COVID-19 Scenario Modeling Hub Report

10 February, 2021
Scenario Modeling Hub Team[1]

Executive Summary

This report presents the results of the second round of projections from the COVID-19 Scenario Modeling Hub. A consortium of five modeling groups convened to make weekly projections of COVID-19 cases, deaths, and hospitalizations given four scenarios. Detailed scenario descriptions and setting assumptions are provided here.

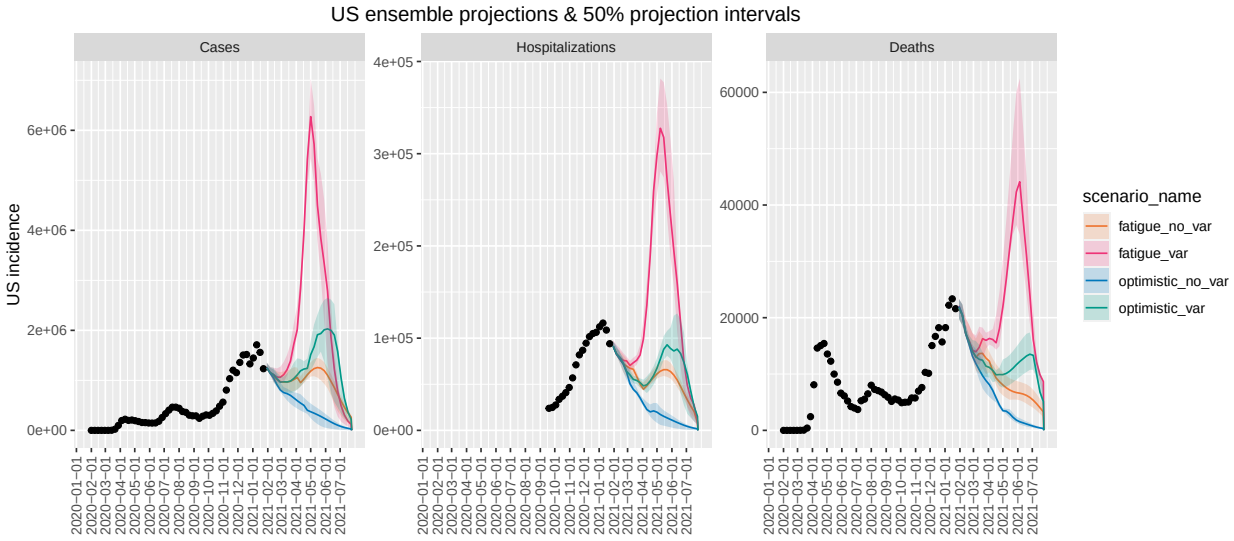
Key Takeaways From First Round

- For each scenario, we see initial decreases in ensemble projections for cases and hospitalizations through February. We see increases in projections during March and April for both scenarios accounting for a variant with increased transmissibility. Meanwhile, we observe increases in deaths for both of scenarios accounting for fatigue, with a sharper increase observed in novel variant projections. This increase is less pronounced and delayed for the optimistic scenario with increased transmissibility.
- We observe consensus across model projections for decreases in cases, hospitalizations, and deaths for the optimistic scenario without a novel variant. Large differences are apparent for scenarios incorporating a more transmissible variant.
- While individual models tend to roughly agree on the timing of resurgence within each scenario, the magnitude of the corresponding peaks vary greatly. Differences are most apparent for hospitalizations and deaths.
- Some disagreement between individual model projections of fatigue scenarios is due to differing interpretations of the timing and magnitude of intervention effectiveness. We are working with teams to ensure a consensus in interpretation of each scenario.

[1]Compiled by Justin Lessler, Rebecca Borchering, and Claire Smith

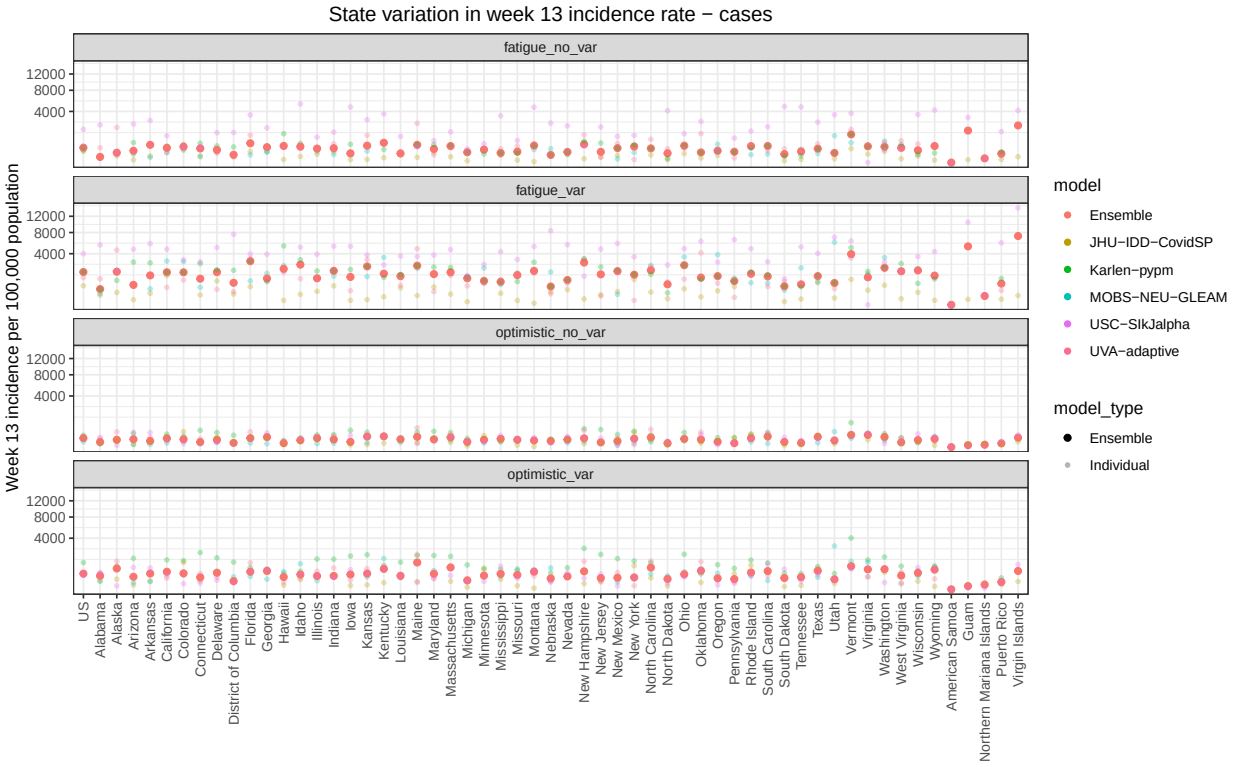
National ensemble projections

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

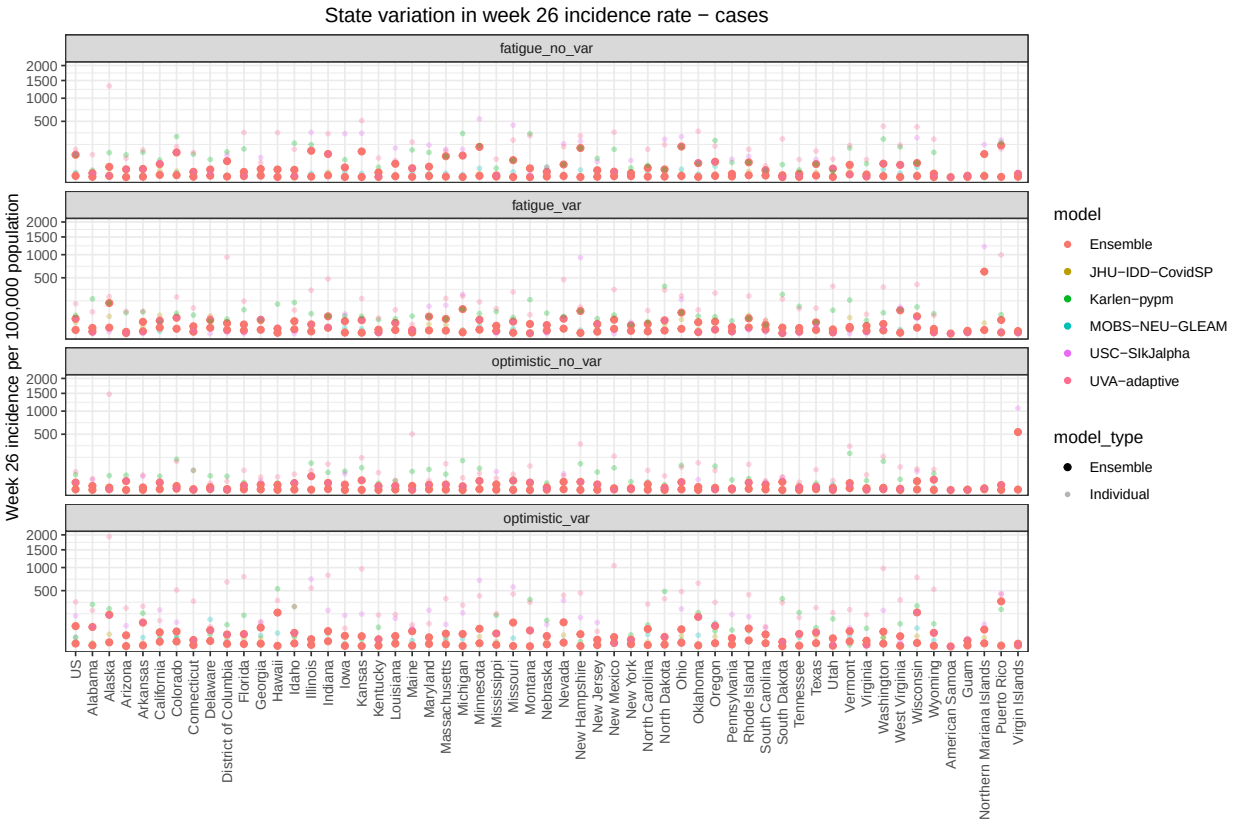


State-level deviation from national

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

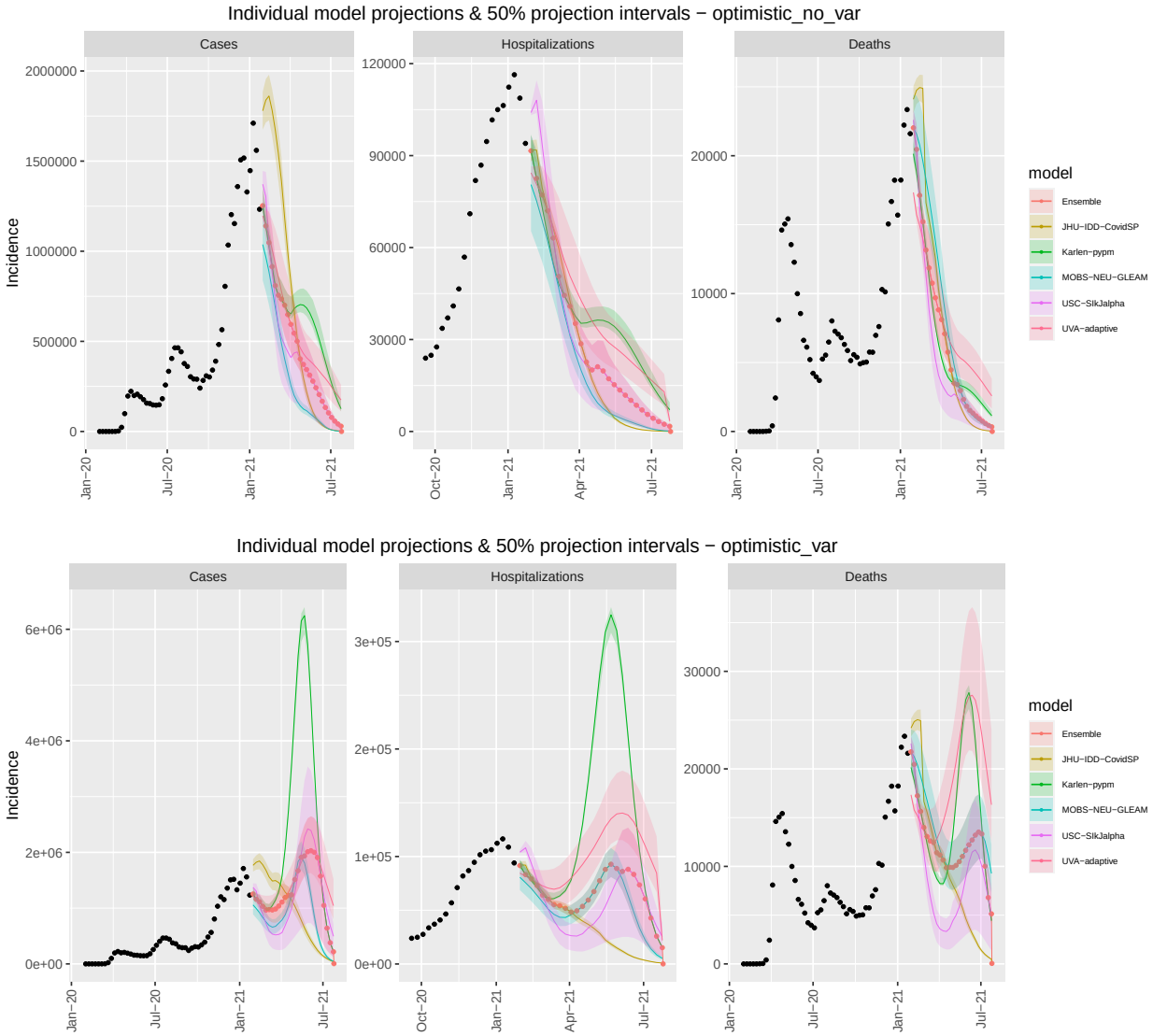


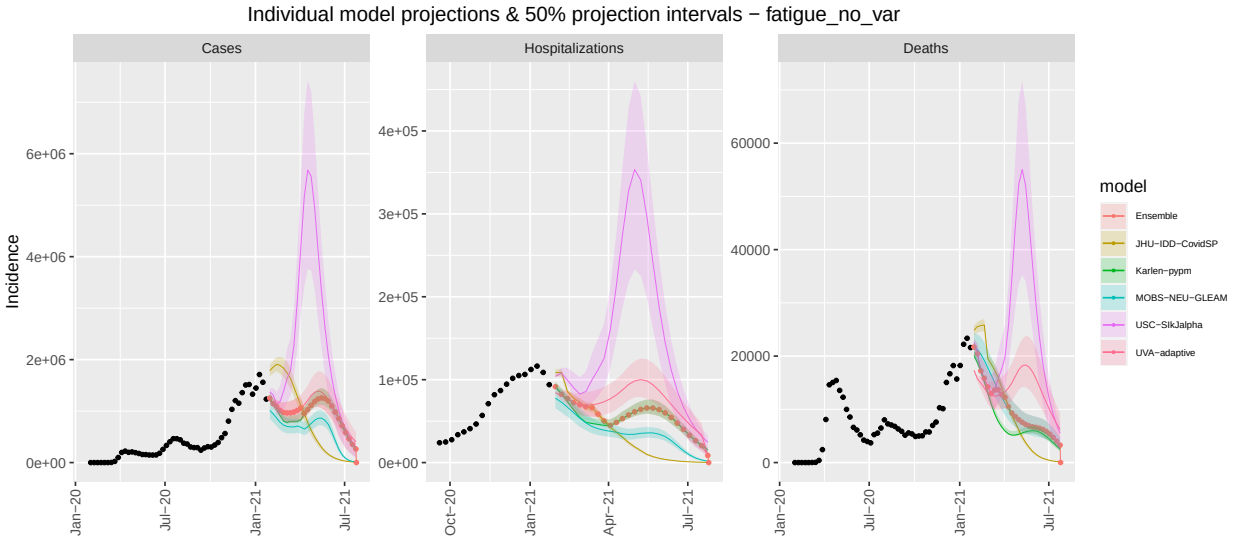
Individual model and ensembles projections for state-level incidence per 100,000 population at week 26.

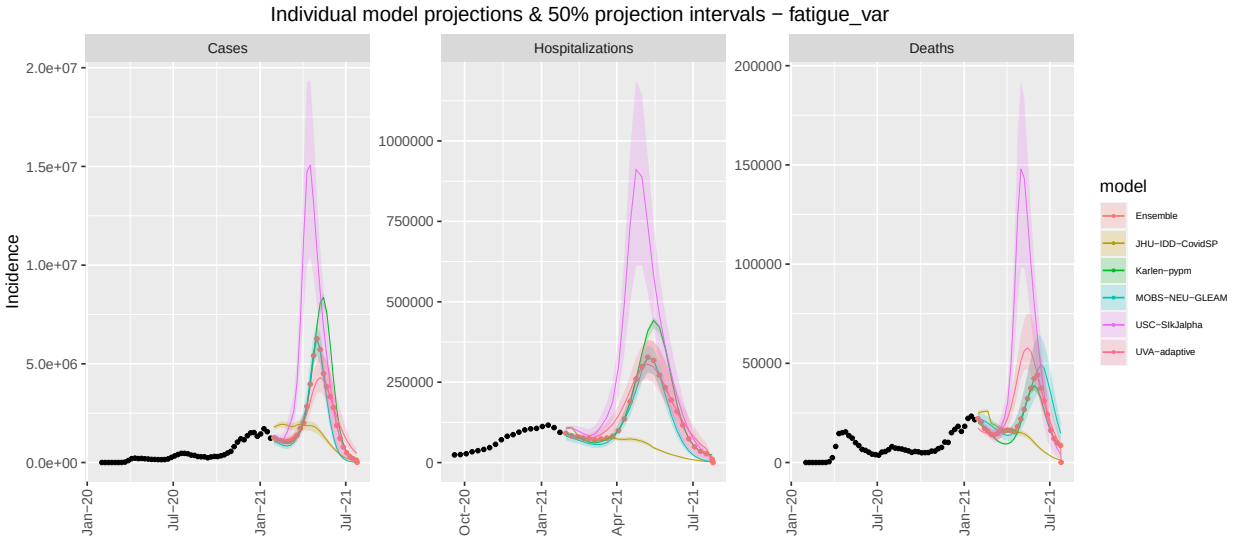


National model variation

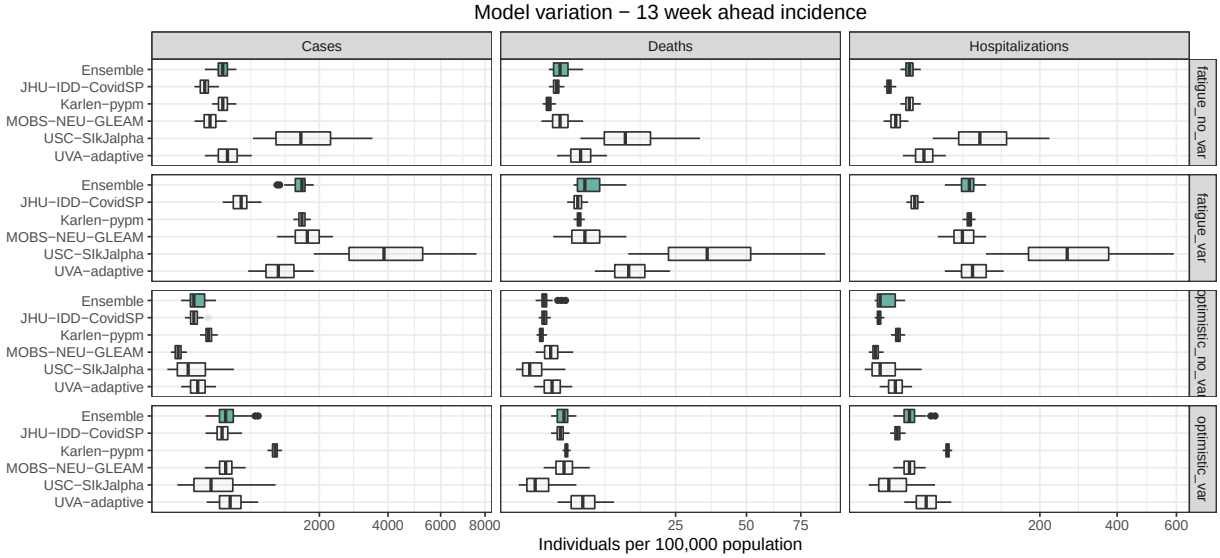
Individual model projections for national incident cases, deaths, and hospitalizations.

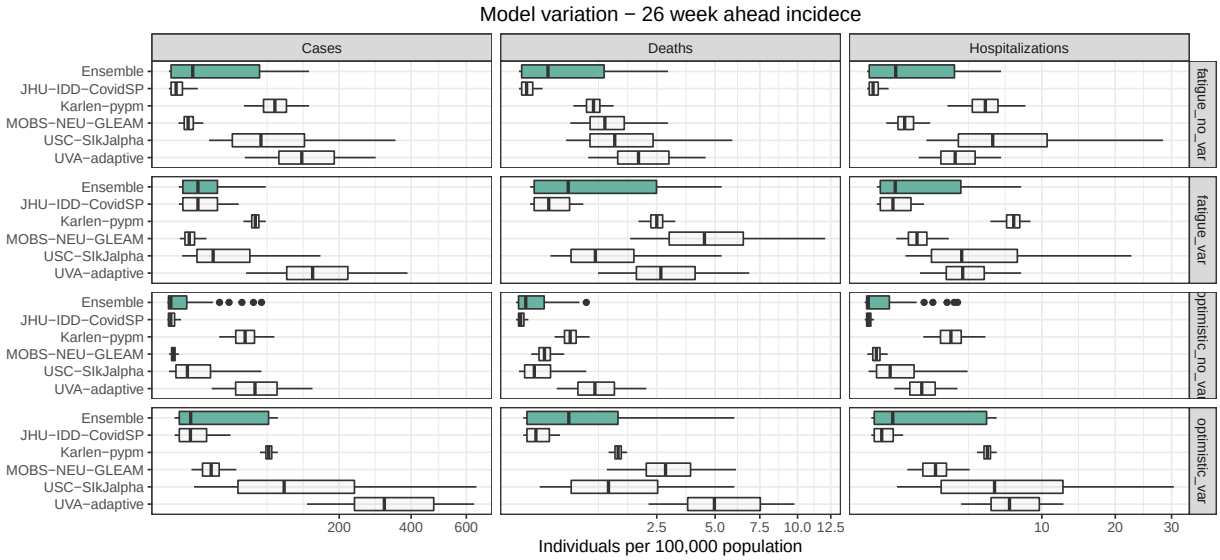


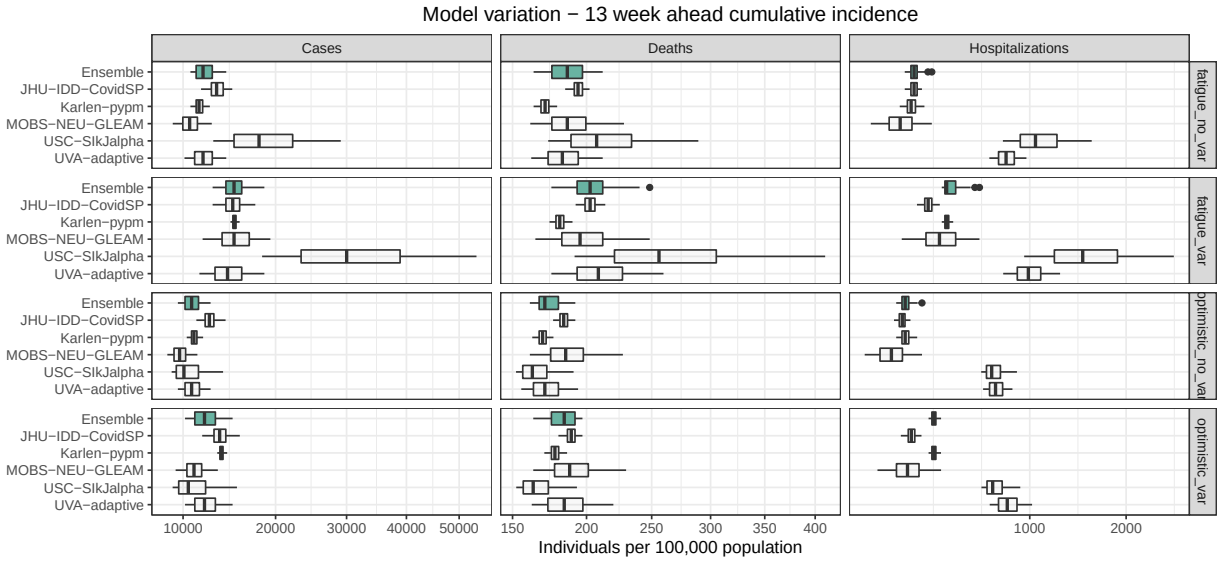

Individual model projections & 50% projection intervals − fatigue_no_var
Cases
Hospitalizations
Deaths
Incidence
6e+06
4e+06
2e+06
0e+00
4e+05
3e+05
2e+05
1e+05
0e+00
60000
40000
20000
0
Jan−20
Jul−20
Jan−21
Jul−21
Oct−20
Jan−21
Apr−21
Jul−21
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive

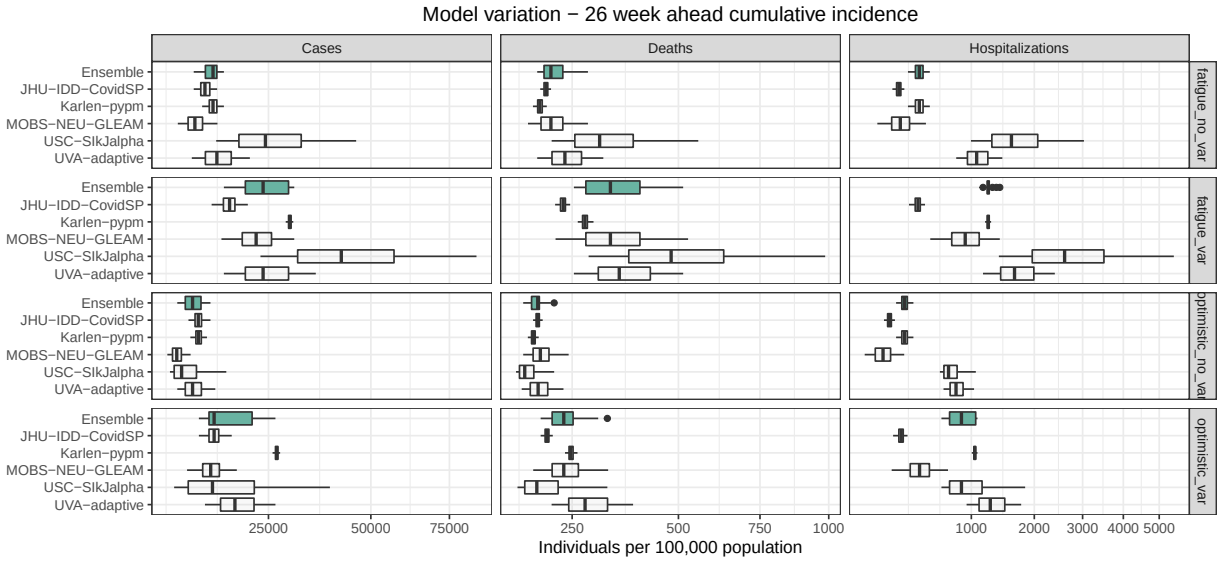

Individual model projections & 50% projection intervals − fatigue_var
Cases
Hospitalizations
Deaths
Incidence
2.0e+07
1.5e+07
1.0e+07
5.0e+06
0.0e+00
1000000
750000
500000
250000
0
200000
150000
100000
50000
0
Jan−20
Jul−20
Jan−21
Jul−21
Oct−20
Jan−21
Apr−21
Jul−21
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive

Projection distributions

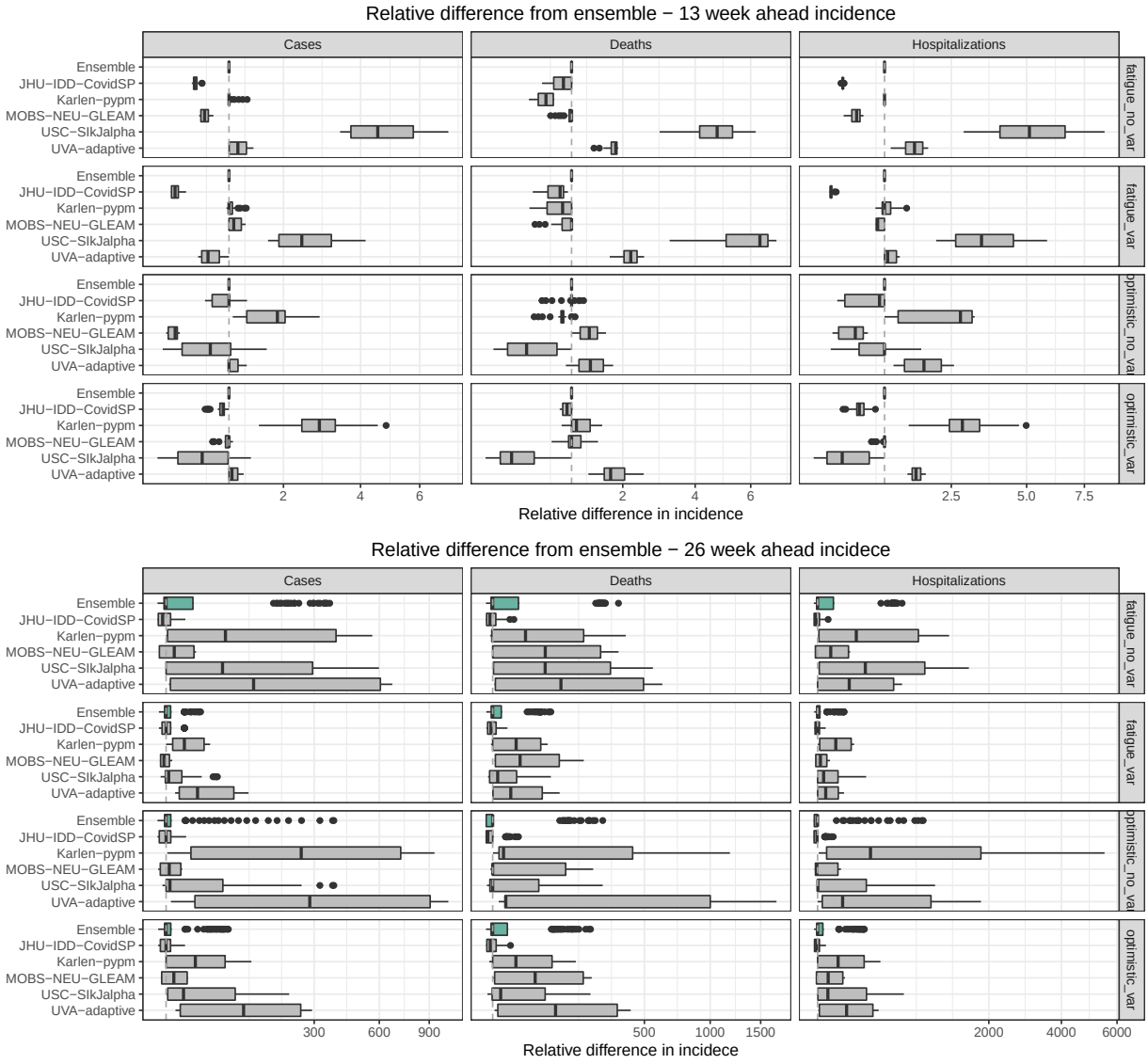


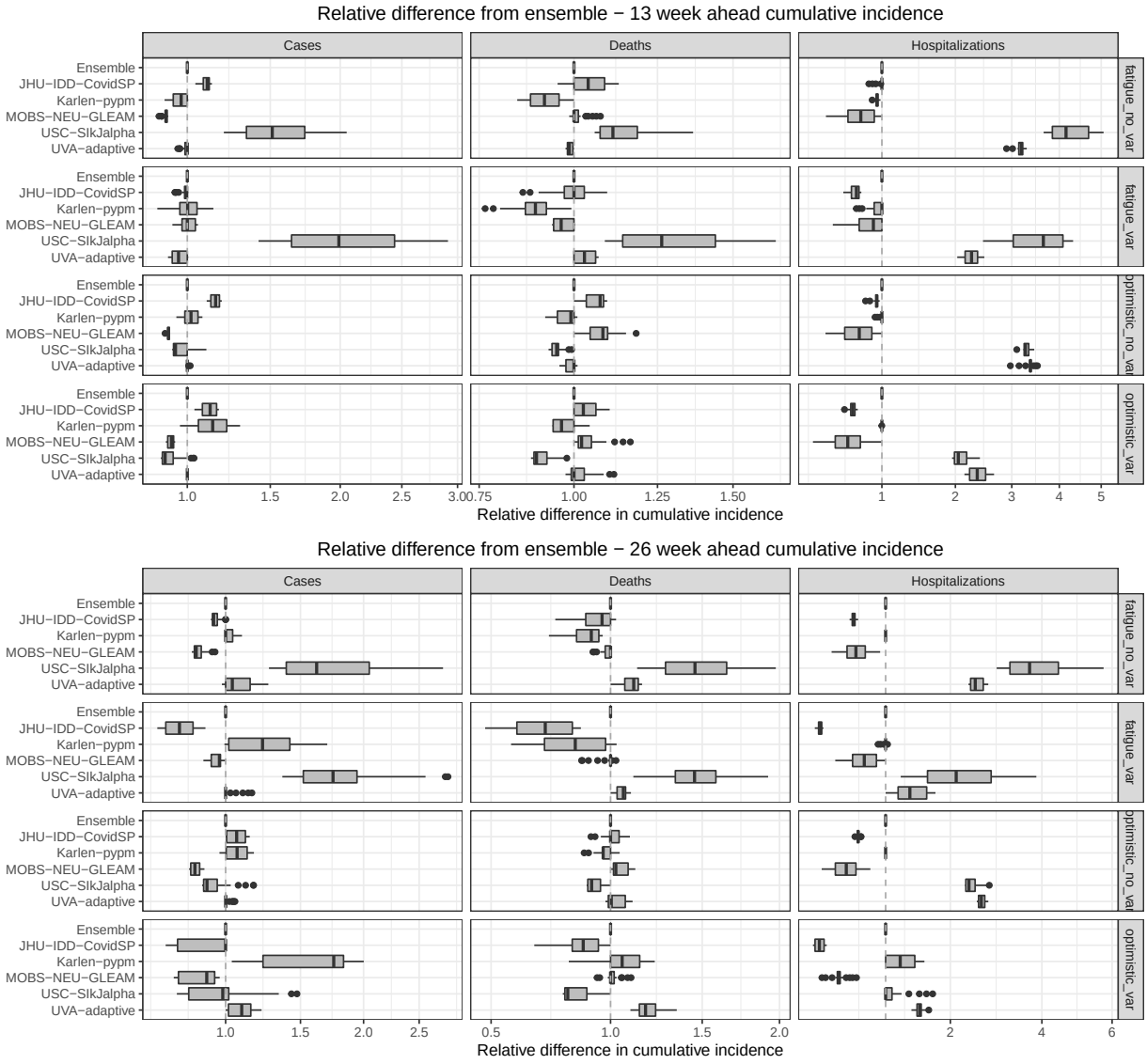



Model variation − 13 week ahead cumulative incidence
Cases
Deaths
Hospitalizations
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive
fatigue_no_var
fatigue_var
optimistic_no_var
optimistic_var
10000
20000
30000
40000
50000
150
200
250
300
350
400
1000
2000
Individuals per 100,000 population


Model variation − 26 week ahead cumulative incidence
Cases
Deaths
Hospitalizations
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive
fatigue_no_var
fatigue_var
optimistic_no_var
optimistic_var
25000
50000
75000
250
500
750
1000
1000
2000
3000
4000
5000
Individuals per 100,000 population

Difference between model and ensemble distributions





Teams and models

- Johns Hopkins ID Dynamics COVID-19 Working Group — COVID Scenario Pipeline
- Karlen Working Group — Karlen-pypm
- Northeastern University MOBS Lab — GLEAM COVID
- USC Data Science Lab — SI kJalpha
- University of Virginia — adaptive

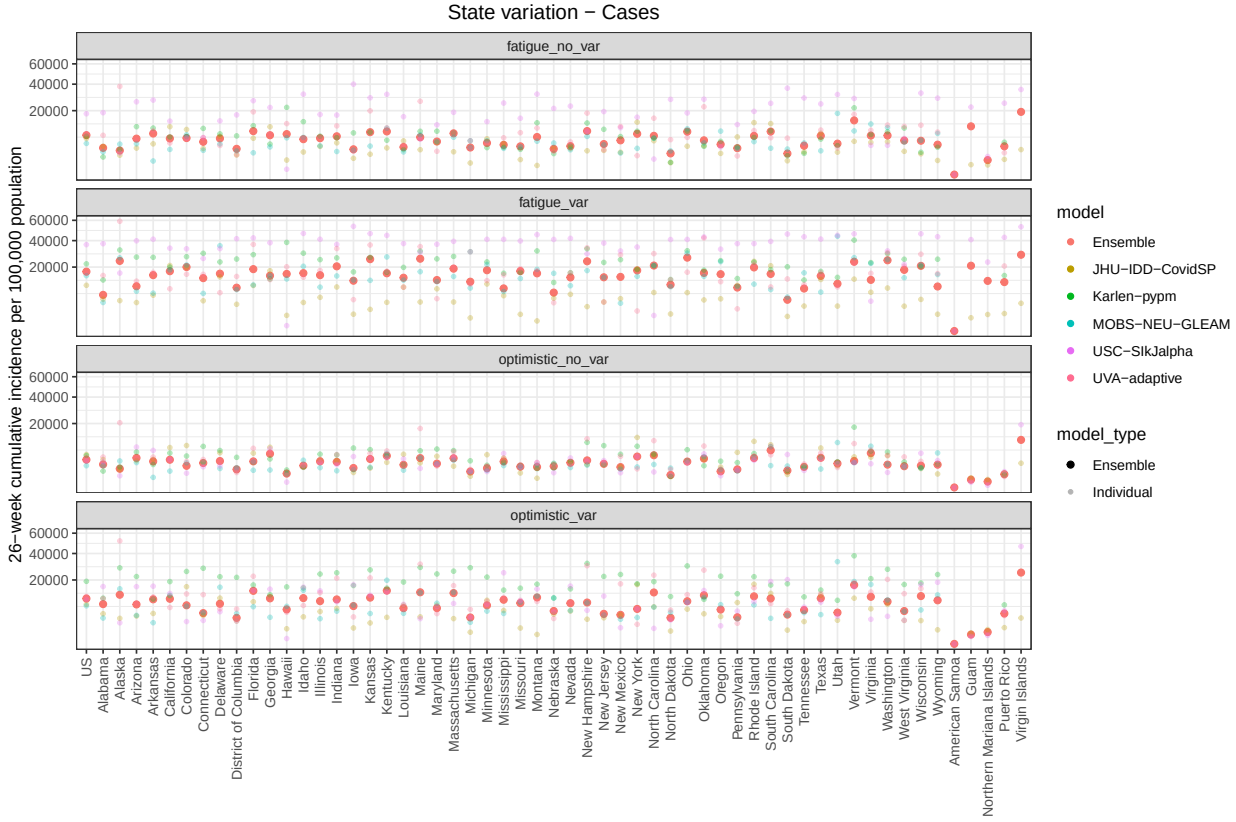
The COVID-19 Scenario Modeling Hub Team

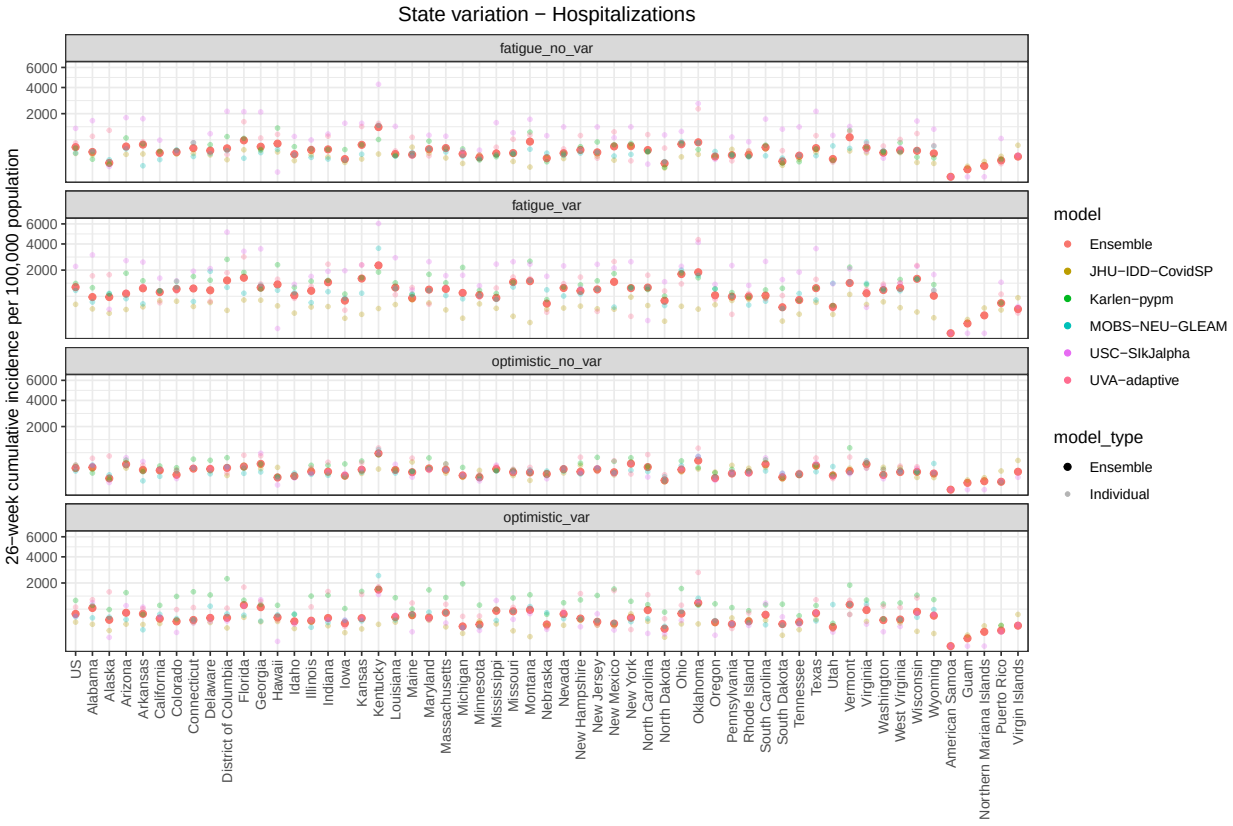
- Justin Lessler, Johns Hopkins University
- Katriona Shea, Penn State University
- Cécile Viboud, NIH Fogarty
- Shaun Truelove, Johns Hopkins University
- Rebecca Borchering, Penn State University
- Claire Smith, Johns Hopkins University

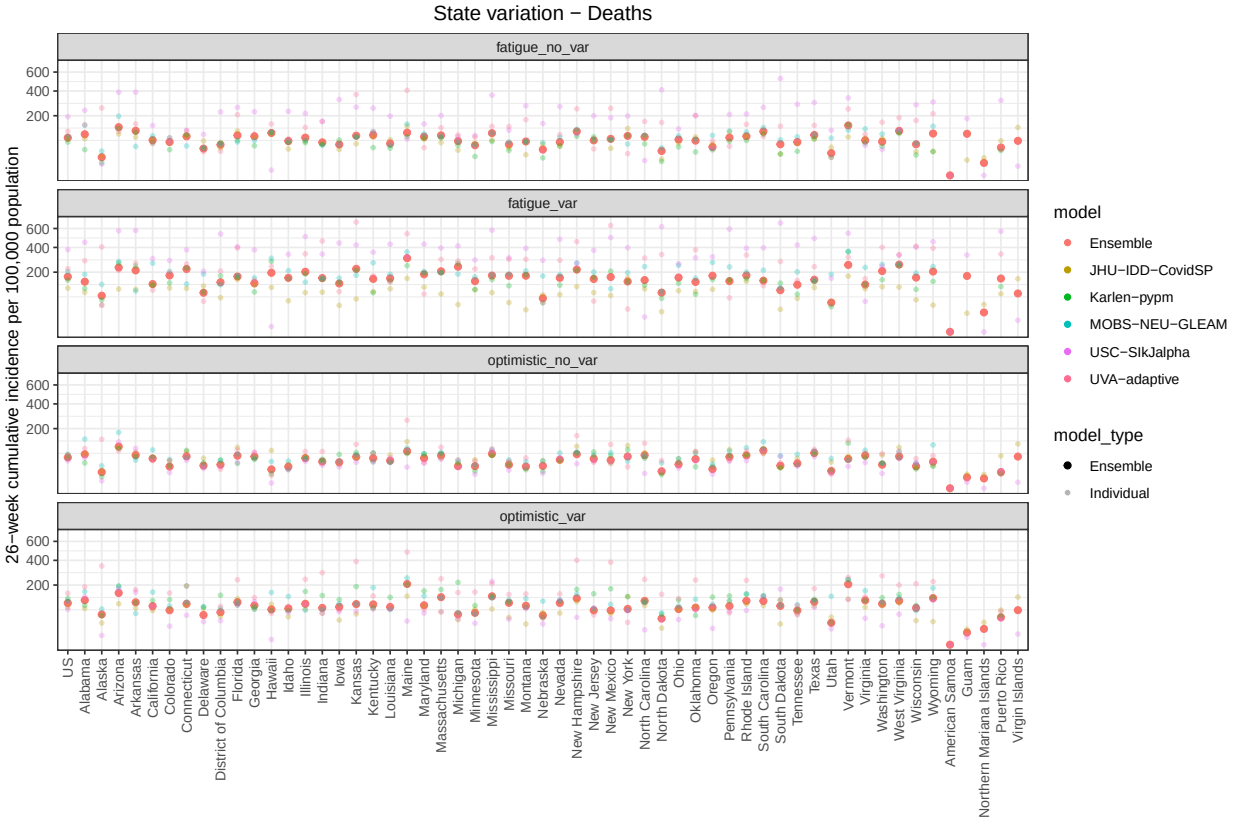
- Nick Reich, University of Massachusetts at Amherst
- Wilbert Van Panhuis, University of Pittsburgh
- Michael Runge, USGS
- Lucie Contamin, University of Pittsburgh
- John Levander, University of Pittsburgh
- Jessica Salerno, University of Pittsburgh

