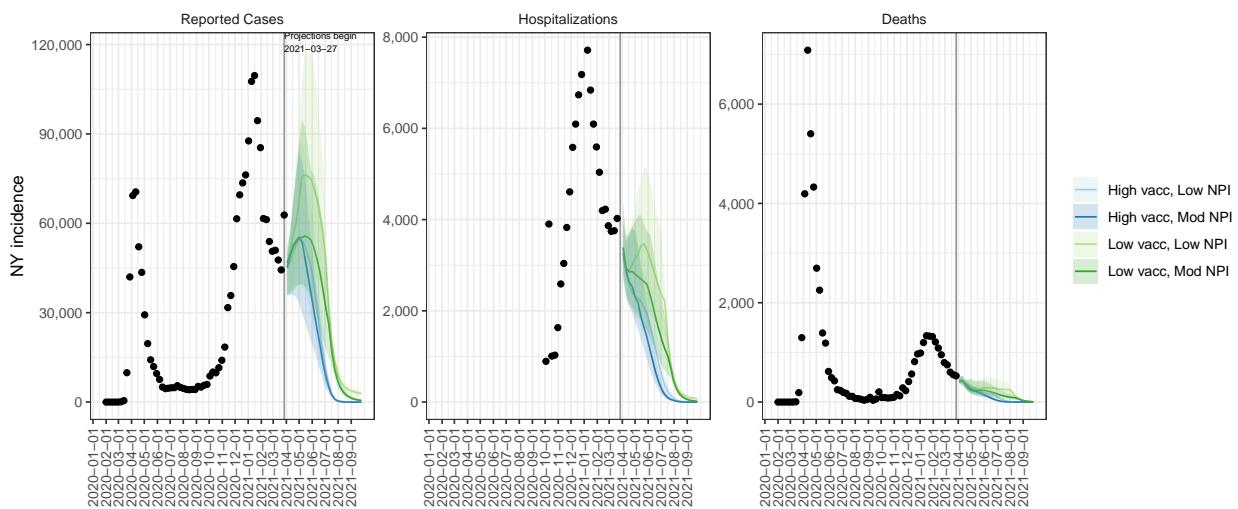
NJ ensemble projections & 50% projection intervals



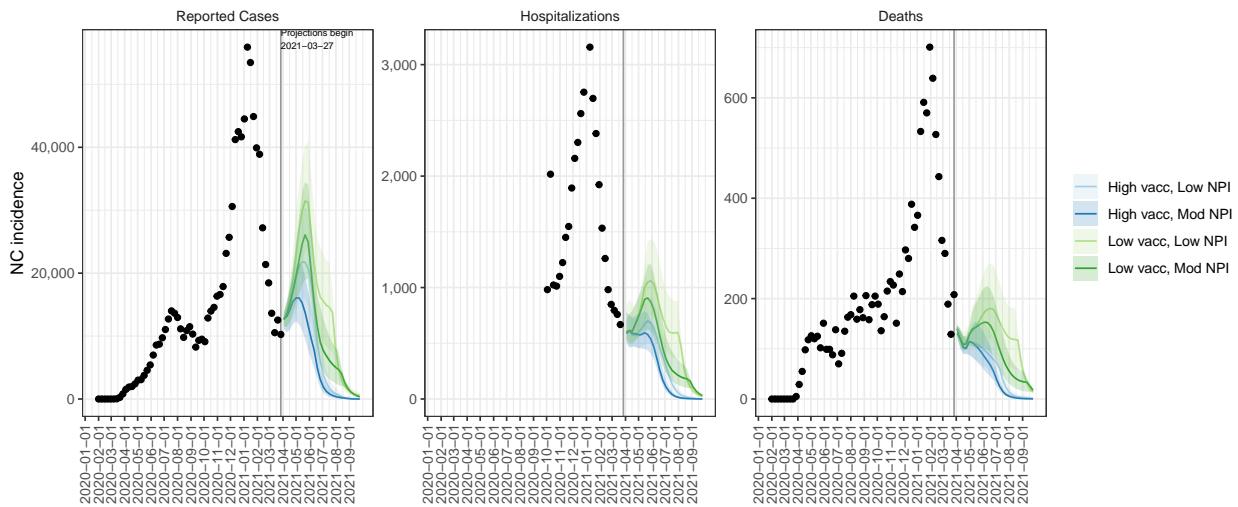
NM ensemble projections & 50% projection intervals



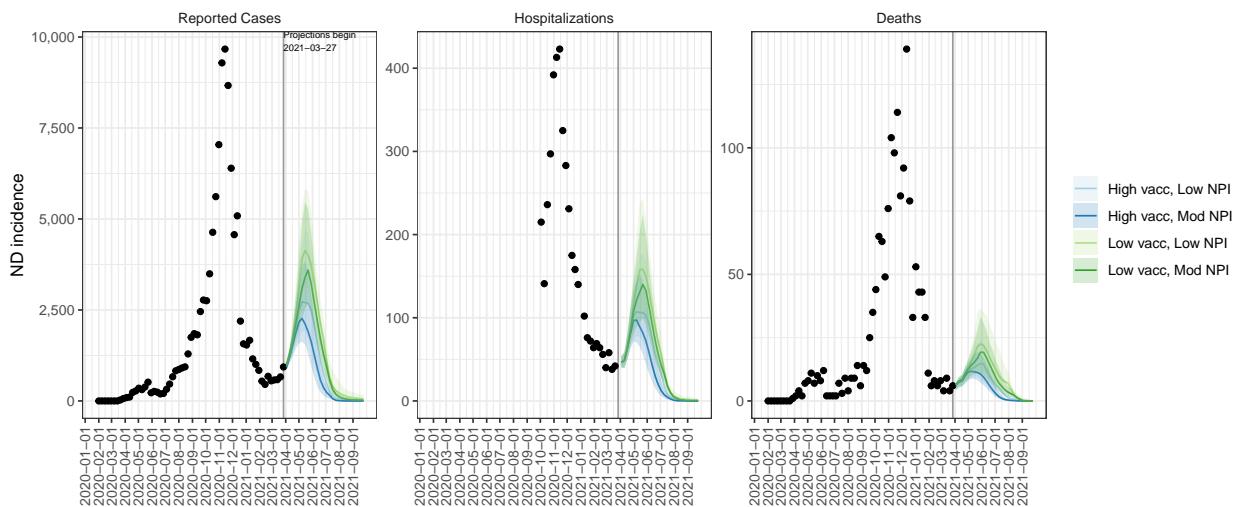
NY ensemble projections & 50% projection intervals



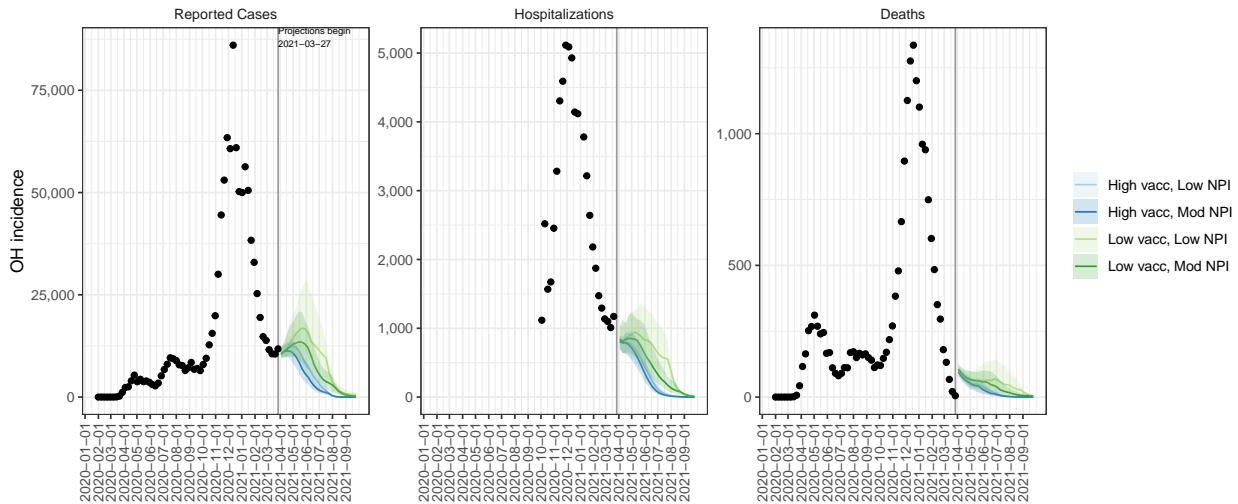
NC ensemble projections & 50% projection intervals



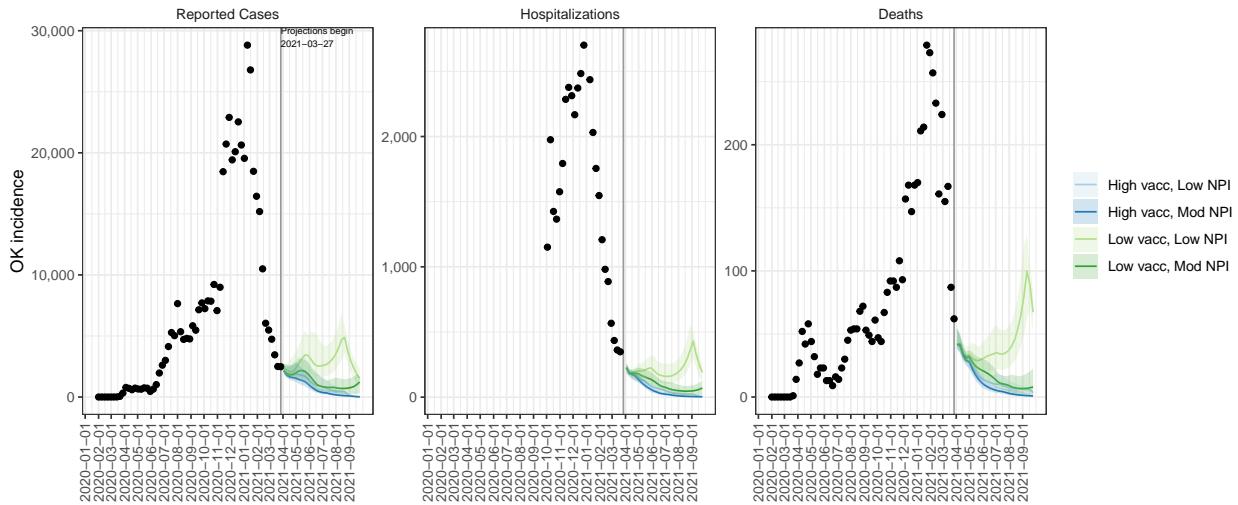
ND ensemble projections & 50% projection intervals



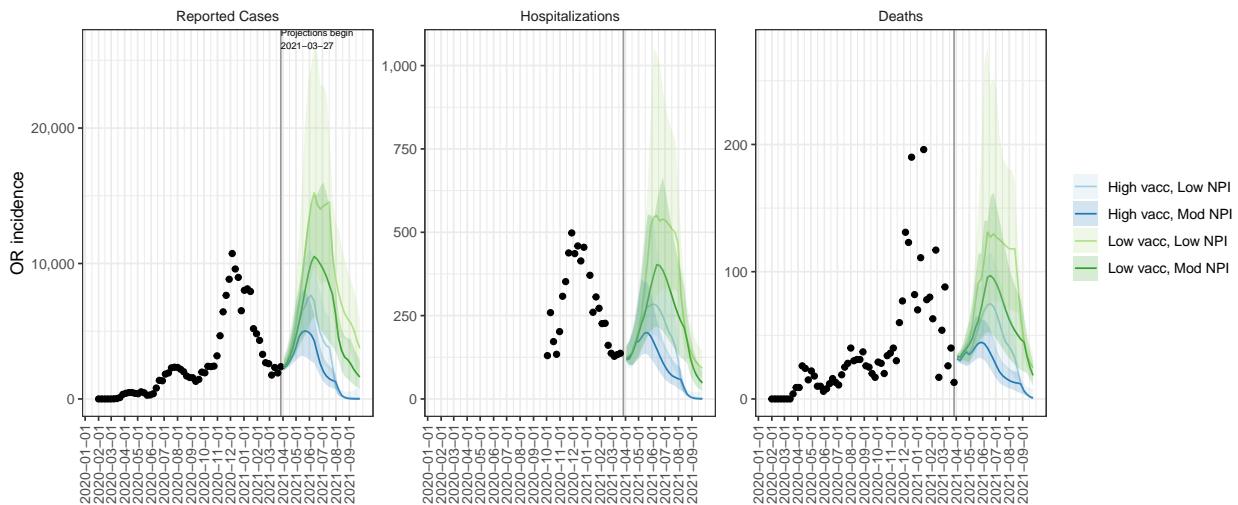
OH ensemble projections & 50% projection intervals



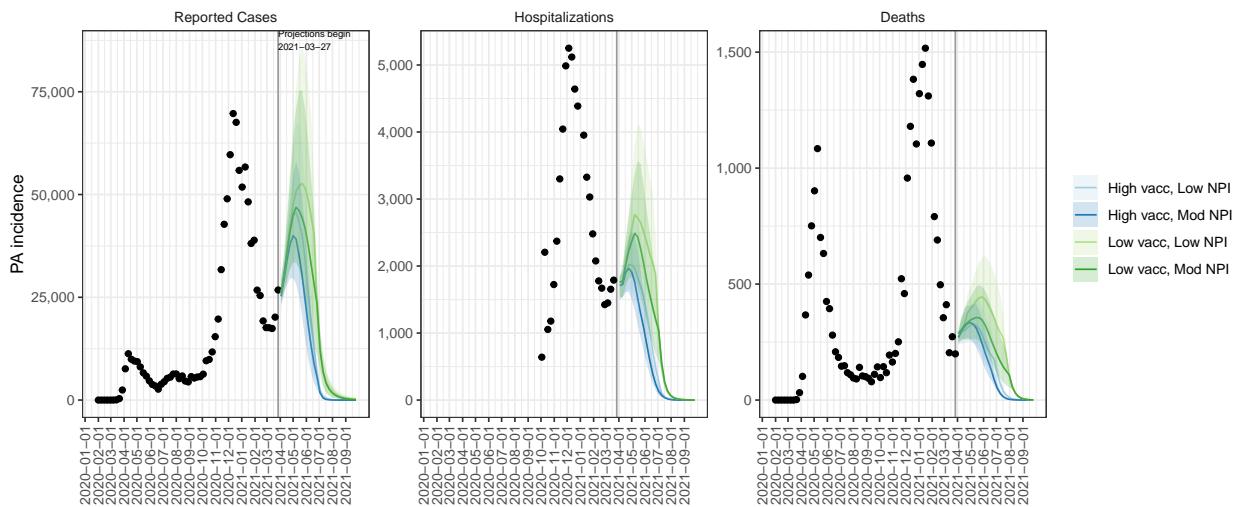
OK ensemble projections & 50% projection intervals



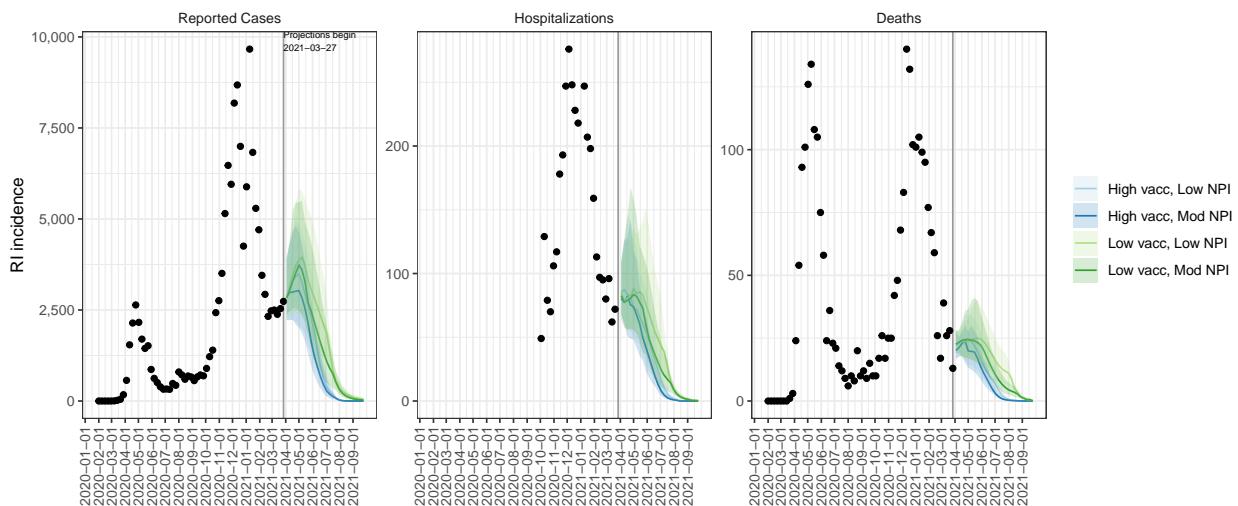
OR ensemble projections & 50% projection intervals



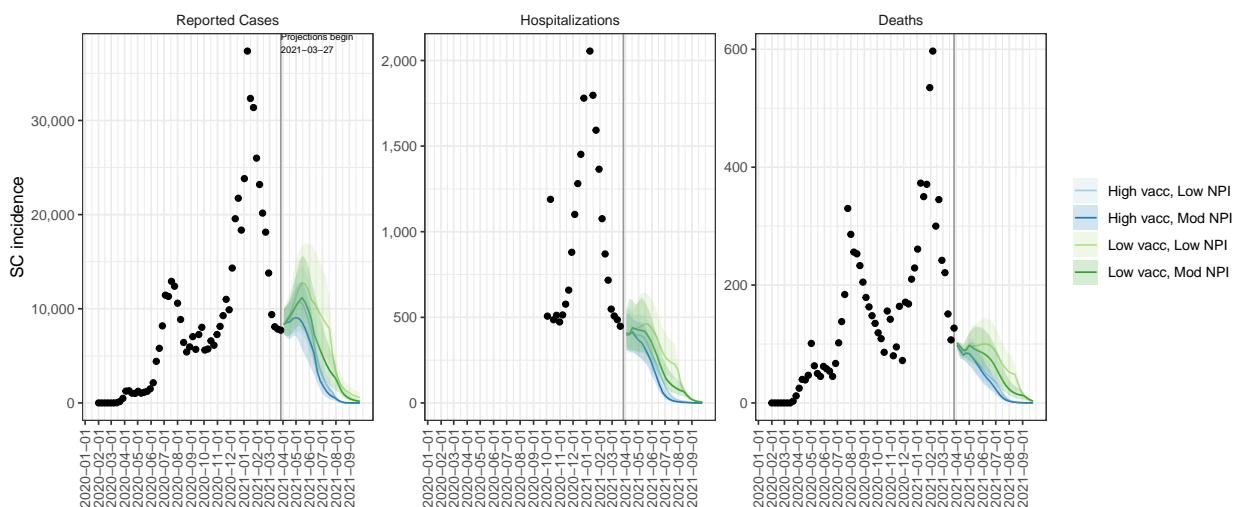
PA ensemble projections & 50% projection intervals



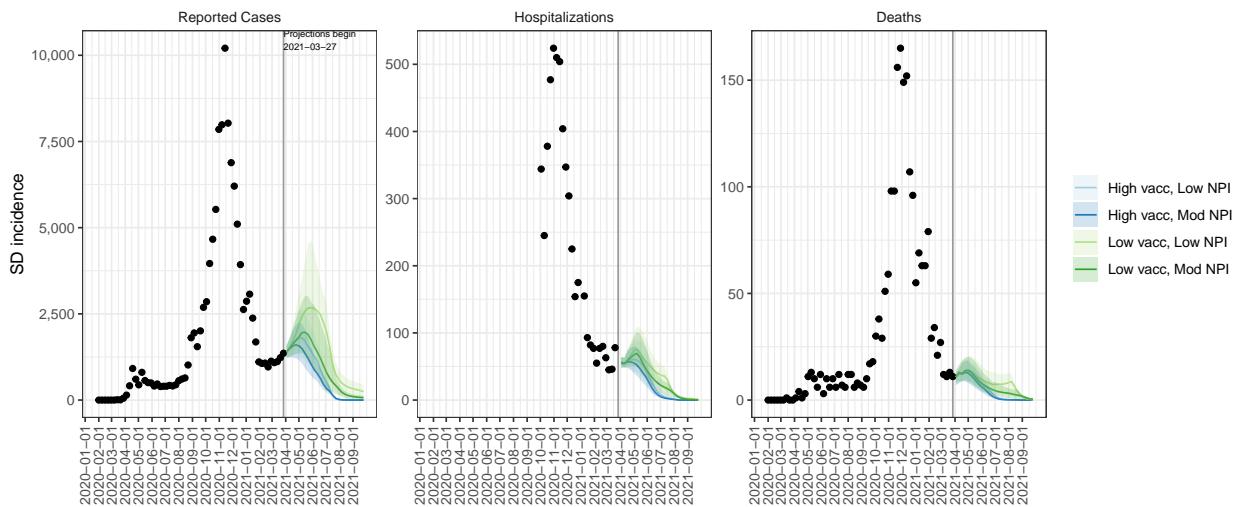
RI ensemble projections & 50% projection intervals



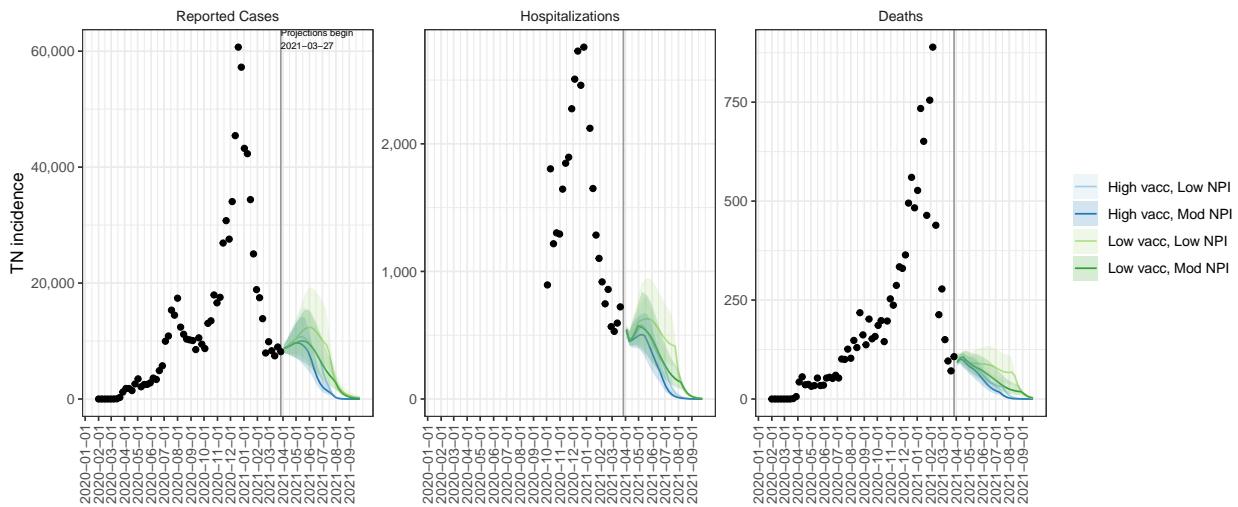
SC ensemble projections & 50% projection intervals



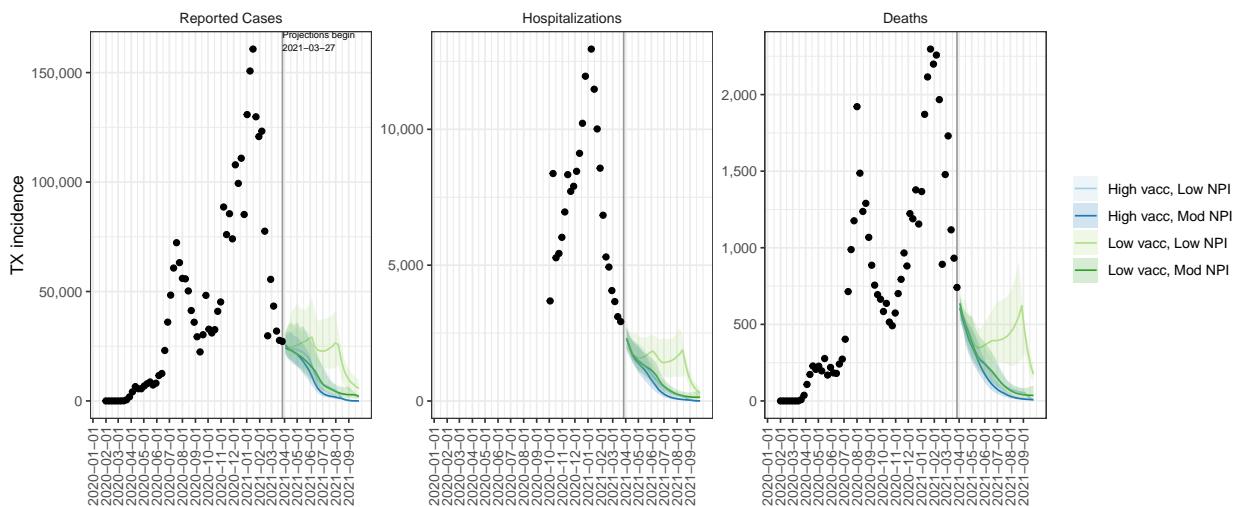
SD ensemble projections & 50% projection intervals



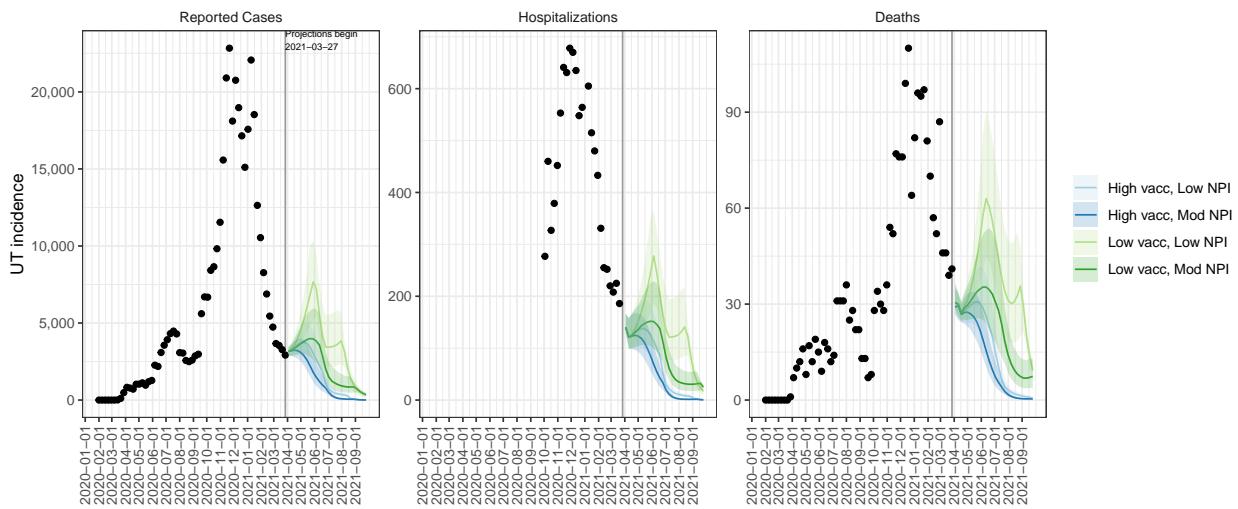
TN ensemble projections & 50% projection intervals



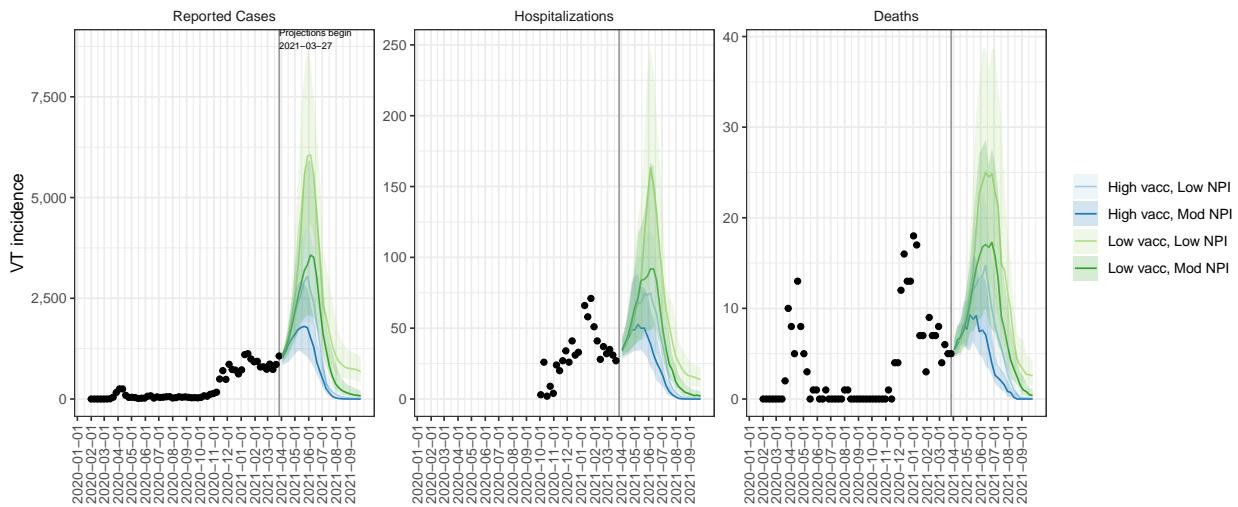
TX ensemble projections & 50% projection intervals



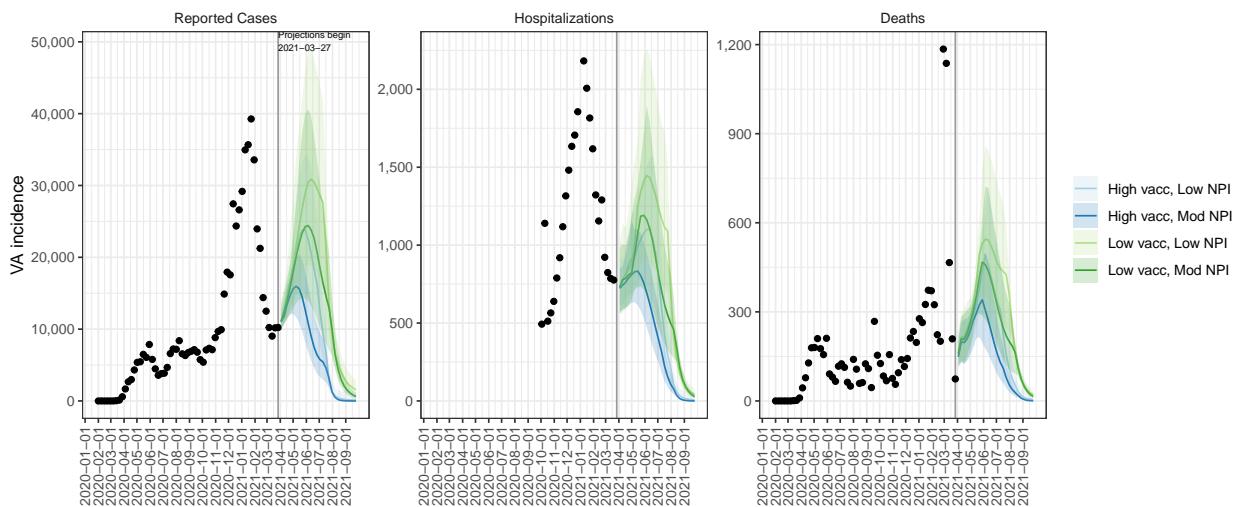
UT ensemble projections & 50% projection intervals



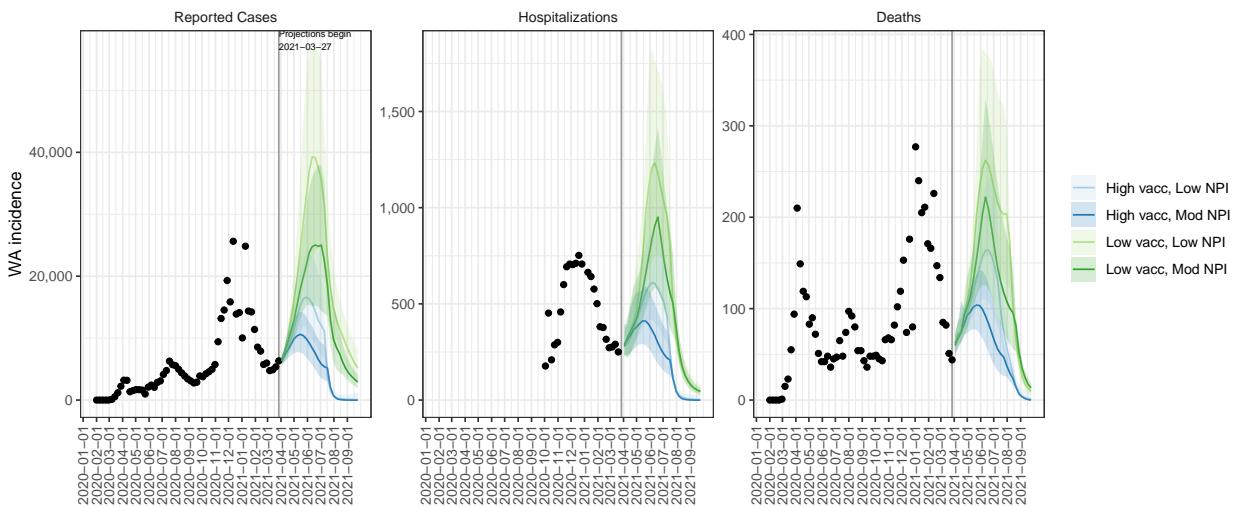
VT ensemble projections & 50% projection intervals



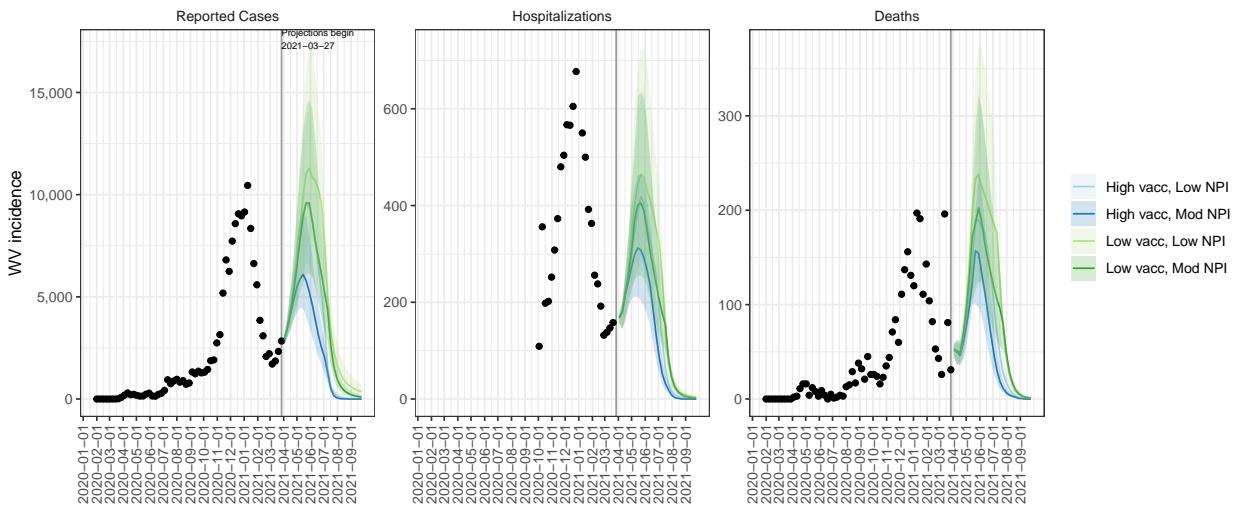
VA ensemble projections & 50% projection intervals



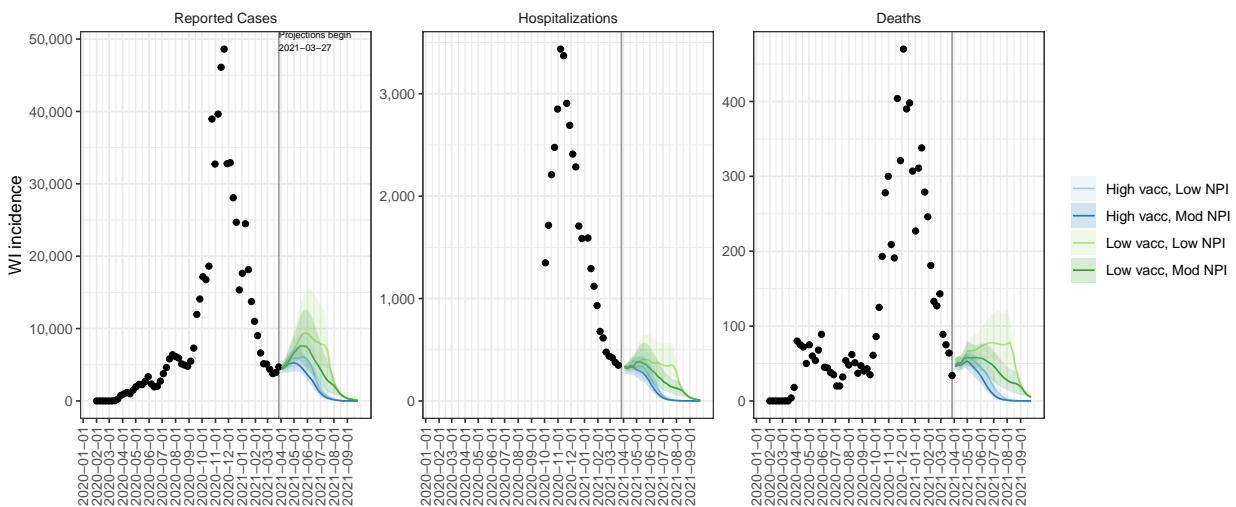
WA ensemble projections & 50% projection intervals



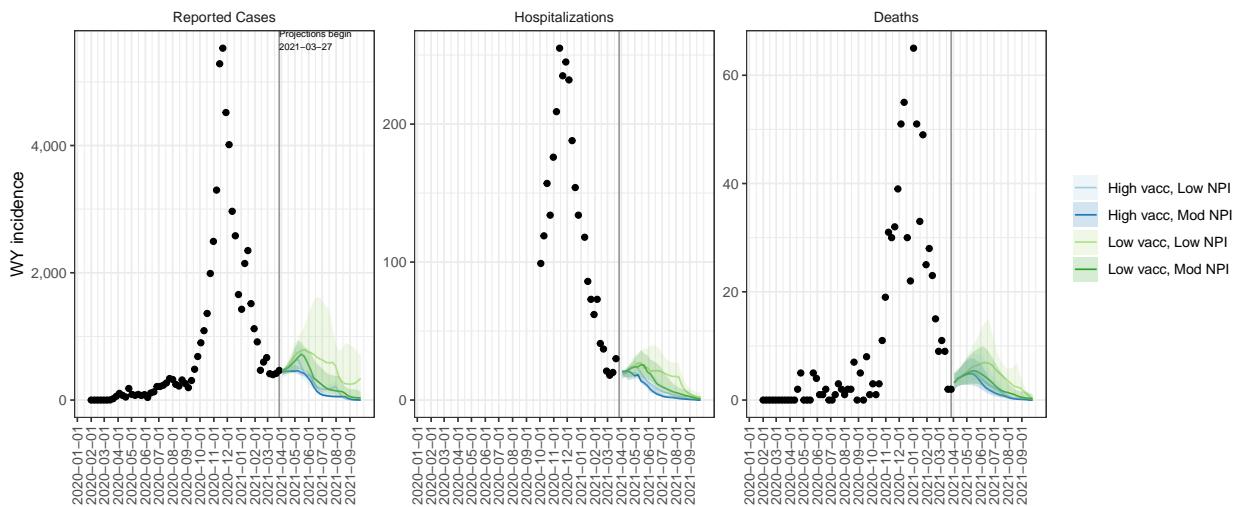
WV ensemble projections & 50% projection intervals



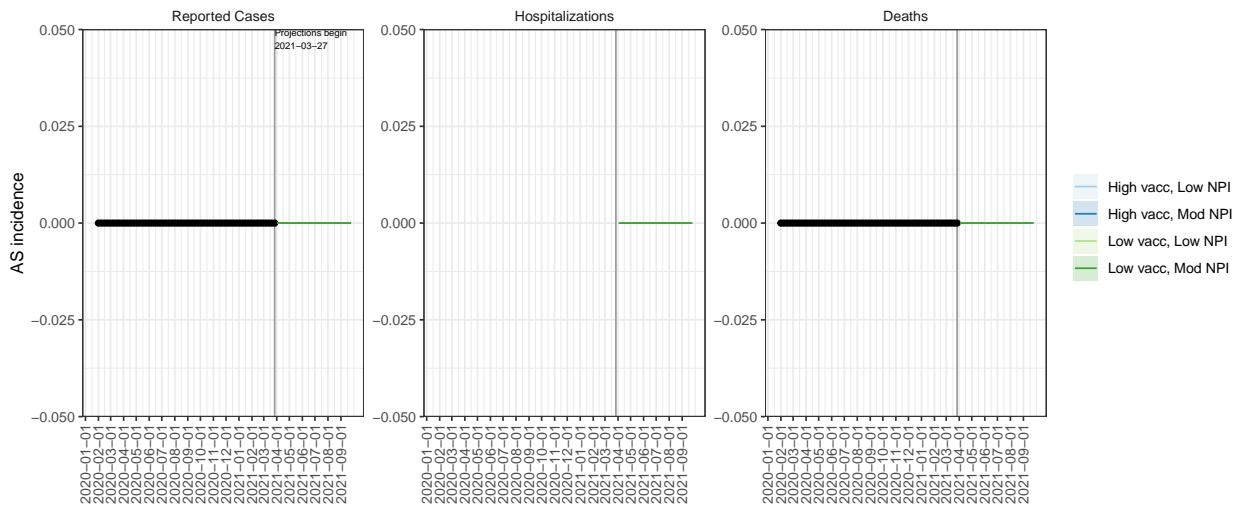
WI ensemble projections & 50% projection intervals



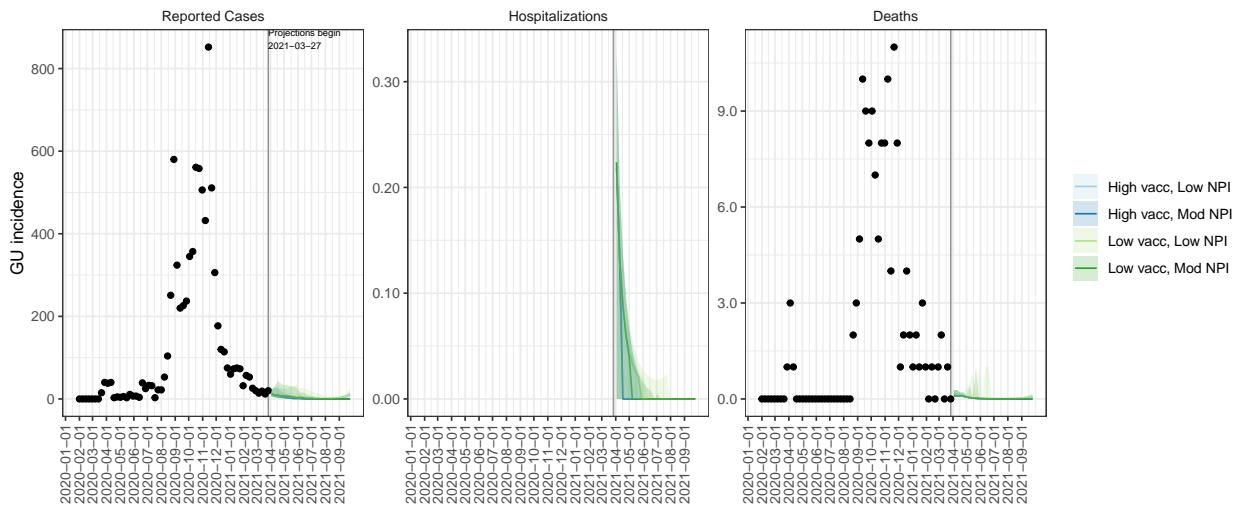
WY ensemble projections & 50% projection intervals



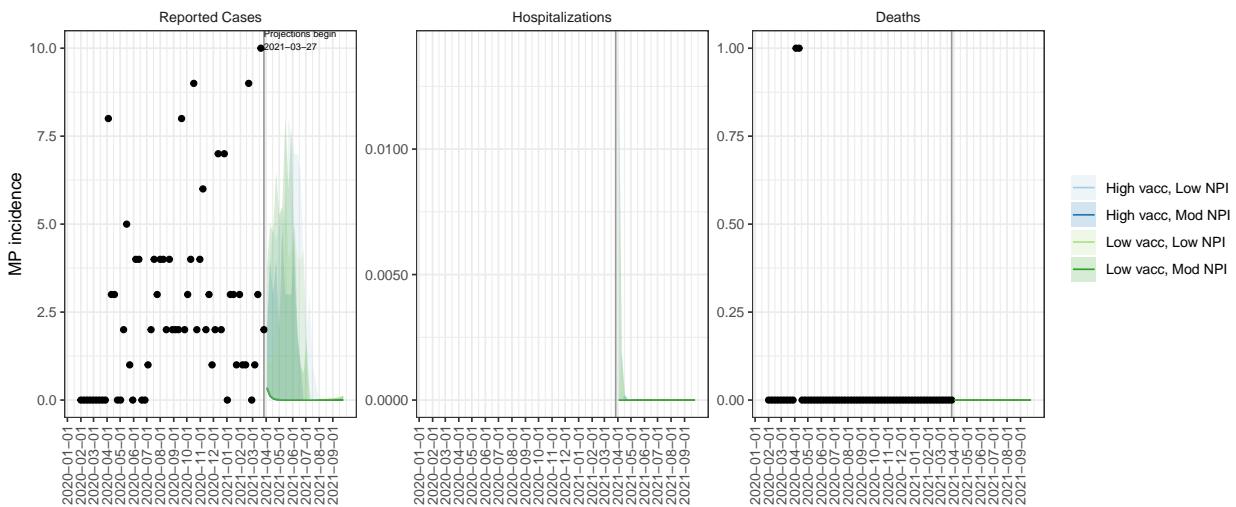
AS ensemble projections & 50% projection intervals



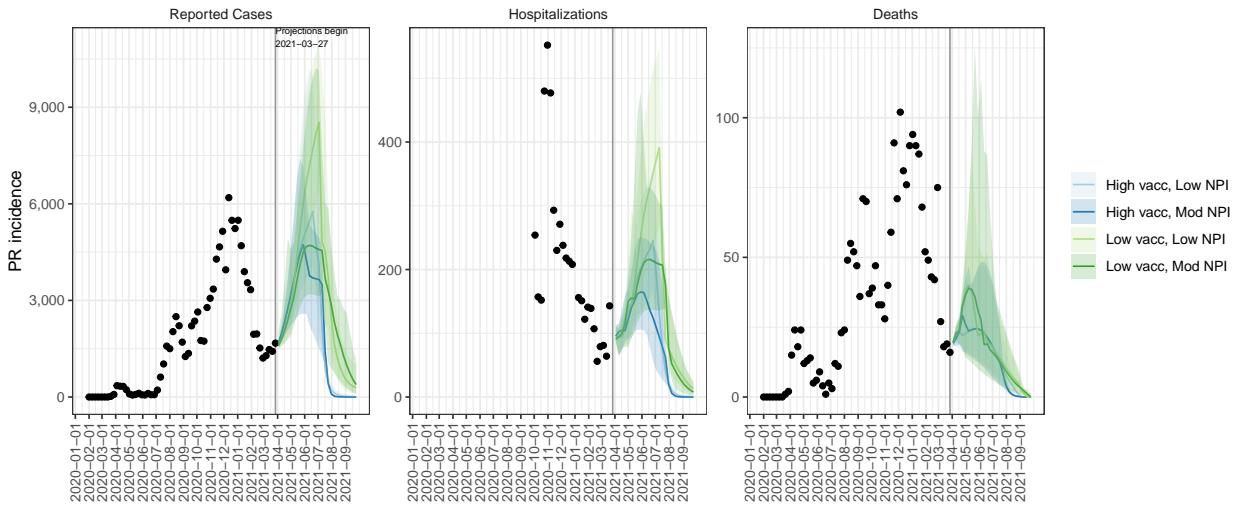
GU ensemble projections & 50% projection intervals



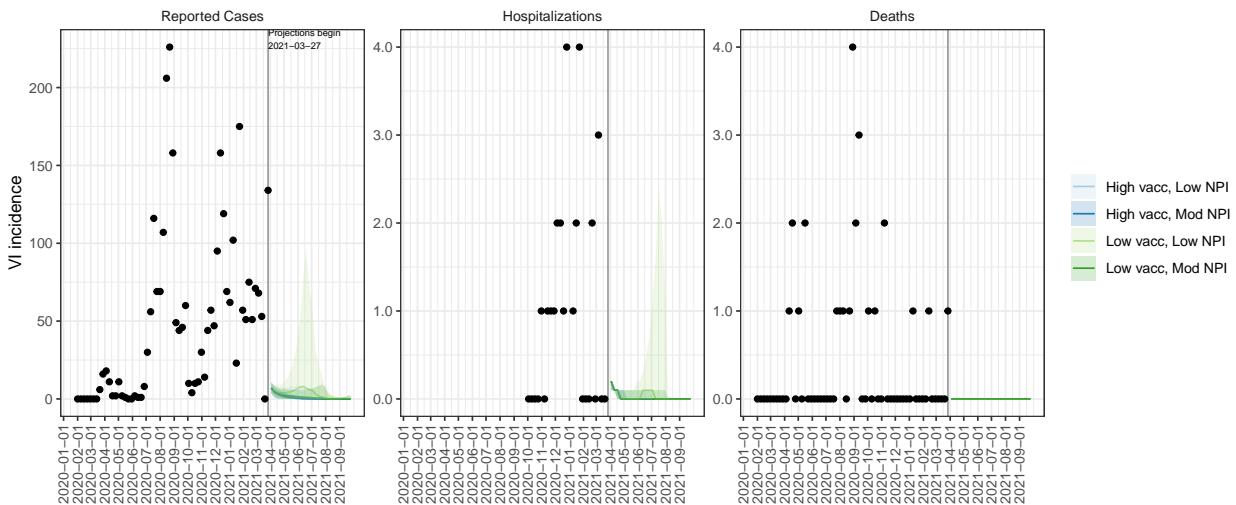
MP ensemble projections & 50% projection intervals



PR ensemble projections & 50% projection intervals



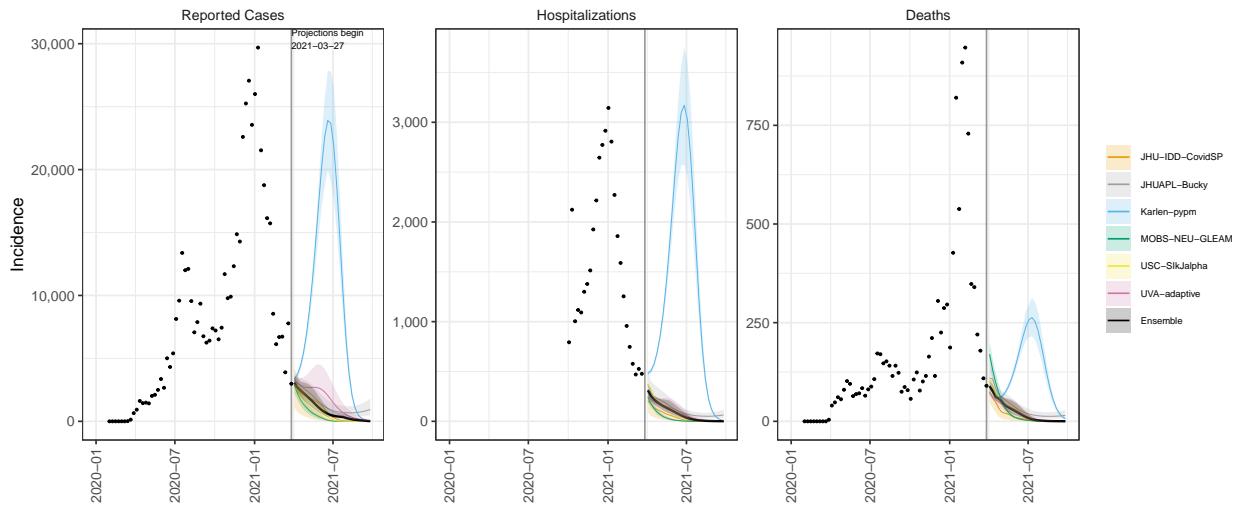
VI ensemble projections & 50% projection intervals



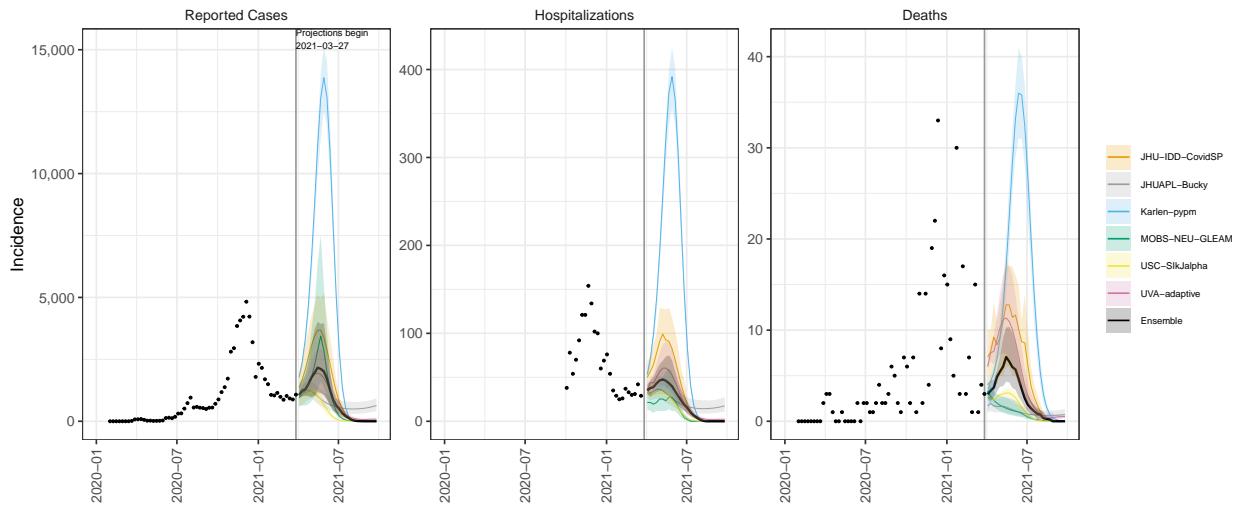
State-level model variation

National model variation for the high vaccination, moderate NPI scenario

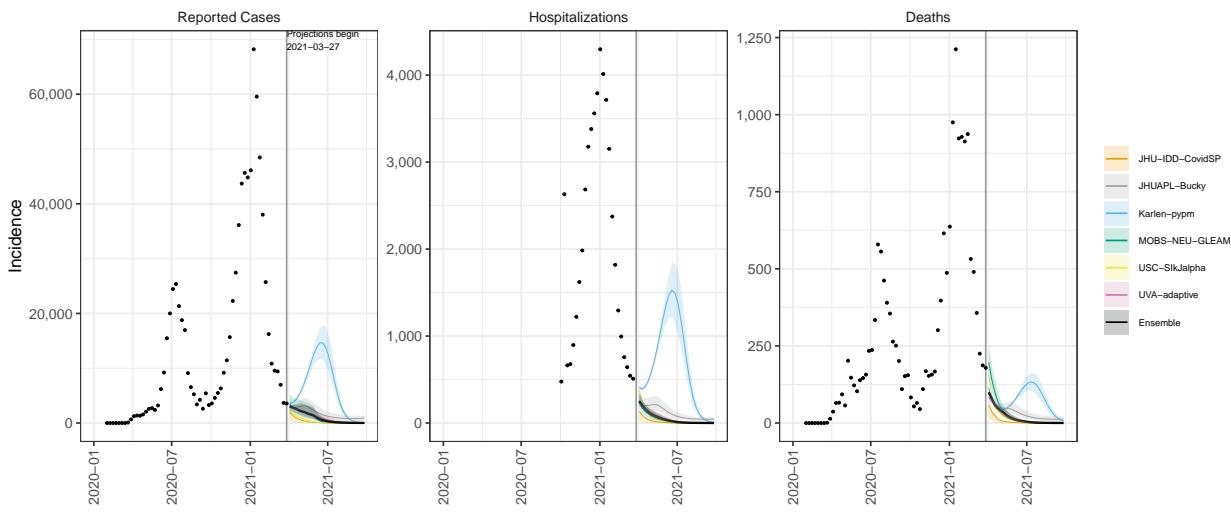
AL model variance & 50% projection intervals – High vaccination, Moderate NPI compliance



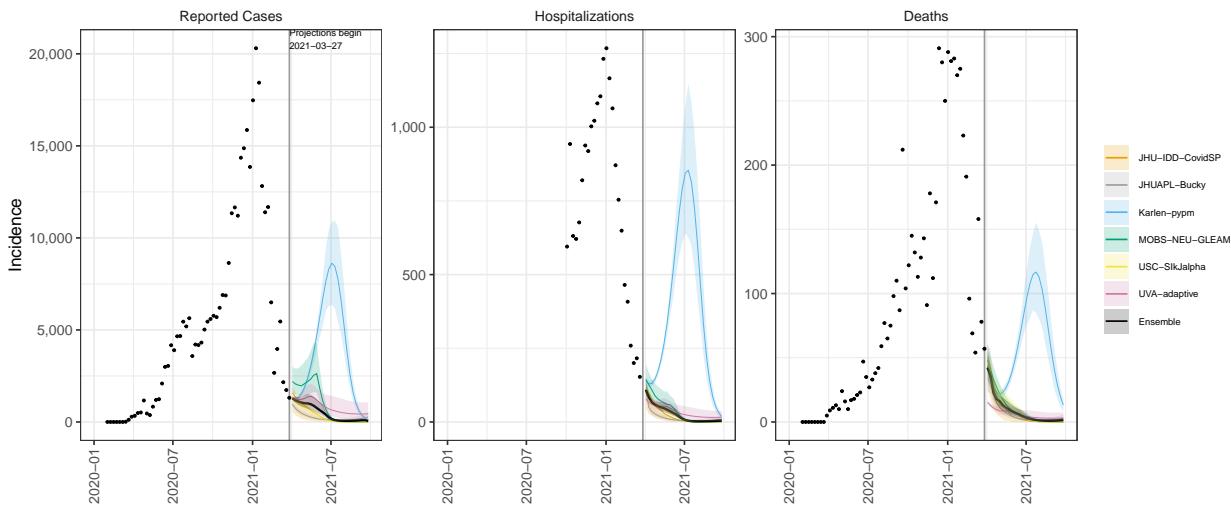
AK model variance & 50% projection intervals – High vaccination, Moderate NPI compliance



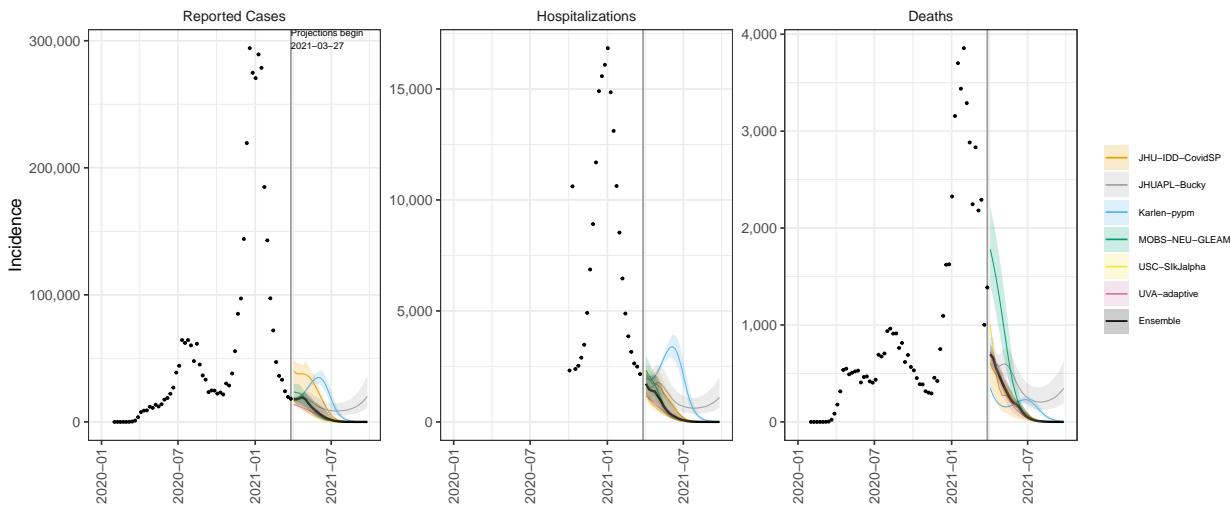
AZ model variance & 50% projection intervals – High vaccination, Moderate NPI compliance



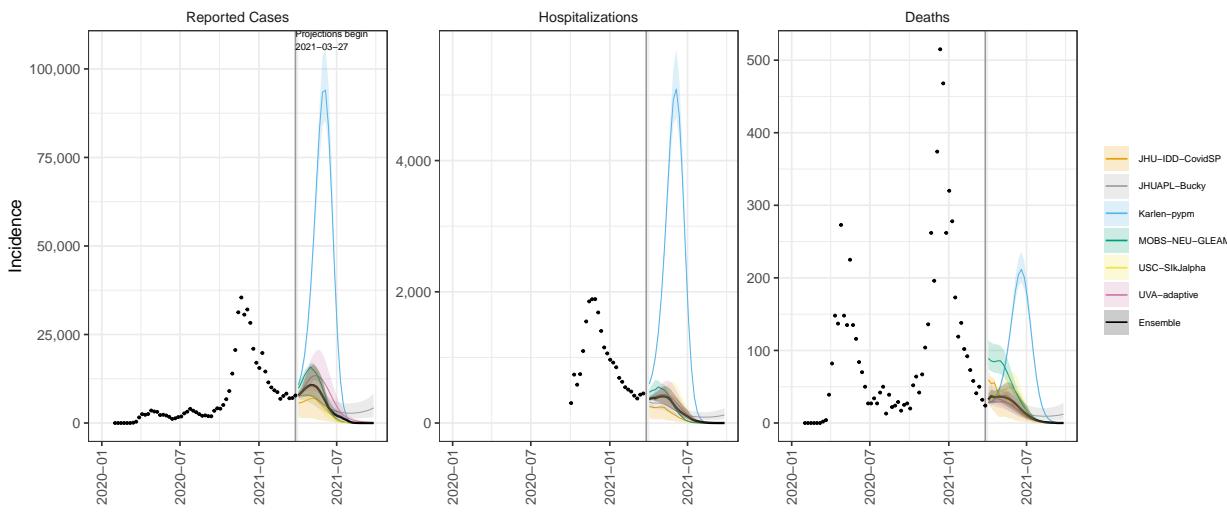
AR model variance & 50% projection intervals – High vaccination, Moderate NPI compliance



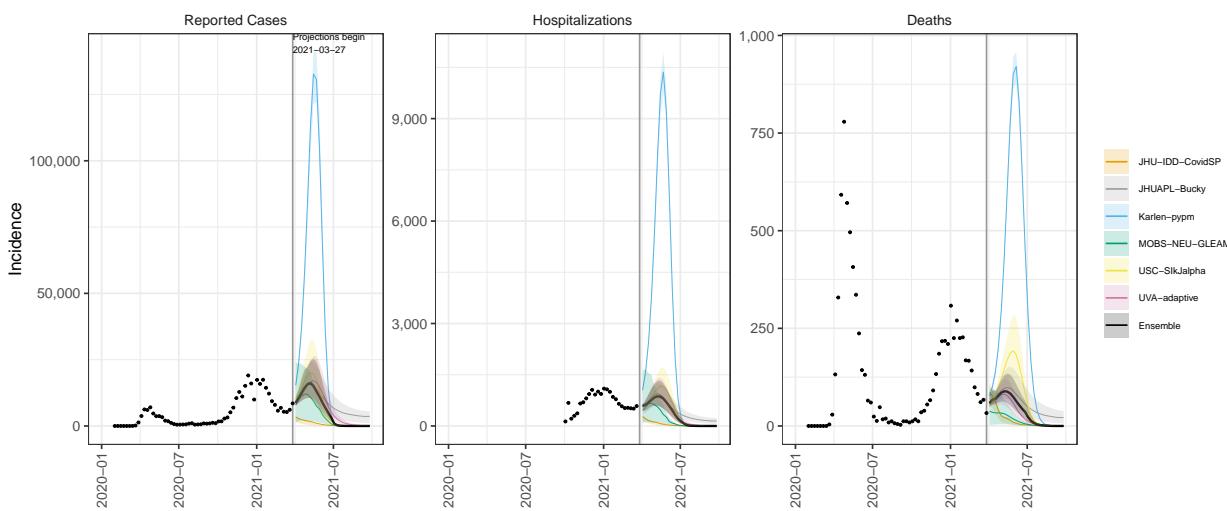
CA model variance & 50% projection intervals – High vaccination, Moderate NPI compliance