Supplemental Plots

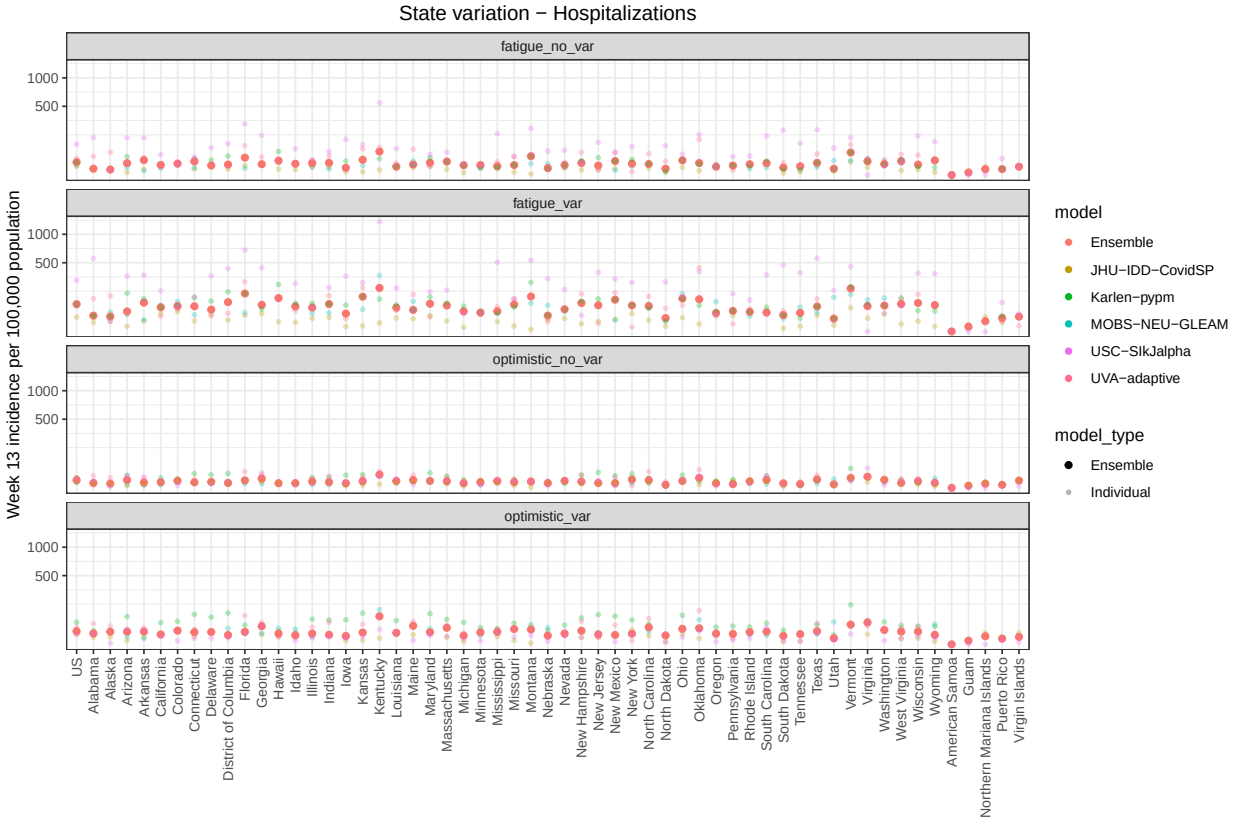
Individual model and ensembles projections for state-level cumulative incidence per 100,000 population over 26-week projection period. Please note the relatively small number of models incorporated in the ensemble at this stage, particularly states and territories for which only one or two models have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

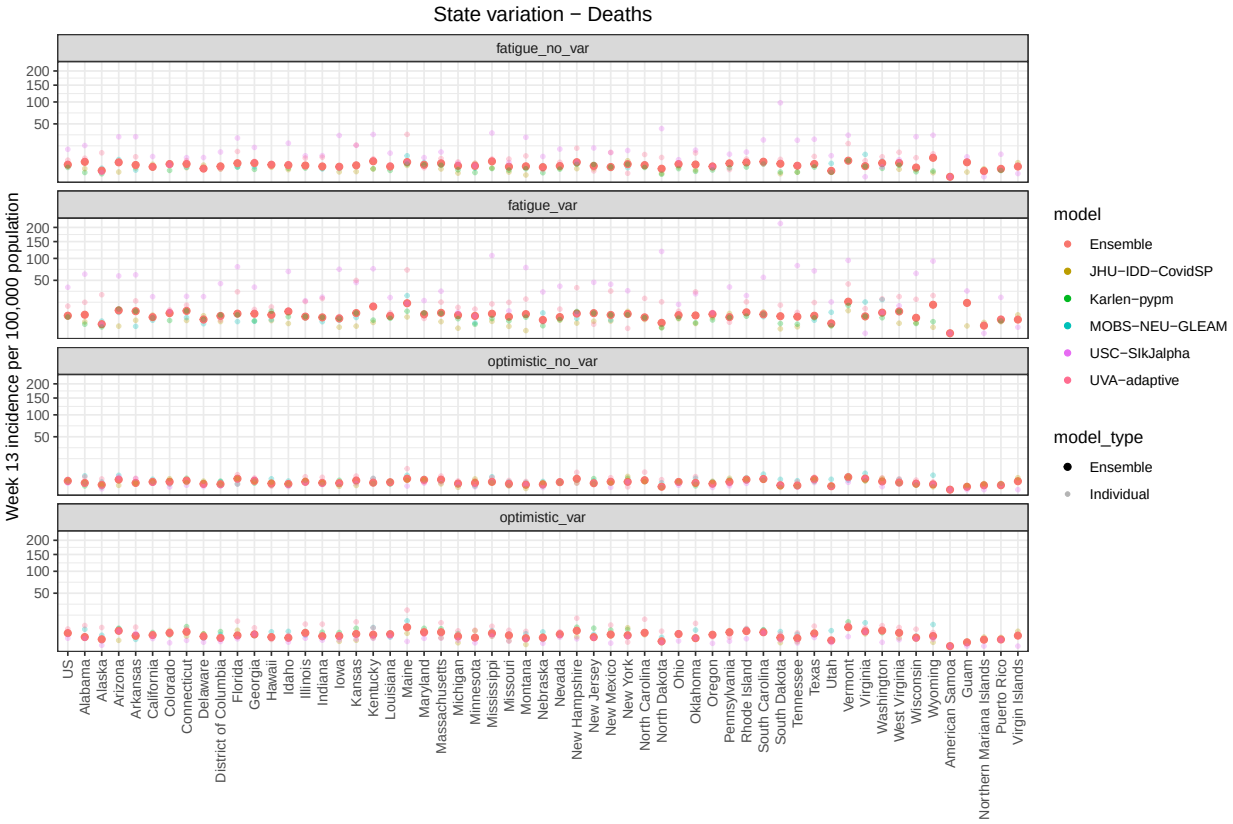



State variation − Hospitalizations
fatigue_no_var
fatigue_var
optimistic_no_var
optimistic_var
6000
4000
2000
26−week cumulative incidence per 100,000 population
US
Alabama
Alaska
Arizona
Arkansas
California
Colorado
Connecticut
Delaware
District of Columbia
Florida
Georgia
Hawaii
Idaho
Illinois
Indiana
Iowa
Kansas
Kentucky
Louisiana
Maine
Maryland
Massachusetts
Michigan
Minnesota
Mississippi
Missouri
Montana
Nebraska
Nevada
New Hampshire
New Jersey
New Mexico
New York
North Carolina
North Dakota
Ohio
Oklahoma
Oregon
Pennsylvania
Rhode Island
South Carolina
South Dakota
Tennessee
Texas
Utah
Vermont
Virginia
Washington
West Virginia
Wisconsin
Wyoming
American Samoa
Guam
Northern Mariana Islands
Puerto Rico
Virgin Islands
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive
model_type
Ensemble
Individual

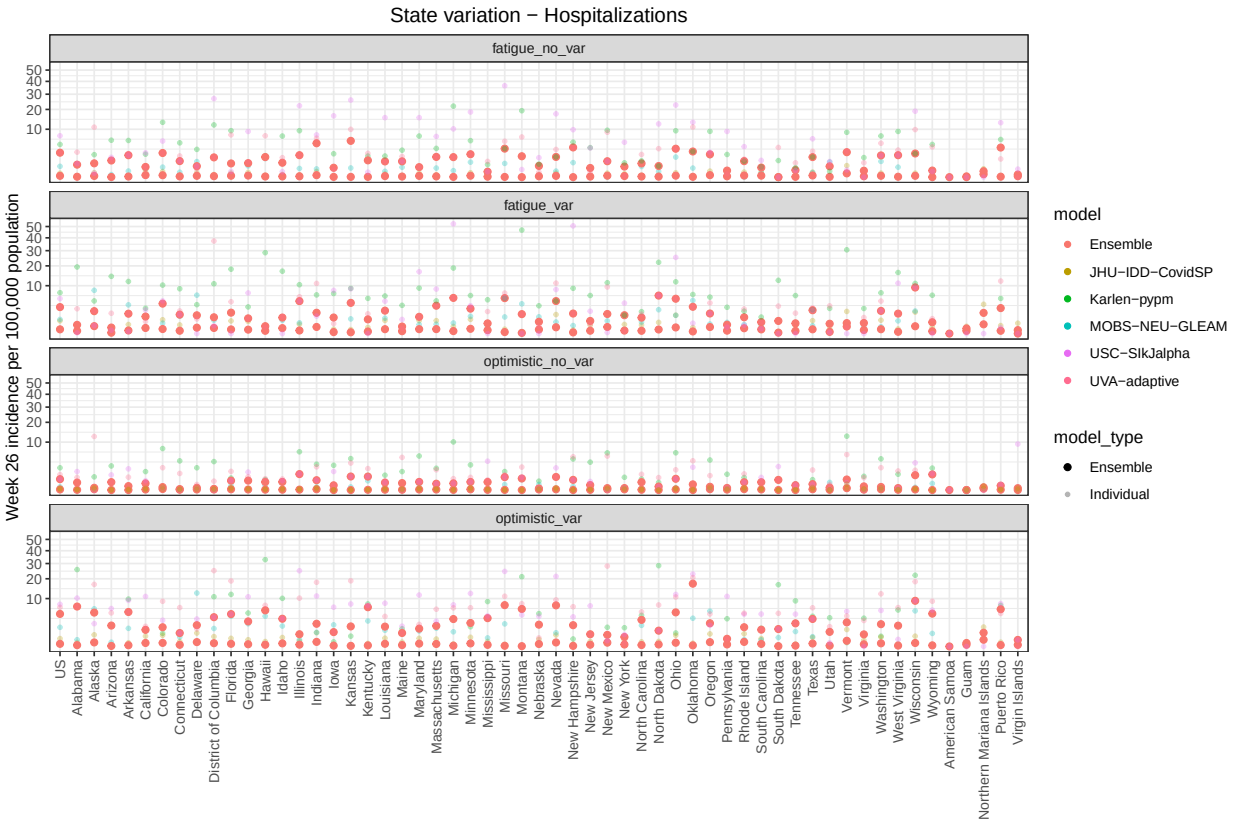

State variation − Deaths
fatigue_no_var
fatigue_var
optimistic_no_var
optimistic_var
600
400
200
26−week cumulative incidence per 100,000 population
US
Alabama
Alaska
Arizona
Arkansas
California
Colorado
Connecticut
Delaware
District of Columbia
Florida
Georgia
Hawaii
Idaho
Illinois
Indiana
Iowa
Kansas
Kentucky
Louisiana
Maine
Maryland
Massachusetts
Michigan
Minnesota
Mississippi
Missouri
Montana
Nebraska
Nevada
New Hampshire
New Jersey
New Mexico
New York
North Carolina
North Dakota
Ohio
Oklahoma
Oregon
Pennsylvania
Rhode Island
South Carolina
South Dakota
Tennessee
Texas
Utah
Vermont
Virginia
Washington
West Virginia
Wisconsin
Wyoming
American Samoa
Guam
Northern Mariana Islands
Puerto Rico
Virgin Islands
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive
model_type
Ensemble
Individual

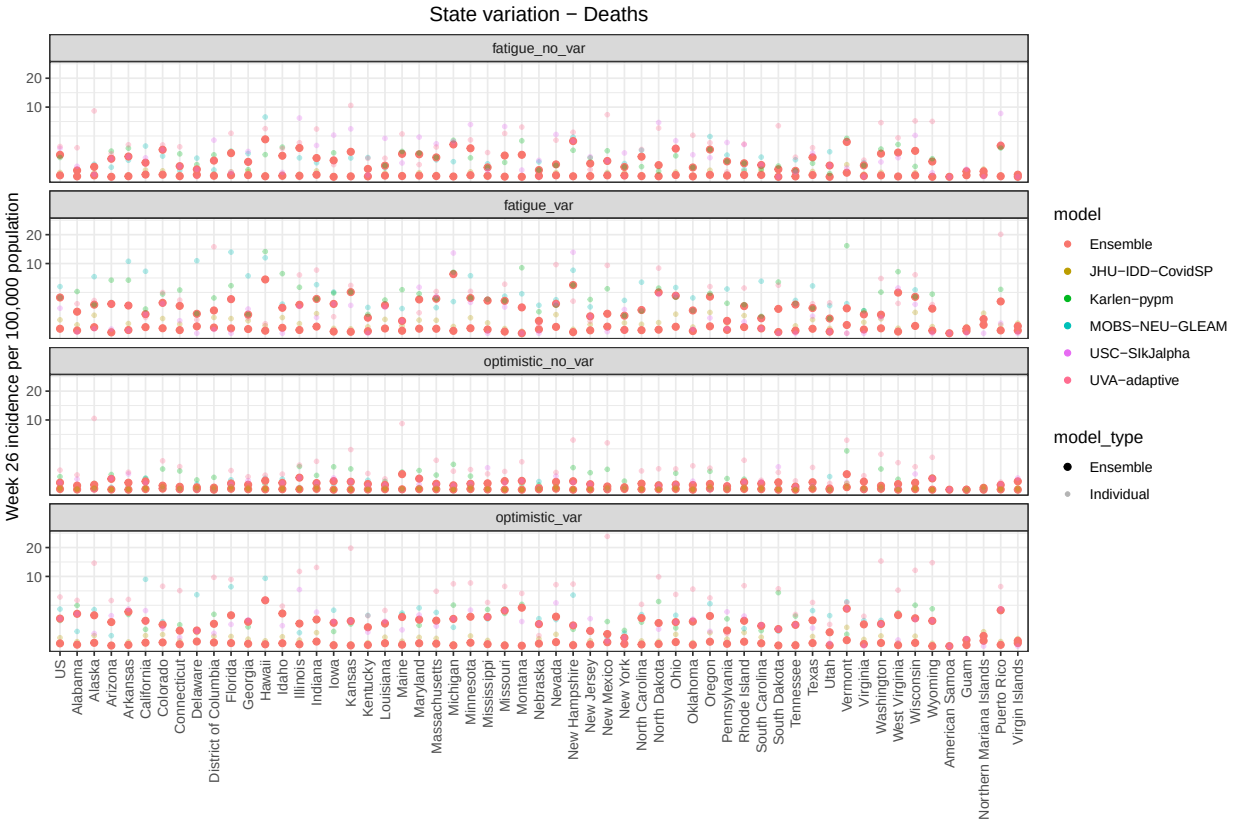
Individual model and ensembles projections for state-level death and hospitalization incidence per 100,000 population at week 13.



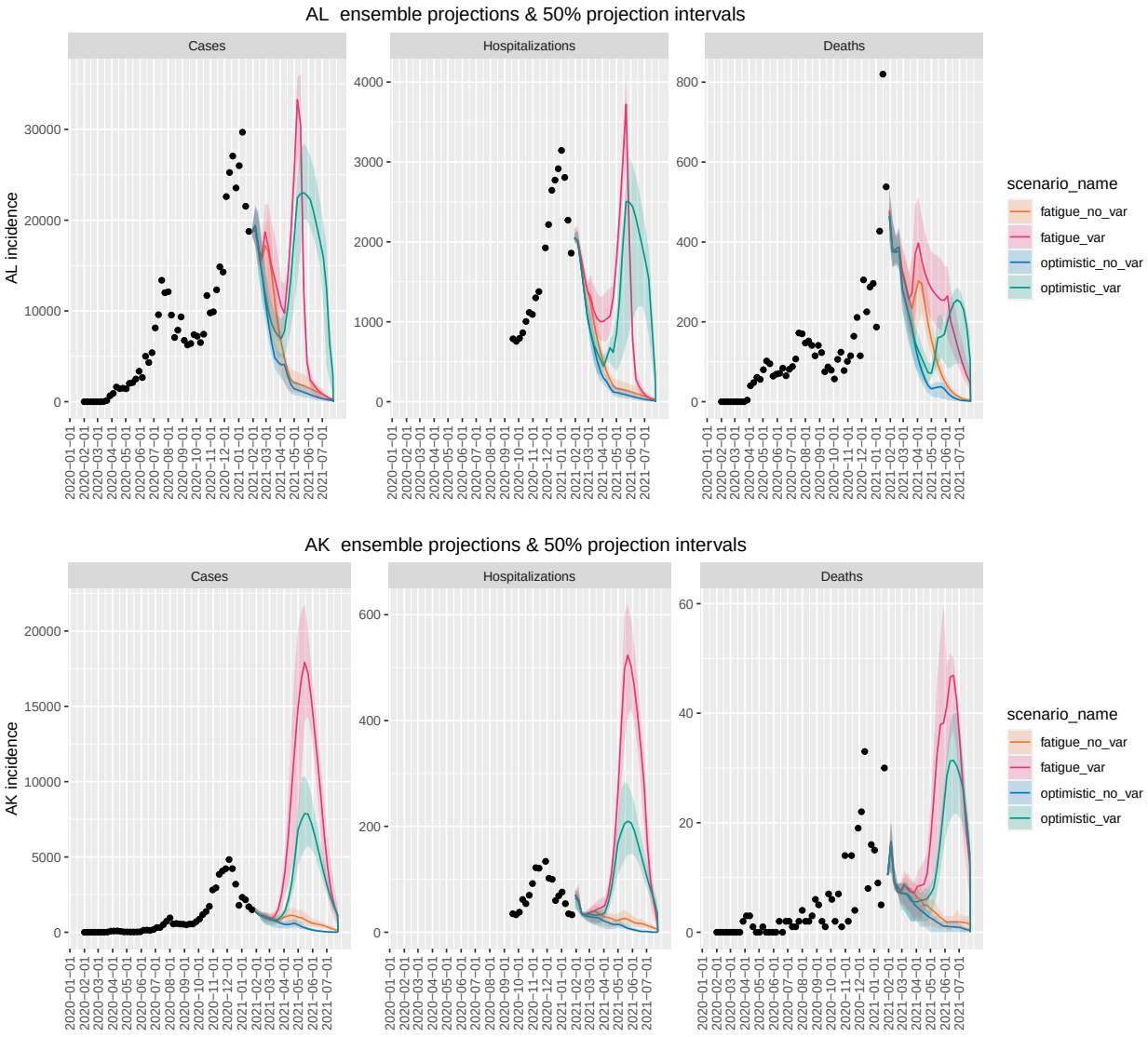

State variation − Deaths
fatigue_no_var
fatigue_var
optimistic_no_var
optimistic_var
Week 13 incidence per 100,000 population
200
150
100
50
US
Alabama
Alaska
Arizona
Arkansas
California
Colorado
Connecticut
Delaware
District of Columbia
Florida
Georgia
Hawaii
Idaho
Illinois
Indiana
Iowa
Kansas
Kentucky
Louisiana
Maine
Maryland
Massachusetts
Michigan
Minnesota
Mississippi
Missouri
Montana
Nebraska
Nevada
New Hampshire
New Jersey
New Mexico
New York
North Carolina
North Dakota
Ohio
Oklahoma
Oregon
Pennsylvania
Rhode Island
South Carolina
South Dakota
Tennessee
Texas
Utah
Vermont
Virginia
Washington
West Virginia
Wisconsin
Wyoming
American Samoa
Guam
Northern Mariana Islands
Puerto Rico
Virgin Islands
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive
model_type
Ensemble
Individual

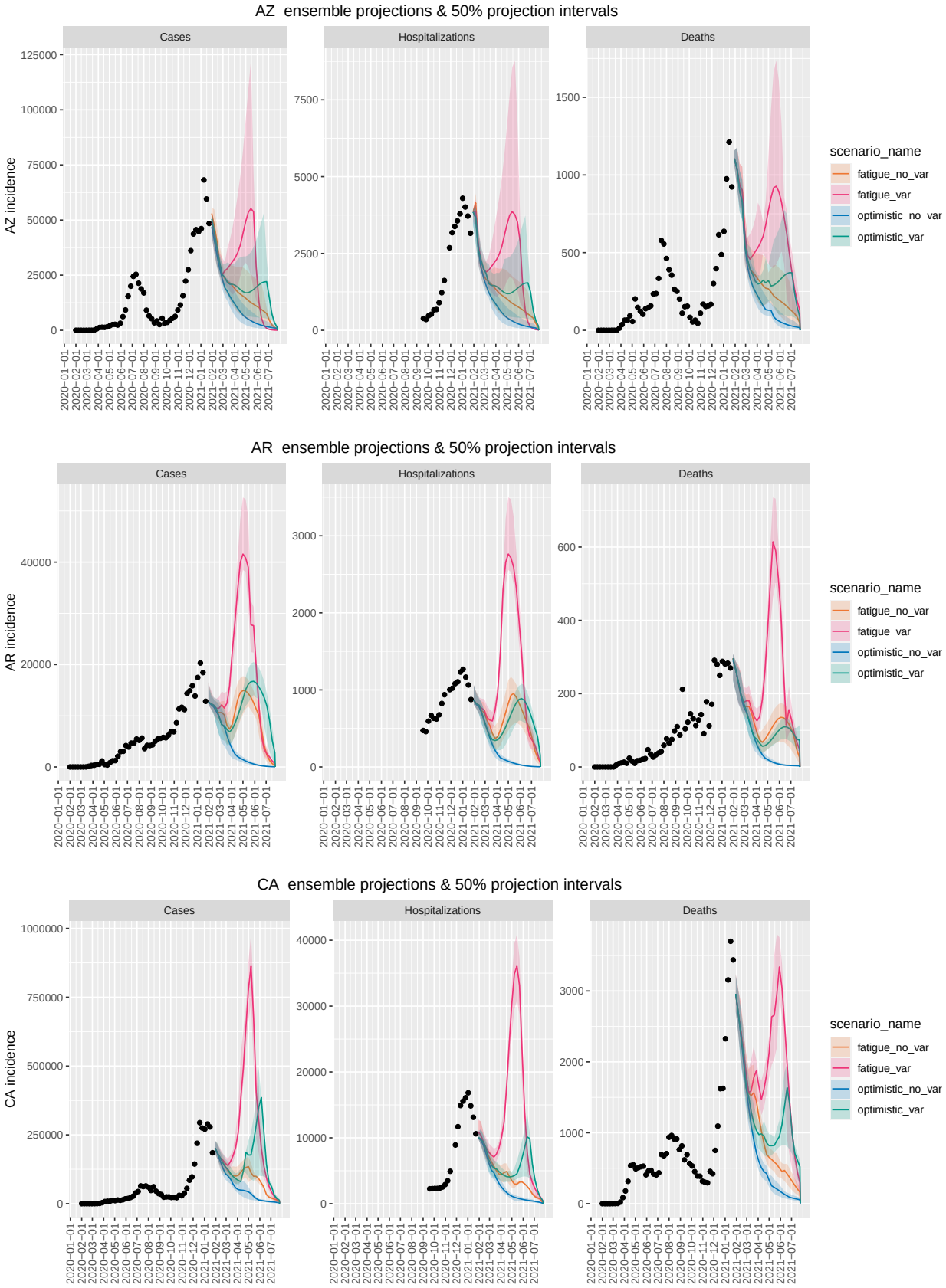
Individual model and ensembles projections for state-level incidence per 100,000 population at week 26.

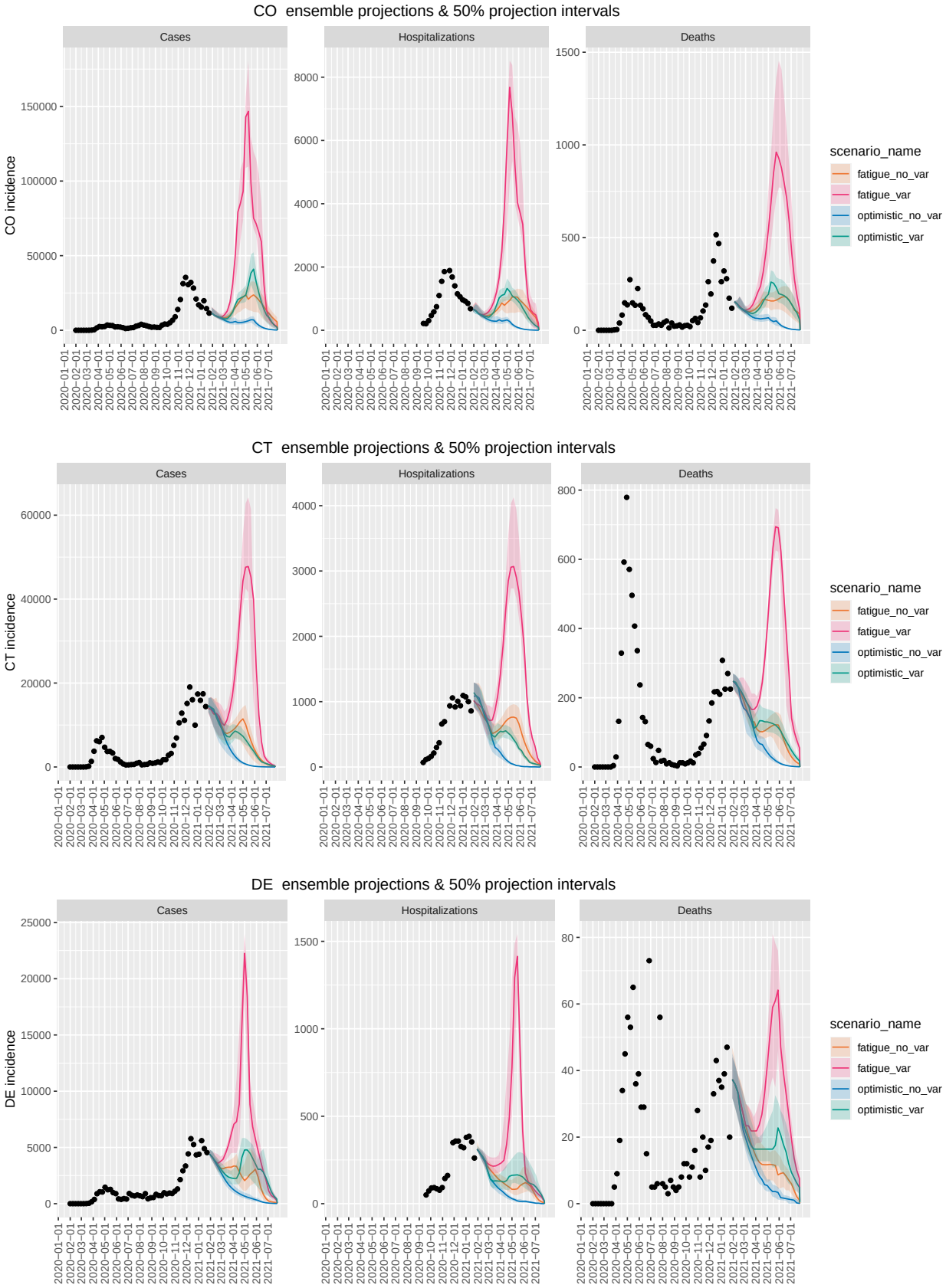


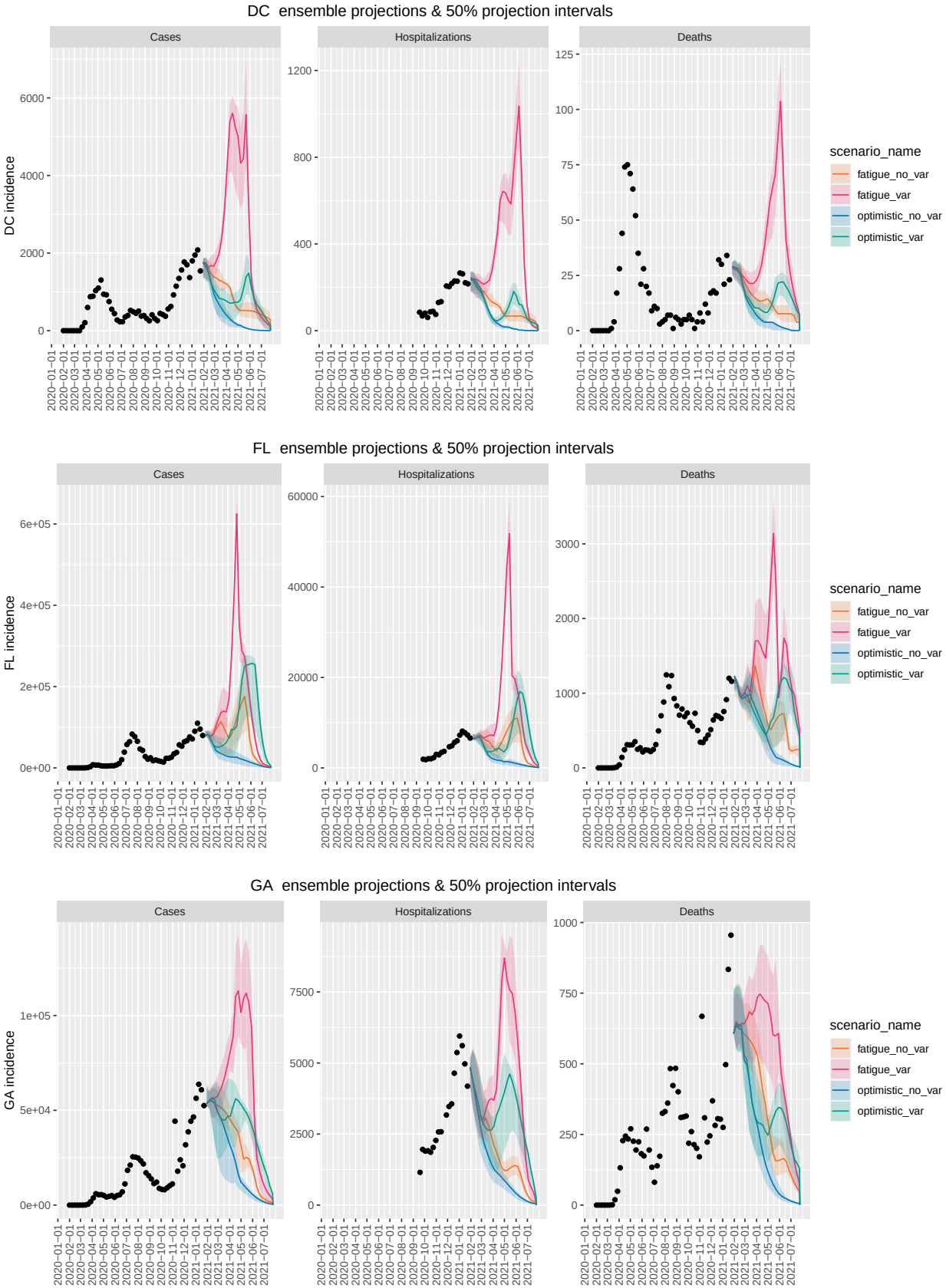

State variation − Deaths
fatigue_no_var
fatigue_var
optimistic_no_var
optimistic_var
Week 26 incidence per 100,000 population
20
10
US
Alabama
Alaska
Arizona
Arkansas
California
Colorado
Connecticut
Delaware
District of Columbia
Florida
Georgia
Hawaii
Idaho
Illinois
Indiana
Iowa
Kansas
Kentucky
Louisiana
Maine
Maryland
Massachusetts
Michigan
Minnesota
Mississippi
Missouri
Montana
Nebraska
Nevada
New Hampshire
New Jersey
New Mexico
New York
North Carolina
North Dakota
Ohio
Oklahoma
Oregon
Pennsylvania
Rhode Island
South Carolina
South Dakota
Tennessee
Texas
Utah
Vermont
Virginia
Washington
West Virginia
Wisconsin
Wyoming
American Samoa
Guam
Northern Mariana Islands
Puerto Rico
Virgin Islands
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive
model_type
Ensemble
Individual

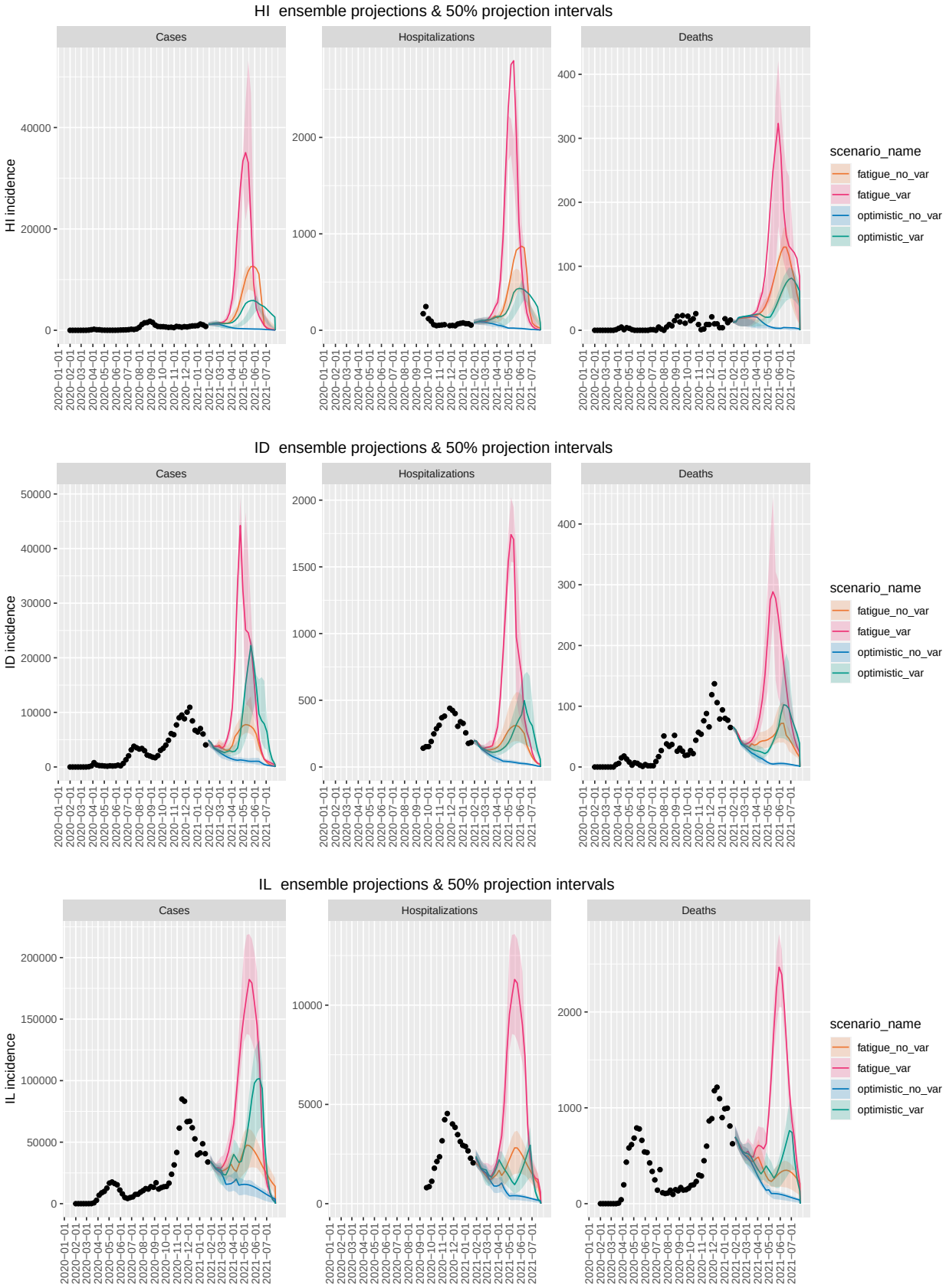
State-level ensemble plots

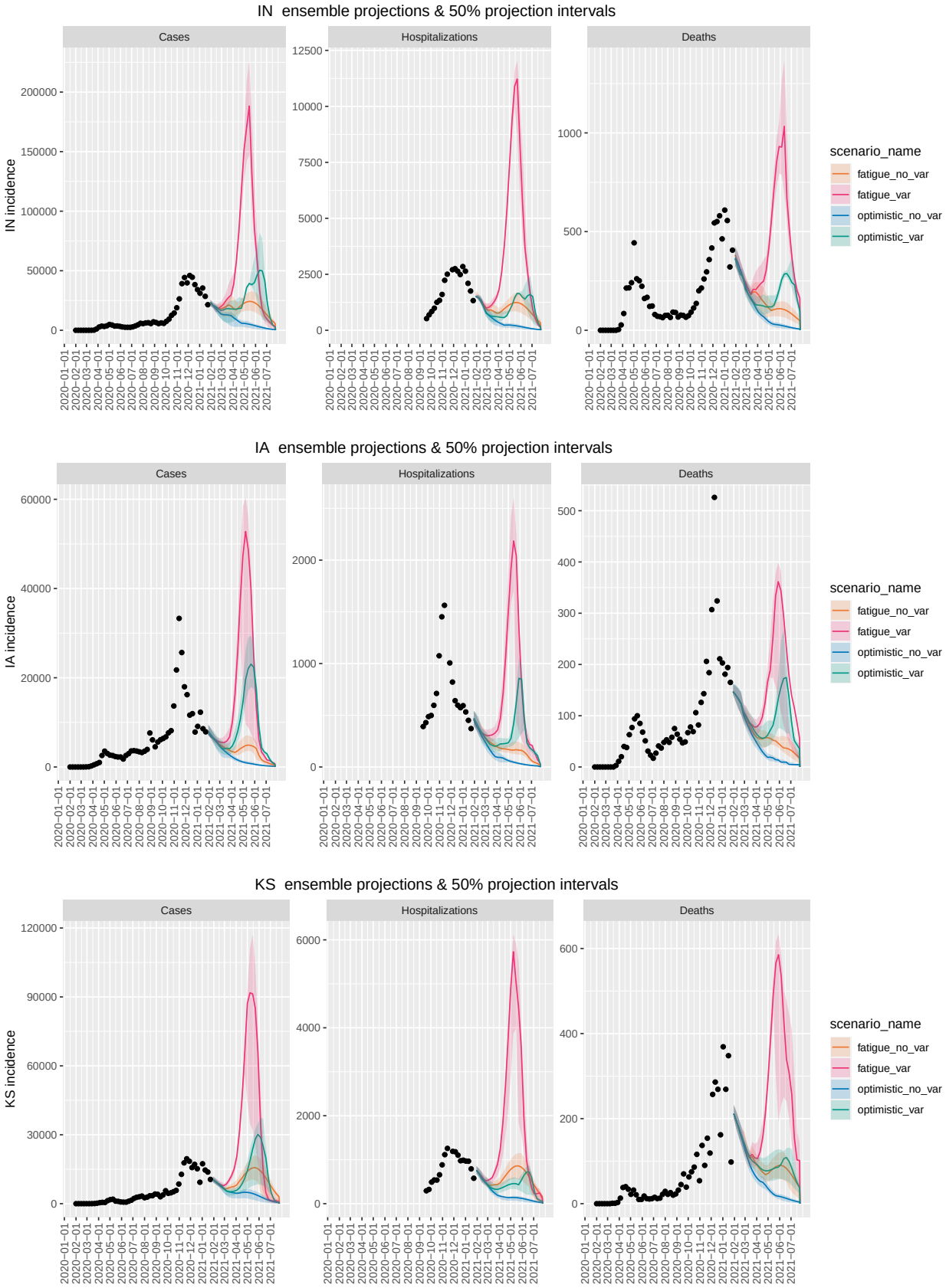


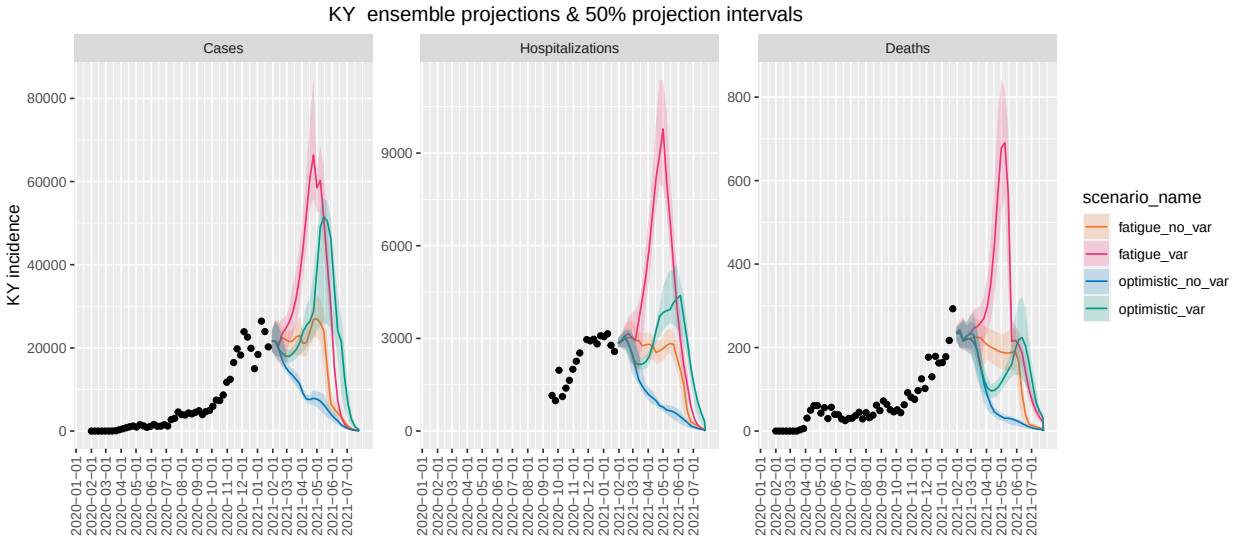

AZ ensemble projections & 50% projection intervals
Cases
Hospitalizations
Deaths
AZ incidence
AR ensemble projections & 50% projection intervals
AR incidence
CA ensemble projections & 50% projection intervals
CA incidence
scenario_name
fatigue_no_var
fatigue_var
optimistic_no_var
optimistic_var

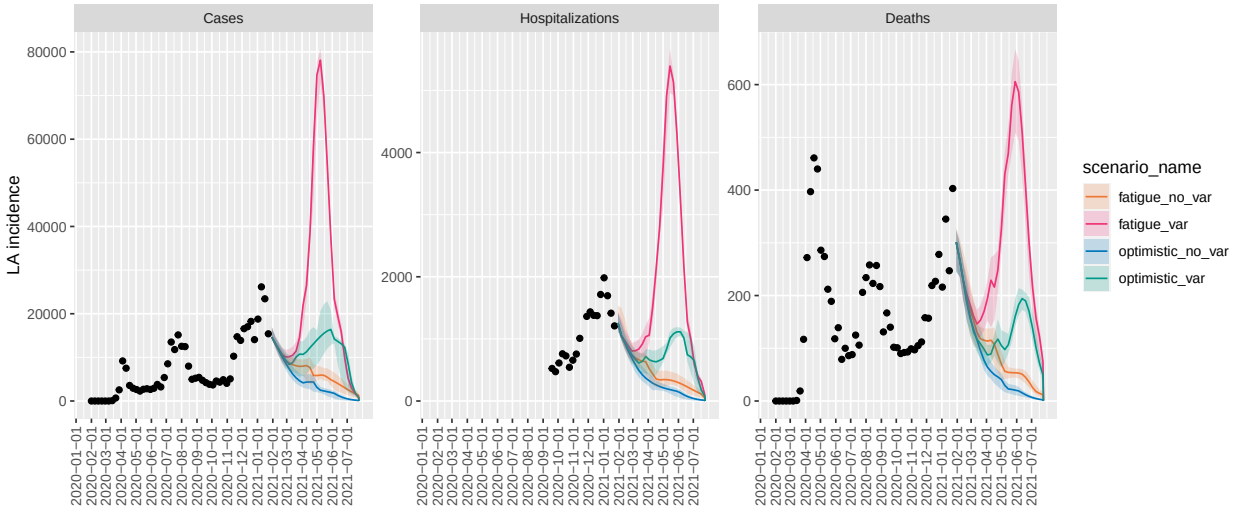

CO ensemble projections & 50% projection intervals
Cases
Hospitalizations
Deaths
CO incidence
CT ensemble projections & 50% projection intervals
CT incidence
DE ensemble projections & 50% projection intervals
DE incidence
scenario_name
fatigue_no_var
fatigue_var
optimistic_no_var
optimistic_var

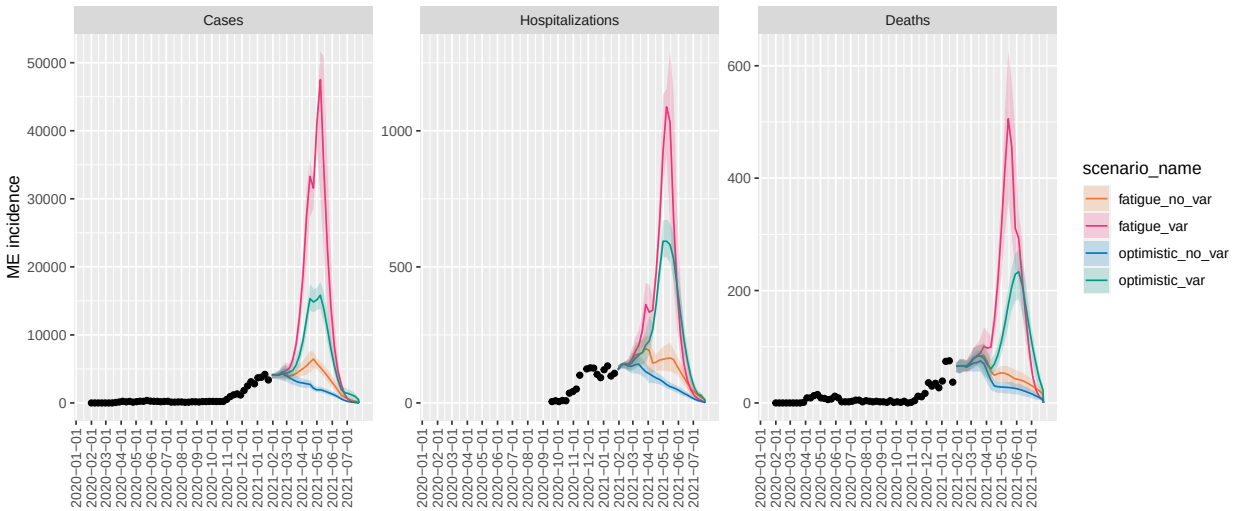

DC ensemble projections & 50% projection intervals
Cases
Hospitalizations
Deaths
DC incidence
FL ensemble projections & 50% projection intervals
FL incidence
GA ensemble projections & 50% projection intervals
GA incidence
scenario_name
fatigue_no_var
fatigue_var
optimistic_no_var
optimistic_var

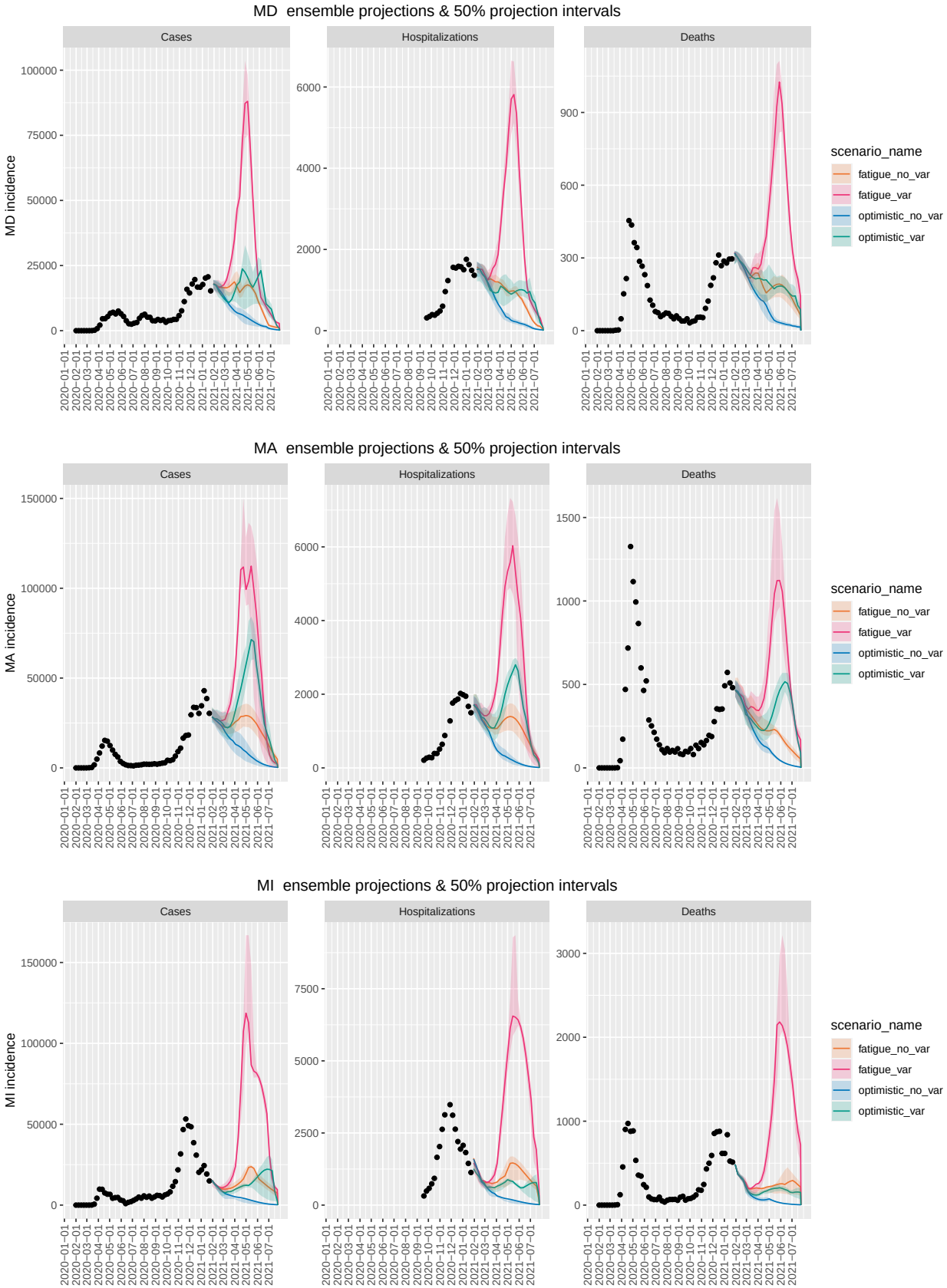

HI ensemble projections & 50% projection intervals
Cases
Hospitalizations
Deaths
HI incidence
ID ensemble projections & 50% projection intervals
ID incidence
IL ensemble projections & 50% projection intervals
IL incidence
scenario_name
fatigue_no_var
fatigue_var
optimistic_no_var
optimistic_var

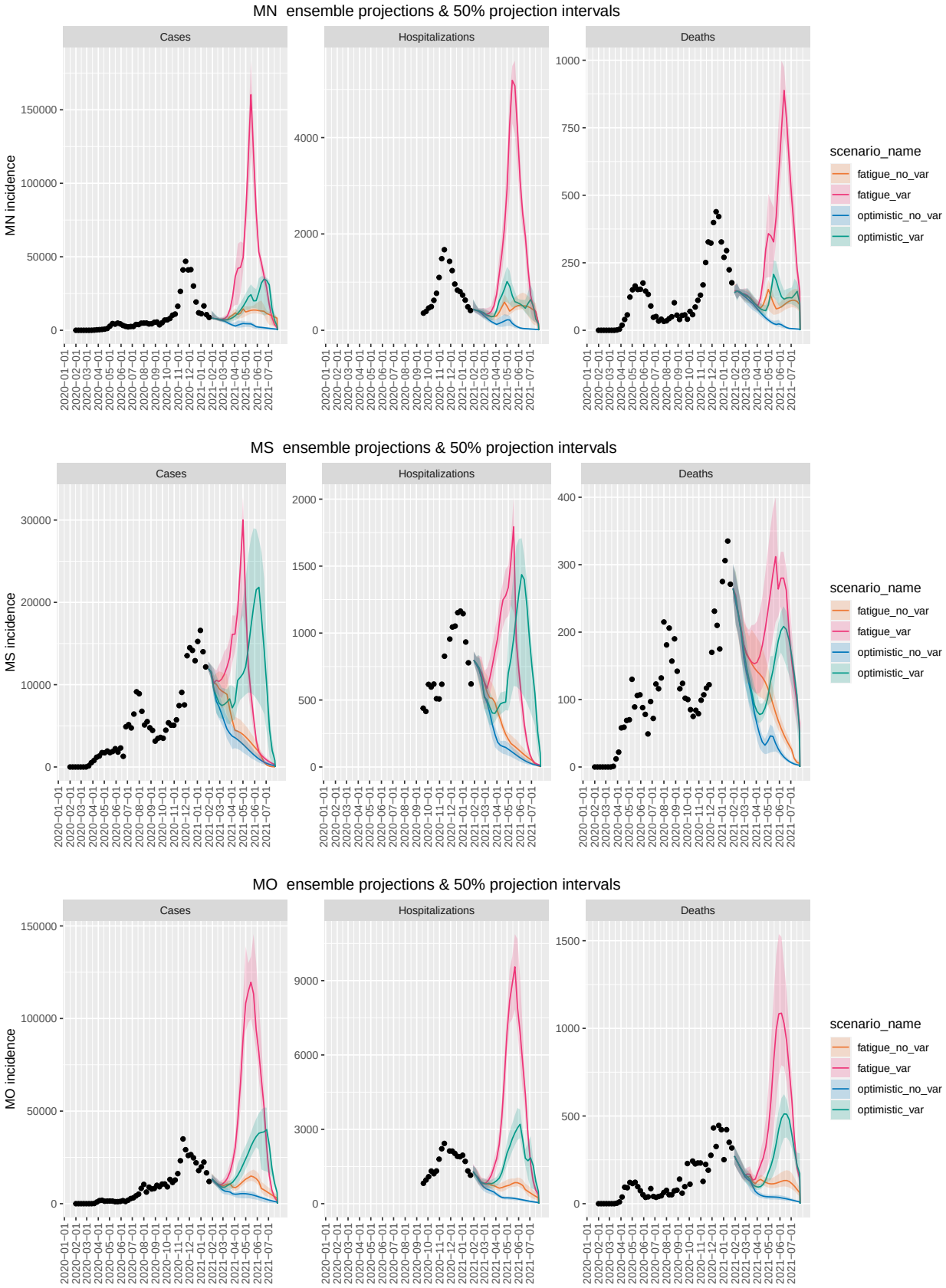

IN ensemble projections & 50% projection intervals
Cases
Hospitalizations
Deaths
IN incidence
scenario_name
fatigue_no_var
fatigue_var
optimistic_no_var
optimistic_var
IA ensemble projections & 50% projection intervals
IA incidence
KS ensemble projections & 50% projection intervals
KS incidence

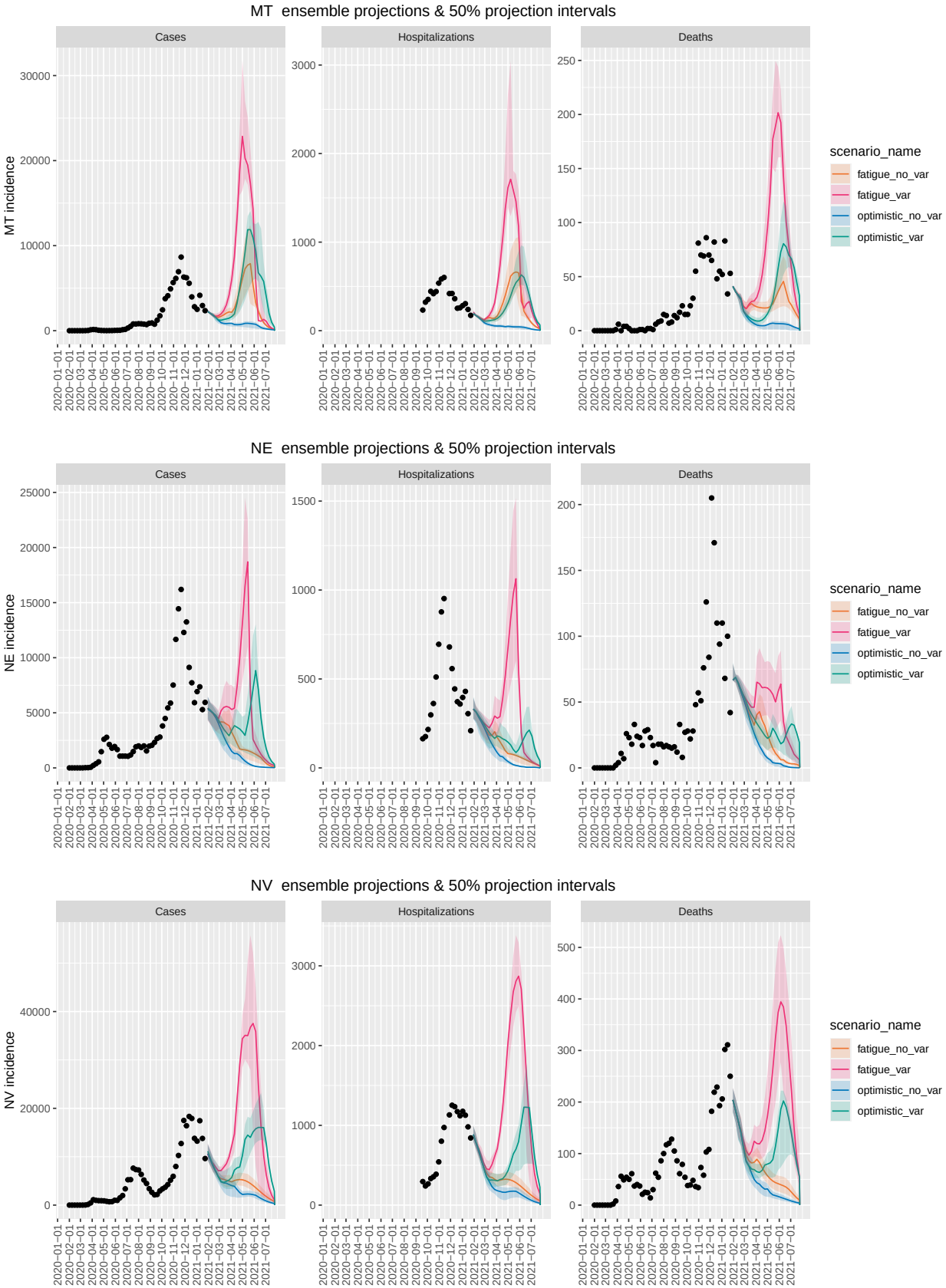

KY ensemble projections & 50% projection intervals
Cases
Hospitalizations
Deaths
KY incidence
scenario_name
fatigue_no_var
fatigue_var
optimistic_no_var
optimistic_var

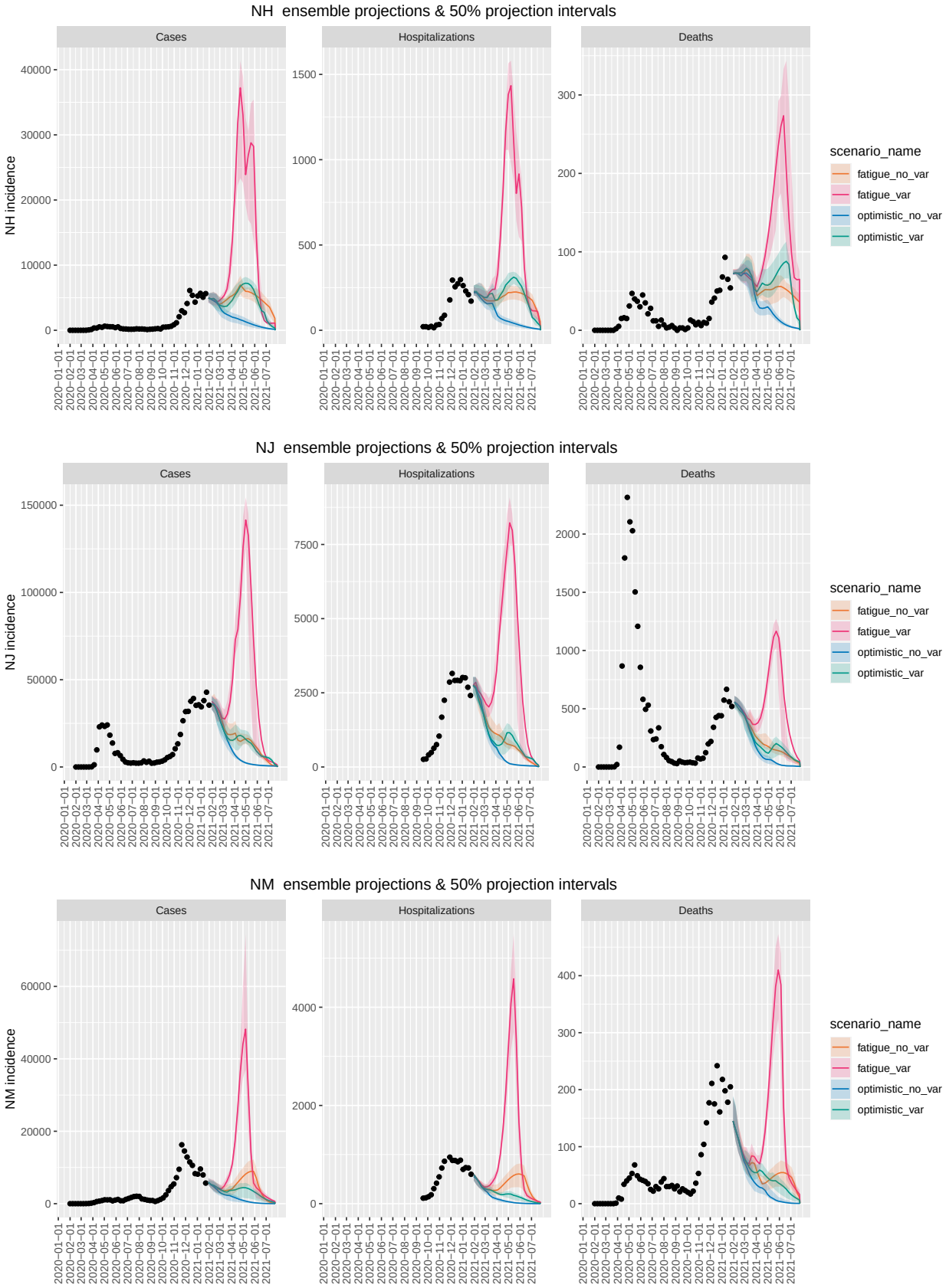

LA ensemble projections & 50% projection intervals
Cases
Hospitalizations
Deaths
LA incidence
scenario_name
fatigue_no_var
fatigue_var
optimistic_no_var
optimistic_var

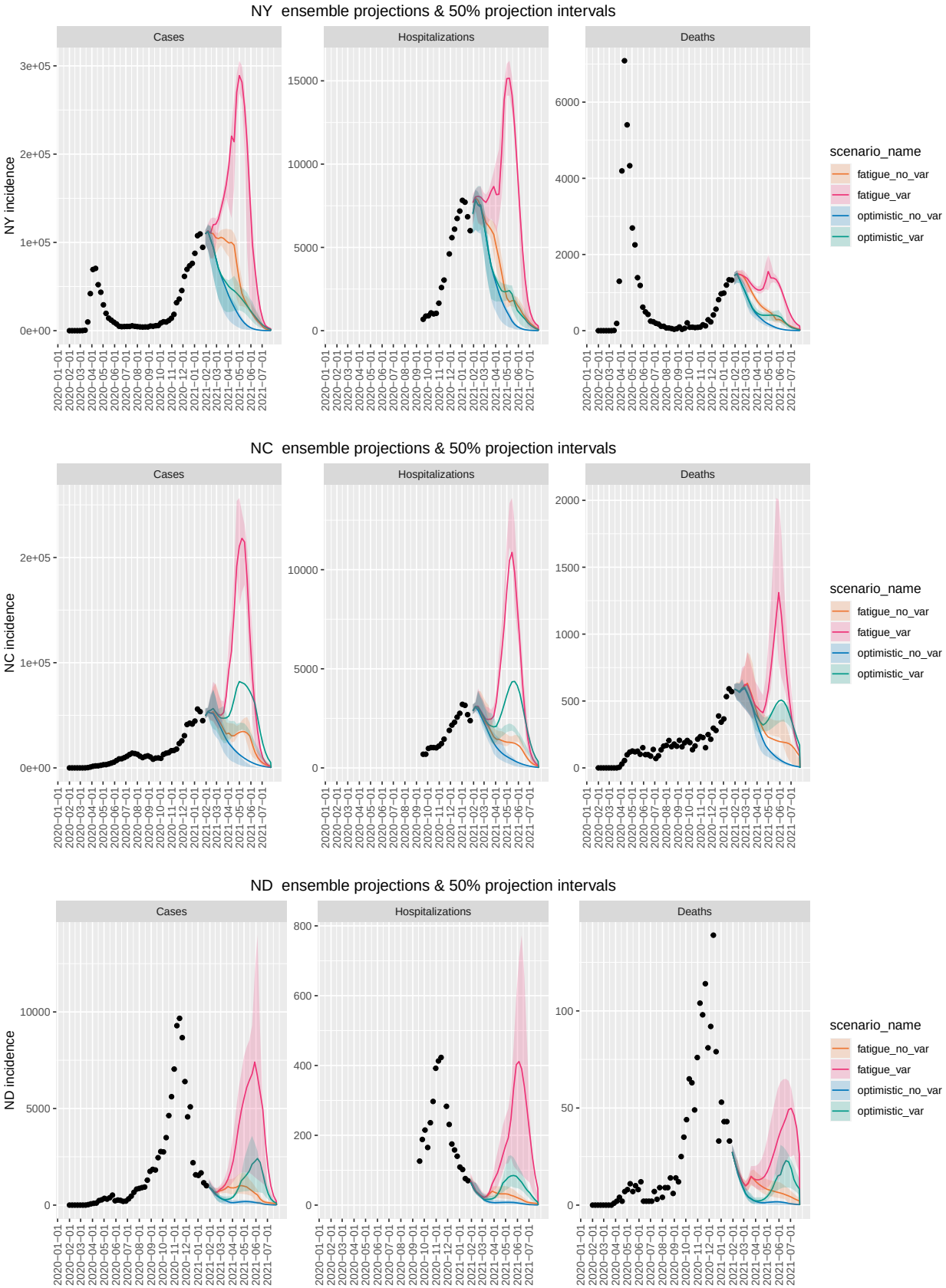

ME ensemble projections & 50% projection intervals
Cases
Hospitalizations
Deaths
ME incidence
scenario_name
fatigue_no_var
fatigue_var
optimistic_no_var
optimistic_var

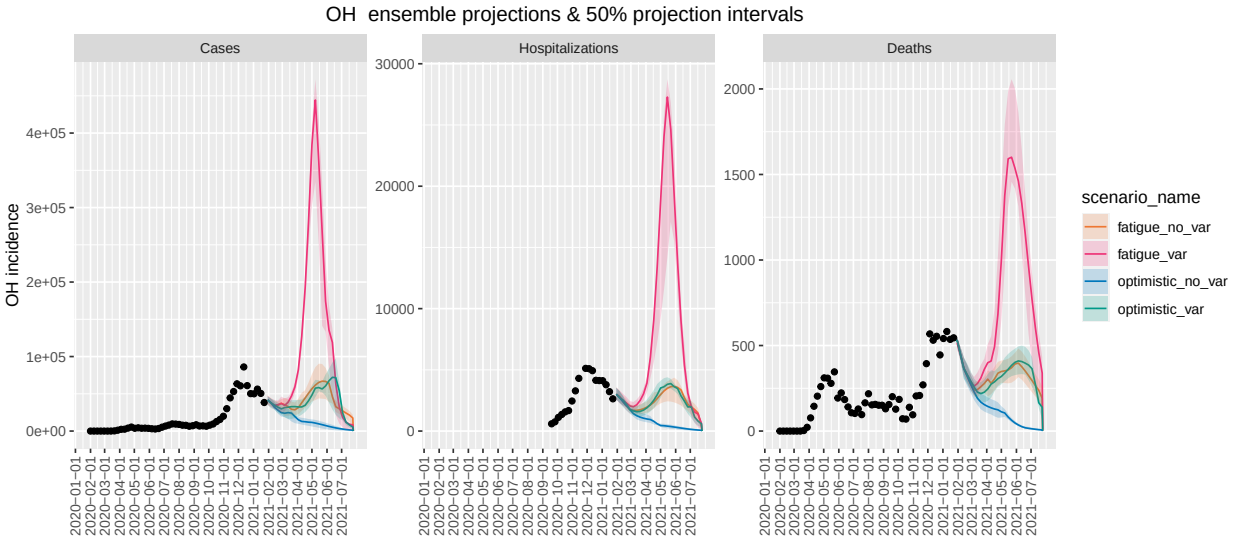

MD ensemble projections & 50% projection intervals
Cases
Hospitalizations
Deaths
MD incidence
MA ensemble projections & 50% projection intervals
MA incidence
MI ensemble projections & 50% projection intervals
MI incidence
scenario_name
fatigue_no_var
fatigue_var
optimistic_no_var
optimistic_var

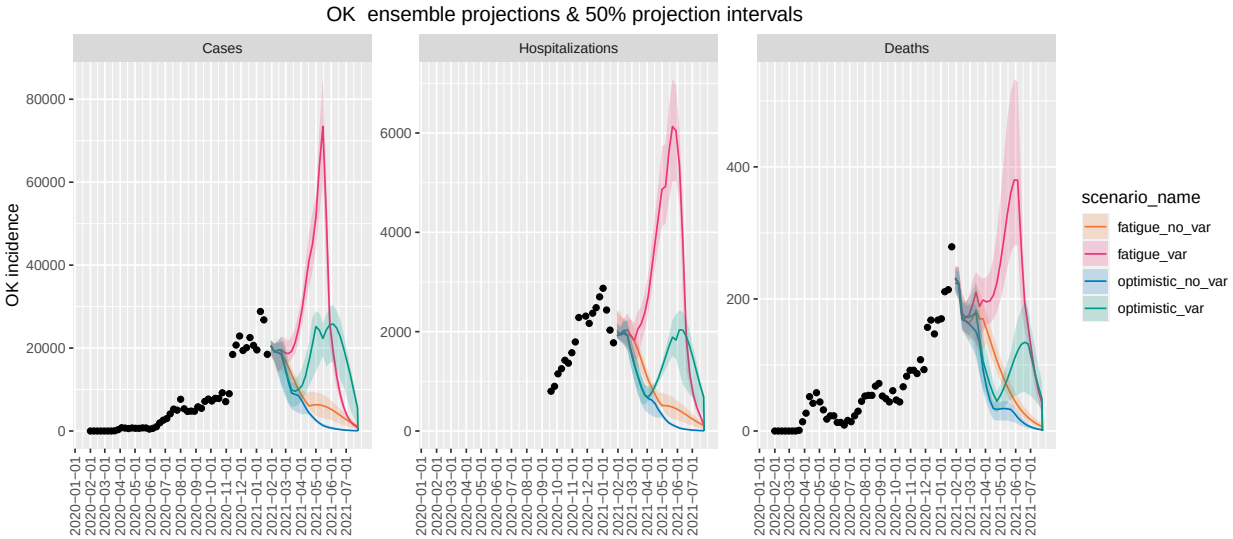

MN ensemble projections & 50% projection intervals
Cases
Hospitalizations
Deaths
MN incidence
MS ensemble projections & 50% projection intervals
MS incidence
MO ensemble projections & 50% projection intervals
MO incidence
scenario_name
fatigue_no_var
fatigue_var
optimistic_no_var
optimistic_var

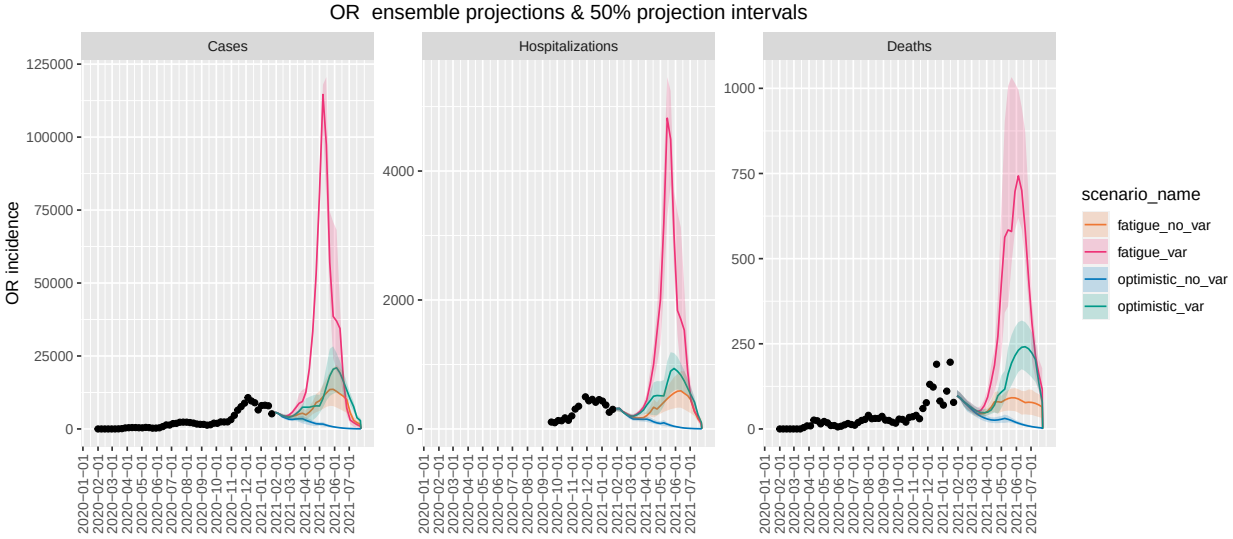

MT ensemble projections & 50% projection intervals
Cases
Hospitalizations
Deaths
MT incidence
NE ensemble projections & 50% projection intervals
NE incidence
NV ensemble projections & 50% projection intervals
NV incidence
scenario_name
fatigue_no_var
fatigue_var
optimistic_no_var
optimistic_var

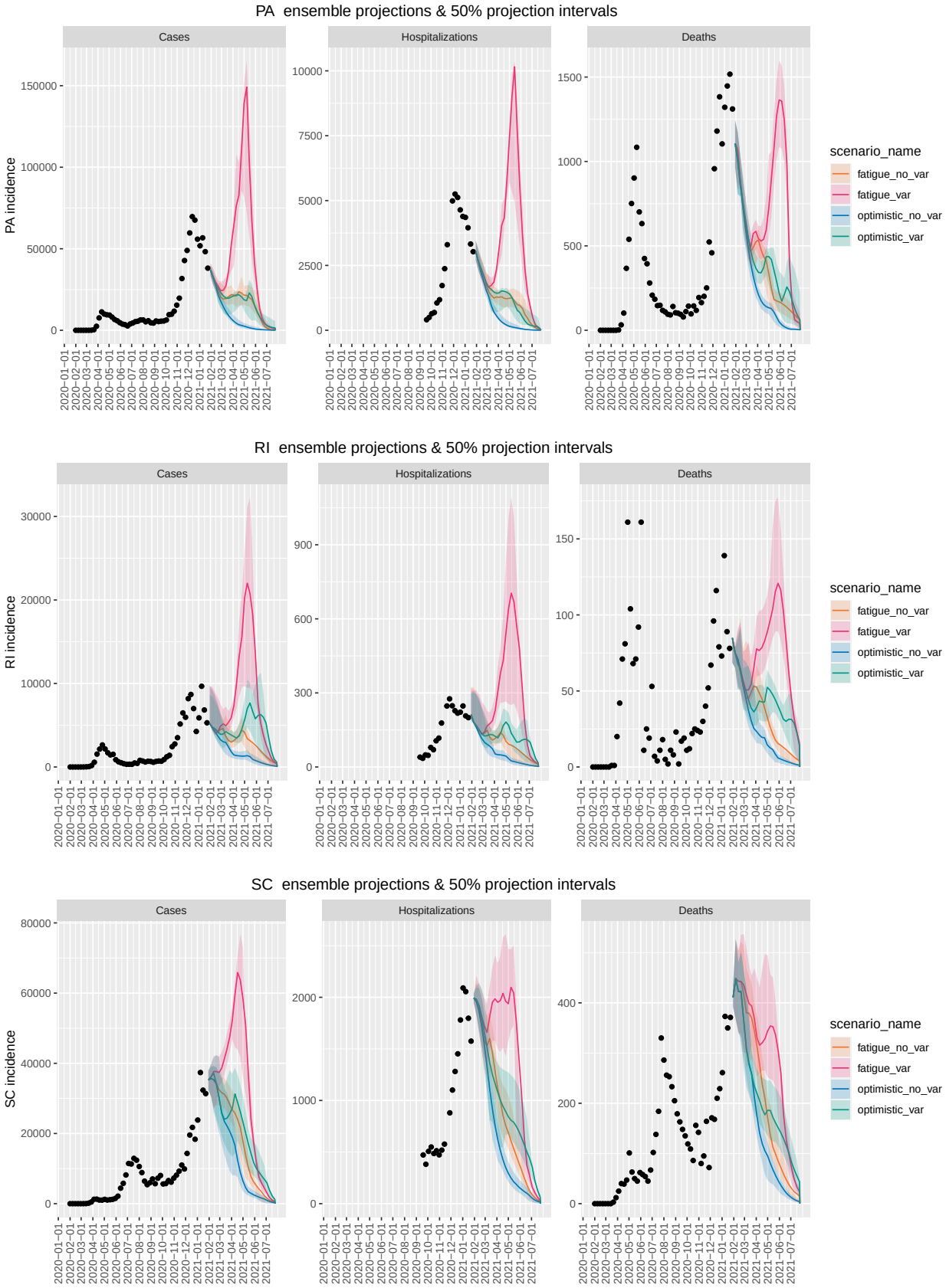

NH ensemble projections & 50% projection intervals
Cases
Hospitalizations
Deaths
NH incidence
NJ ensemble projections & 50% projection intervals
NJ incidence
NM ensemble projections & 50% projection intervals
NM incidence
scenario_name
fatigue_no_var
fatigue_var
optimistic_no_var
optimistic_var

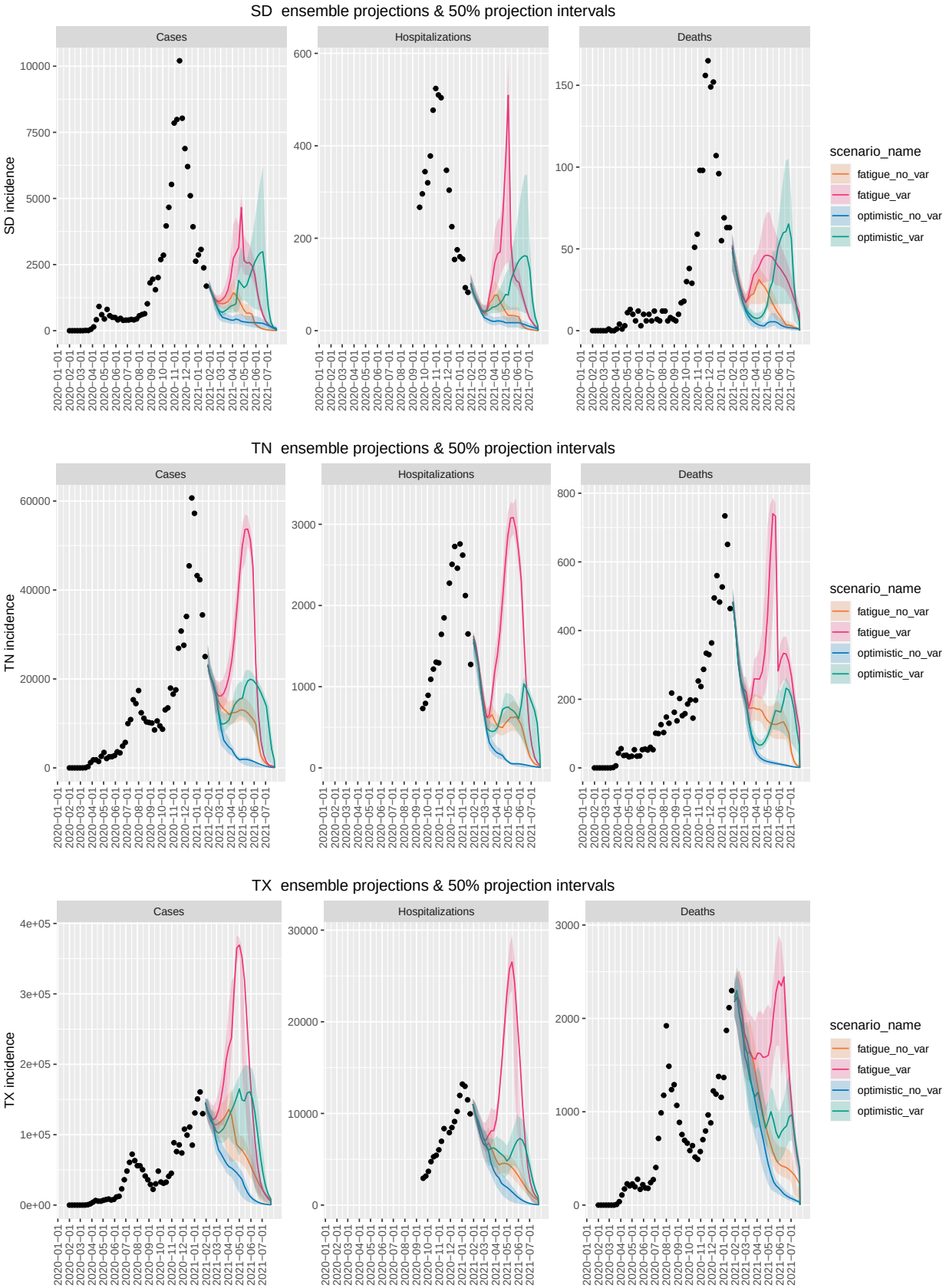

NY ensemble projections & 50% projection intervals
Cases
Hospitalizations
Deaths
NY incidence
NC ensemble projections & 50% projection intervals
NC incidence
ND ensemble projections & 50% projection intervals
ND incidence
scenario_name
fatigue_no_var
fatigue_var
optimistic_no_var
optimistic_var

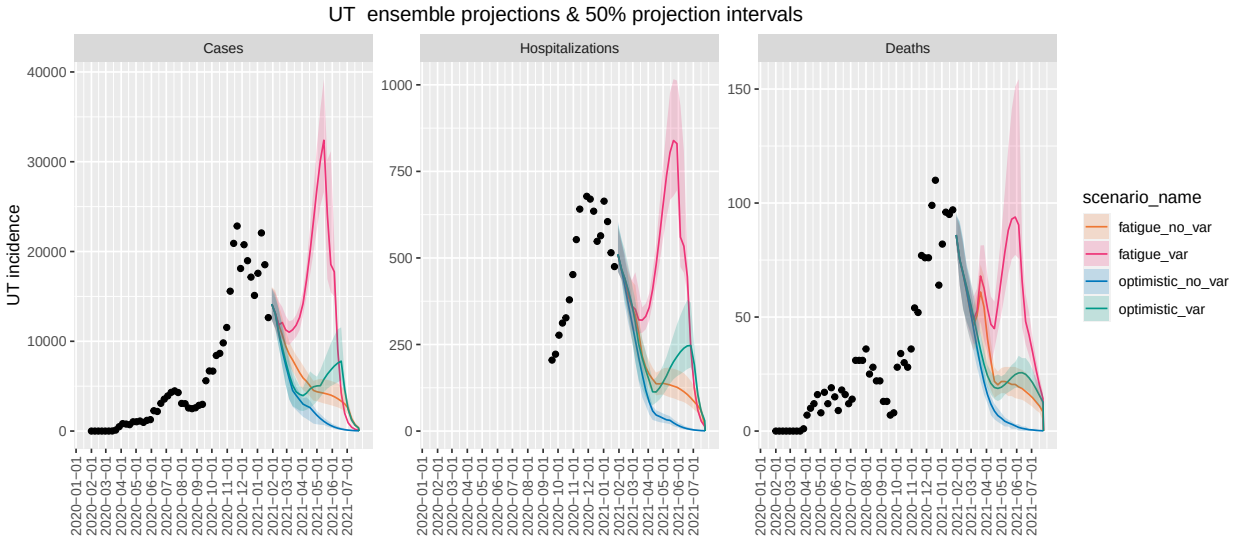

OH ensemble projections & 50% projection intervals
Cases
Hospitalizations
Deaths
OH incidence
scenario_name
fatigue_no_var
fatigue_var
optimistic_no_var
optimistic_var

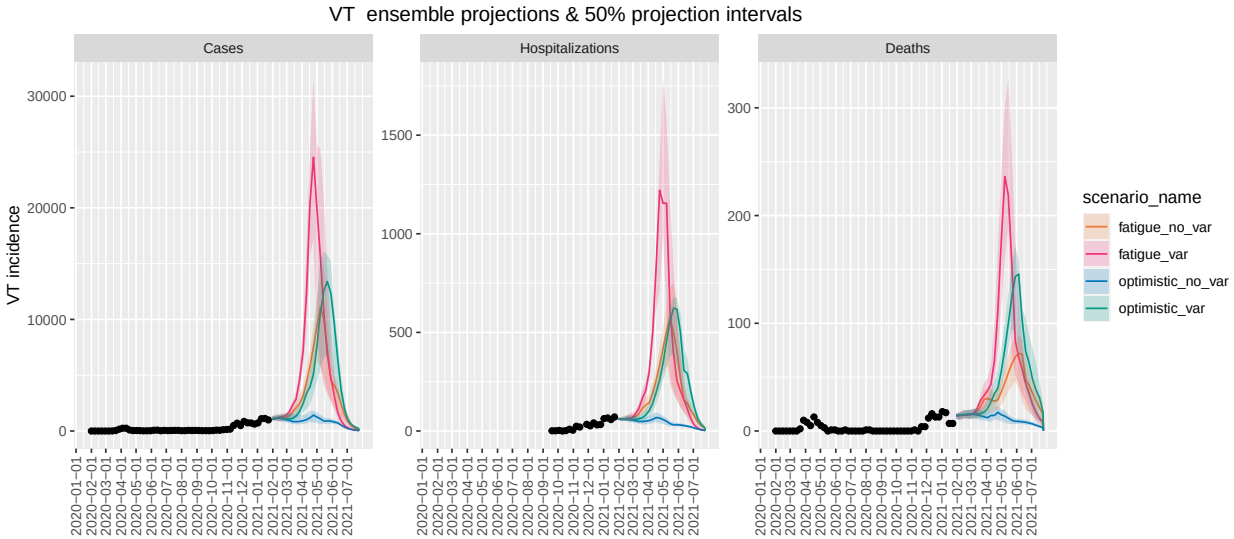

OK ensemble projections & 50% projection intervals
Cases
Hospitalizations
Deaths
OK incidence
scenario_name
fatigue_no_var
fatigue_var
optimistic_no_var
optimistic_var

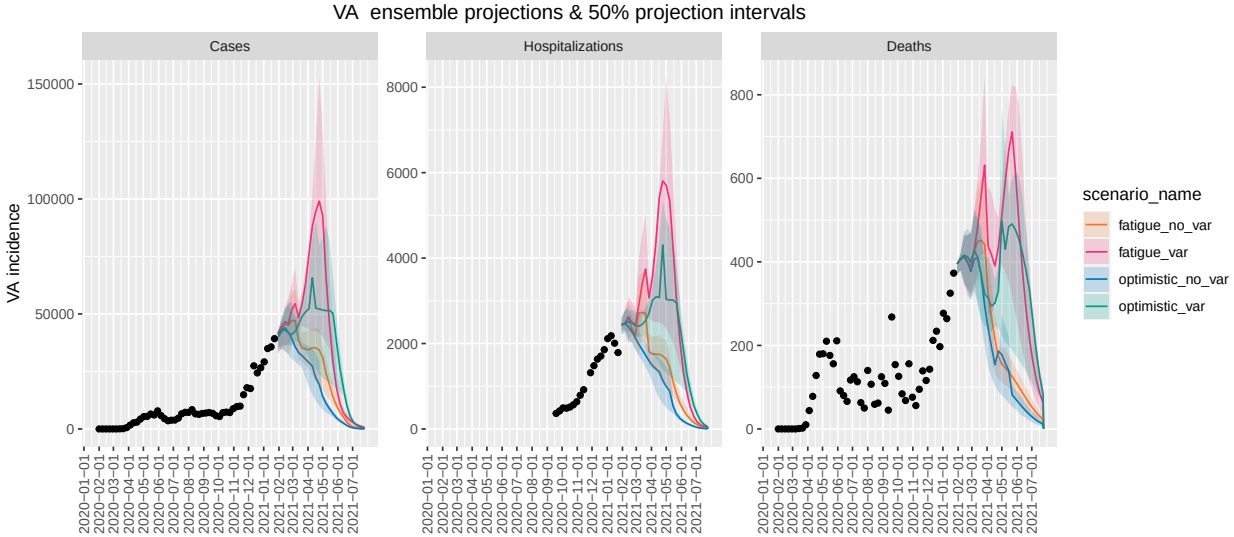

OR ensemble projections & 50% projection intervals
Cases
Hospitalizations
Deaths
OR incidence
scenario_name
fatigue_no_var
fatigue_var
optimistic_no_var
optimistic_var

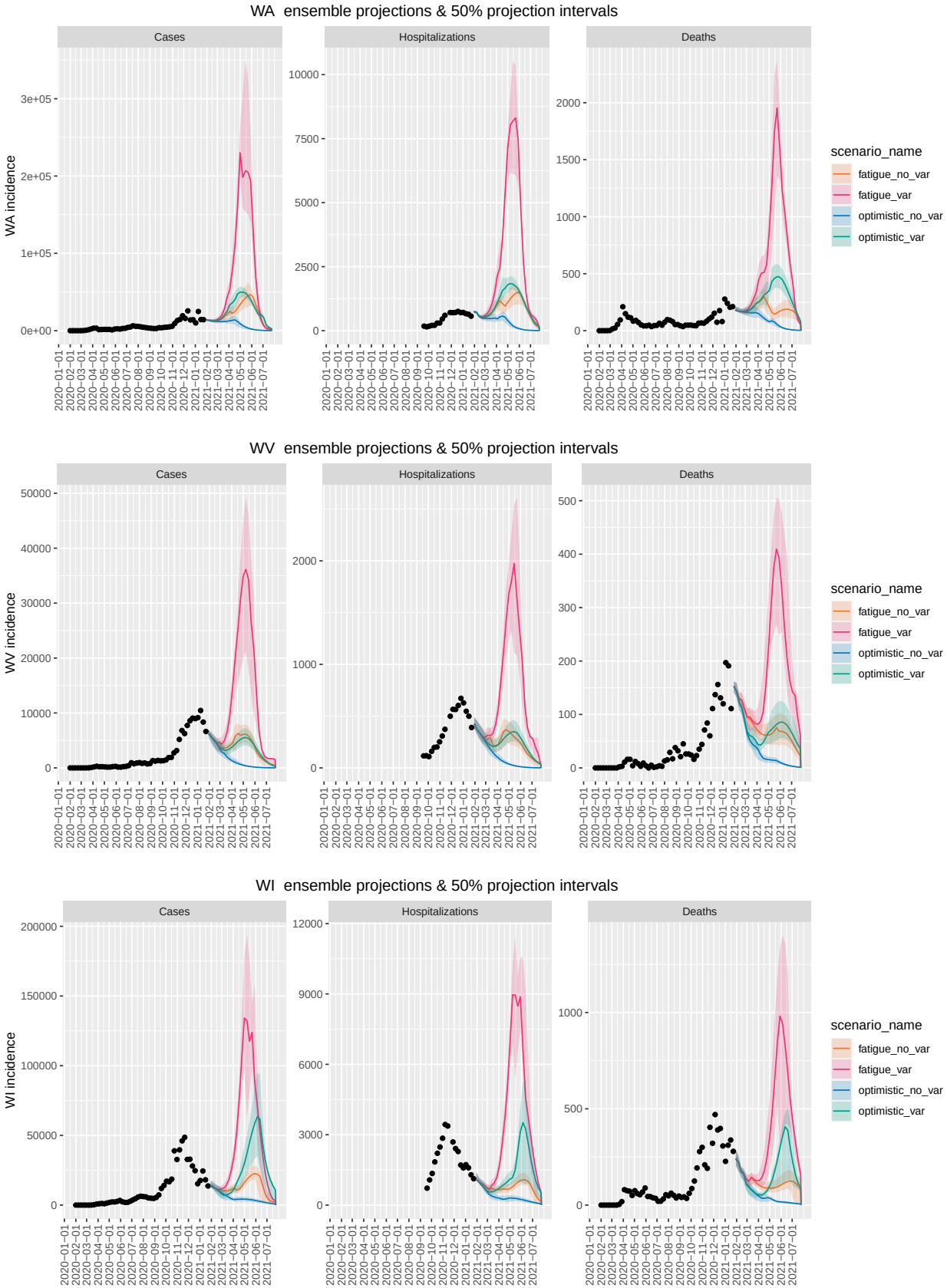

PA ensemble projections & 50% projection intervals
Cases
Hospitalizations
Deaths
PA incidence
RI ensemble projections & 50% projection intervals
RI incidence
SC ensemble projections & 50% projection intervals
SC incidence
scenario_name
fatigue_no_var
fatigue_var
optimistic_no_var
optimistic_var