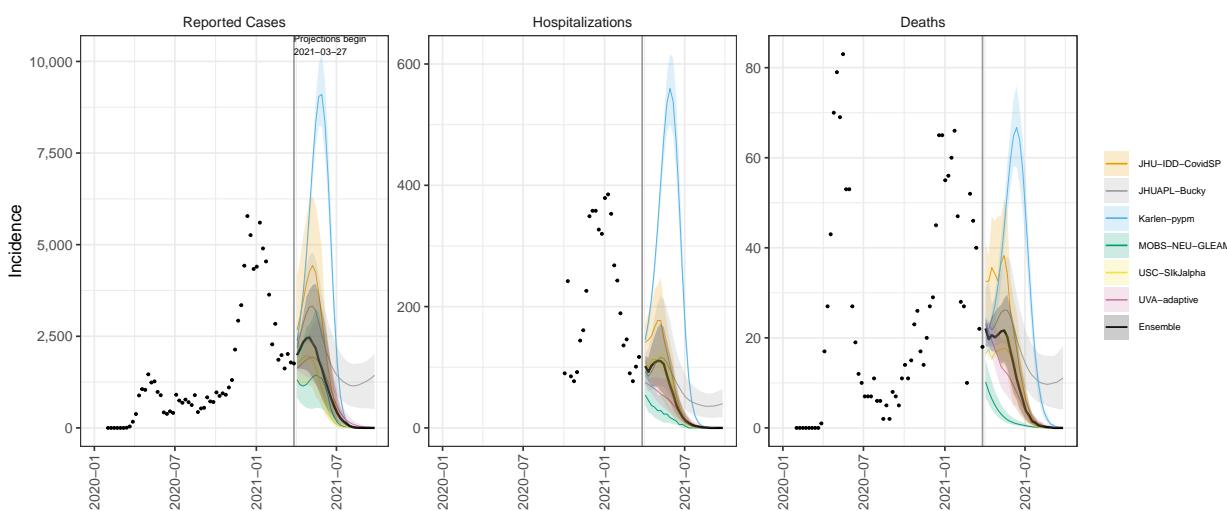
CO model variance & 50% projection intervals – High vaccination, Moderate NPI compliance



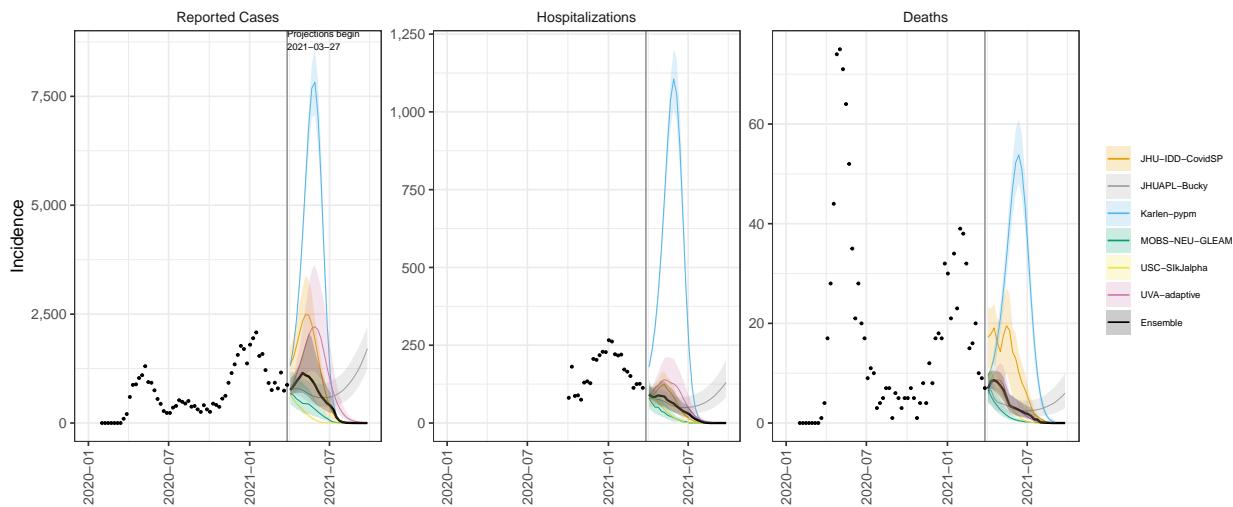
CT model variance & 50% projection intervals – High vaccination, Moderate NPI compliance



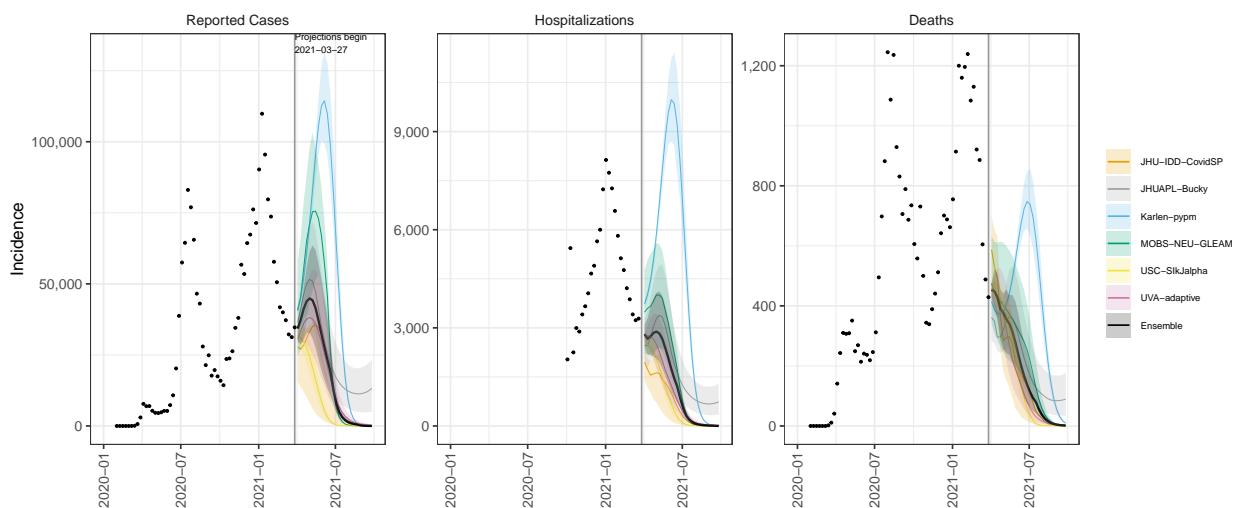
DE model variance & 50% projection intervals – High vaccination, Moderate NPI compliance



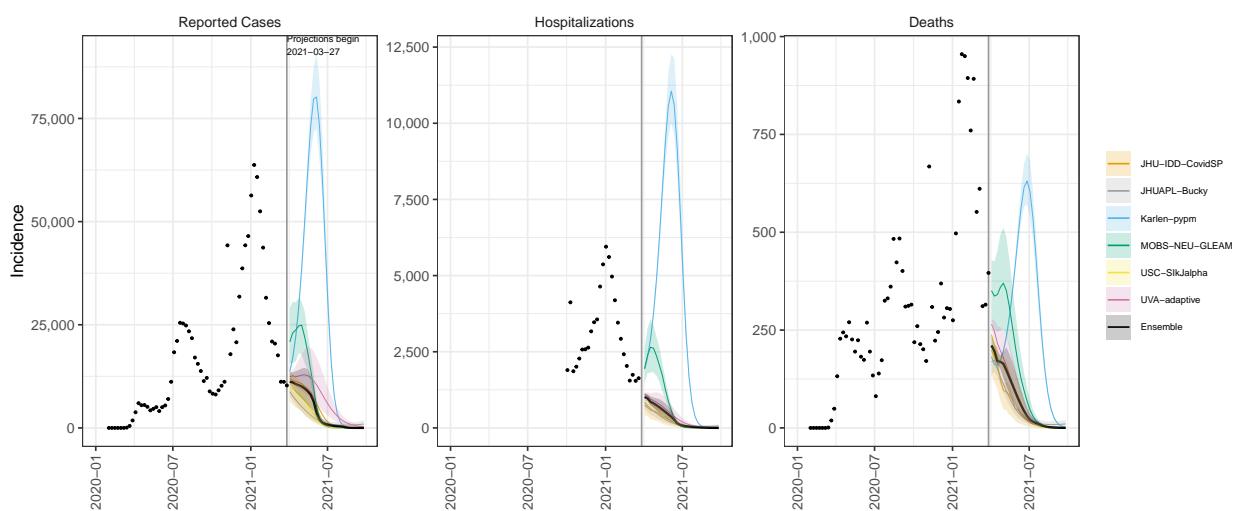
DC model variance & 50% projection intervals – High vaccination, Moderate NPI compliance



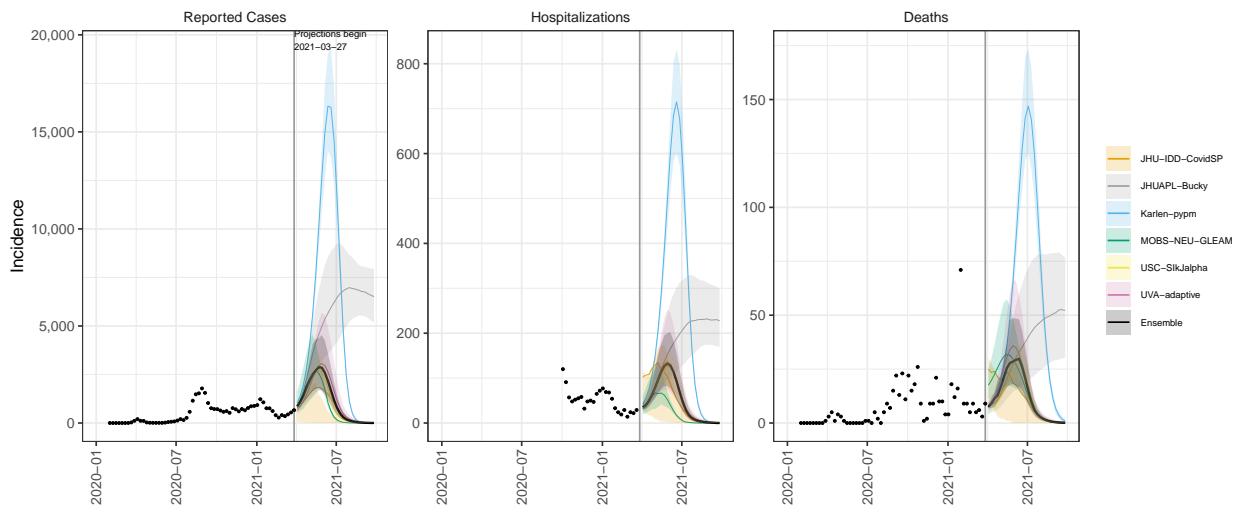
FL model variance & 50% projection intervals – High vaccination, Moderate NPI compliance



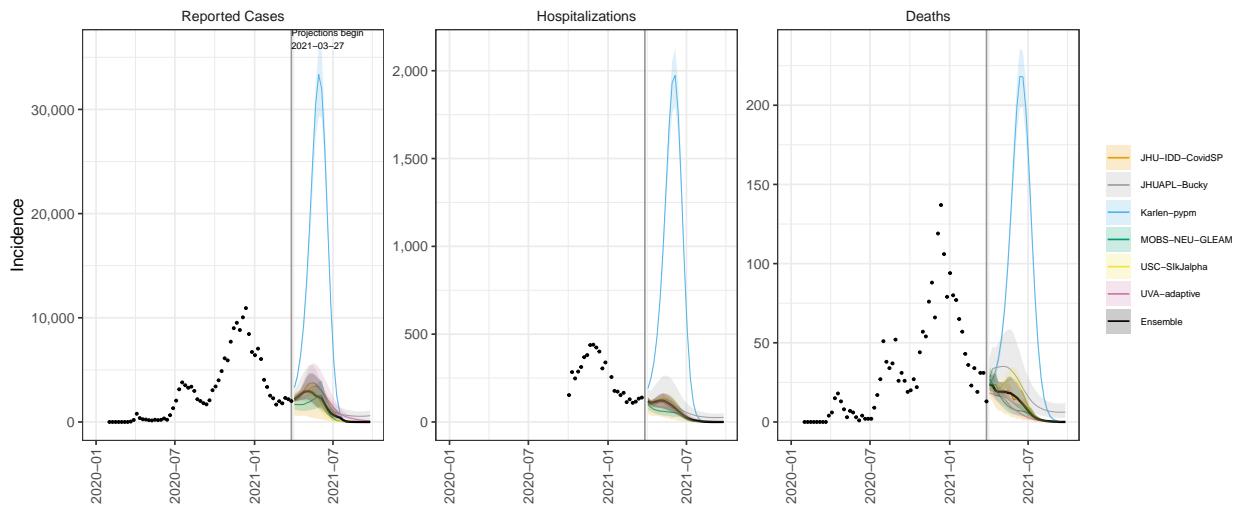
GA model variance & 50% projection intervals – High vaccination, Moderate NPI compliance



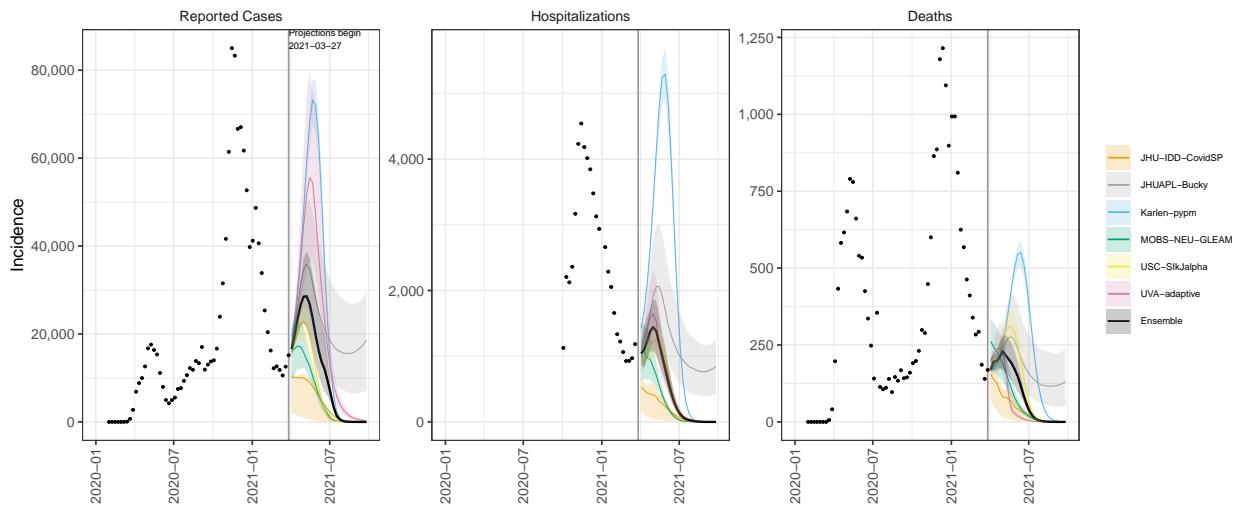
HI model variance & 50% projection intervals – High vaccination, Moderate NPI compliance



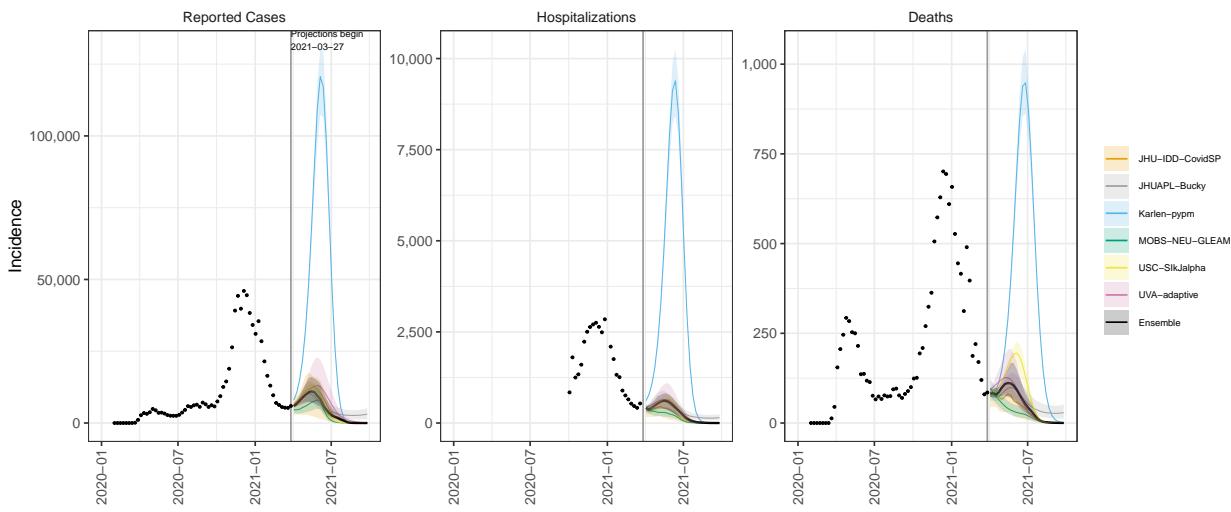
ID model variance & 50% projection intervals – High vaccination, Moderate NPI compliance



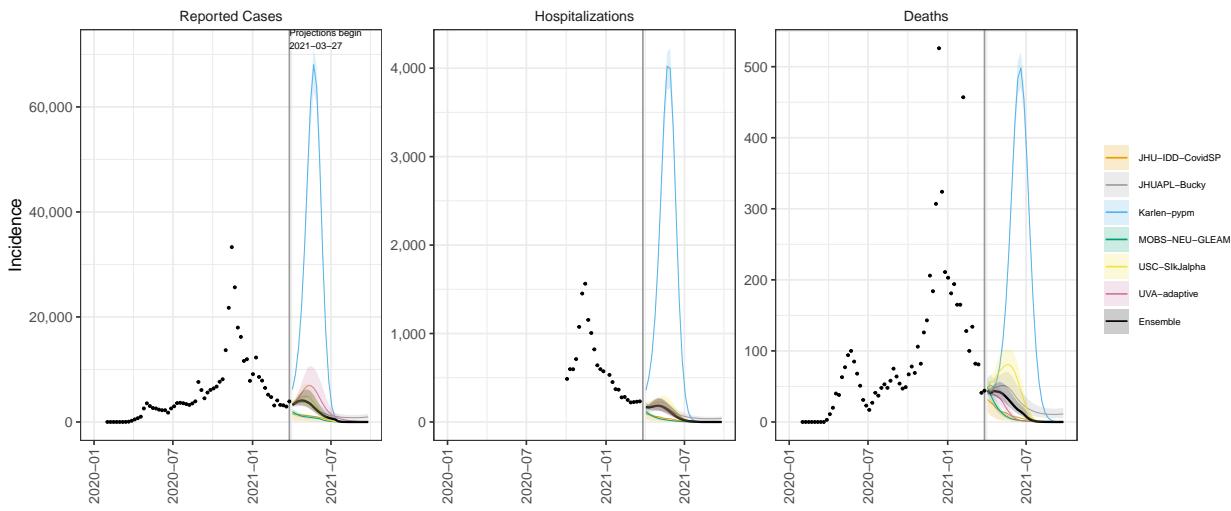
IL model variance & 50% projection intervals – High vaccination, Moderate NPI compliance



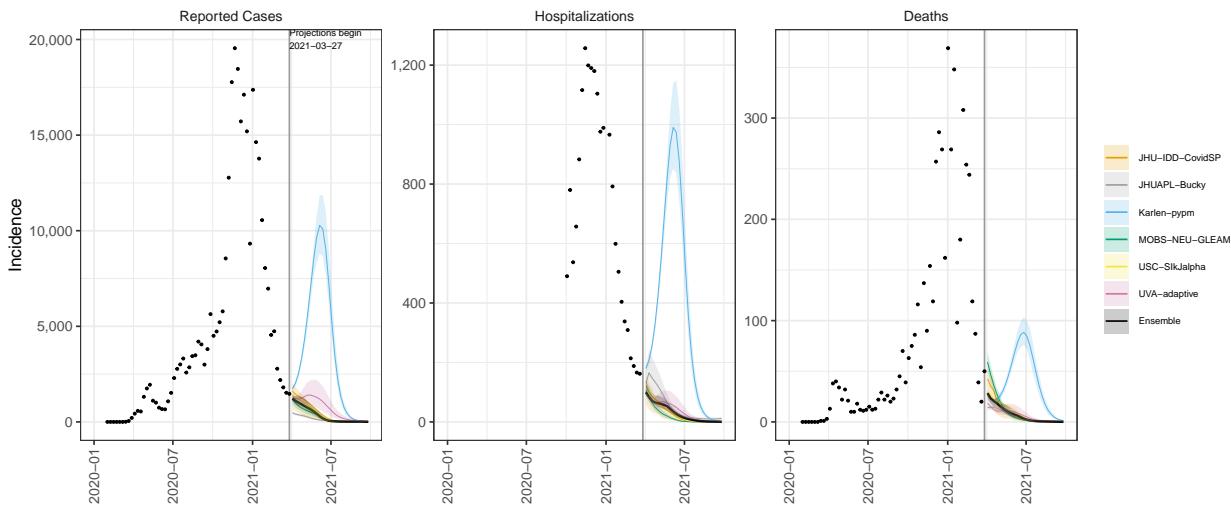
IN model variance & 50% projection intervals – High vaccination, Moderate NPI compliance



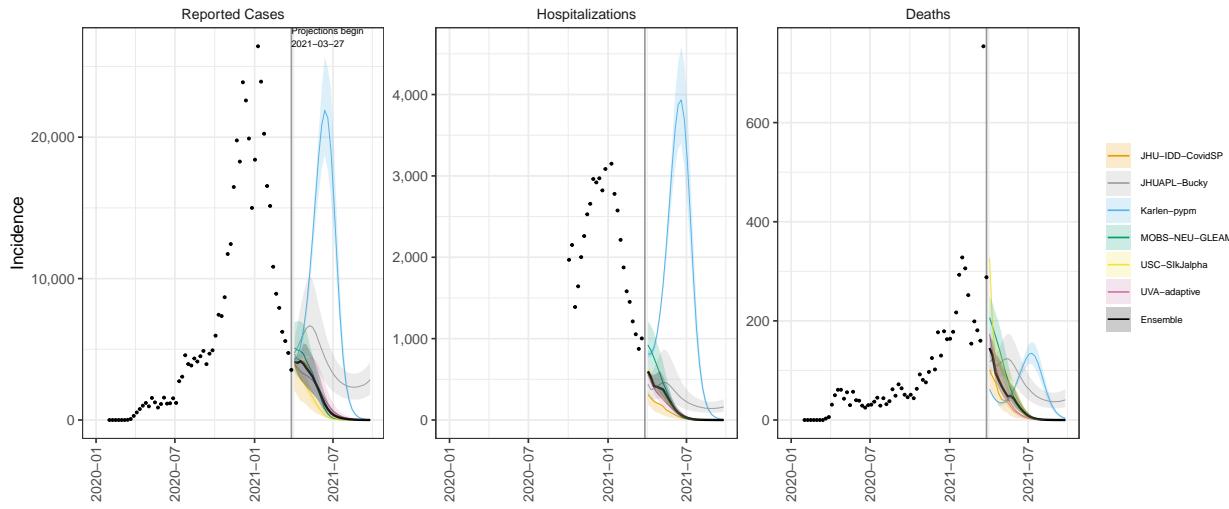
IA model variance & 50% projection intervals – High vaccination, Moderate NPI compliance



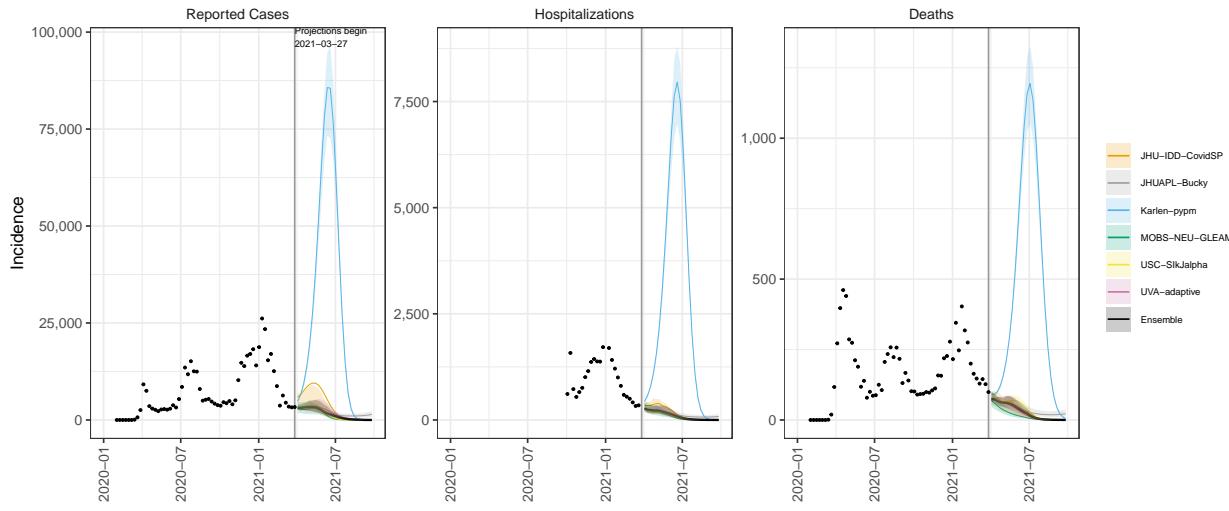
KS model variance & 50% projection intervals – High vaccination, Moderate NPI compliance



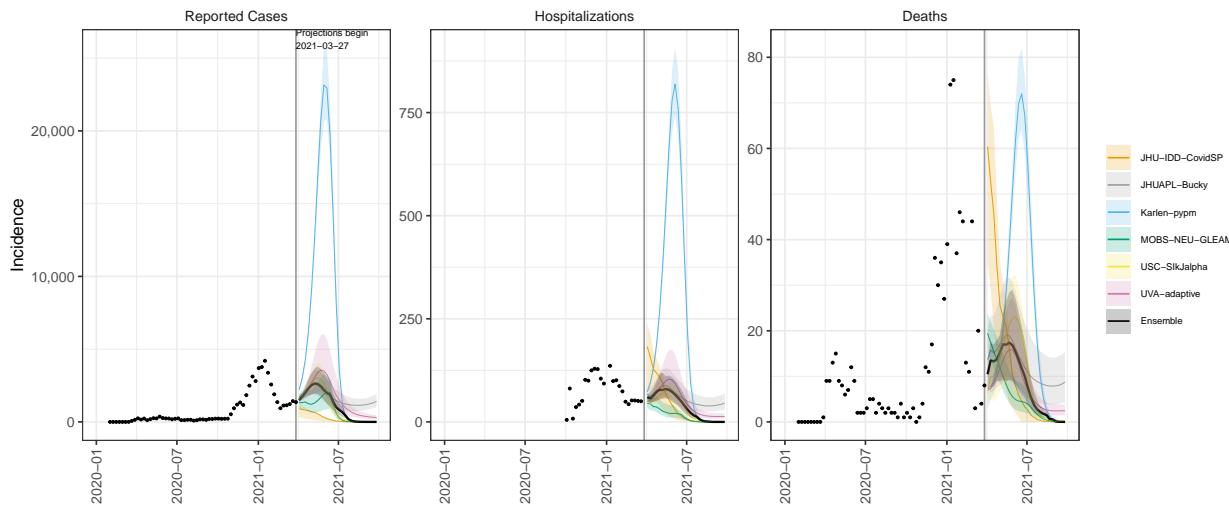
KY model variance & 50% projection intervals – High vaccination, Moderate NPI compliance



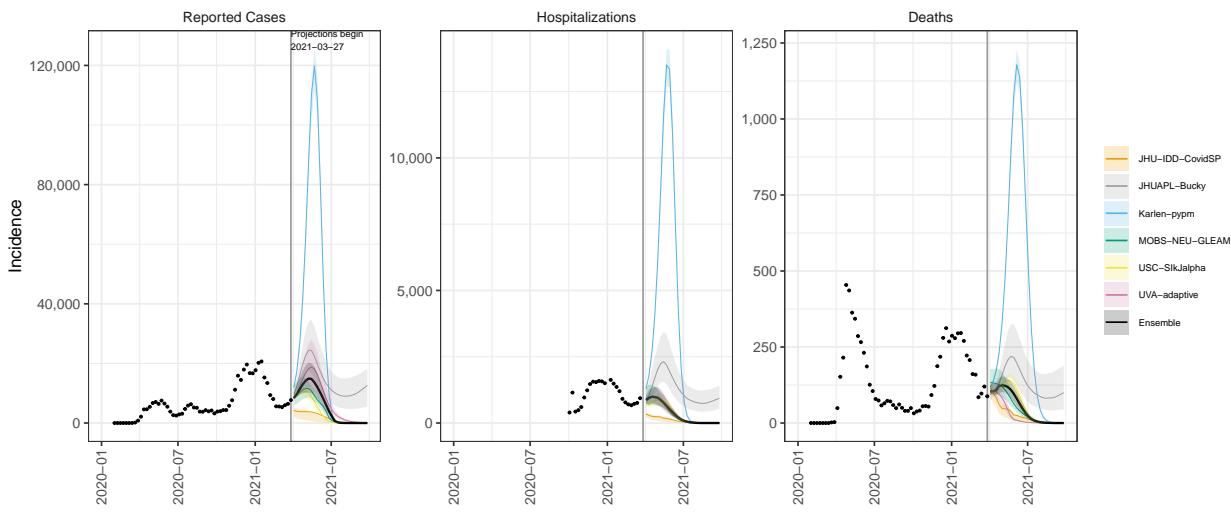
LA model variance & 50% projection intervals – High vaccination, Moderate NPI compliance



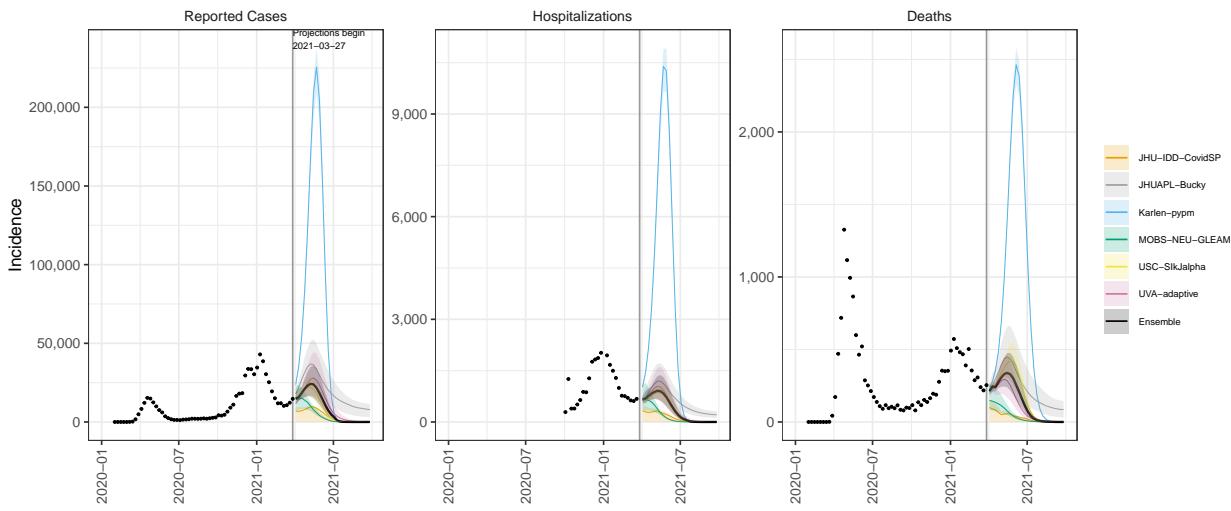
ME model variance & 50% projection intervals – High vaccination, Moderate NPI compliance



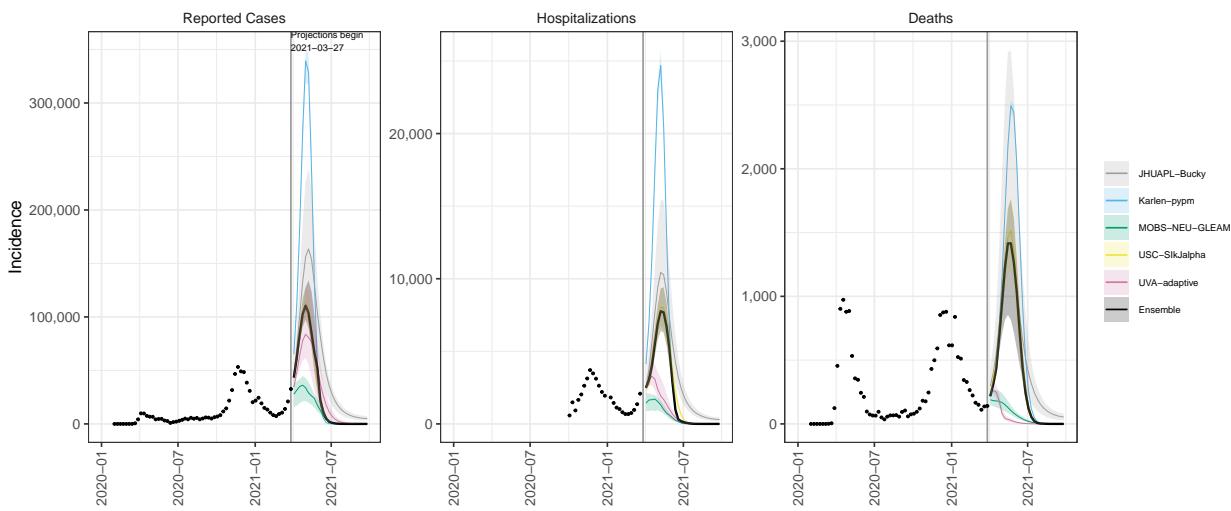
MD model variance & 50% projection intervals – High vaccination, Moderate NPI compliance



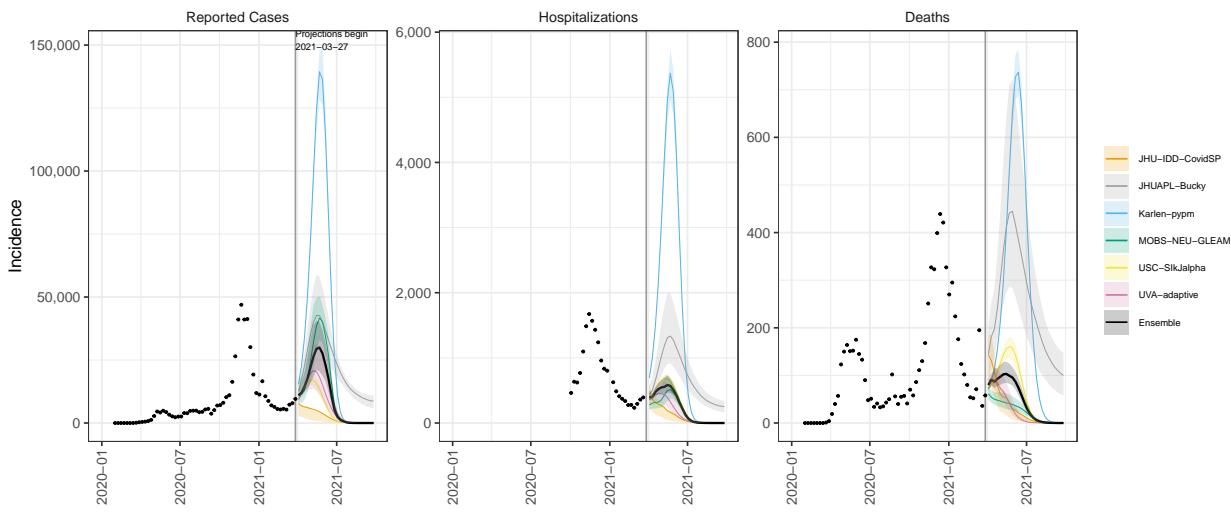
MA model variance & 50% projection intervals – High vaccination, Moderate NPI compliance



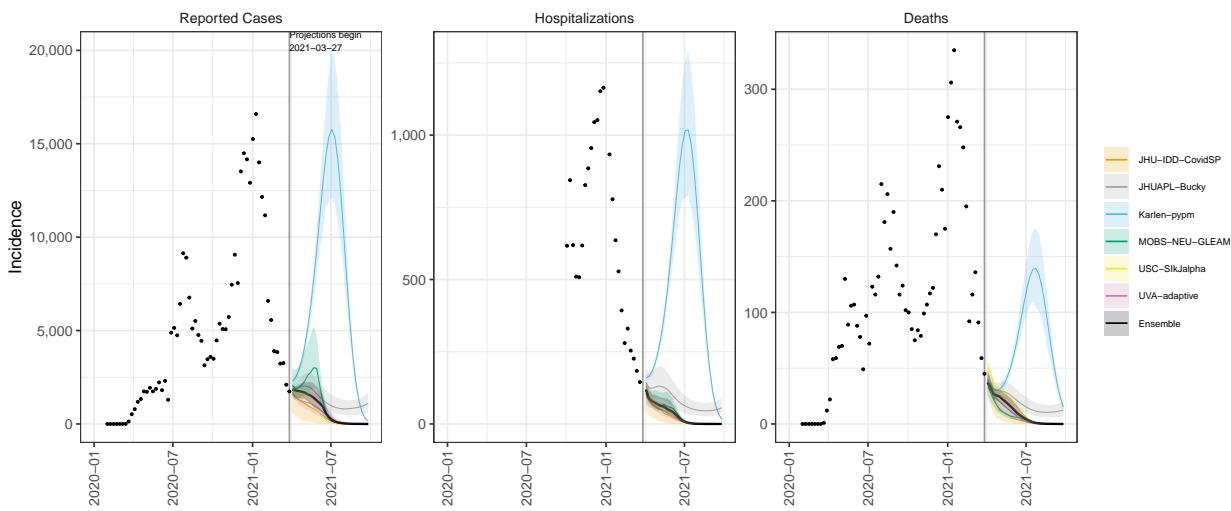
MI model variance & 50% projection intervals – High vaccination, Moderate NPI compliance



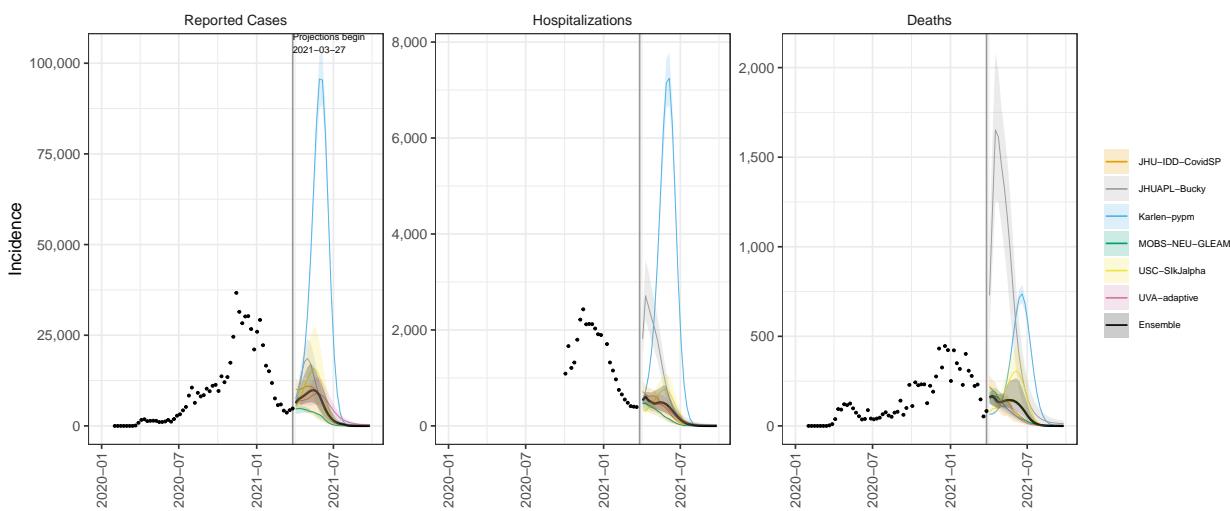
MN model variance & 50% projection intervals – High vaccination, Moderate NPI compliance



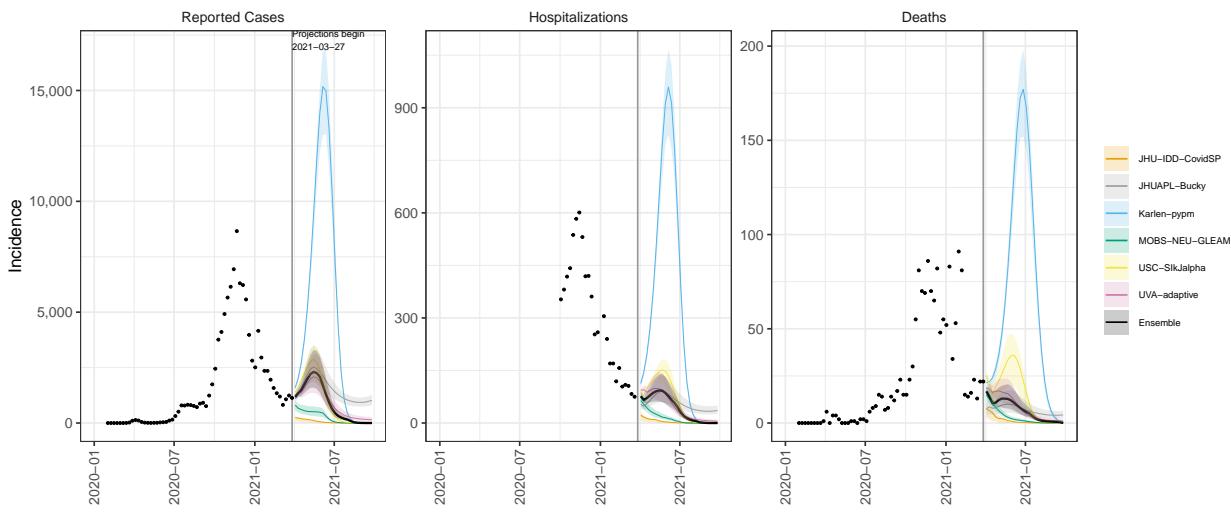
MS model variance & 50% projection intervals – High vaccination, Moderate NPI compliance



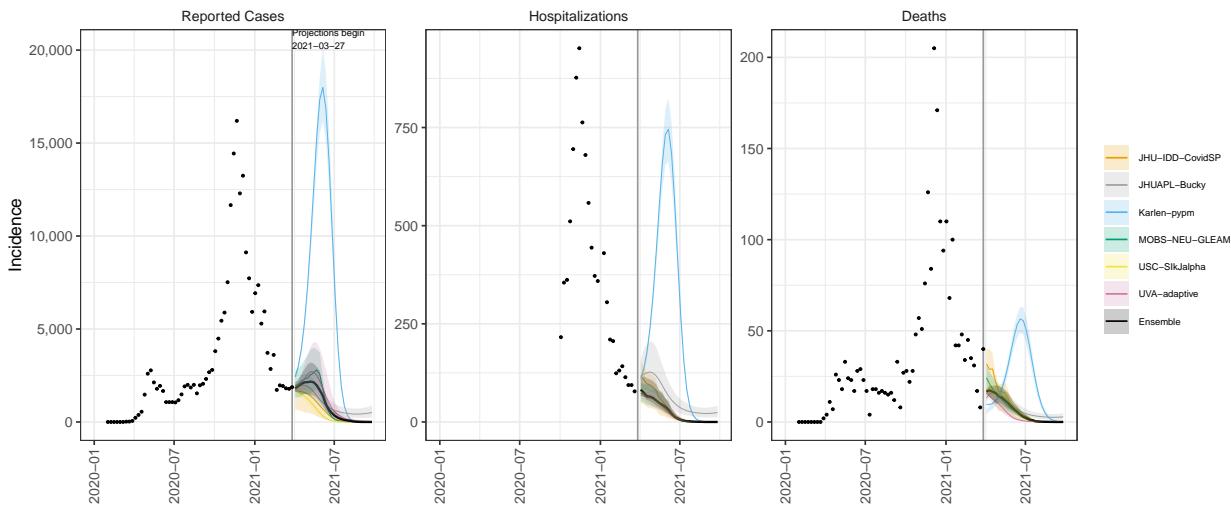
MO model variance & 50% projection intervals – High vaccination, Moderate NPI compliance



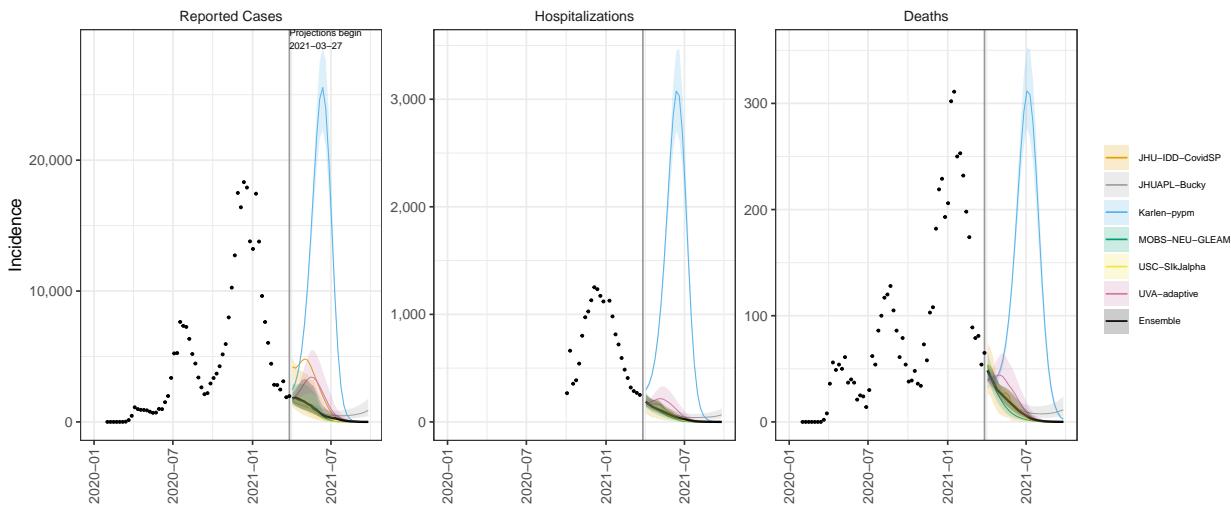
MT model variance & 50% projection intervals – High vaccination, Moderate NPI compliance



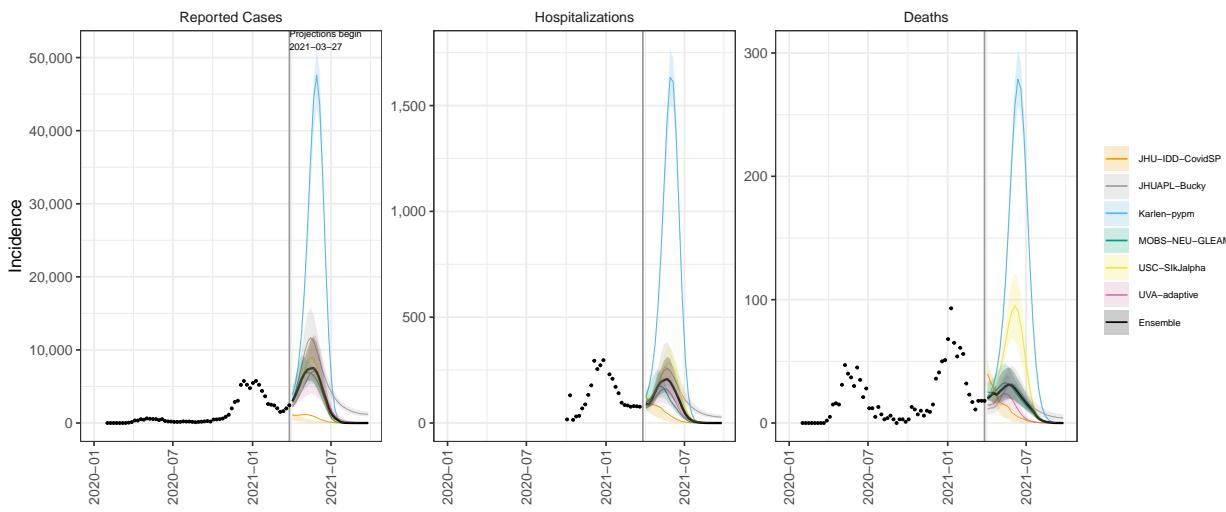
NE model variance & 50% projection intervals – High vaccination, Moderate NPI compliance



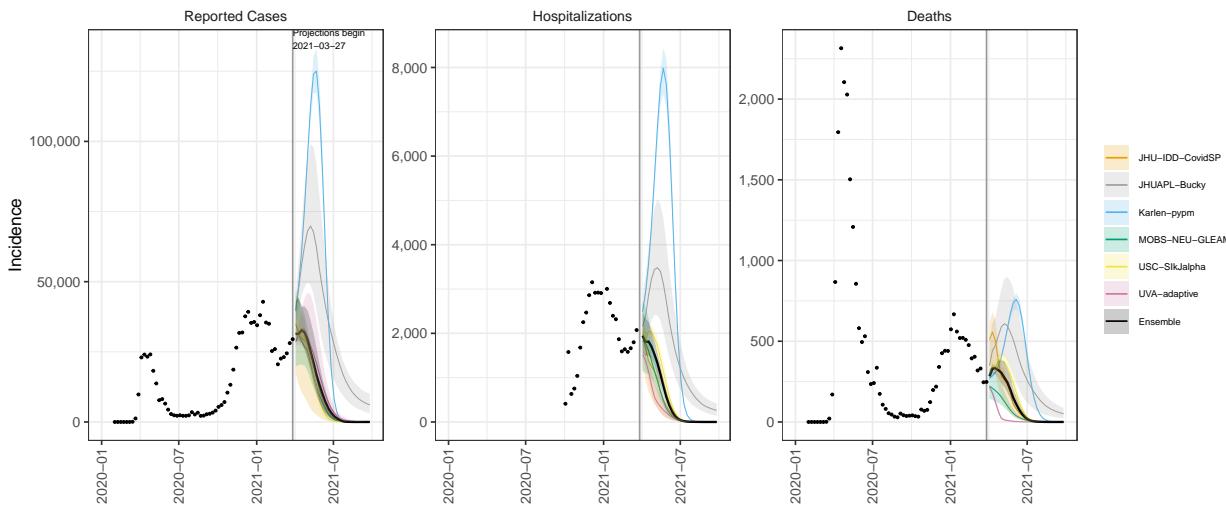
NV model variance & 50% projection intervals – High vaccination, Moderate NPI compliance



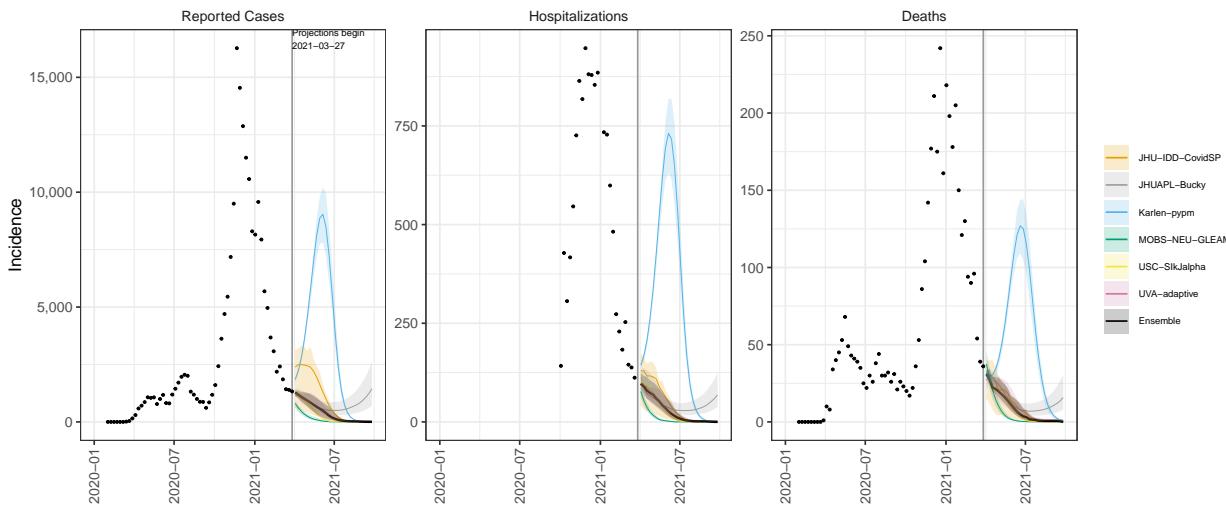
NH model variance & 50% projection intervals – High vaccination, Moderate NPI compliance



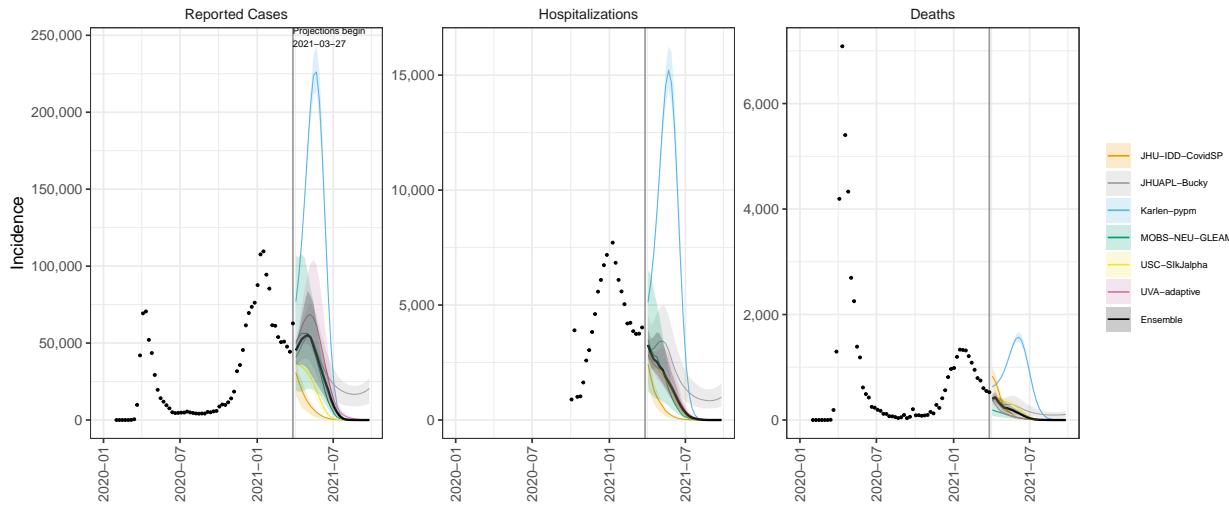
NJ model variance & 50% projection intervals – High vaccination, Moderate NPI compliance



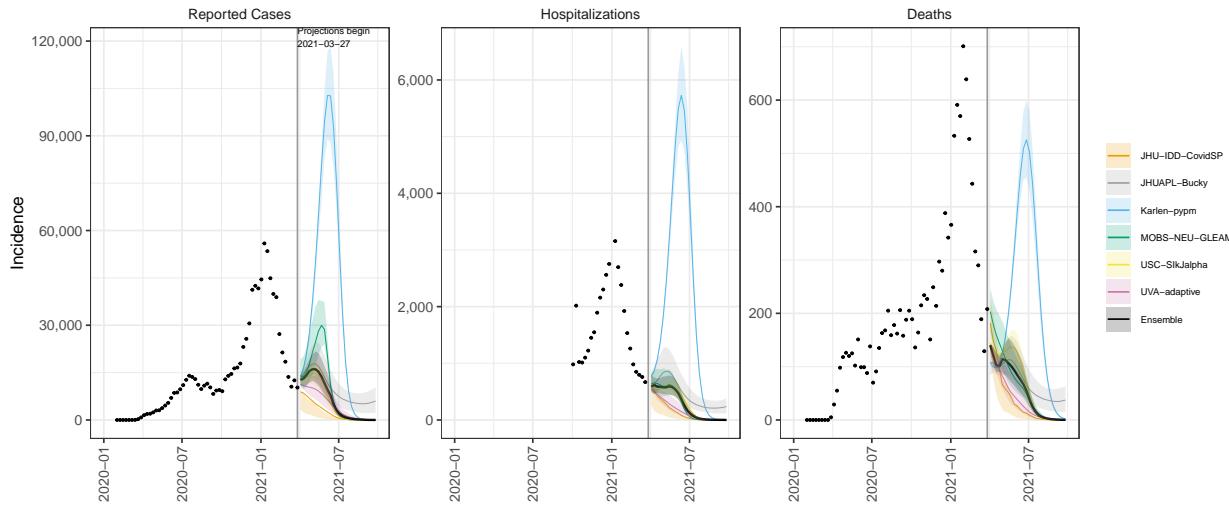
NM model variance & 50% projection intervals – High vaccination, Moderate NPI compliance



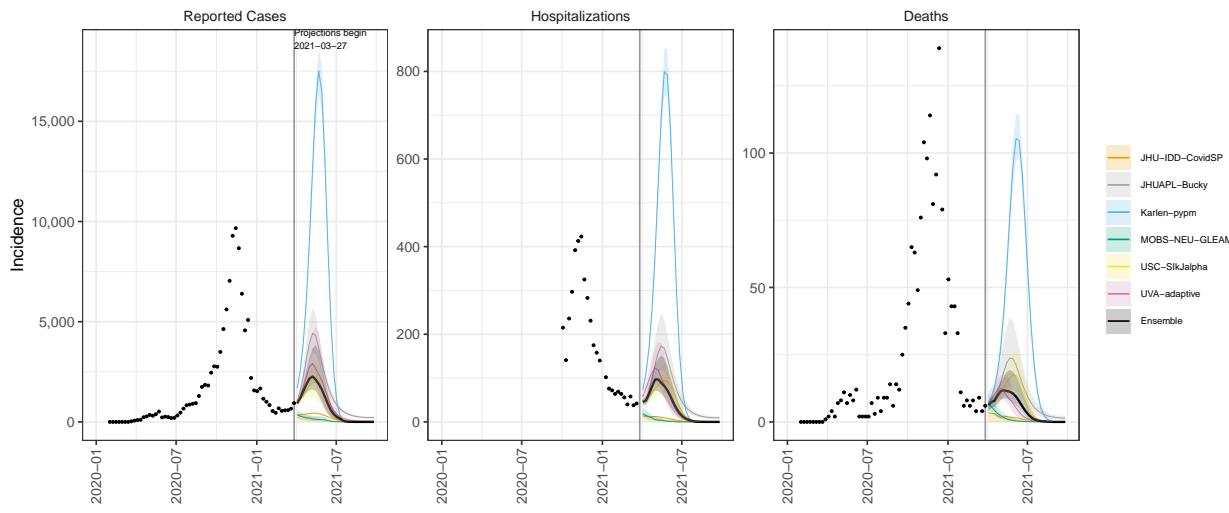
NY model variance & 50% projection intervals – High vaccination, Moderate NPI compliance



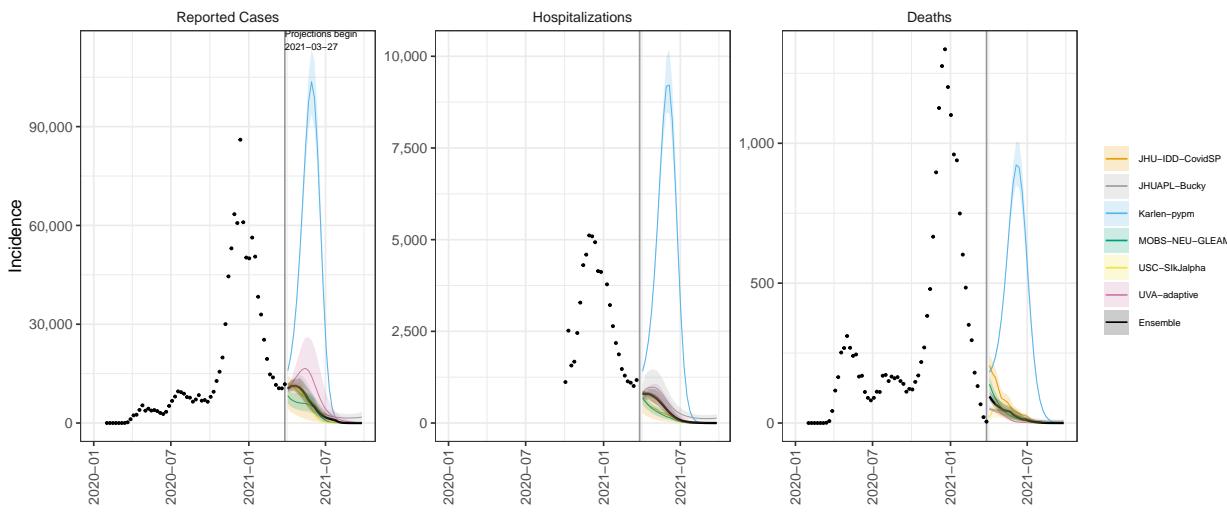
NC model variance & 50% projection intervals – High vaccination, Moderate NPI compliance



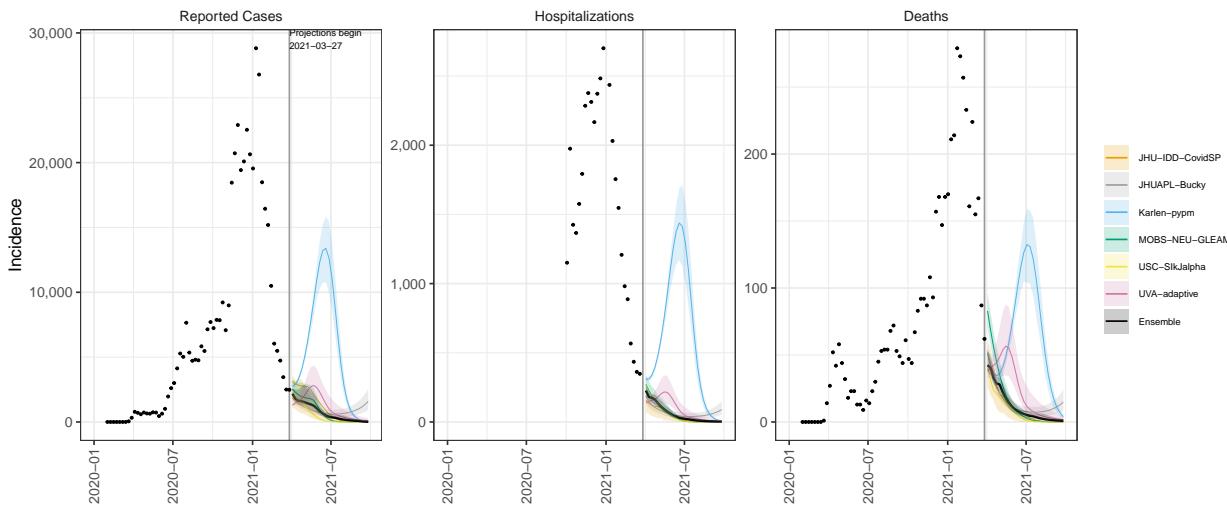
ND model variance & 50% projection intervals – High vaccination, Moderate NPI compliance



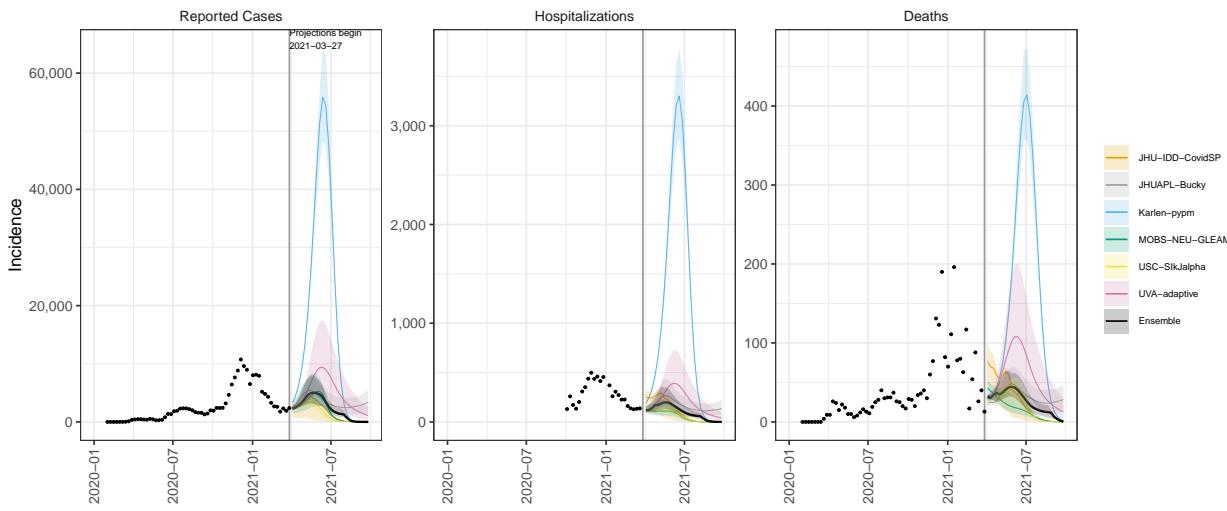
OH model variance & 50% projection intervals – High vaccination, Moderate NPI compliance