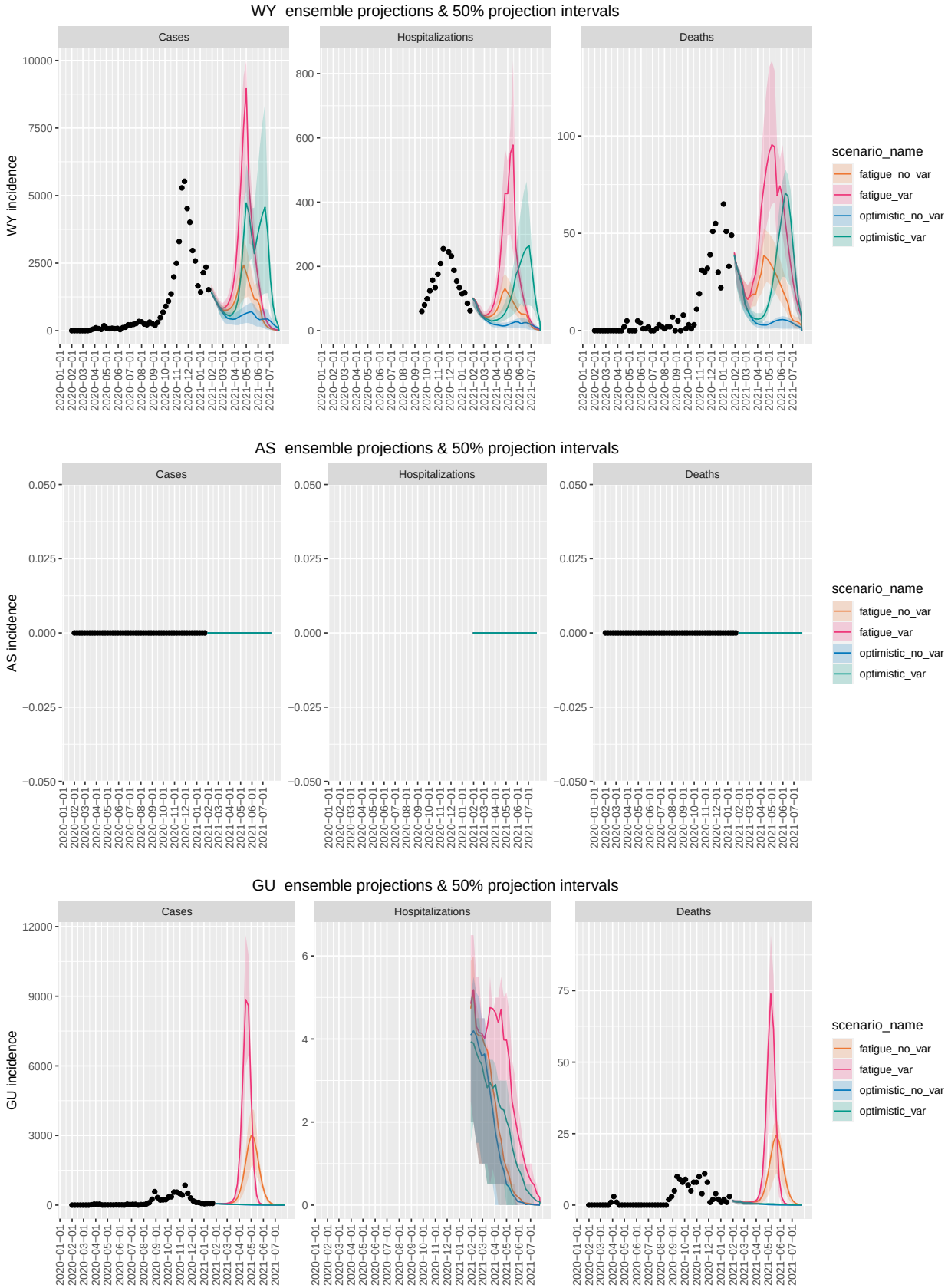

SD ensemble projections & 50% projection intervals
Cases
Hospitalizations
Deaths
SD incidence
TN ensemble projections & 50% projection intervals
TN incidence
TX ensemble projections & 50% projection intervals
TX incidence
scenario_name
fatigue_no_var
fatigue_var
optimistic_no_var
optimistic_var

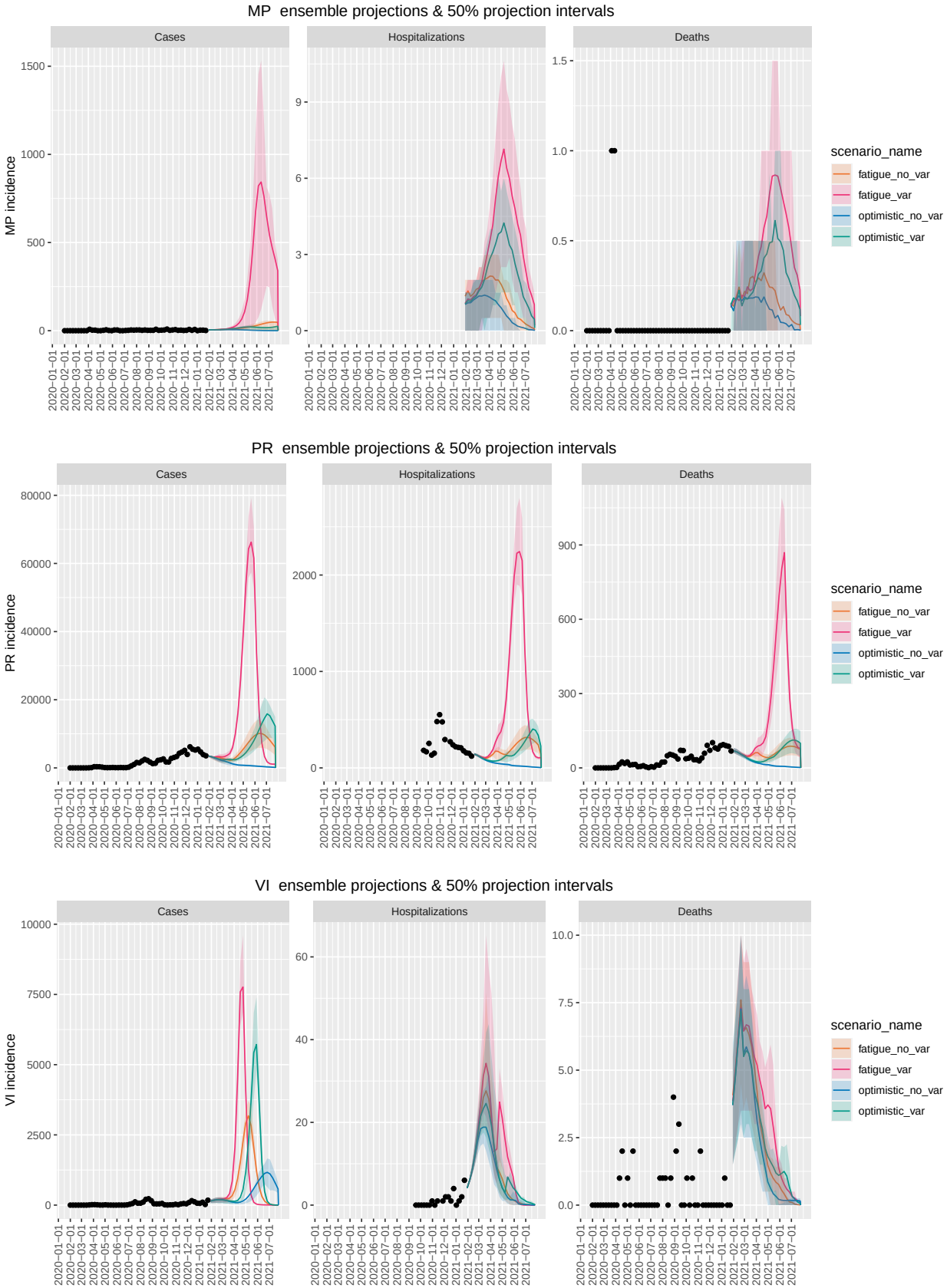

UT ensemble projections & 50% projection intervals
Cases
Hospitalizations
Deaths
UT incidence
scenario_name
fatigue_no_var
fatigue_var
optimistic_no_var
optimistic_var


VT ensemble projections & 50% projection intervals
Cases
Hospitalizations
Deaths
VT incidence
scenario_name
fatigue_no_var
fatigue_var
optimistic_no_var
optimistic_var


VA ensemble projections & 50% projection intervals
Cases
Hospitalizations
Deaths
VA incidence
scenario_name
fatigue_no_var
fatigue_var
optimistic_no_var
optimistic_var

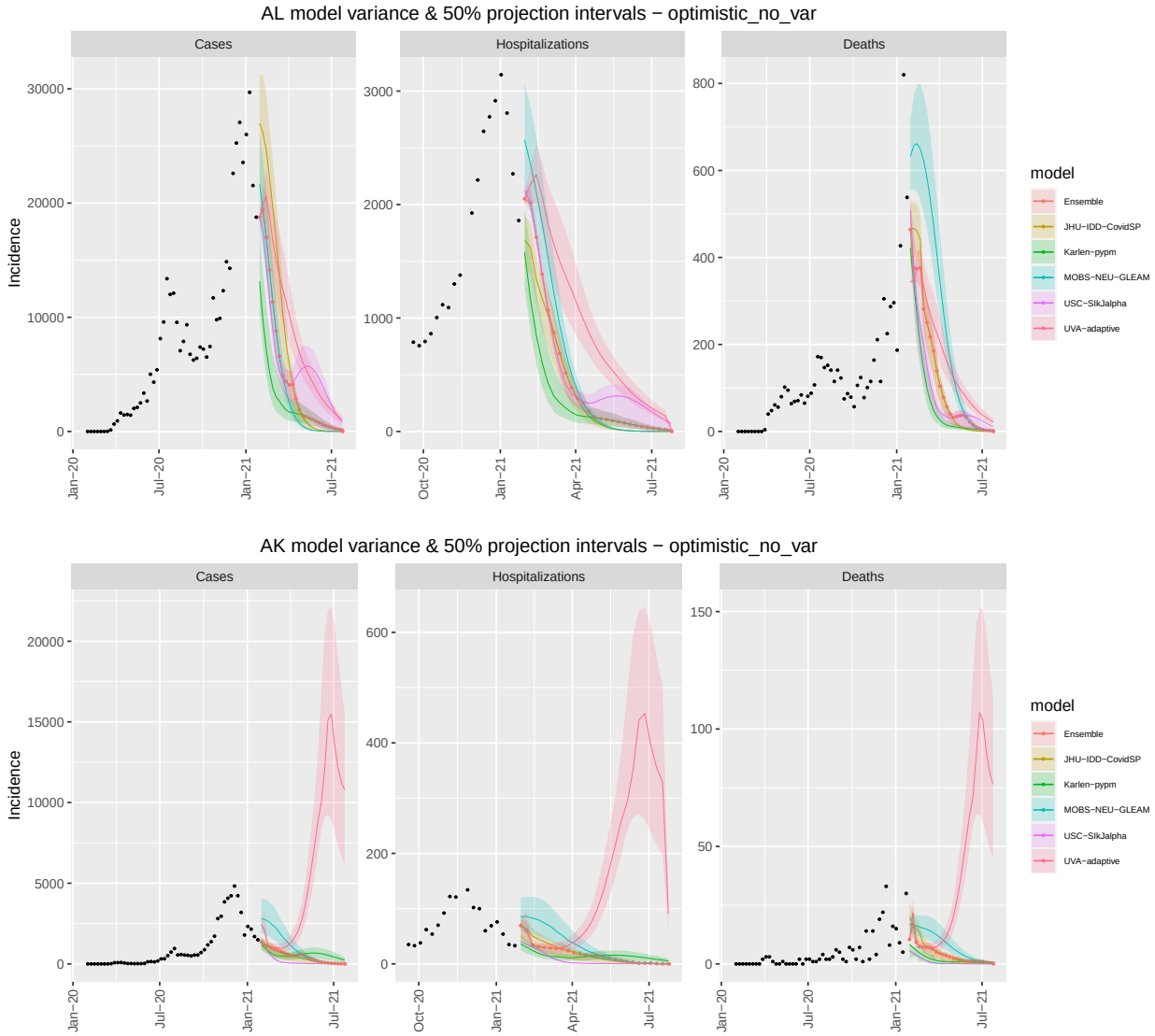

WA ensemble projections & 50% projection intervals
Cases
Hospitalizations
Deaths
WA incidence
WV ensemble projections & 50% projection intervals
WV incidence
WI ensemble projections & 50% projection intervals
WI incidence
scenario_name
fatigue_no_var
fatigue_var
optimistic_no_var
optimistic_var

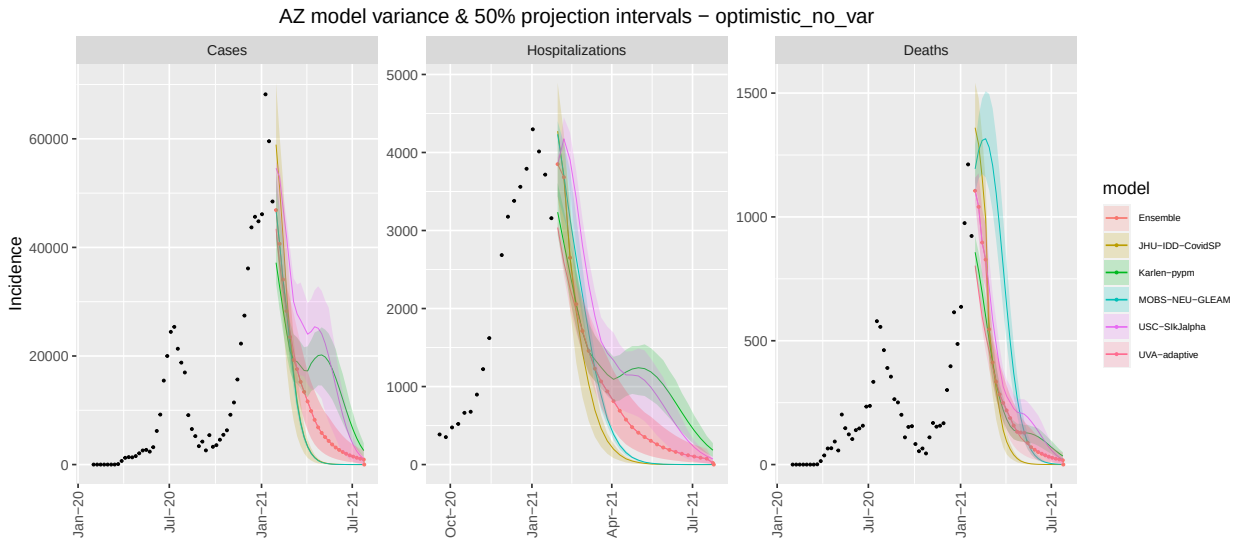

WY ensemble projections & 50% projection intervals
Cases
Hospitalizations
Deaths
WY incidence
AS ensemble projections & 50% projection intervals
AS incidence
GU ensemble projections & 50% projection intervals
GU incidence
scenario_name
fatigue_no_var
fatigue_var
optimistic_no_var
optimistic_var

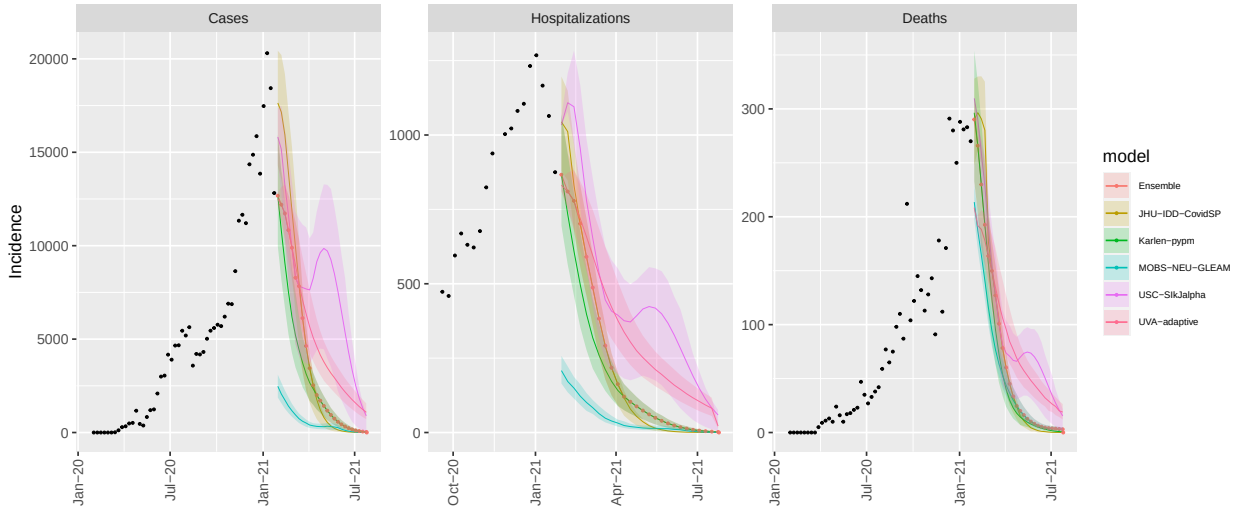

MP ensemble projections & 50% projection intervals
Cases
Hospitalizations
Deaths
MP incidence
PR ensemble projections & 50% projection intervals
PR incidence
VI ensemble projections & 50% projection intervals
VI incidence
scenario_name
fatigue_no_var
fatigue_var
optimistic_no_var
optimistic_var

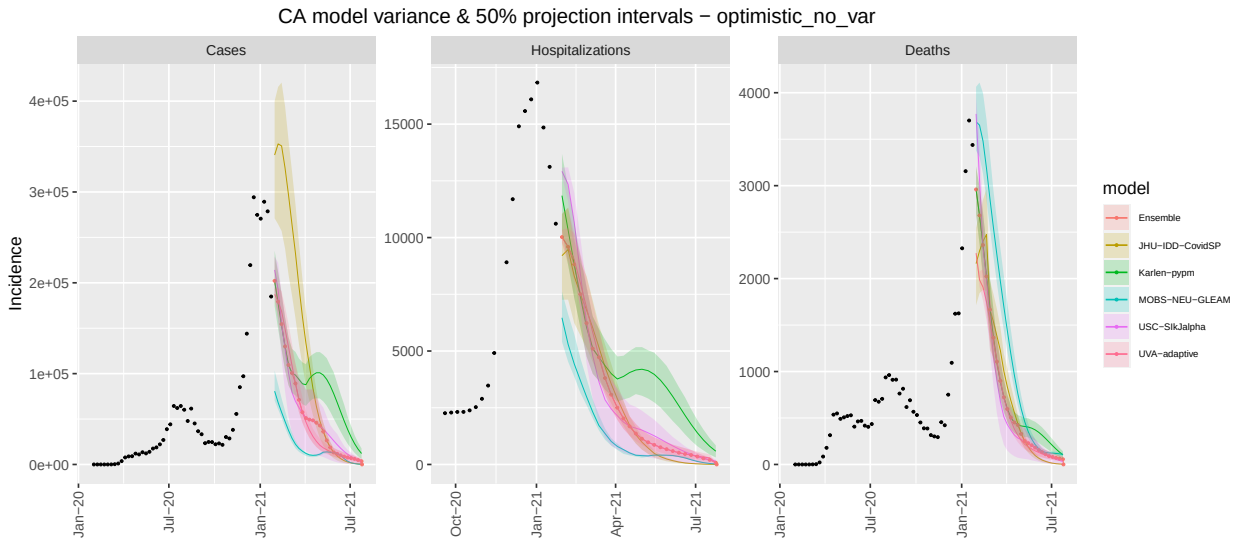
State-level model variation

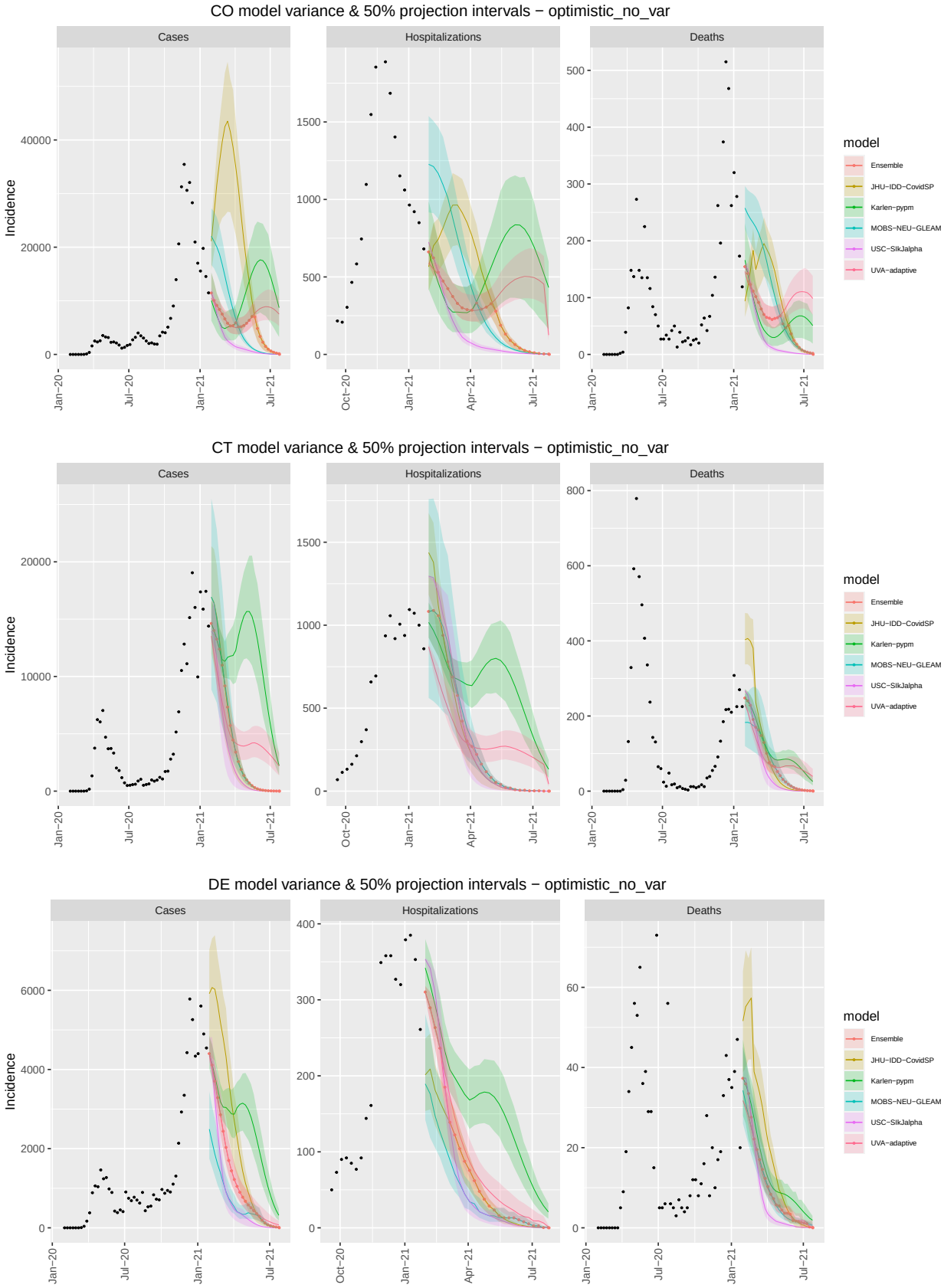
National model variation for the optimistic no variant scenario

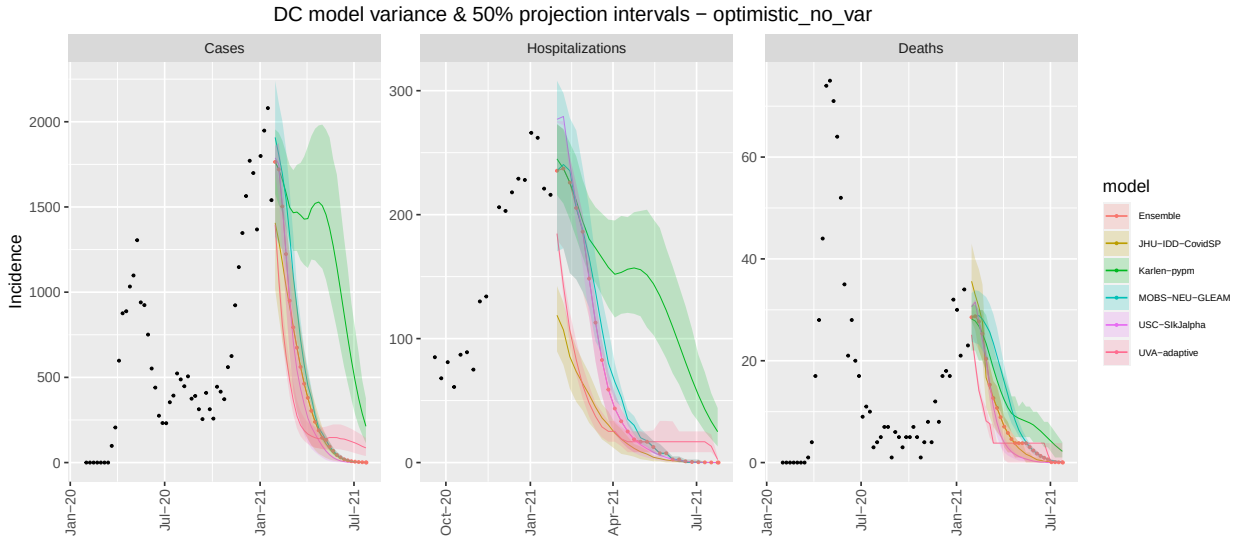


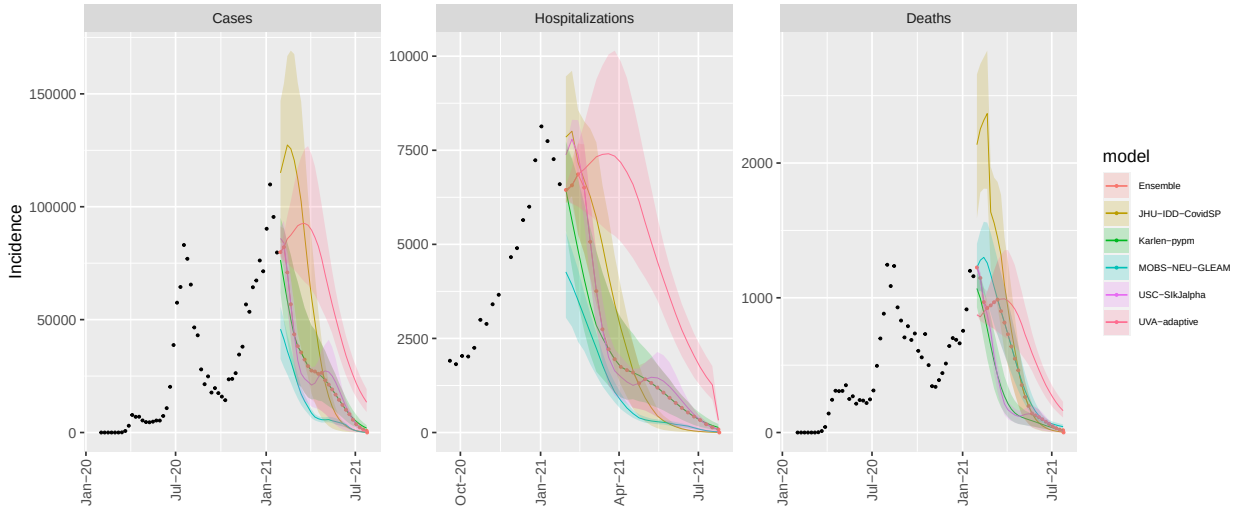

AZ model variance & 50% projection intervals − optimistic_no_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive

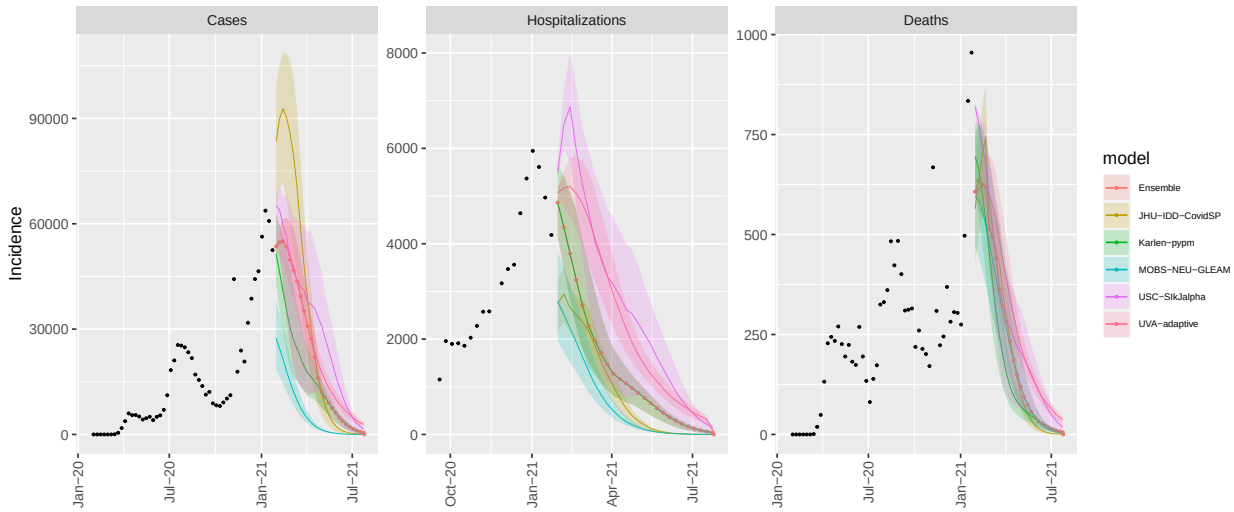

AR model variance & 50% projection intervals − optimistic_no_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive

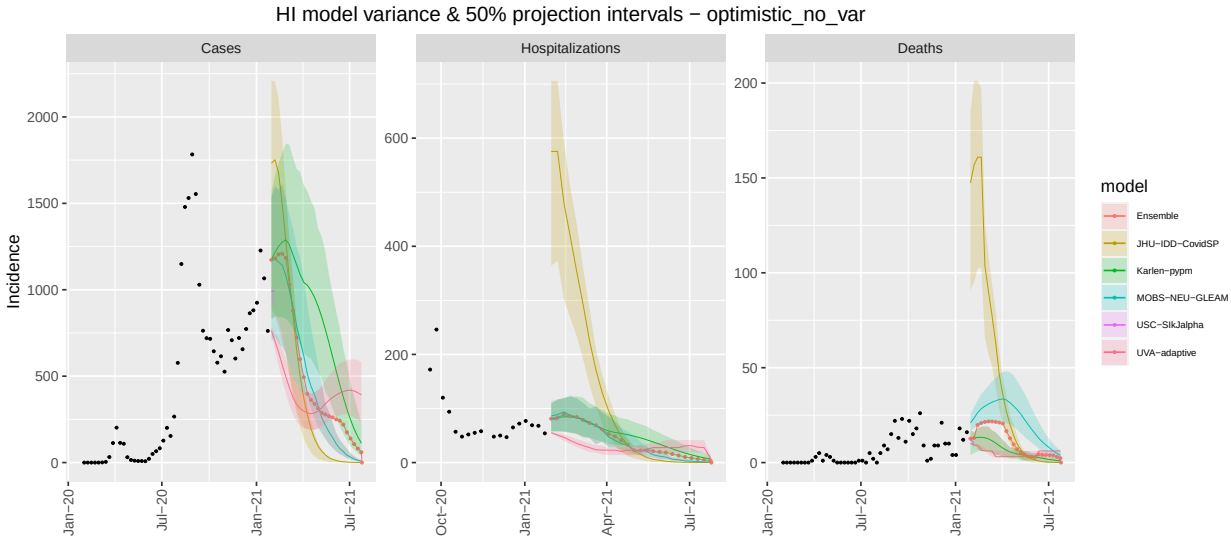

CA model variance & 50% projection intervals − optimistic_no_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive

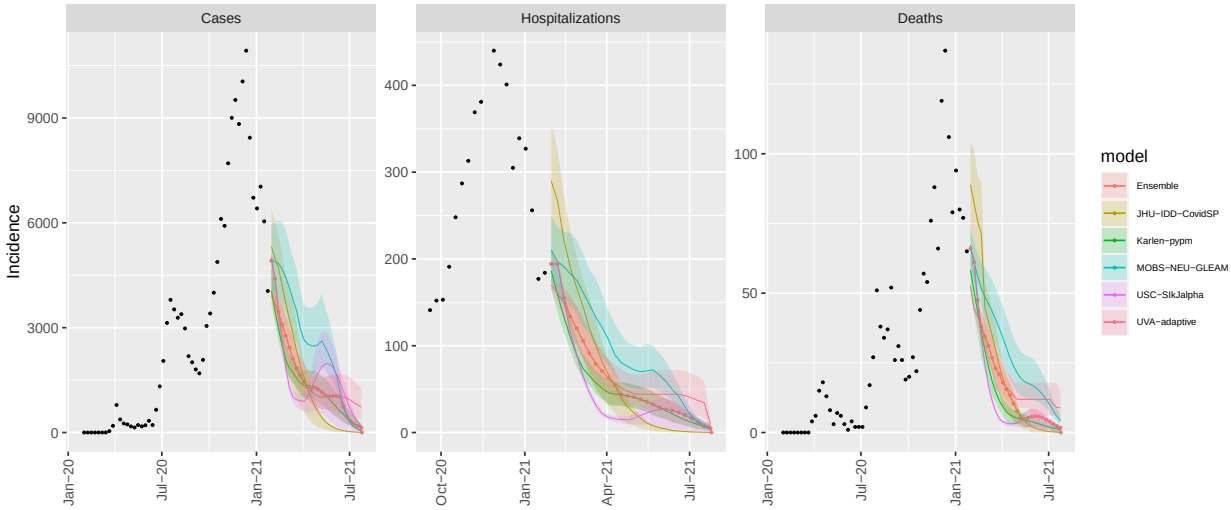

CO model variance & 50% projection intervals − optimistic_no_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive
CT model variance & 50% projection intervals − optimistic_no_var
DE model variance & 50% projection intervals − optimistic_no_var

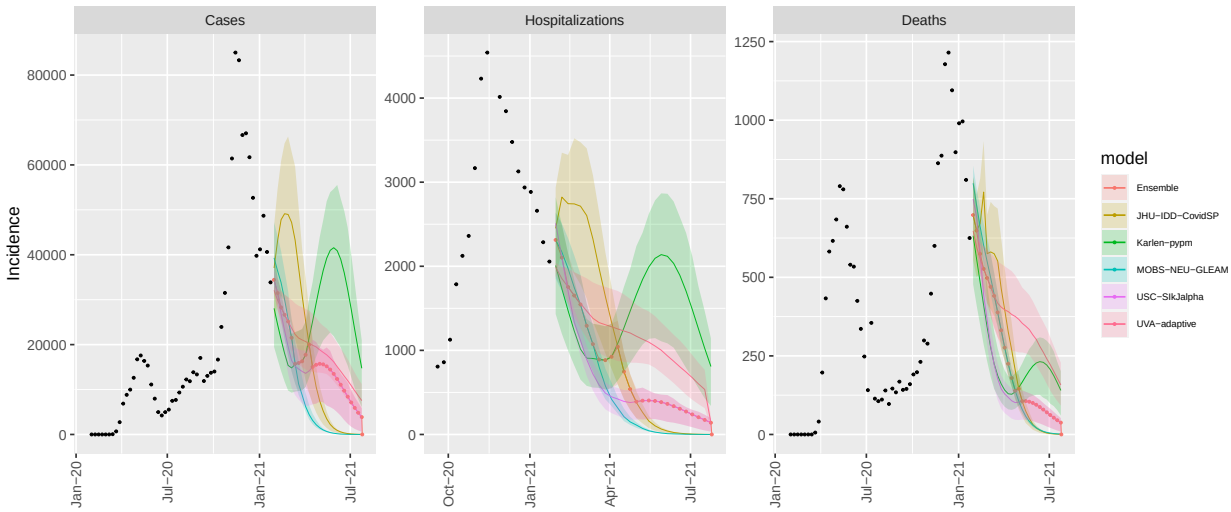

DC model variance & 50% projection intervals − optimistic_no_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive

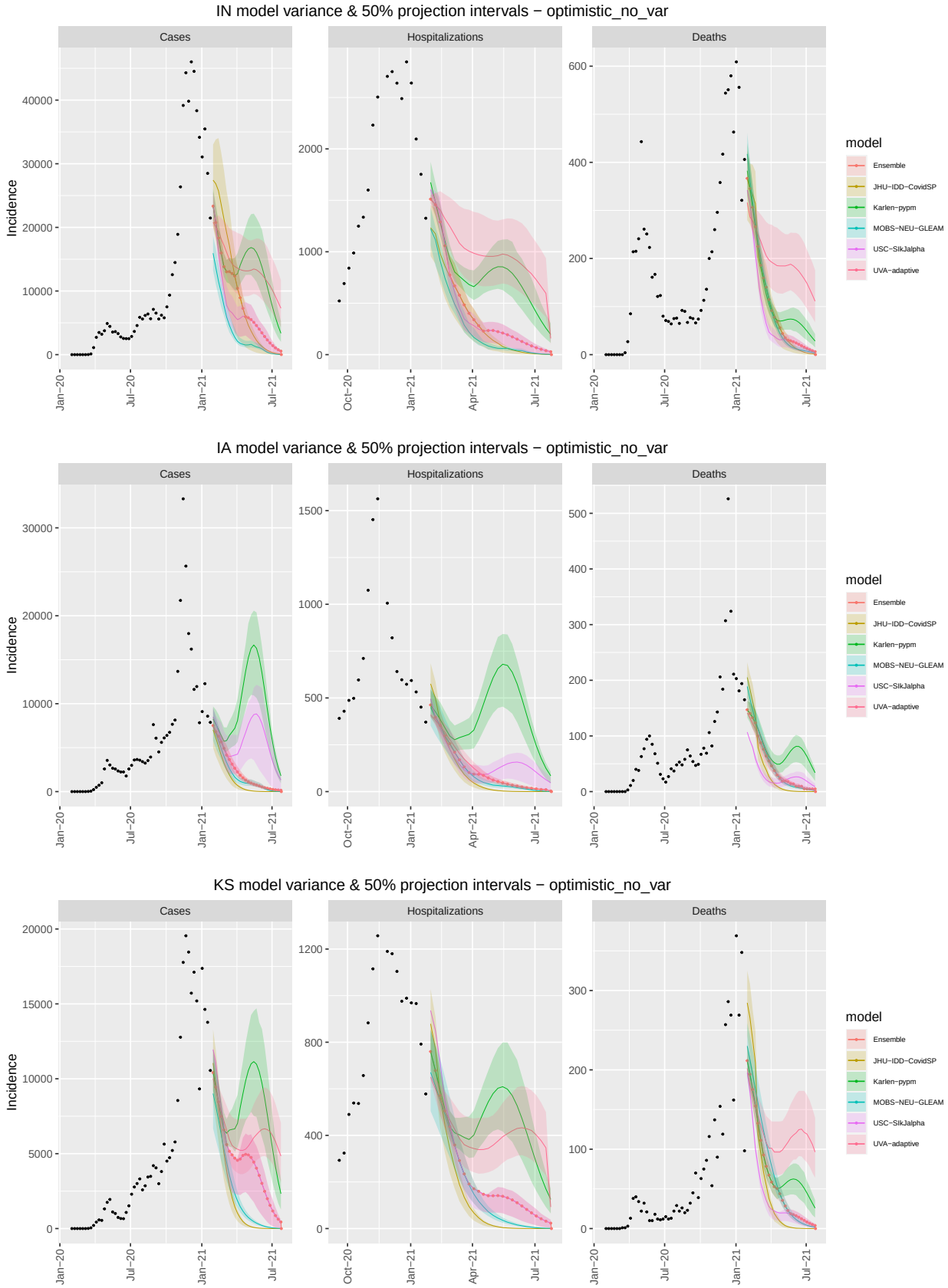

FL model variance & 50% projection intervals − optimistic_no_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive

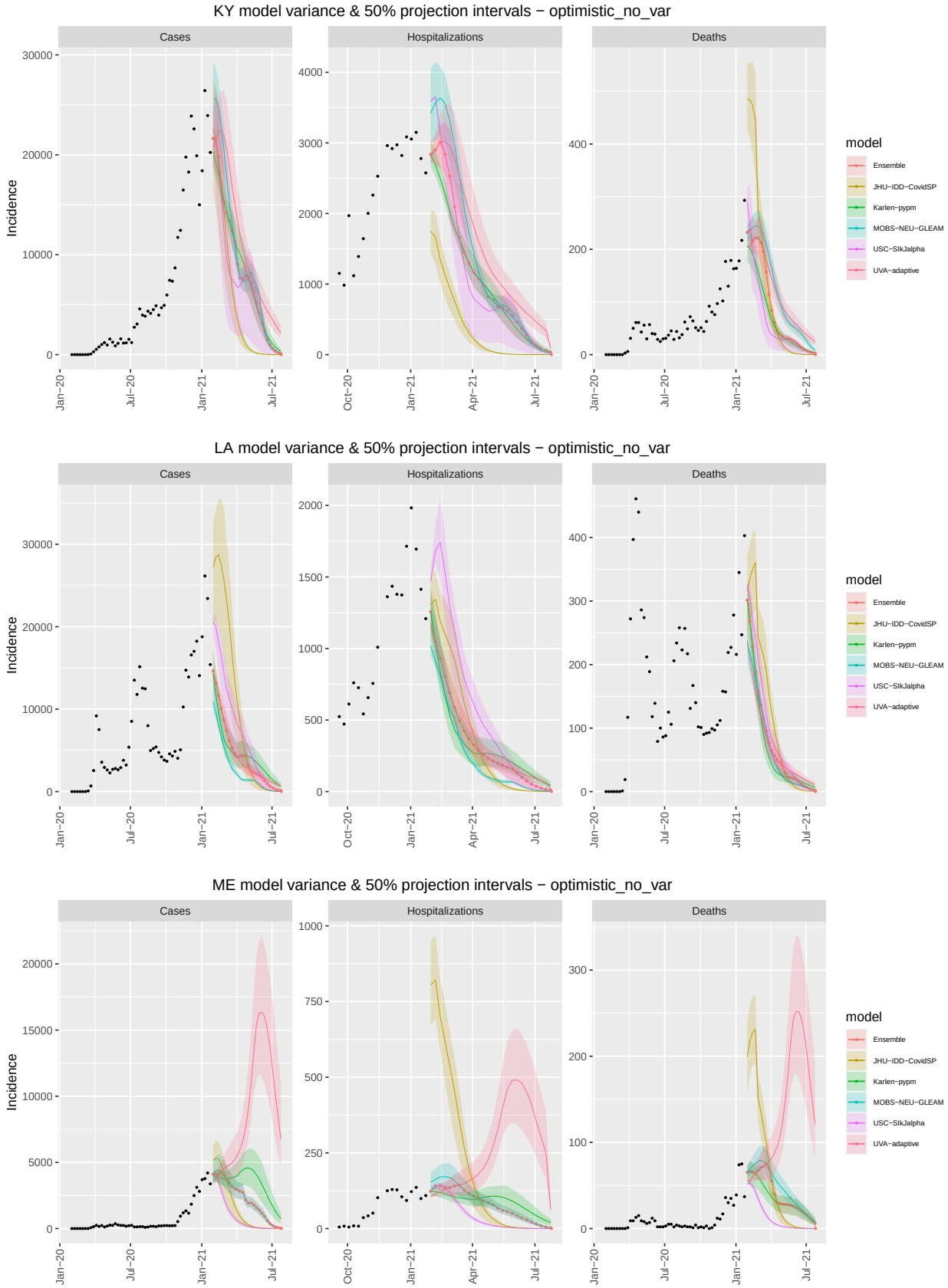

GA model variance & 50% projection intervals − optimistic_no_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive

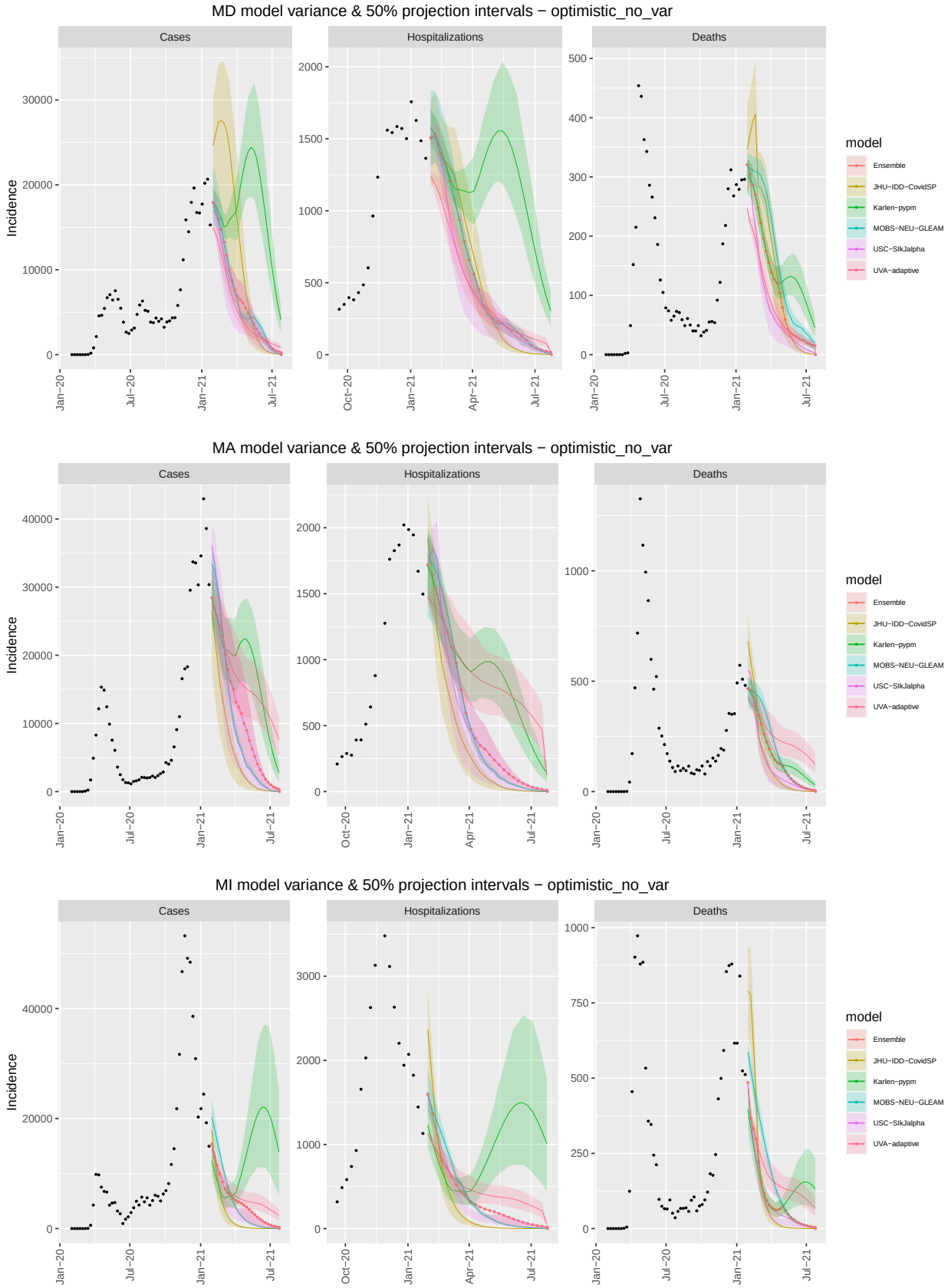

HI model variance & 50% projection intervals − optimistic_no_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive