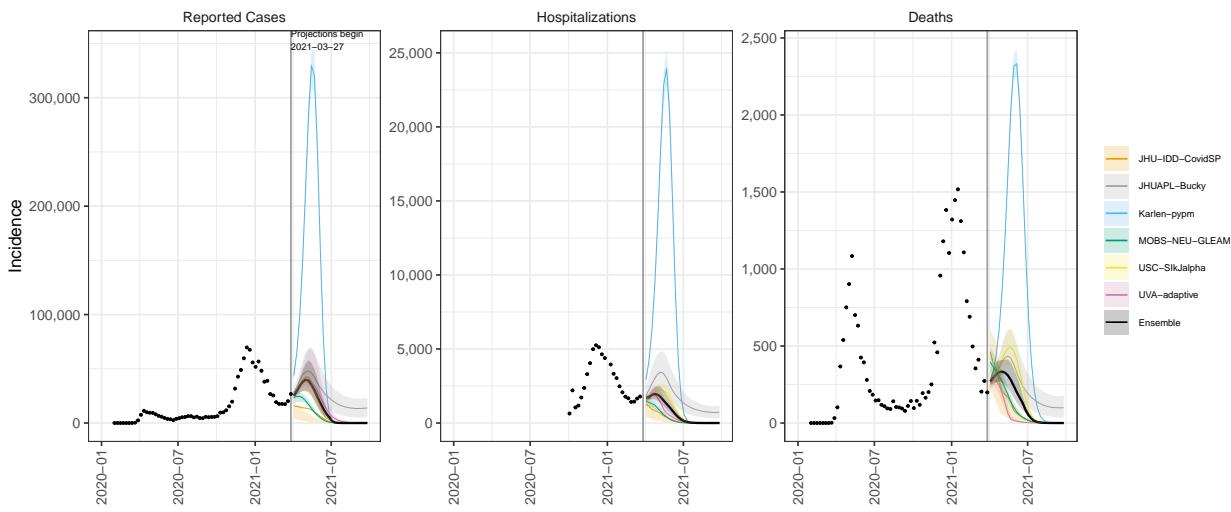
OK model variance & 50% projection intervals – High vaccination, Moderate NPI compliance



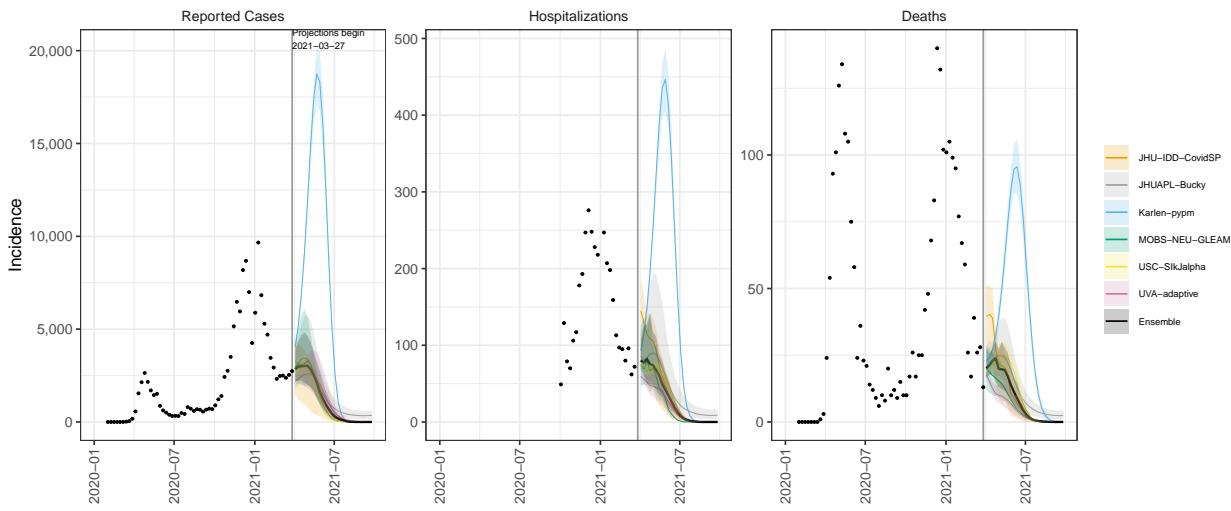
OR model variance & 50% projection intervals – High vaccination, Moderate NPI compliance



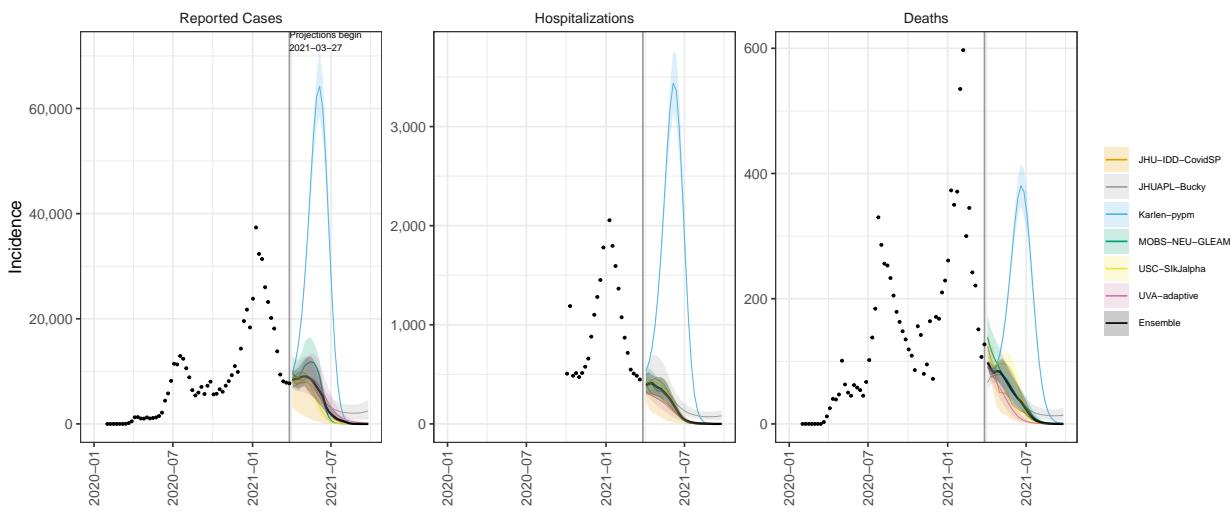
PA model variance & 50% projection intervals – High vaccination, Moderate NPI compliance



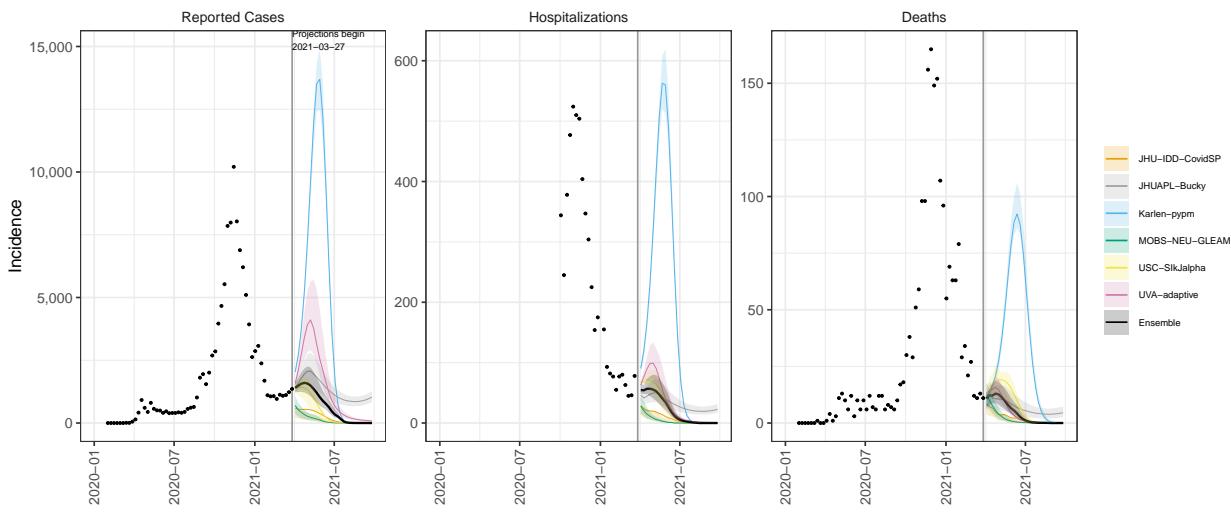
RI model variance & 50% projection intervals – High vaccination, Moderate NPI compliance



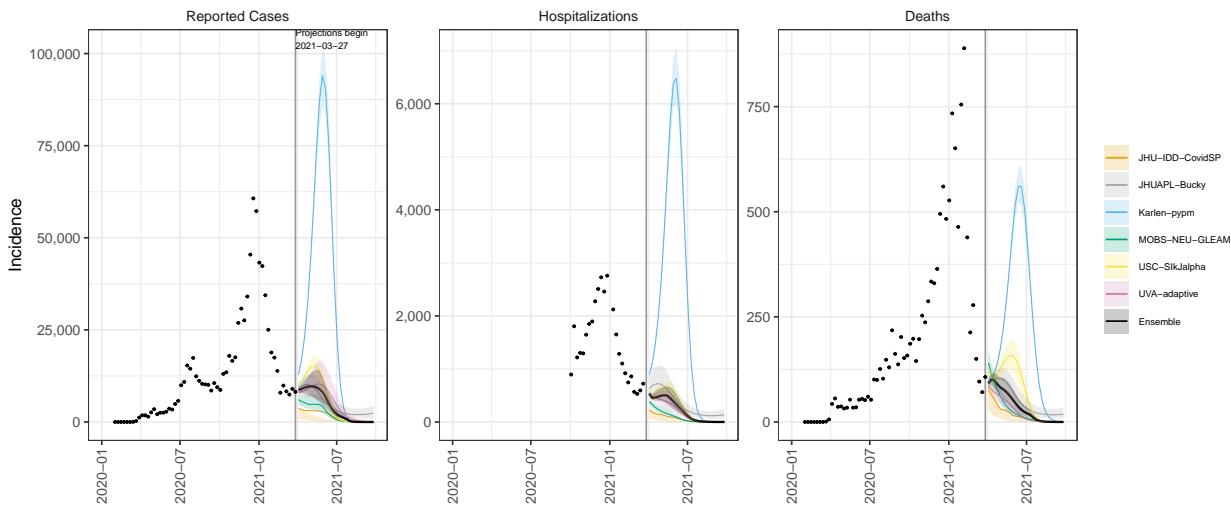
SC model variance & 50% projection intervals – High vaccination, Moderate NPI compliance



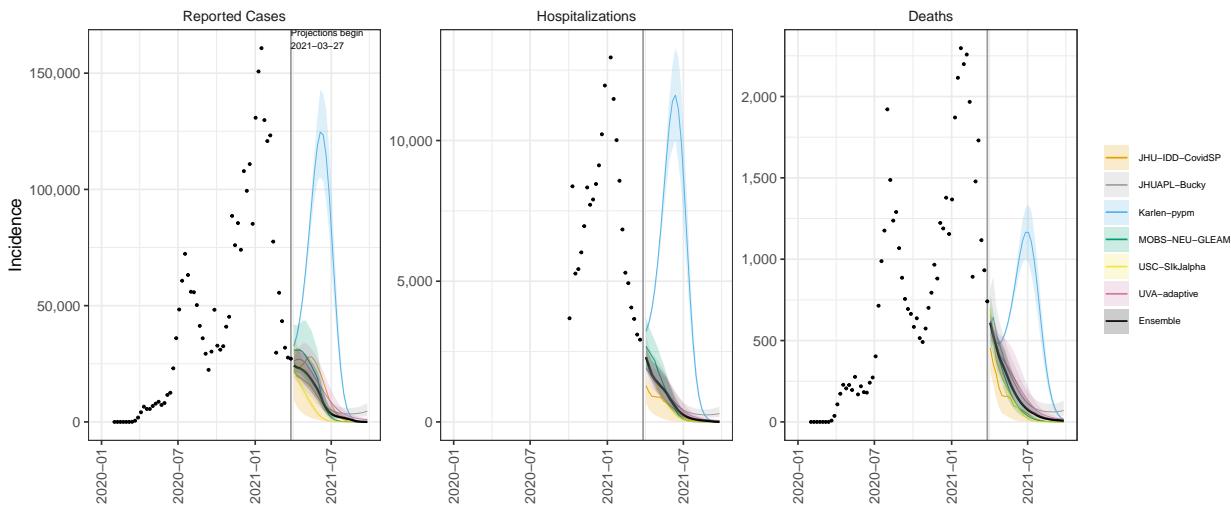
SD model variance & 50% projection intervals – High vaccination, Moderate NPI compliance



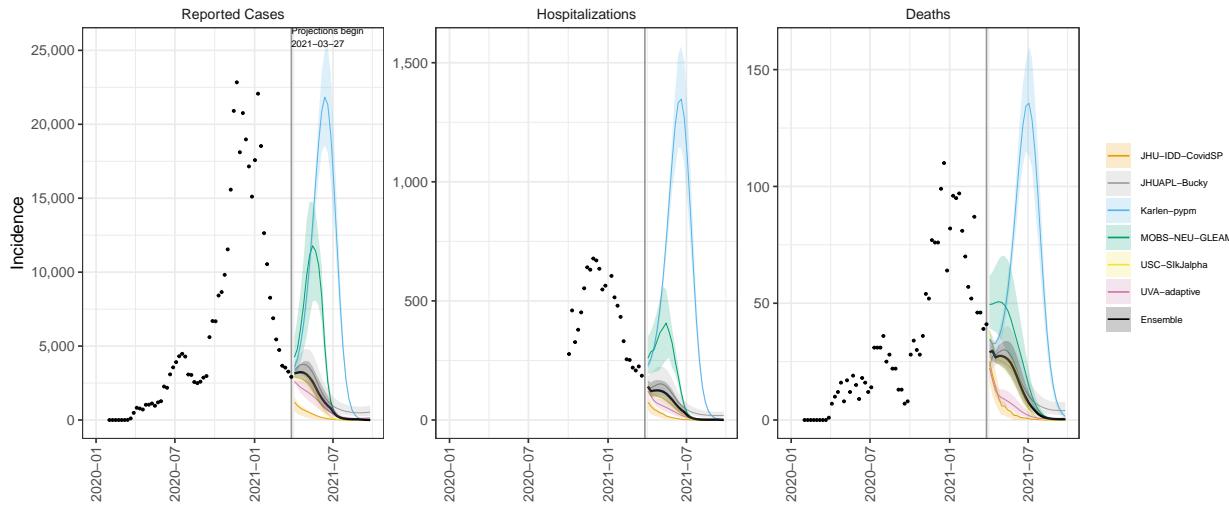
TN model variance & 50% projection intervals – High vaccination, Moderate NPI compliance



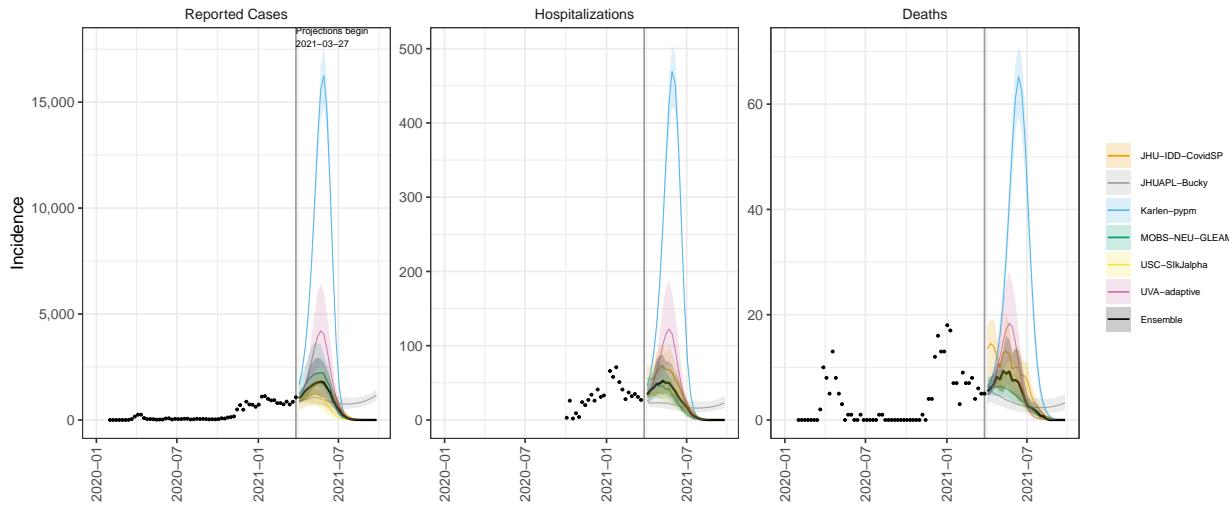
TX model variance & 50% projection intervals – High vaccination, Moderate NPI compliance



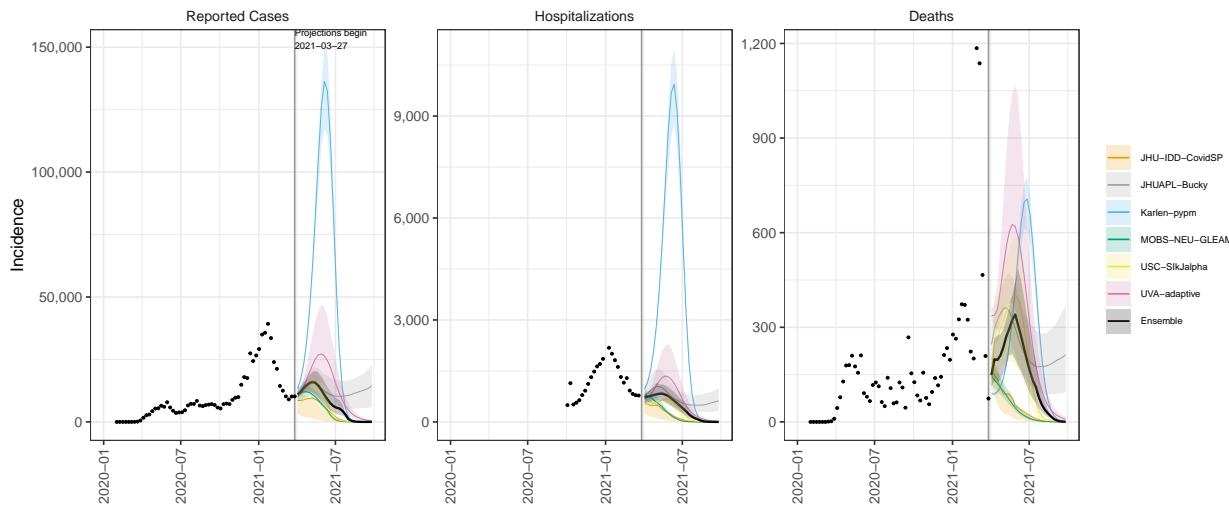
UT model variance & 50% projection intervals – High vaccination, Moderate NPI compliance



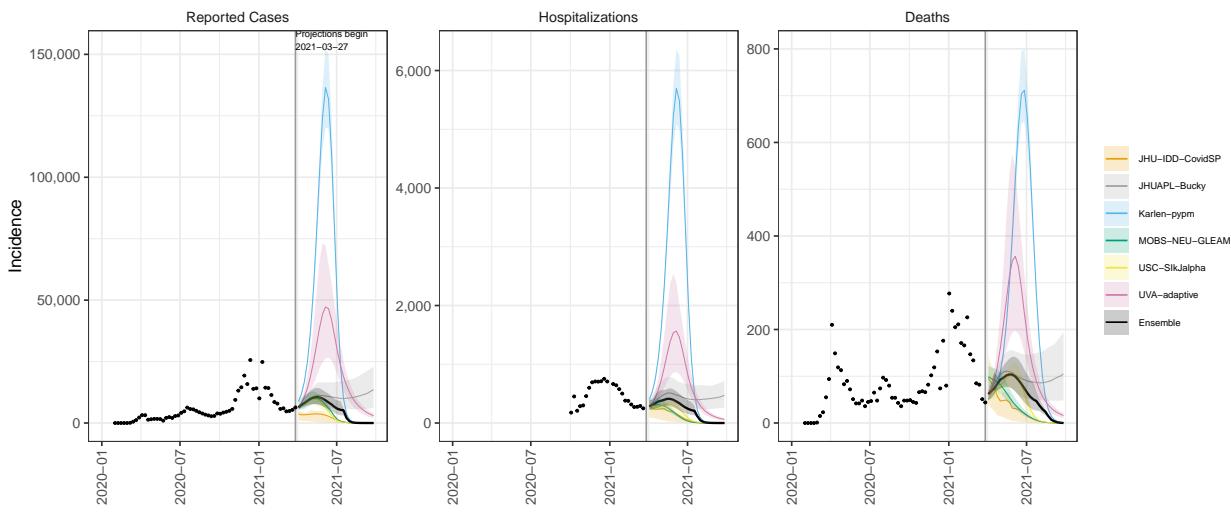
VT model variance & 50% projection intervals – High vaccination, Moderate NPI compliance



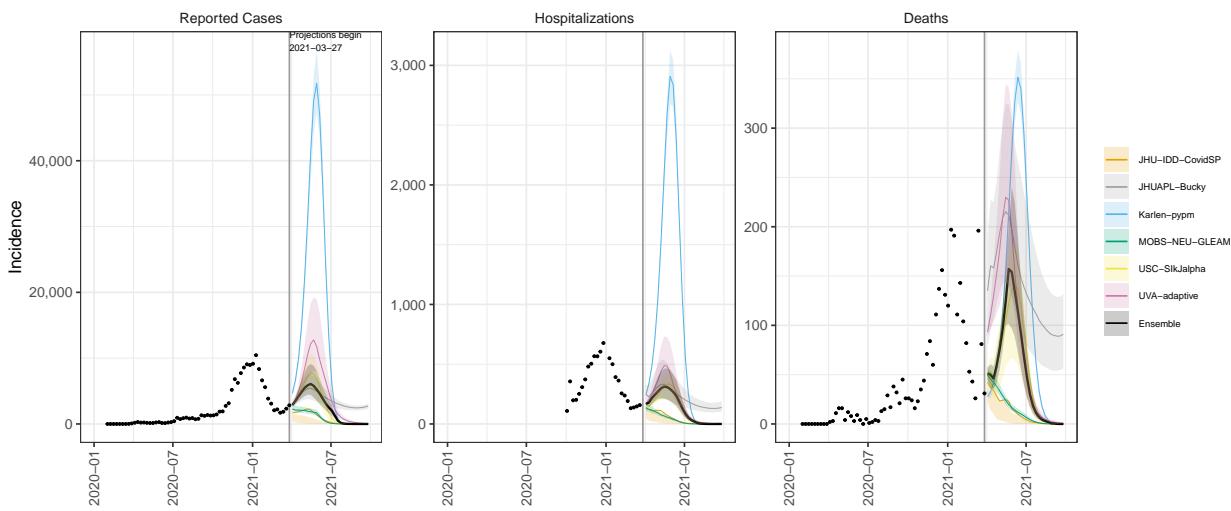
VA model variance & 50% projection intervals – High vaccination, Moderate NPI compliance



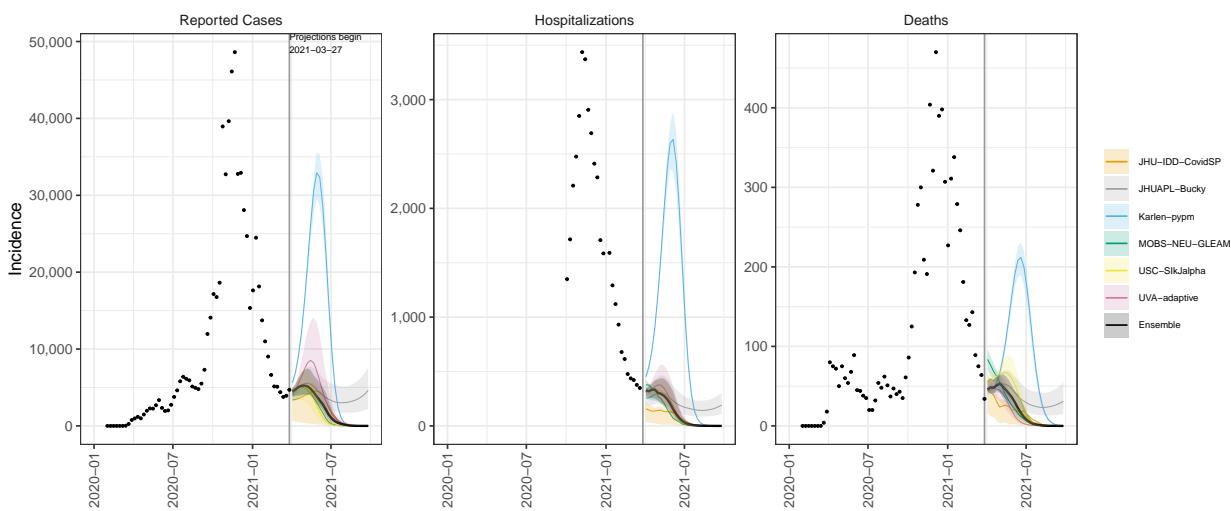
WA model variance & 50% projection intervals – High vaccination, Moderate NPI compliance



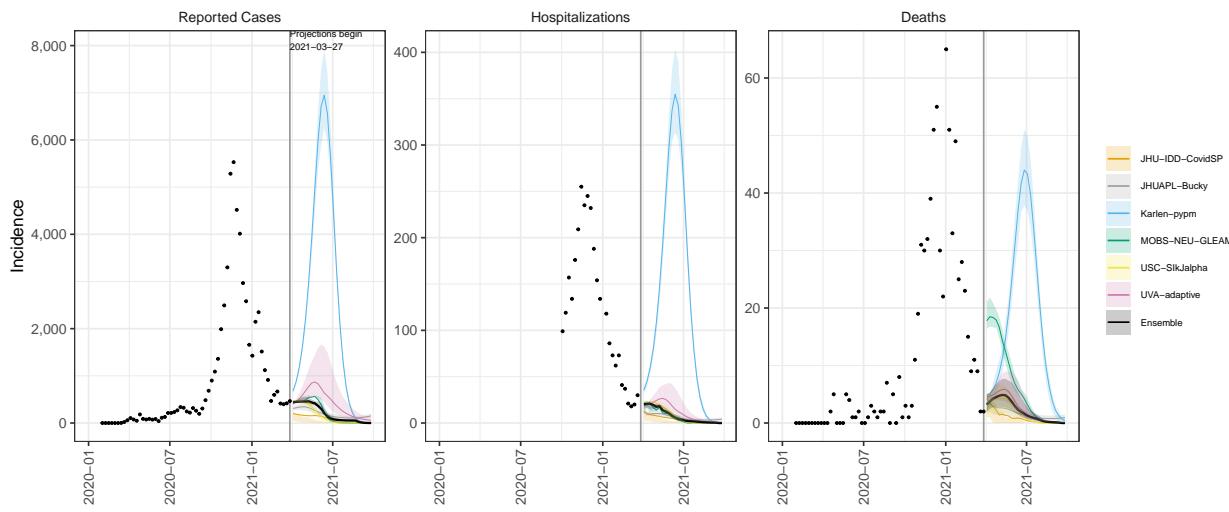
WV model variance & 50% projection intervals – High vaccination, Moderate NPI compliance



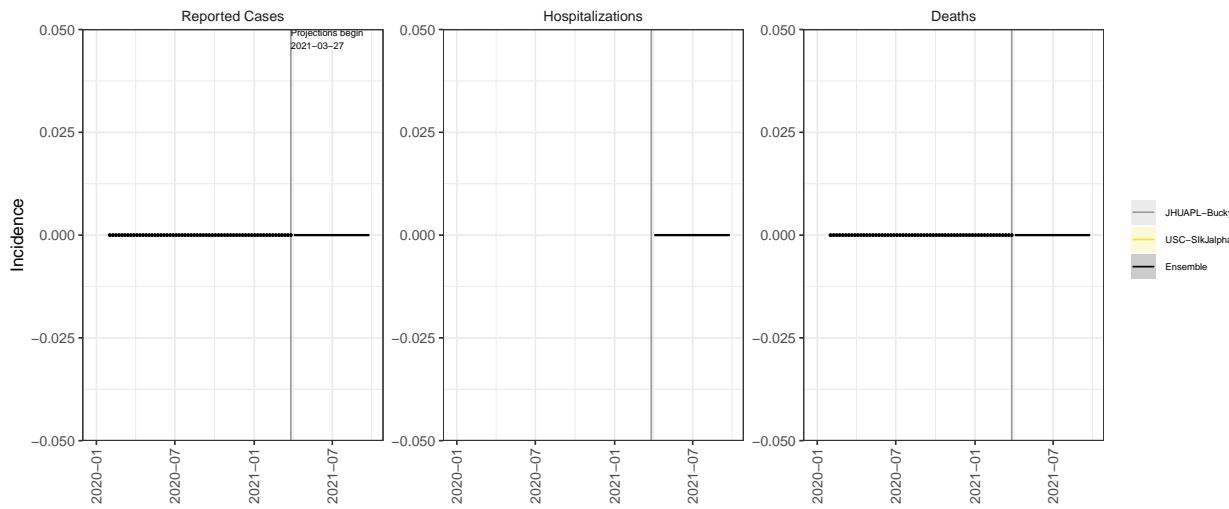
WI model variance & 50% projection intervals – High vaccination, Moderate NPI compliance



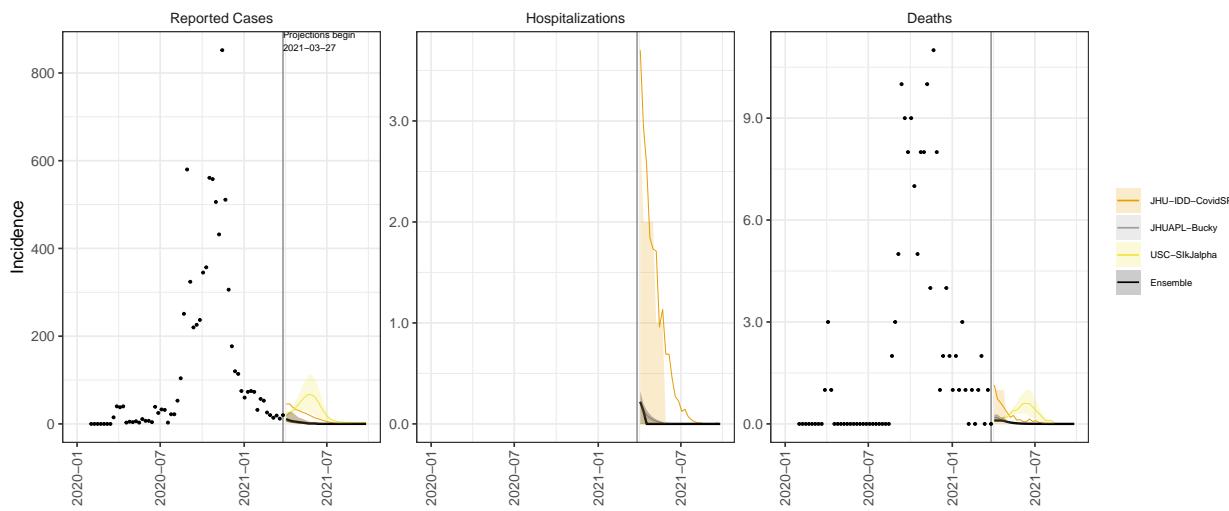
WY model variance & 50% projection intervals – High vaccination, Moderate NPI compliance



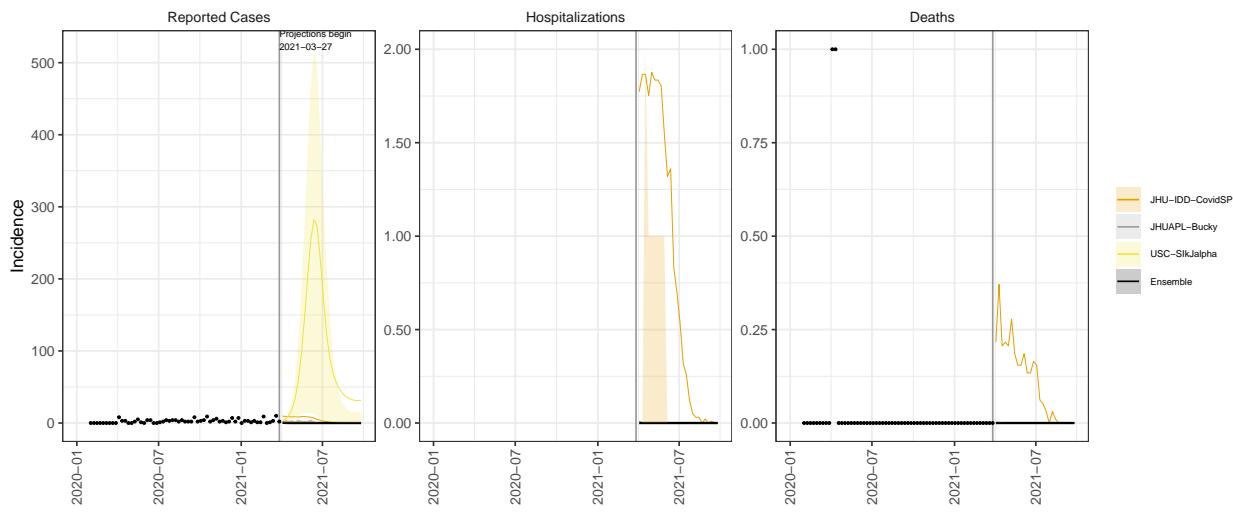
AS model variance & 50% projection intervals – High vaccination, Moderate NPI compliance



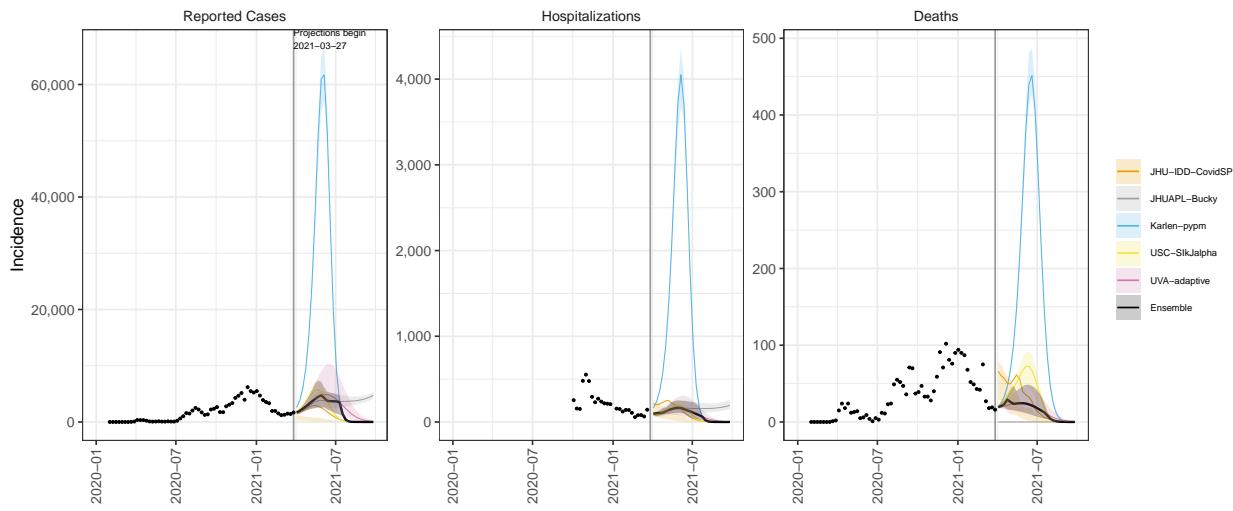
GU model variance & 50% projection intervals – High vaccination, Moderate NPI compliance



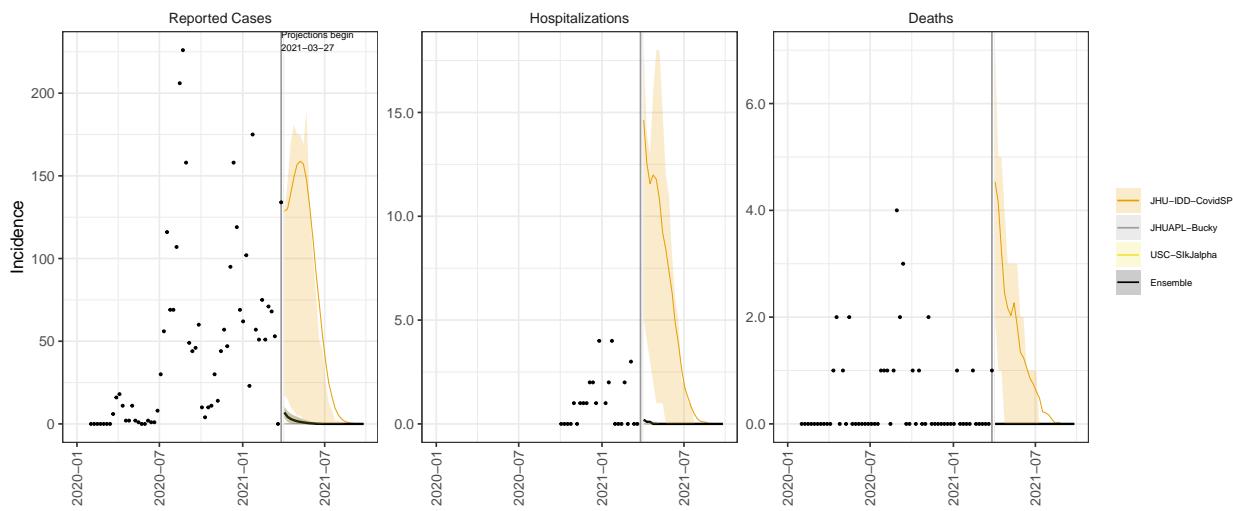
MP model variance & 50% projection intervals – High vaccination, Moderate NPI compliance



PR model variance & 50% projection intervals – High vaccination, Moderate NPI compliance

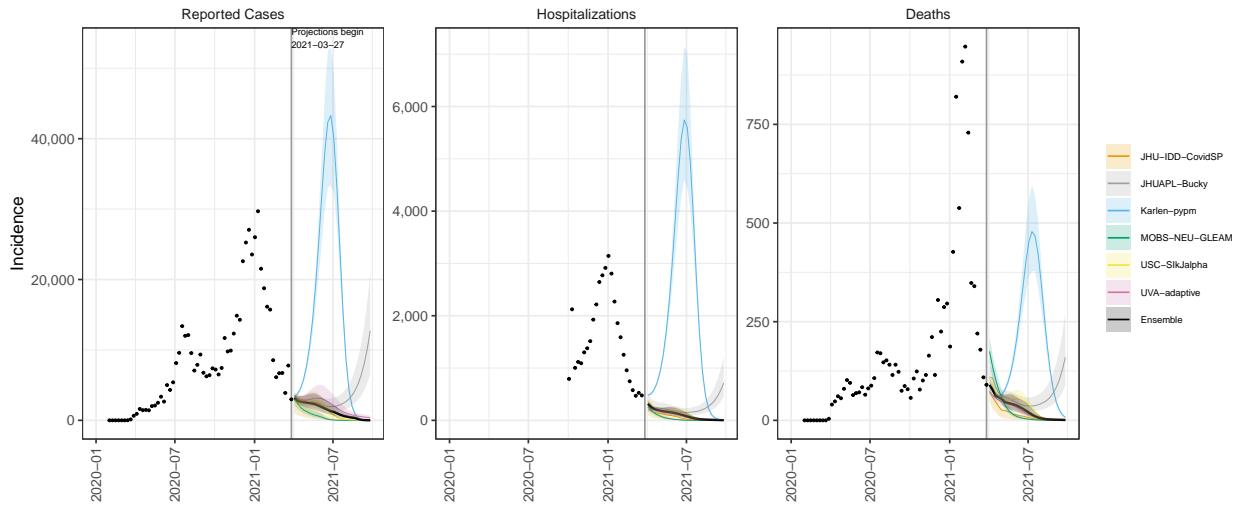


VI model variance & 50% projection intervals – High vaccination, Moderate NPI compliance

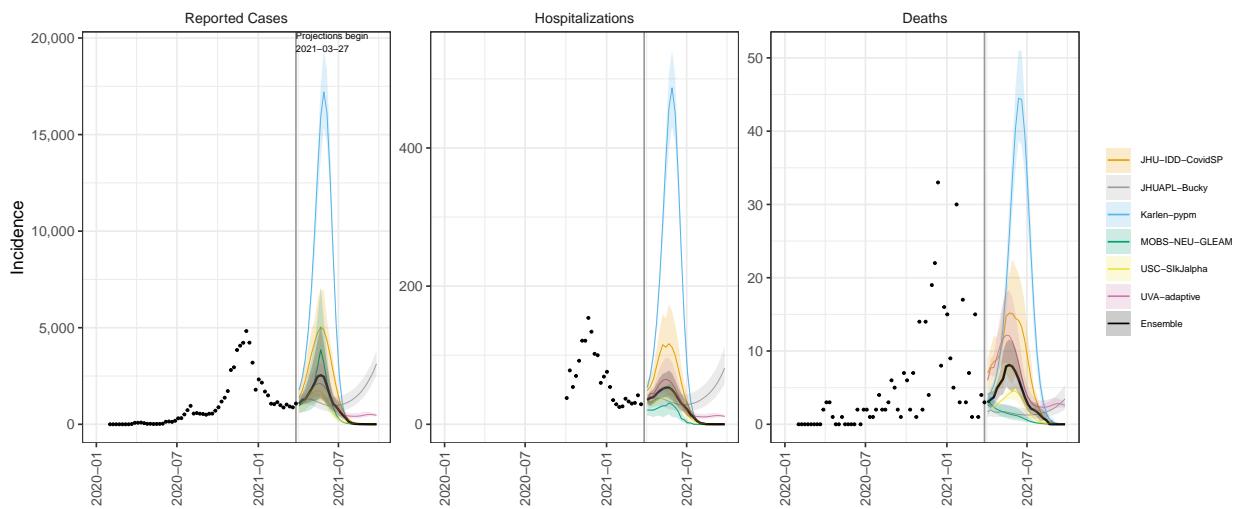


National model variation for the high vaccination, low NPI scenario

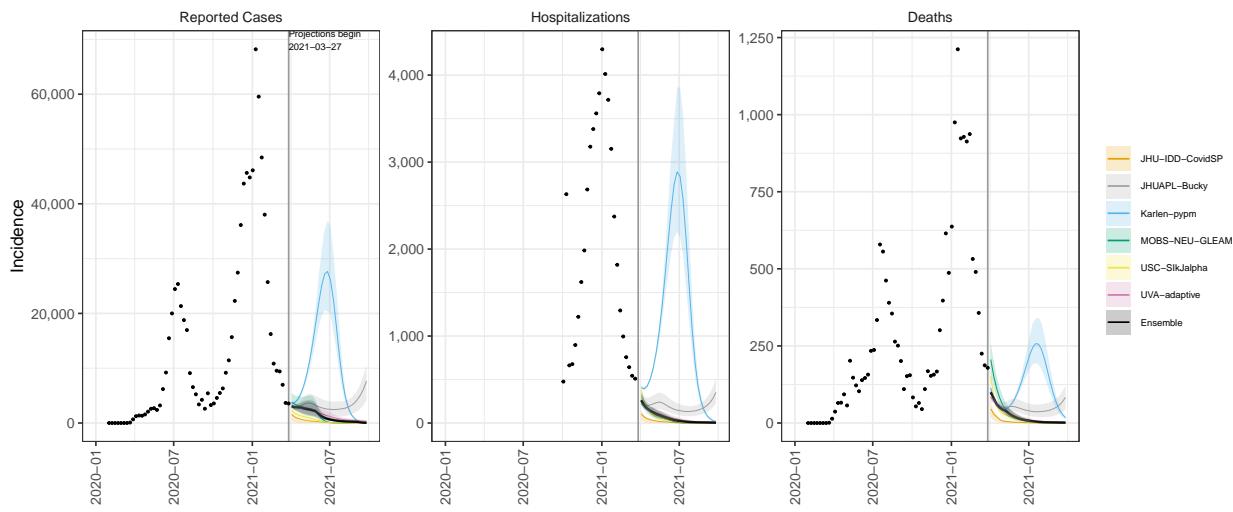
AL model variance & 50% projection intervals – High vaccination, Low NPI compliance



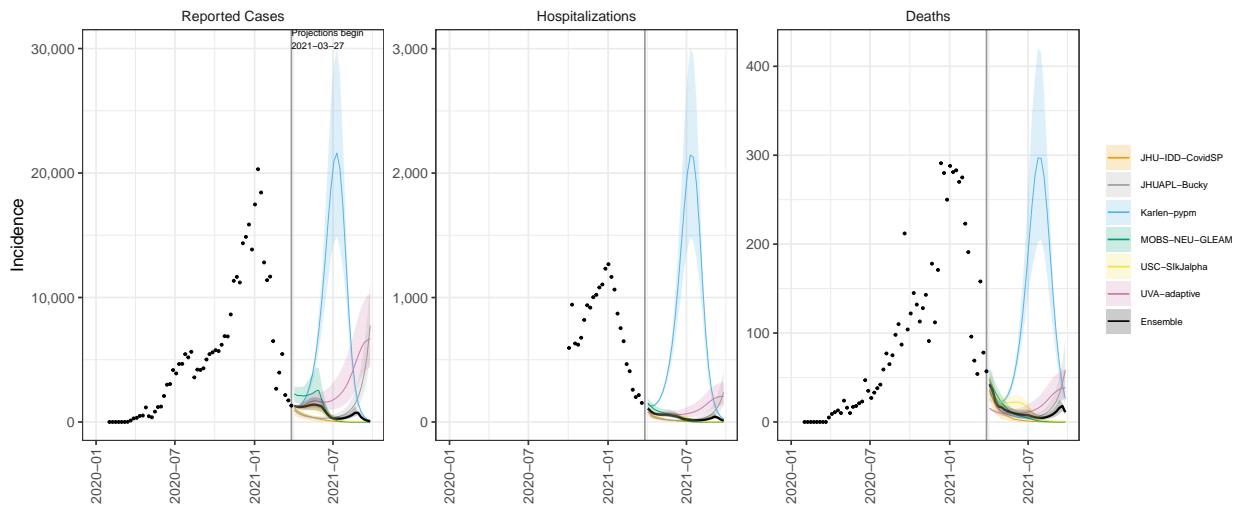
AK model variance & 50% projection intervals – High vaccination, Low NPI compliance



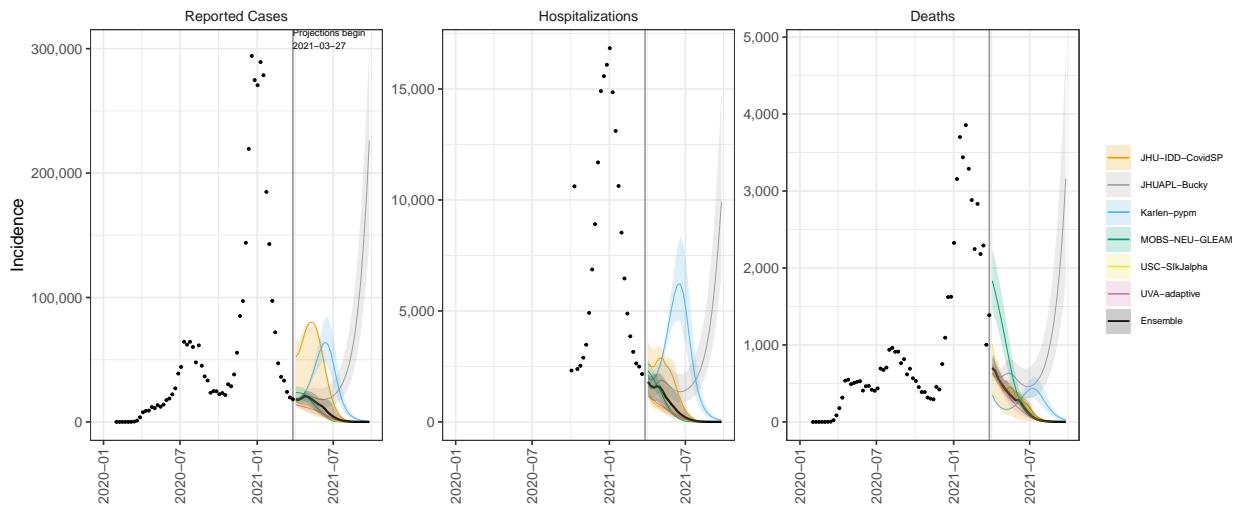
AZ model variance & 50% projection intervals – High vaccination, Low NPI compliance



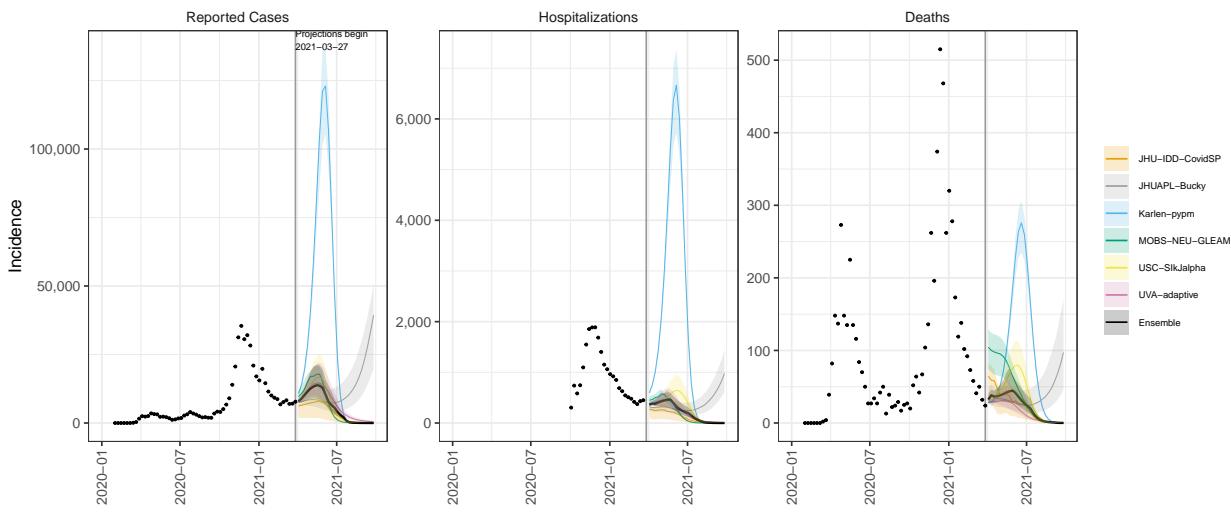
AR model variance & 50% projection intervals – High vaccination, Low NPI compliance



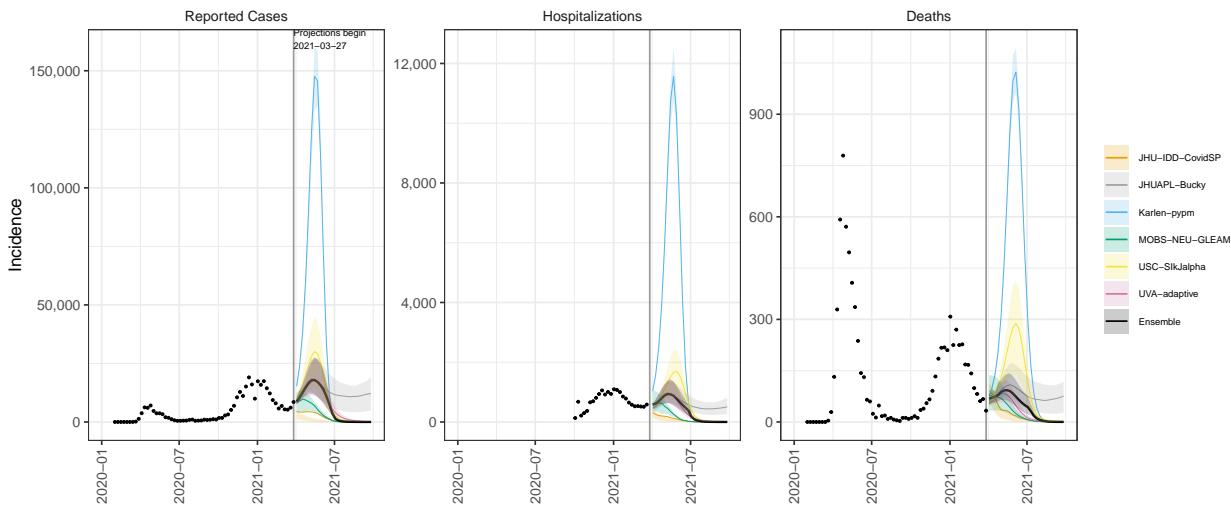
CA model variance & 50% projection intervals – High vaccination, Low NPI compliance



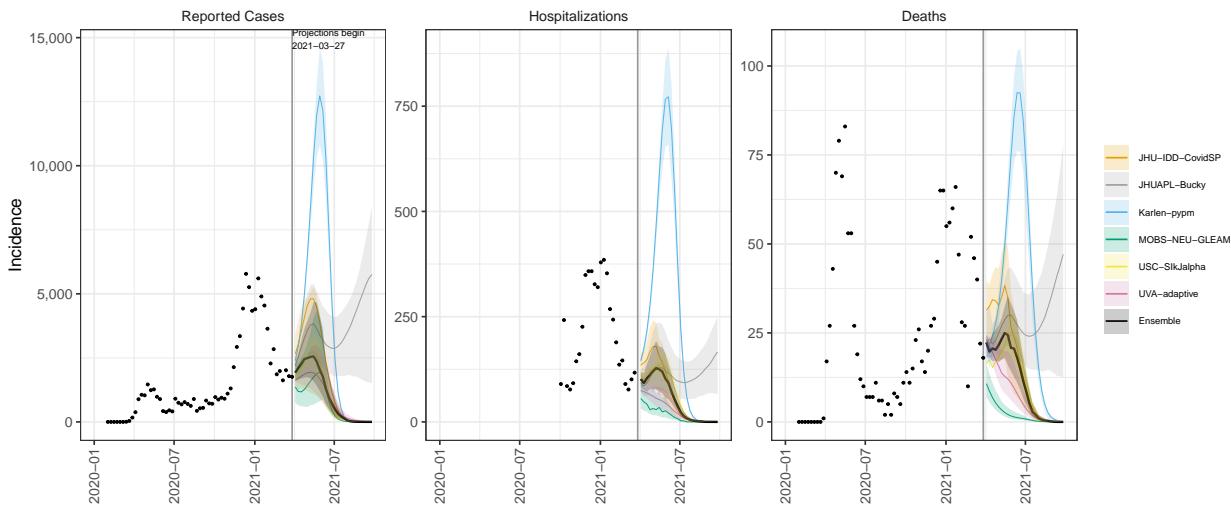
CO model variance & 50% projection intervals – High vaccination, Low NPI compliance



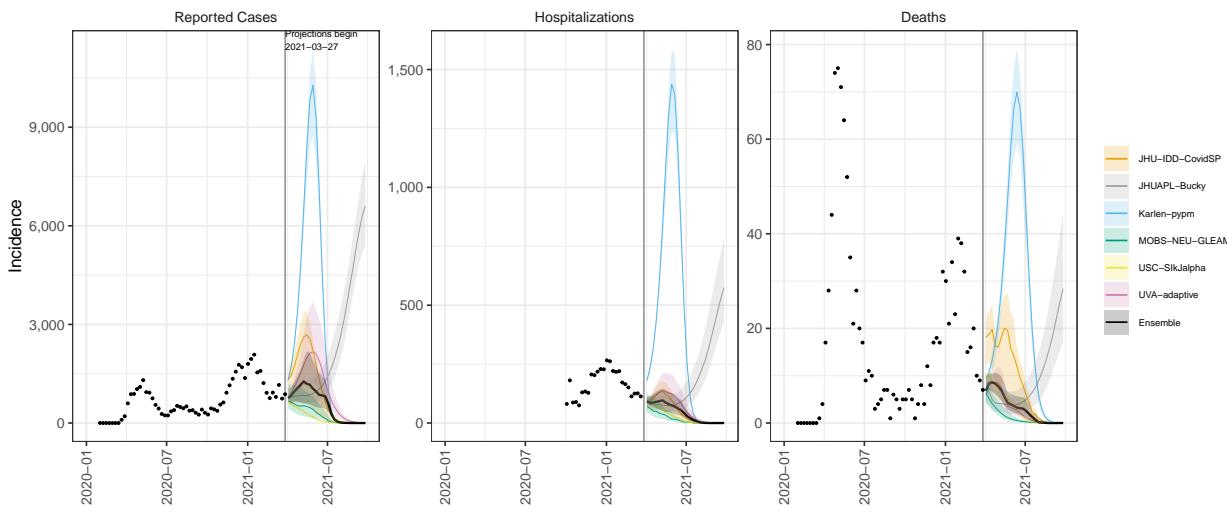
CT model variance & 50% projection intervals – High vaccination, Low NPI compliance



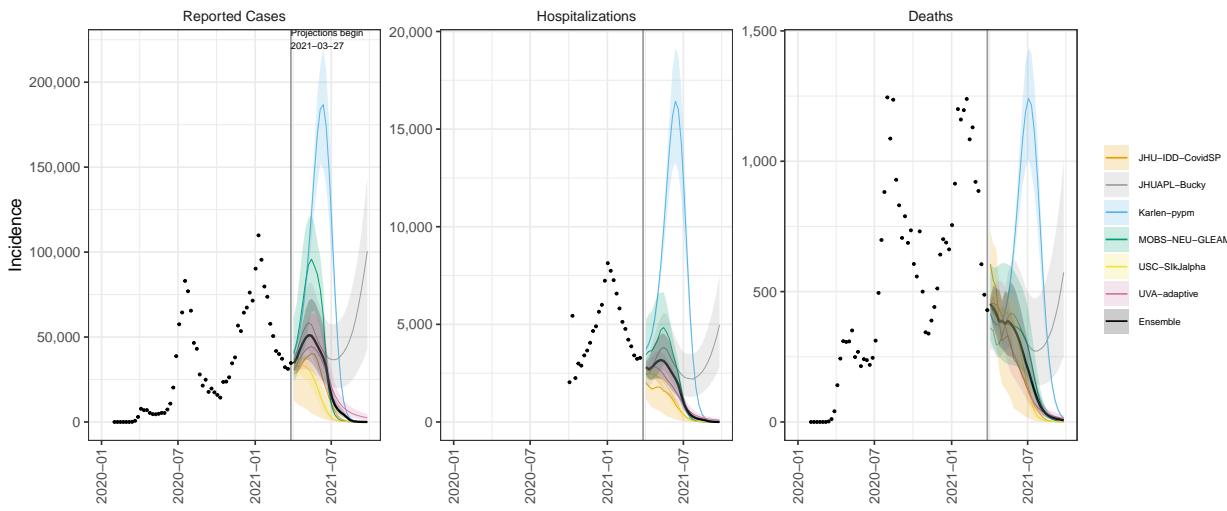
DE model variance & 50% projection intervals – High vaccination, Low NPI compliance



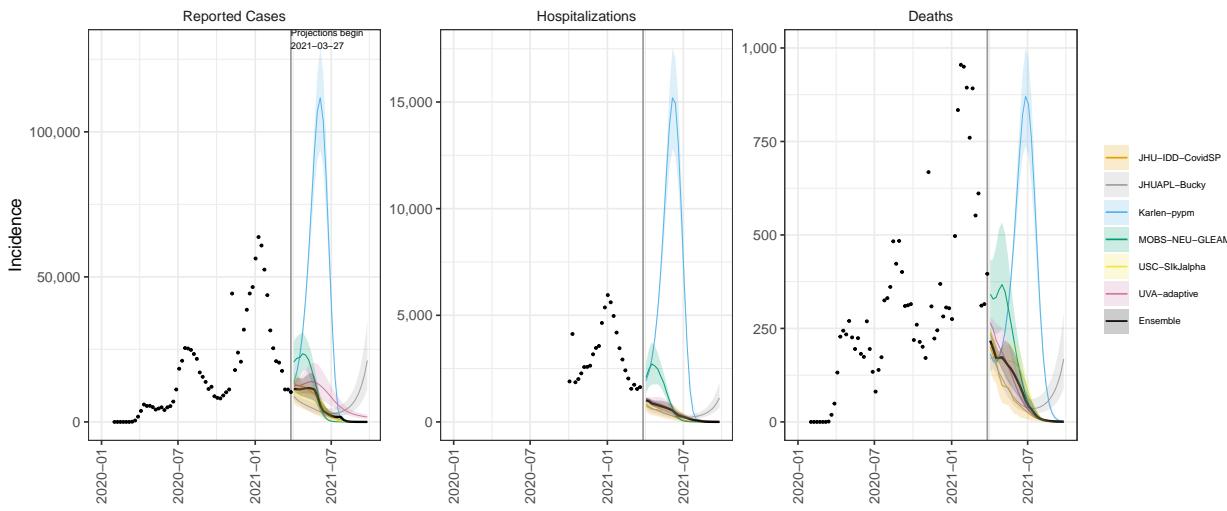
DC model variance & 50% projection intervals – High vaccination, Low NPI compliance



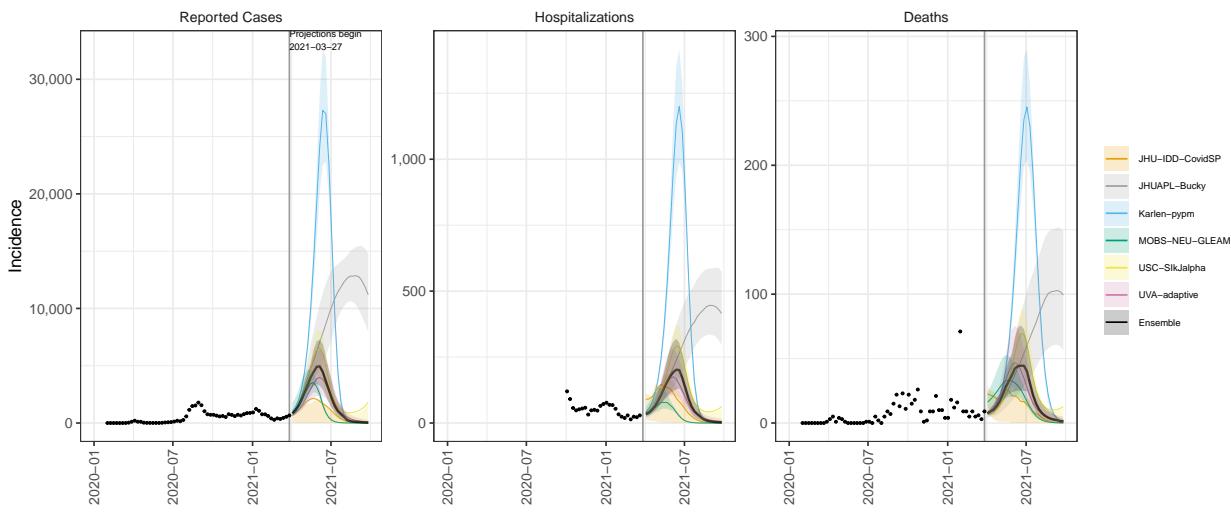
FL model variance & 50% projection intervals – High vaccination, Low NPI compliance



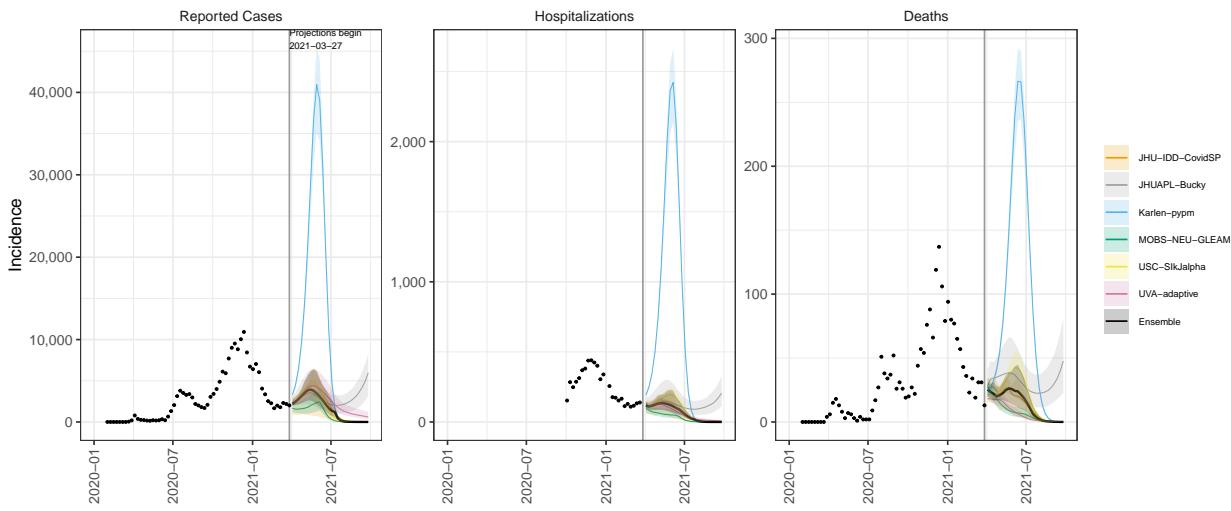
GA model variance & 50% projection intervals – High vaccination, Low NPI compliance



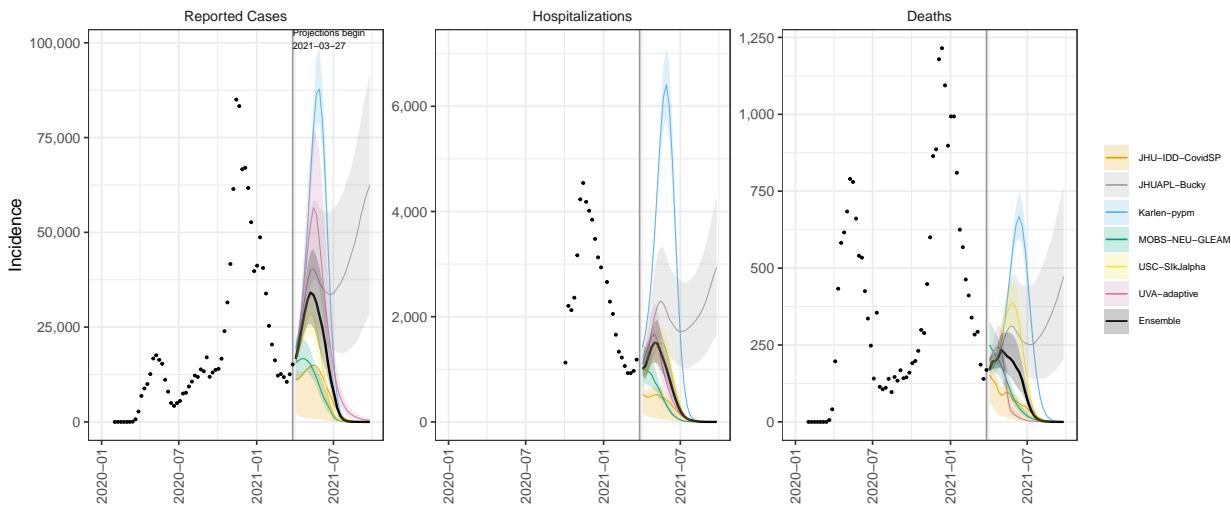
HI model variance & 50% projection intervals – High vaccination, Low NPI compliance



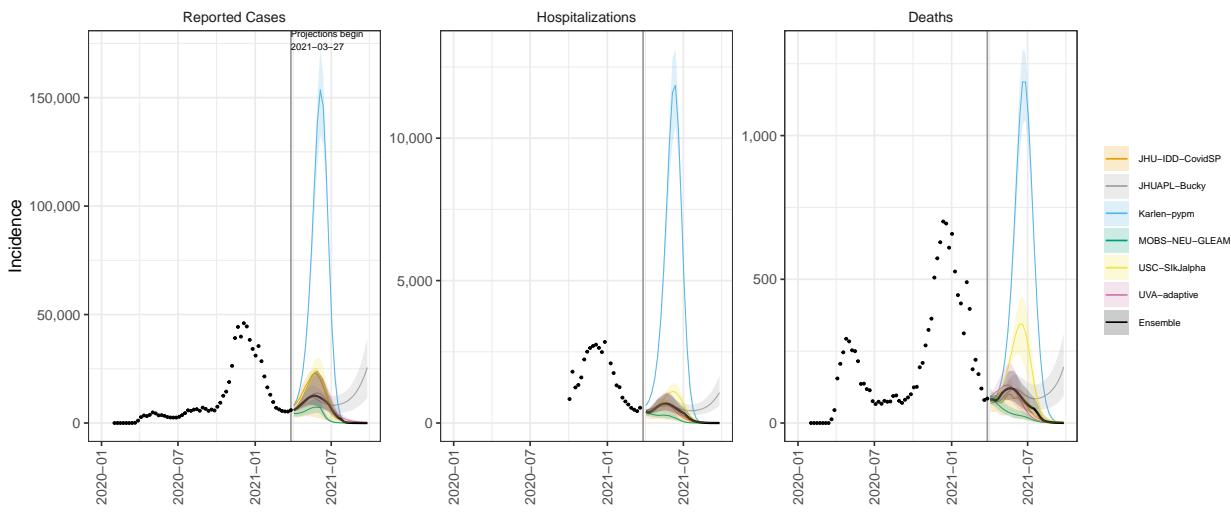
ID model variance & 50% projection intervals – High vaccination, Low NPI compliance



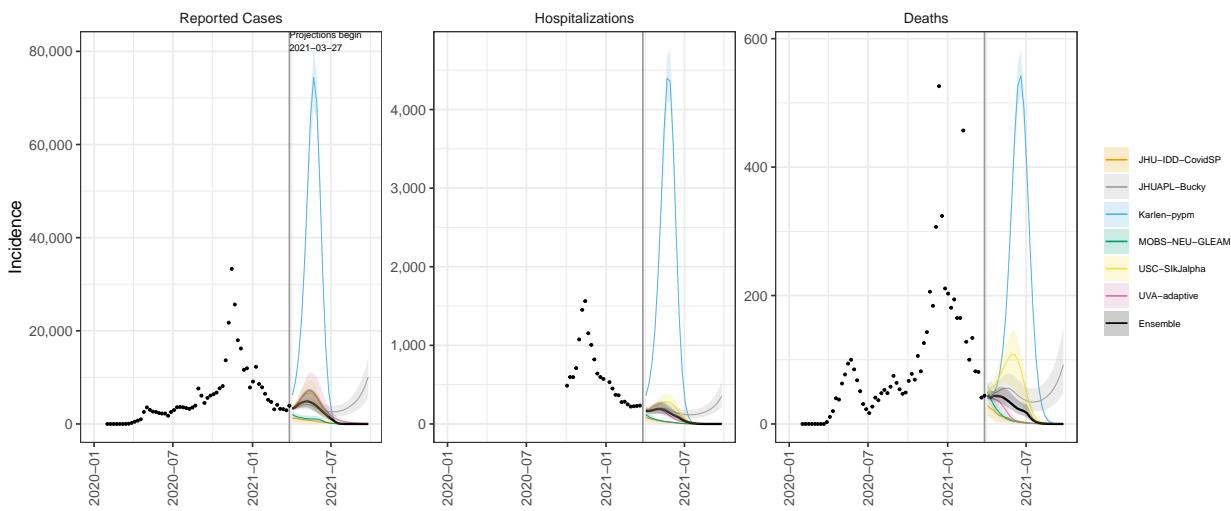
IL model variance & 50% projection intervals – High vaccination, Low NPI compliance



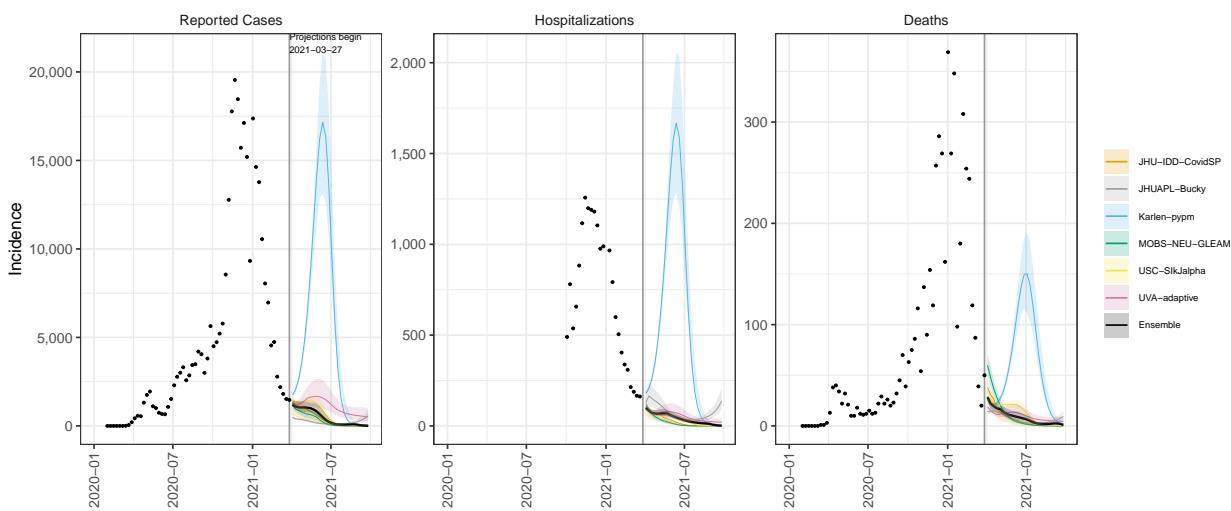
IN model variance & 50% projection intervals – High vaccination, Low NPI compliance



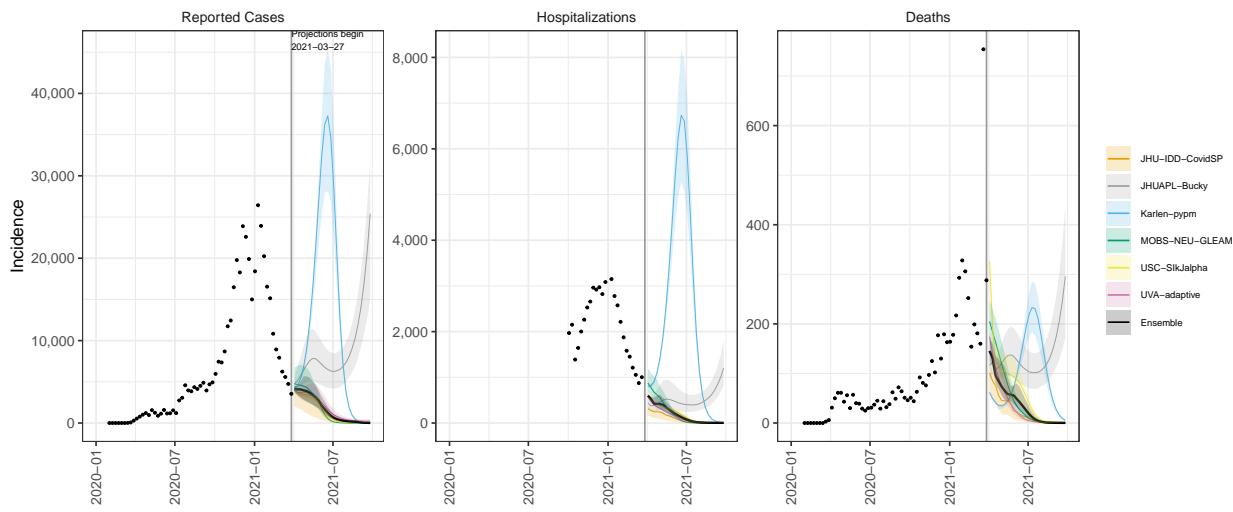
IA model variance & 50% projection intervals – High vaccination, Low NPI compliance



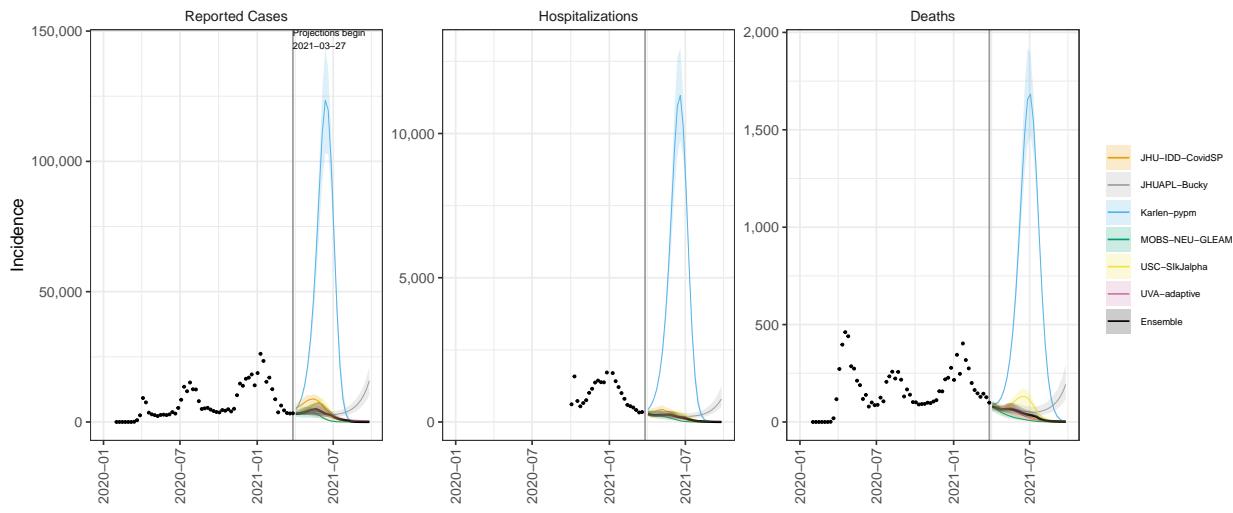
KS model variance & 50% projection intervals – High vaccination, Low NPI compliance



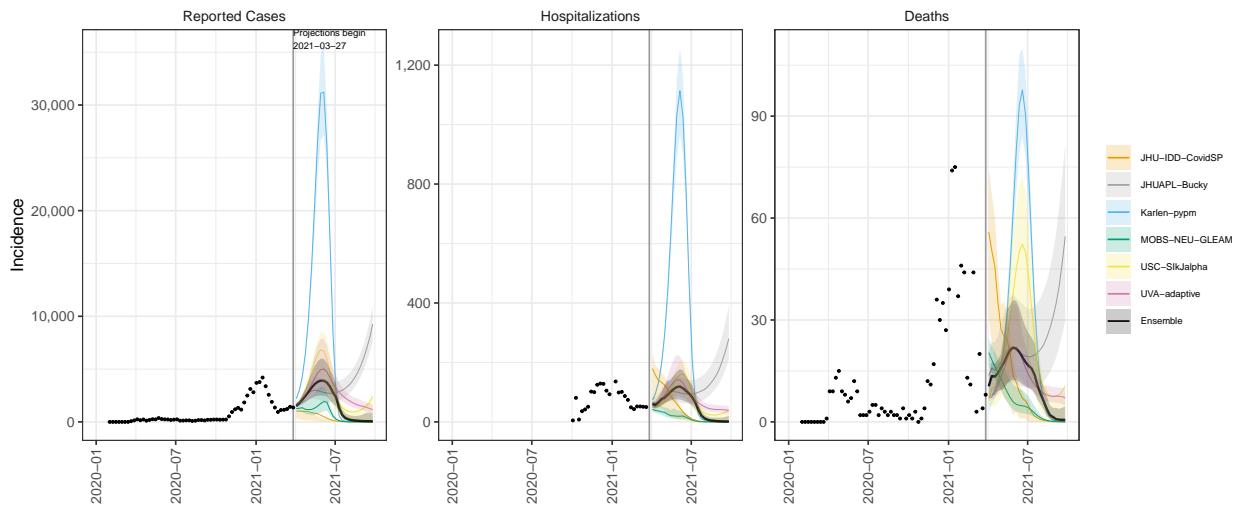
KY model variance & 50% projection intervals – High vaccination, Low NPI compliance



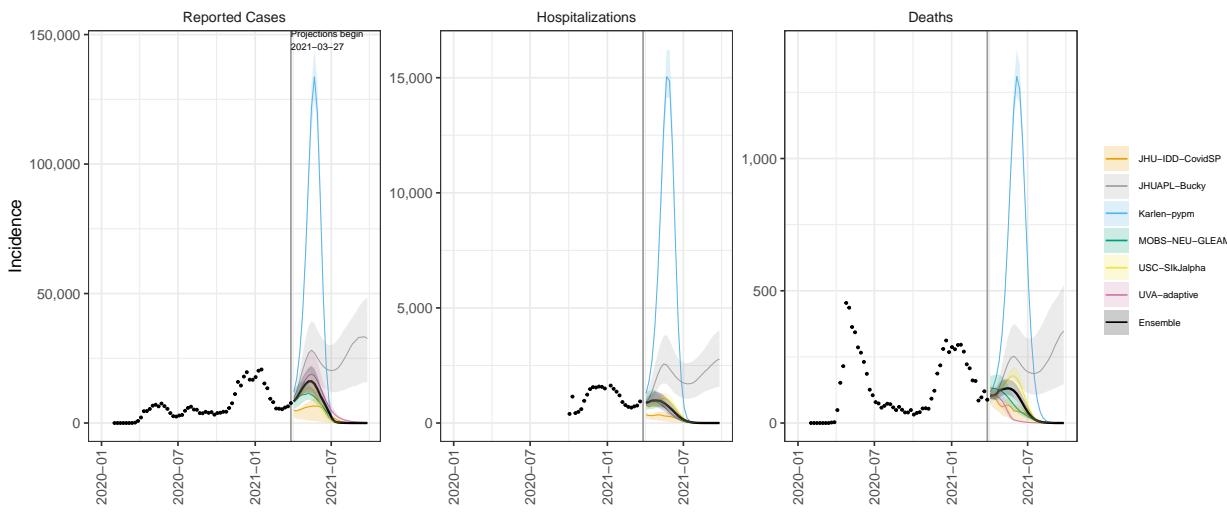
LA model variance & 50% projection intervals – High vaccination, Low NPI compliance



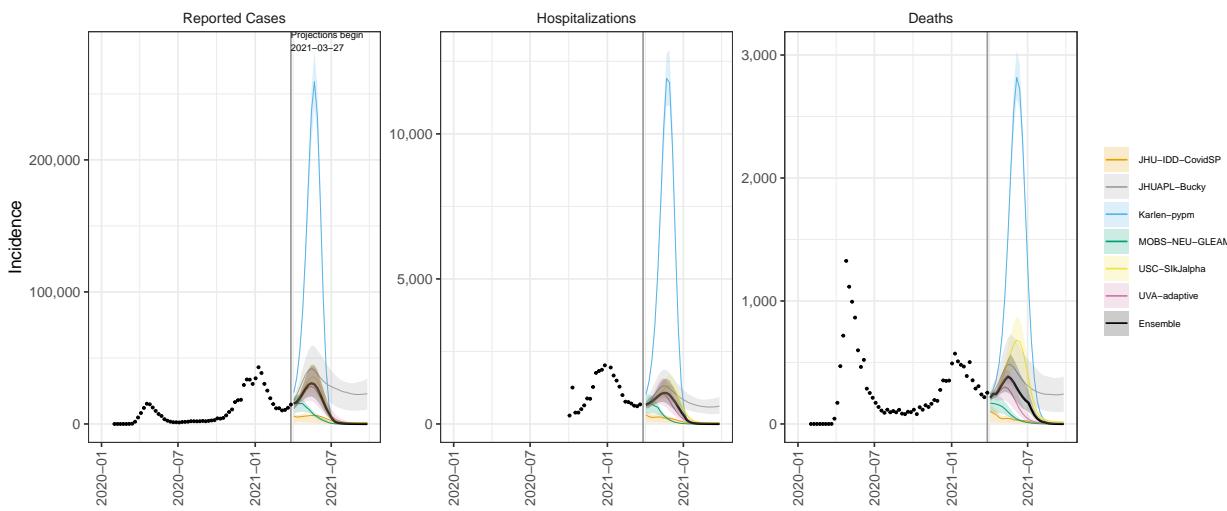
ME model variance & 50% projection intervals – High vaccination, Low NPI compliance



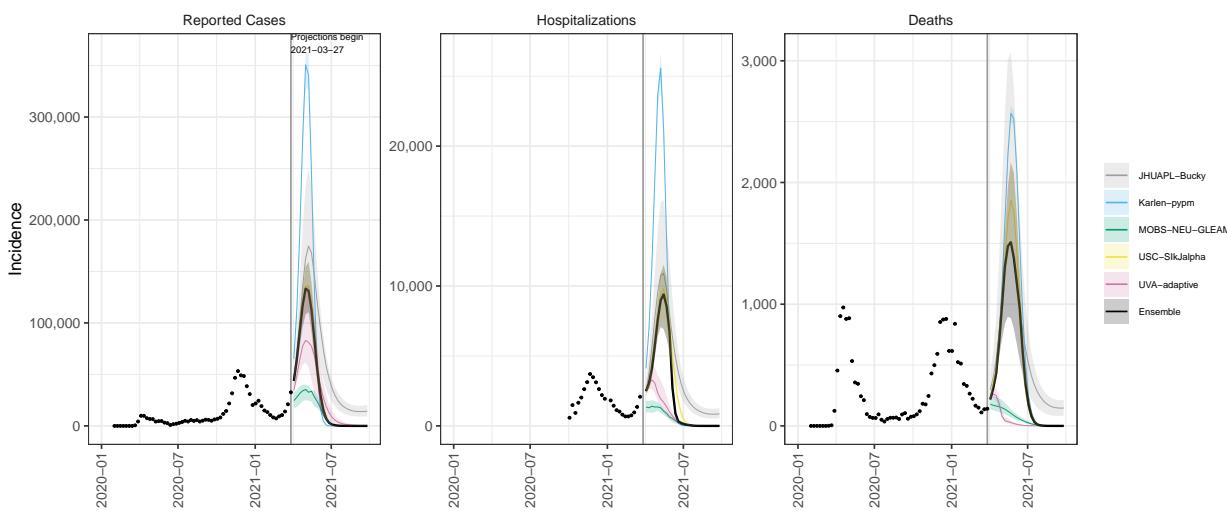
MD model variance & 50% projection intervals – High vaccination, Low NPI compliance



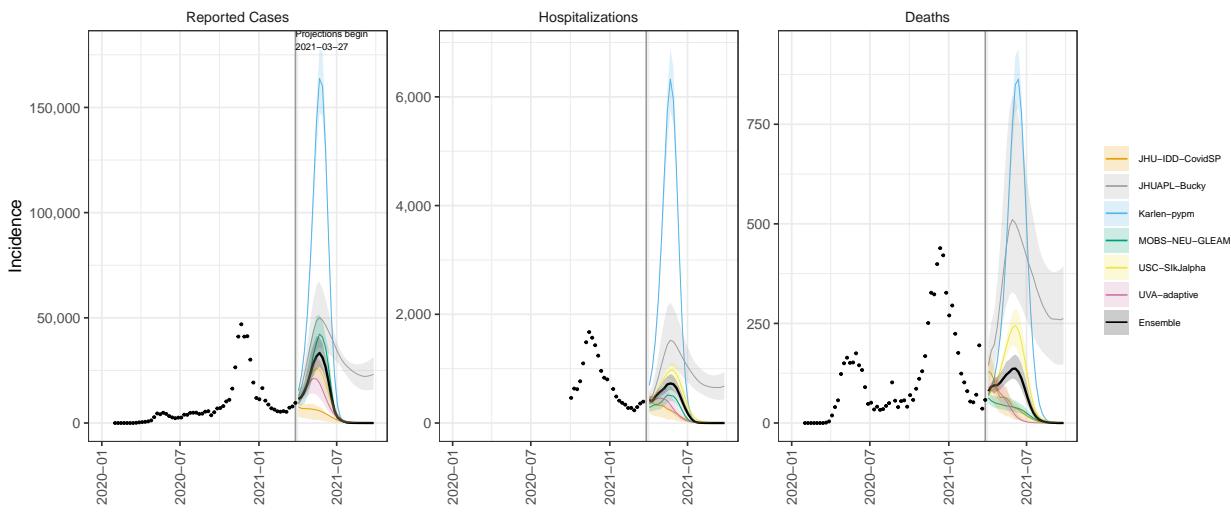
MA model variance & 50% projection intervals – High vaccination, Low NPI compliance



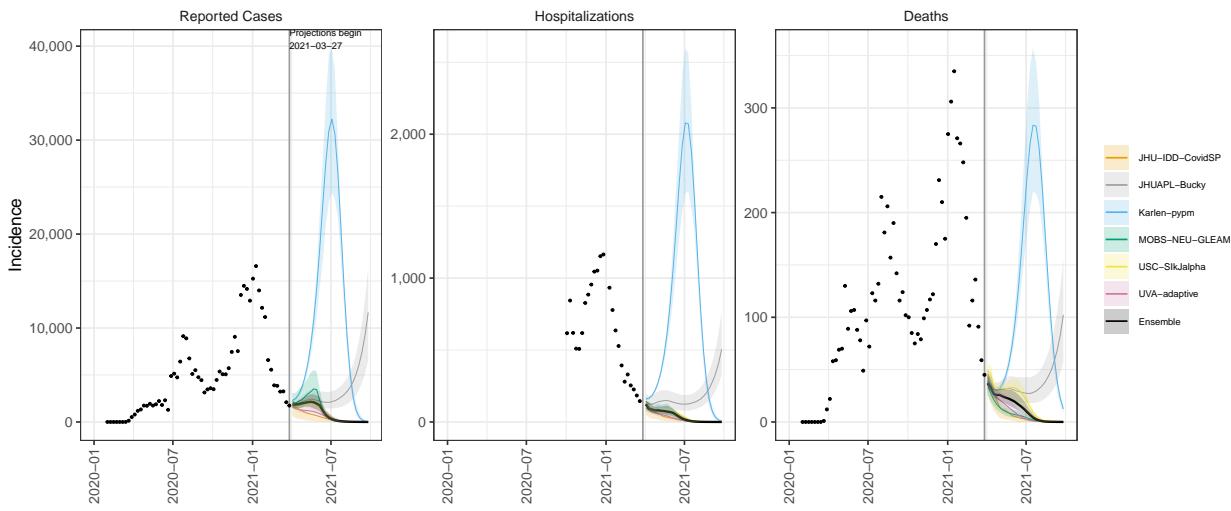
MI model variance & 50% projection intervals – High vaccination, Low NPI compliance



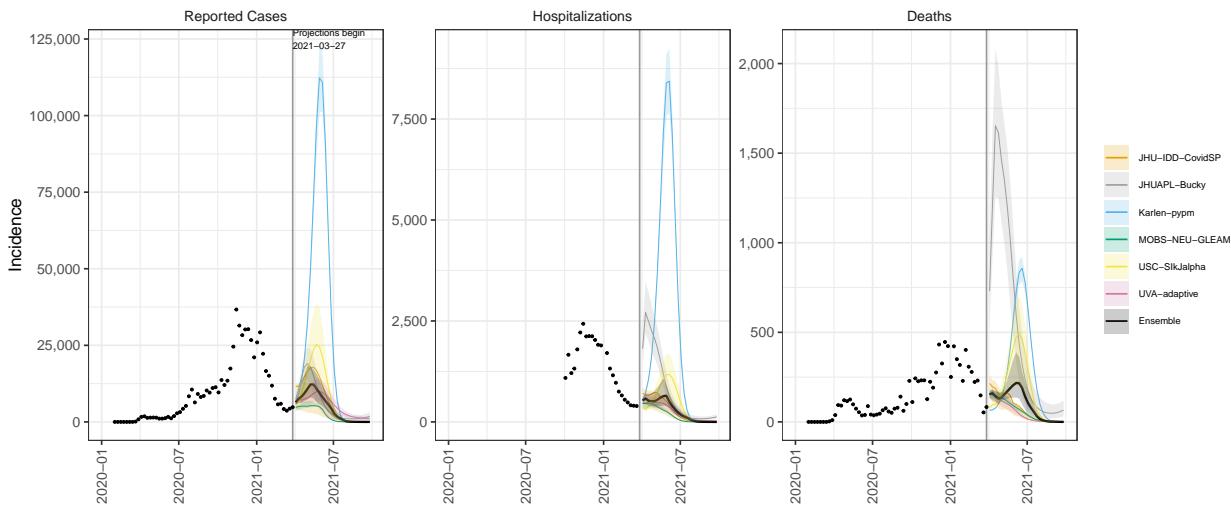
MN model variance & 50% projection intervals – High vaccination, Low NPI compliance



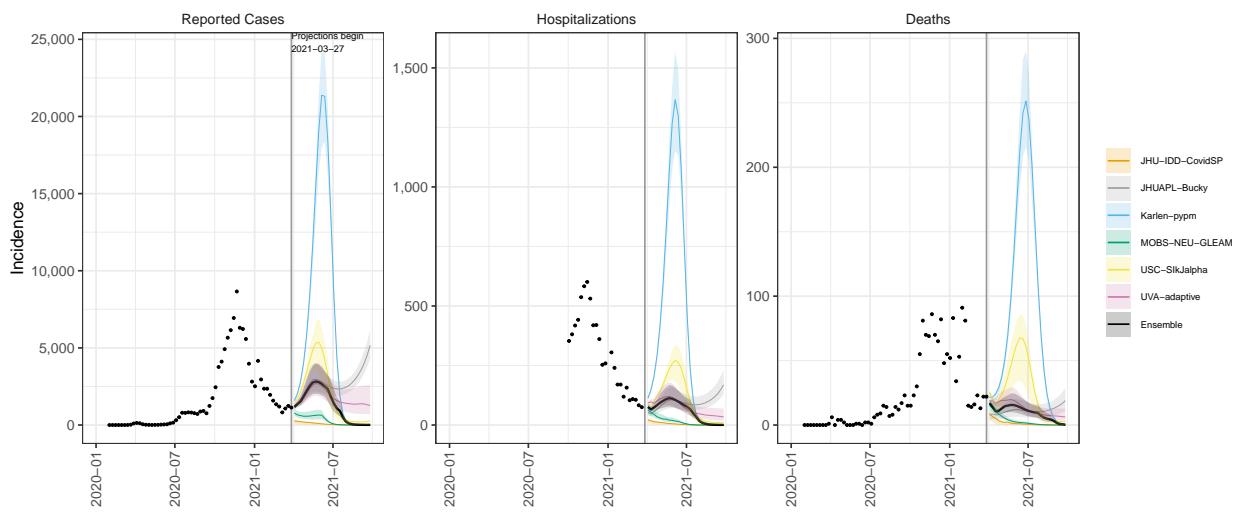
MS model variance & 50% projection intervals – High vaccination, Low NPI compliance



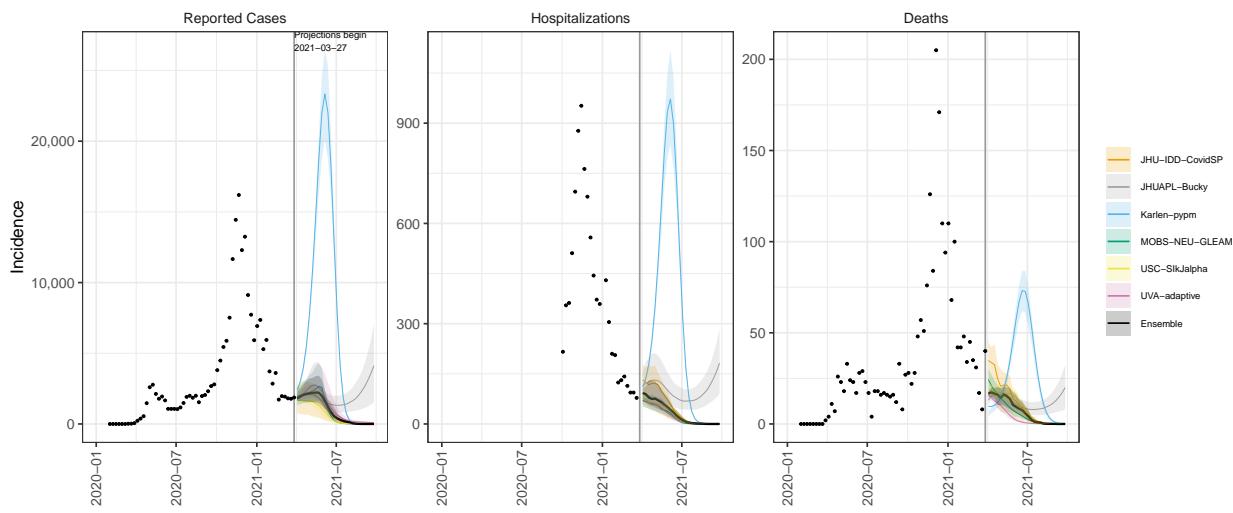
MO model variance & 50% projection intervals – High vaccination, Low NPI compliance



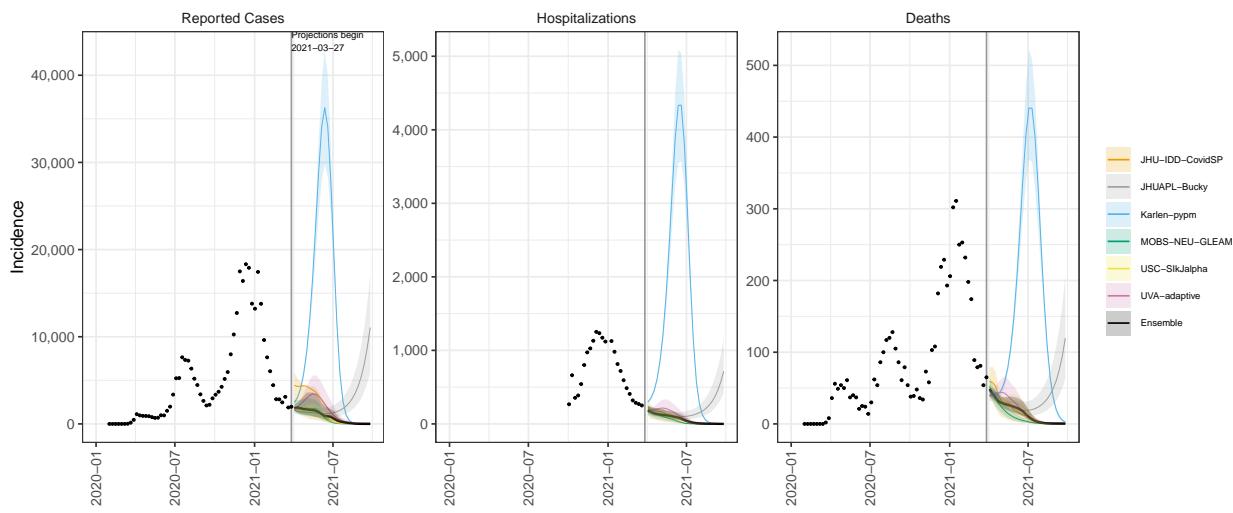
MT model variance & 50% projection intervals – High vaccination, Low NPI compliance



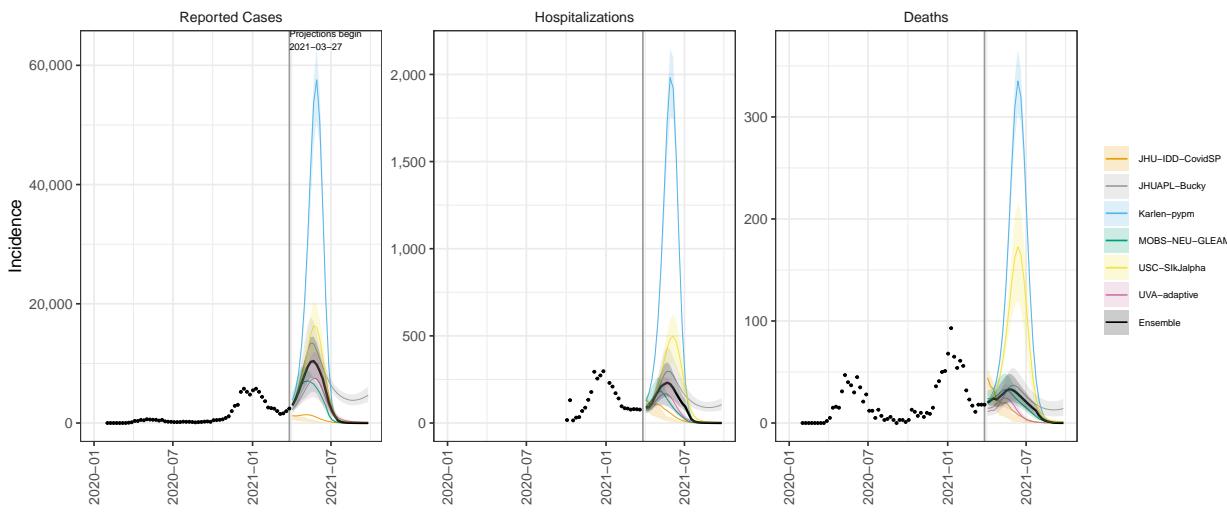
NE model variance & 50% projection intervals – High vaccination, Low NPI compliance



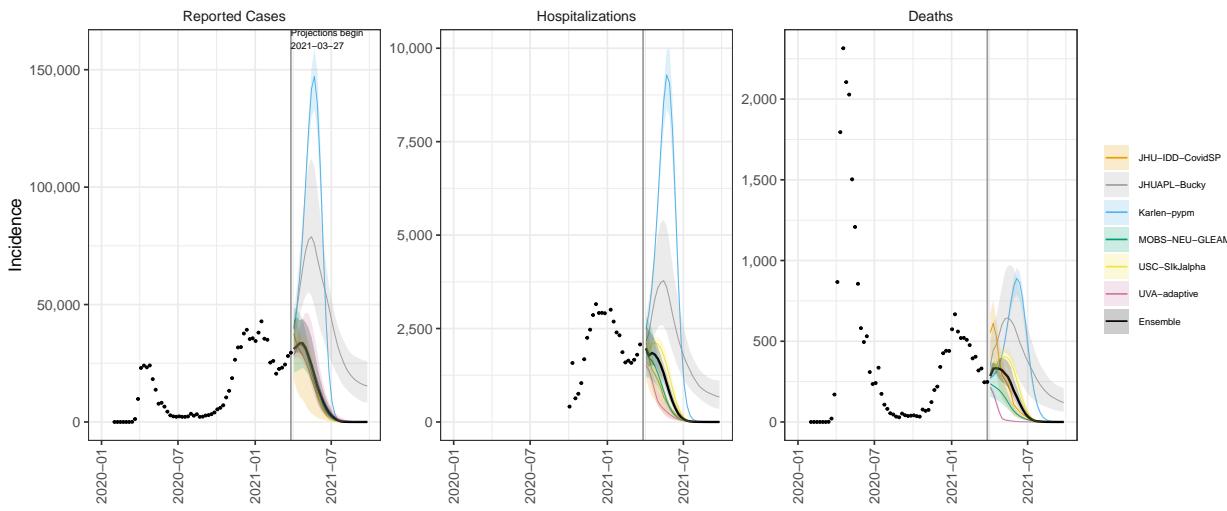
NV model variance & 50% projection intervals – High vaccination, Low NPI compliance



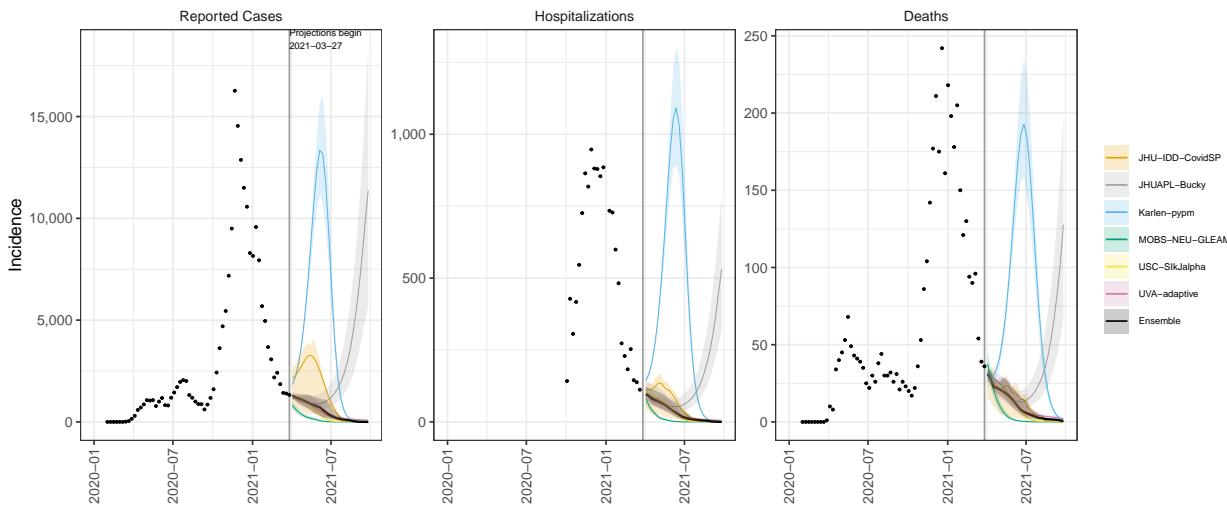
NH model variance & 50% projection intervals – High vaccination, Low NPI compliance



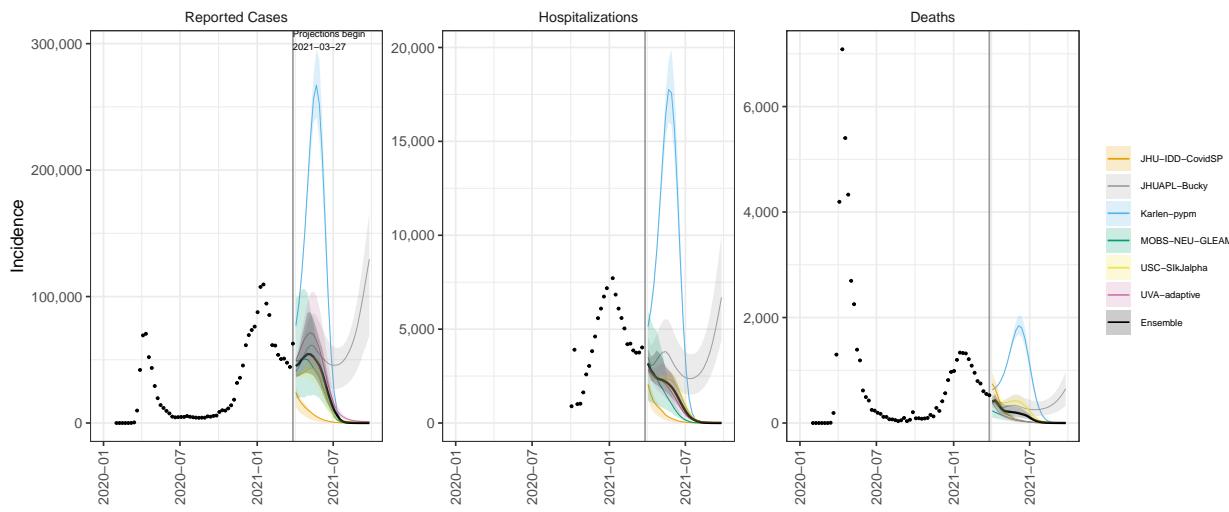
NJ model variance & 50% projection intervals – High vaccination, Low NPI compliance



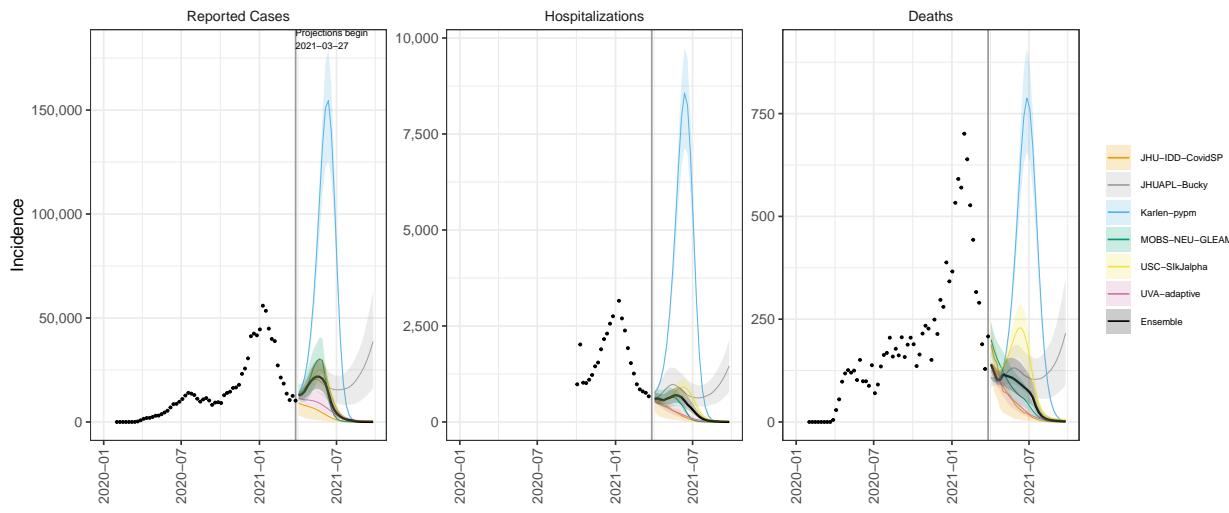
NM model variance & 50% projection intervals – High vaccination, Low NPI compliance



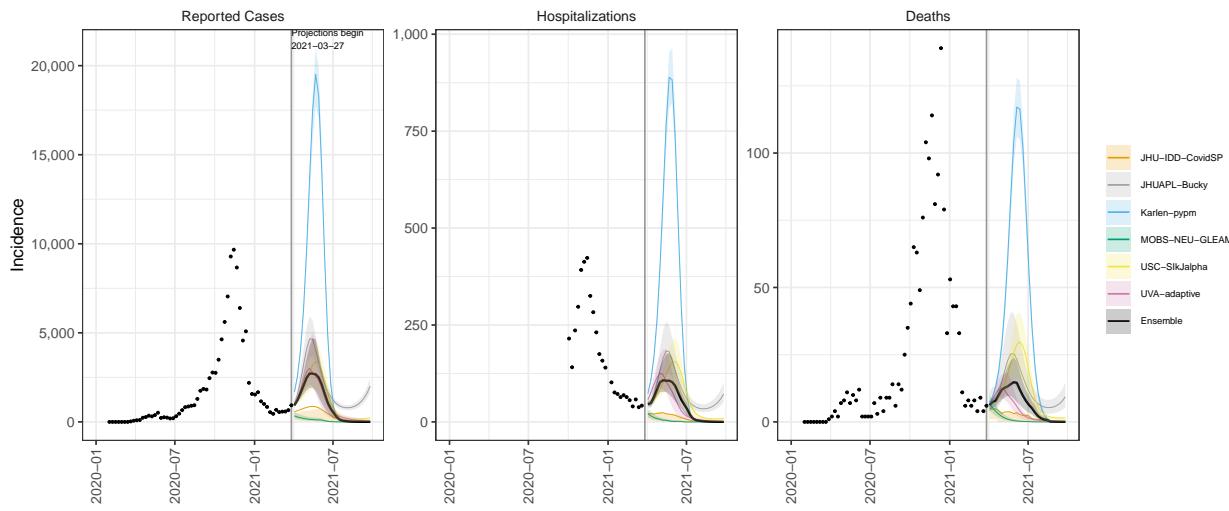
NY model variance & 50% projection intervals – High vaccination, Low NPI compliance



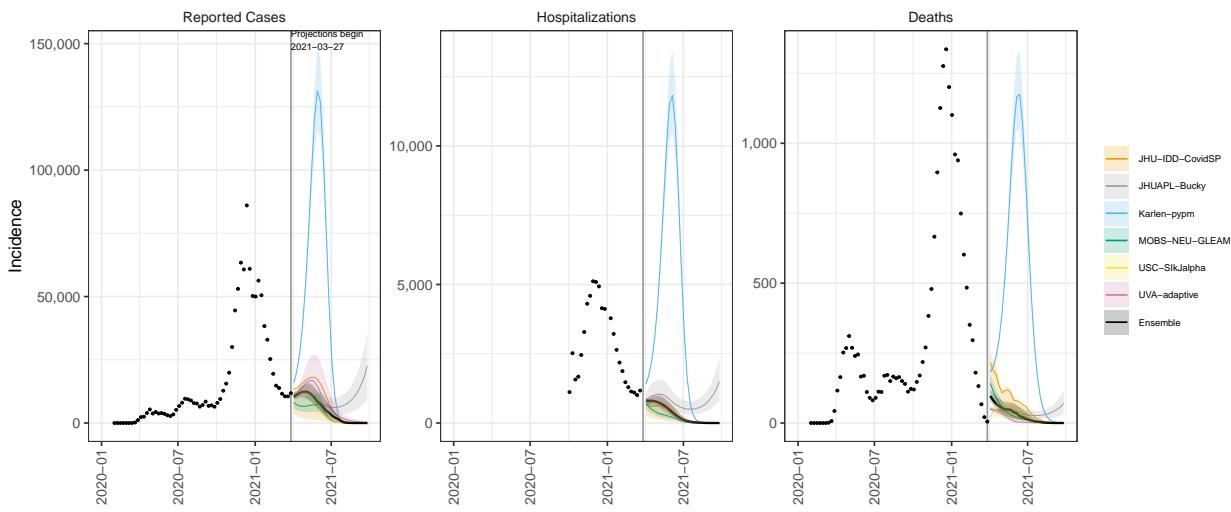
NC model variance & 50% projection intervals – High vaccination, Low NPI compliance



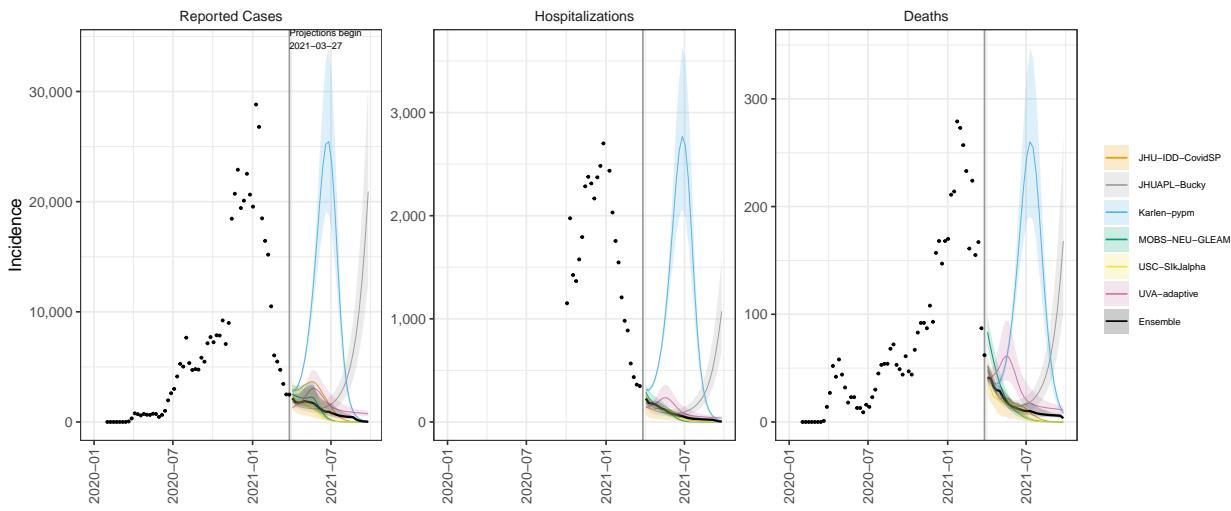
ND model variance & 50% projection intervals – High vaccination, Low NPI compliance



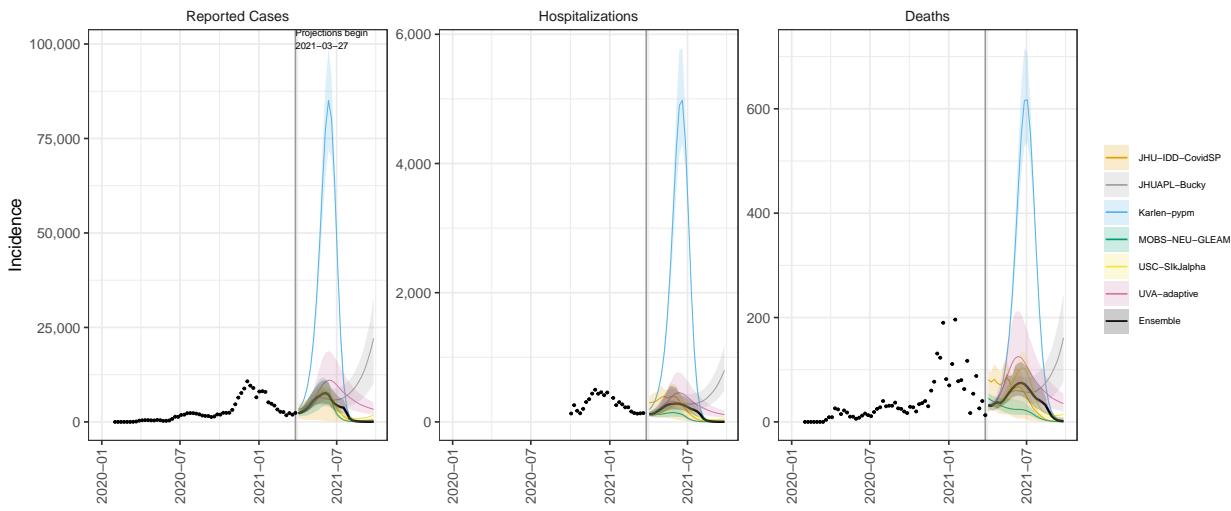
OH model variance & 50% projection intervals – High vaccination, Low NPI compliance



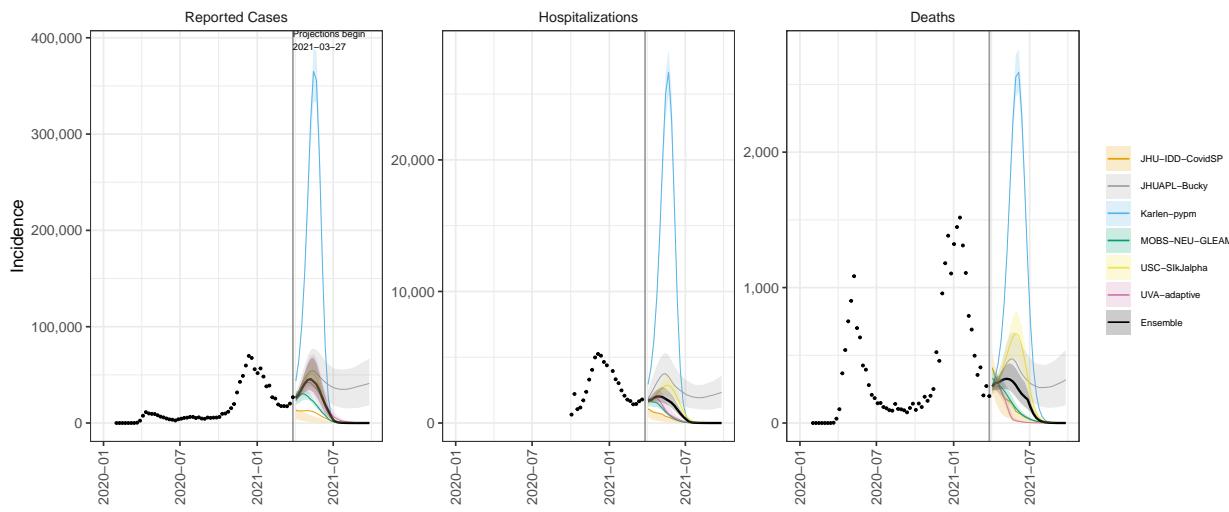
OK model variance & 50% projection intervals – High vaccination, Low NPI compliance



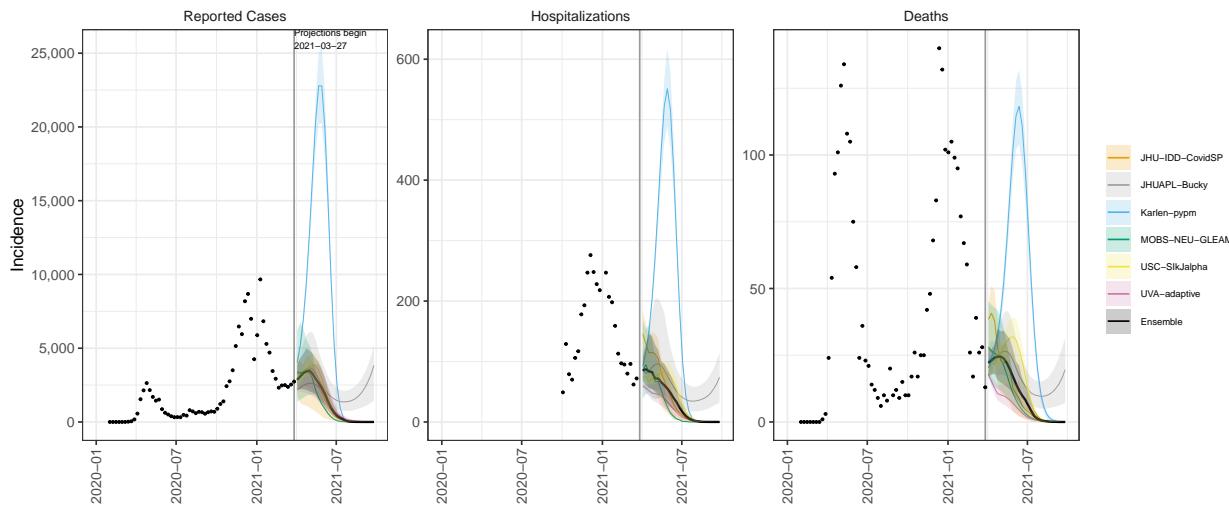
OR model variance & 50% projection intervals – High vaccination, Low NPI compliance



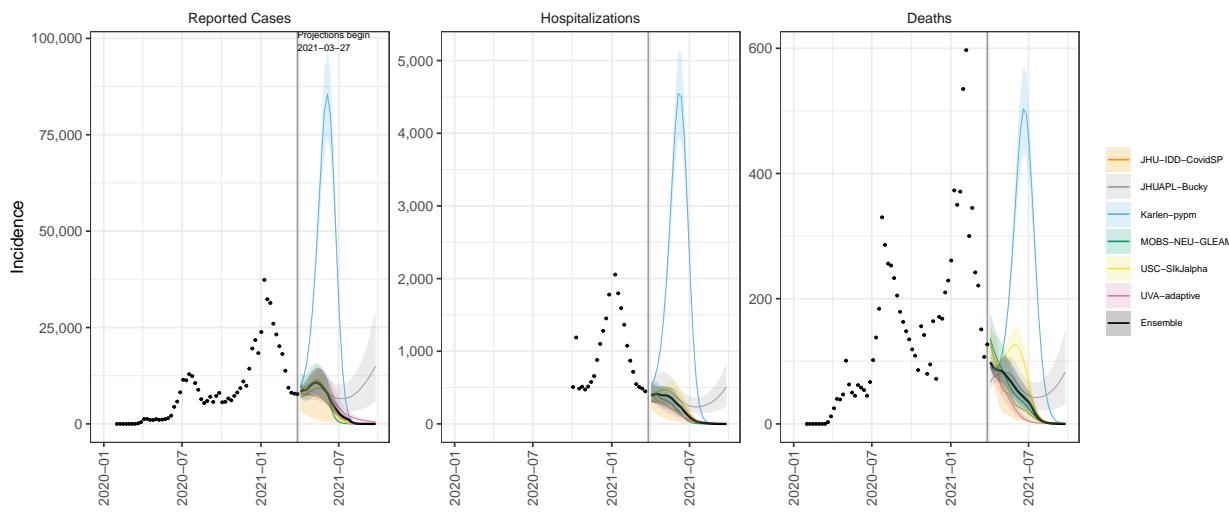
PA model variance & 50% projection intervals – High vaccination, Low NPI compliance



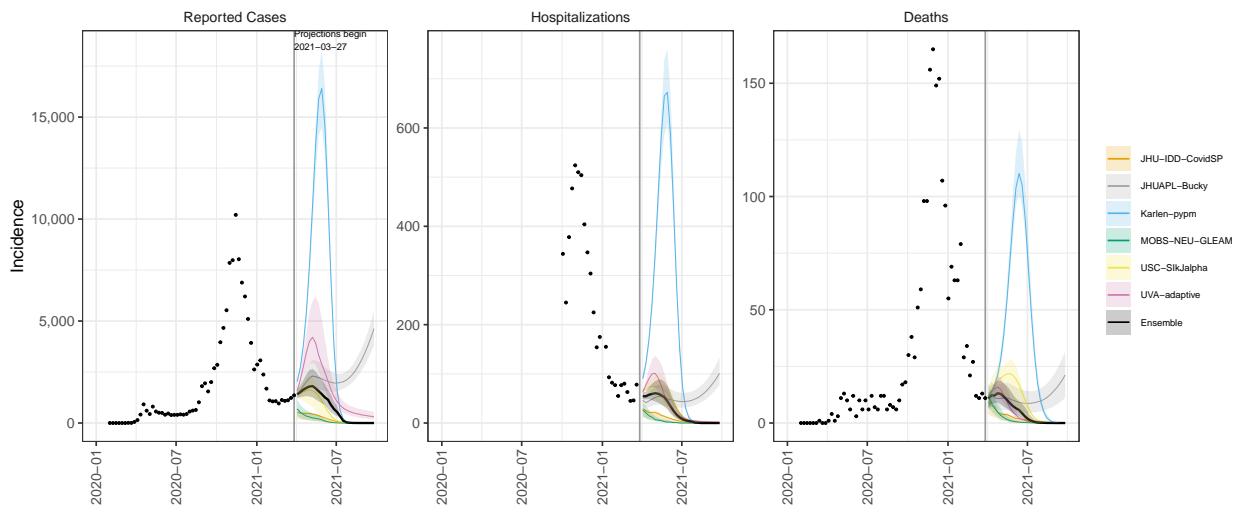
RI model variance & 50% projection intervals – High vaccination, Low NPI compliance



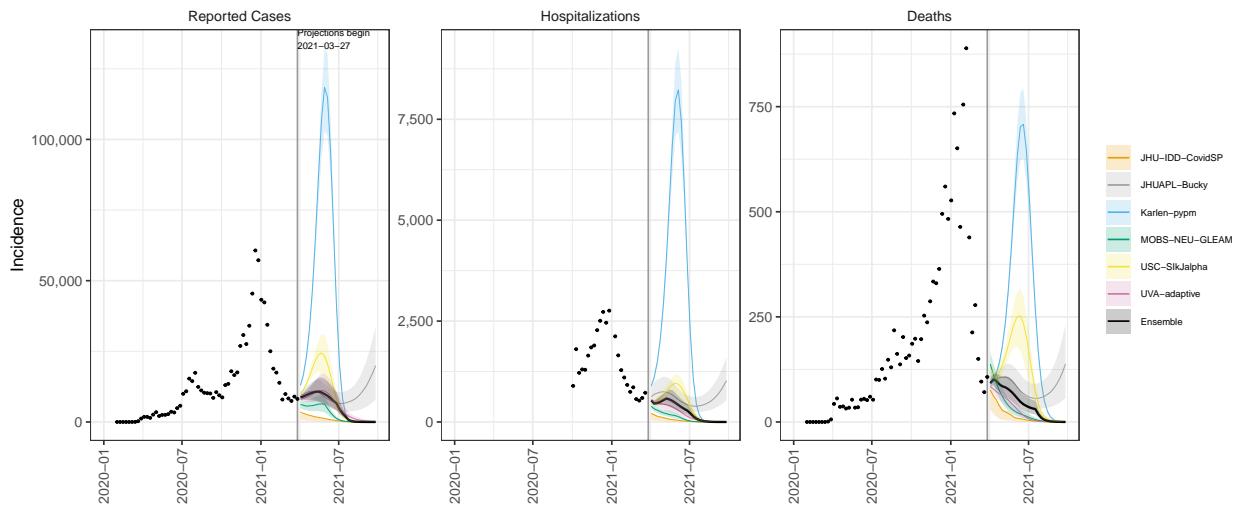
SC model variance & 50% projection intervals – High vaccination, Low NPI compliance



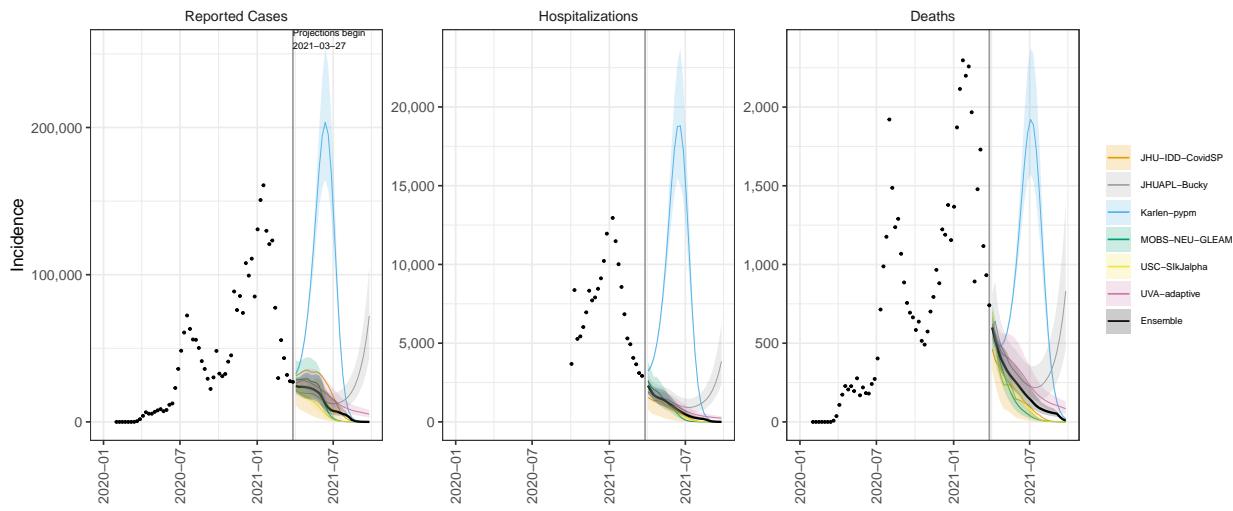
SD model variance & 50% projection intervals – High vaccination, Low NPI compliance