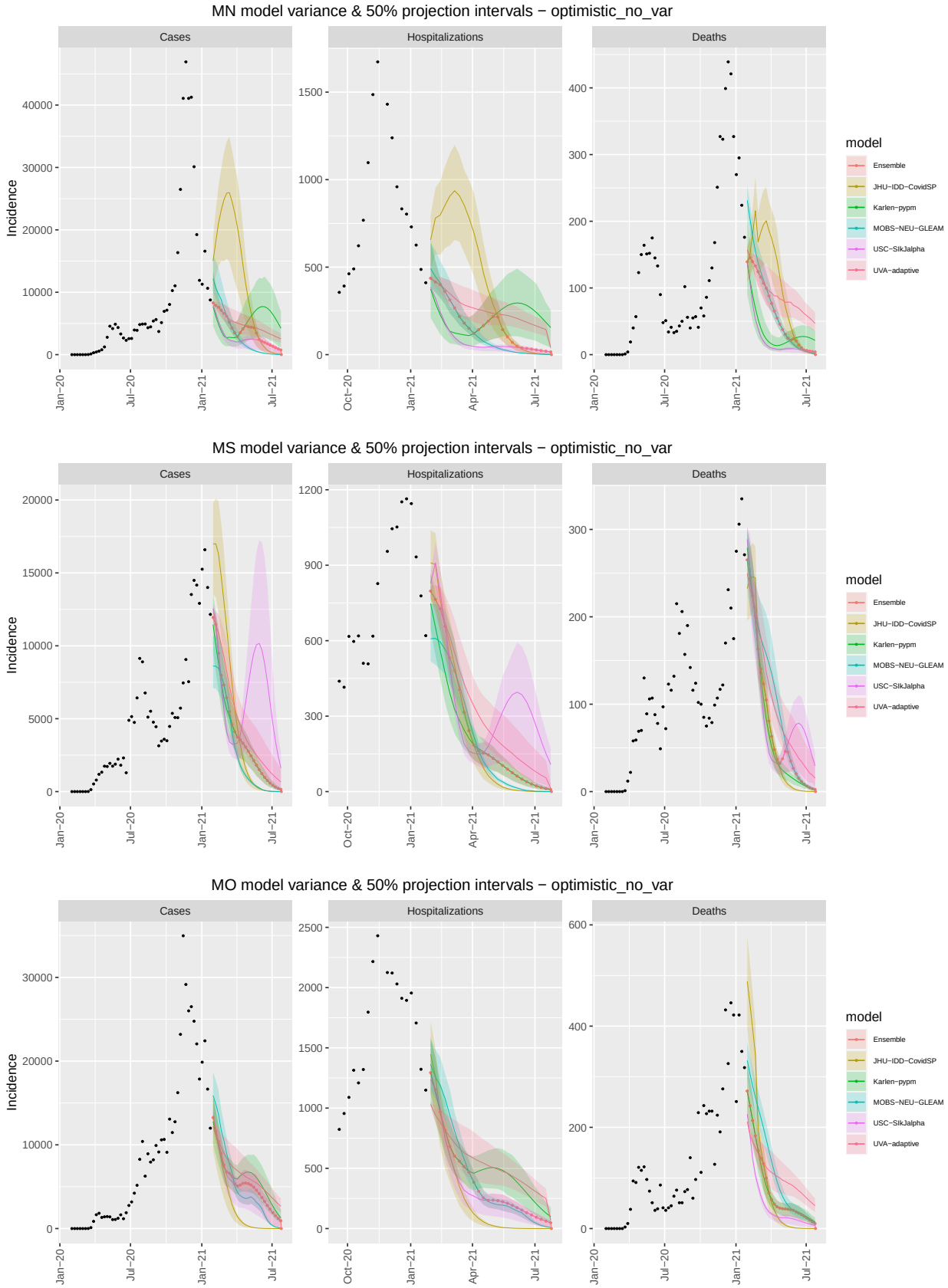

ID model variance & 50% projection intervals − optimistic_no_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive

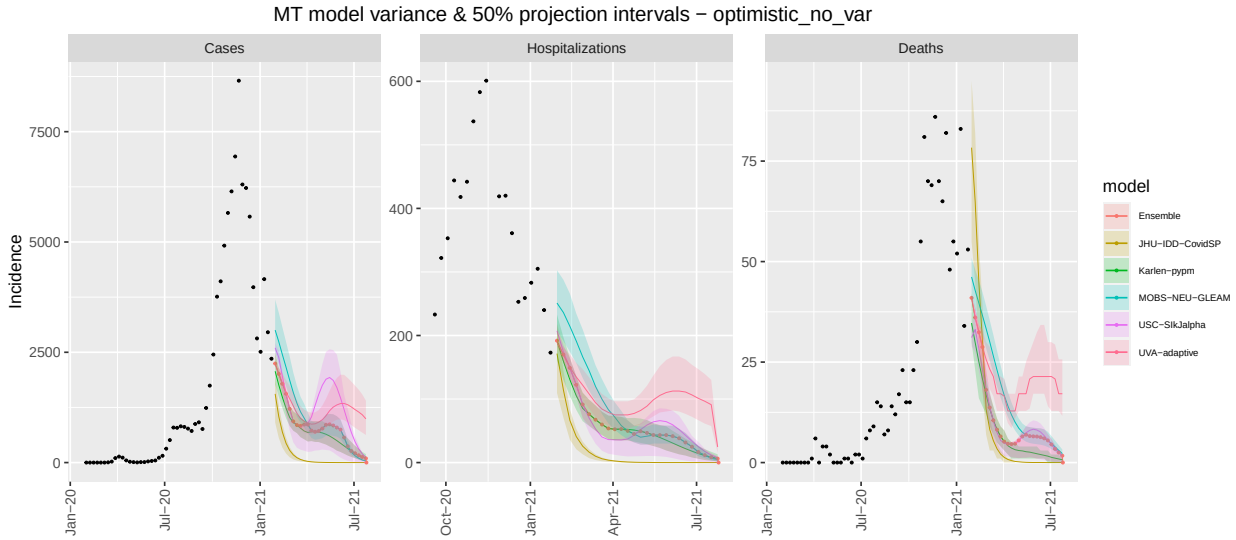

IL model variance & 50% projection intervals − optimistic_no_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive

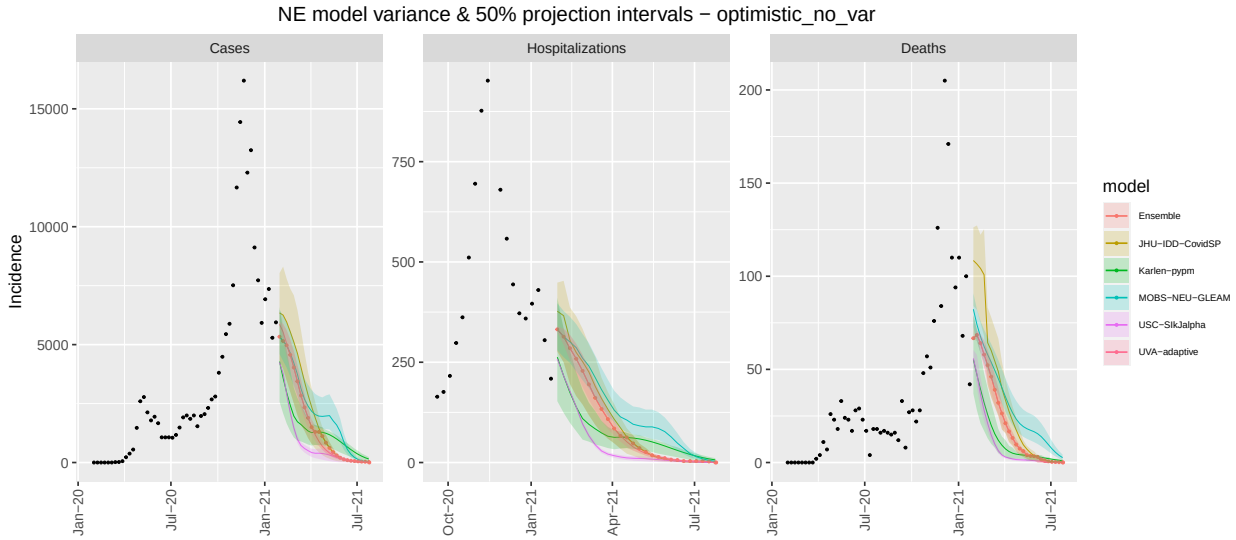

IN model variance & 50% projection intervals − optimistic_no_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive
IA model variance & 50% projection intervals − optimistic_no_var
KS model variance & 50% projection intervals − optimistic_no_var

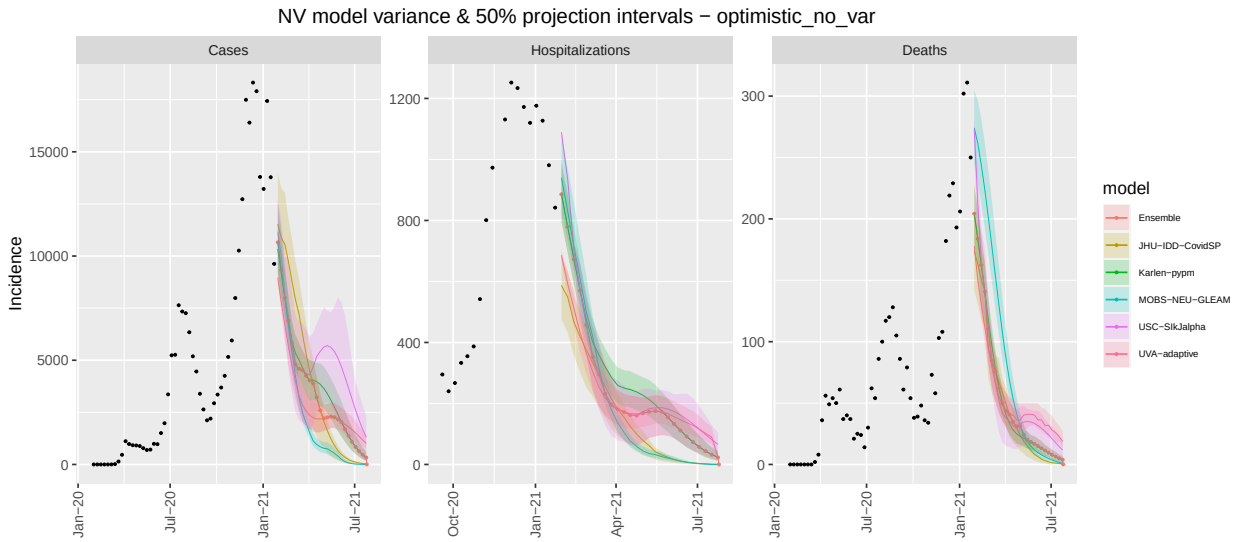

KY model variance & 50% projection intervals − optimistic_no_var
LA model variance & 50% projection intervals − optimistic_no_var
ME model variance & 50% projection intervals − optimistic_no_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive
Jan−20
Jul−20
Jan−21
Jul−21
Oct−20
Apr−21

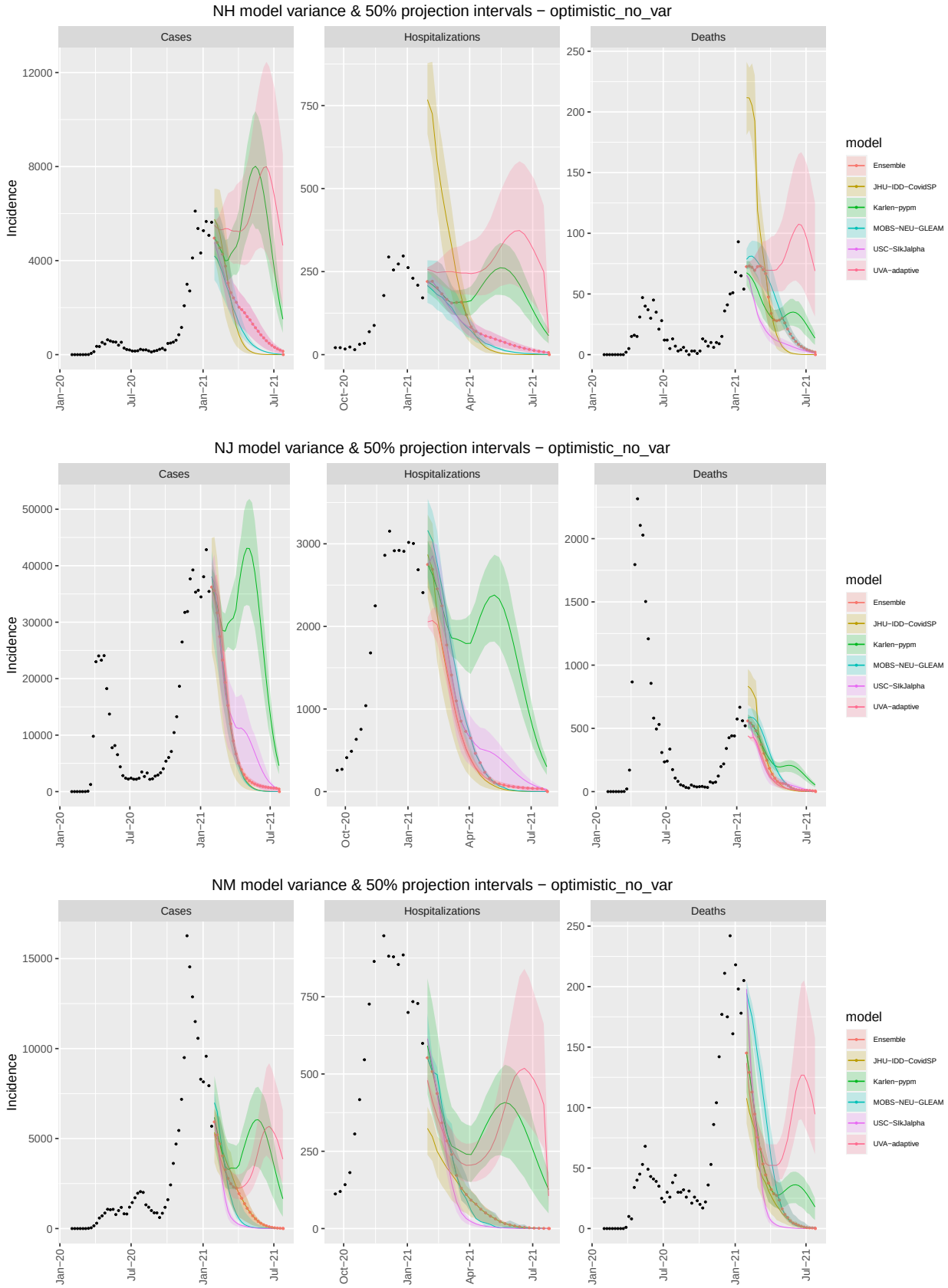

MD model variance & 50% projection intervals − optimistic_no_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive
MA model variance & 50% projection intervals − optimistic_no_var
MI model variance & 50% projection intervals − optimistic_no_var

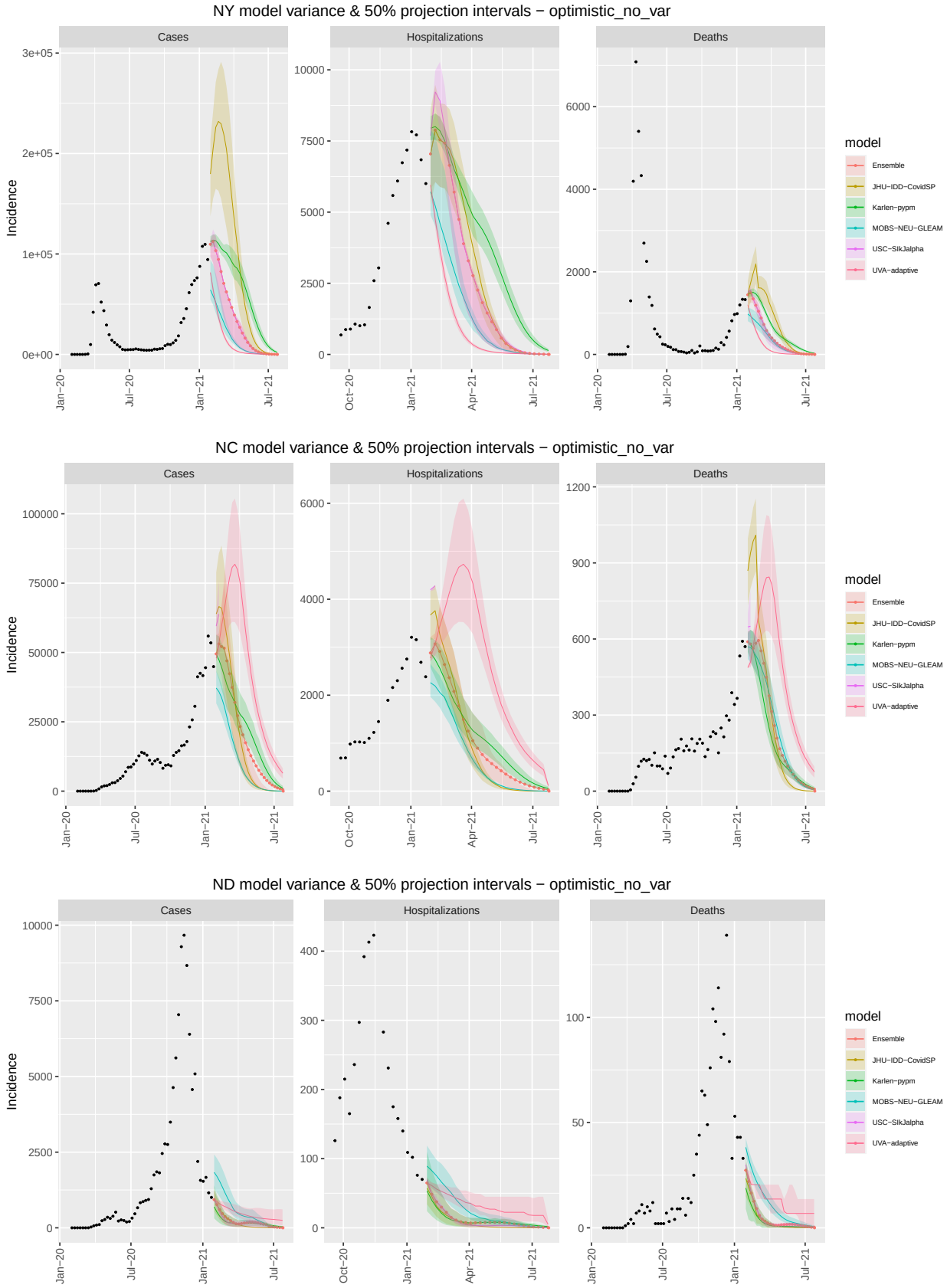

MN model variance & 50% projection intervals − optimistic_no_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive
MS model variance & 50% projection intervals − optimistic_no_var
MO model variance & 50% projection intervals − optimistic_no_var

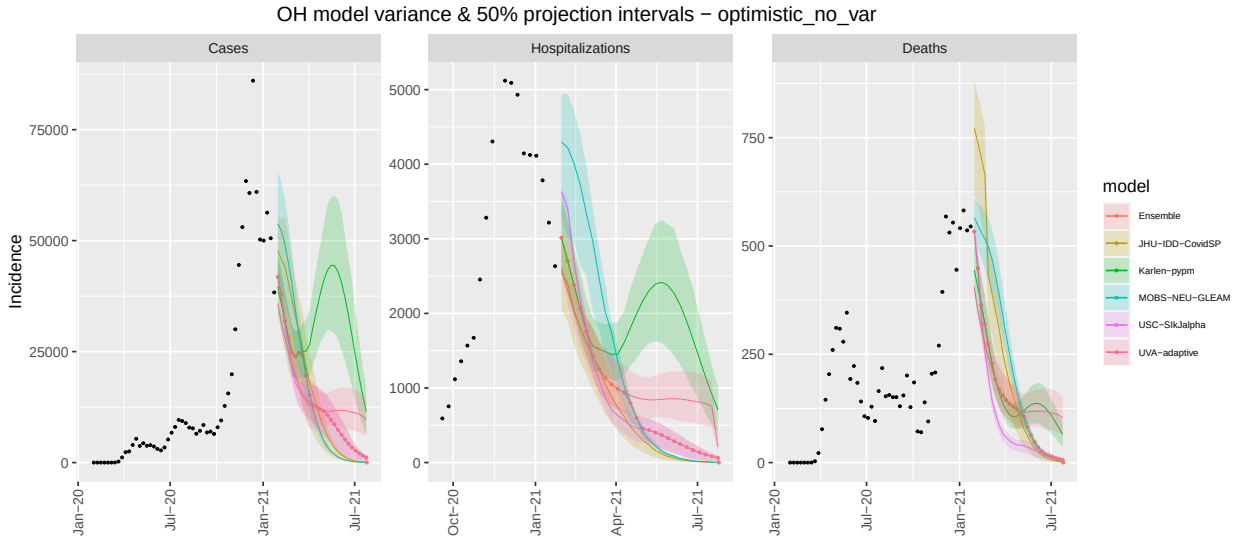

MT model variance & 50% projection intervals − optimistic_no_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive
Jan−20
Jul−20
Jan−21
Jul−21
Oct−20
Apr−21

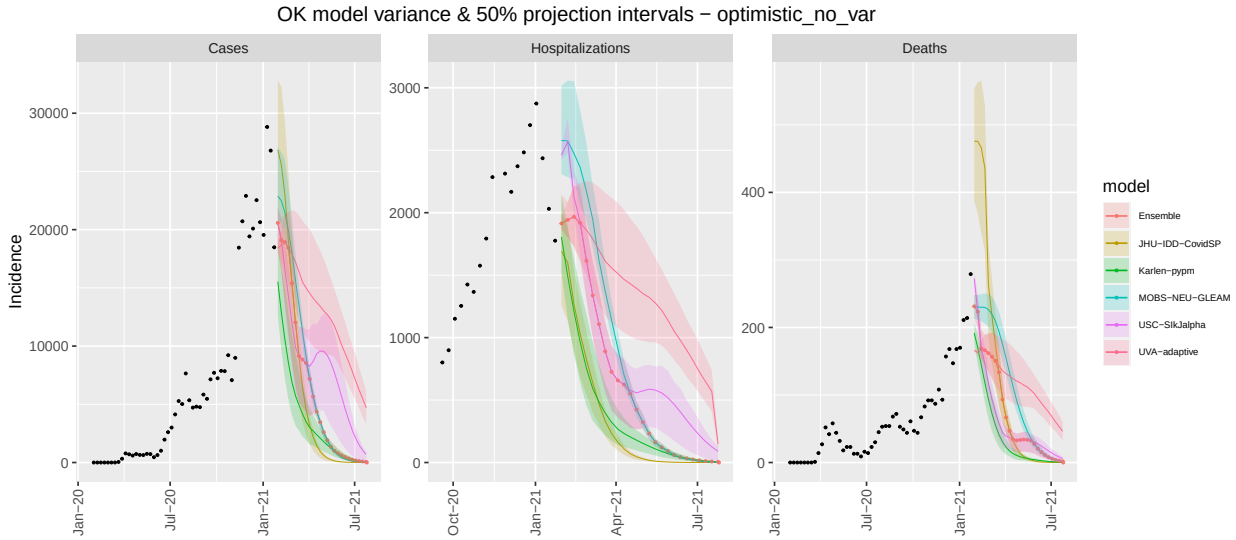

NE model variance & 50% projection intervals − optimistic_no_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive
Jan−20
Jul−20
Jan−21
Jul−21
Oct−20
Apr−21

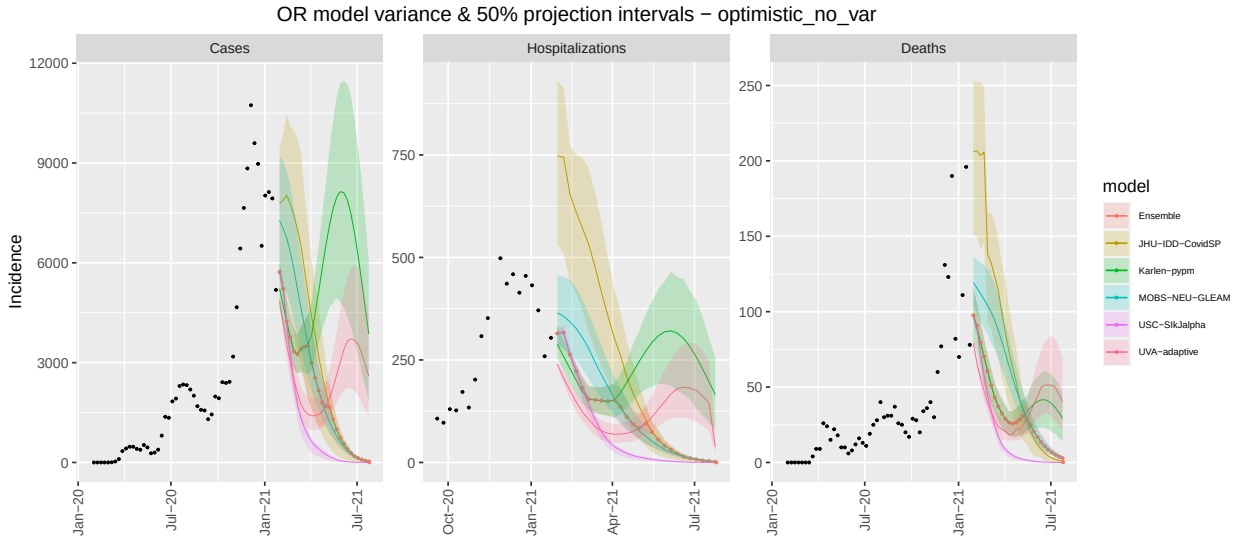

NV model variance & 50% projection intervals − optimistic_no_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive
Jan−20
Jul−20
Jan−21
Jul−21
Oct−20
Apr−21

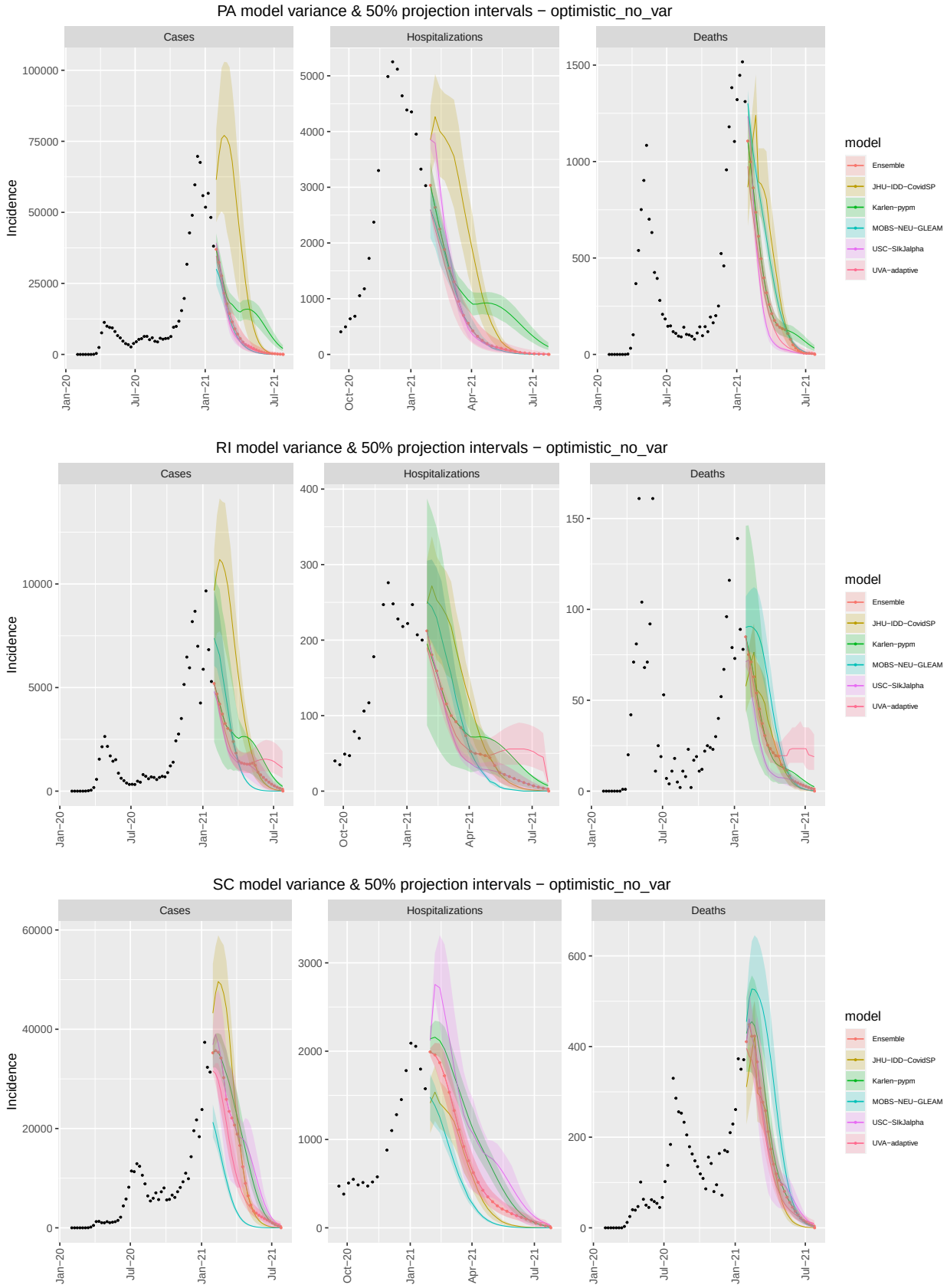

NH model variance & 50% projection intervals − optimistic_no_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive
NJ model variance & 50% projection intervals − optimistic_no_var
NM model variance & 50% projection intervals − optimistic_no_var

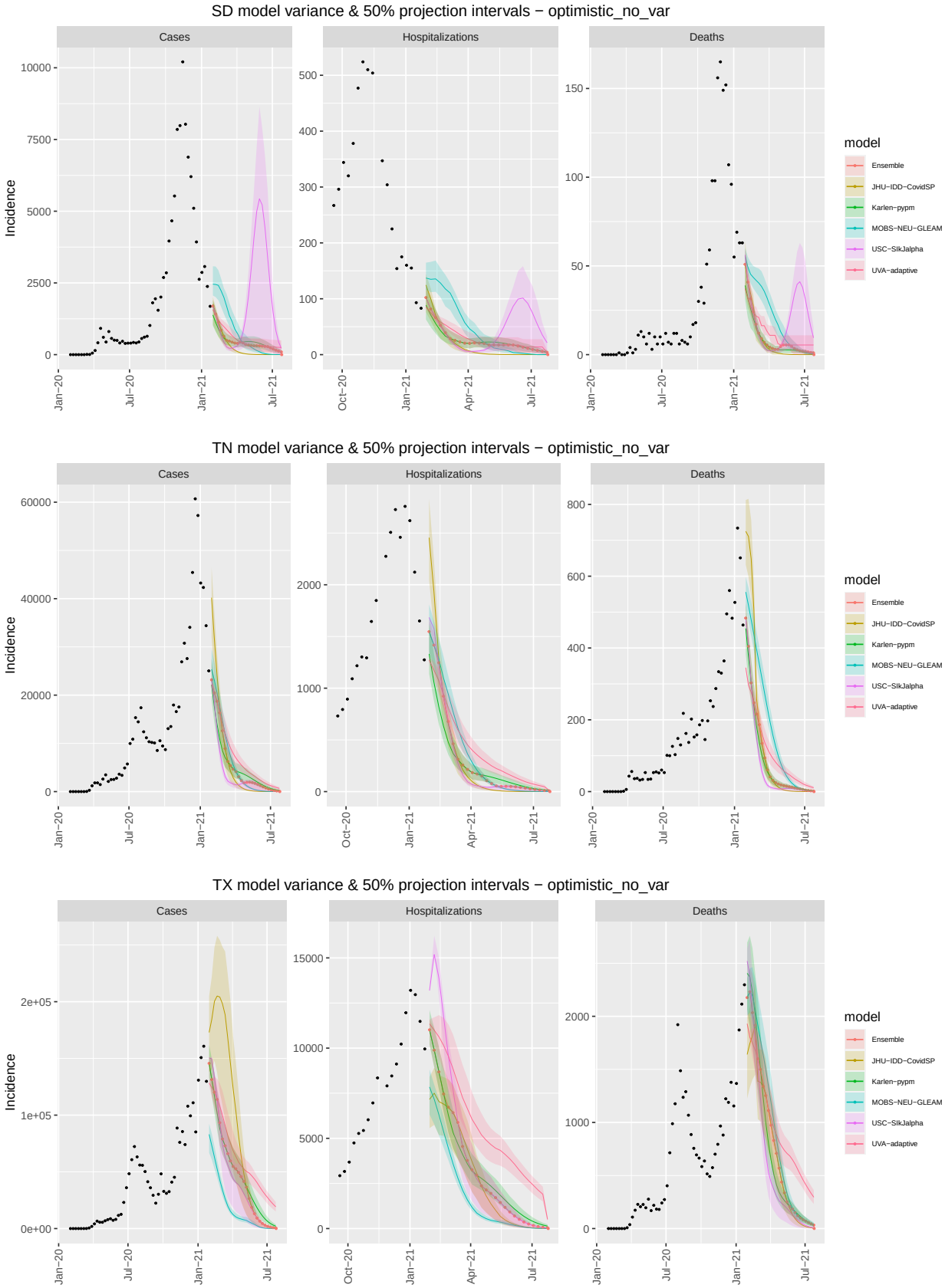

NY model variance & 50% projection intervals − optimistic_no_var
Cases
Hospitalizations
Deaths
Incidence
3e+05
2e+05
1e+05
0e+00
10000
7500
5000
2500
0
6000
4000
2000
Jan−20
Jul−20
Jan−21
Jul−21
Oct−20
Apr−21
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive
NC model variance & 50% projection intervals − optimistic_no_var
100000
75000
50000
25000
1200
900
600
300
ND model variance & 50% projection intervals − optimistic_no_var
400
200
100

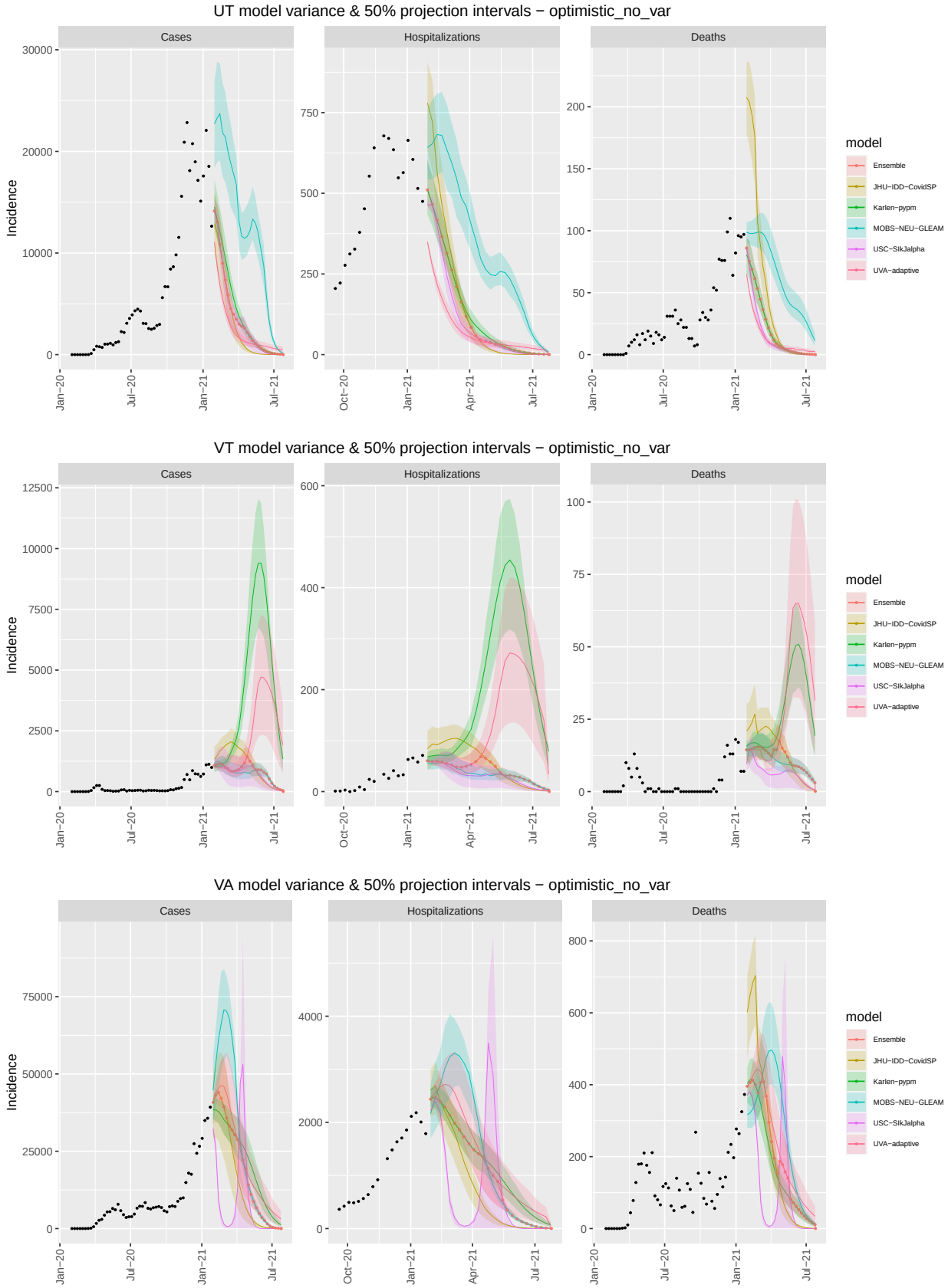

OH model variance & 50% projection intervals − optimistic_no_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive

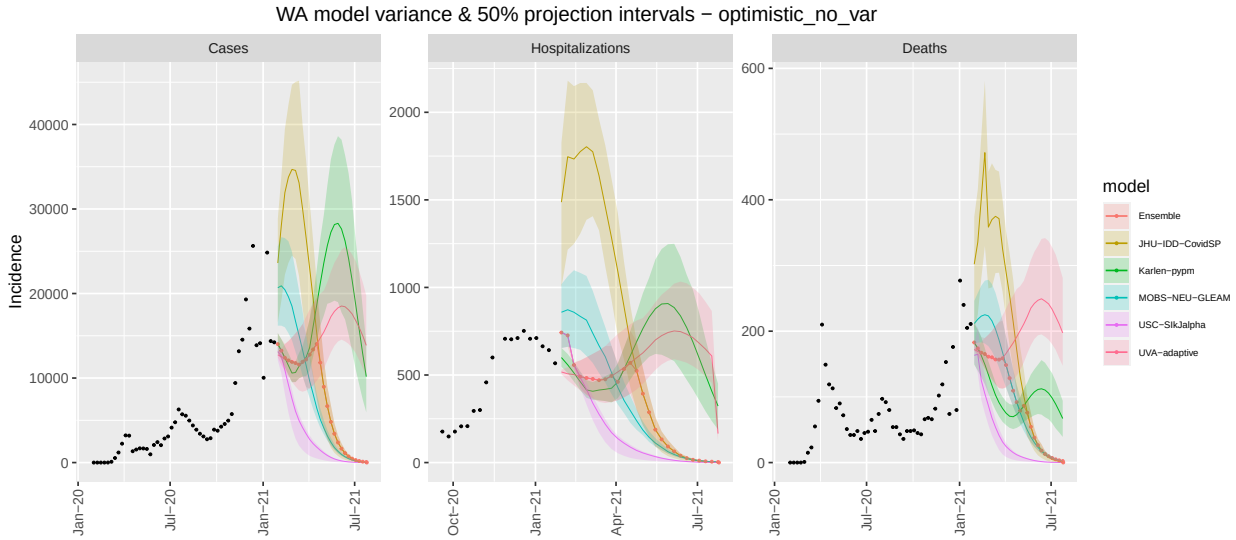

OK model variance & 50% projection intervals − optimistic_no_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive

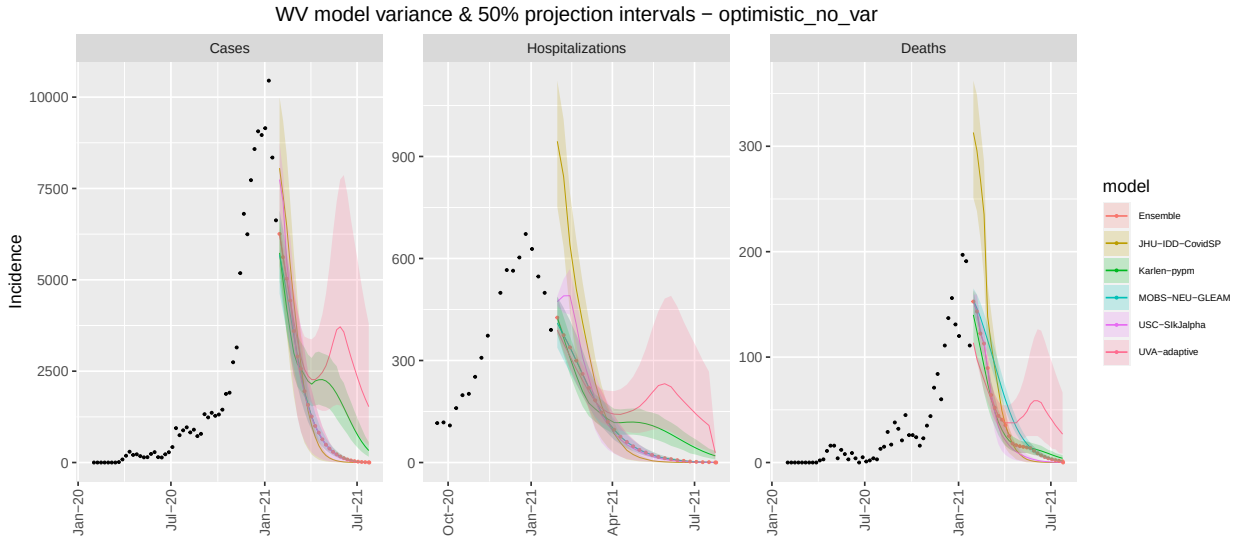

OR model variance & 50% projection intervals − optimistic_no_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive

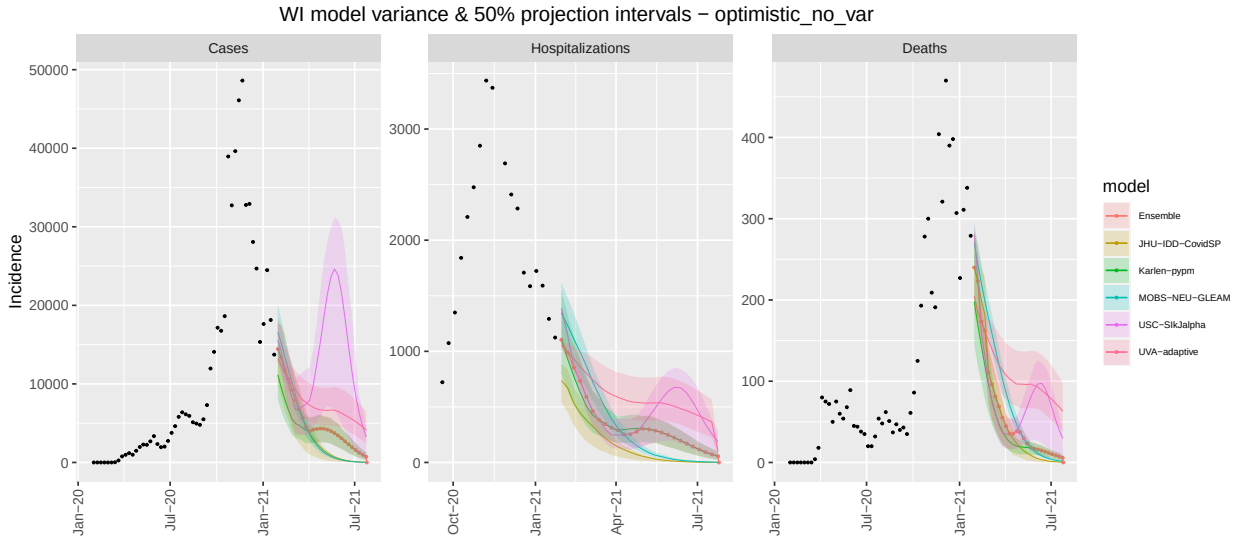

PA model variance & 50% projection intervals − optimistic_no_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive
RI model variance & 50% projection intervals − optimistic_no_var
SC model variance & 50% projection intervals − optimistic_no_var

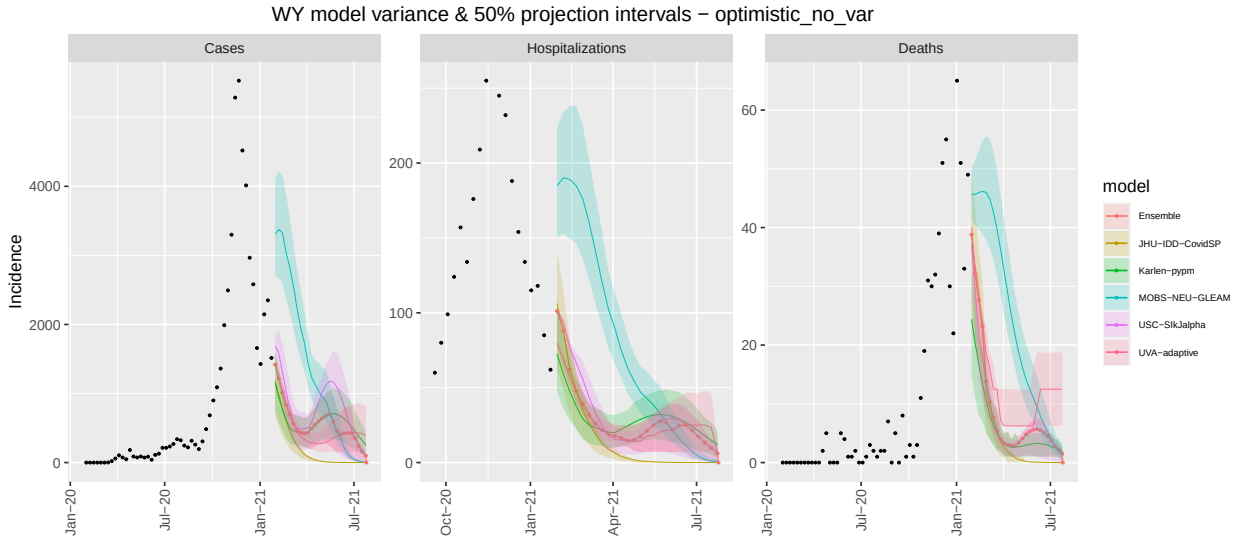

SD model variance & 50% projection intervals − optimistic_no_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive
TN model variance & 50% projection intervals − optimistic_no_var
TX model variance & 50% projection intervals − optimistic_no_var

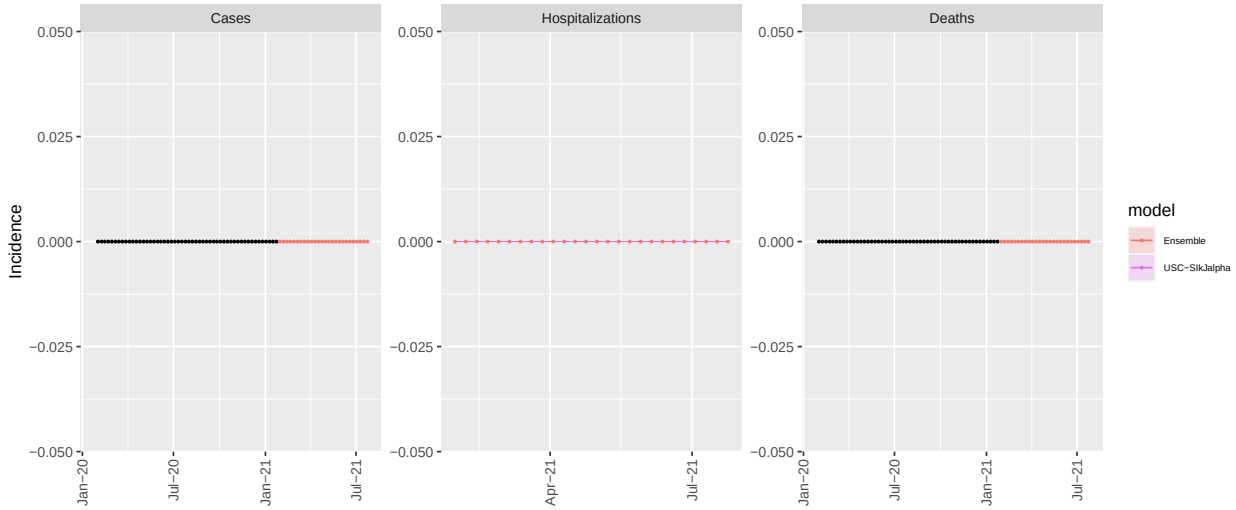

UT model variance & 50% projection intervals − optimistic_no_var
VT model variance & 50% projection intervals − optimistic_no_var
VA model variance & 50% projection intervals − optimistic_no_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive
Jan−20
Jul−20
Jan−21
Jul−21
Oct−20
Apr−21