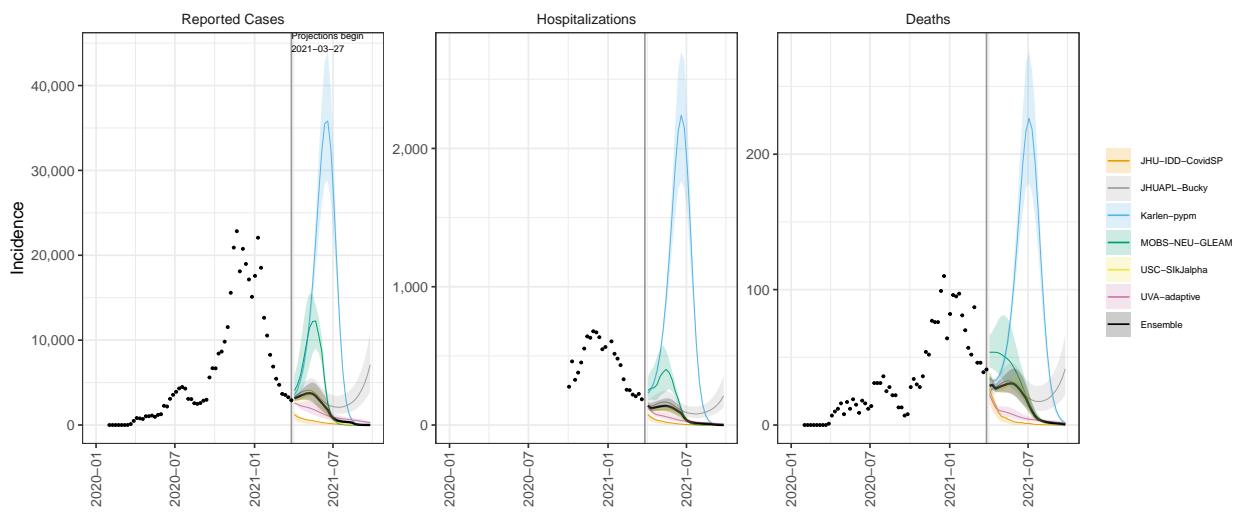
TN model variance & 50% projection intervals – High vaccination, Low NPI compliance



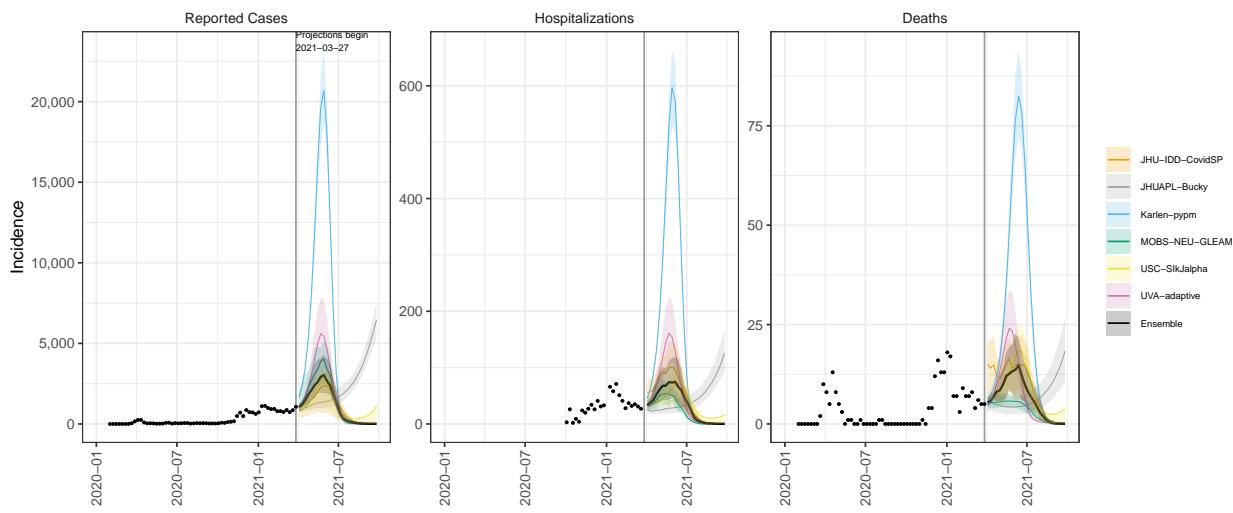
TX model variance & 50% projection intervals – High vaccination, Low NPI compliance



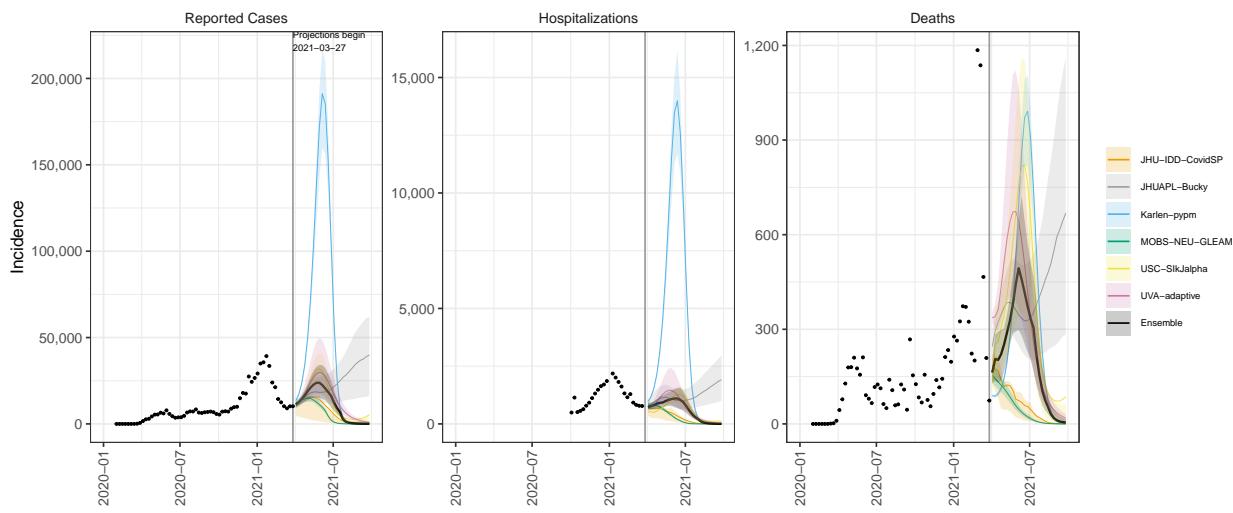
UT model variance & 50% projection intervals – High vaccination, Low NPI compliance



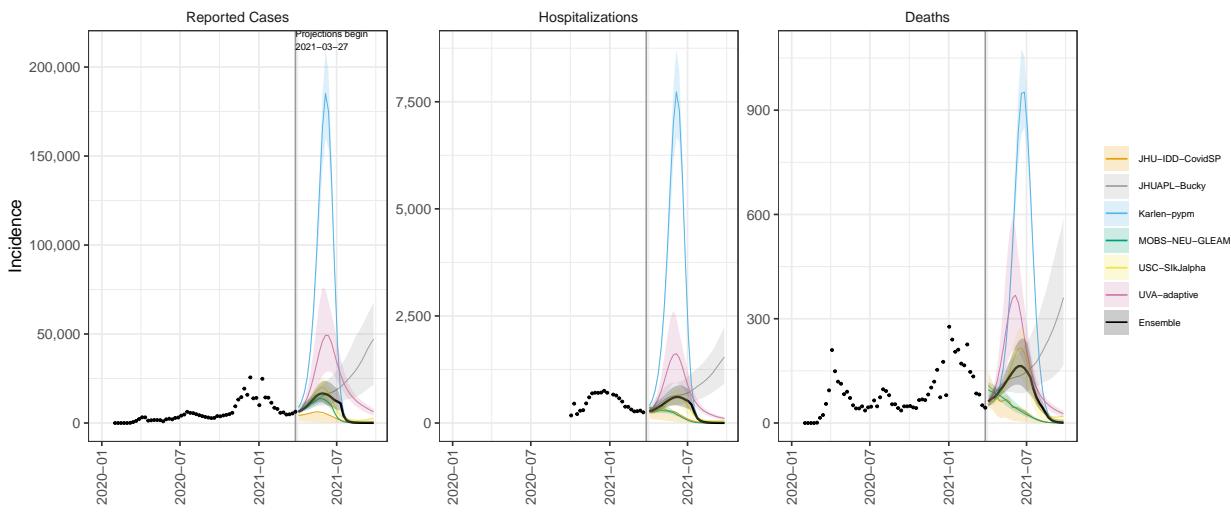
VT model variance & 50% projection intervals – High vaccination, Low NPI compliance



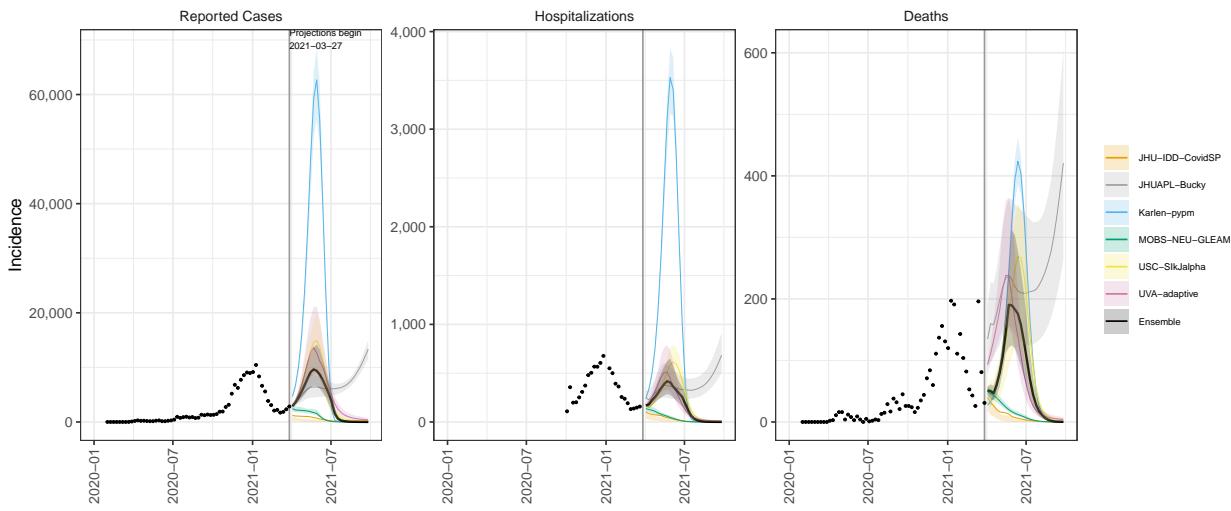
VA model variance & 50% projection intervals – High vaccination, Low NPI compliance



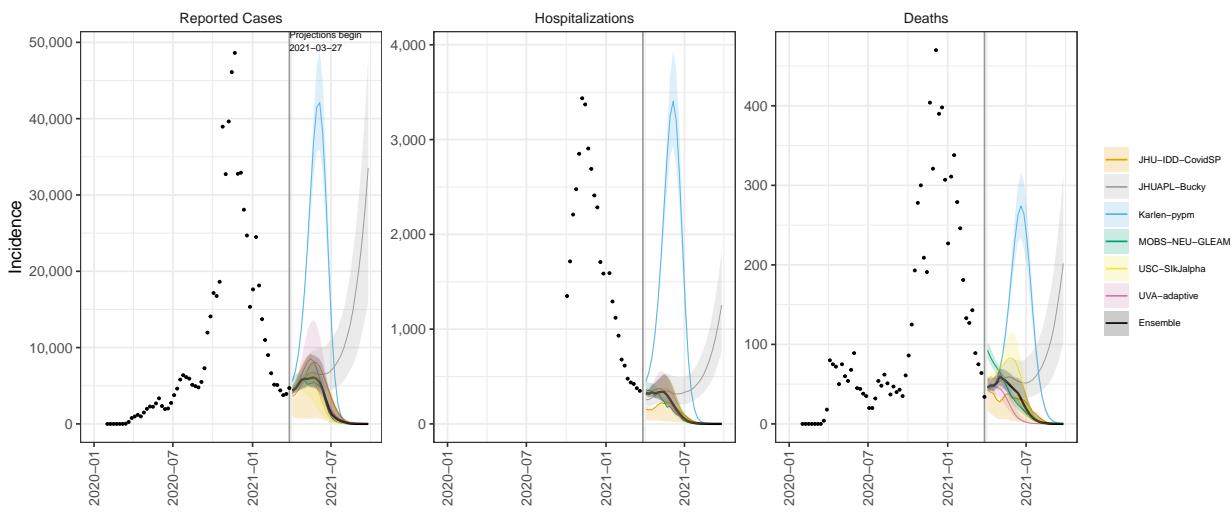
WA model variance & 50% projection intervals – High vaccination, Low NPI compliance



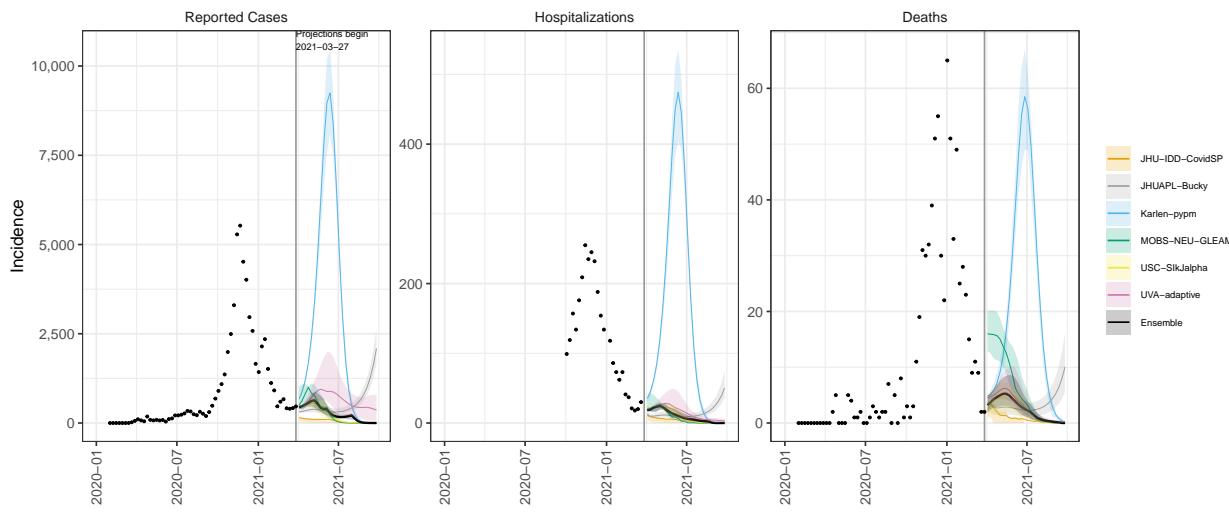
WV model variance & 50% projection intervals – High vaccination, Low NPI compliance



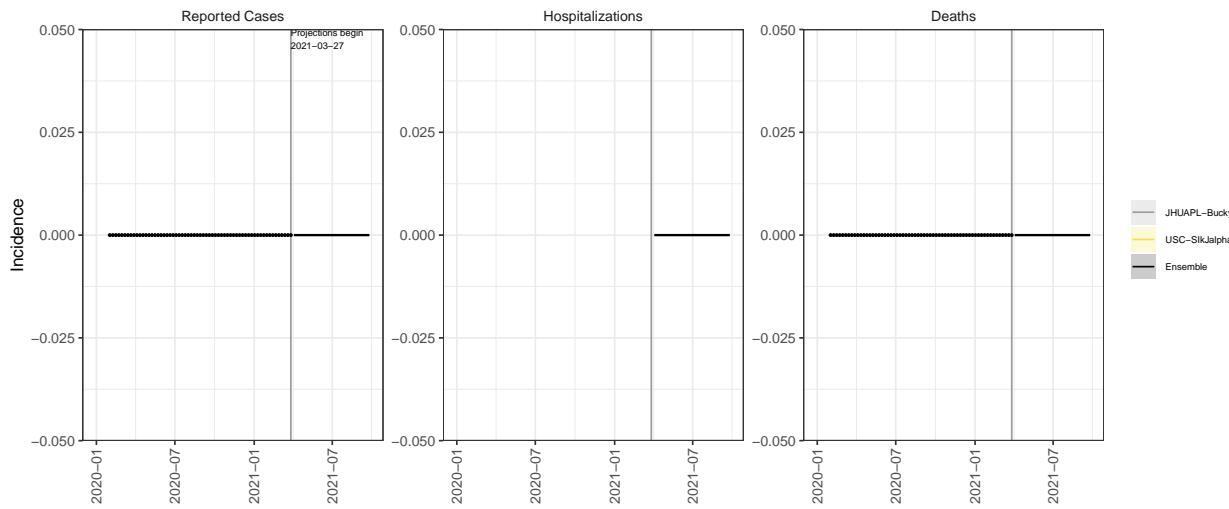
WI model variance & 50% projection intervals – High vaccination, Low NPI compliance



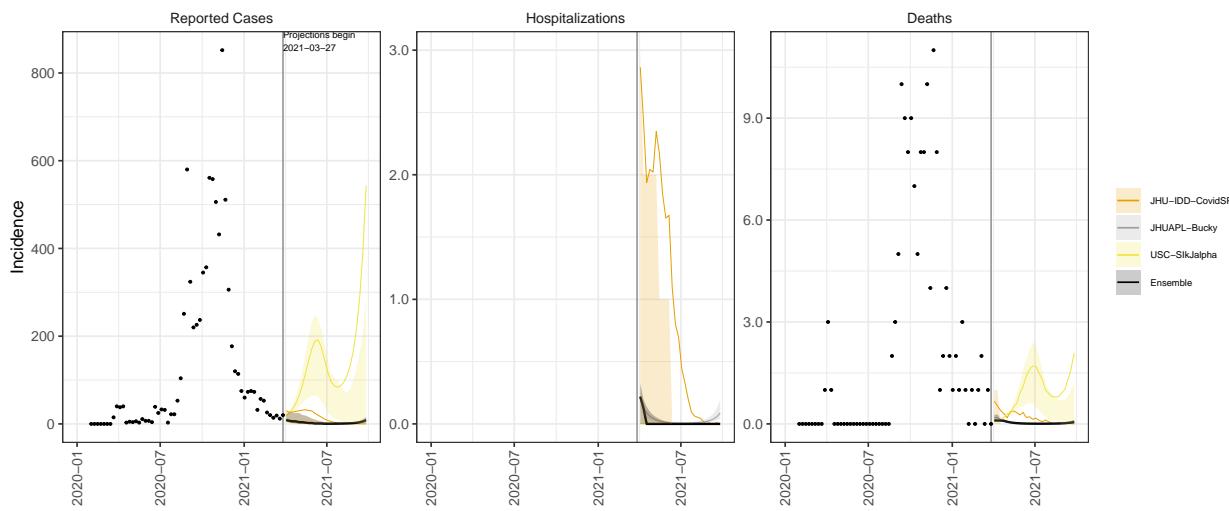
WY model variance & 50% projection intervals – High vaccination, Low NPI compliance



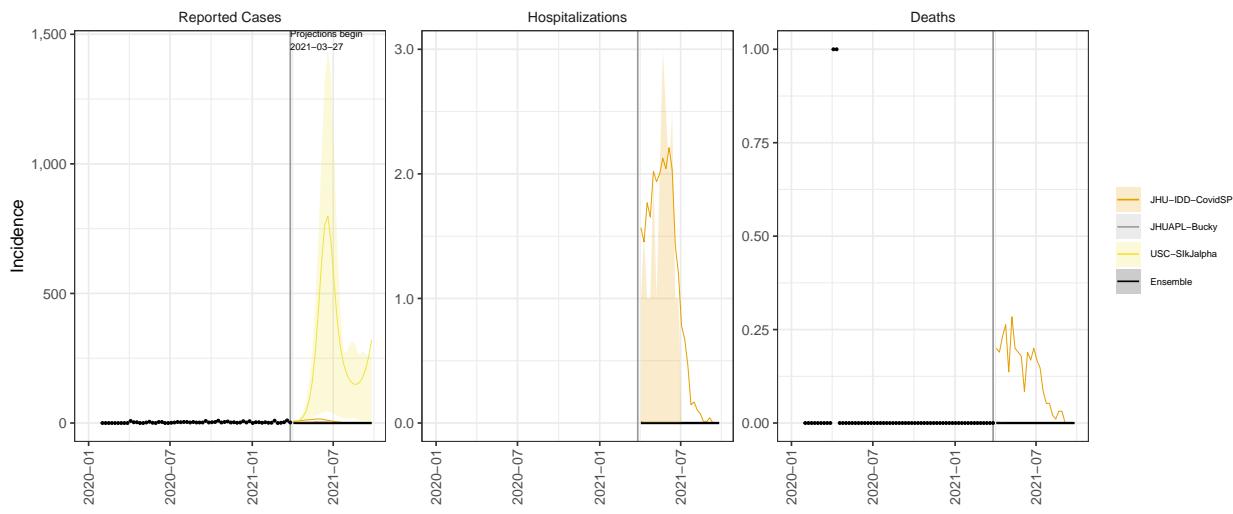
AS model variance & 50% projection intervals – High vaccination, Low NPI compliance



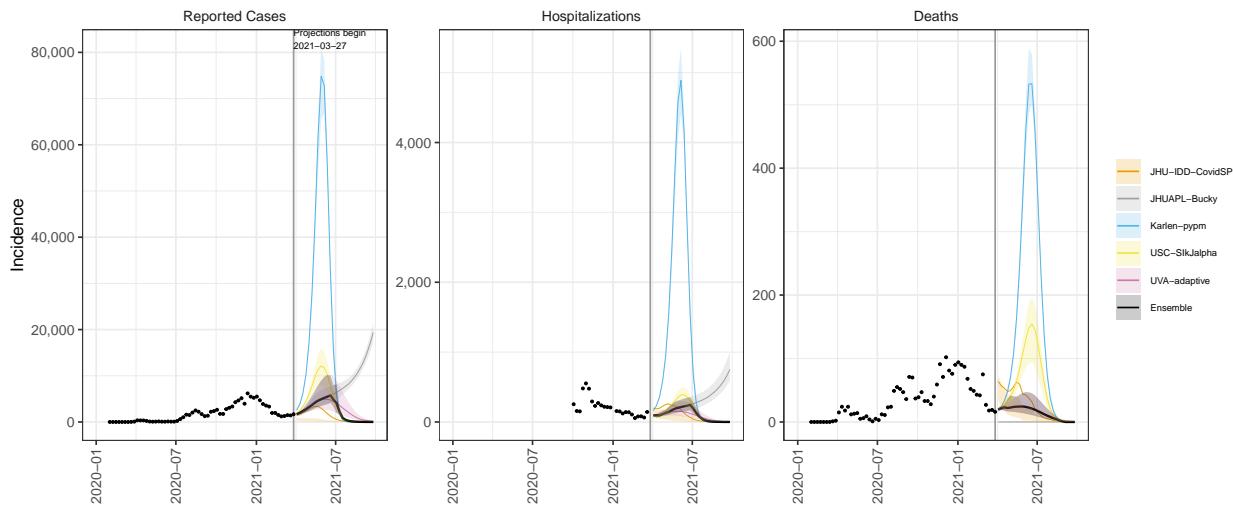
GU model variance & 50% projection intervals – High vaccination, Low NPI compliance



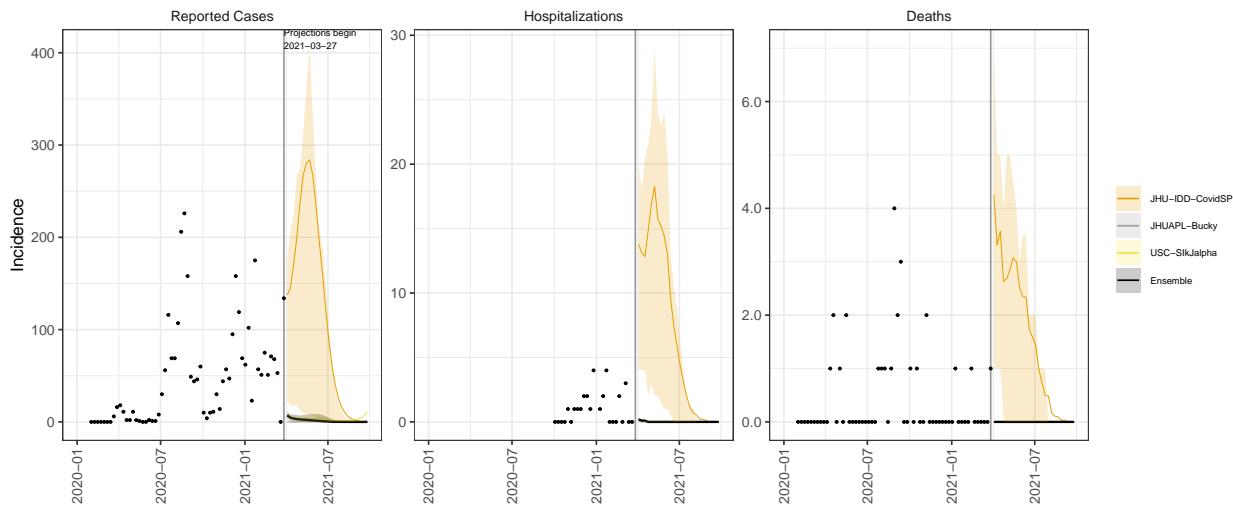
MP model variance & 50% projection intervals – High vaccination, Low NPI compliance



PR model variance & 50% projection intervals – High vaccination, Low NPI compliance

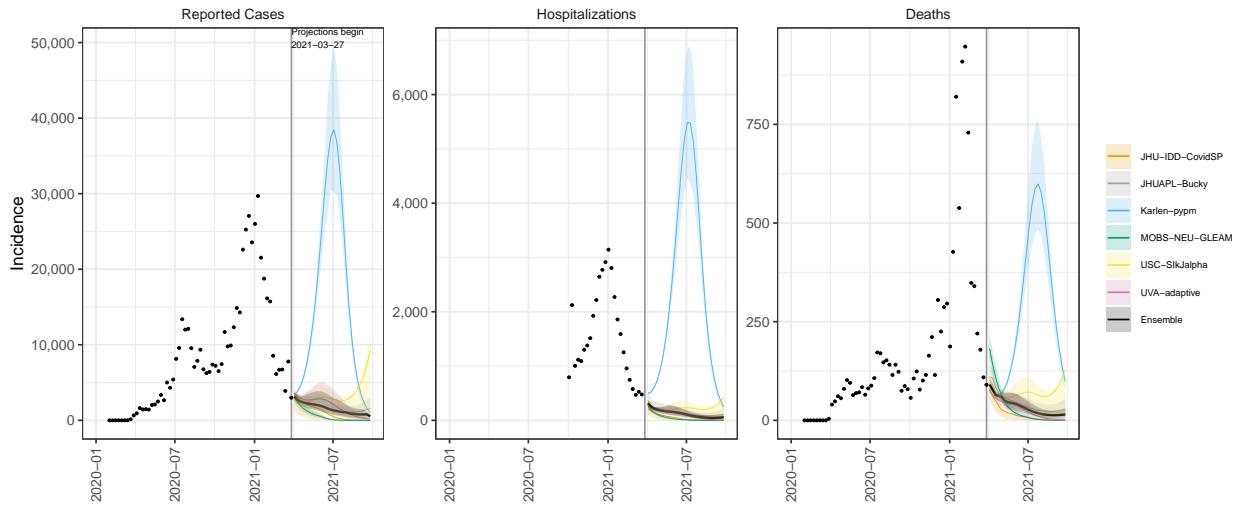


VI model variance & 50% projection intervals – High vaccination, Low NPI compliance

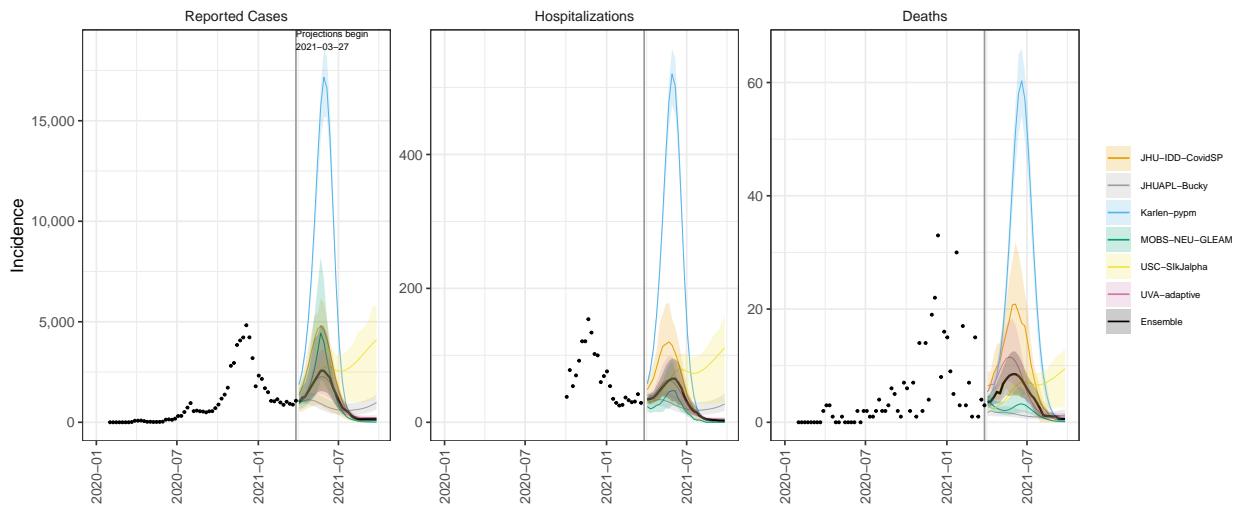


National model variation for the low vaccination, moderate NPI scenario

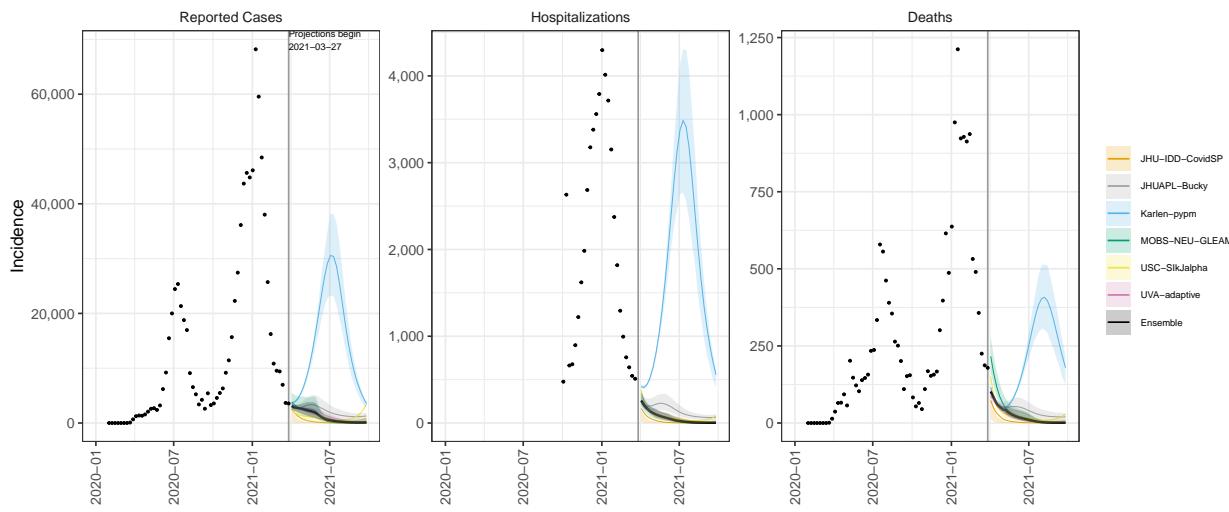
AL model variance & 50% projection intervals – Low vaccination, Moderate NPI compliance



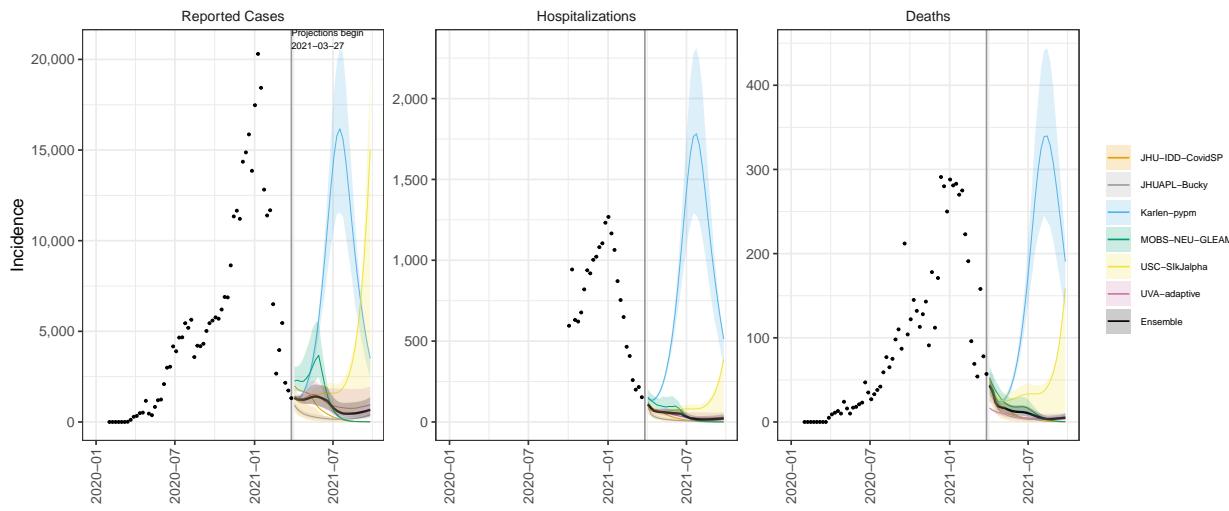
AK model variance & 50% projection intervals – Low vaccination, Moderate NPI compliance



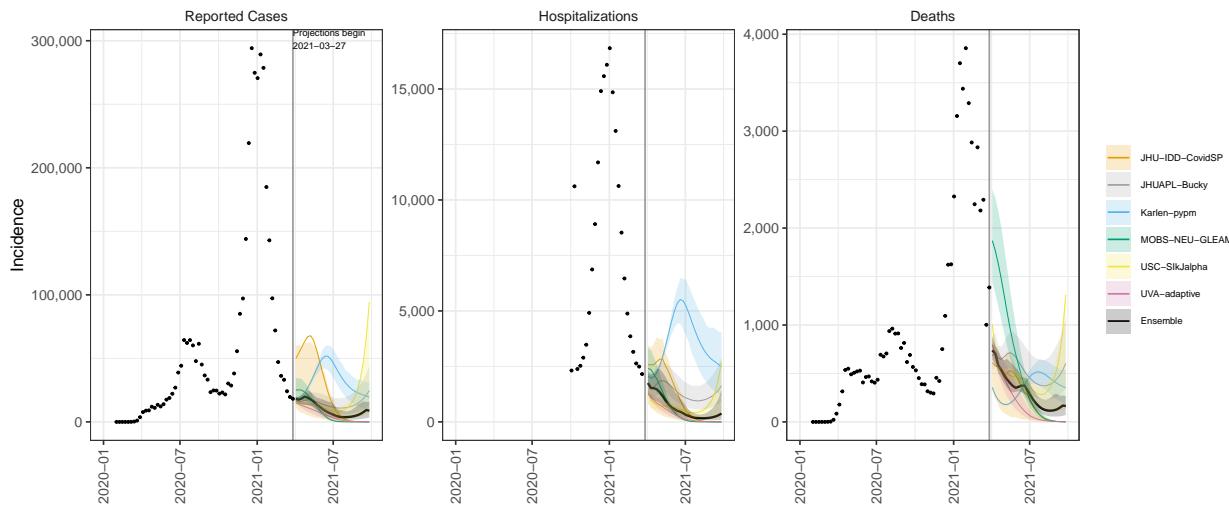
AZ model variance & 50% projection intervals – Low vaccination, Moderate NPI compliance



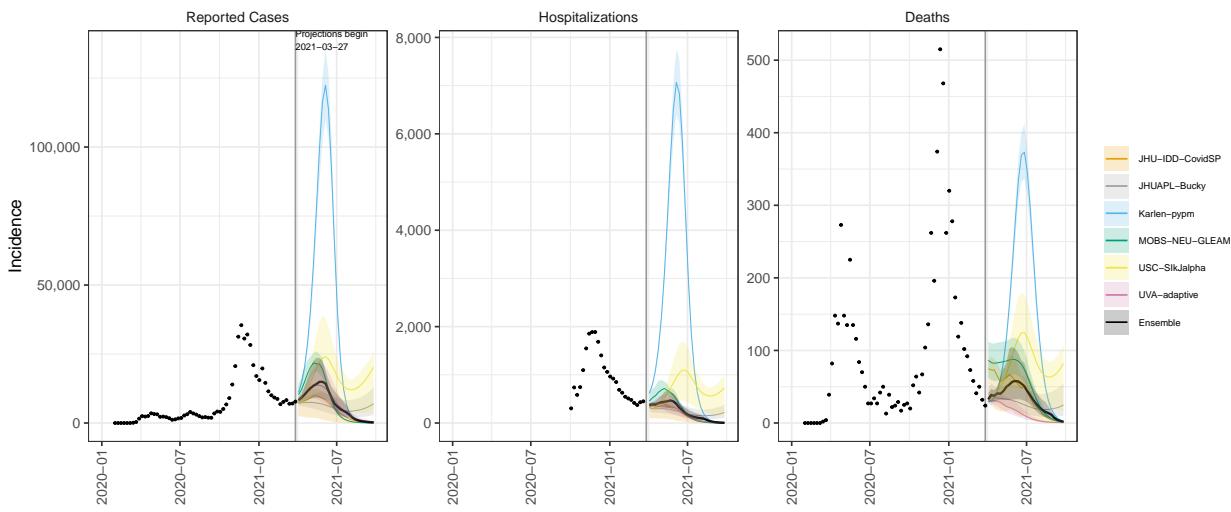
AR model variance & 50% projection intervals – Low vaccination, Moderate NPI compliance



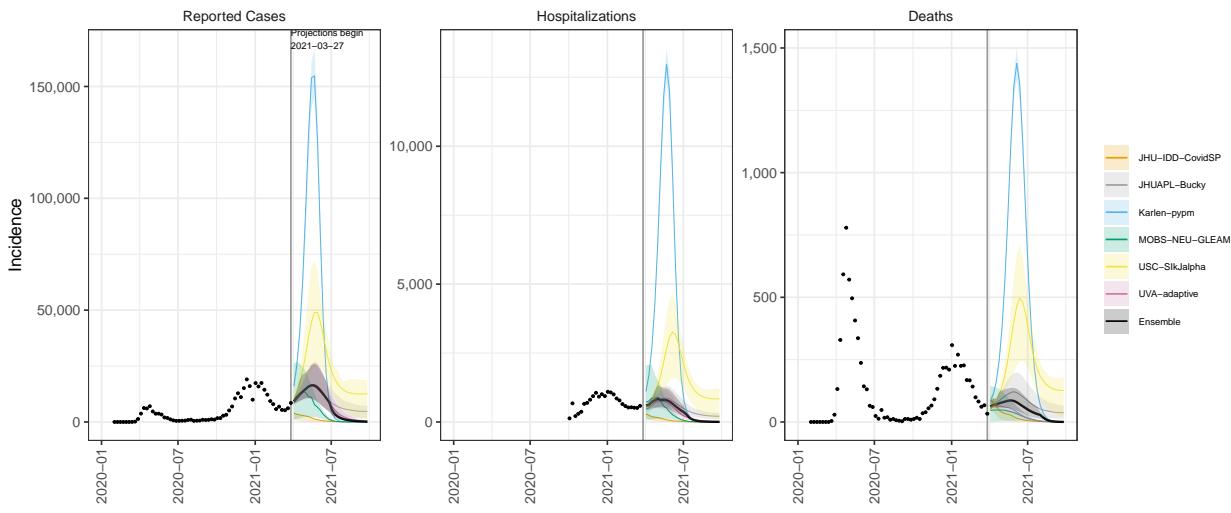
CA model variance & 50% projection intervals – Low vaccination, Moderate NPI compliance



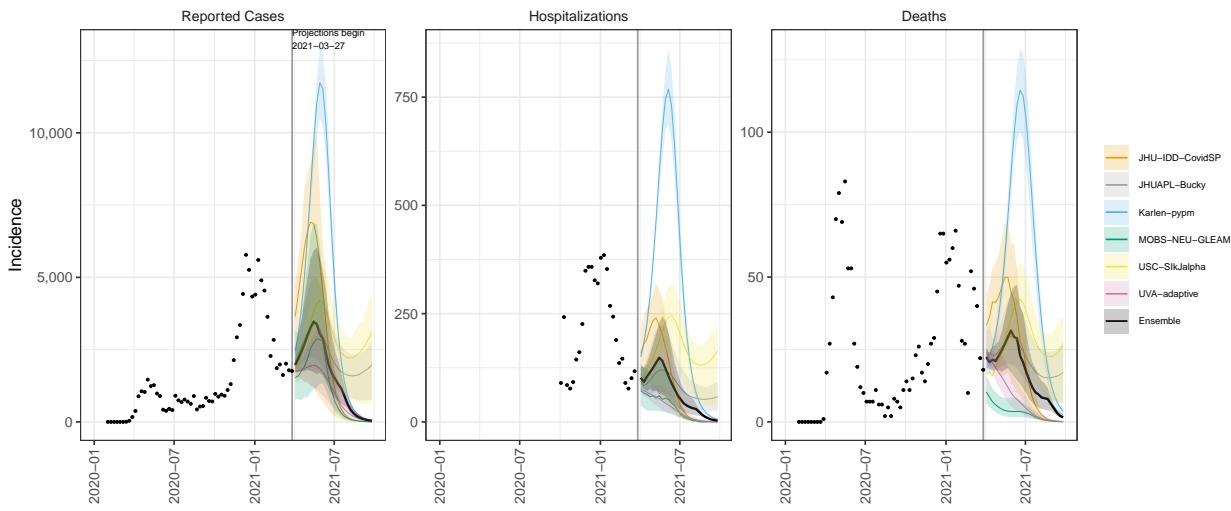
CO model variance & 50% projection intervals – Low vaccination, Moderate NPI compliance



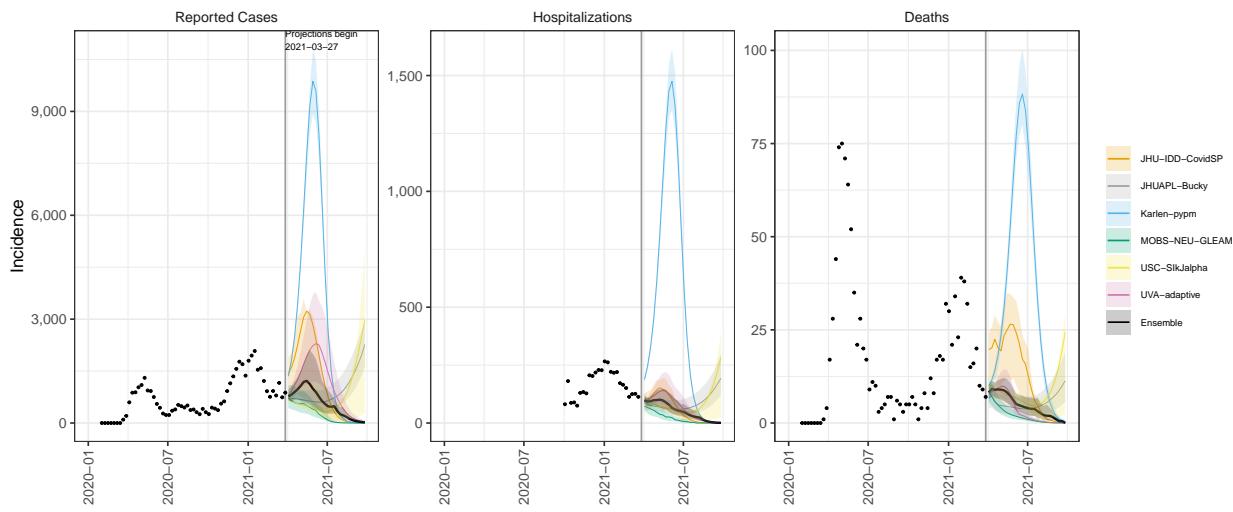
CT model variance & 50% projection intervals – Low vaccination, Moderate NPI compliance



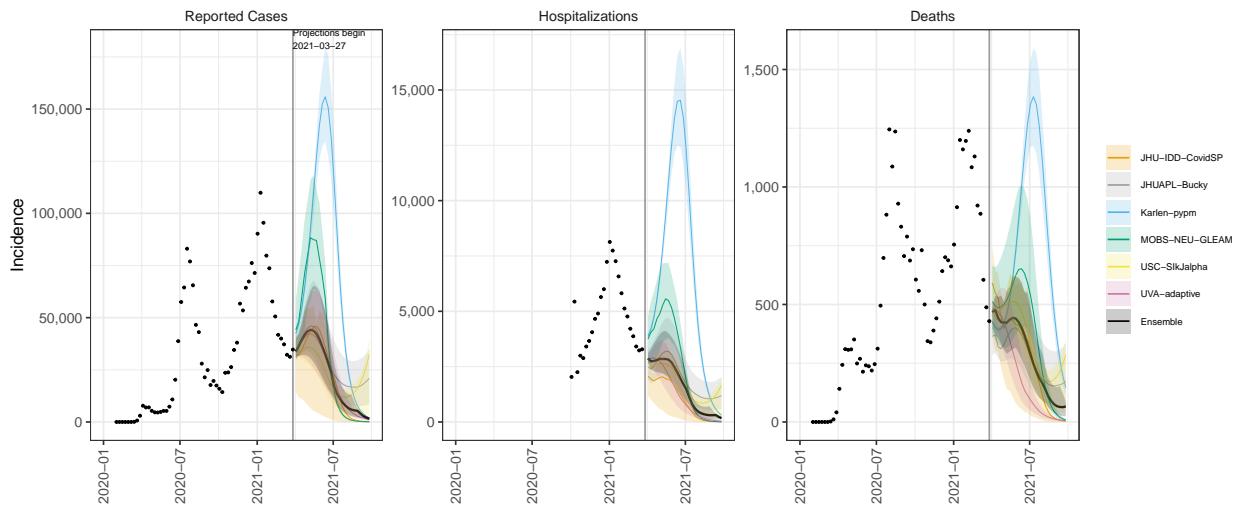
DE model variance & 50% projection intervals – Low vaccination, Moderate NPI compliance



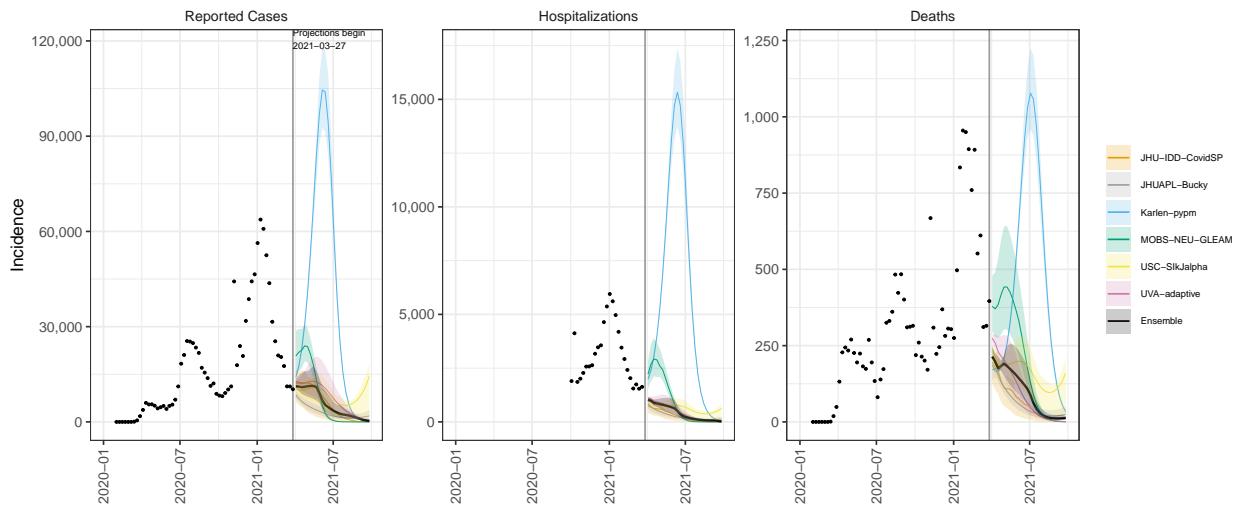
DC model variance & 50% projection intervals – Low vaccination, Moderate NPI compliance



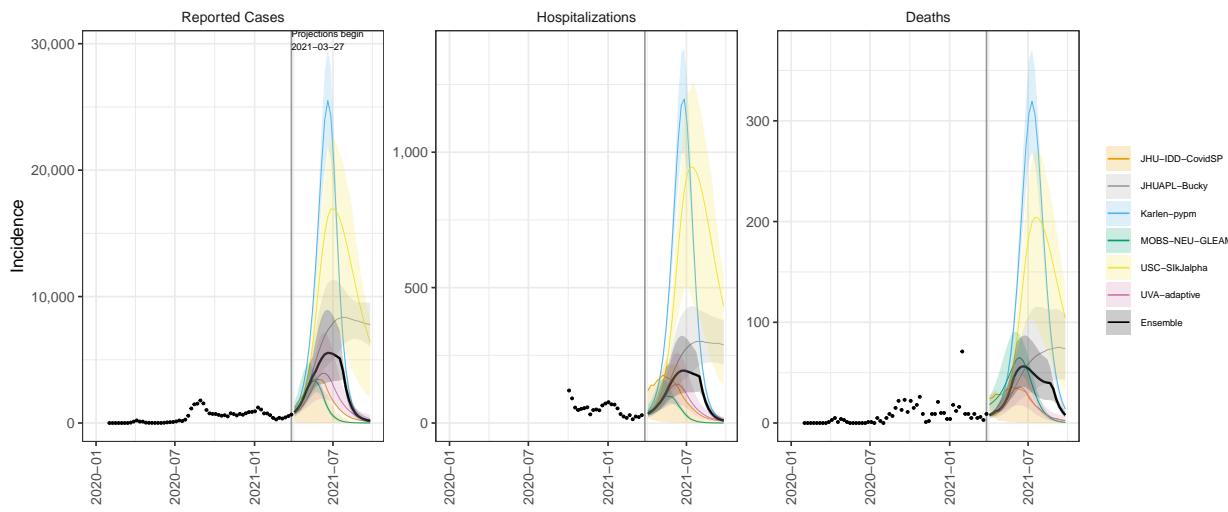
FL model variance & 50% projection intervals – Low vaccination, Moderate NPI compliance



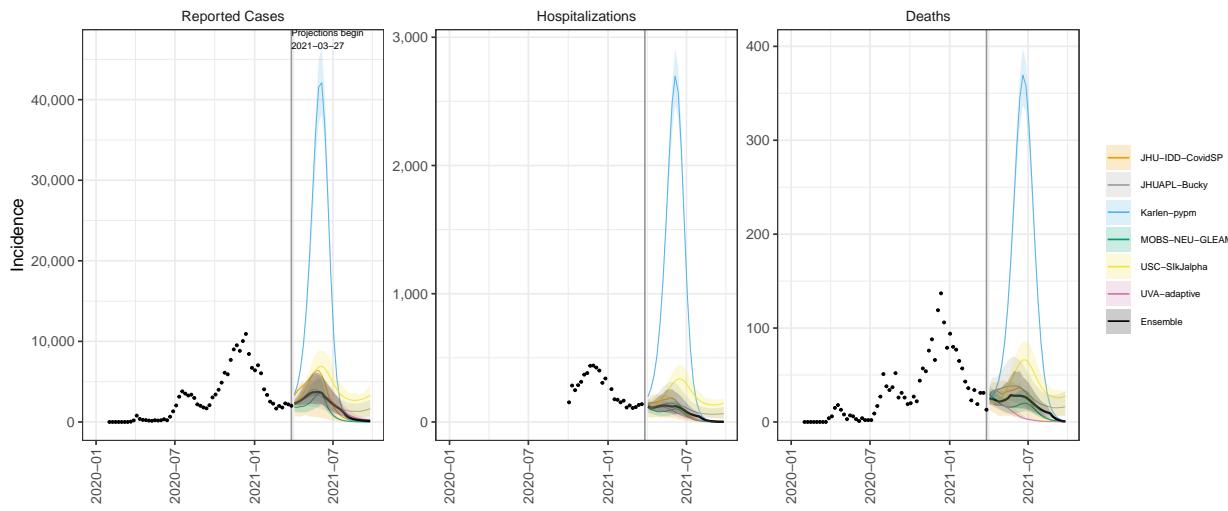
GA model variance & 50% projection intervals – Low vaccination, Moderate NPI compliance



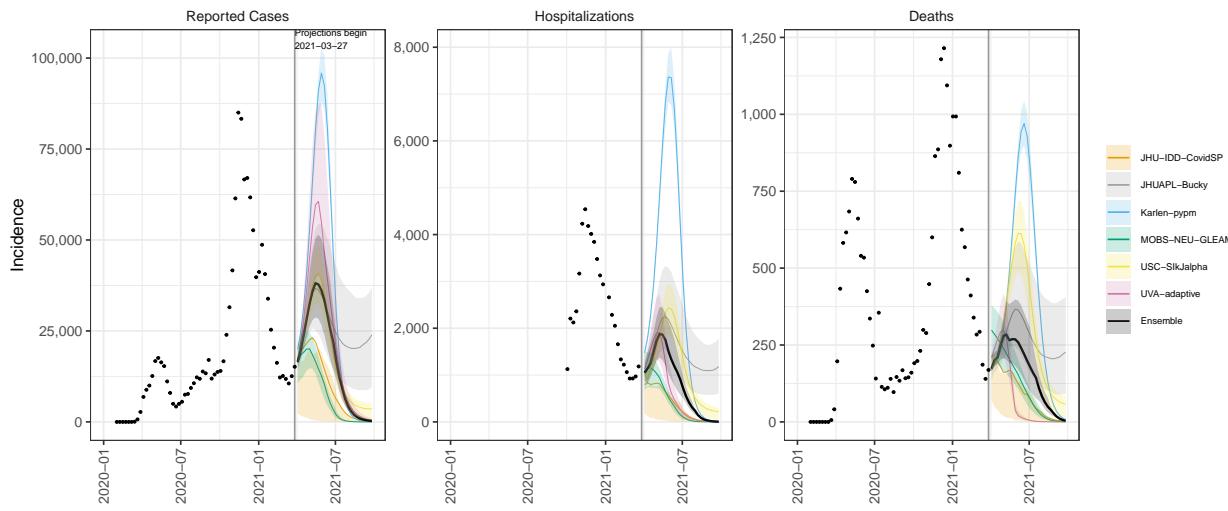
HI model variance & 50% projection intervals – Low vaccination, Moderate NPI compliance



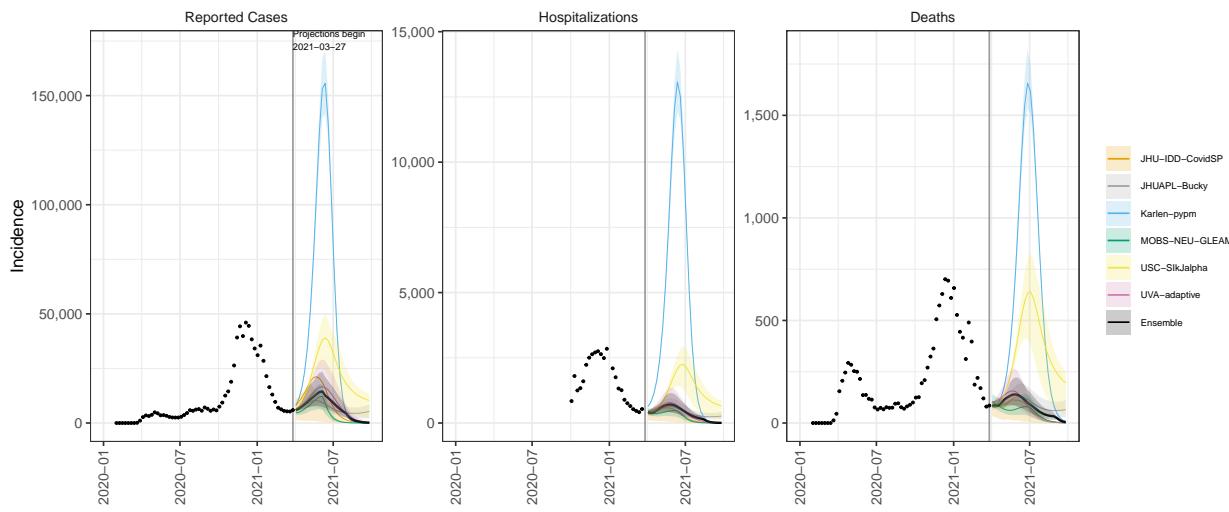
ID model variance & 50% projection intervals – Low vaccination, Moderate NPI compliance



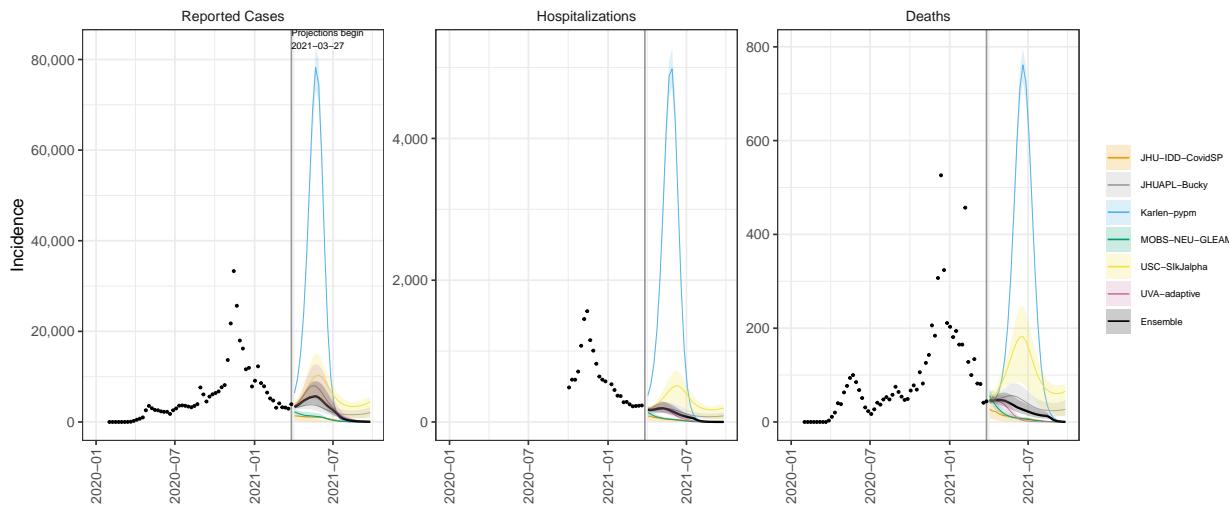
IL model variance & 50% projection intervals – Low vaccination, Moderate NPI compliance



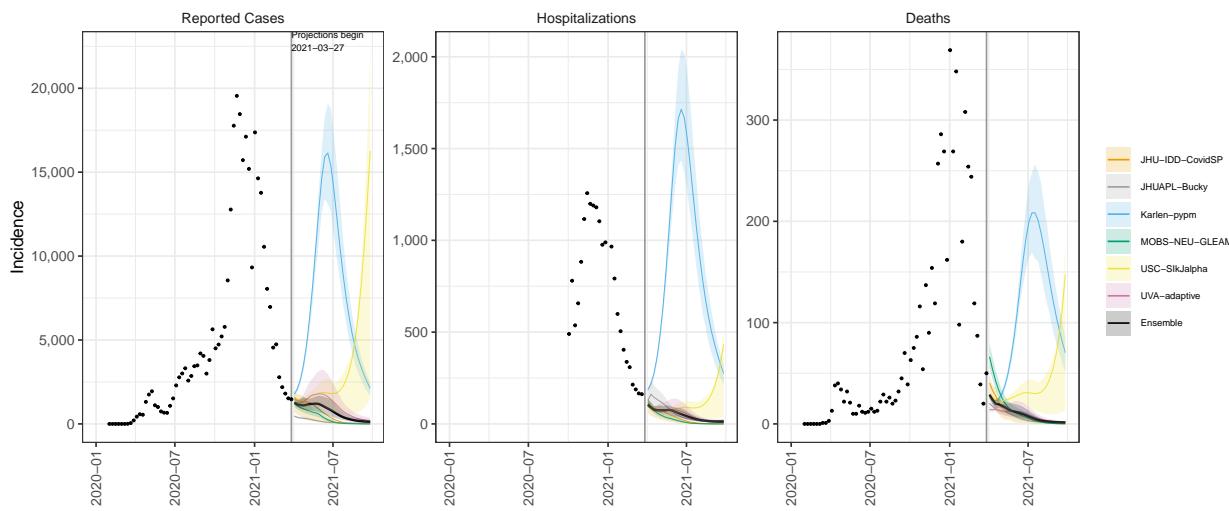
IN model variance & 50% projection intervals – Low vaccination, Moderate NPI compliance



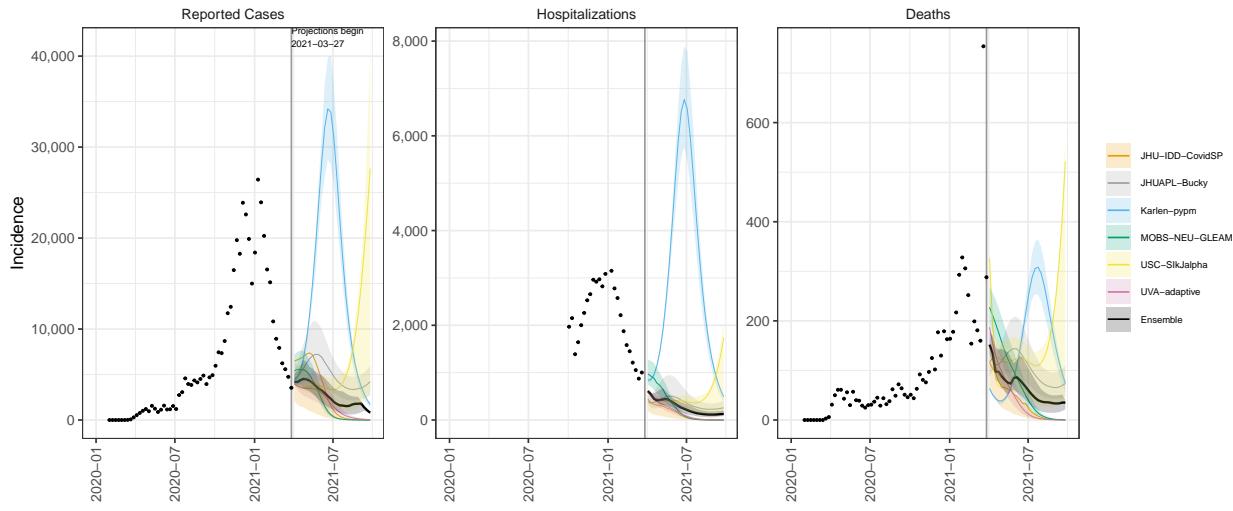
IA model variance & 50% projection intervals – Low vaccination, Moderate NPI compliance



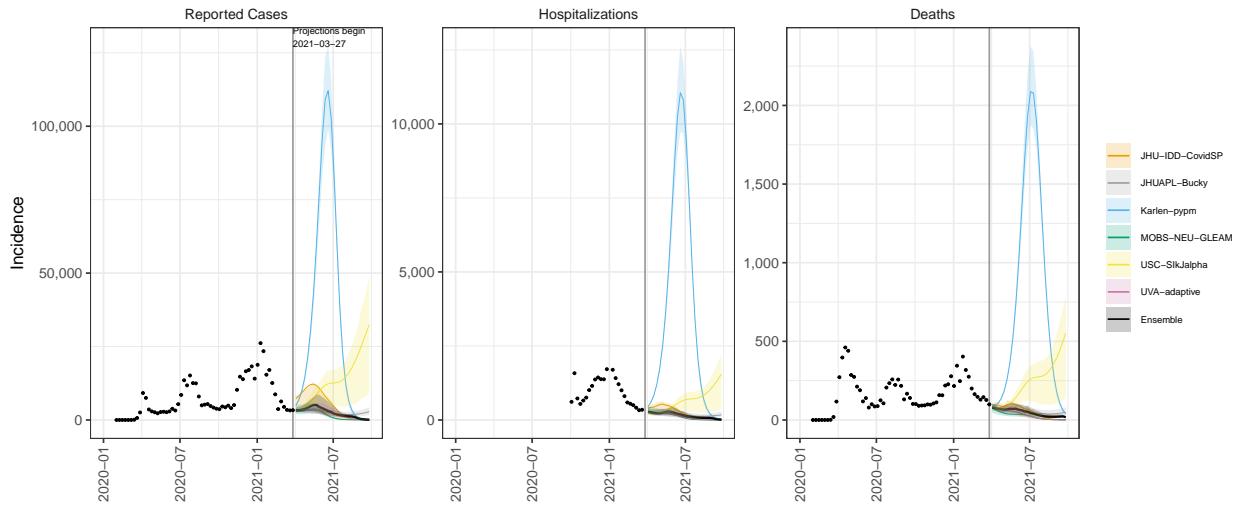
KS model variance & 50% projection intervals – Low vaccination, Moderate NPI compliance



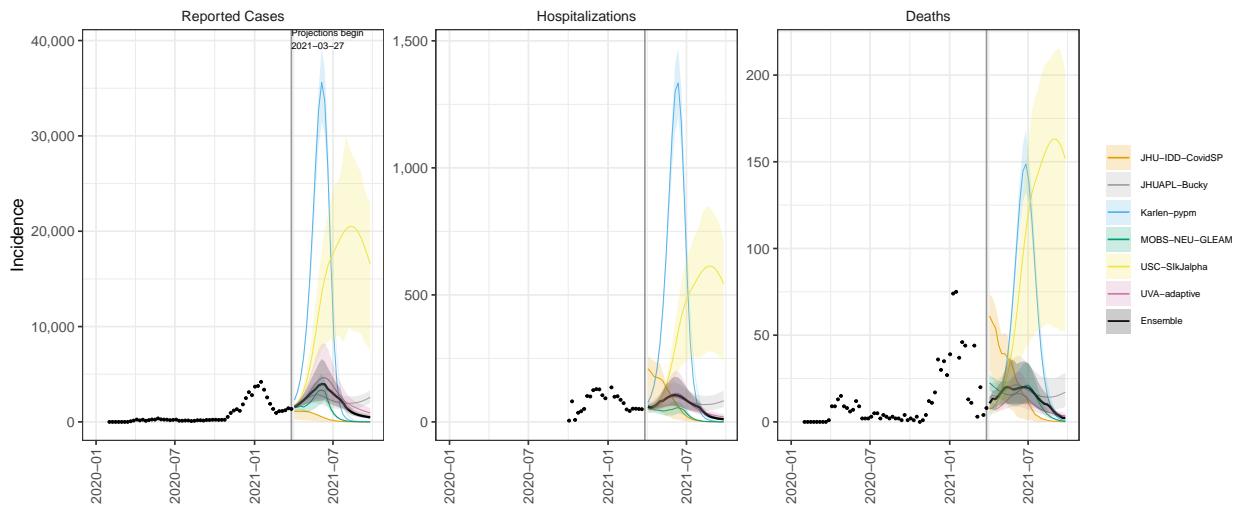
KY model variance & 50% projection intervals – Low vaccination, Moderate NPI compliance



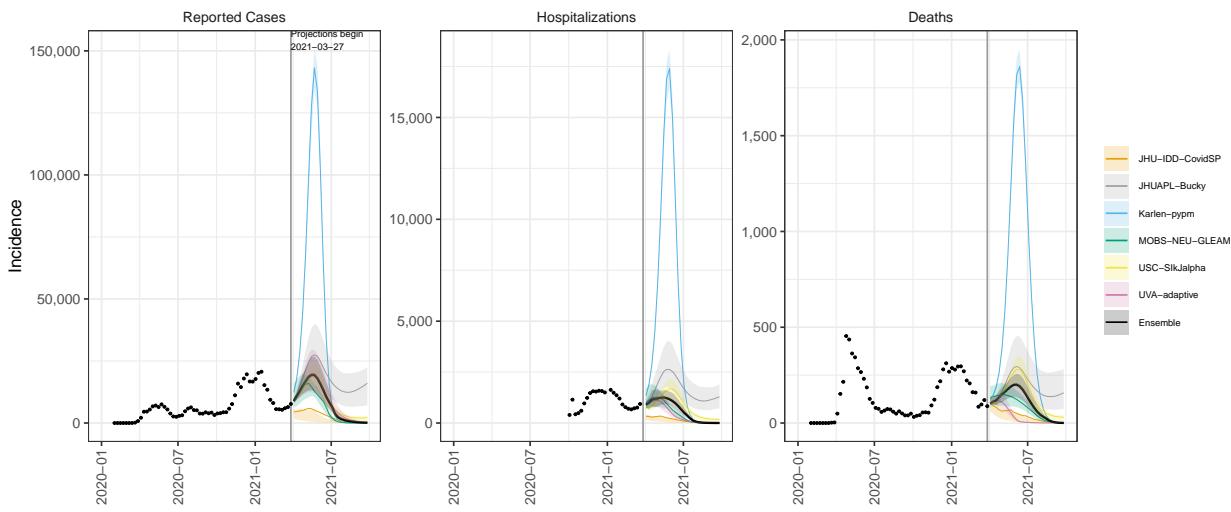
LA model variance & 50% projection intervals – Low vaccination, Moderate NPI compliance



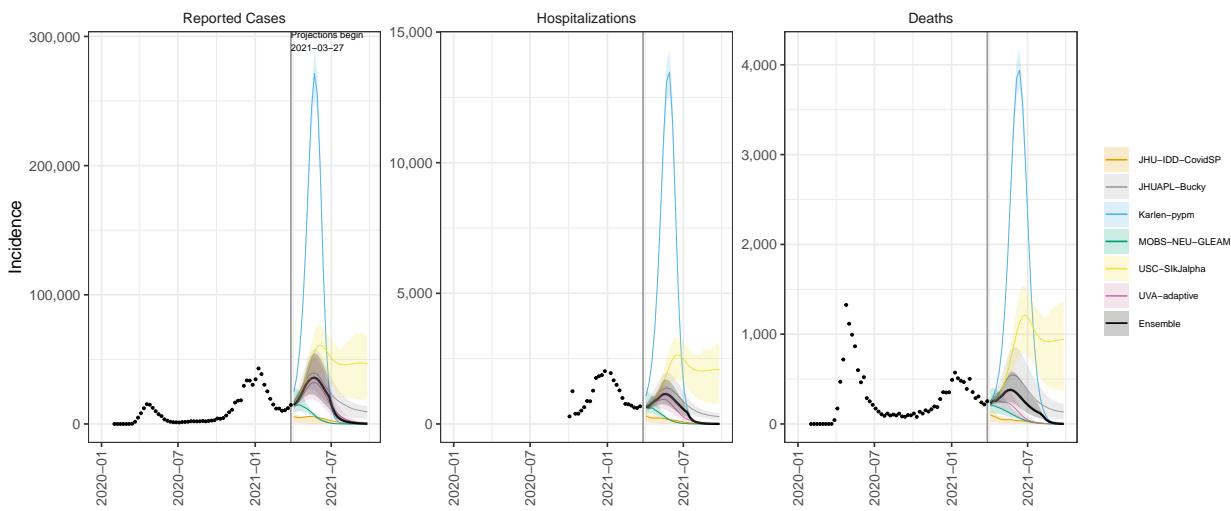
ME model variance & 50% projection intervals – Low vaccination, Moderate NPI compliance



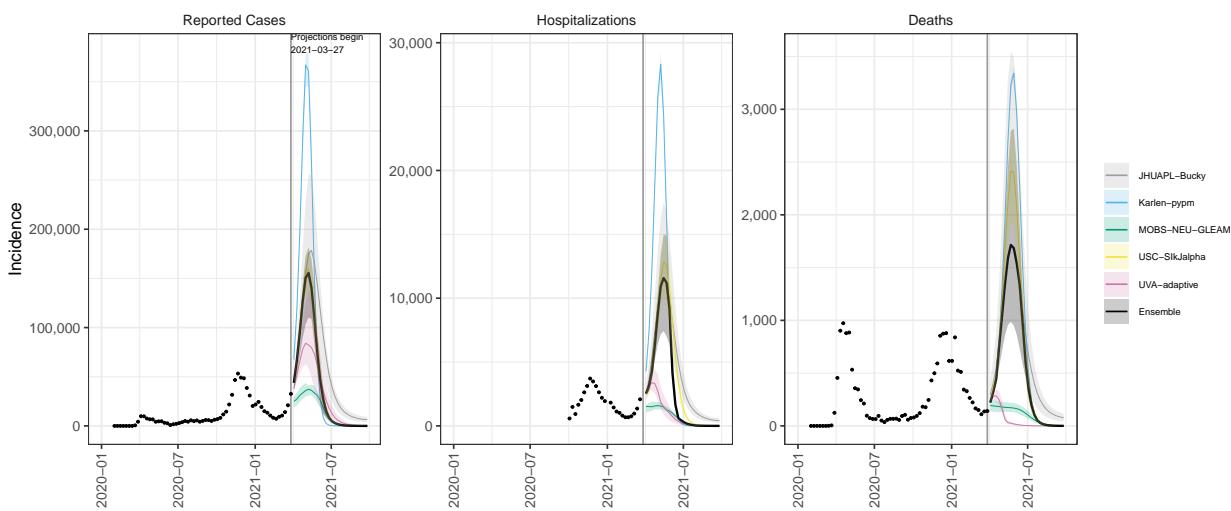
MD model variance & 50% projection intervals – Low vaccination, Moderate NPI compliance



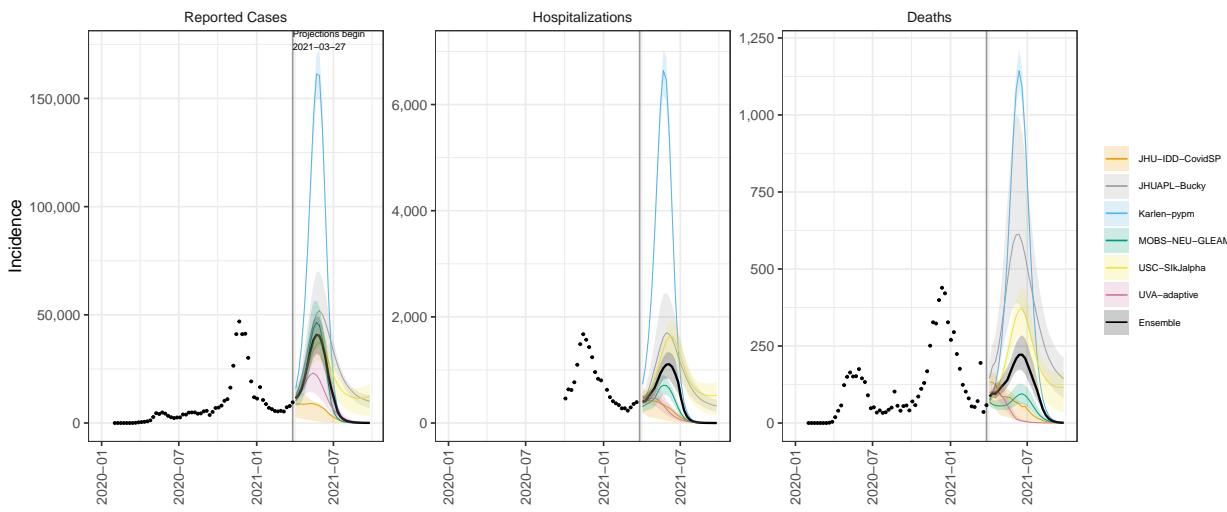
MA model variance & 50% projection intervals – Low vaccination, Moderate NPI compliance



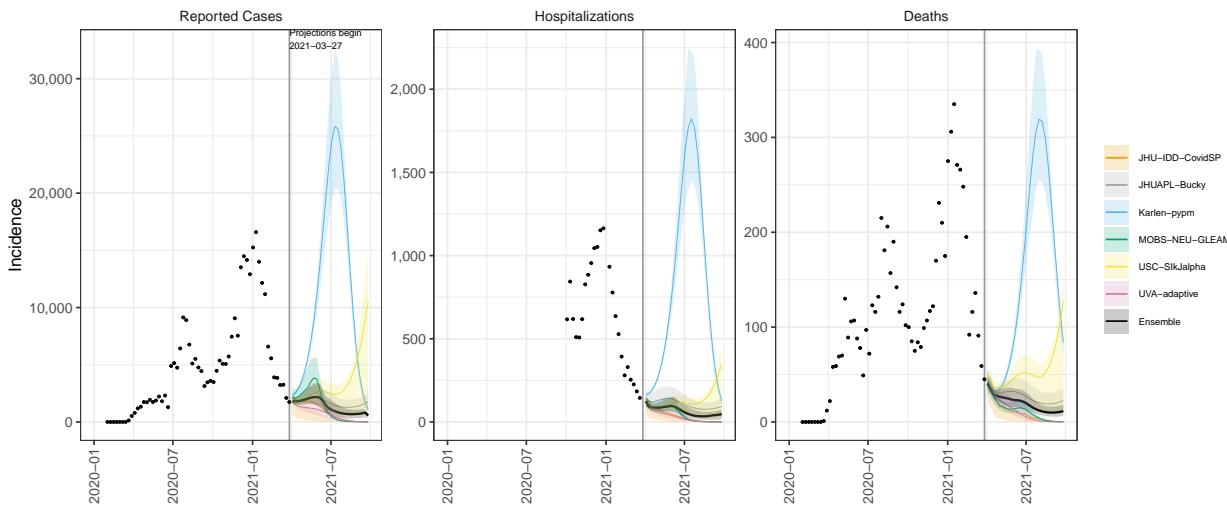
MI model variance & 50% projection intervals – Low vaccination, Moderate NPI compliance



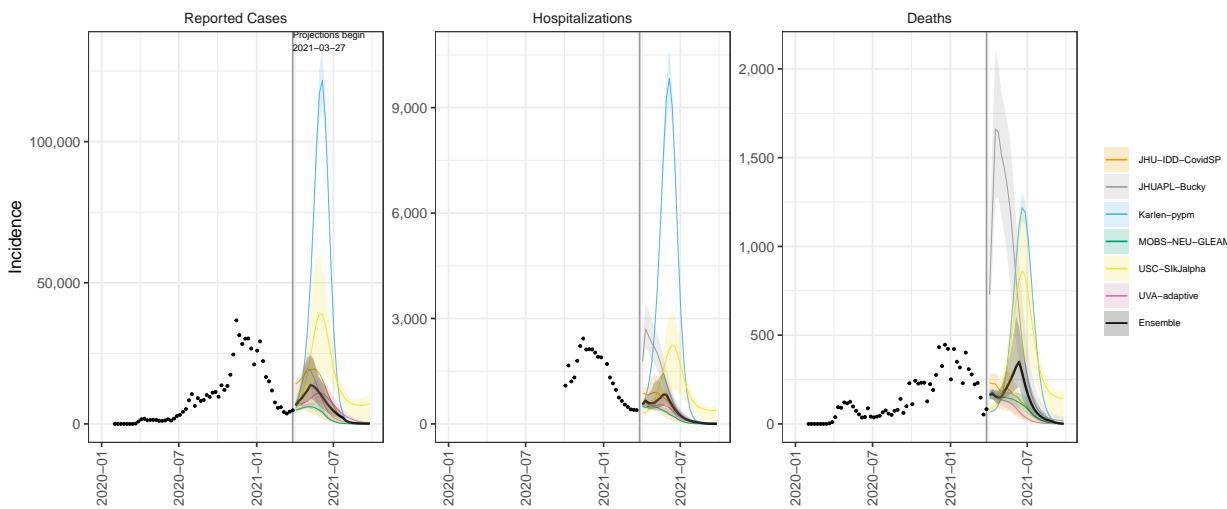
MN model variance & 50% projection intervals – Low vaccination, Moderate NPI compliance



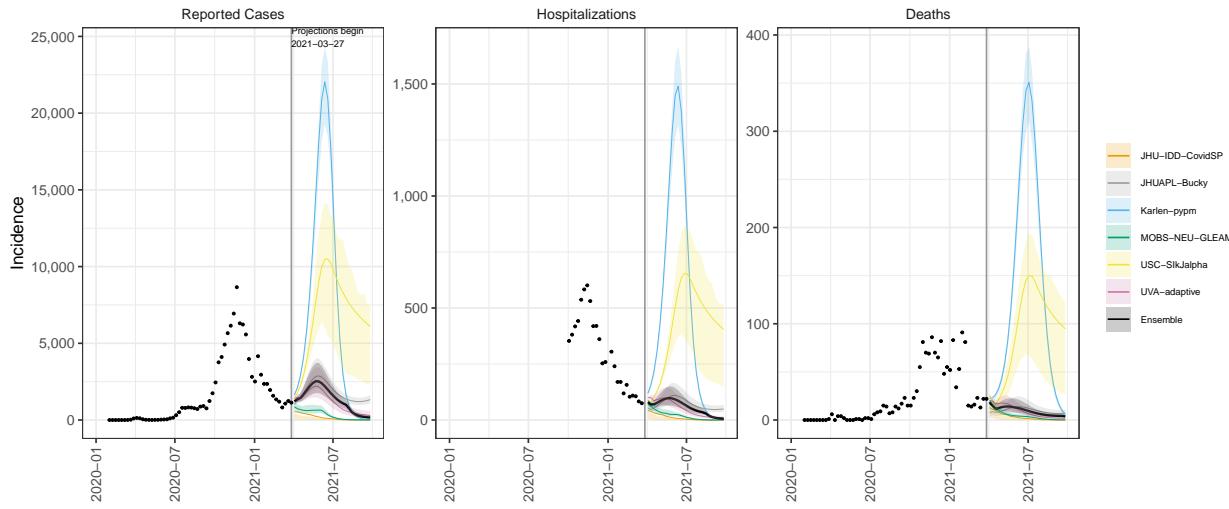
MS model variance & 50% projection intervals – Low vaccination, Moderate NPI compliance



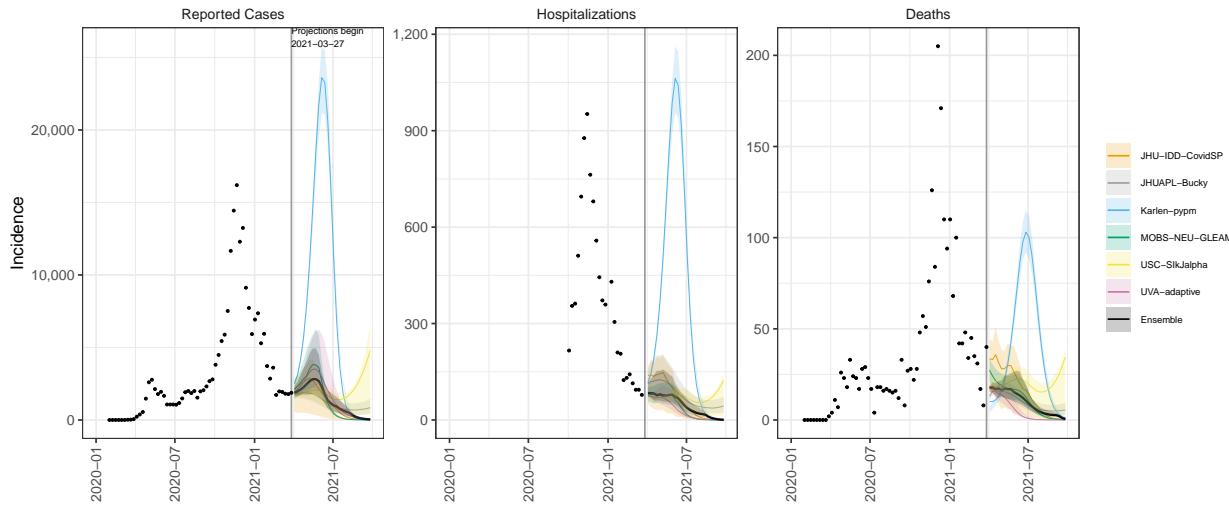
MO model variance & 50% projection intervals – Low vaccination, Moderate NPI compliance



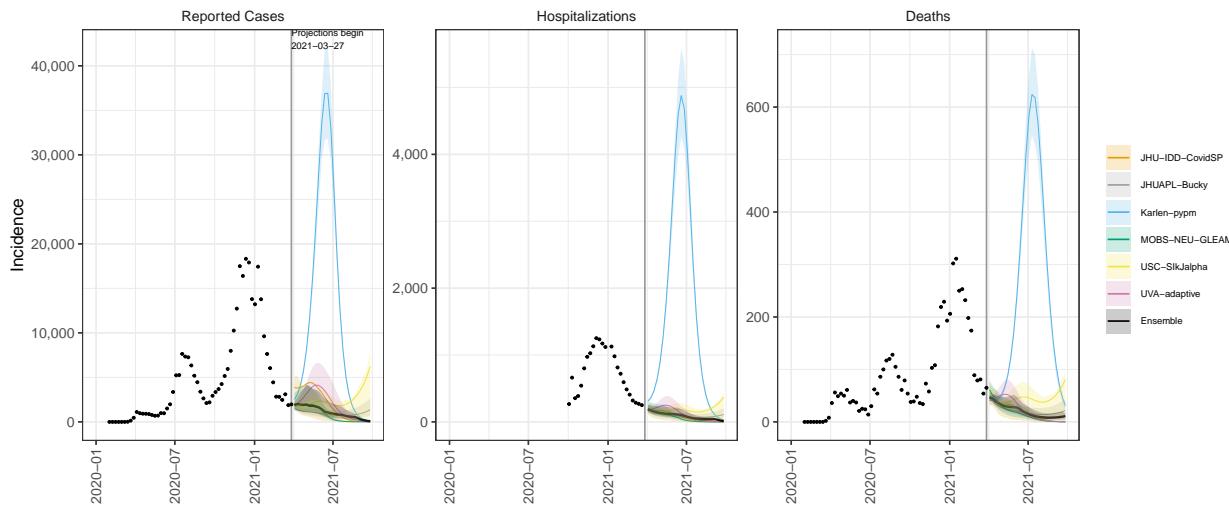
MT model variance & 50% projection intervals – Low vaccination, Moderate NPI compliance



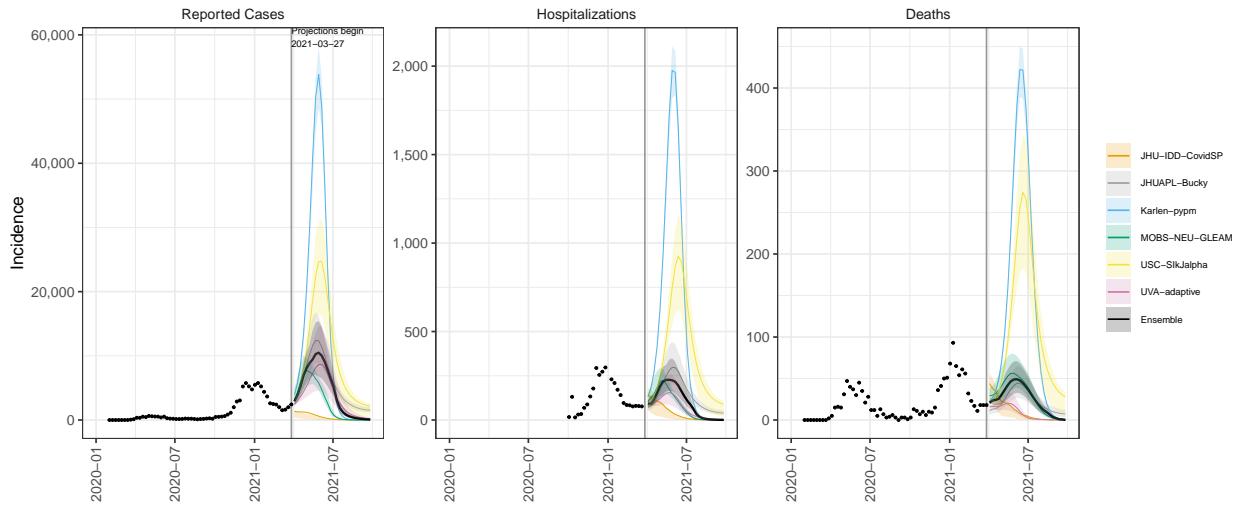
NE model variance & 50% projection intervals – Low vaccination, Moderate NPI compliance



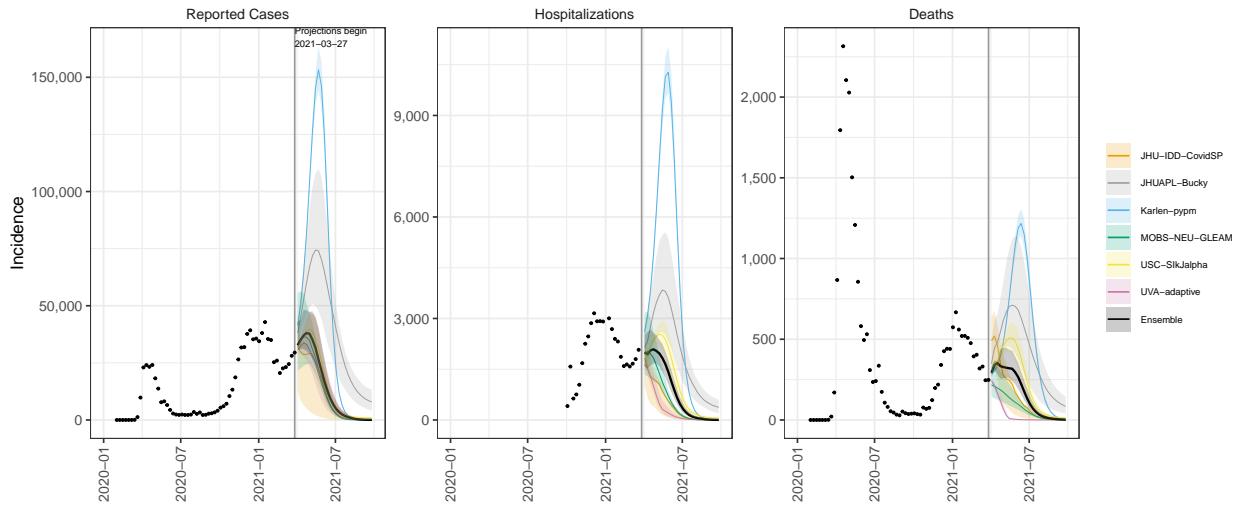
NV model variance & 50% projection intervals – Low vaccination, Moderate NPI compliance



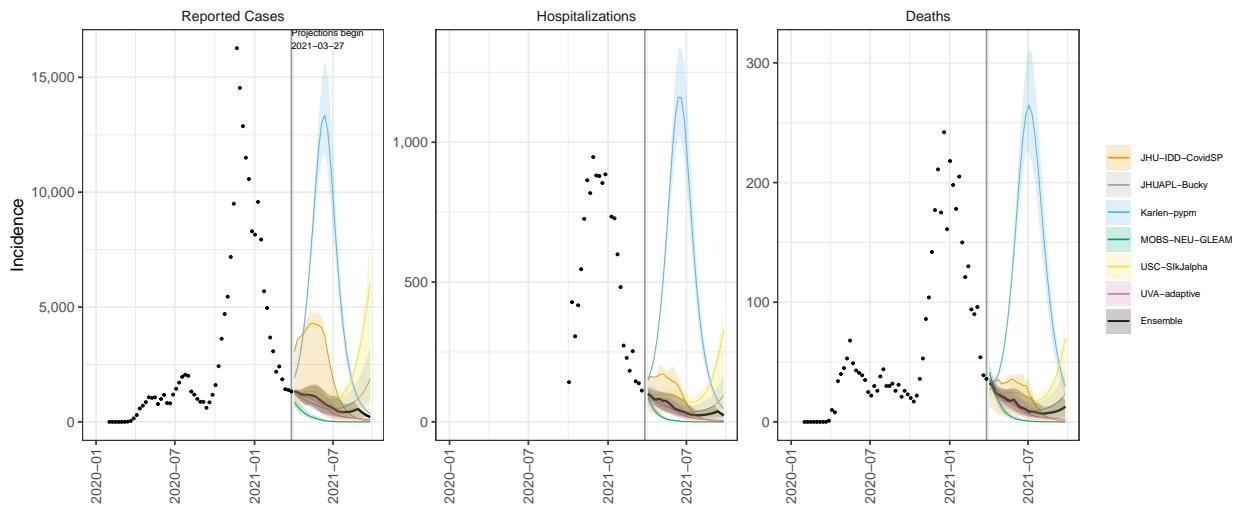
NH model variance & 50% projection intervals – Low vaccination, Moderate NPI compliance



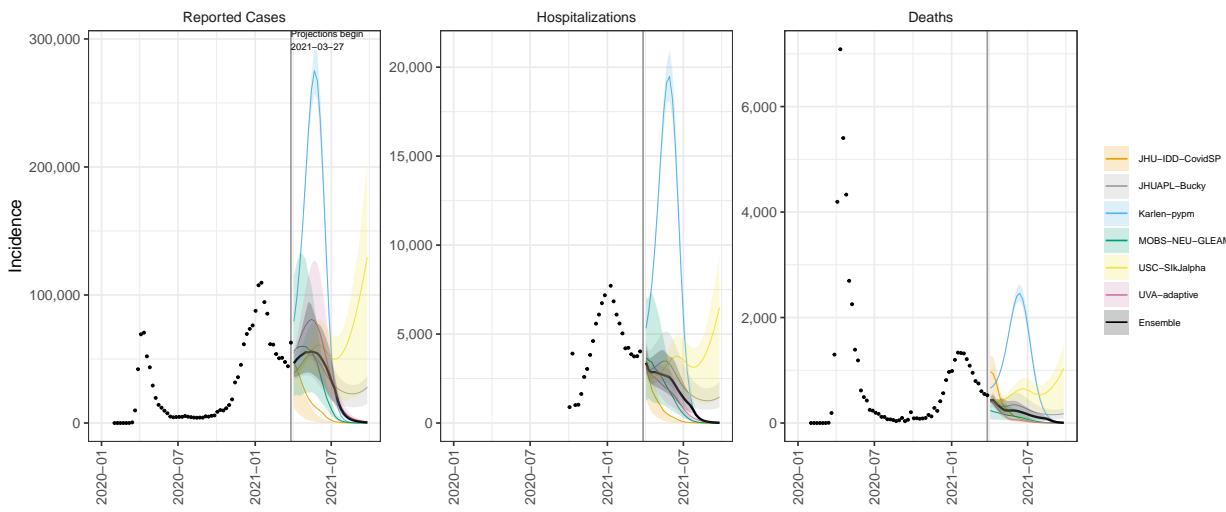
NJ model variance & 50% projection intervals – Low vaccination, Moderate NPI compliance



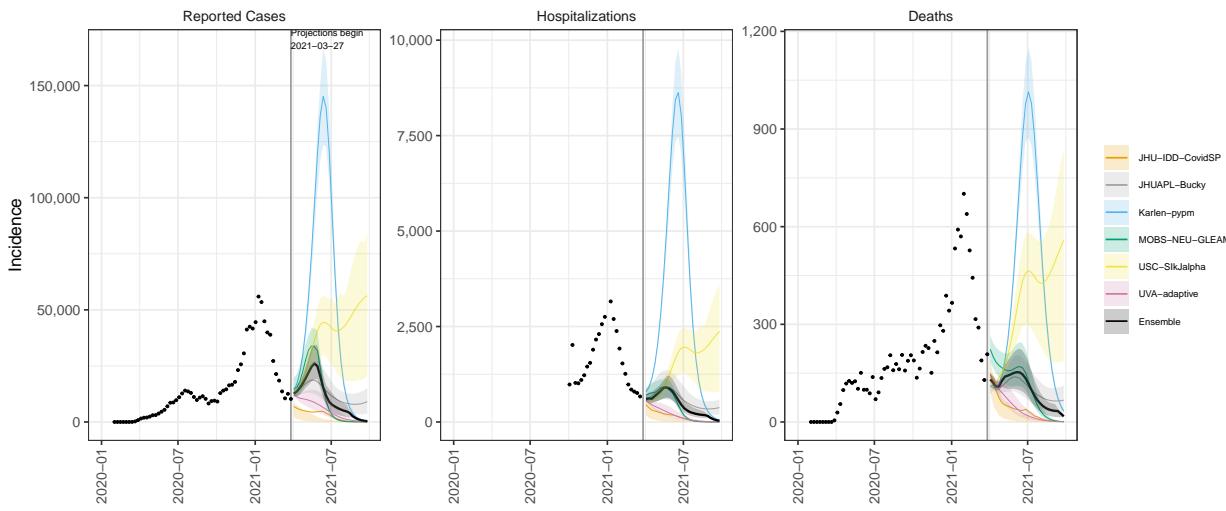
NM model variance & 50% projection intervals – Low vaccination, Moderate NPI compliance



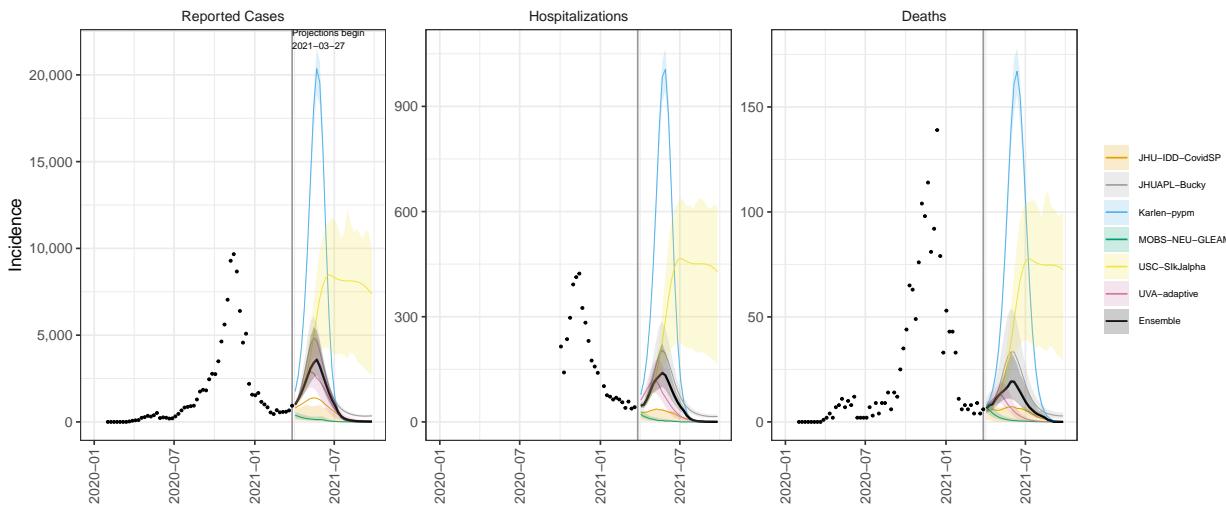
NY model variance & 50% projection intervals – Low vaccination, Moderate NPI compliance



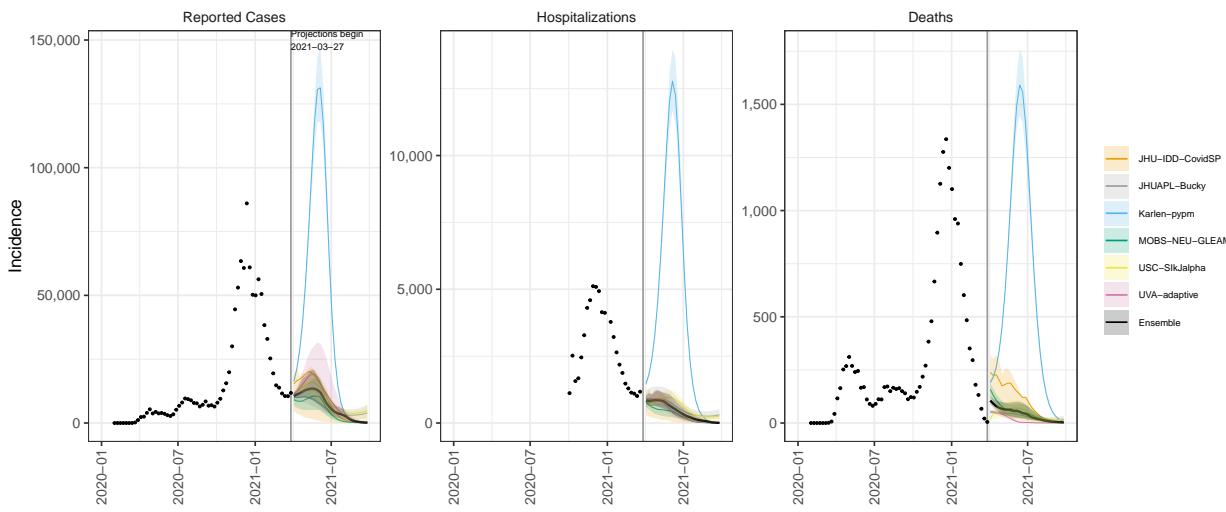
NC model variance & 50% projection intervals – Low vaccination, Moderate NPI compliance



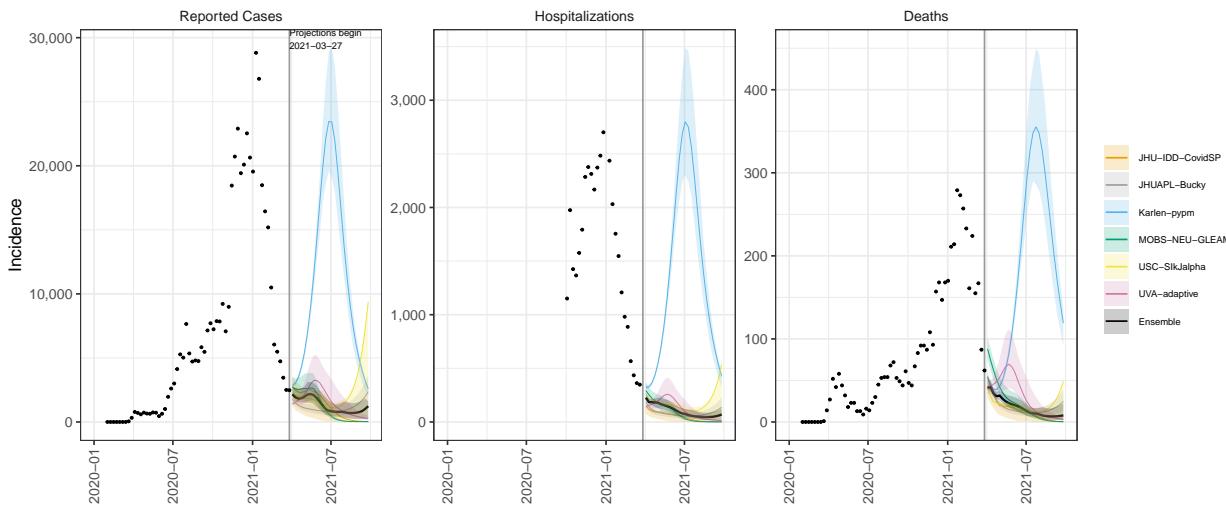
ND model variance & 50% projection intervals – Low vaccination, Moderate NPI compliance



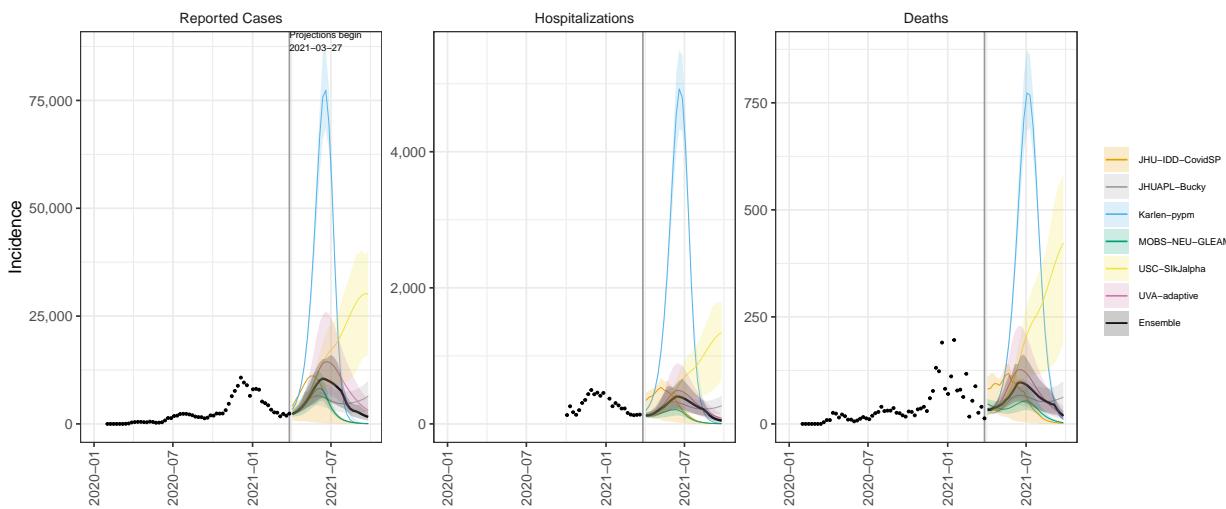
OH model variance & 50% projection intervals – Low vaccination, Moderate NPI compliance



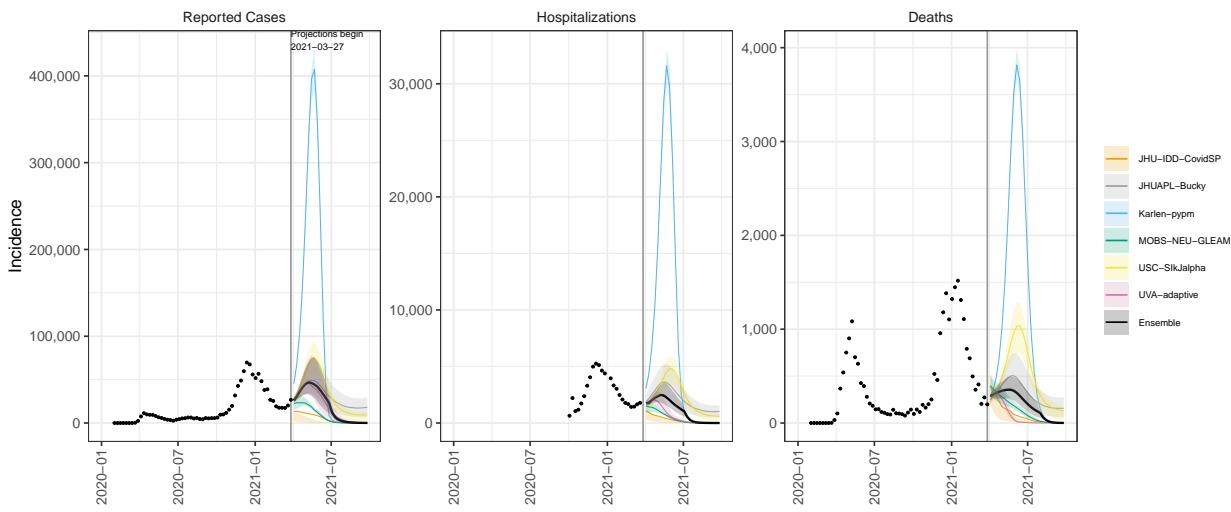
OK model variance & 50% projection intervals – Low vaccination, Moderate NPI compliance



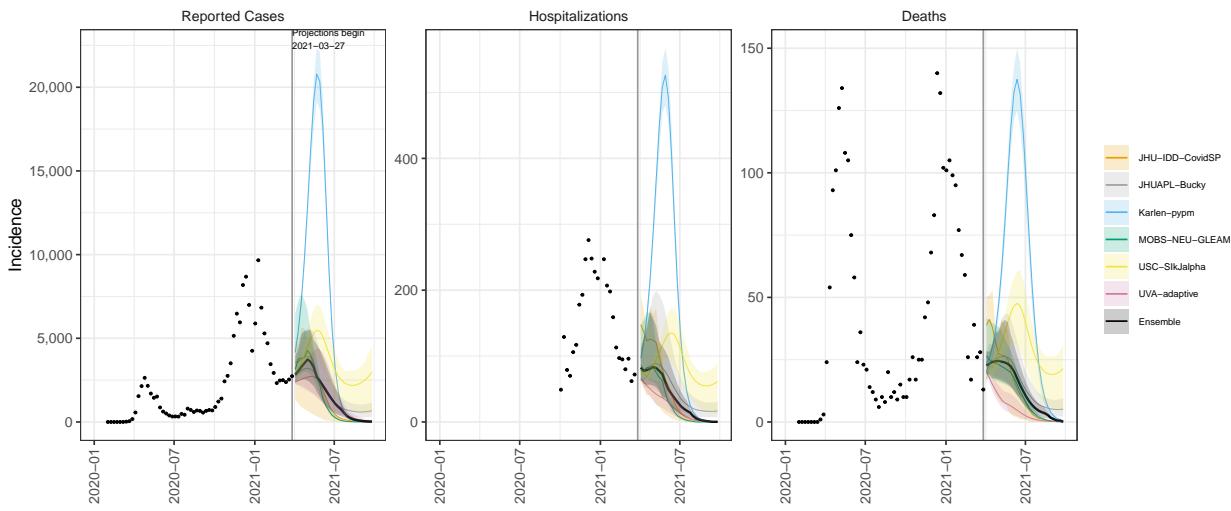
OR model variance & 50% projection intervals – Low vaccination, Moderate NPI compliance



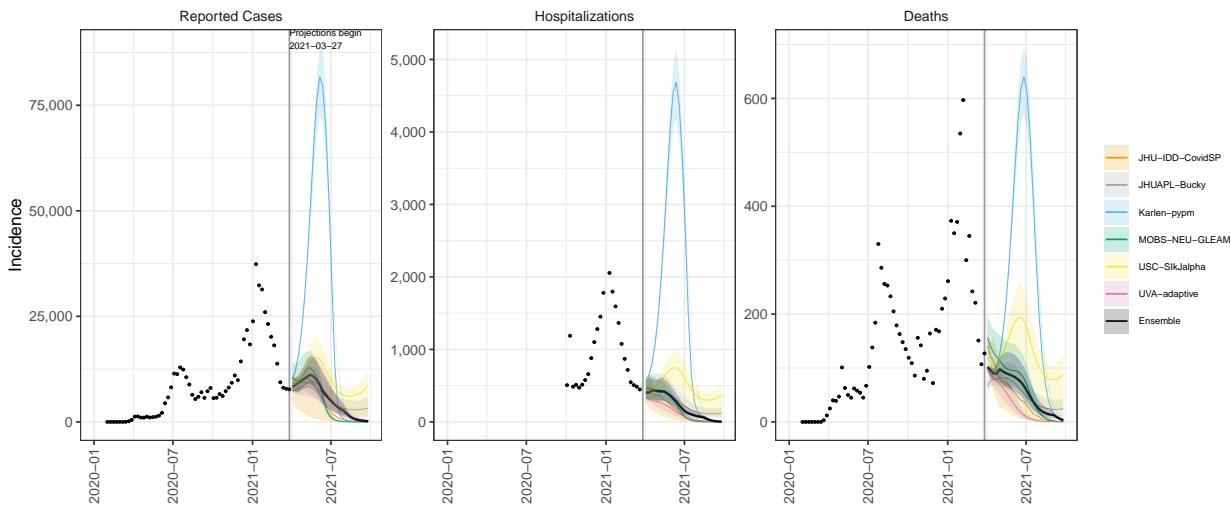
PA model variance & 50% projection intervals – Low vaccination, Moderate NPI compliance



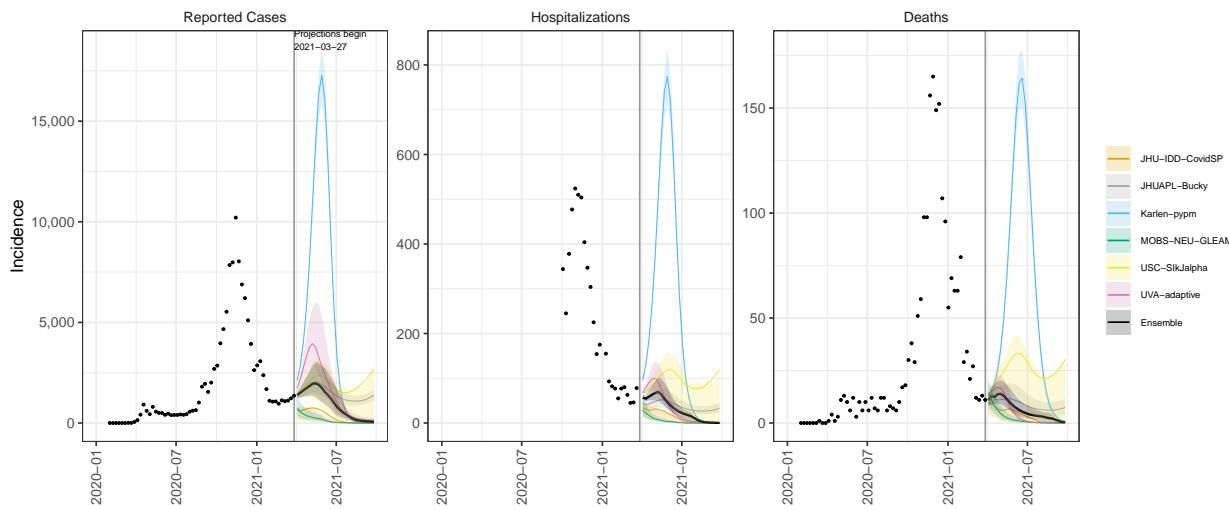
RI model variance & 50% projection intervals – Low vaccination, Moderate NPI compliance



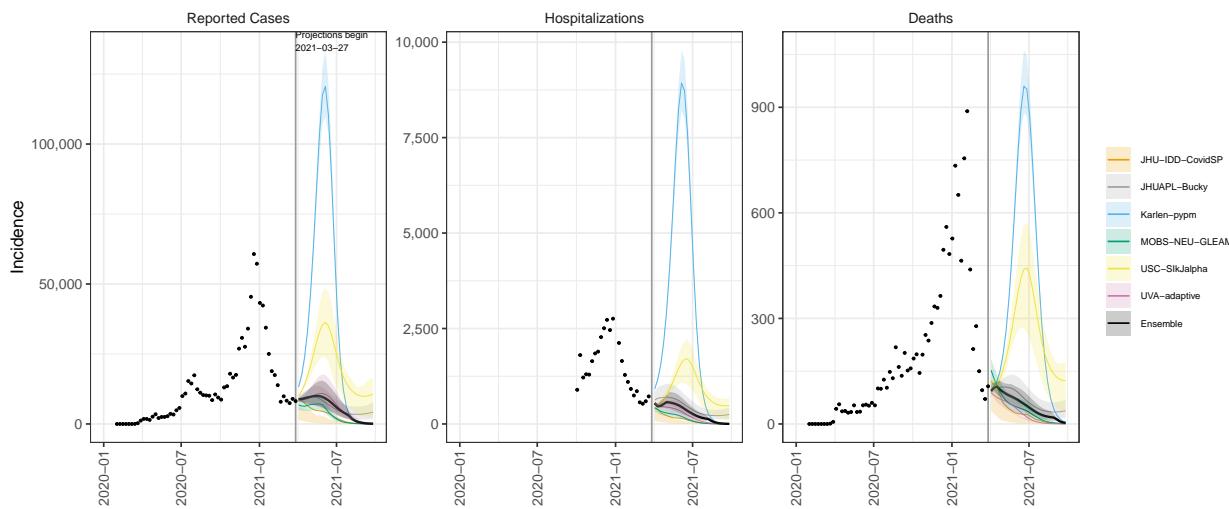
SC model variance & 50% projection intervals – Low vaccination, Moderate NPI compliance



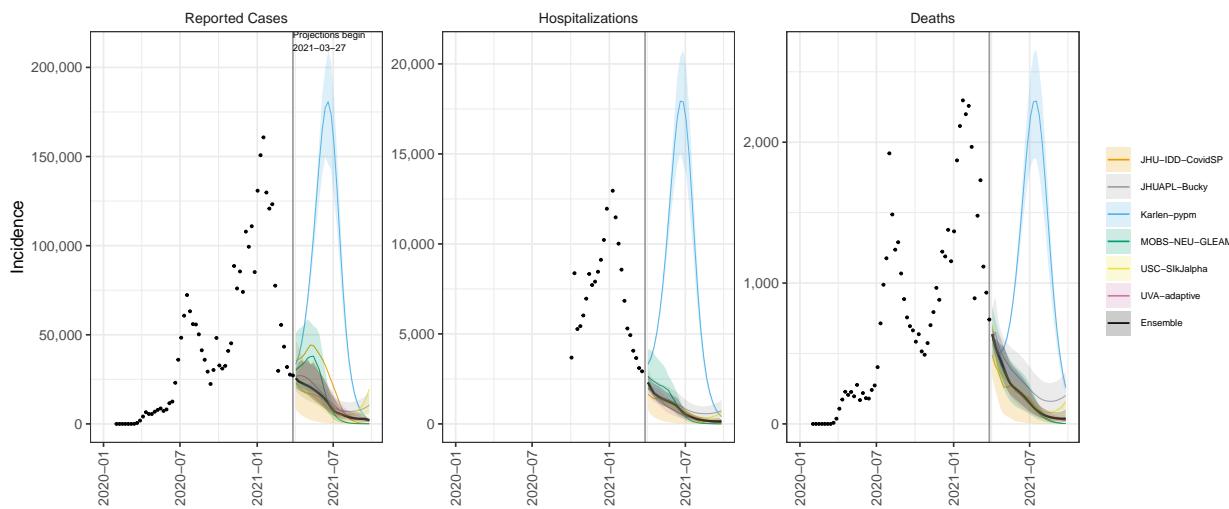
SD model variance & 50% projection intervals – Low vaccination, Moderate NPI compliance



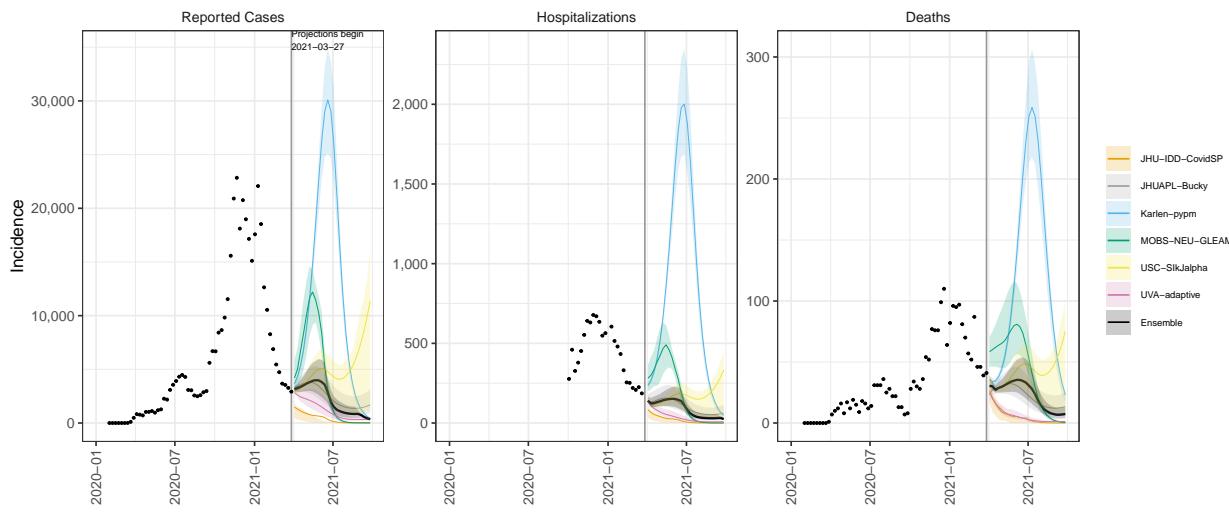
TN model variance & 50% projection intervals – Low vaccination, Moderate NPI compliance



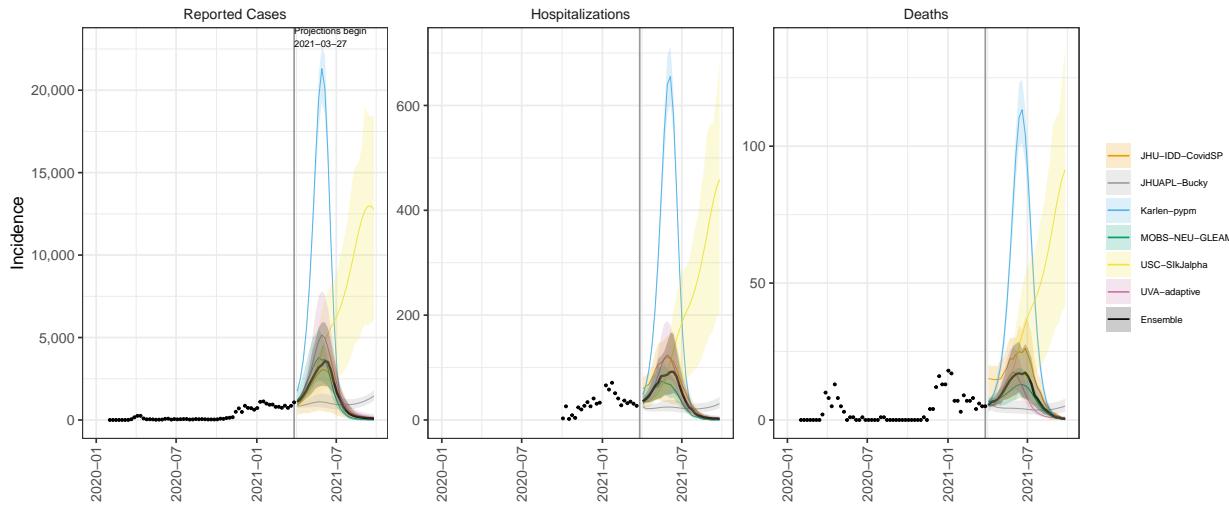
TX model variance & 50% projection intervals – Low vaccination, Moderate NPI compliance



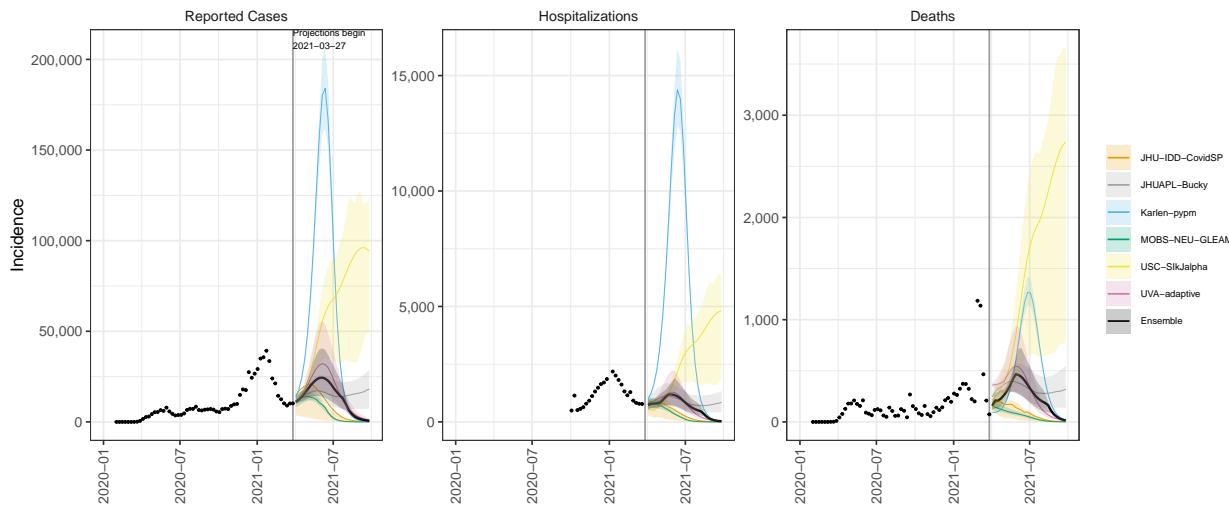
UT model variance & 50% projection intervals – Low vaccination, Moderate NPI compliance



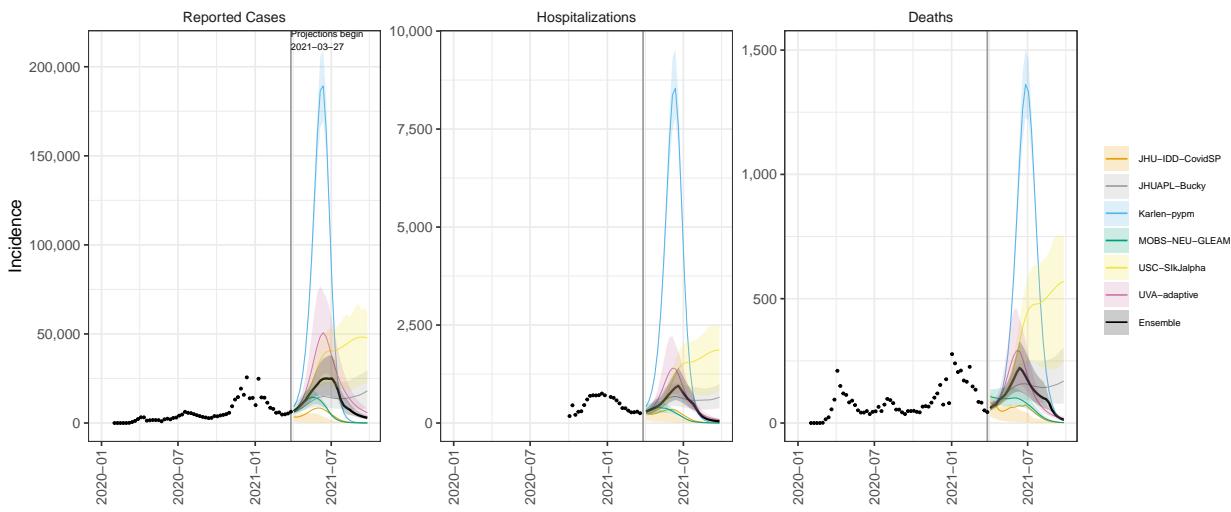
VT model variance & 50% projection intervals – Low vaccination, Moderate NPI compliance



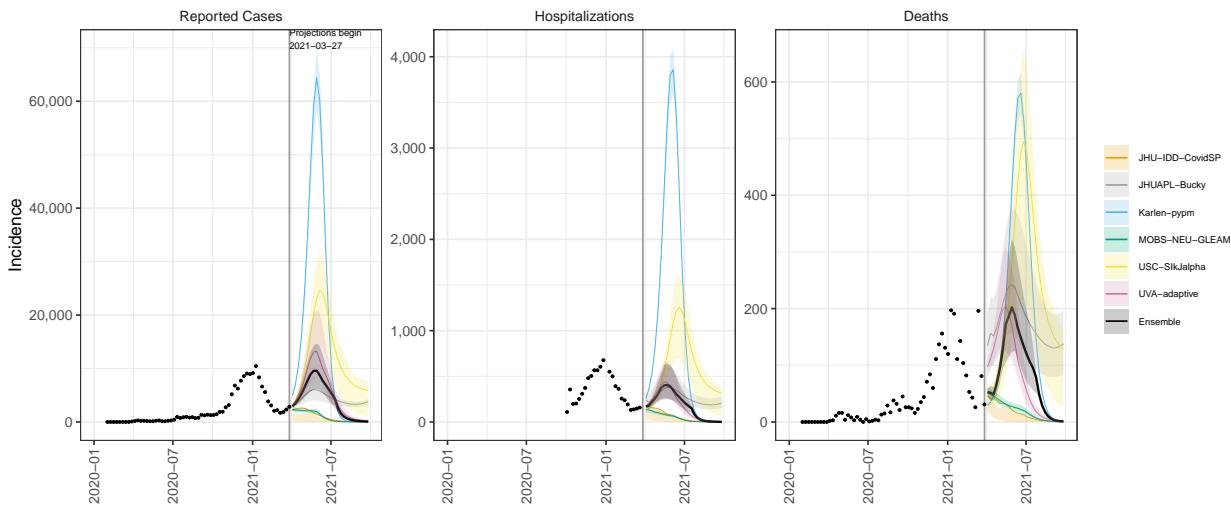
VA model variance & 50% projection intervals – Low vaccination, Moderate NPI compliance



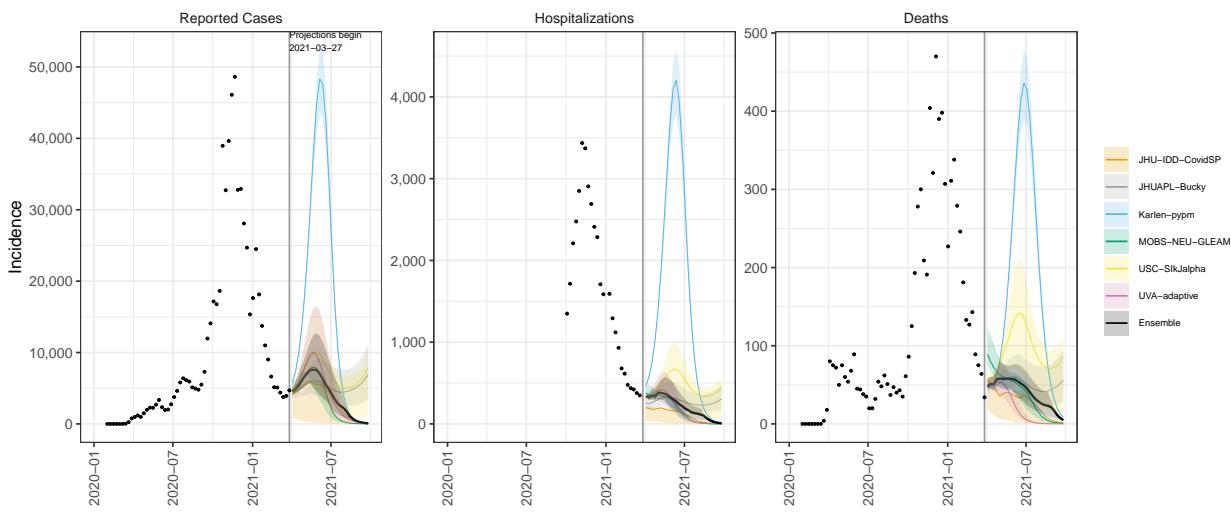
WA model variance & 50% projection intervals – Low vaccination, Moderate NPI compliance