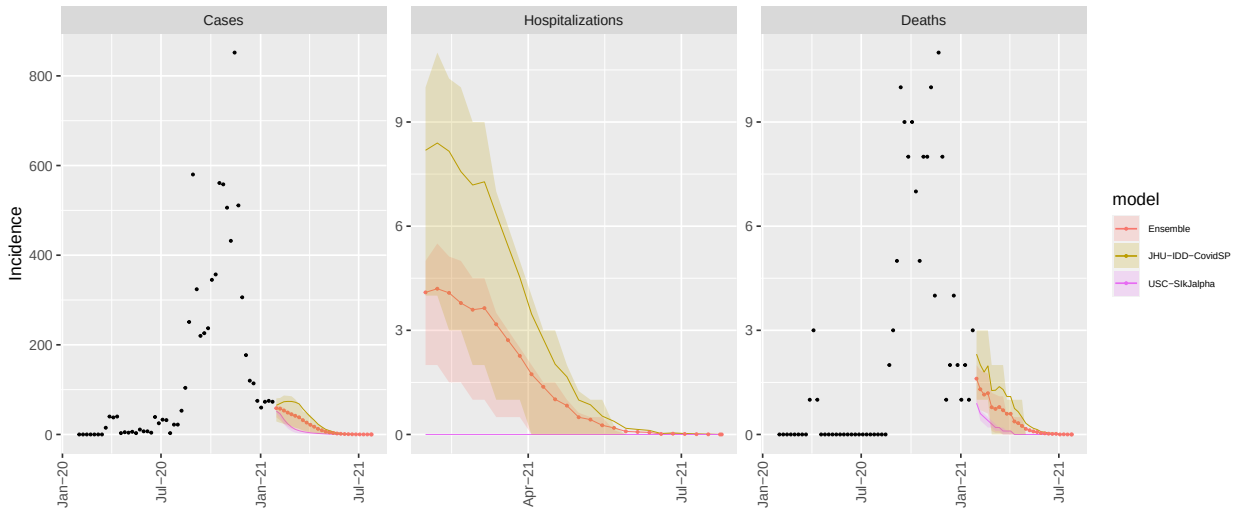

WA model variance & 50% projection intervals − optimistic_no_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive

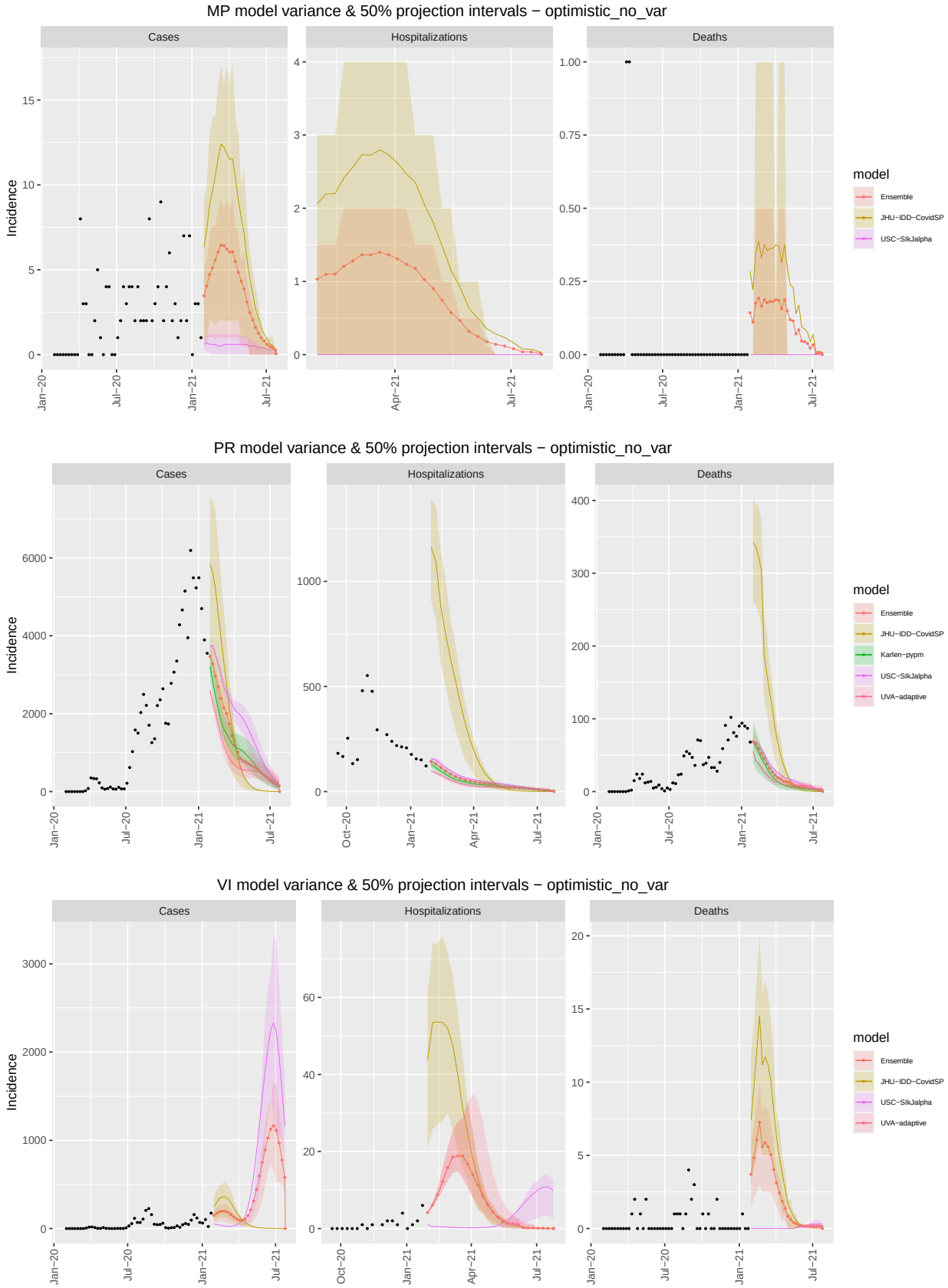

WV model variance & 50% projection intervals − optimistic_no_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive


WI model variance & 50% projection intervals − optimistic_no_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive

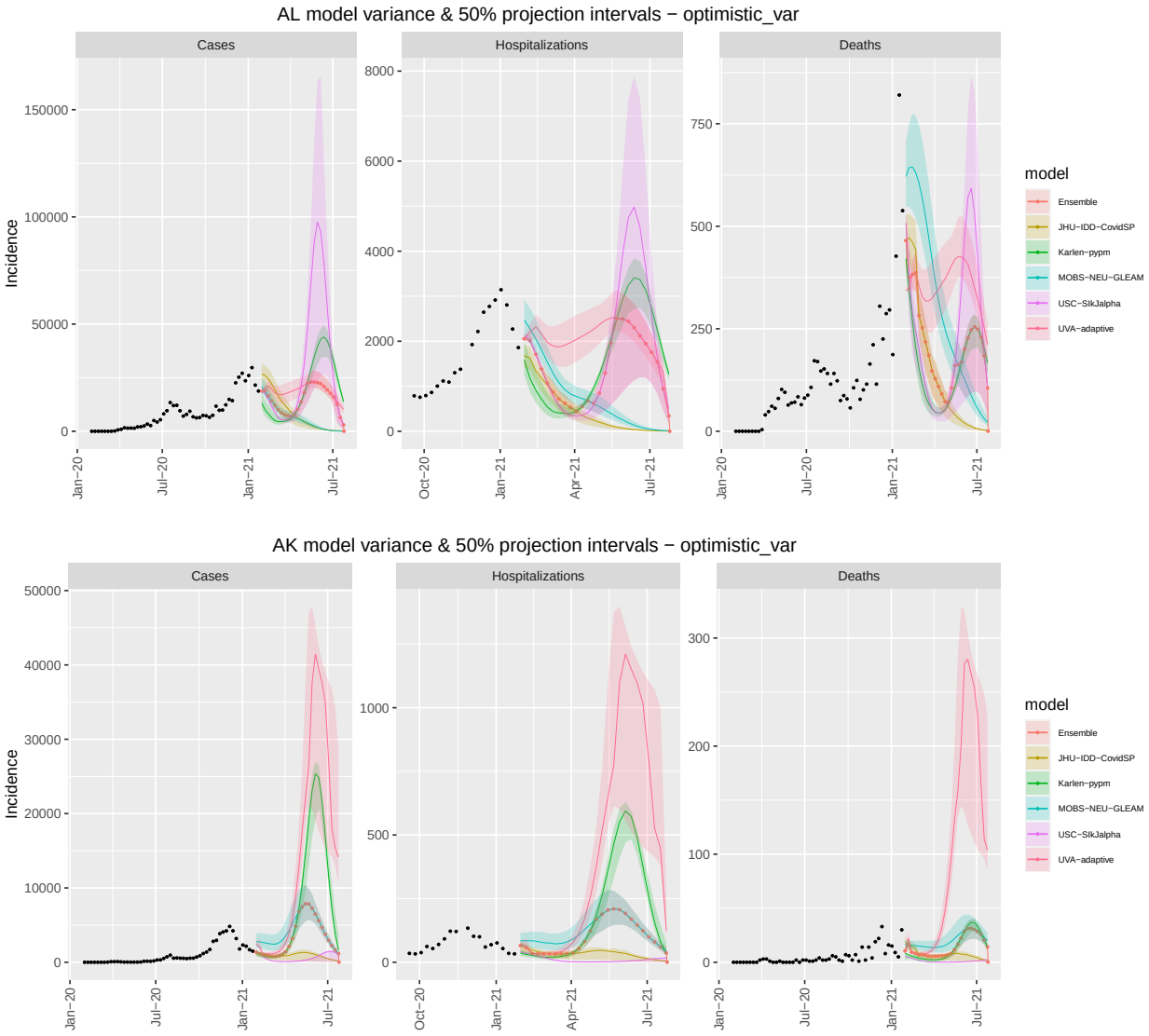

WY model variance & 50% projection intervals − optimistic_no_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive

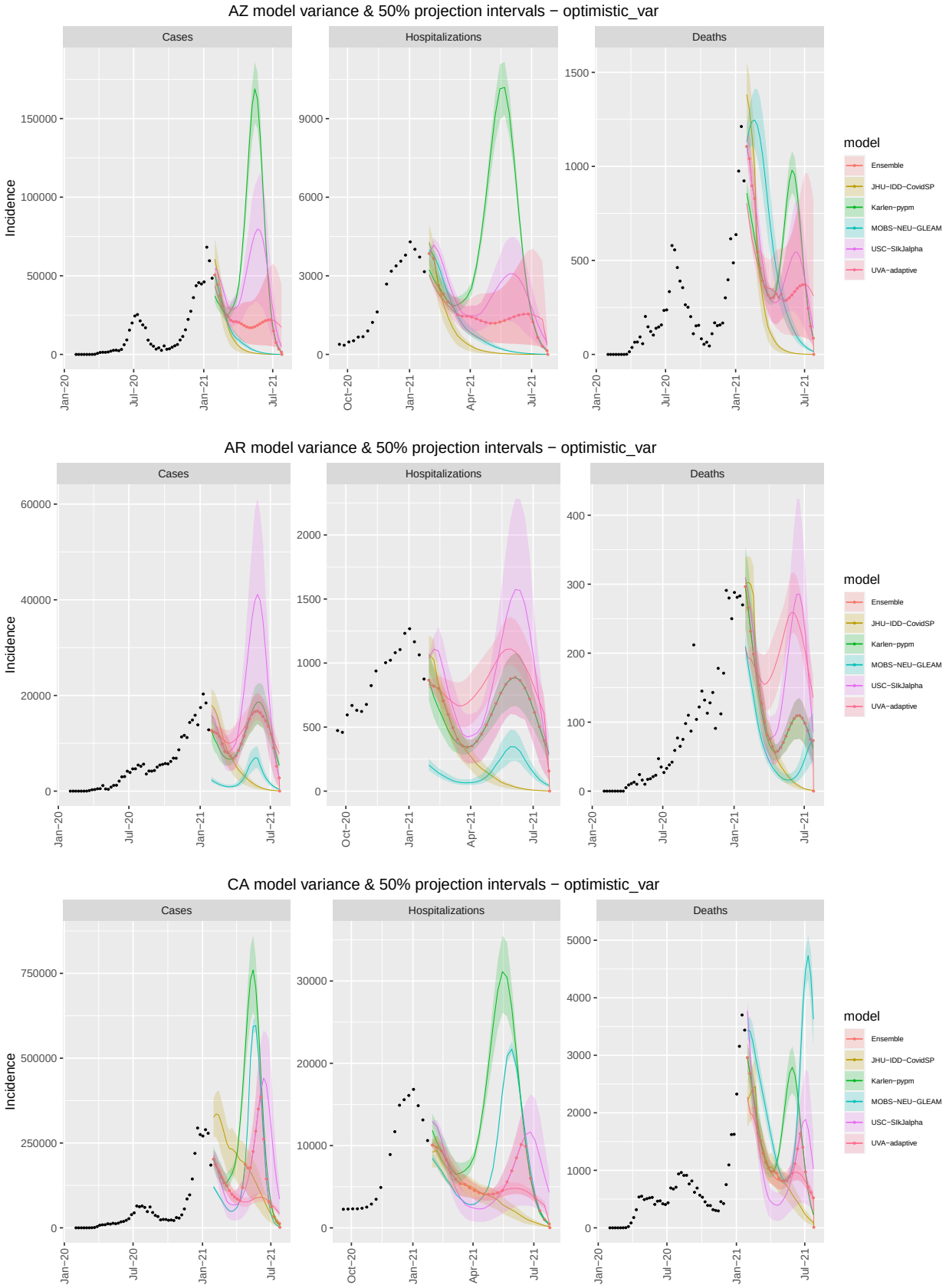

AS model variance & 50% projection intervals − optimistic_no_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
USC−SIkJalpha

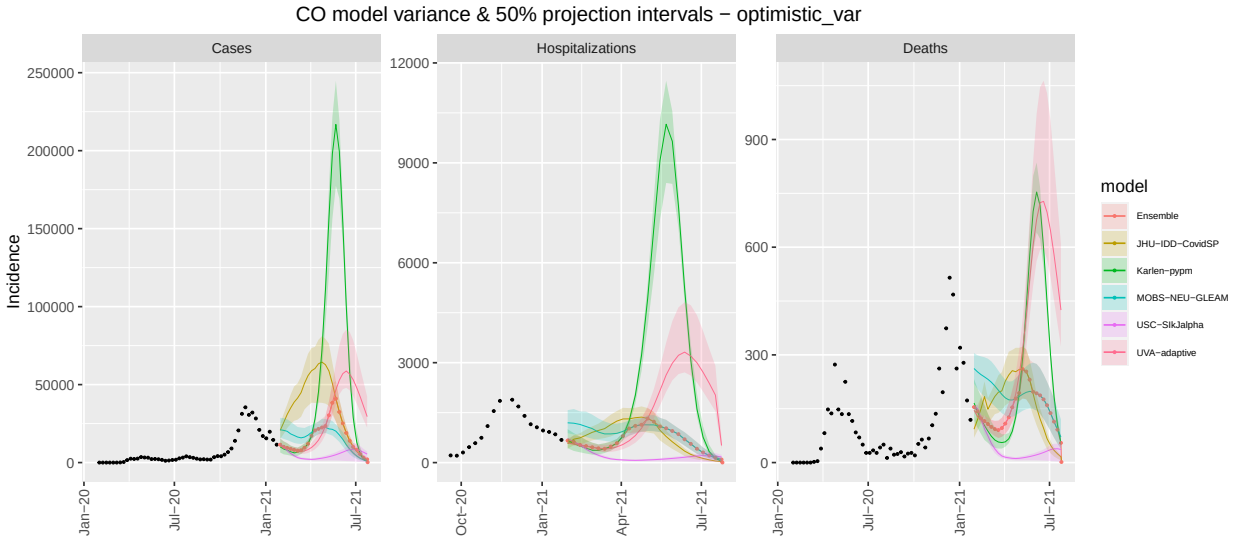

GU model variance & 50% projection intervals − optimistic_no_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
USC−SIkJalpha

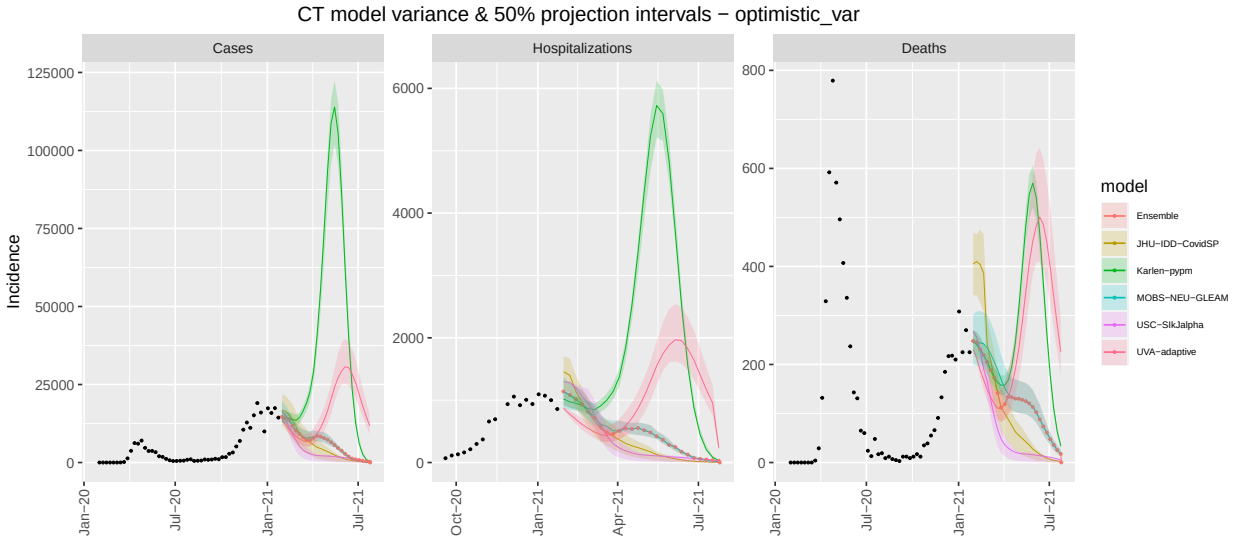

MP model variance & 50% projection intervals − optimistic_no_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
USC−SIkJalpha
PR model variance & 50% projection intervals − optimistic_no_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
USC−SIkJalpha
UVA−adaptive
VI model variance & 50% projection intervals − optimistic_no_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
USC−SIkJalpha
UVA−adaptive

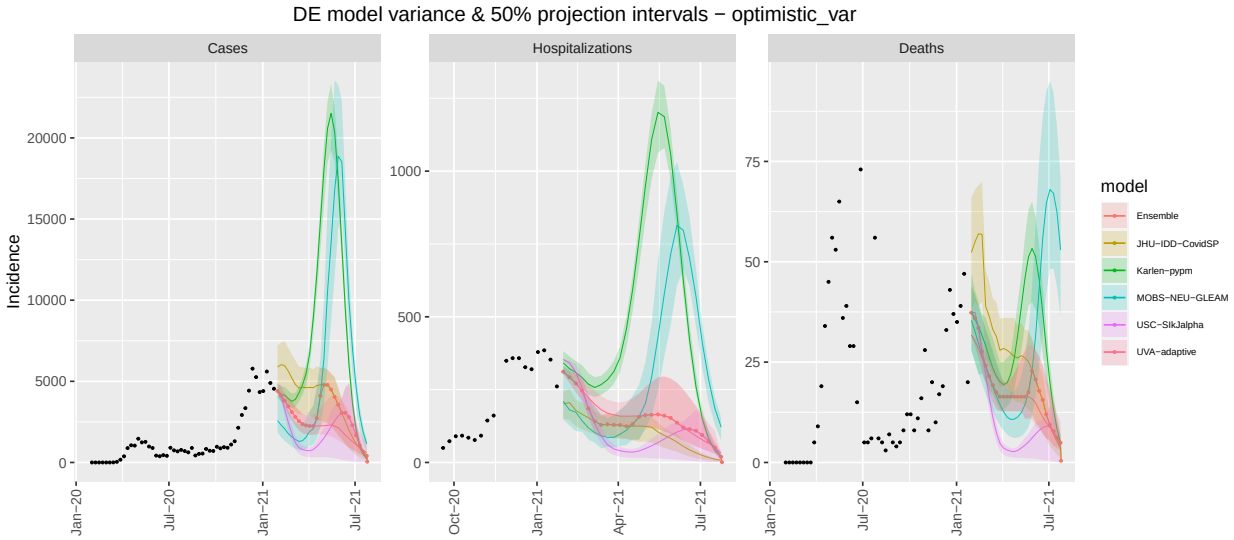
National model variation for the optimistic variant scenario

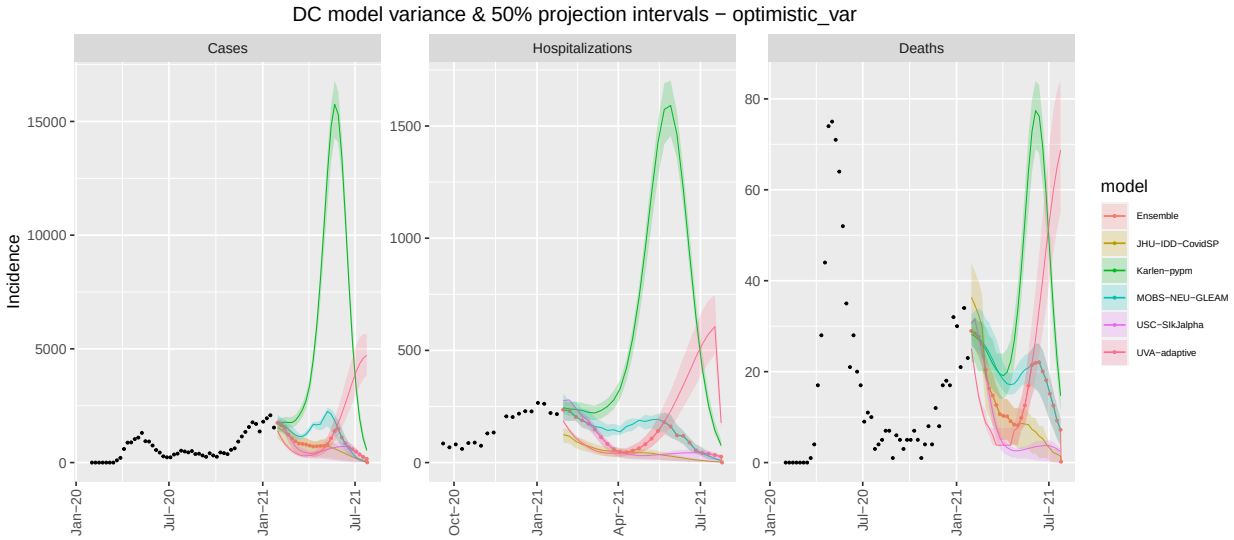


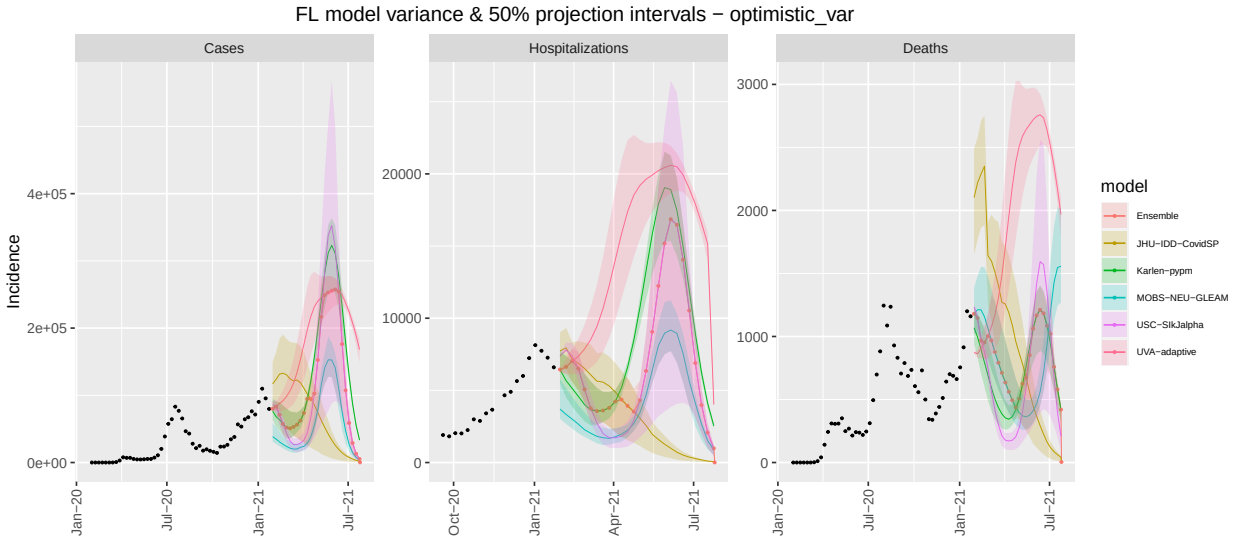

AZ model variance & 50% projection intervals − optimistic_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive
AR model variance & 50% projection intervals − optimistic_var
CA model variance & 50% projection intervals − optimistic_var

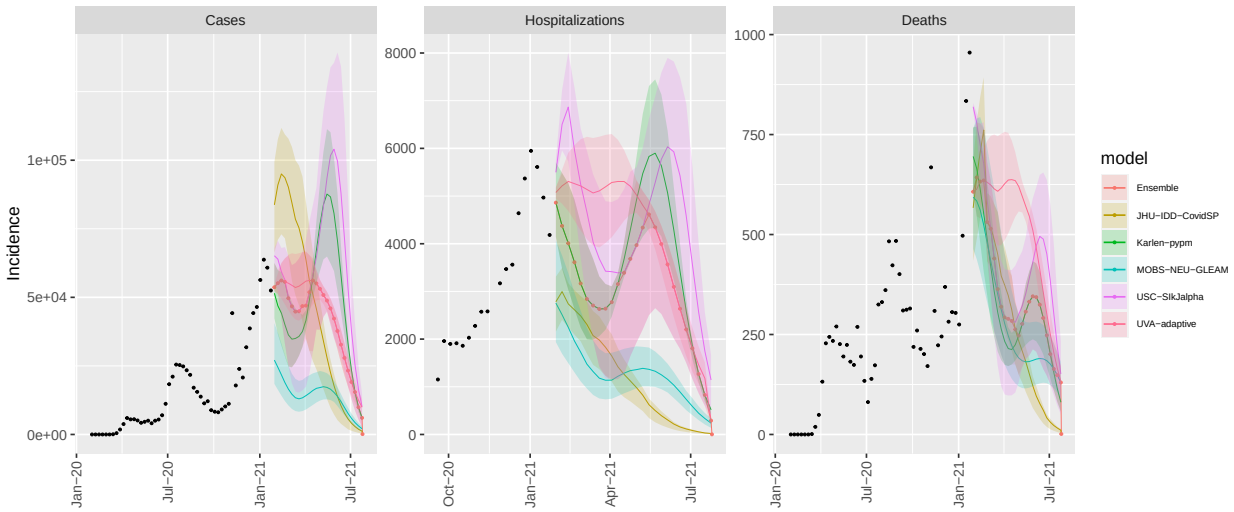

CO model variance & 50% projection intervals − optimistic_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive

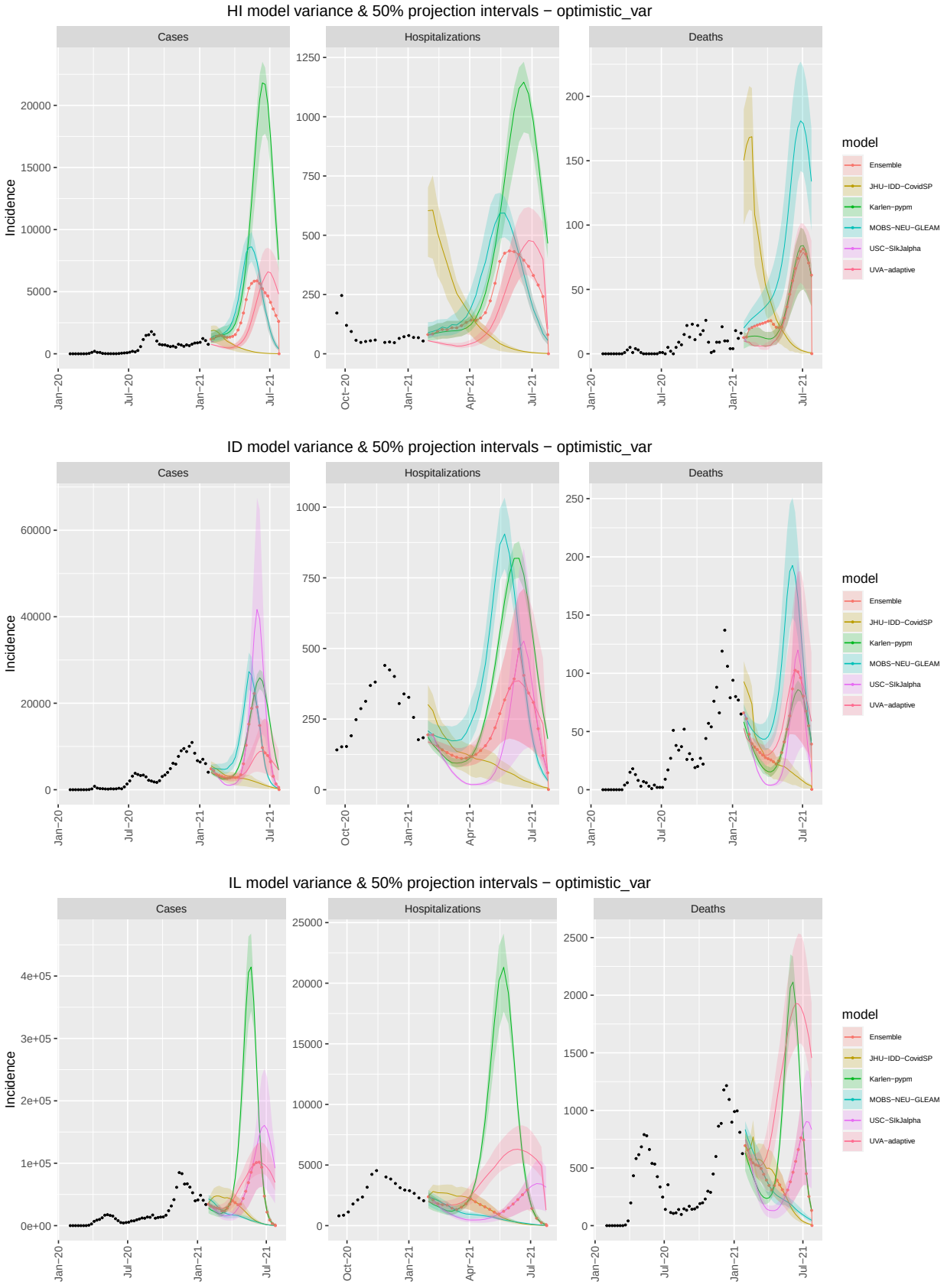

CT model variance & 50% projection intervals − optimistic_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive

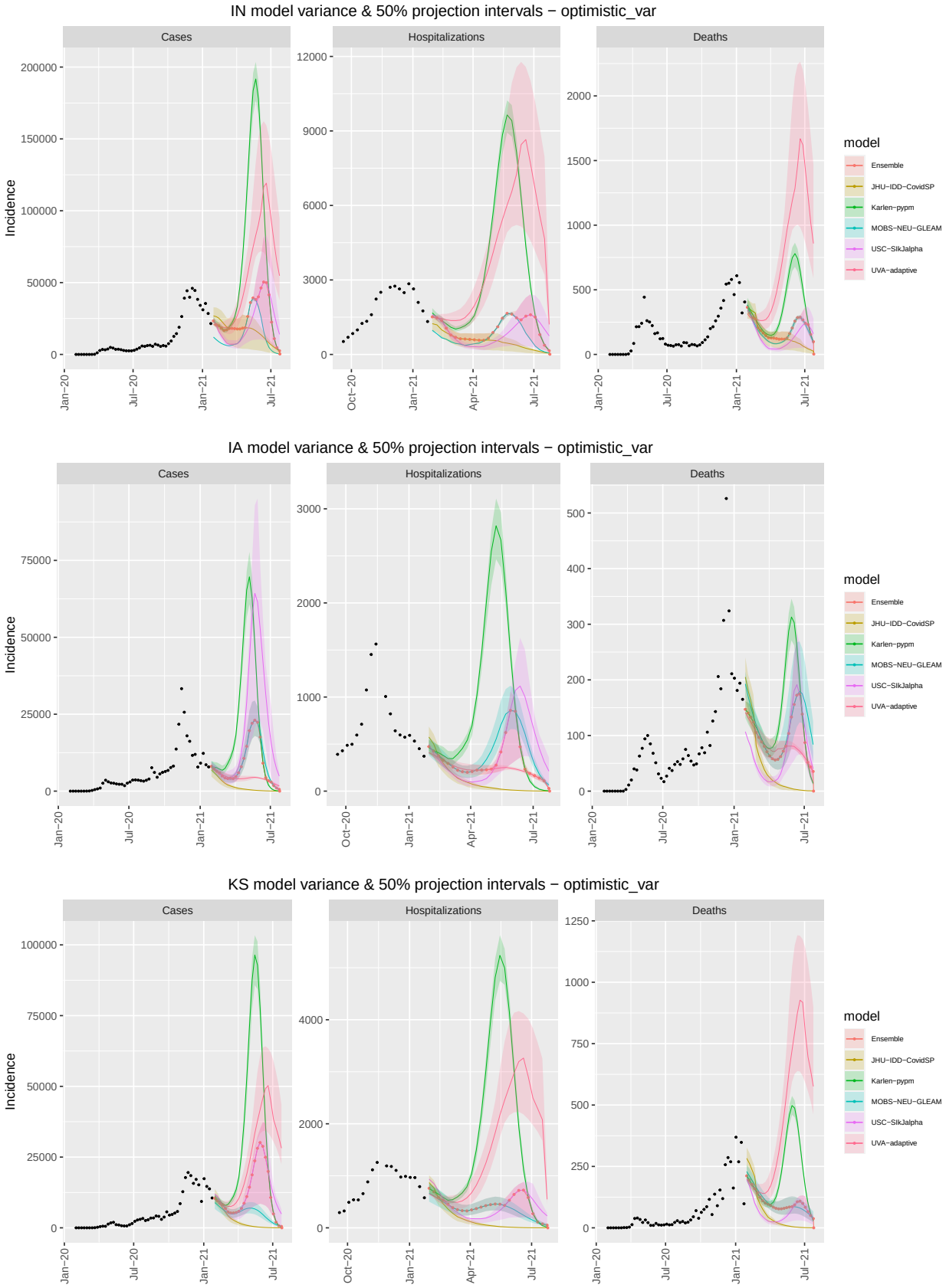

DE model variance & 50% projection intervals − optimistic_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive


DC model variance & 50% projection intervals − optimistic_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive


FL model variance & 50% projection intervals − optimistic_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive


GA model variance & 50% projection intervals − optimistic_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive


HI model variance & 50% projection intervals − optimistic_var
ID model variance & 50% projection intervals − optimistic_var
IL model variance & 50% projection intervals − optimistic_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive
Jan−20
Jul−20
Jan−21
Jul−21
Oct−20
Apr−21


IN model variance & 50% projection intervals − optimistic_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
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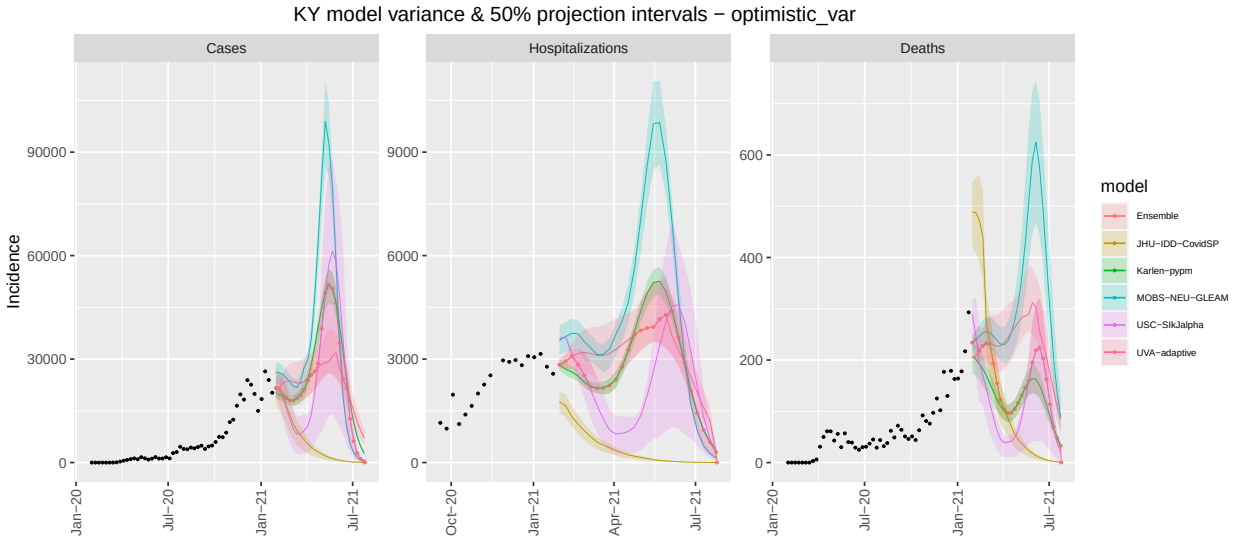
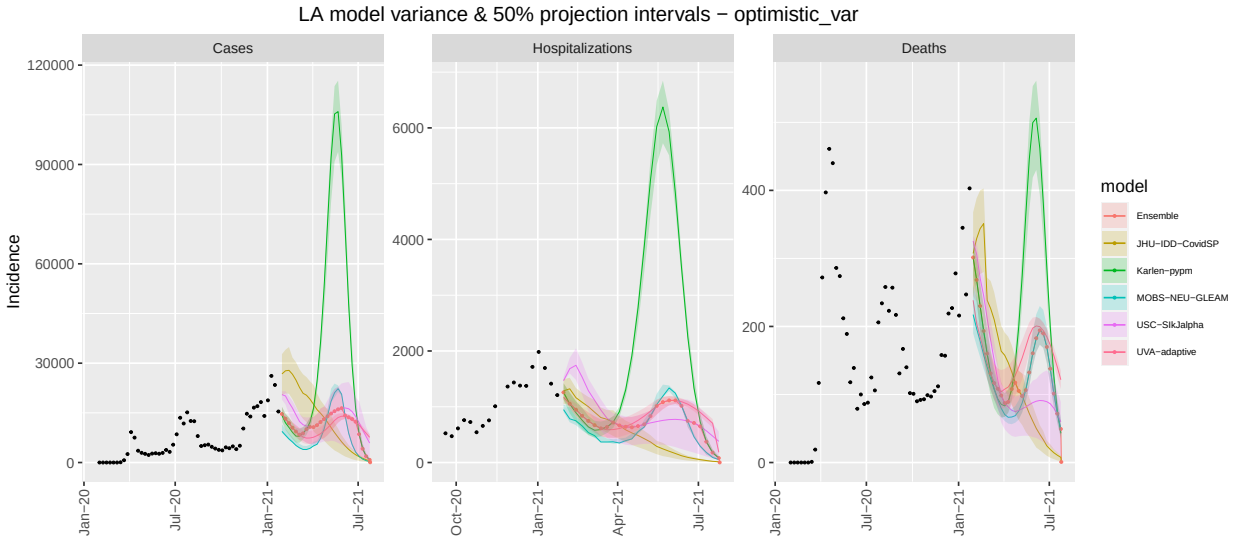
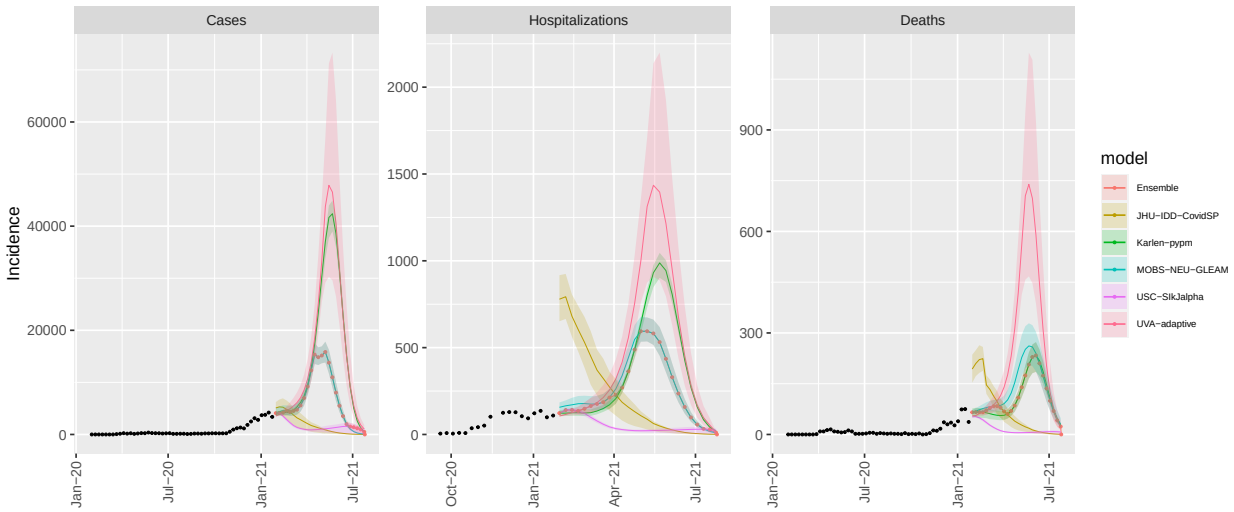
USC−SIkJalpha
UVA−adaptive
IA model variance & 50% projection intervals − optimistic_var
KS model variance & 50% projection intervals − optimistic_var


KY model variance & 50% projection intervals − optimistic_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive


LA model variance & 50% projection intervals − optimistic_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive