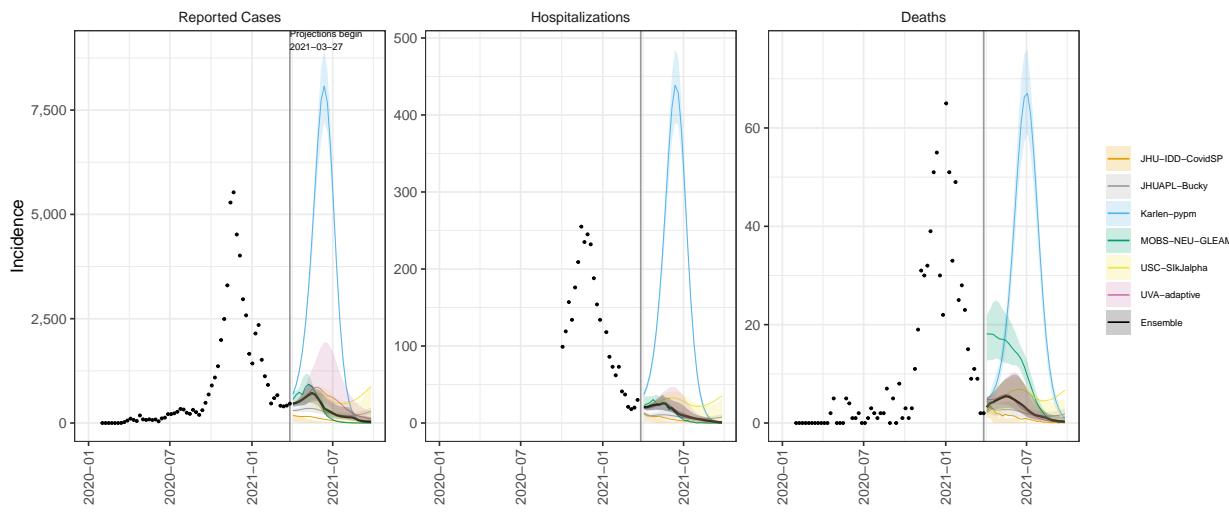
WV model variance & 50% projection intervals – Low vaccination, Moderate NPI compliance



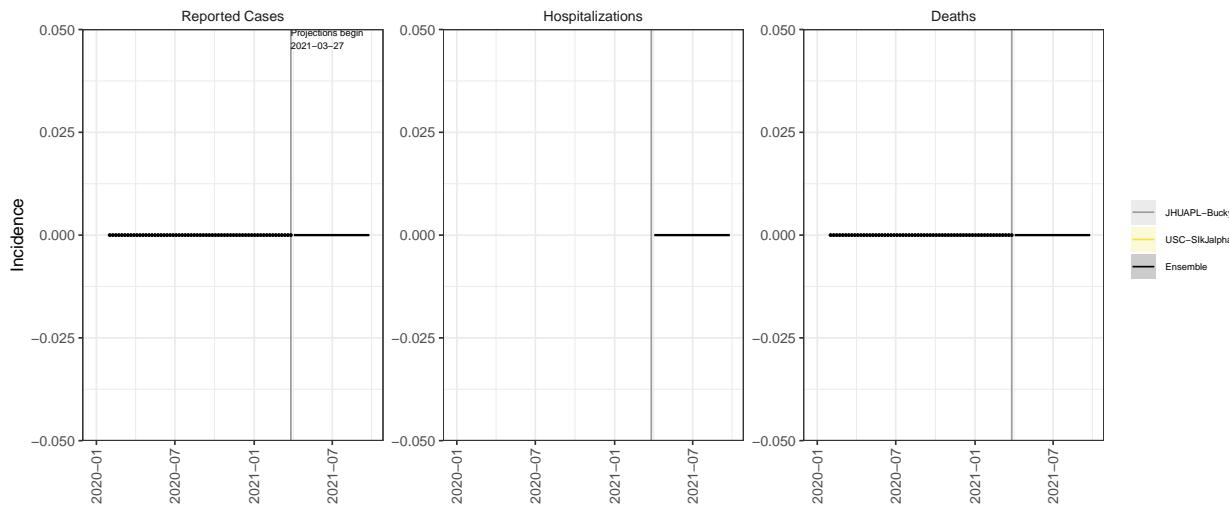
WI model variance & 50% projection intervals – Low vaccination, Moderate NPI compliance



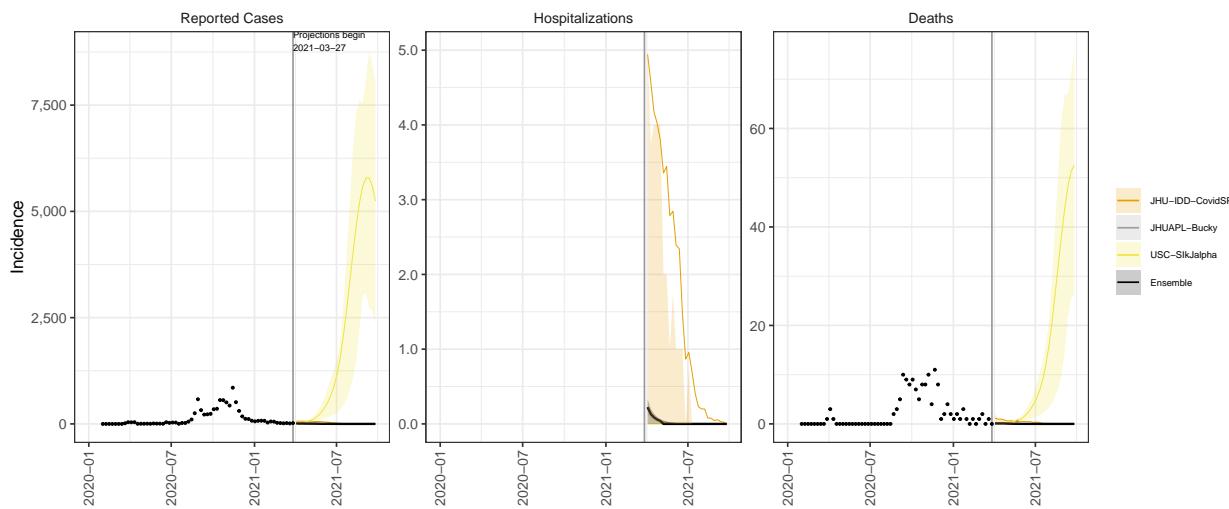
WY model variance & 50% projection intervals – Low vaccination, Moderate NPI compliance



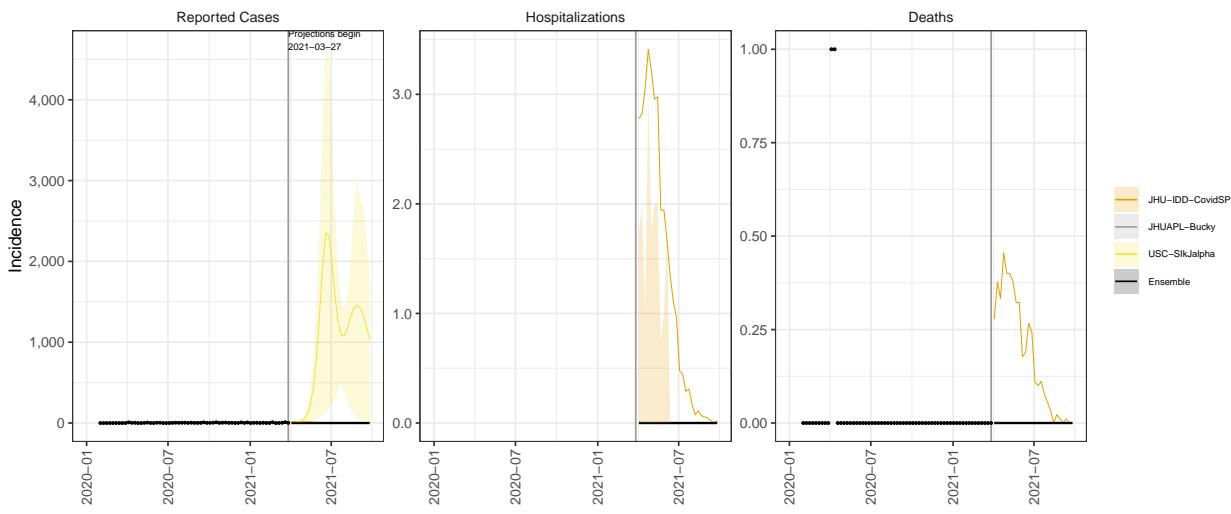
AS model variance & 50% projection intervals – Low vaccination, Moderate NPI compliance



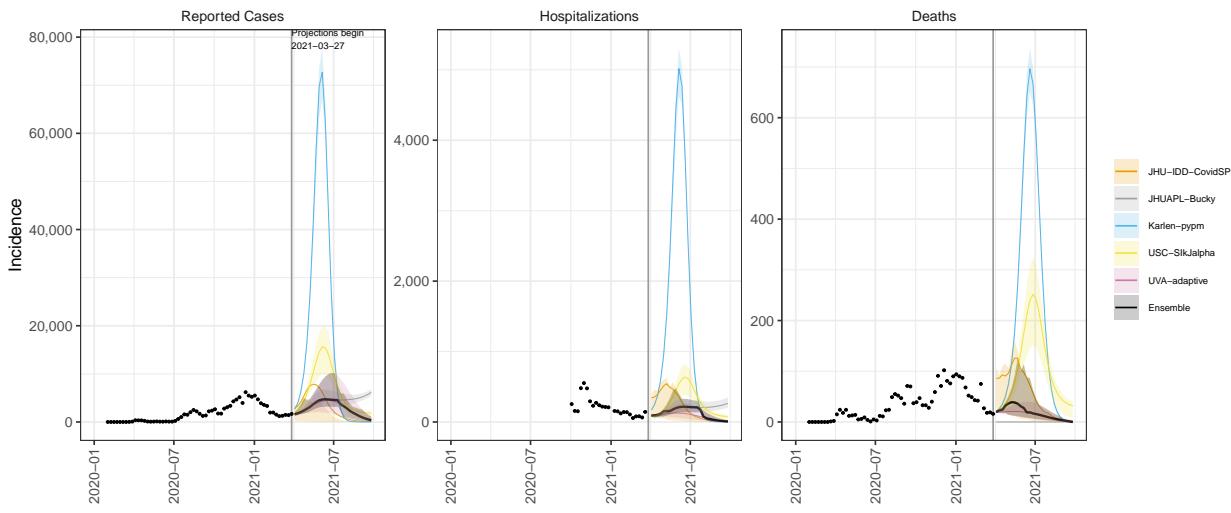
GU model variance & 50% projection intervals – Low vaccination, Moderate NPI compliance



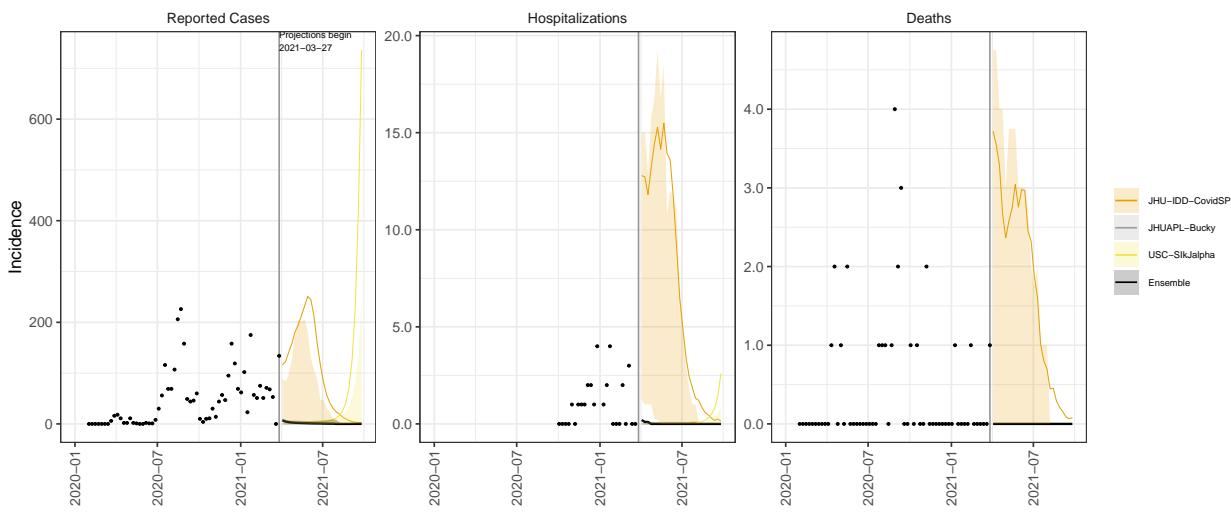
MP model variance & 50% projection intervals – Low vaccination, Moderate NPI compliance



PR model variance & 50% projection intervals – Low vaccination, Moderate NPI compliance

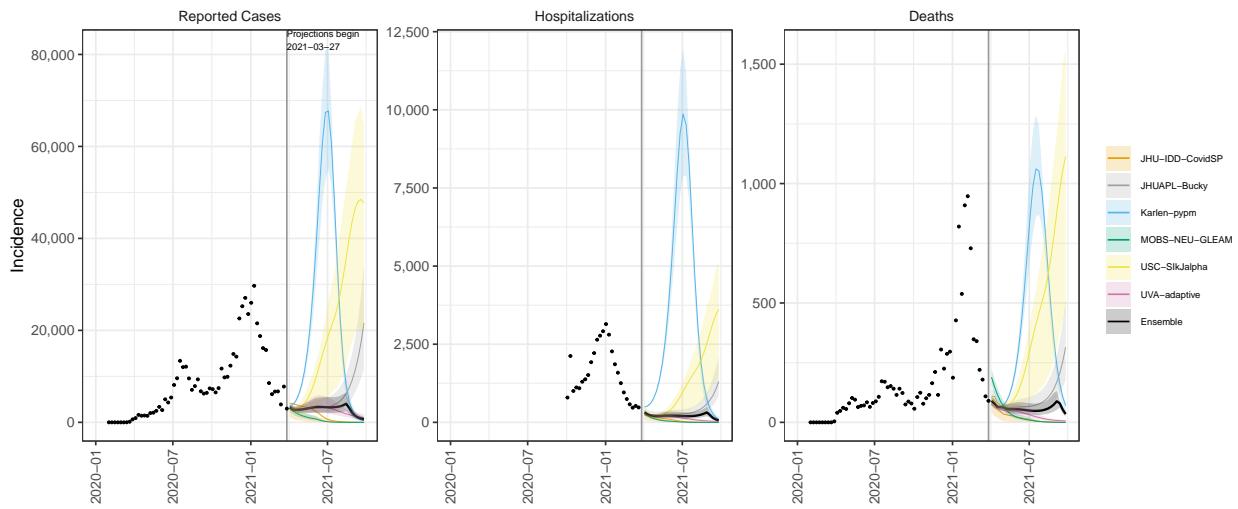


VI model variance & 50% projection intervals – Low vaccination, Moderate NPI compliance

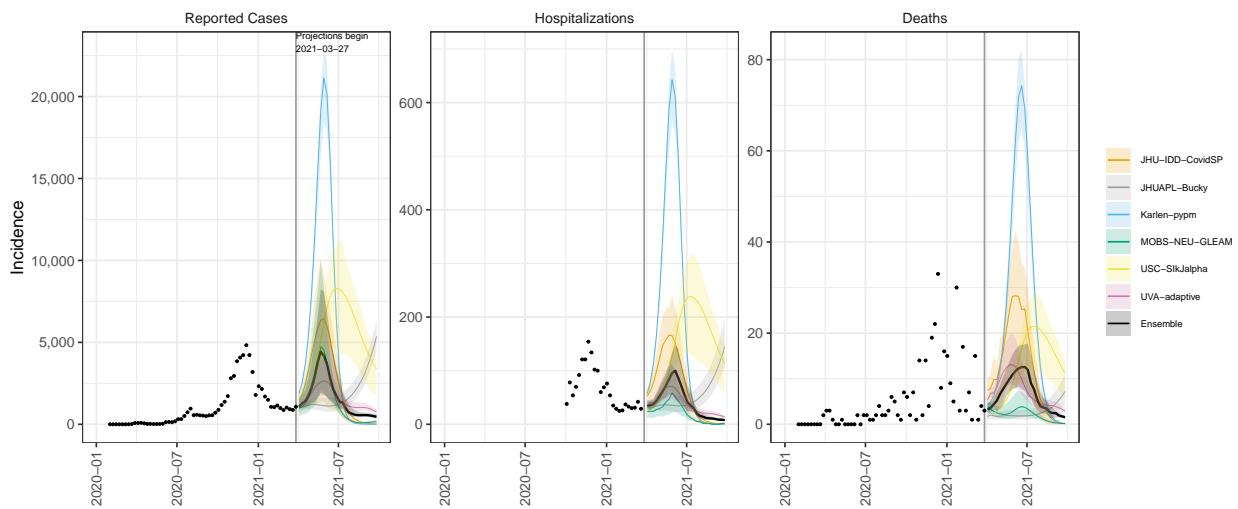


National model variation for the low vaccination, low NPI scenario

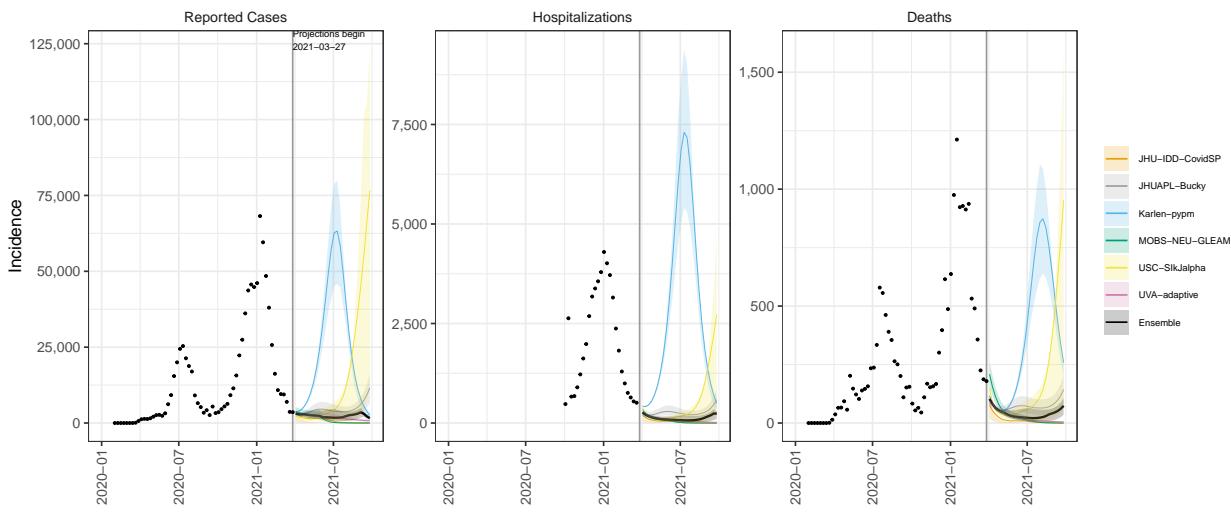
AL model variance & 50% projection intervals – Low vaccination, Low NPI compliance



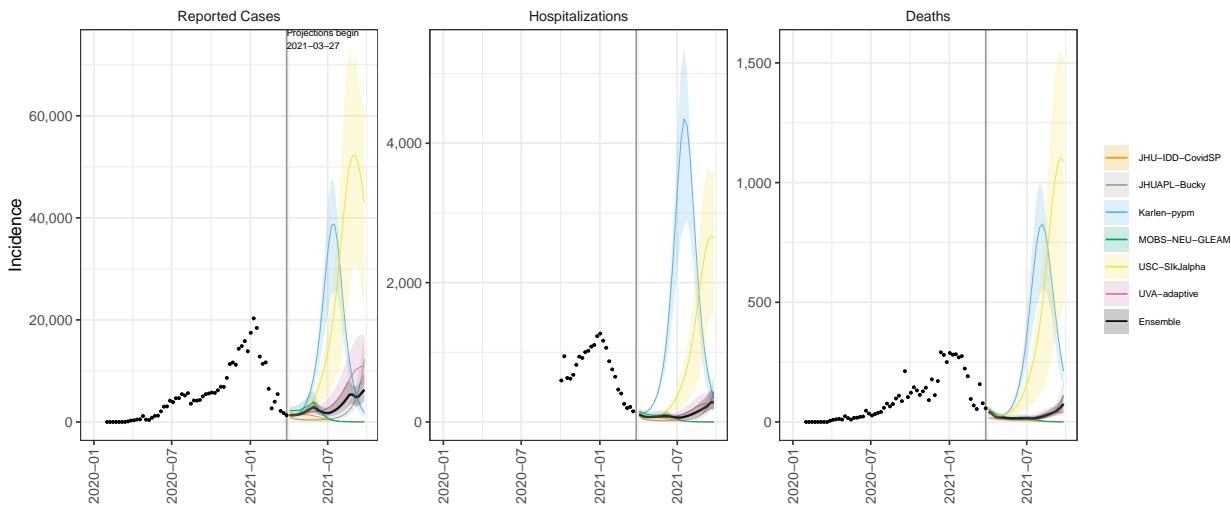
AK model variance & 50% projection intervals – Low vaccination, Low NPI compliance



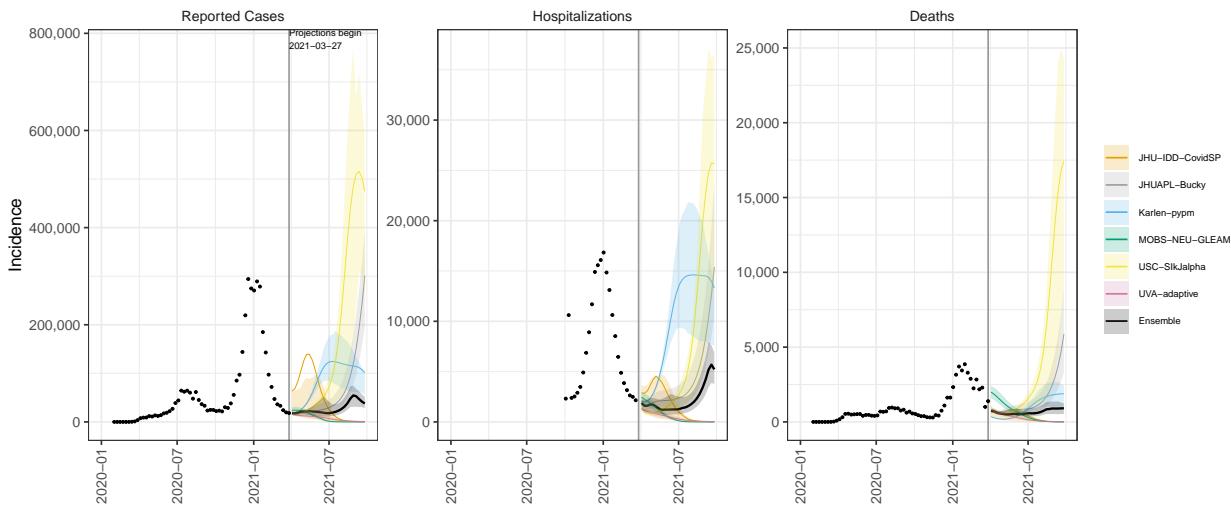
AZ model variance & 50% projection intervals – Low vaccination, Low NPI compliance



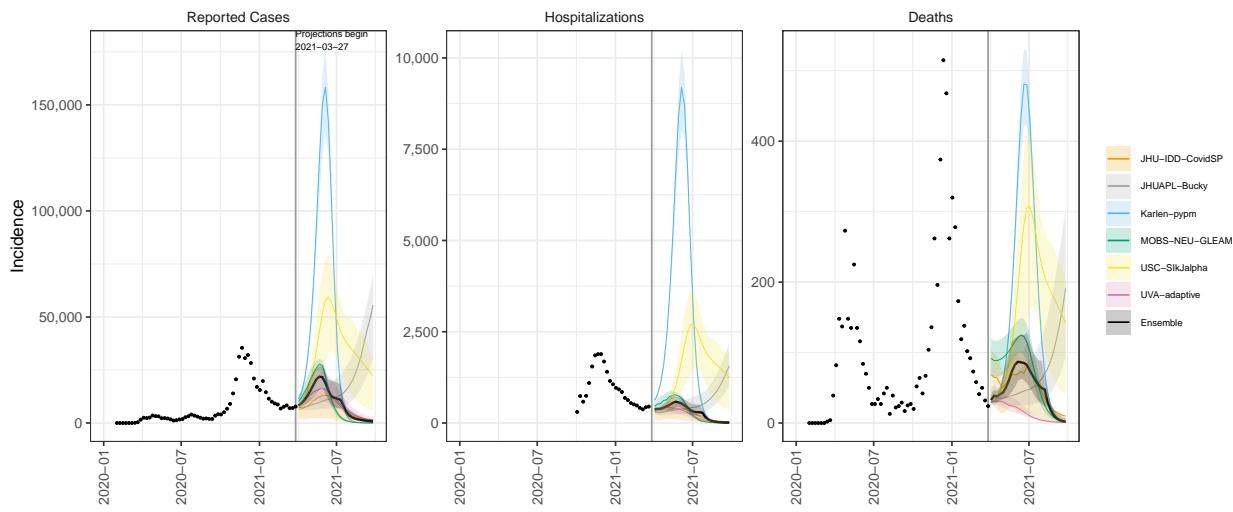
AR model variance & 50% projection intervals – Low vaccination, Low NPI compliance



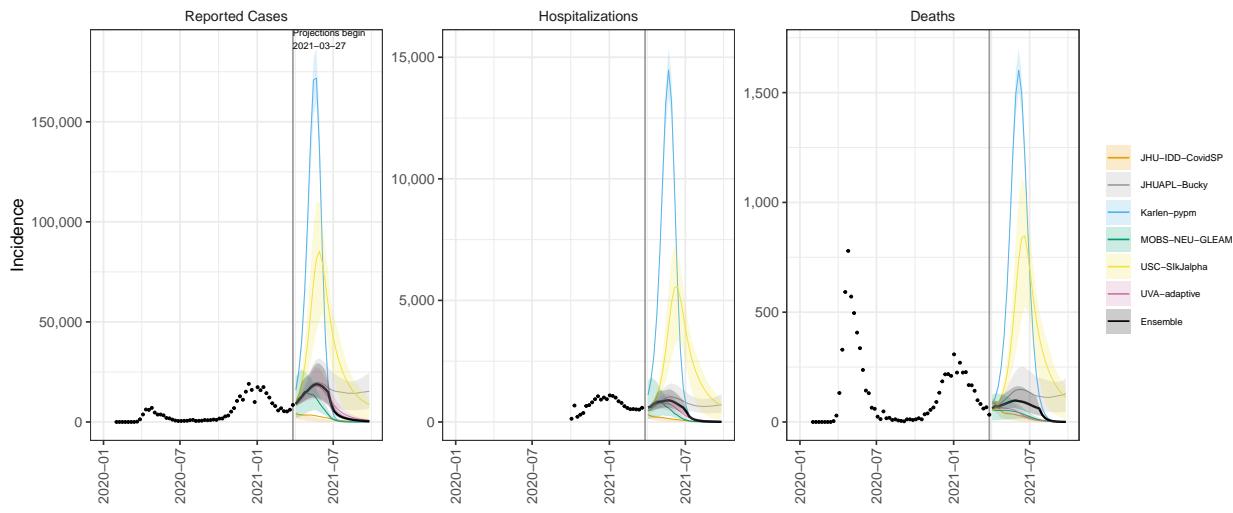
CA model variance & 50% projection intervals – Low vaccination, Low NPI compliance



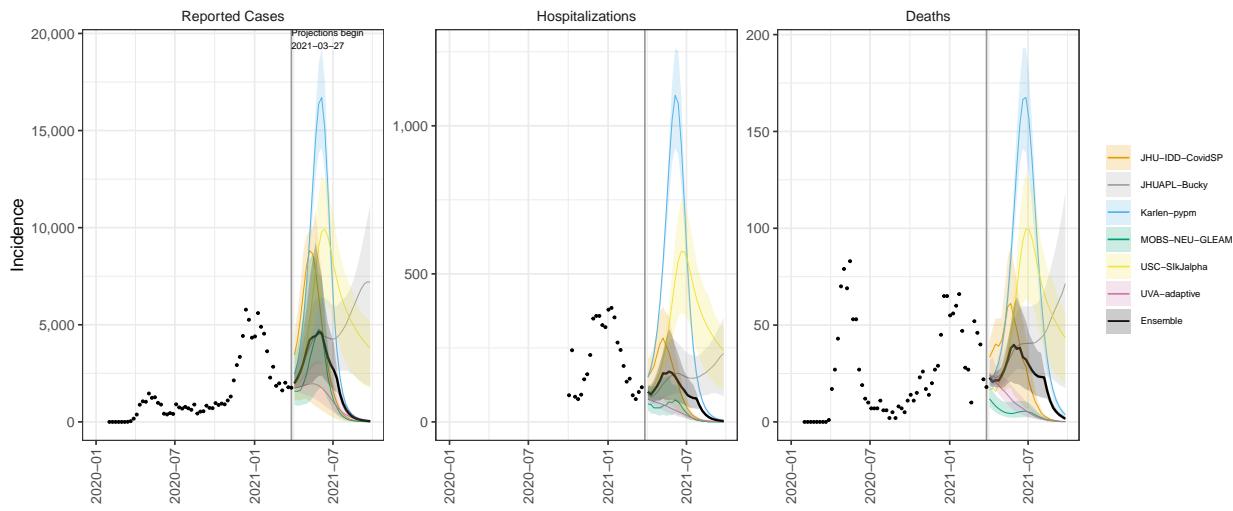
CO model variance & 50% projection intervals – Low vaccination, Low NPI compliance



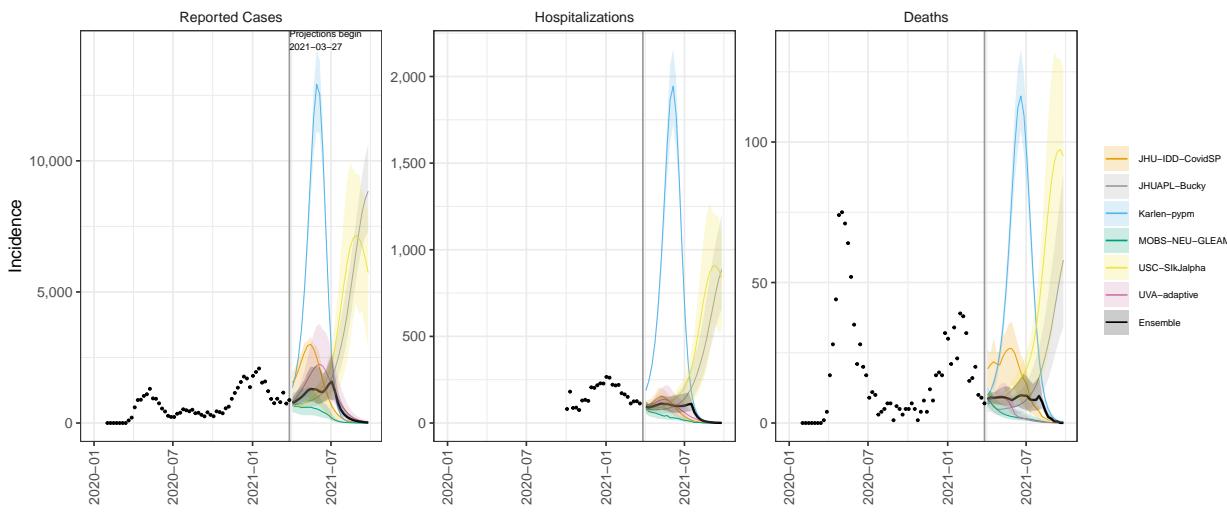
CT model variance & 50% projection intervals – Low vaccination, Low NPI compliance



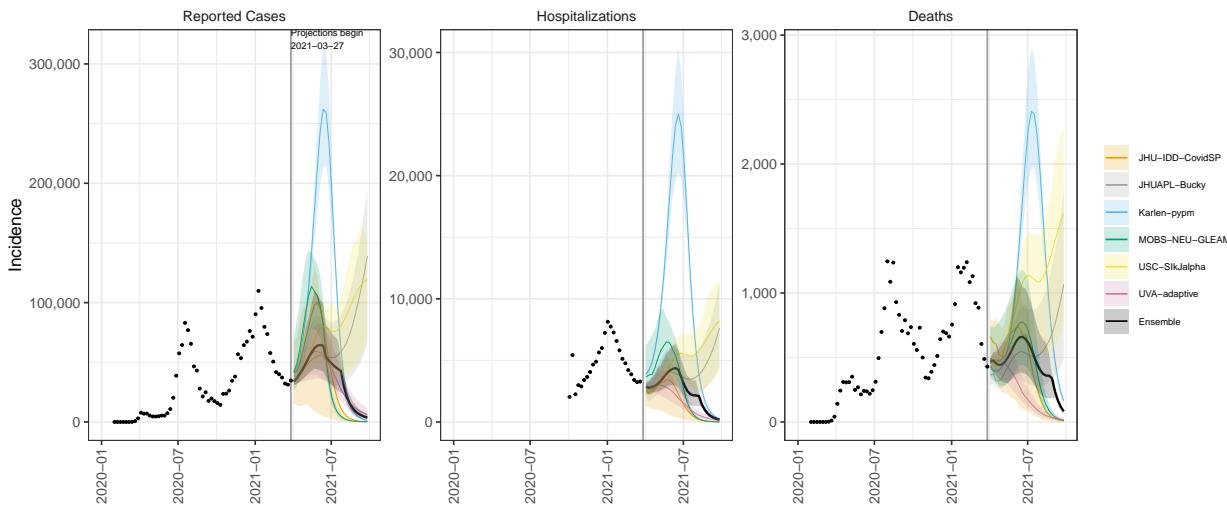
DE model variance & 50% projection intervals – Low vaccination, Low NPI compliance



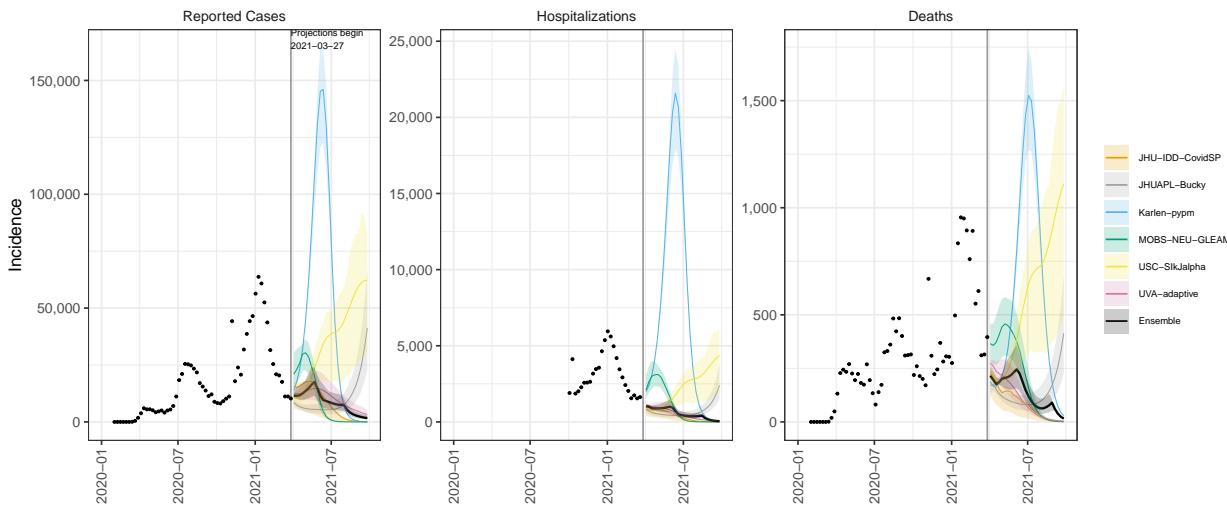
DC model variance & 50% projection intervals – Low vaccination, Low NPI compliance



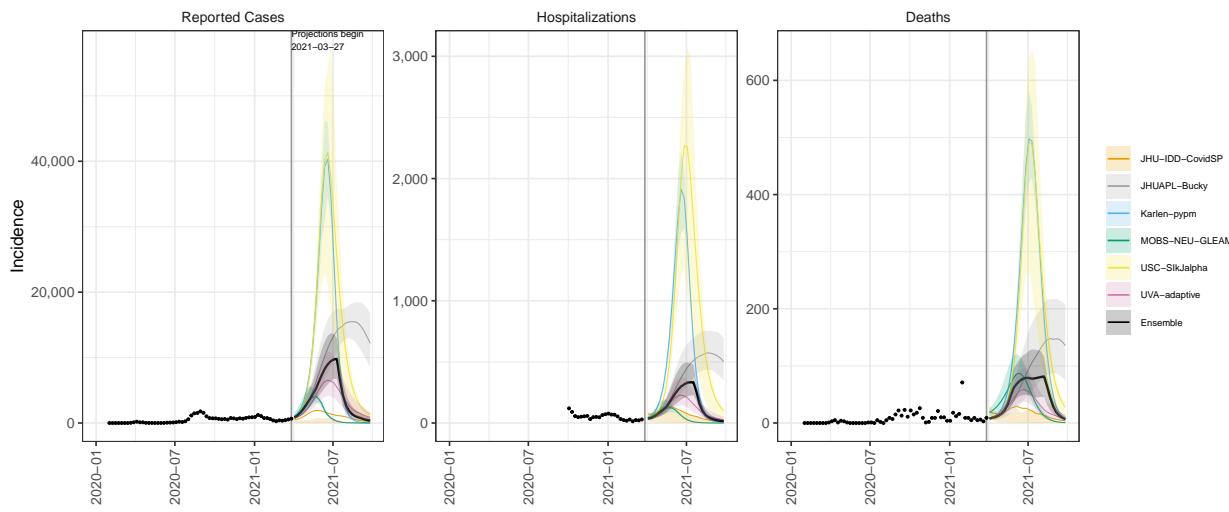
FL model variance & 50% projection intervals – Low vaccination, Low NPI compliance



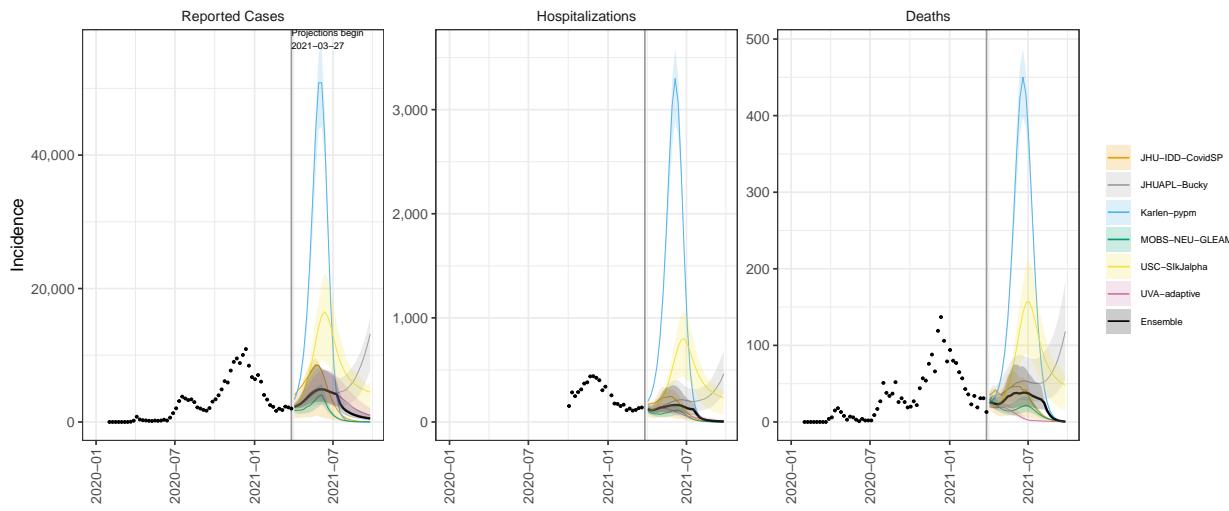
GA model variance & 50% projection intervals – Low vaccination, Low NPI compliance



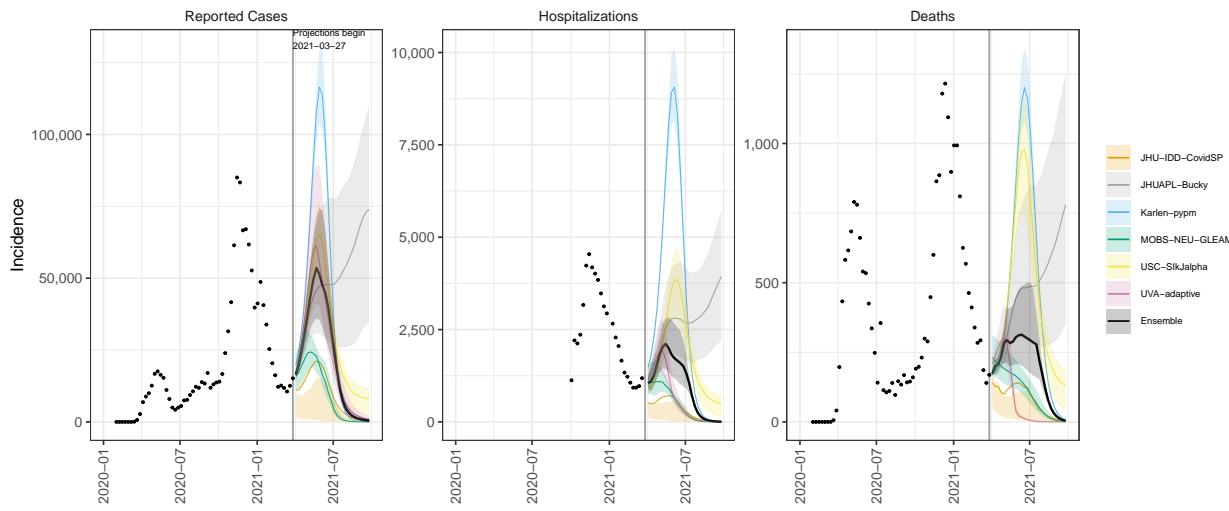
HI model variance & 50% projection intervals – Low vaccination, Low NPI compliance



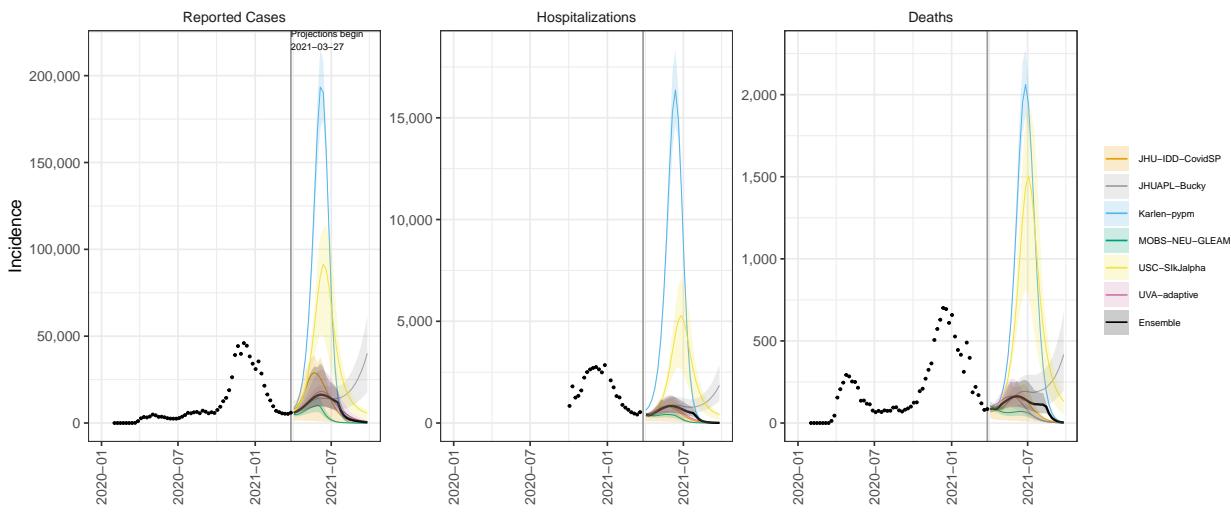
ID model variance & 50% projection intervals – Low vaccination, Low NPI compliance



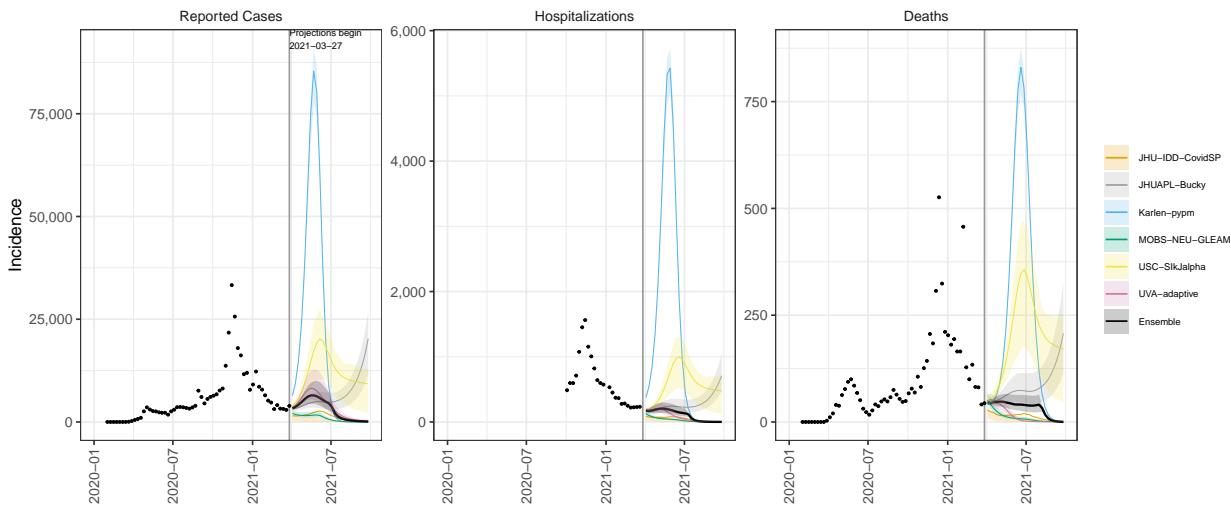
IL model variance & 50% projection intervals – Low vaccination, Low NPI compliance



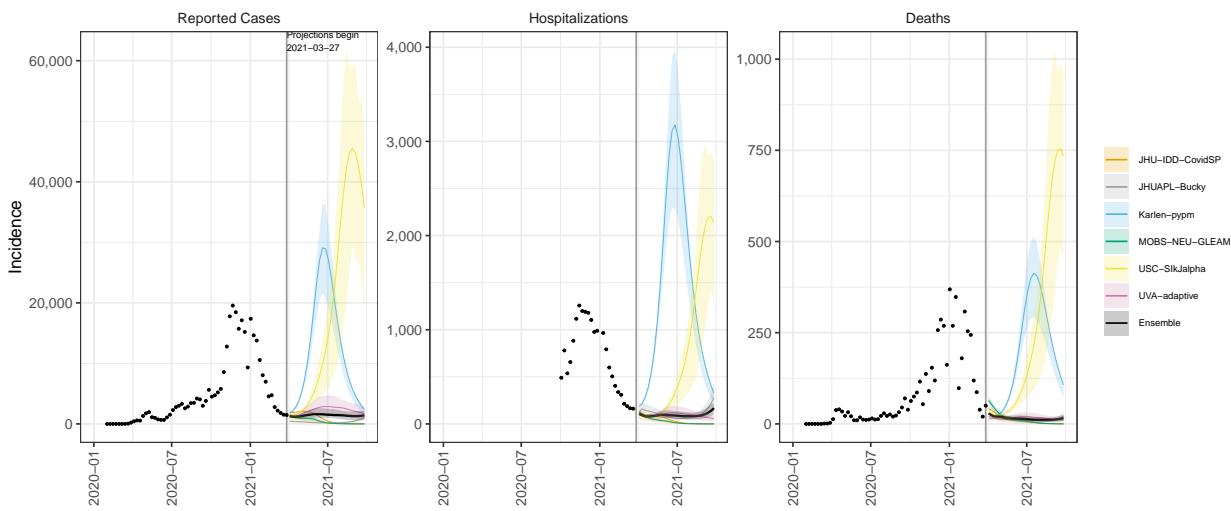
IN model variance & 50% projection intervals – Low vaccination, Low NPI compliance



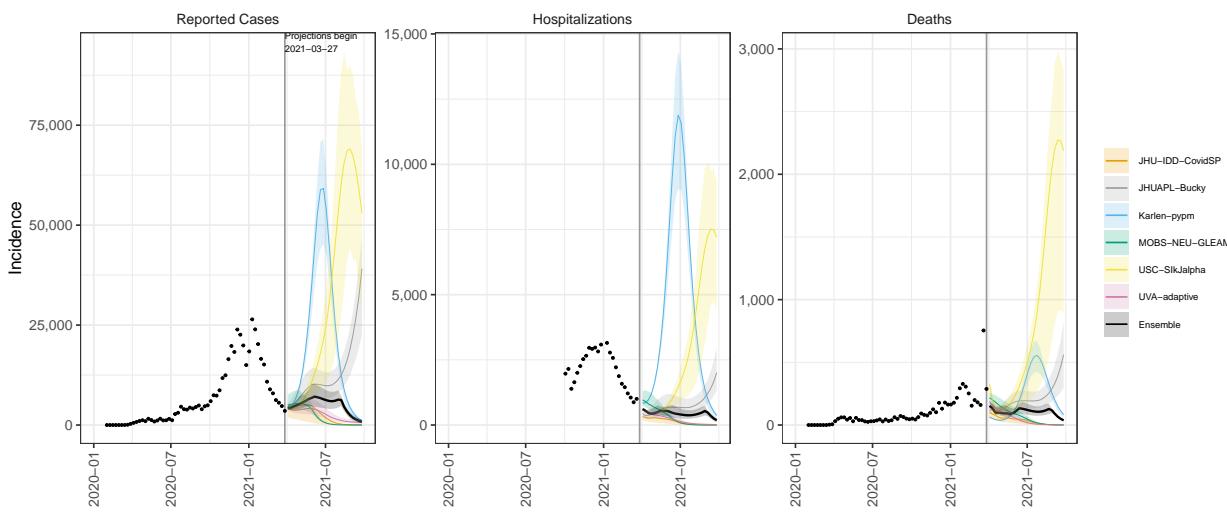
IA model variance & 50% projection intervals – Low vaccination, Low NPI compliance



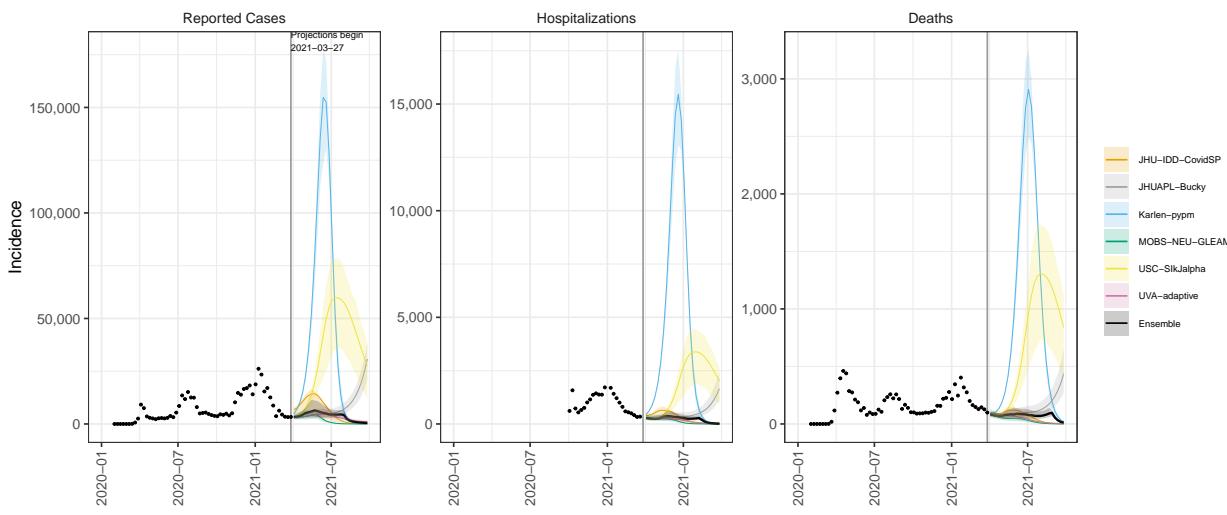
KS model variance & 50% projection intervals – Low vaccination, Low NPI compliance



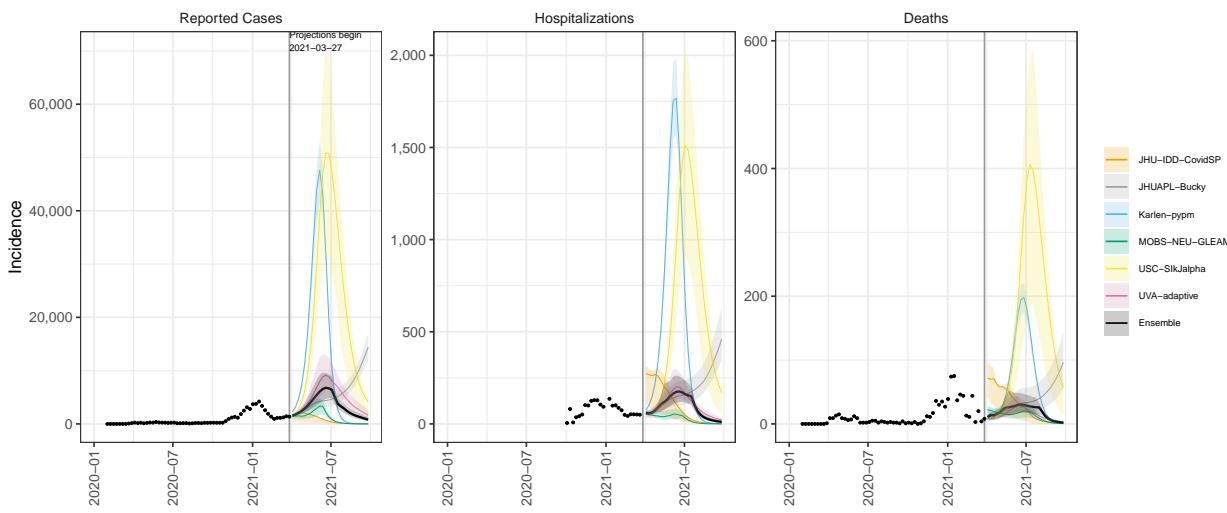
KY model variance & 50% projection intervals – Low vaccination, Low NPI compliance



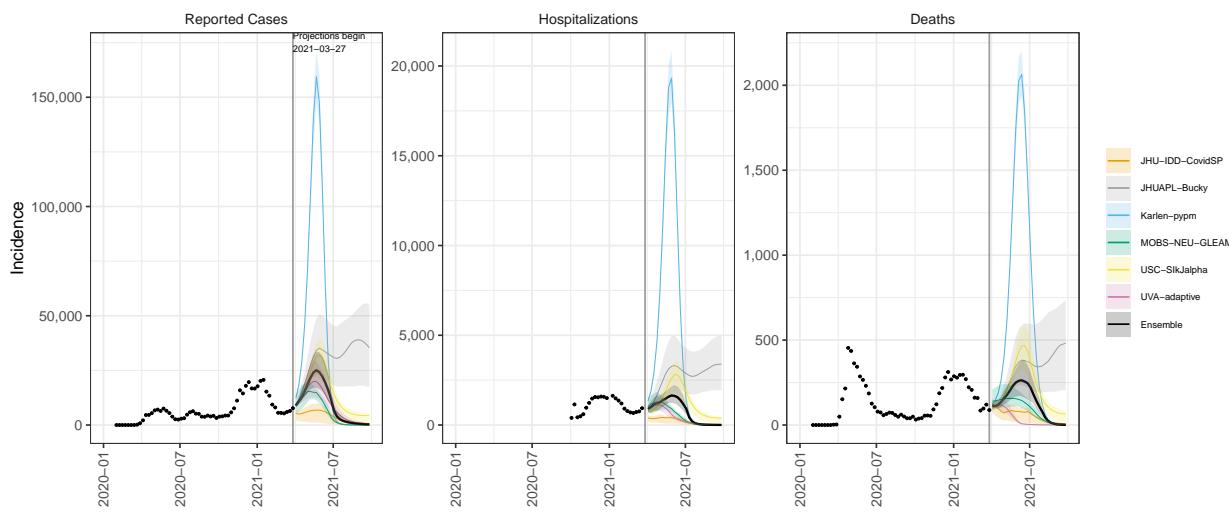
LA model variance & 50% projection intervals – Low vaccination, Low NPI compliance



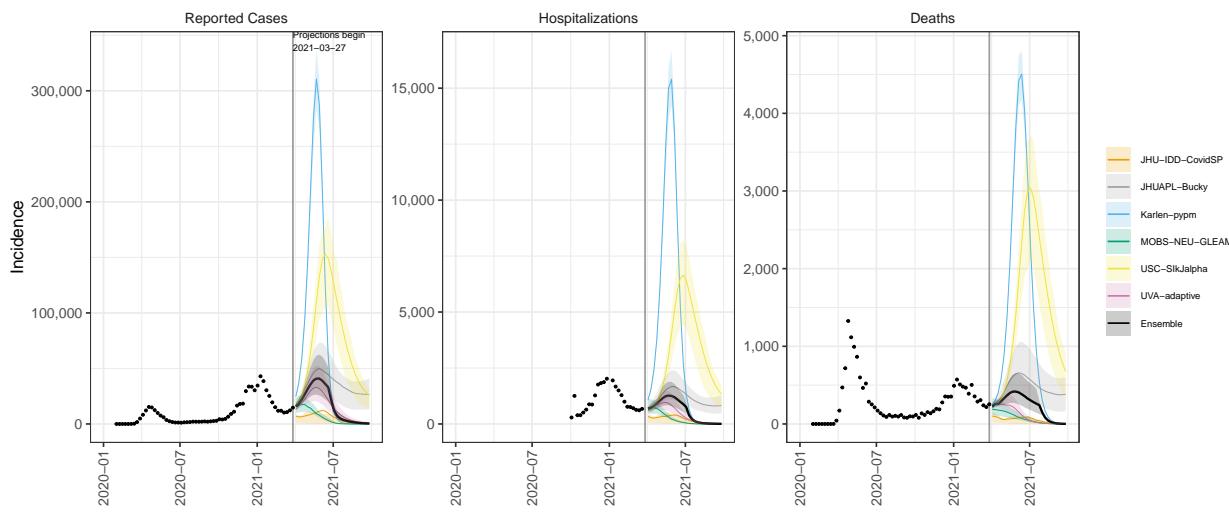
ME model variance & 50% projection intervals – Low vaccination, Low NPI compliance



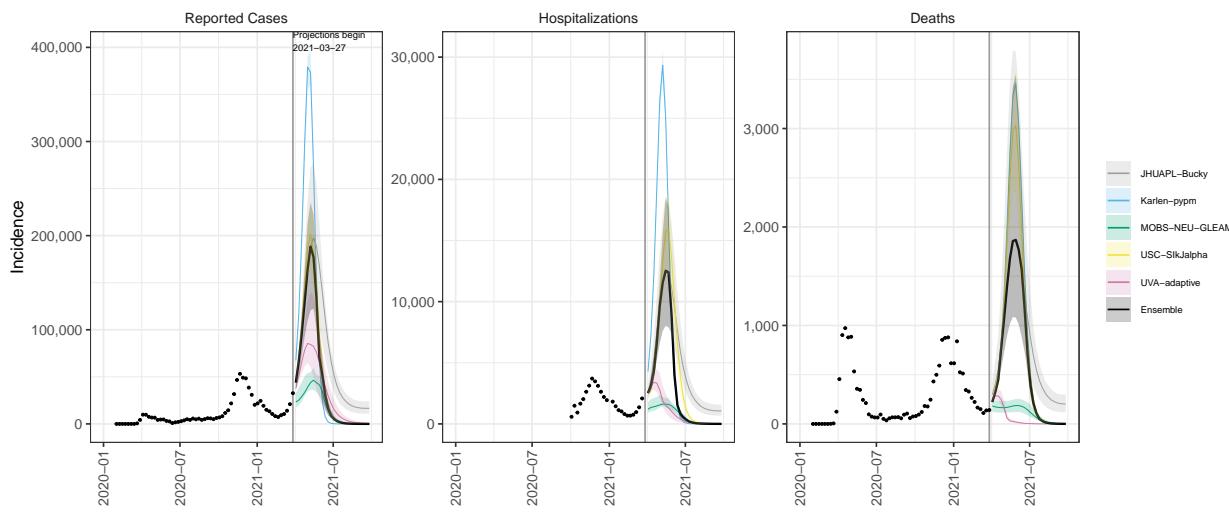
MD model variance & 50% projection intervals – Low vaccination, Low NPI compliance



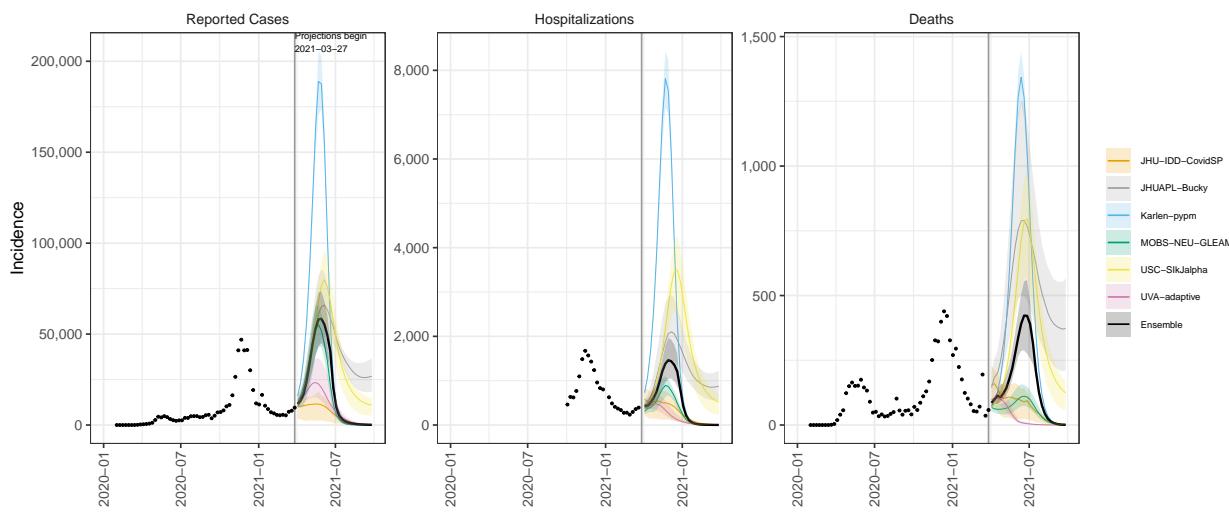
MA model variance & 50% projection intervals – Low vaccination, Low NPI compliance



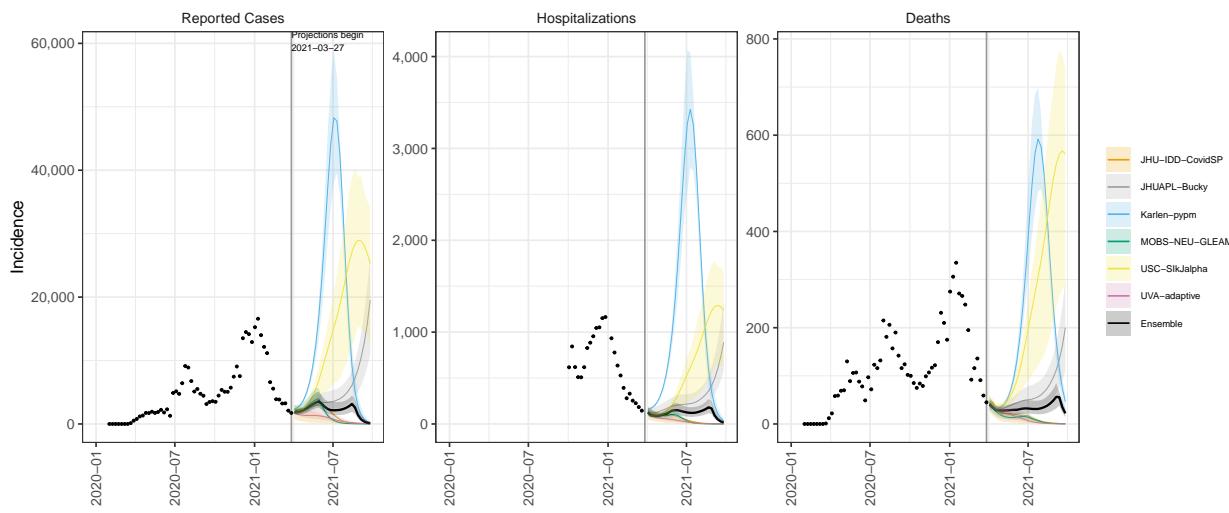
MI model variance & 50% projection intervals – Low vaccination, Low NPI compliance



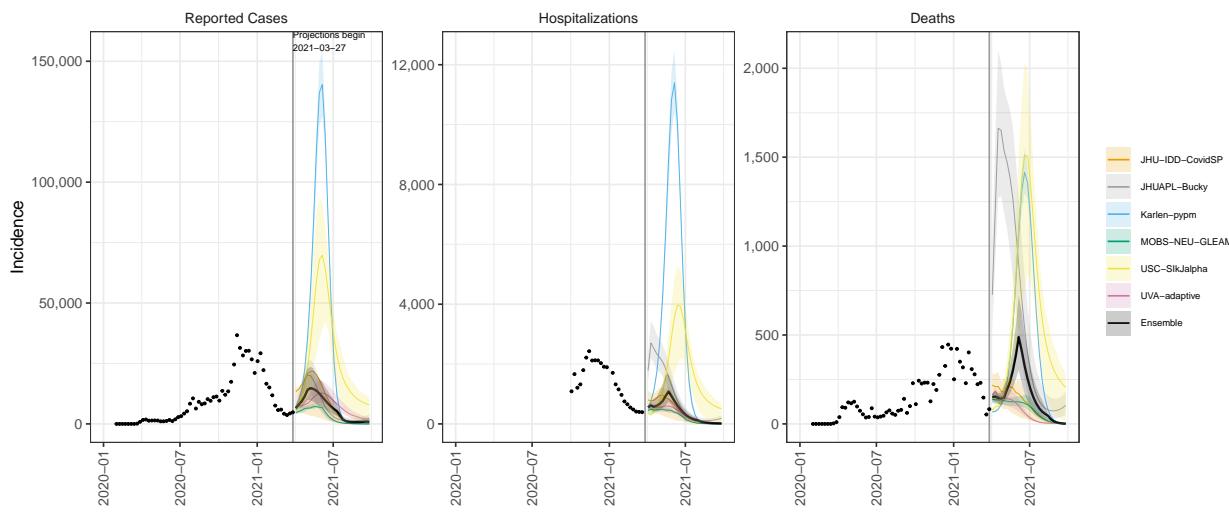
MN model variance & 50% projection intervals – Low vaccination, Low NPI compliance



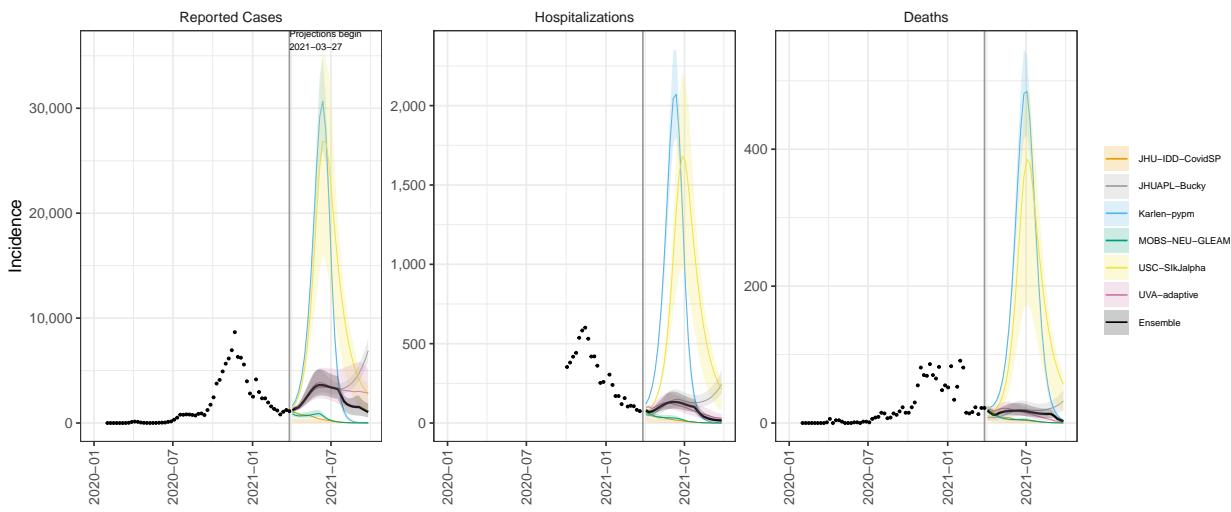
MS model variance & 50% projection intervals – Low vaccination, Low NPI compliance



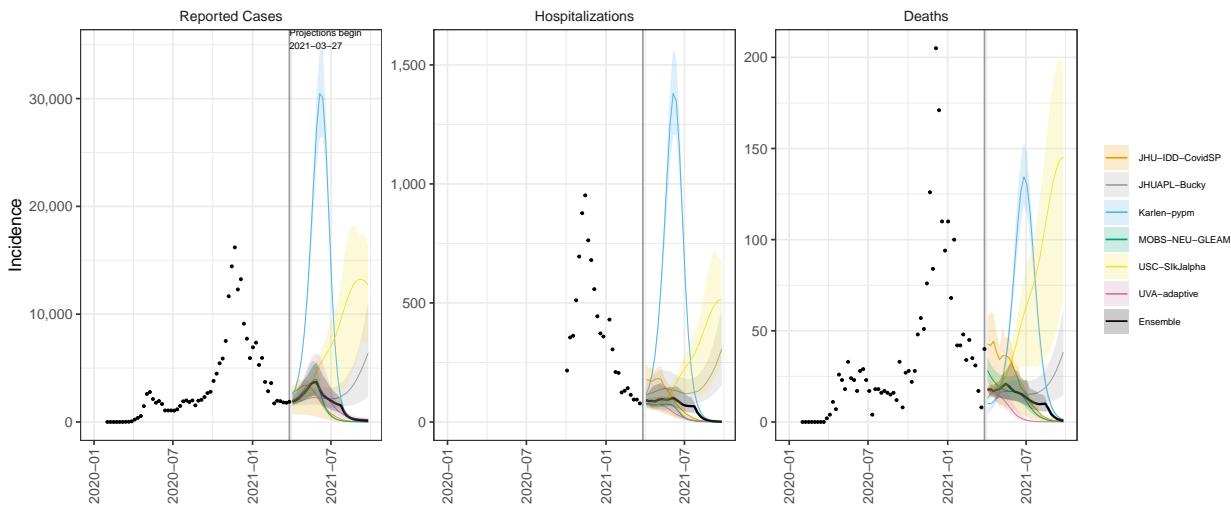
MO model variance & 50% projection intervals – Low vaccination, Low NPI compliance



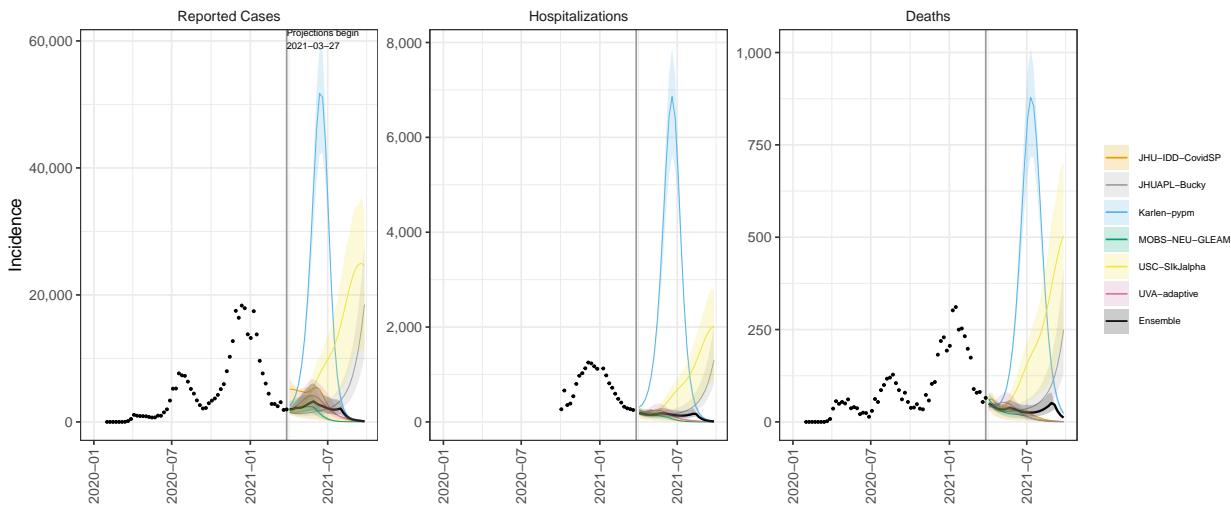
MT model variance & 50% projection intervals – Low vaccination, Low NPI compliance



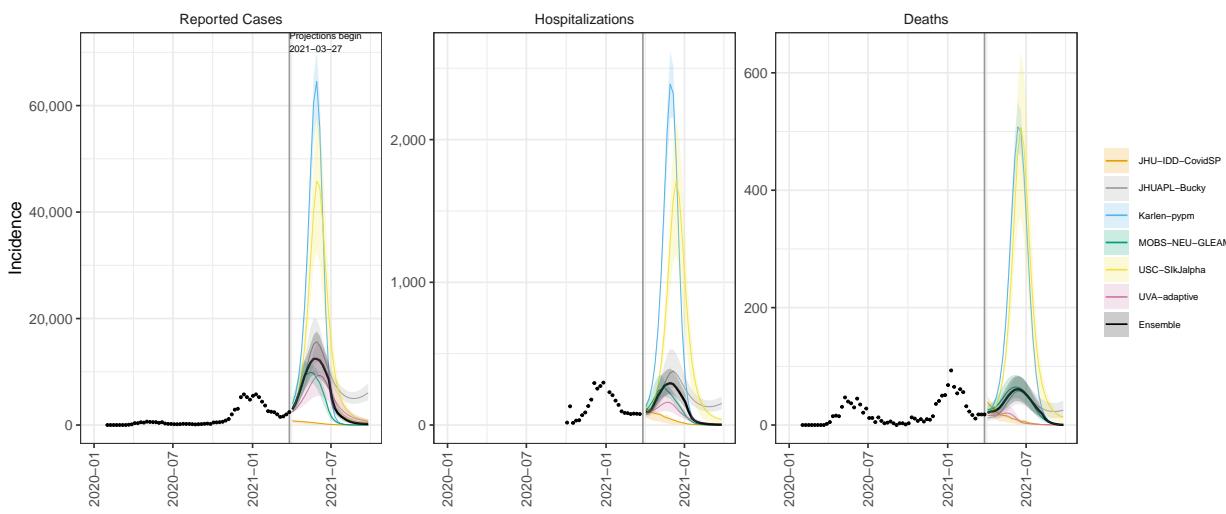
NE model variance & 50% projection intervals – Low vaccination, Low NPI compliance



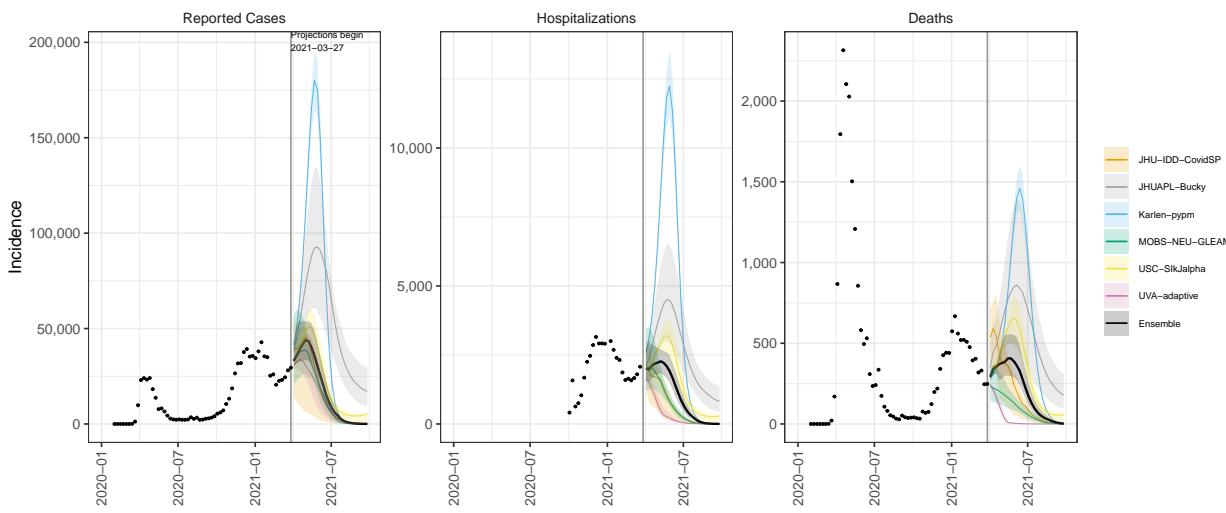
NV model variance & 50% projection intervals – Low vaccination, Low NPI compliance



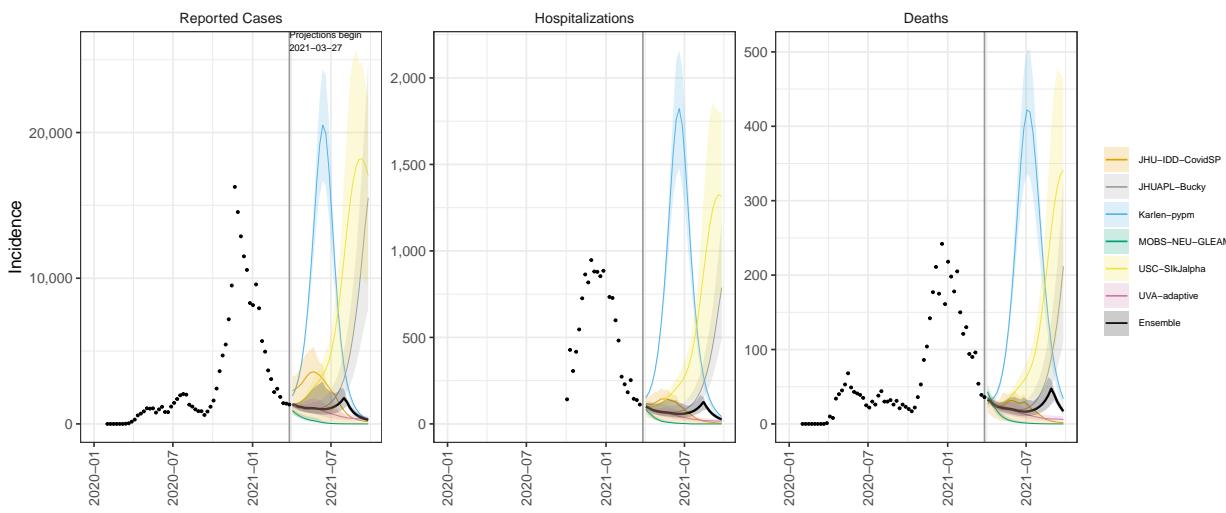
NH model variance & 50% projection intervals – Low vaccination, Low NPI compliance



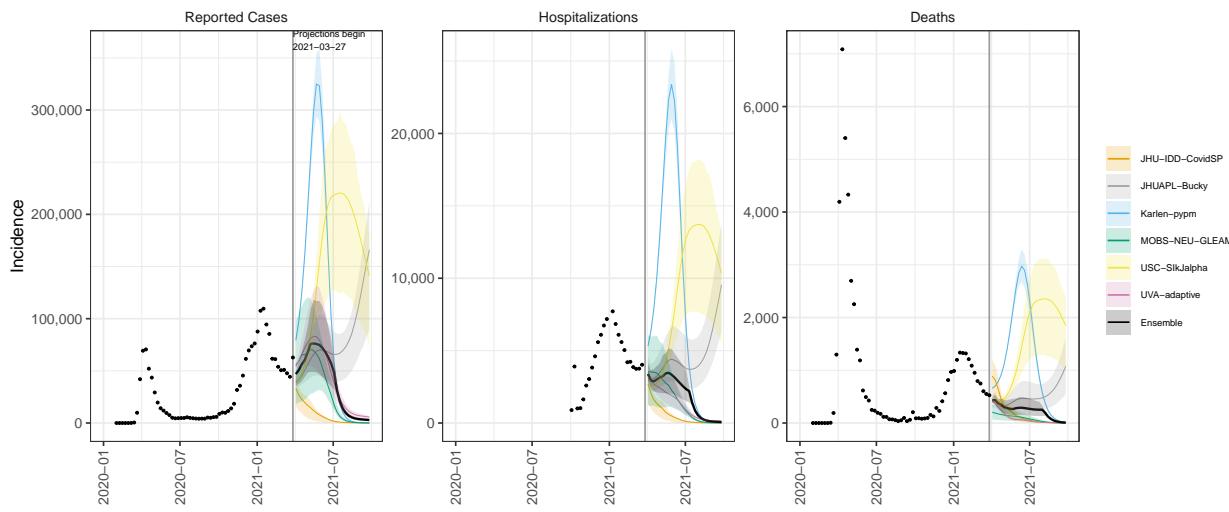
NJ model variance & 50% projection intervals – Low vaccination, Low NPI compliance



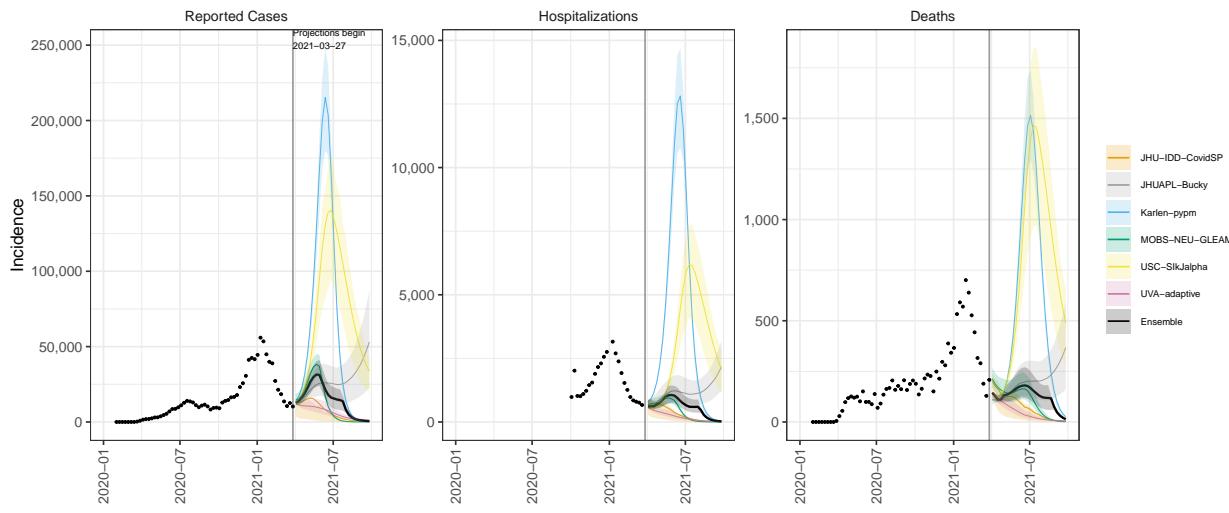
NM model variance & 50% projection intervals – Low vaccination, Low NPI compliance



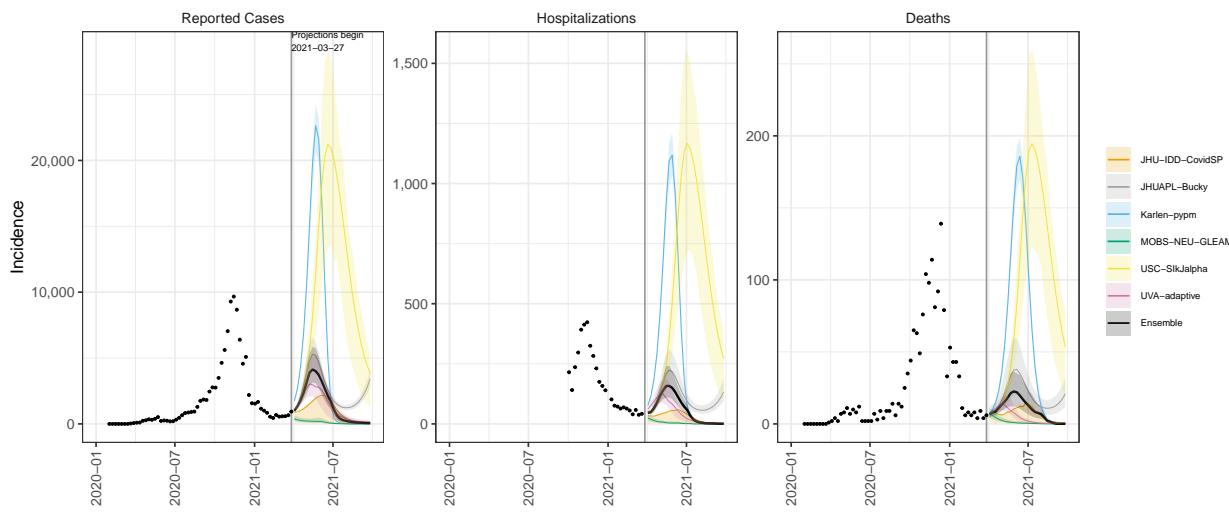
NY model variance & 50% projection intervals – Low vaccination, Low NPI compliance



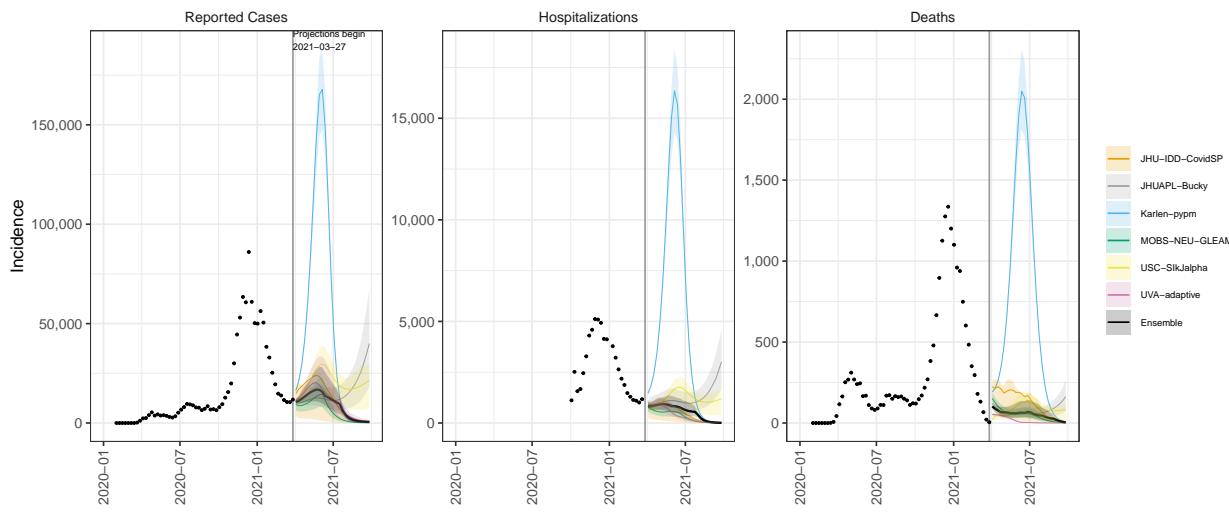
NC model variance & 50% projection intervals – Low vaccination, Low NPI compliance



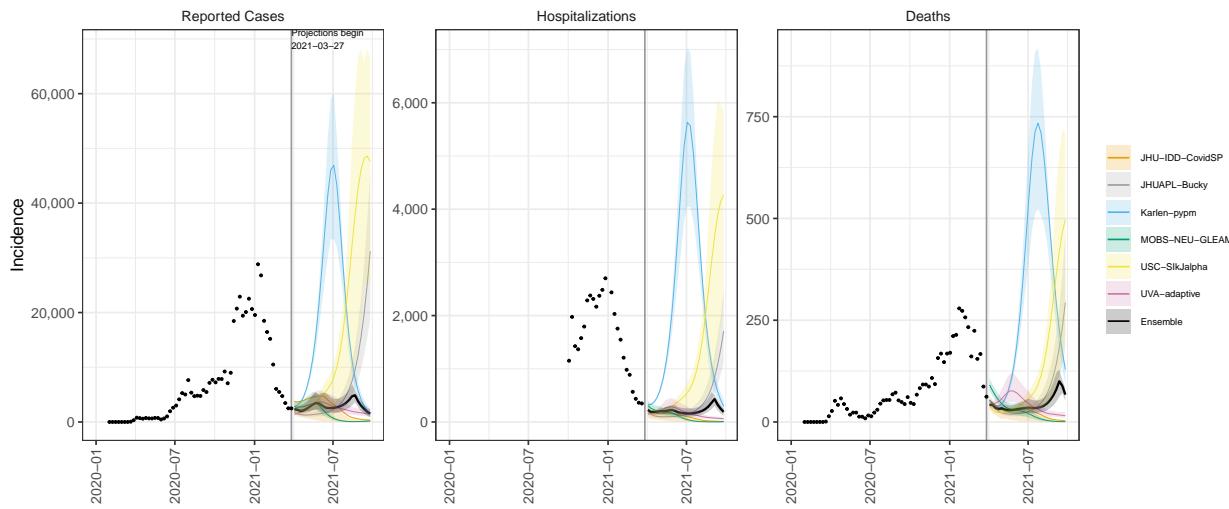
ND model variance & 50% projection intervals – Low vaccination, Low NPI compliance



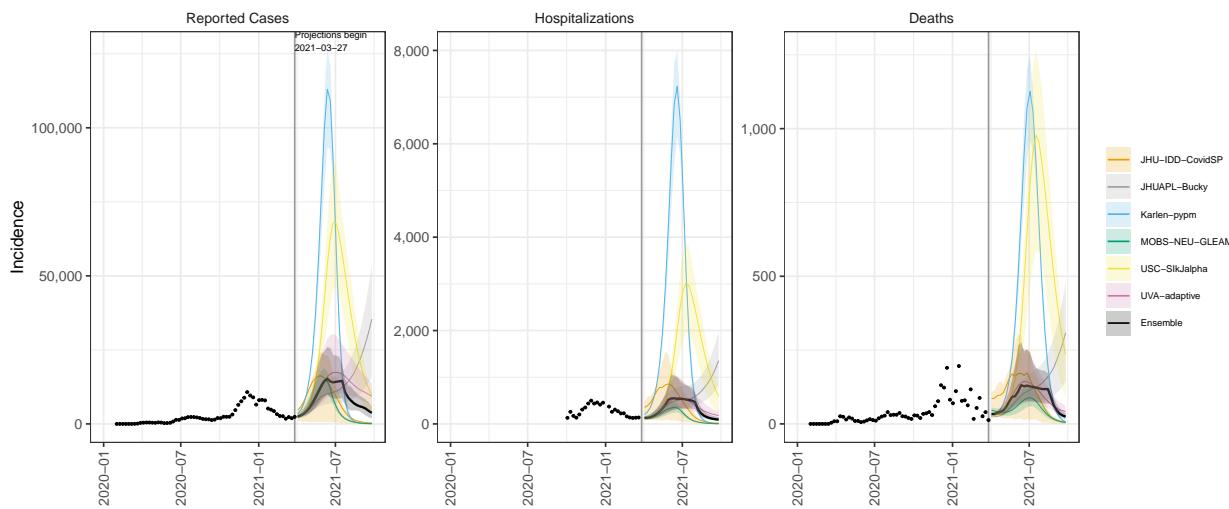
OH model variance & 50% projection intervals – Low vaccination, Low NPI compliance



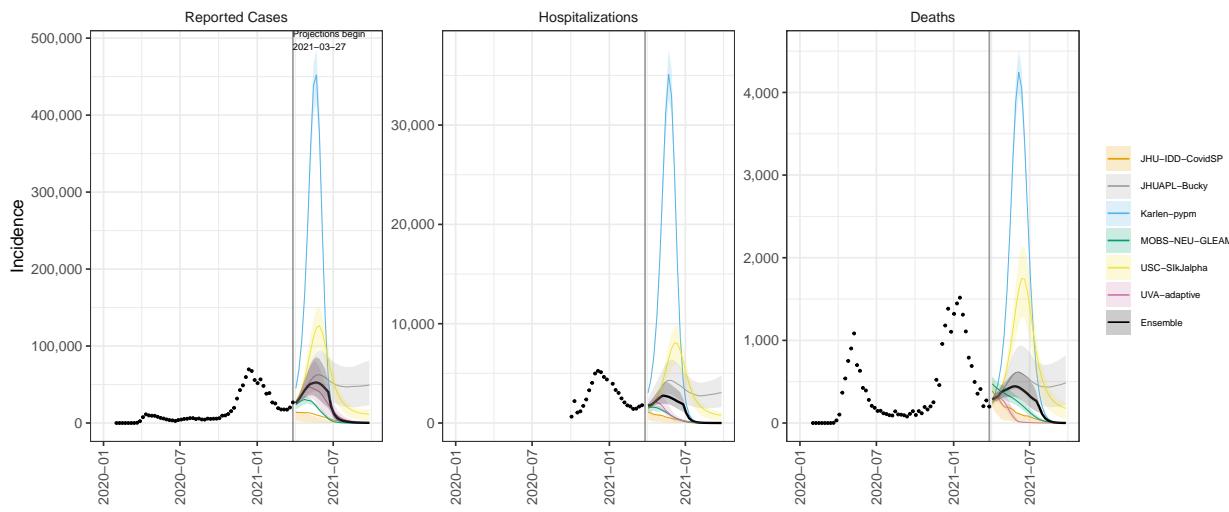
OK model variance & 50% projection intervals – Low vaccination, Low NPI compliance



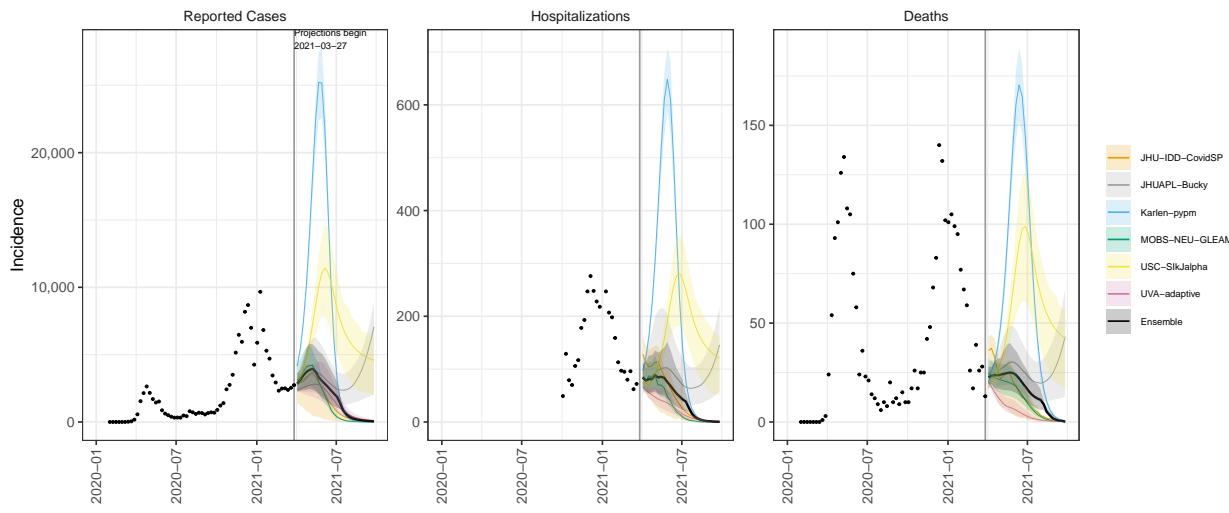
OR model variance & 50% projection intervals – Low vaccination, Low NPI compliance



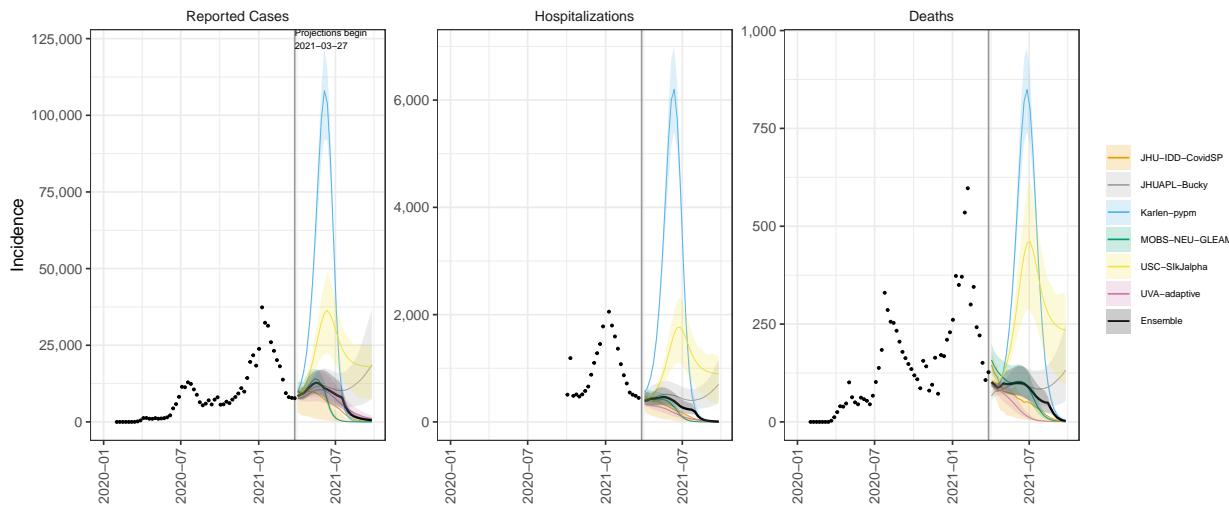
PA model variance & 50% projection intervals – Low vaccination, Low NPI compliance



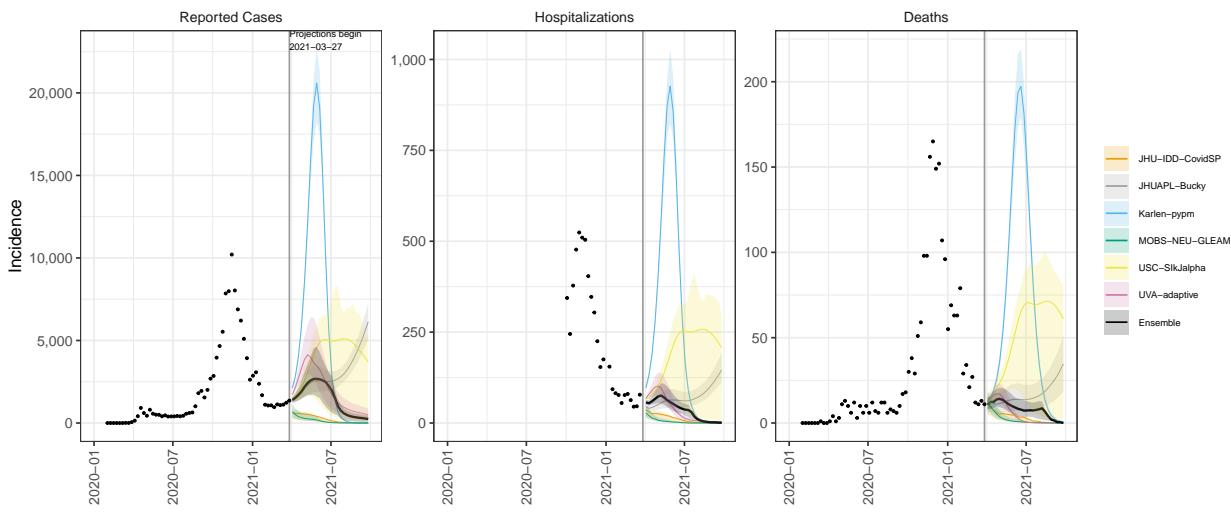
RI model variance & 50% projection intervals – Low vaccination, Low NPI compliance



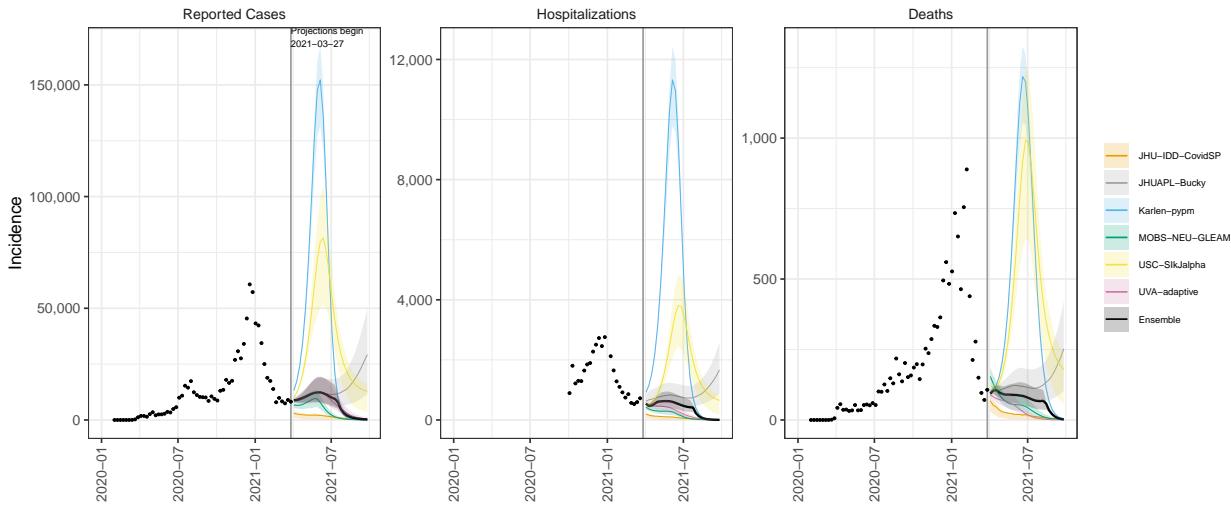
SC model variance & 50% projection intervals – Low vaccination, Low NPI compliance



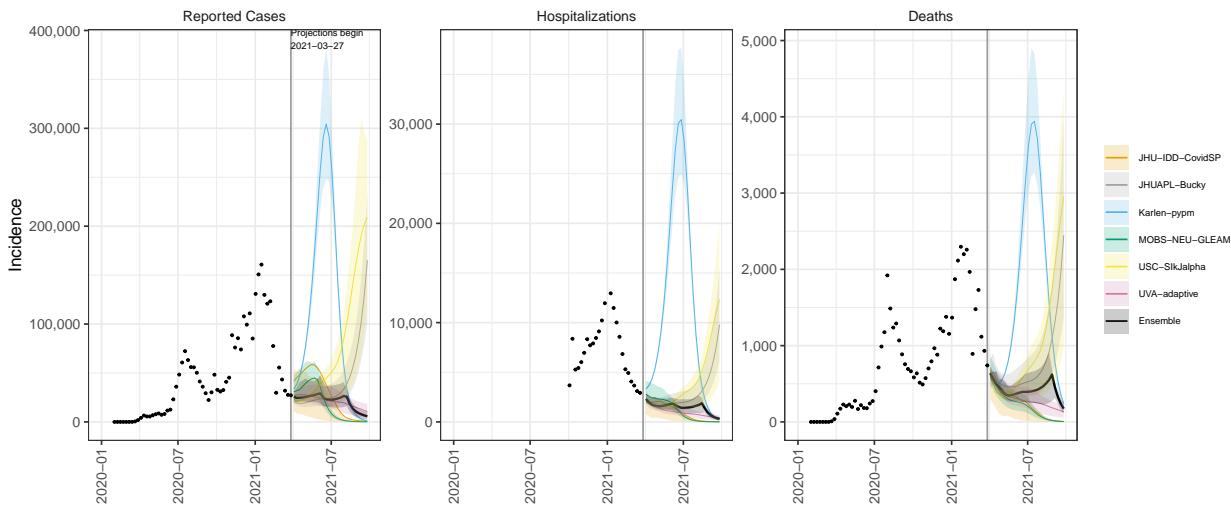
SD model variance & 50% projection intervals – Low vaccination, Low NPI compliance



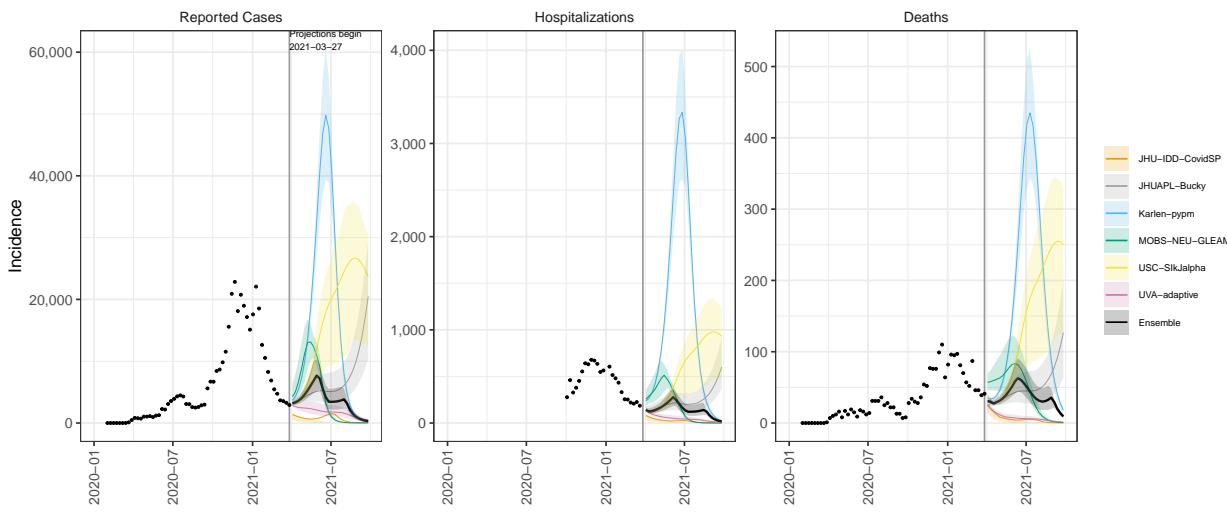
TN model variance & 50% projection intervals – Low vaccination, Low NPI compliance



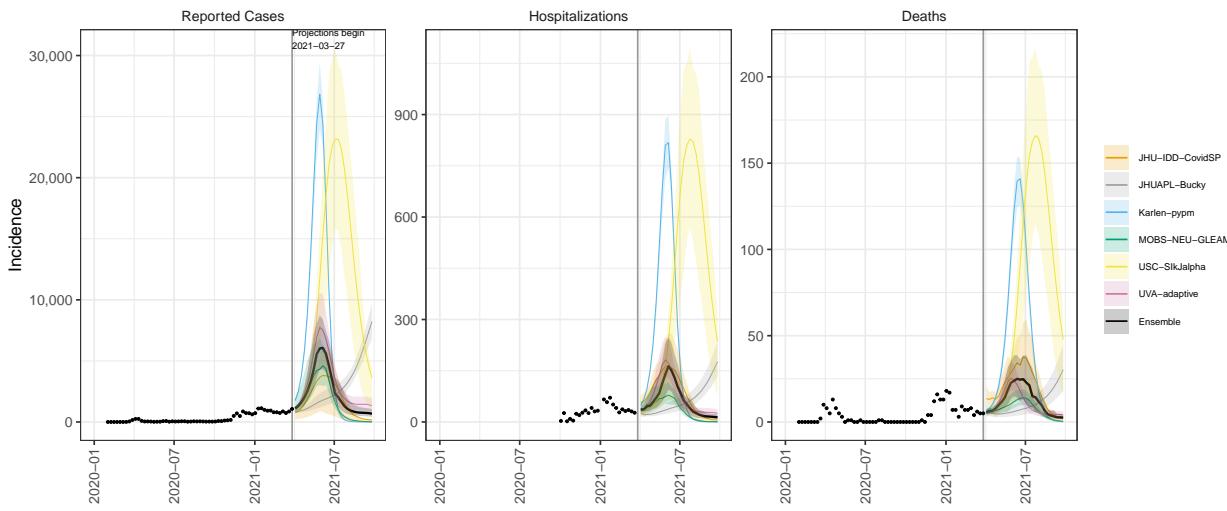
TX model variance & 50% projection intervals – Low vaccination, Low NPI compliance



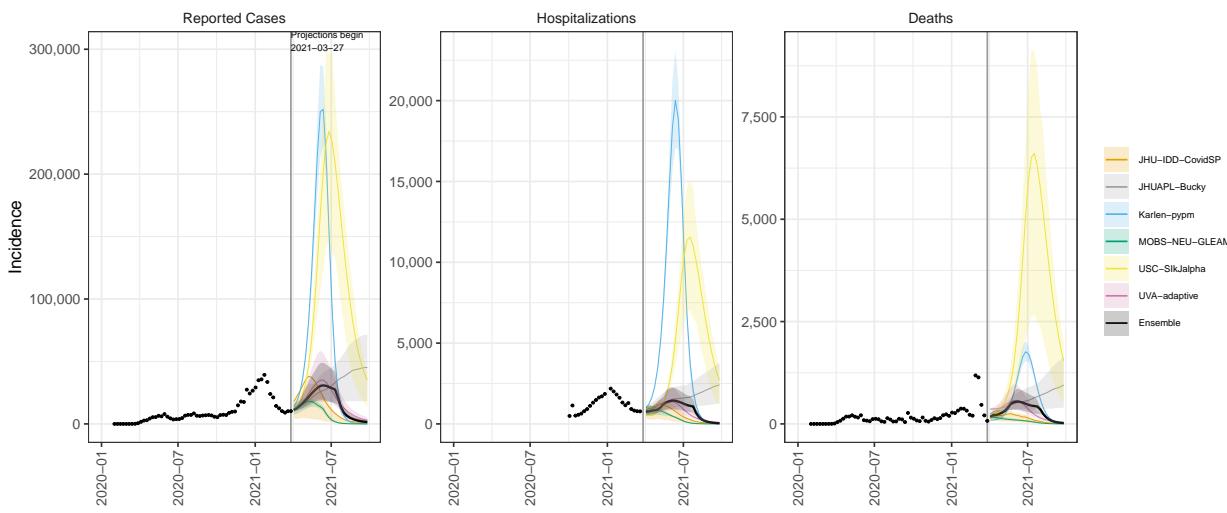
UT model variance & 50% projection intervals – Low vaccination, Low NPI compliance



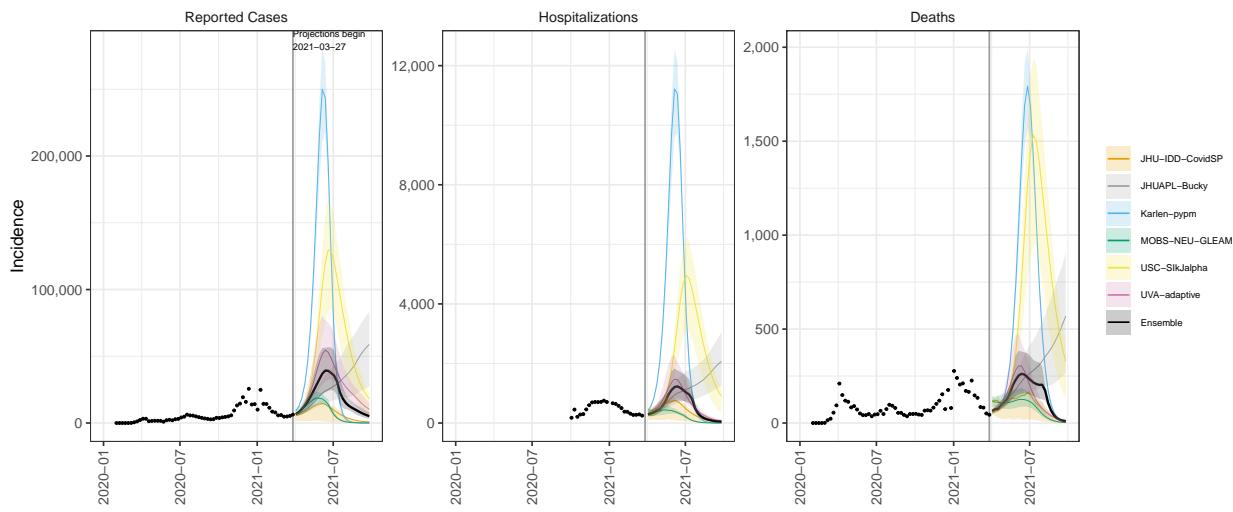
VT model variance & 50% projection intervals – Low vaccination, Low NPI compliance



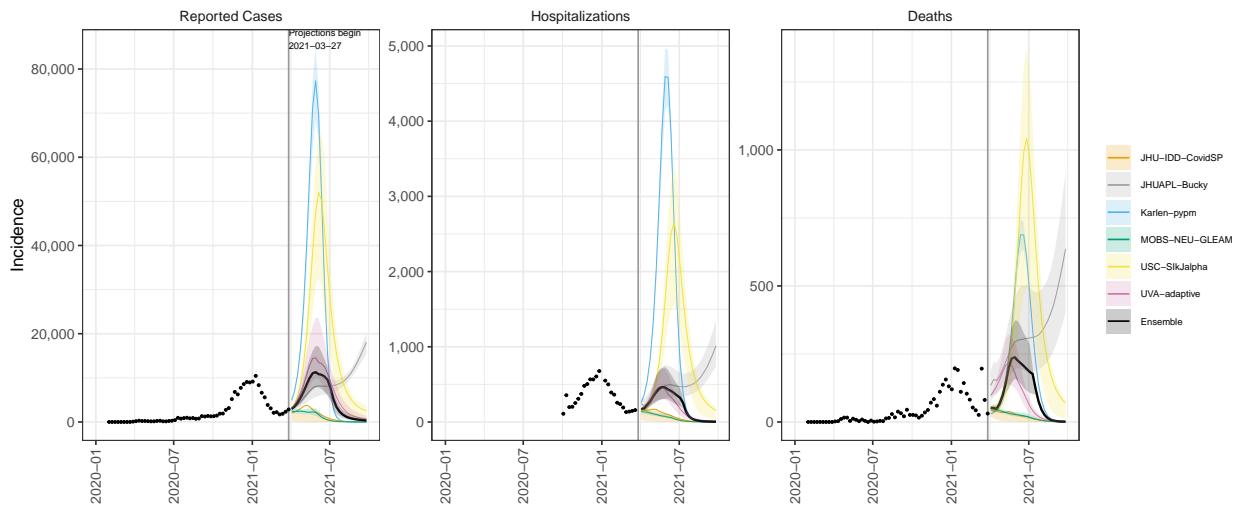
VA model variance & 50% projection intervals – Low vaccination, Low NPI compliance



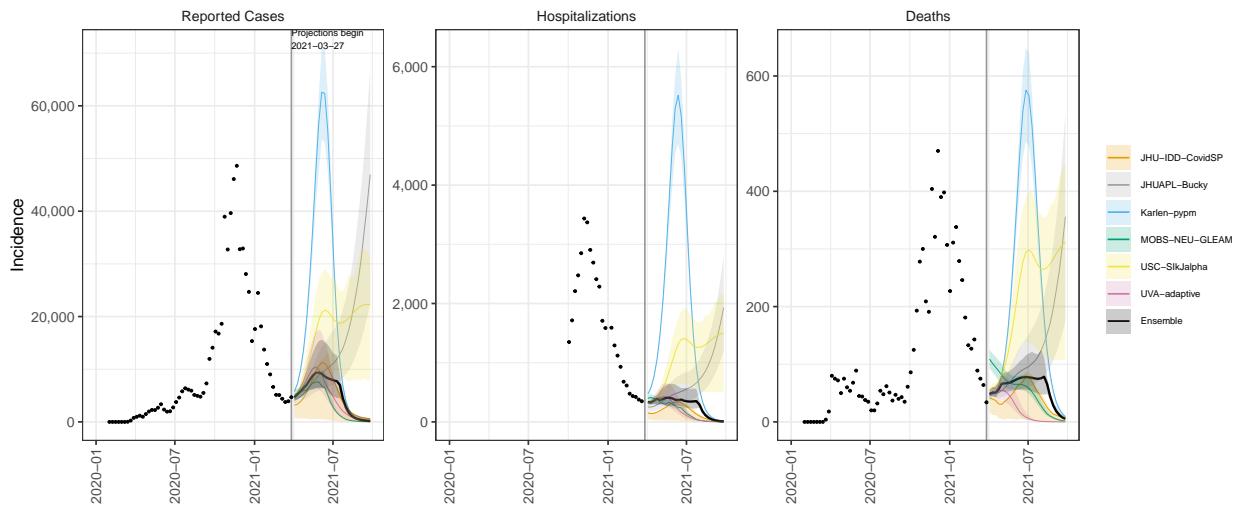
WA model variance & 50% projection intervals – Low vaccination, Low NPI compliance



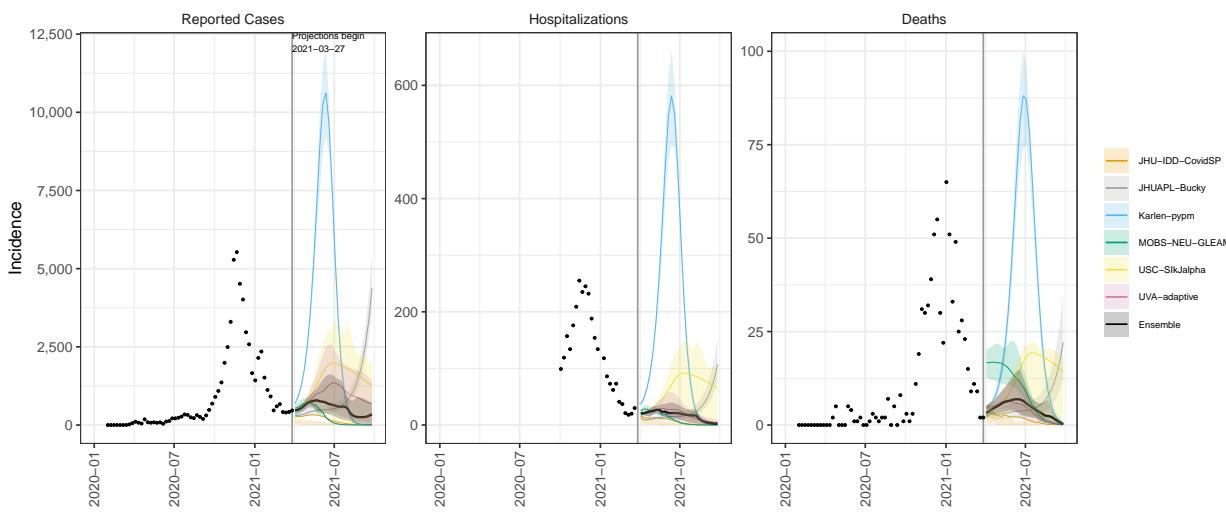
WV model variance & 50% projection intervals – Low vaccination, Low NPI compliance



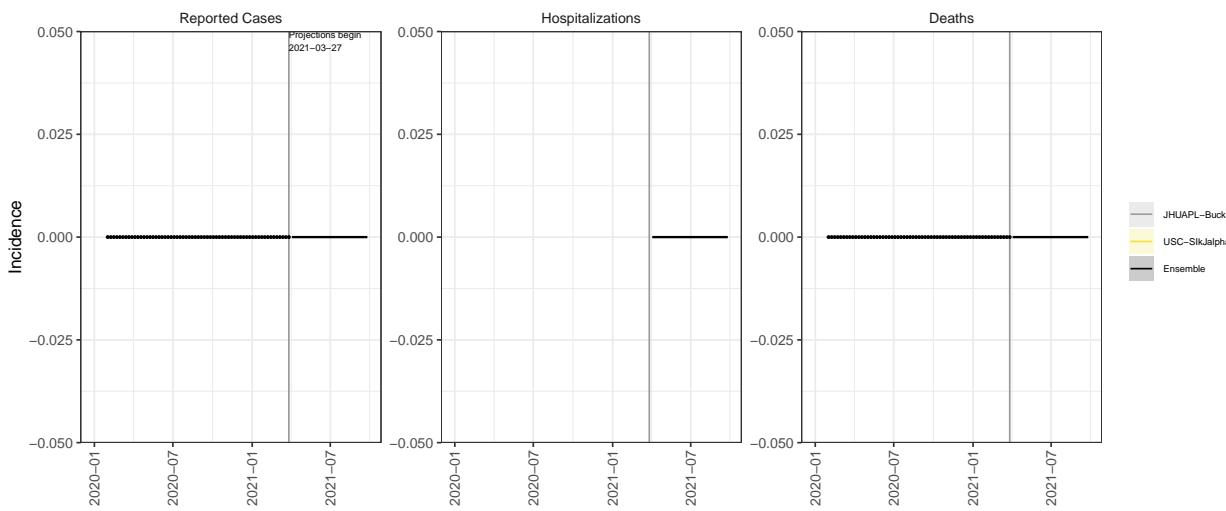
WI model variance & 50% projection intervals – Low vaccination, Low NPI compliance



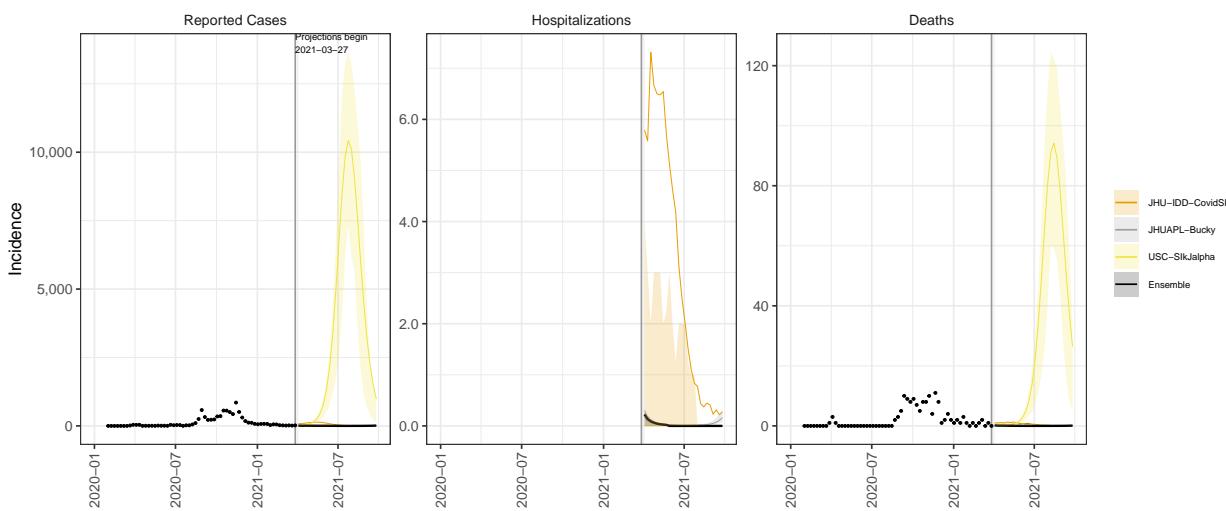
WY model variance & 50% projection intervals – Low vaccination, Low NPI compliance



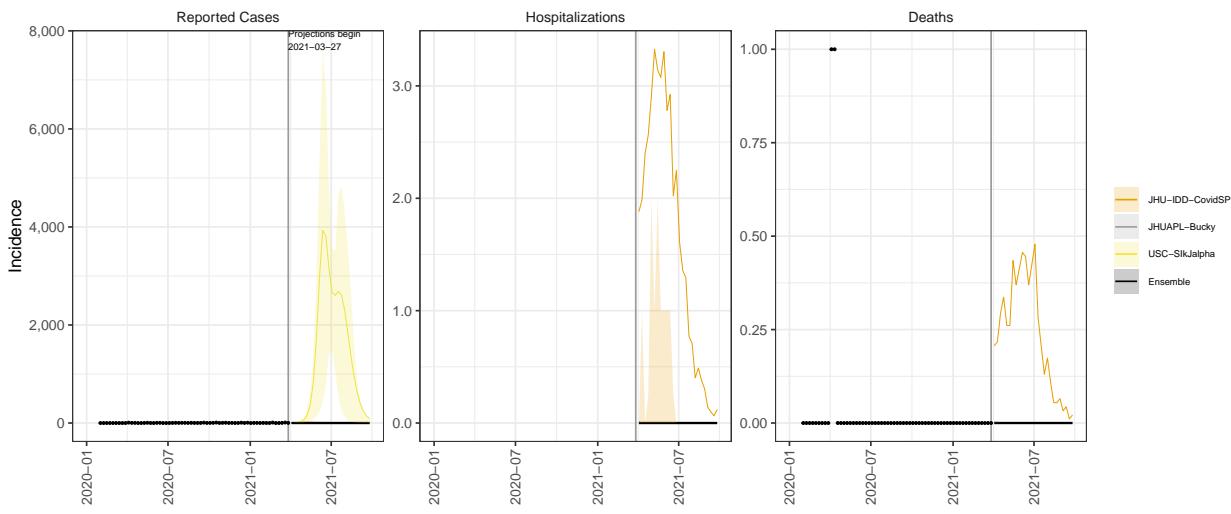
AS model variance & 50% projection intervals – Low vaccination, Low NPI compliance



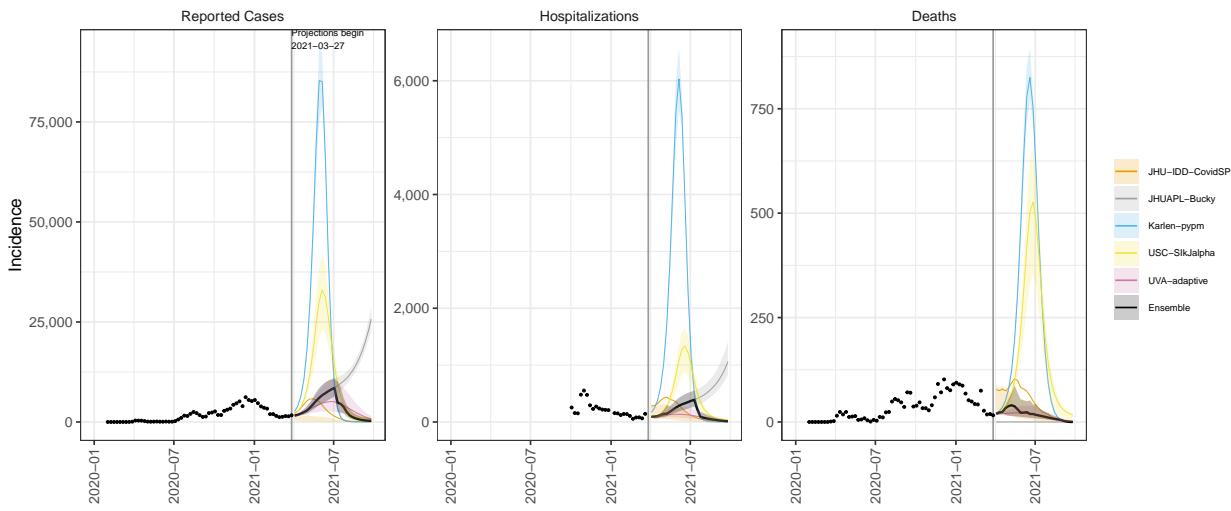
GU model variance & 50% projection intervals – Low vaccination, Low NPI compliance



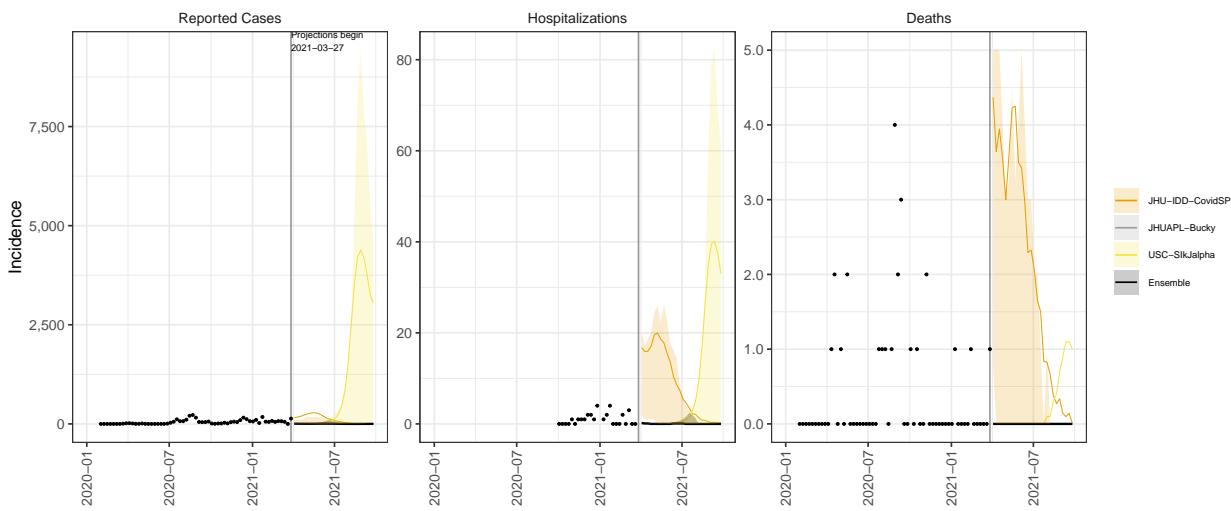
MP model variance & 50% projection intervals – Low vaccination, Low NPI compliance



PR model variance & 50% projection intervals – Low vaccination, Low NPI compliance



VI model variance & 50% projection intervals – Low vaccination, Low NPI compliance



Teams and models

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