ME model variance & 50% projection intervals − optimistic_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
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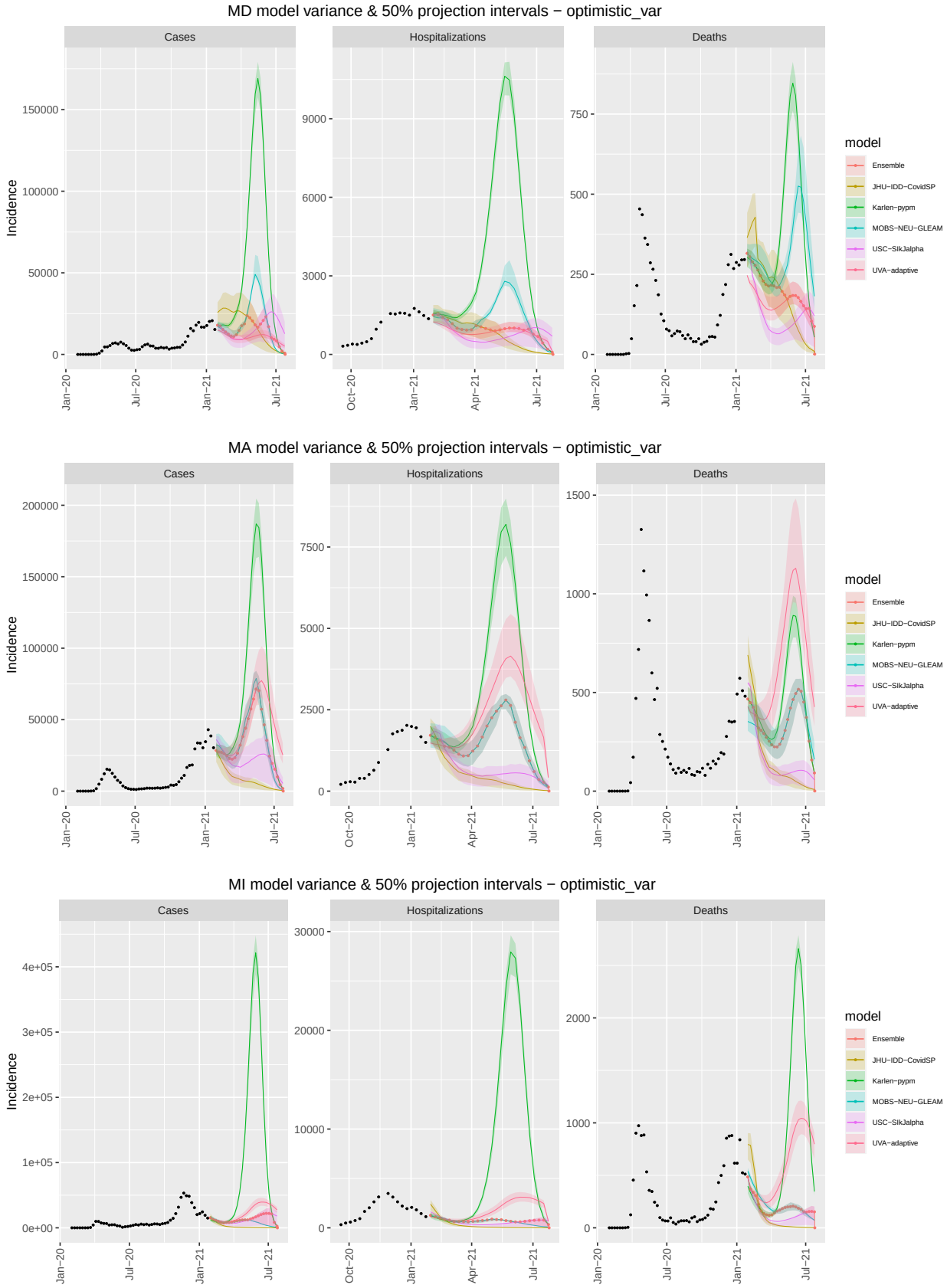
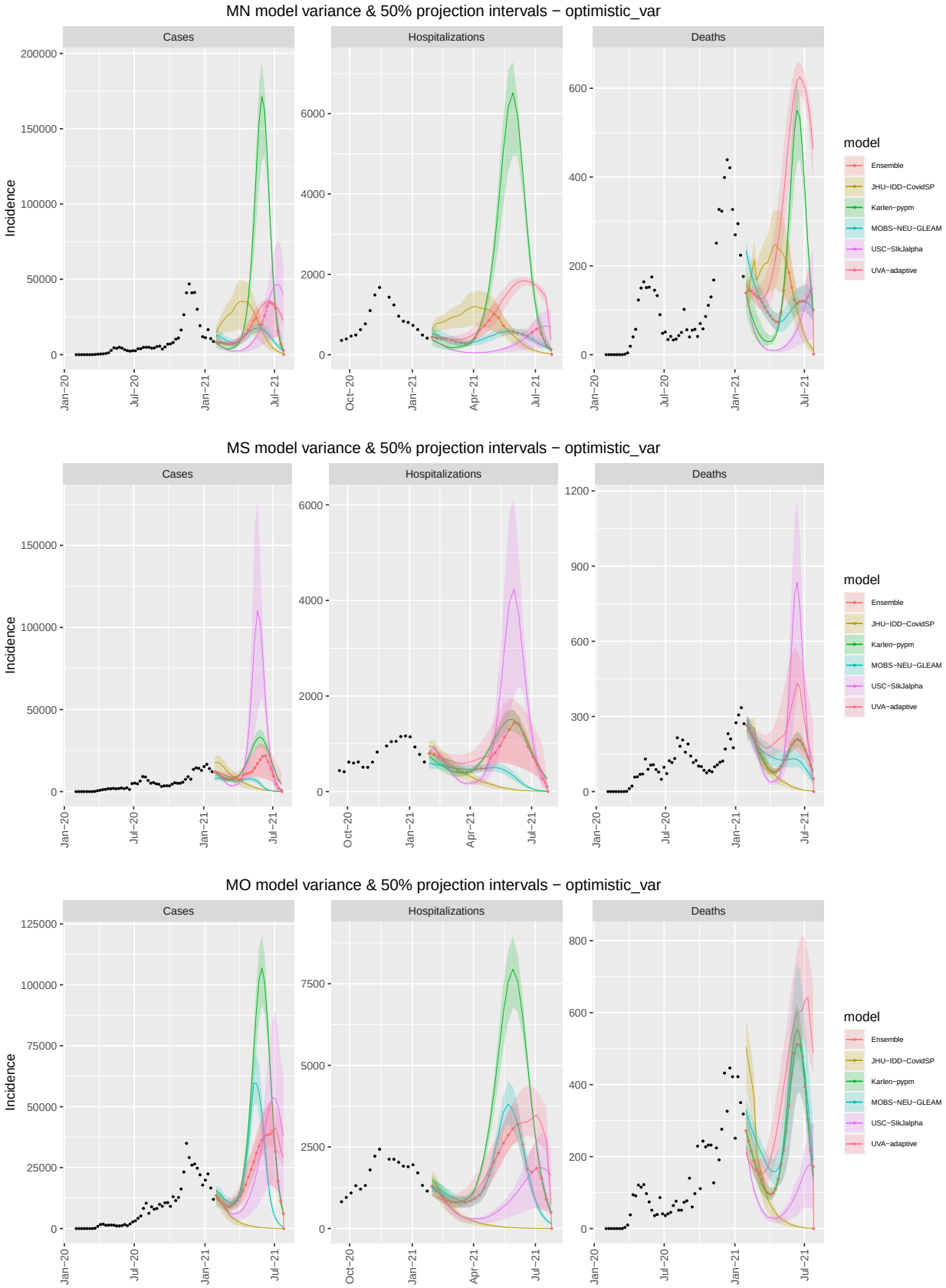
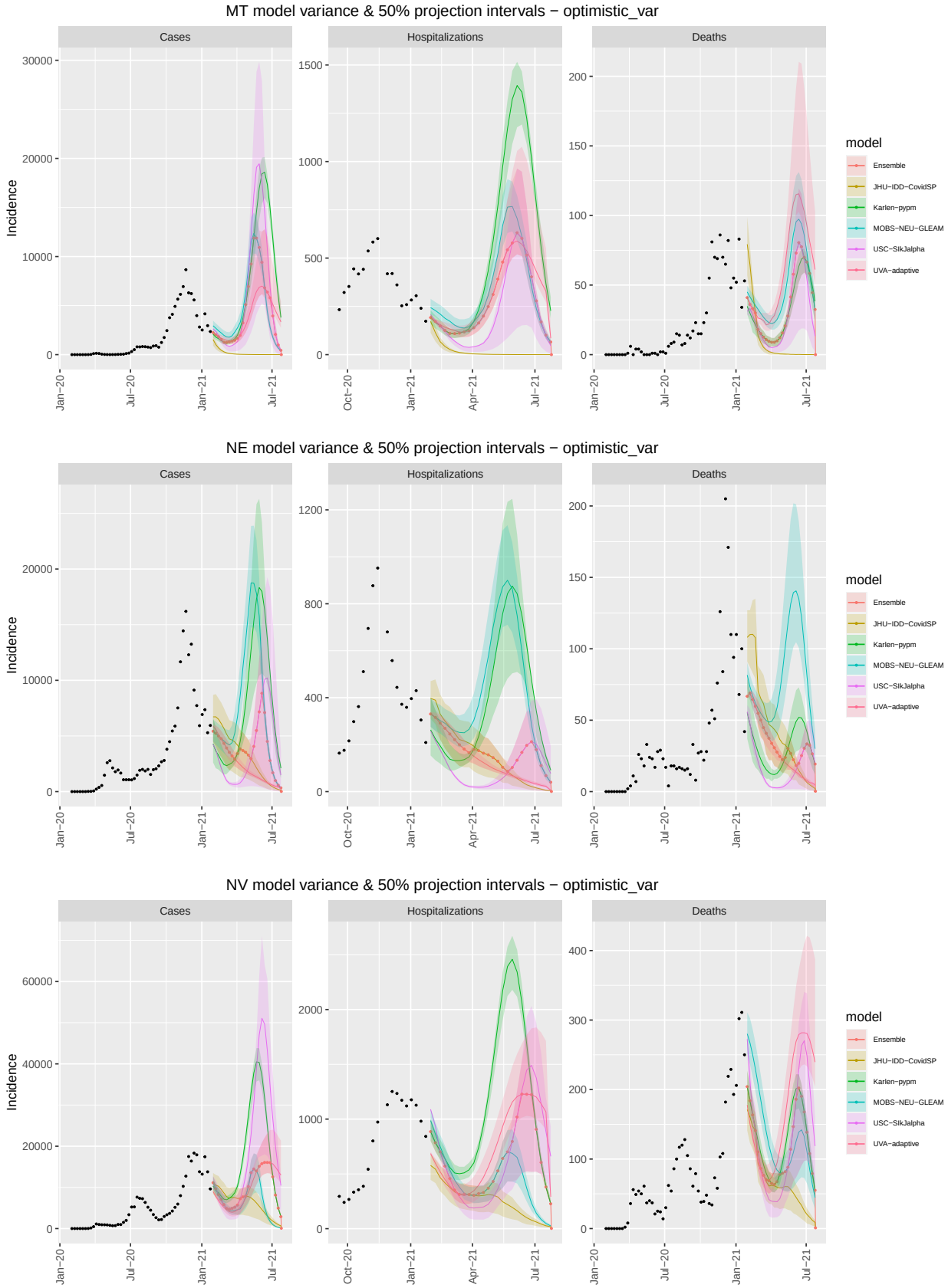
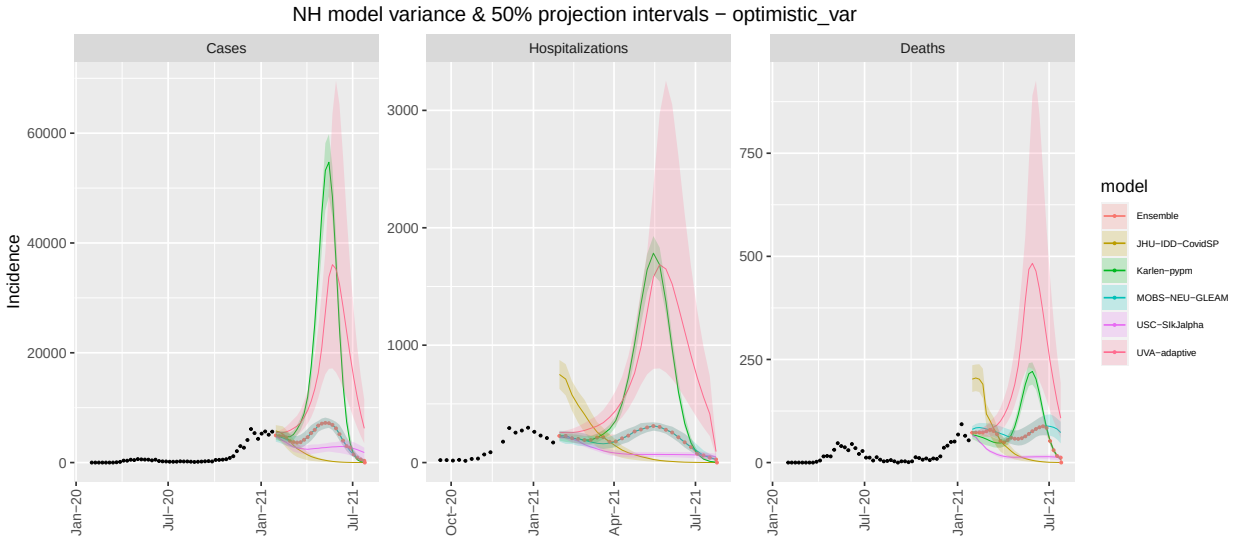
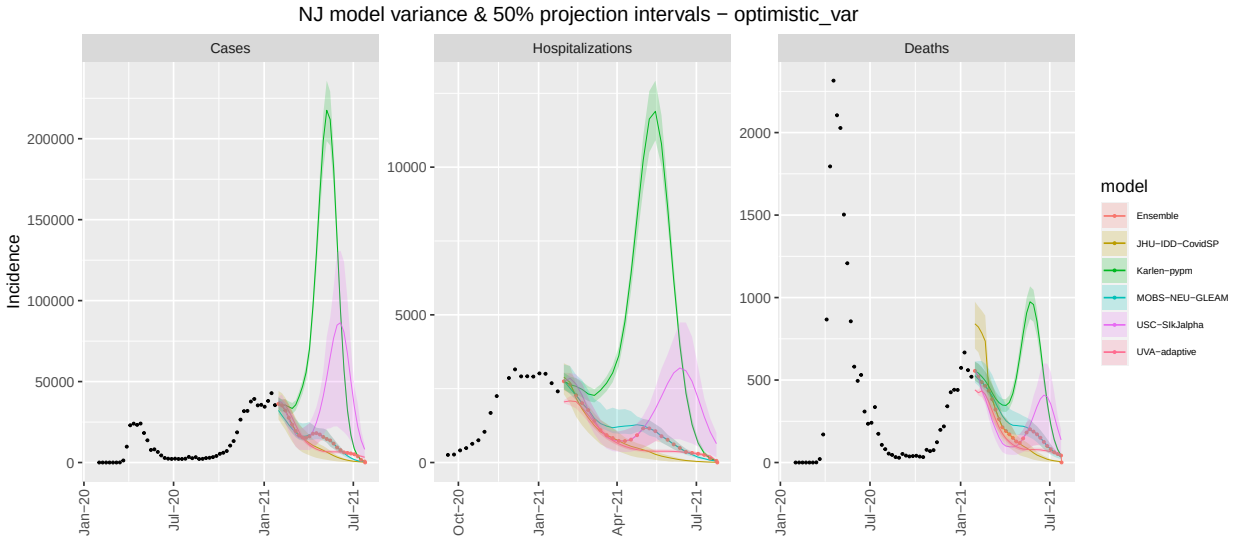
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive

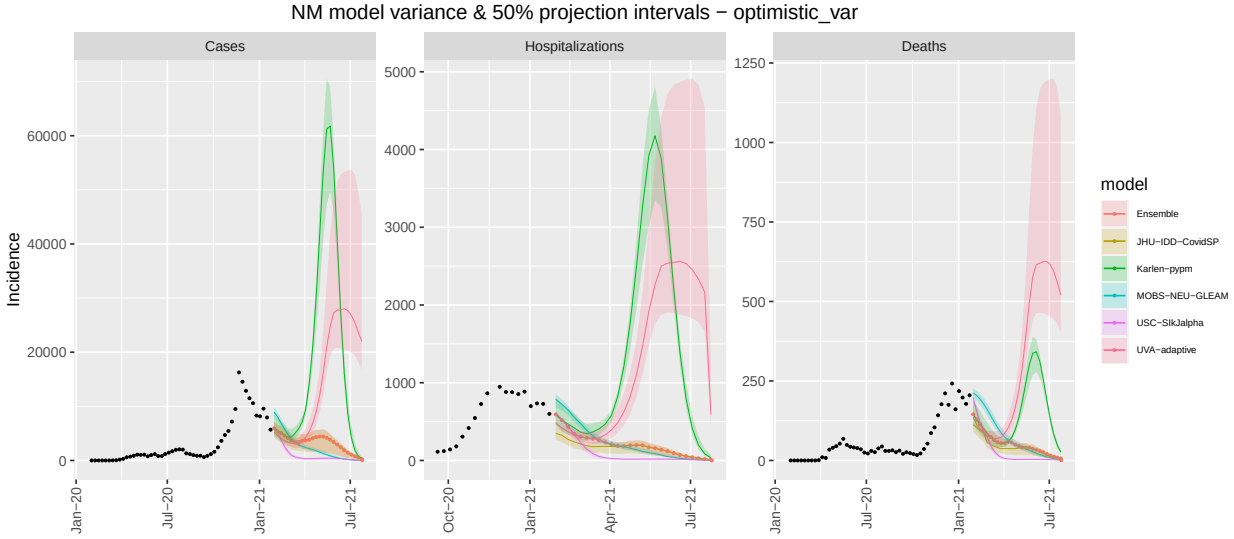

MD model variance & 50% projection intervals − optimistic_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive
MA model variance & 50% projection intervals − optimistic_var
MI model variance & 50% projection intervals − optimistic_var

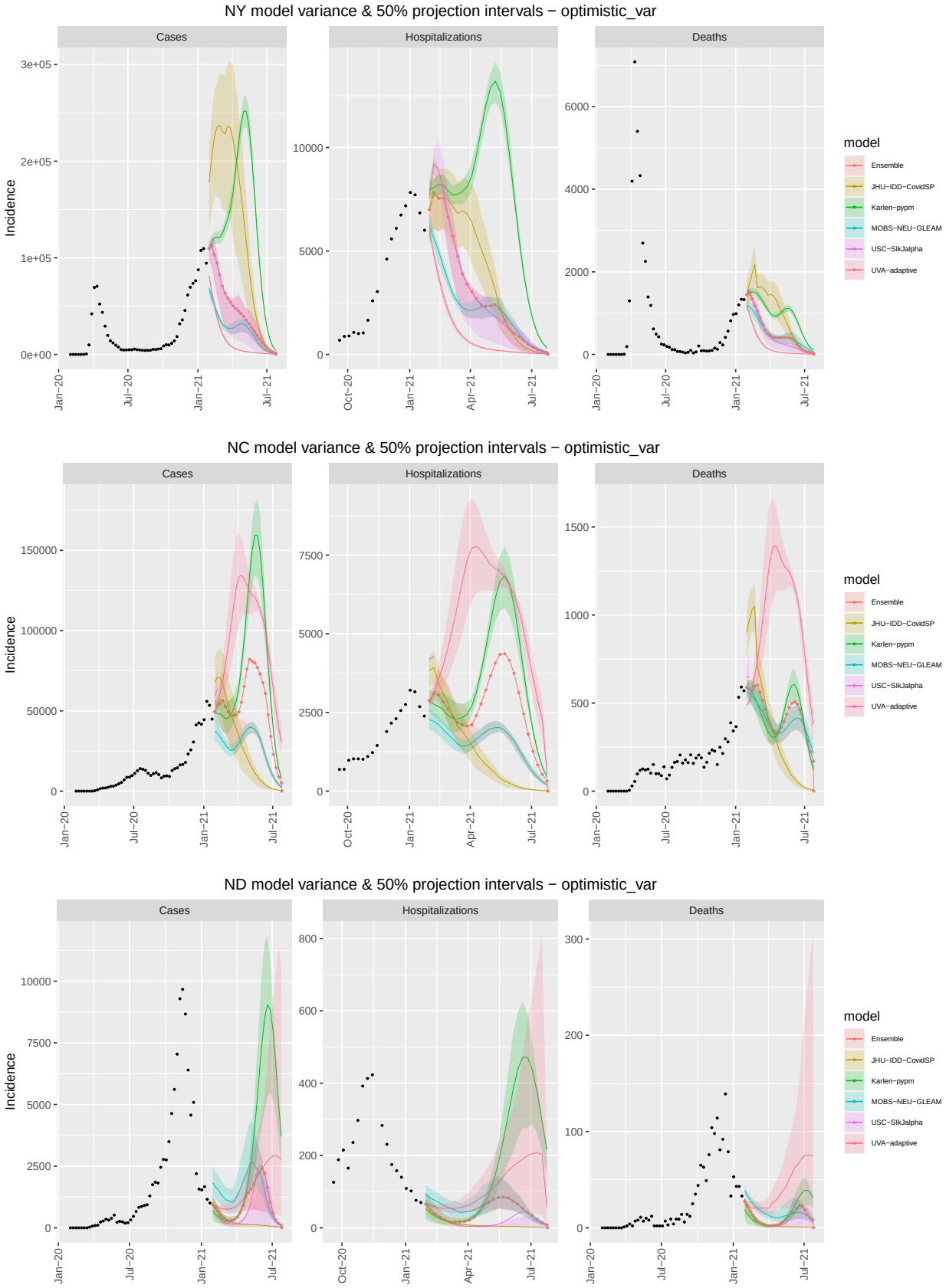

MN model variance & 50% projection intervals − optimistic_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive
MS model variance & 50% projection intervals − optimistic_var
MO model variance & 50% projection intervals − optimistic_var


MT model variance & 50% projection intervals − optimistic_var
NE model variance & 50% projection intervals − optimistic_var
NV model variance & 50% projection intervals − optimistic_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive
Jan−20
Jul−20
Jan−21
Jul−21
Oct−20
Apr−21


NH model variance & 50% projection intervals − optimistic_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive


NJ model variance & 50% projection intervals − optimistic_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive


NM model variance & 50% projection intervals − optimistic_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive


NY model variance & 50% projection intervals − optimistic_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
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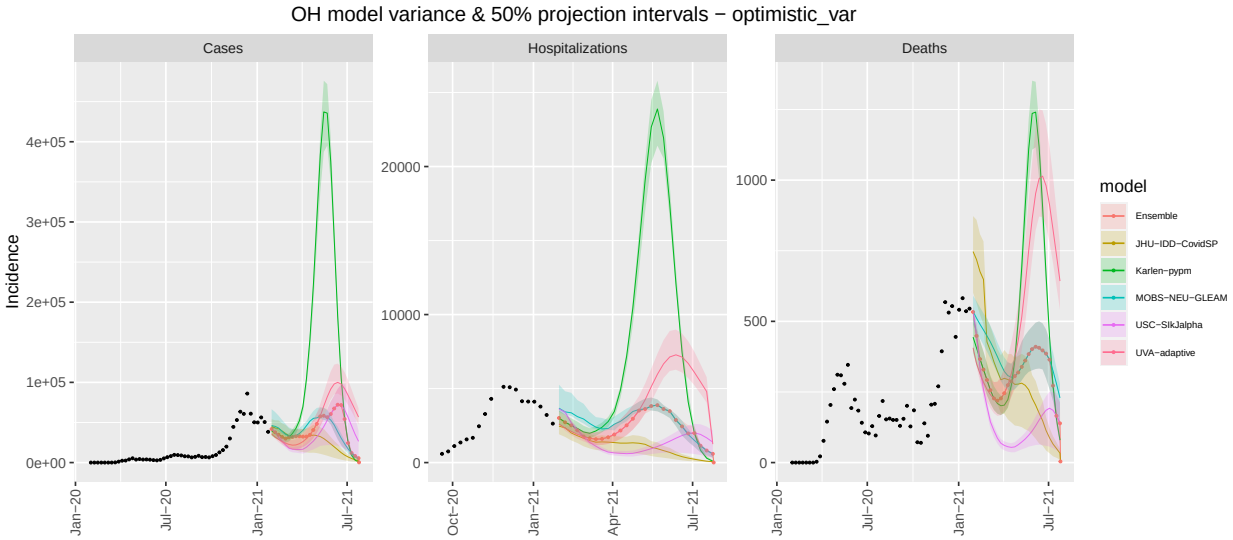
USC−SIkJalpha
UVA−adaptive
NC model variance & 50% projection intervals − optimistic_var
ND model variance & 50% projection intervals − optimistic_var


OH model variance & 50% projection intervals − optimistic_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
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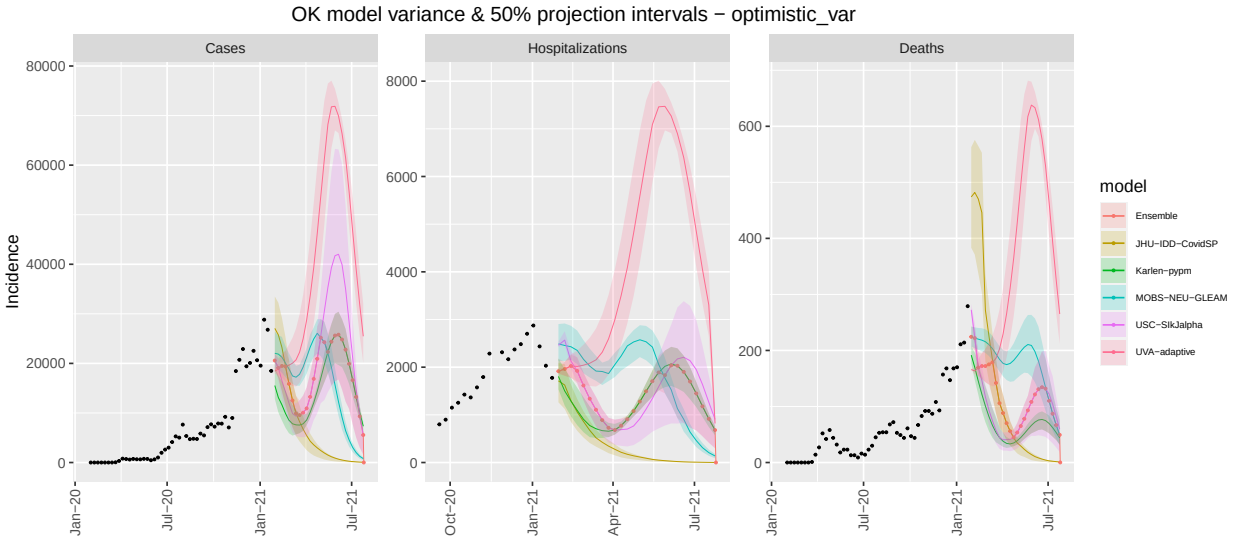
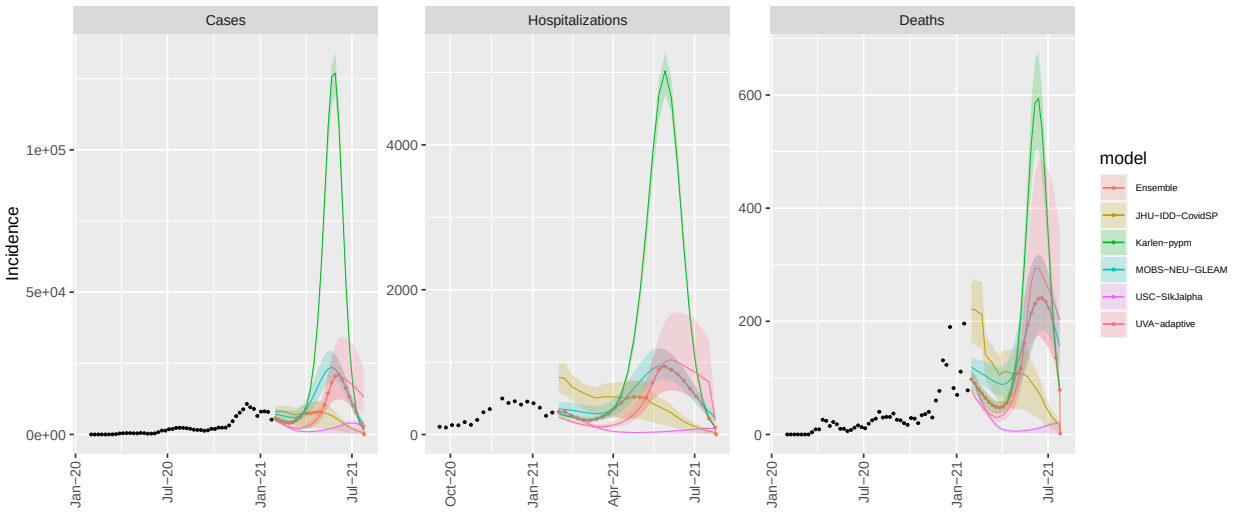
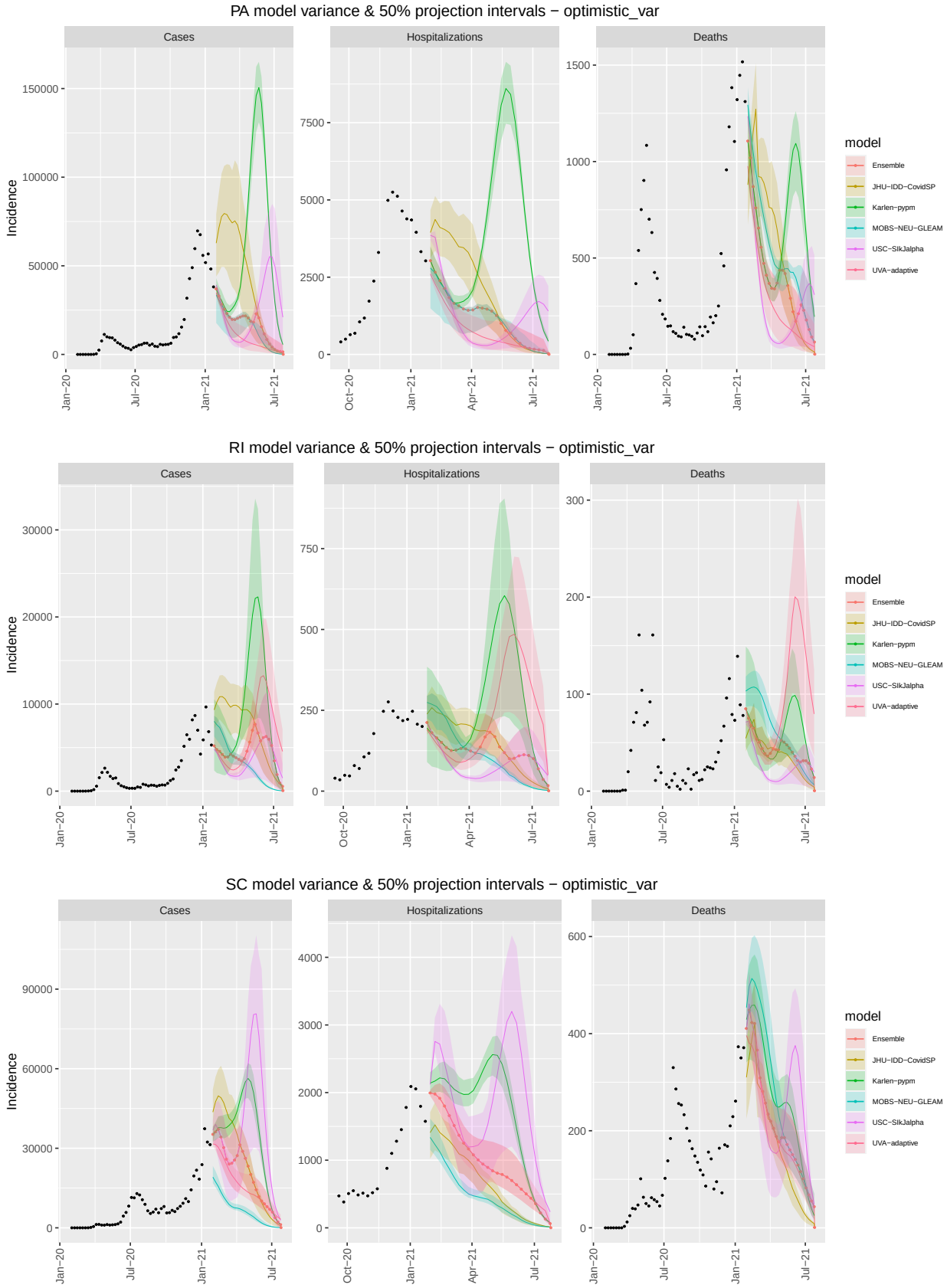
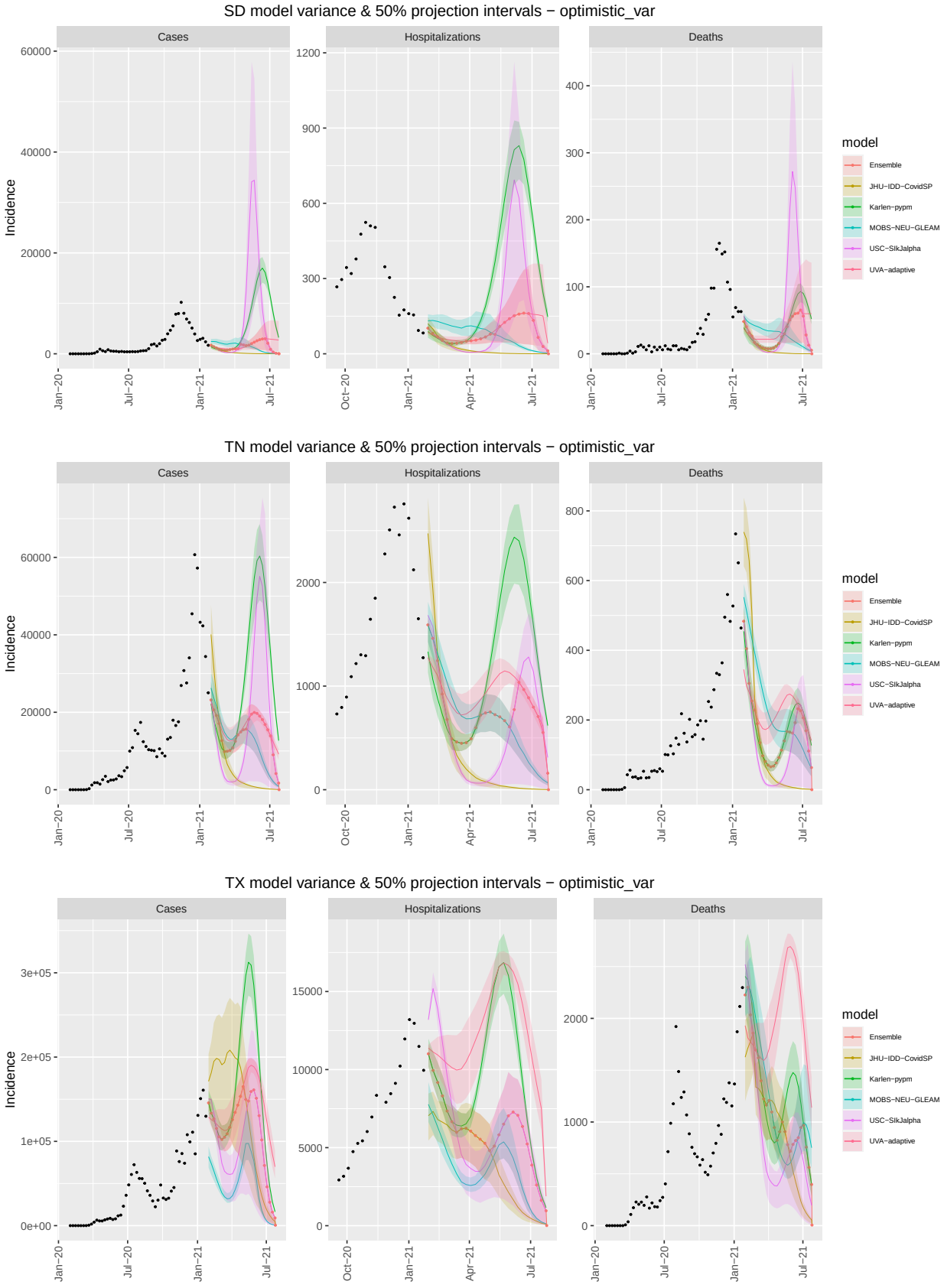
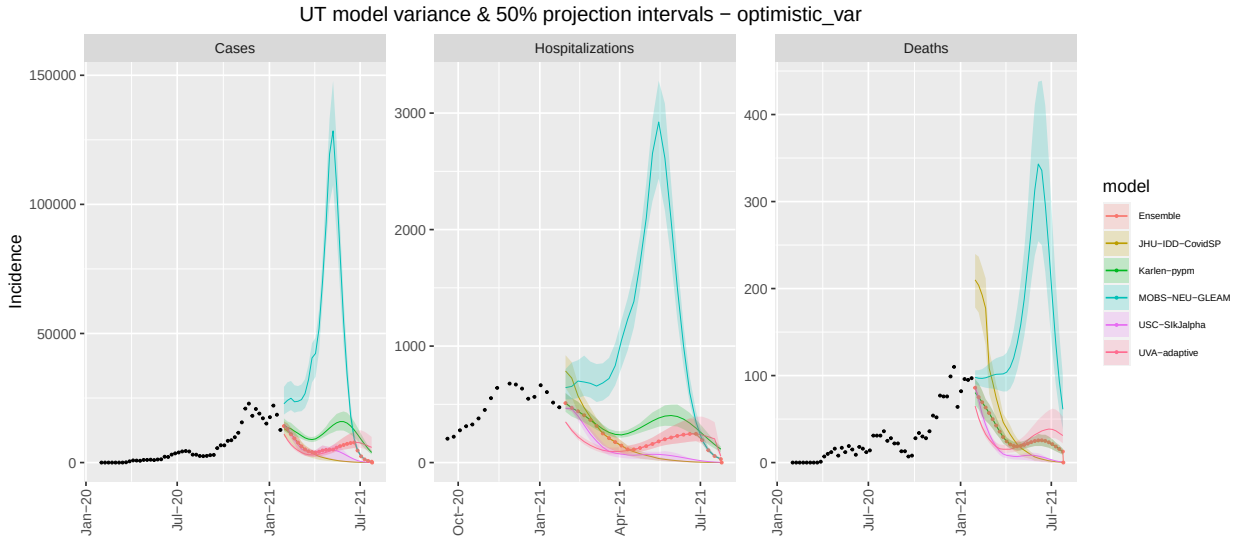
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive

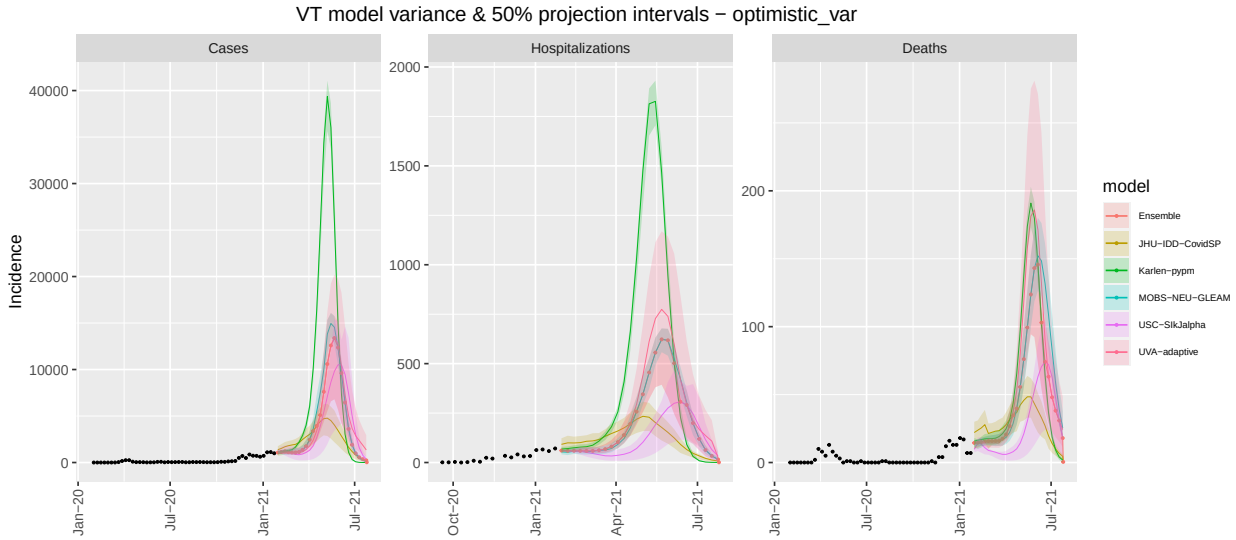

OK model variance & 50% projection intervals − optimistic_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive

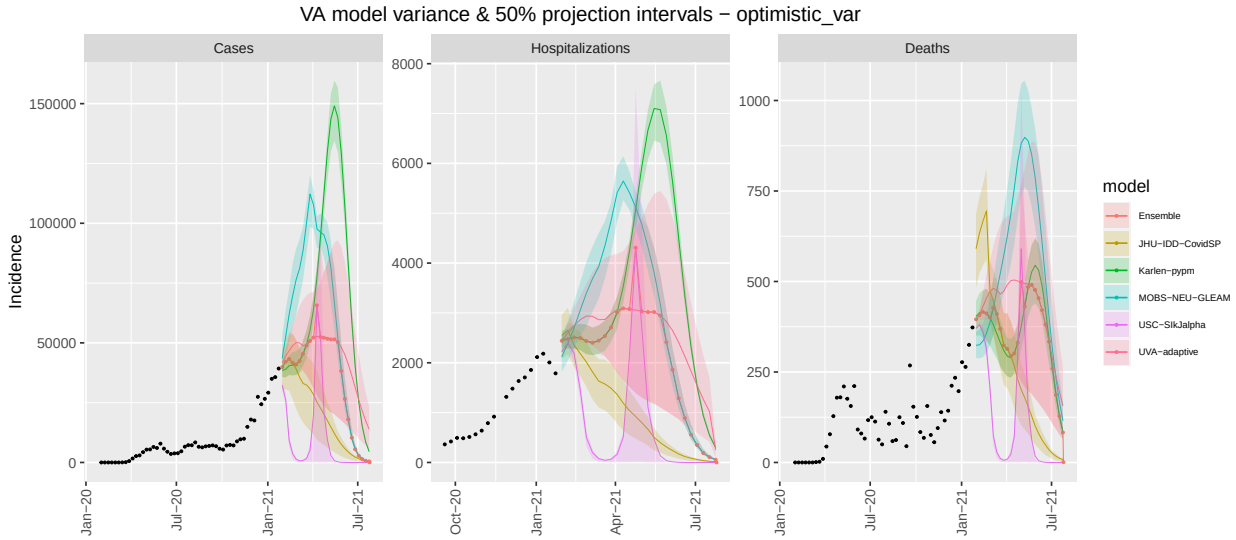

OR model variance & 50% projection intervals − optimistic_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive

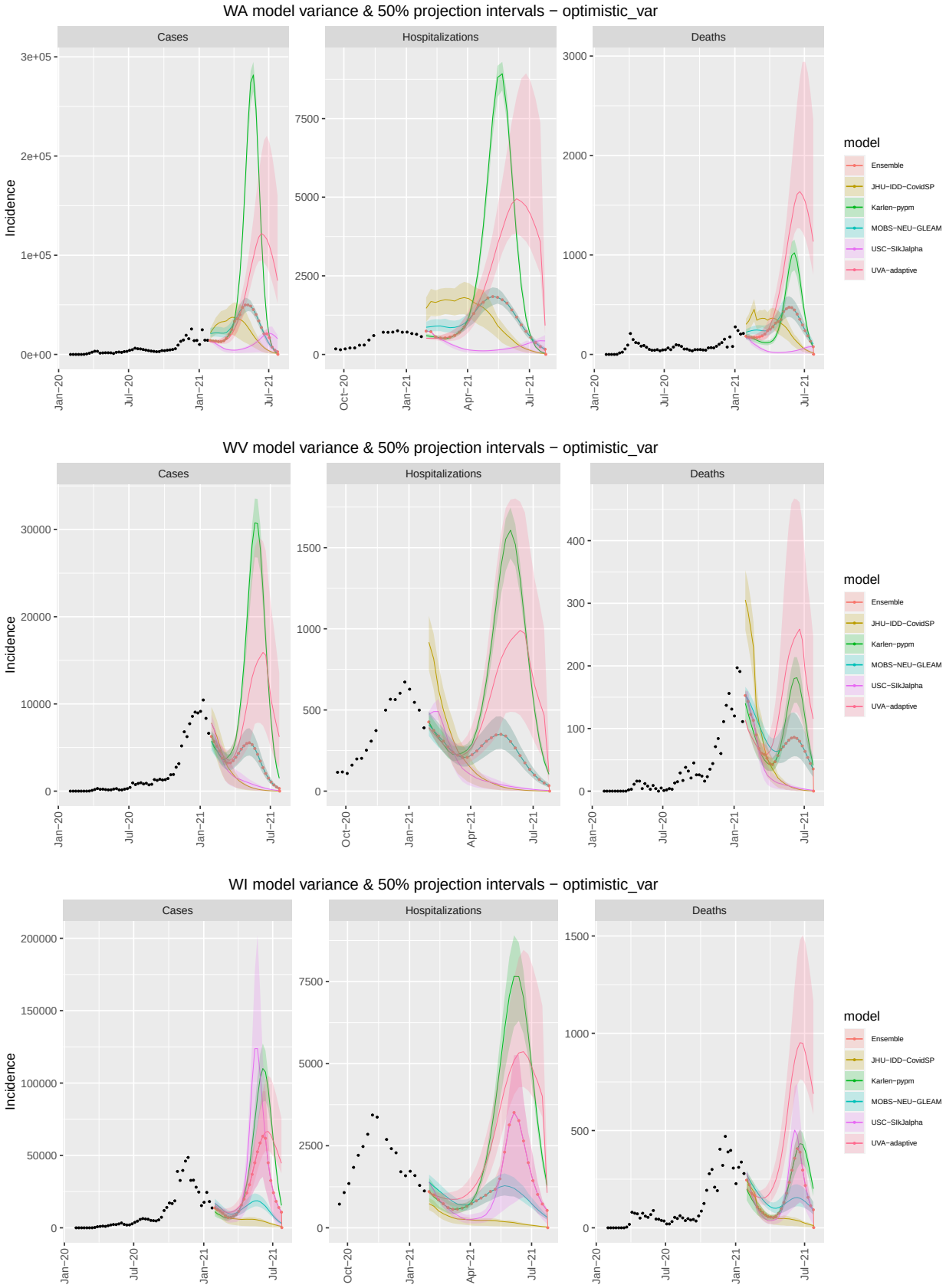

PA model variance & 50% projection intervals − optimistic_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive
RI model variance & 50% projection intervals − optimistic_var
SC model variance & 50% projection intervals − optimistic_var

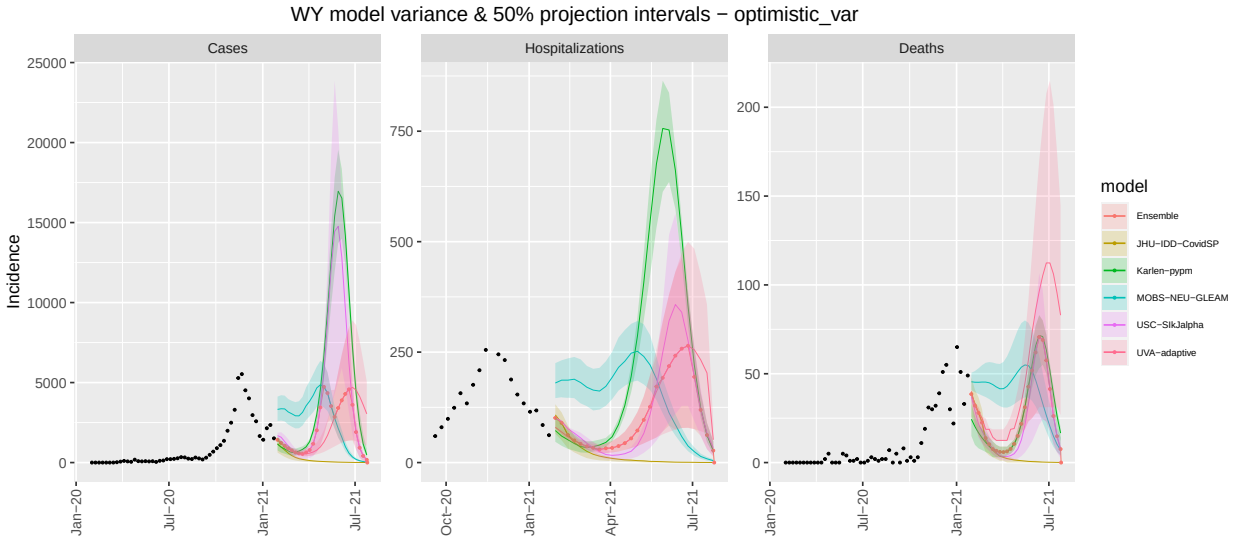

SD model variance & 50% projection intervals − optimistic_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive
TN model variance & 50% projection intervals − optimistic_var
TX model variance & 50% projection intervals − optimistic_var

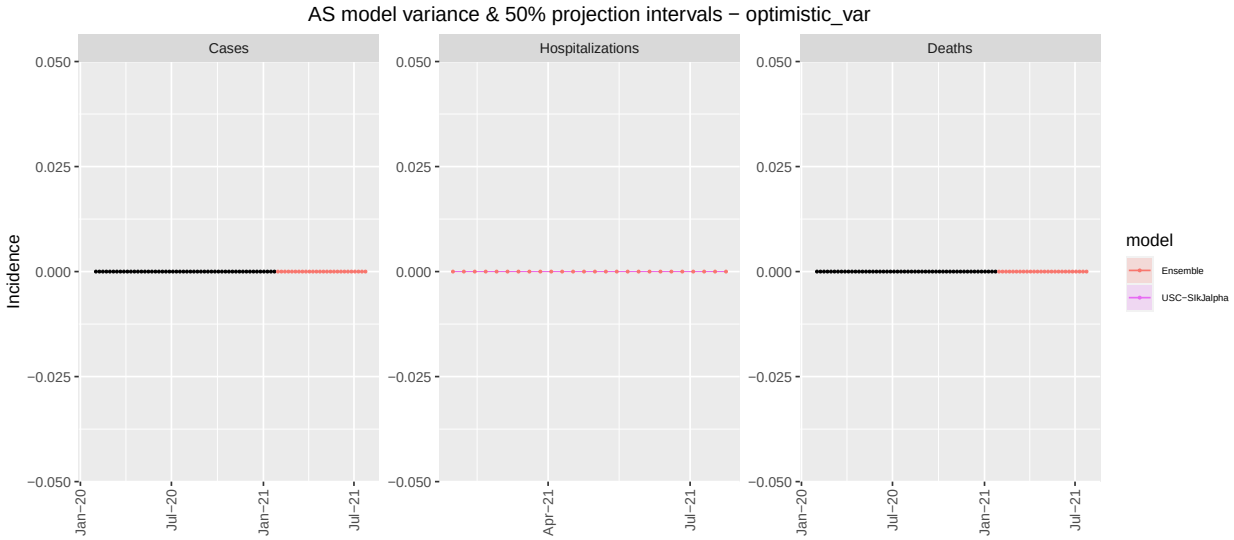

UT model variance & 50% projection intervals − optimistic_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive

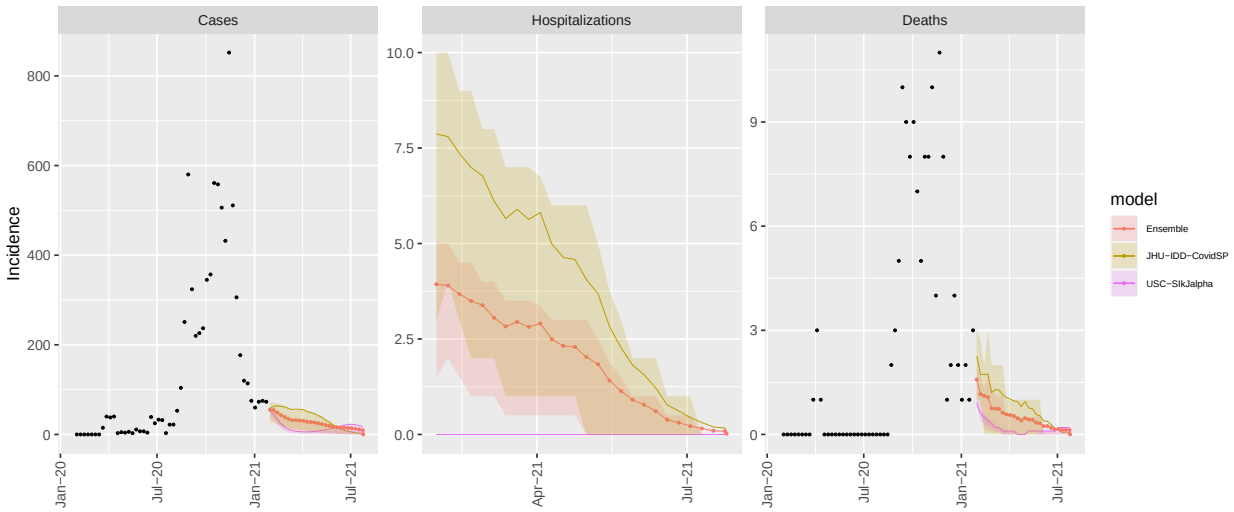

VT model variance & 50% projection intervals − optimistic_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive

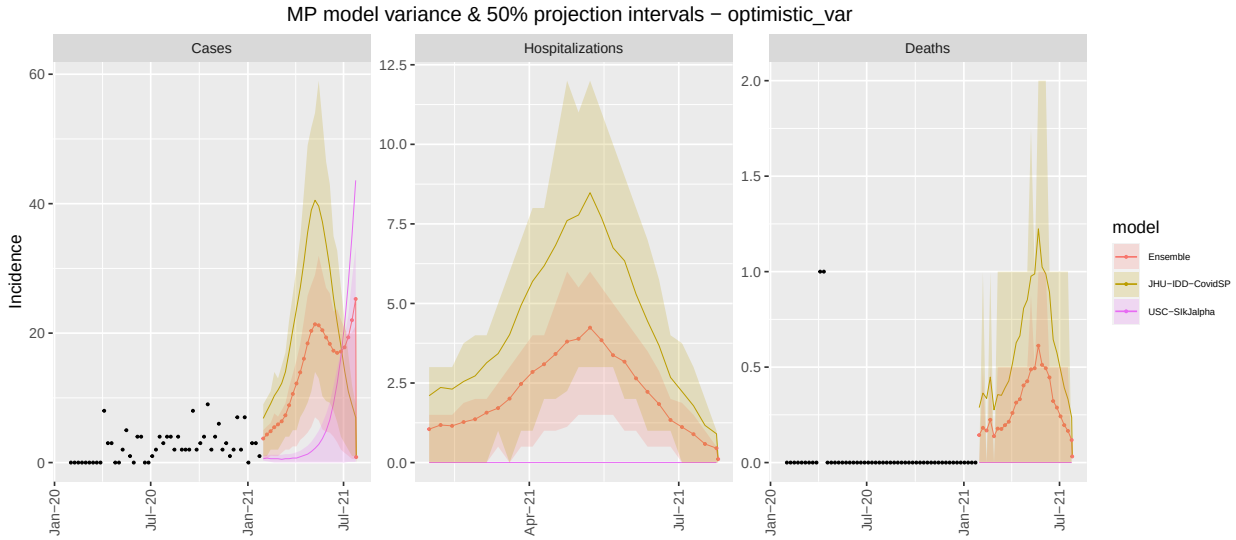

VA model variance & 50% projection intervals − optimistic_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive

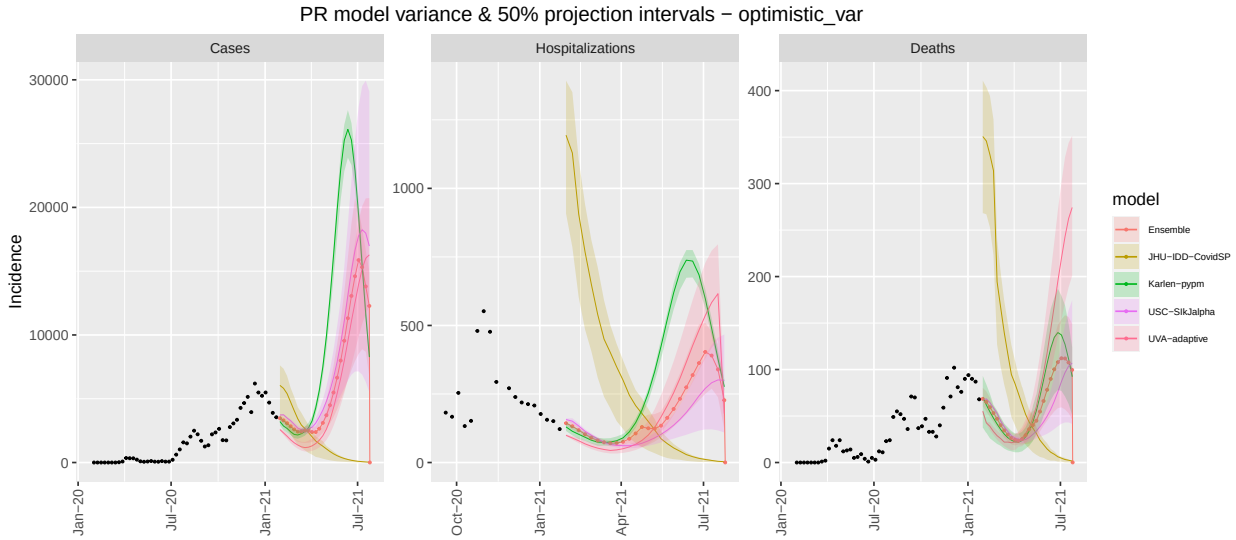

WA model variance & 50% projection intervals − optimistic_var
Cases
Hospitalizations
Deaths
Incidence
3e+05
2e+05
1e+05
0e+00
7500
5000
2500
0
3000
2000
1000
Jan−20
Jul−20
Jan−21
Jul−21
Oct−20
Apr−21
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive
WV model variance & 50% projection intervals − optimistic_var
30000
20000
10000
1500
1000
500
400
300
200
100
WI model variance & 50% projection intervals − optimistic_var
200000
150000
100000
50000

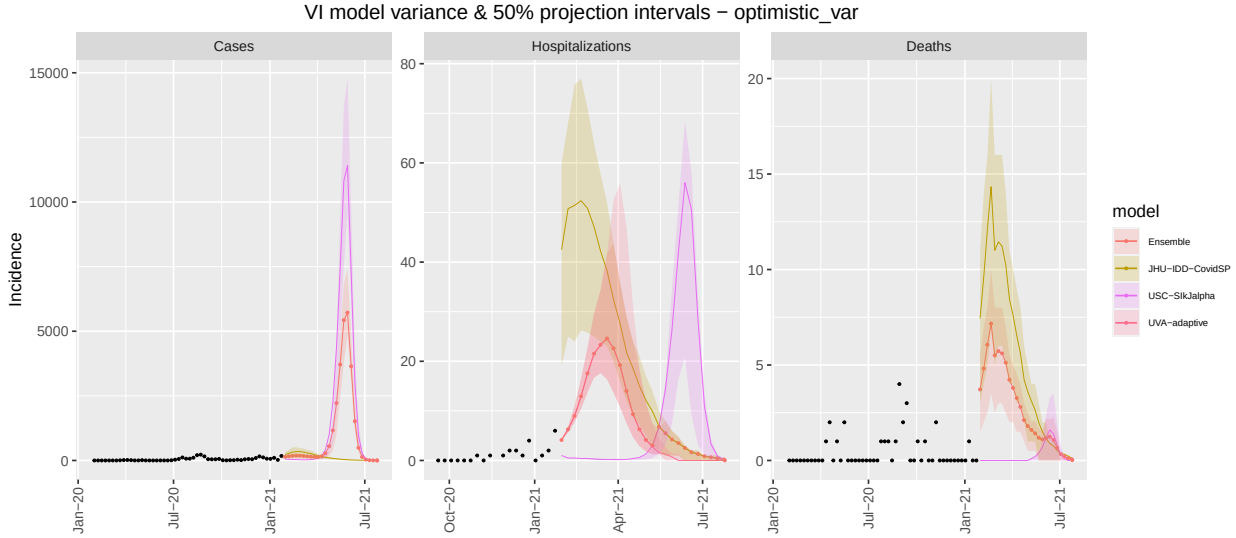

WY model variance & 50% projection intervals − optimistic_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive


AS model variance & 50% projection intervals − optimistic_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
USC−SIkJalpha

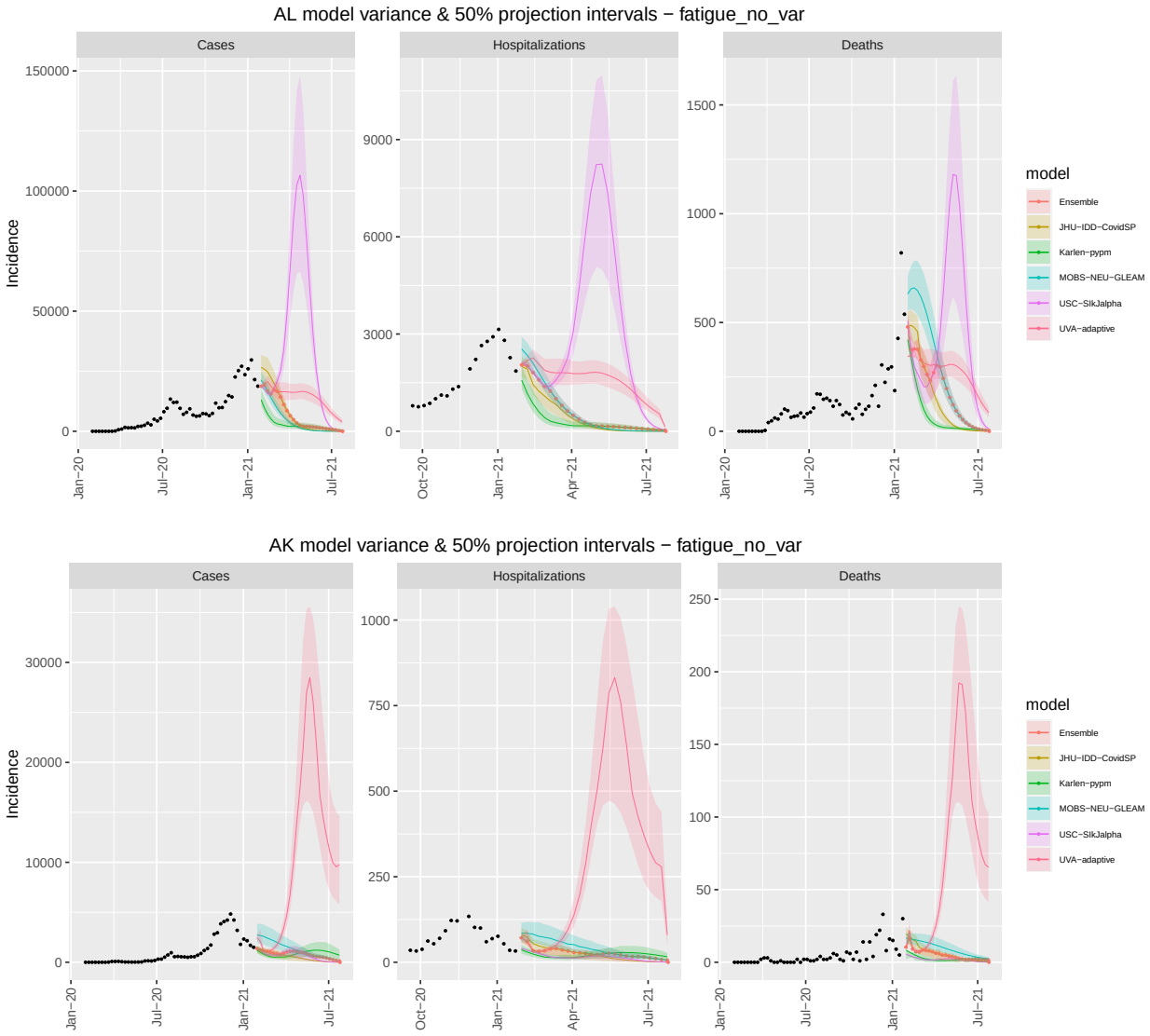

GU model variance & 50% projection intervals − optimistic_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
USC−SIkJalpha

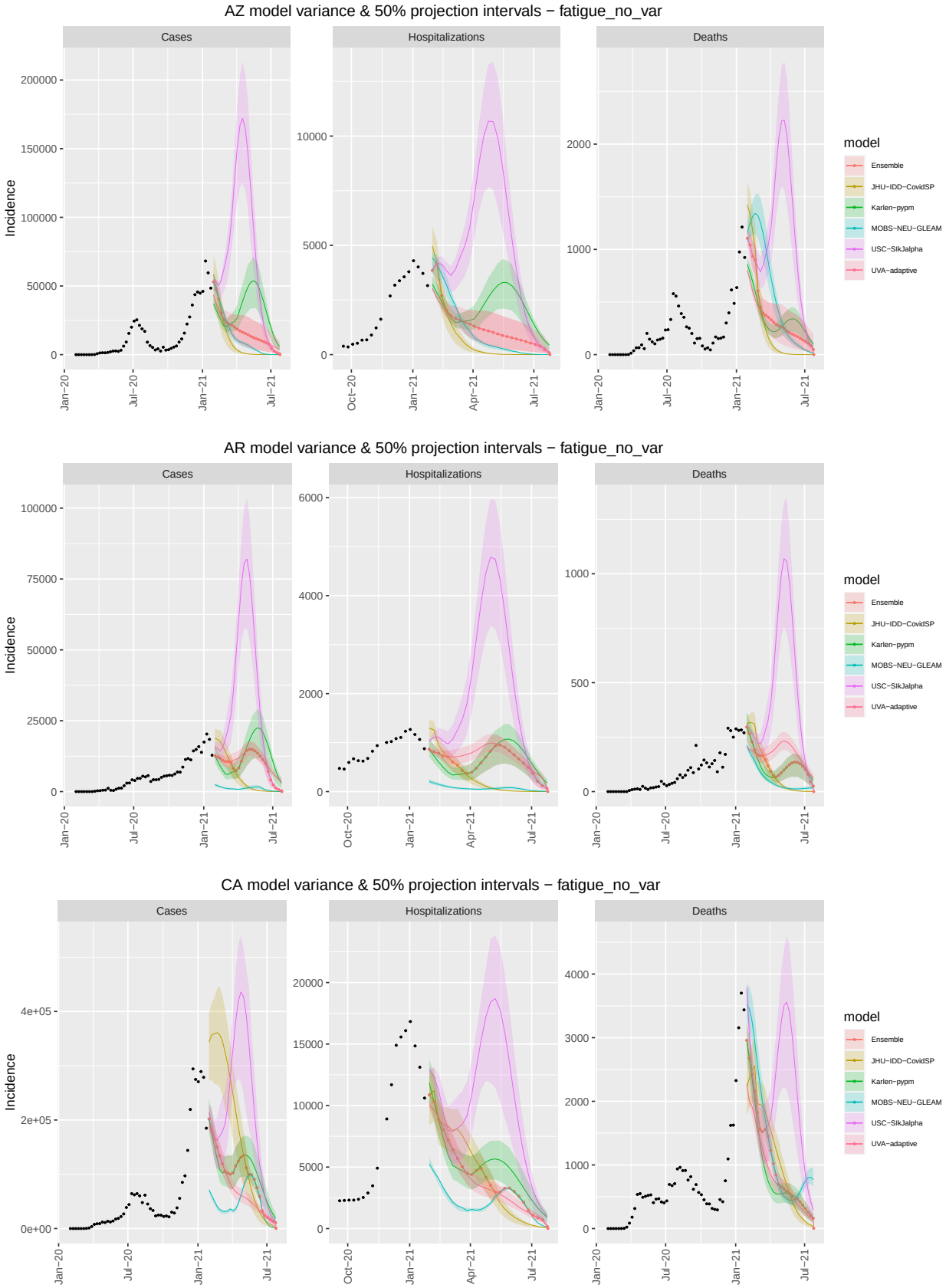

MP model variance & 50% projection intervals − optimistic_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
USC−SIkJalpha

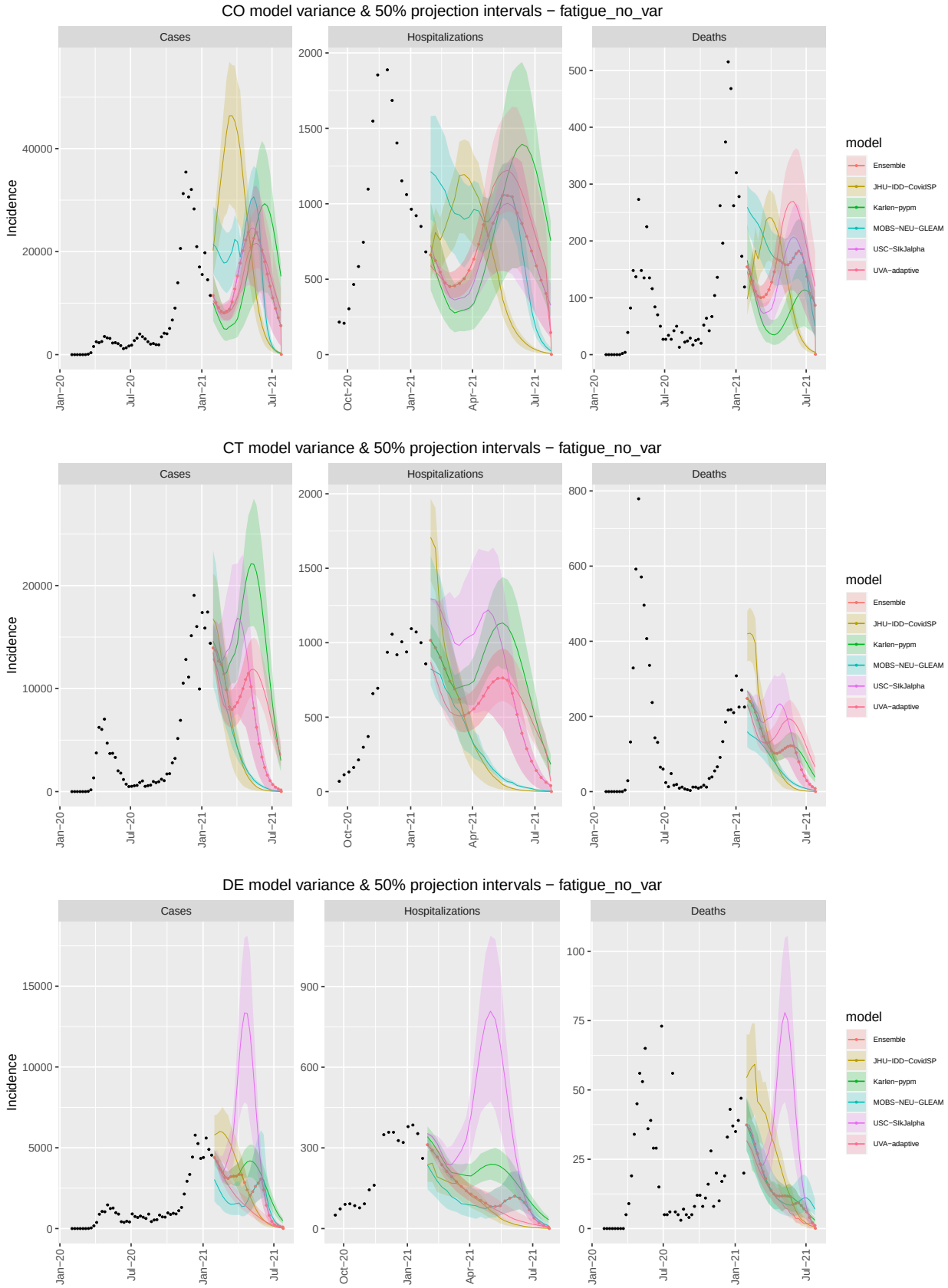

PR model variance & 50% projection intervals − optimistic_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
USC−SIkJalpha
UVA−adaptive

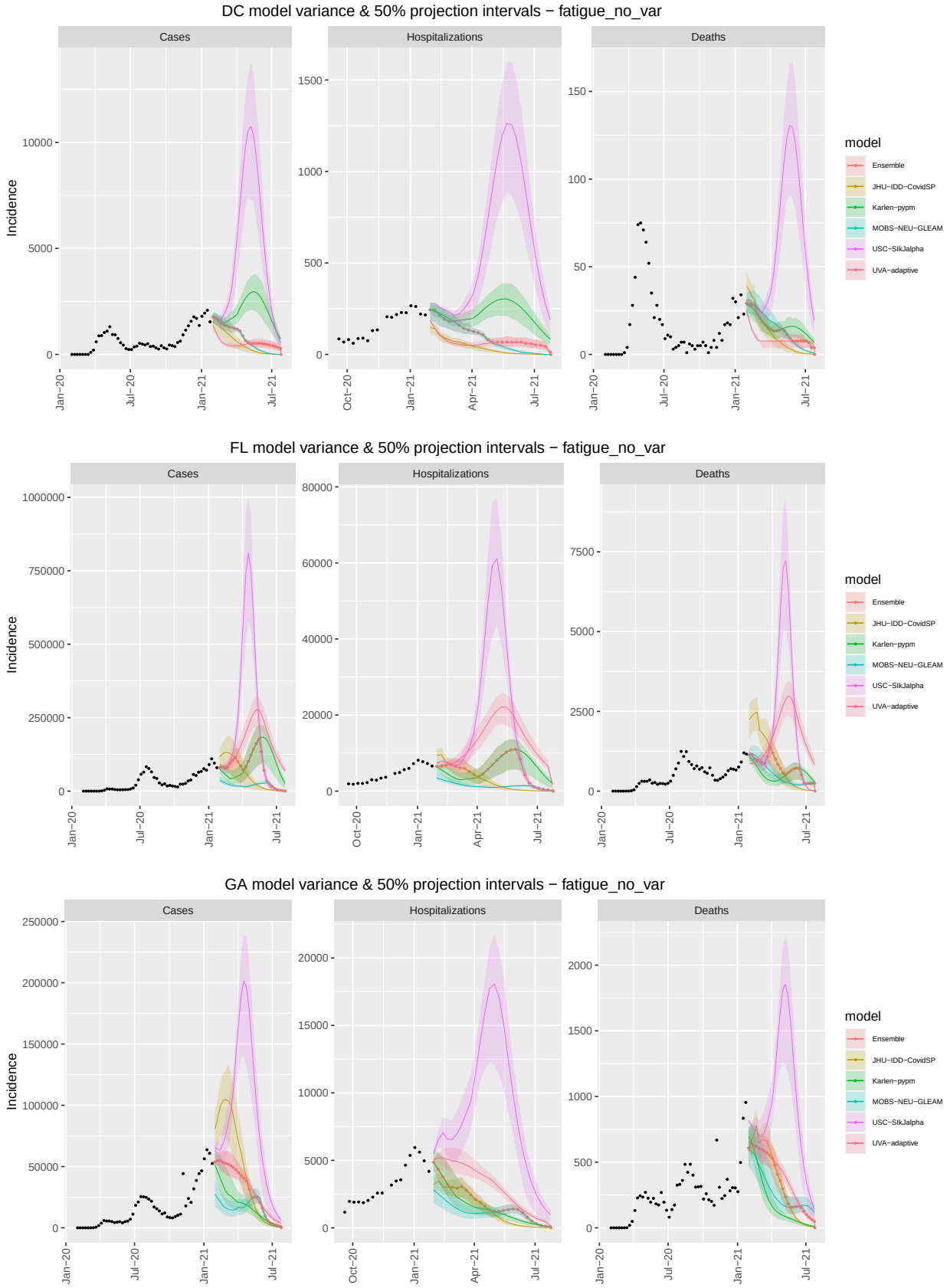

VI model variance & 50% projection intervals − optimistic_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
USC−SIkJalpha
UVA−adaptive

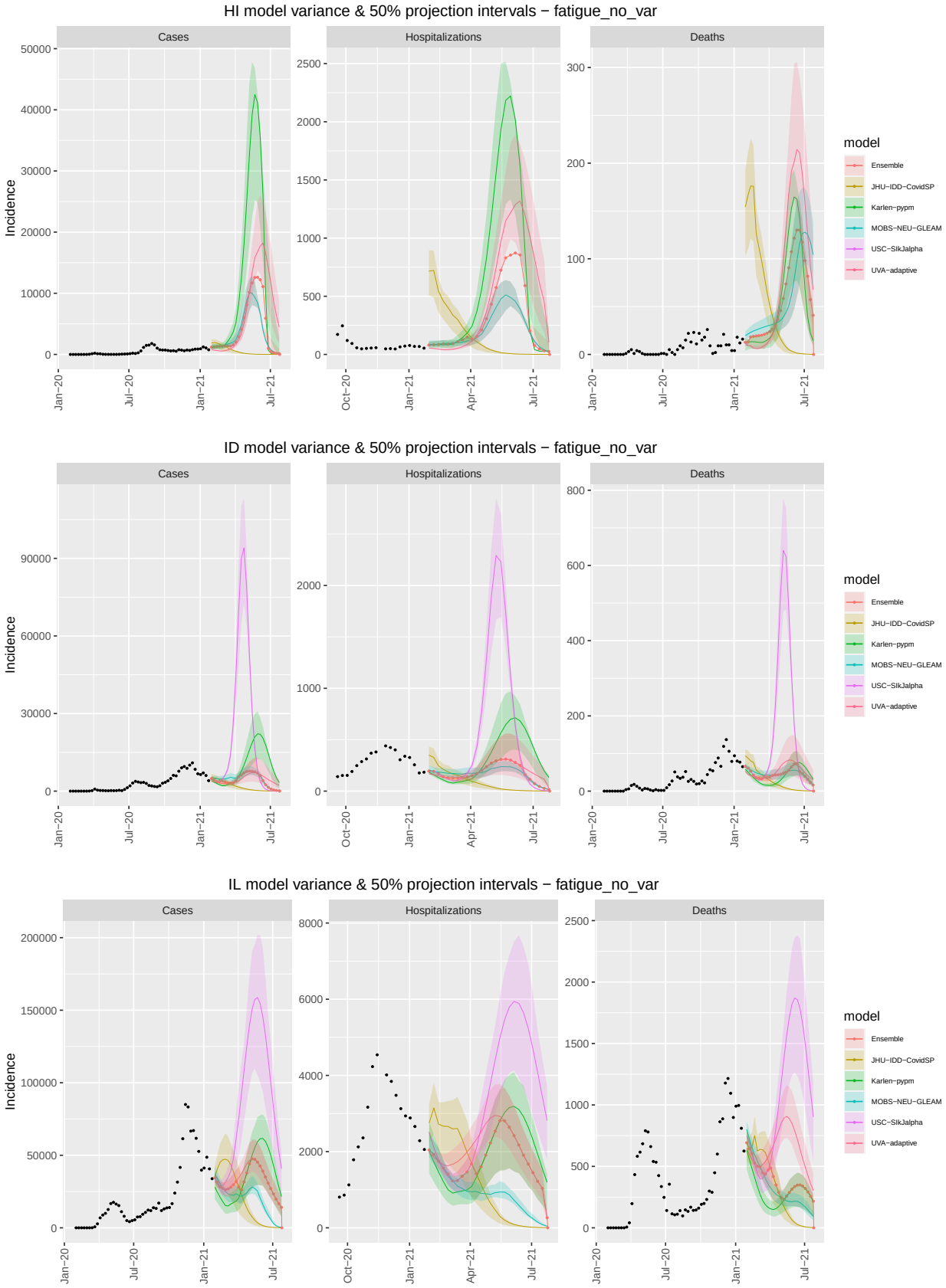
National model variation for the fatigue no variant scenario

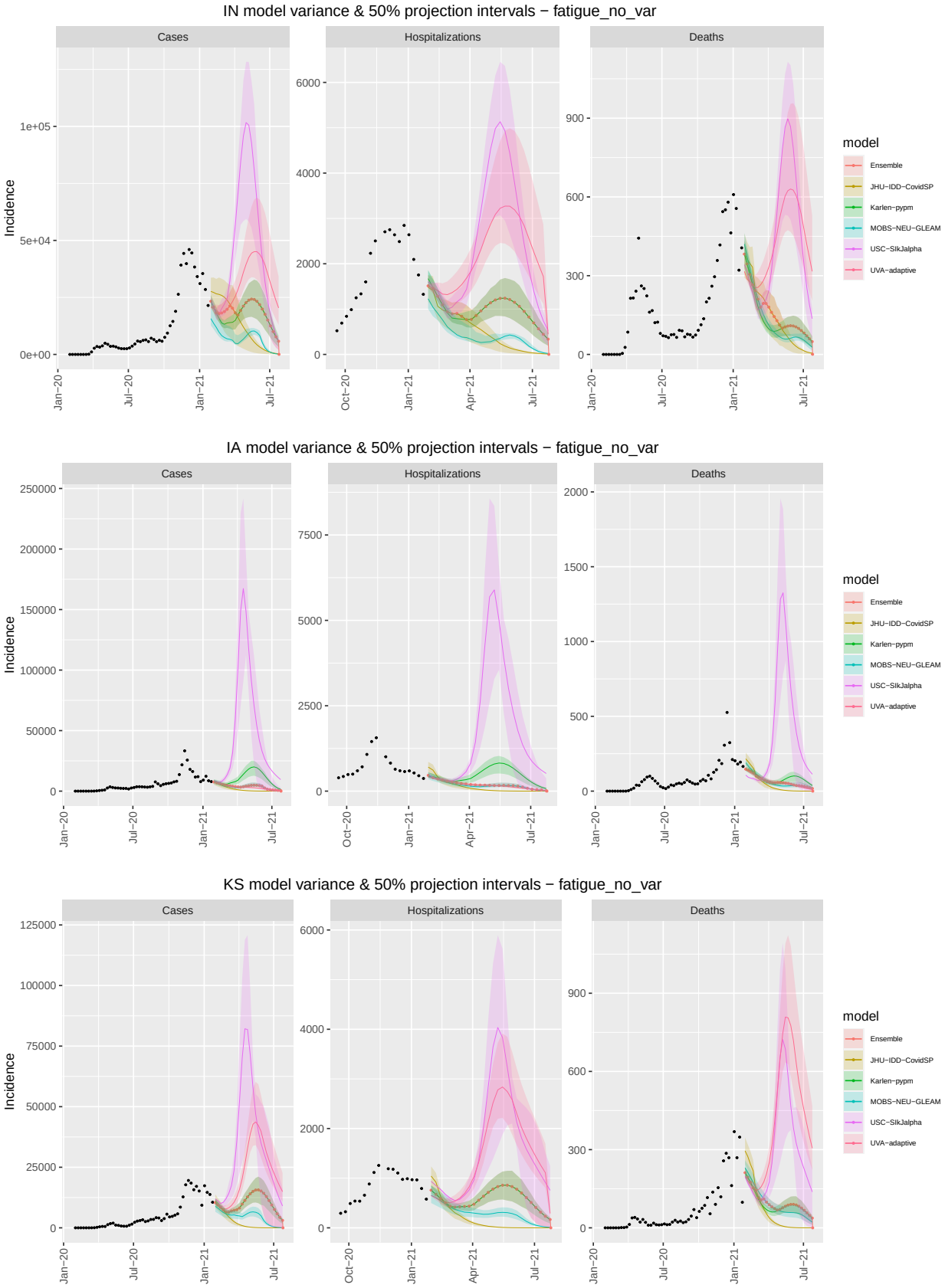


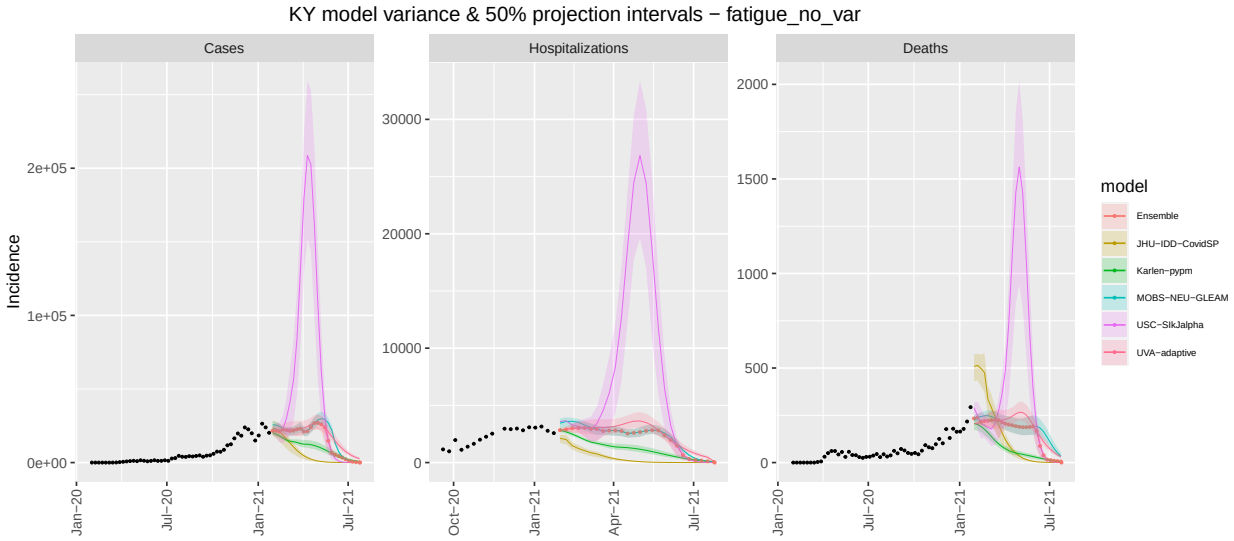

AZ model variance & 50% projection intervals − fatigue_no_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive
AR model variance & 50% projection intervals − fatigue_no_var
CA model variance & 50% projection intervals − fatigue_no_var

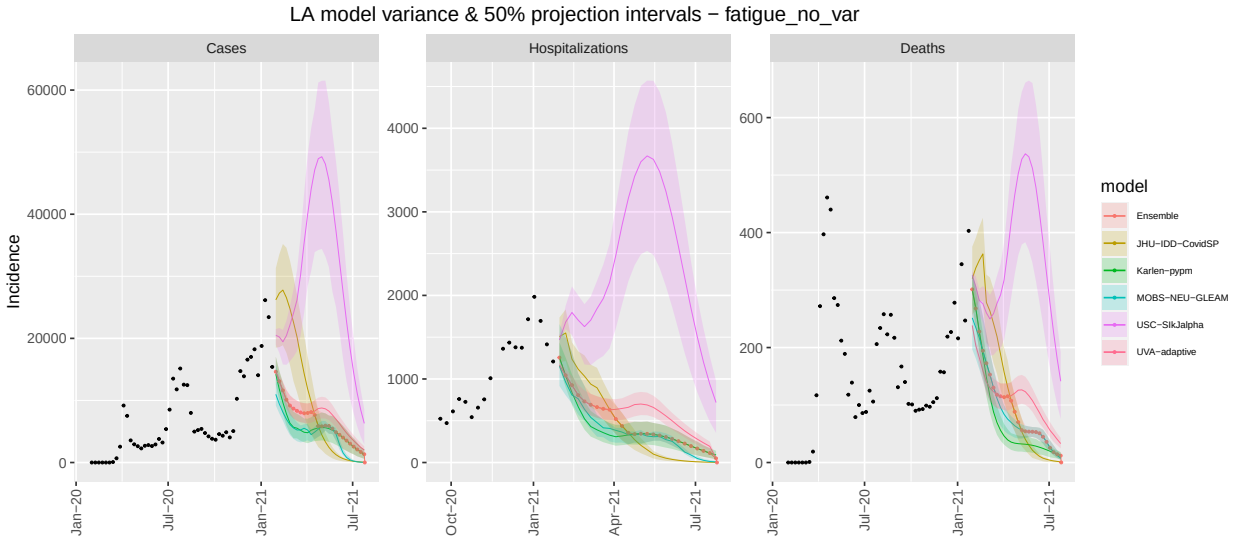

CO model variance & 50% projection intervals − fatigue_no_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive
CT model variance & 50% projection intervals − fatigue_no_var
DE model variance & 50% projection intervals − fatigue_no_var

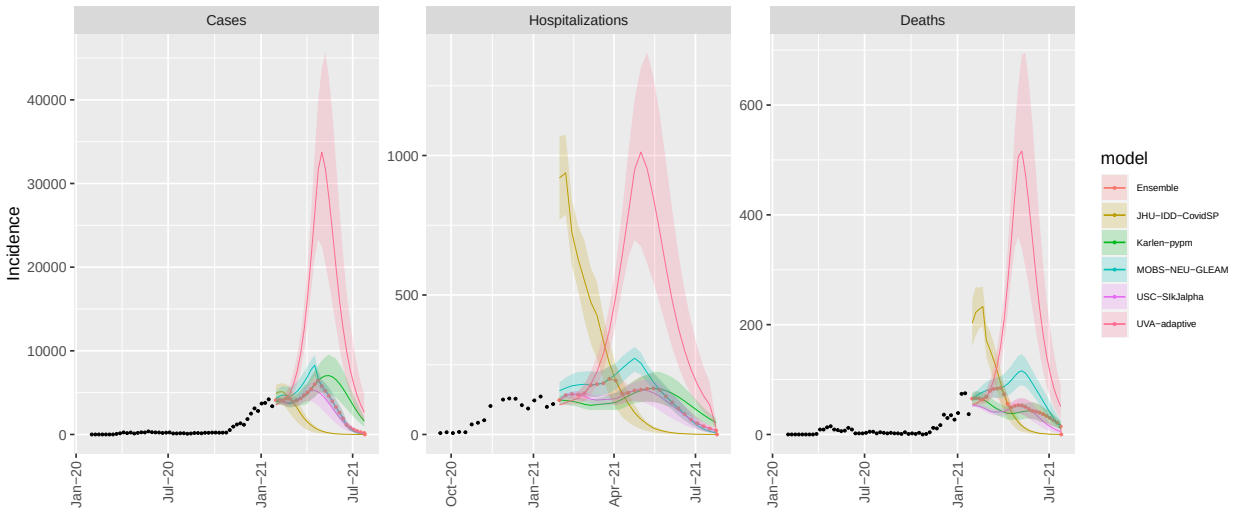

DC model variance & 50% projection intervals − fatigue_no_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive
FL model variance & 50% projection intervals − fatigue_no_var
GA model variance & 50% projection intervals − fatigue_no_var

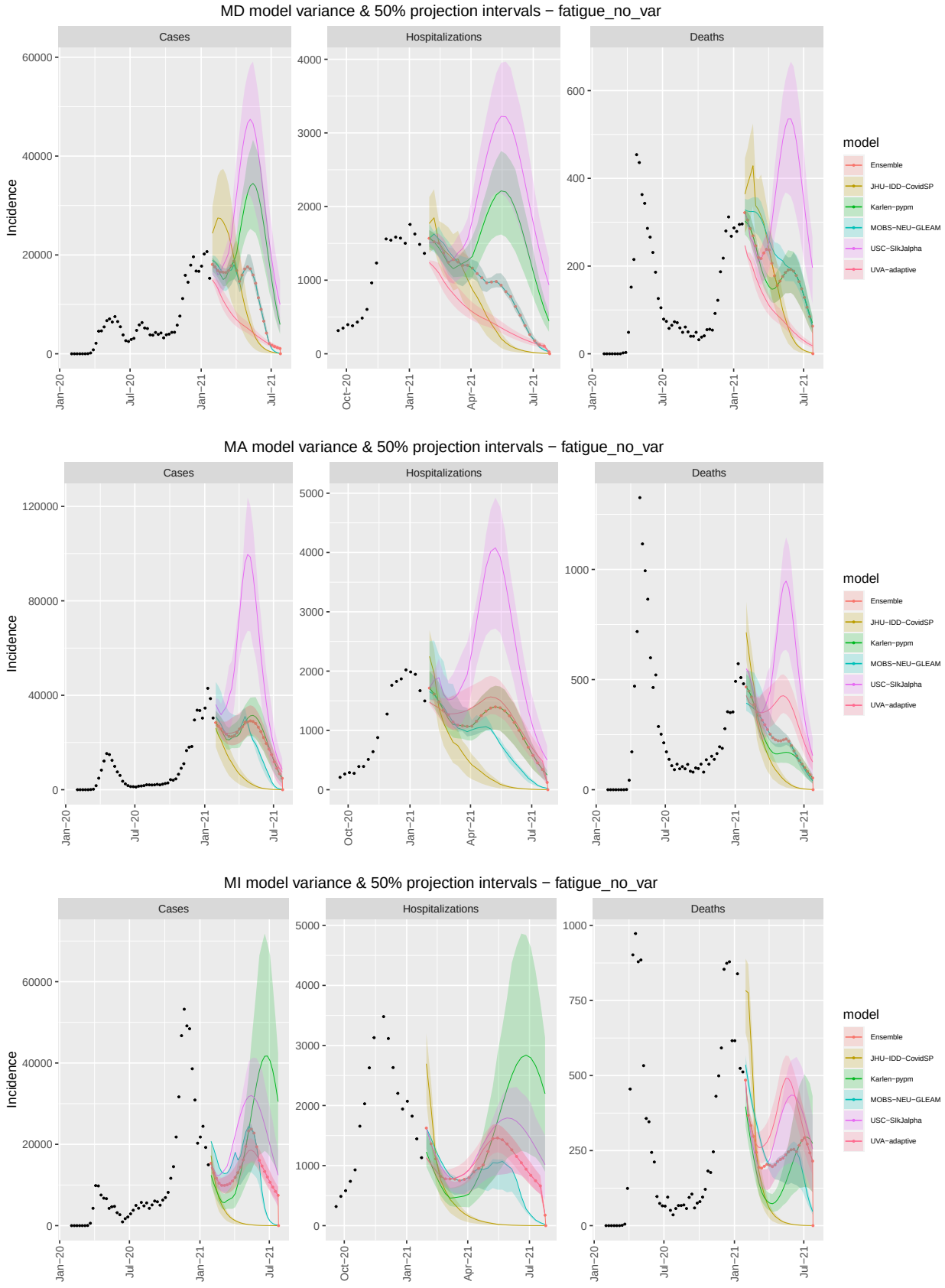

HI model variance & 50% projection intervals − fatigue_no_var
ID model variance & 50% projection intervals − fatigue_no_var
IL model variance & 50% projection intervals − fatigue_no_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive
Jan−20
Jul−20
Jan−21
Jul−21
Oct−20
Apr−21

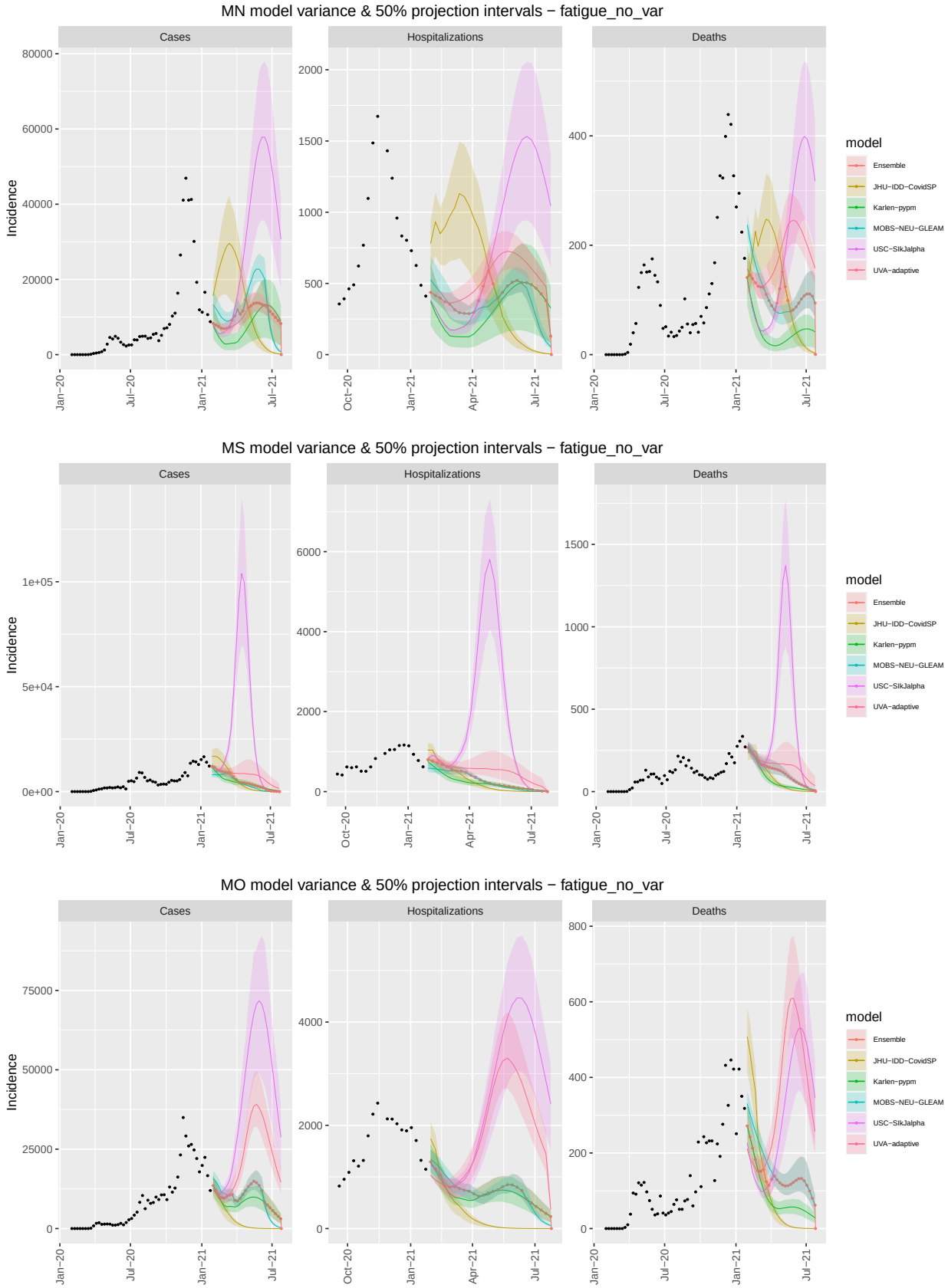

IN model variance & 50% projection intervals − fatigue_no_var
Cases
Hospitalizations
Deaths
Incidence
1e+05
5e+04
0e+00
6000
4000
2000
0
900
600
300
Jan−20
Jul−20
Jan−21
Jul−21
Oct−20
Apr−21
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive
IA model variance & 50% projection intervals − fatigue_no_var
250000
200000
150000
100000
50000
7500
5000
2500
2000
1500
1000
500
KS model variance & 50% projection intervals − fatigue_no_var
125000
75000
25000

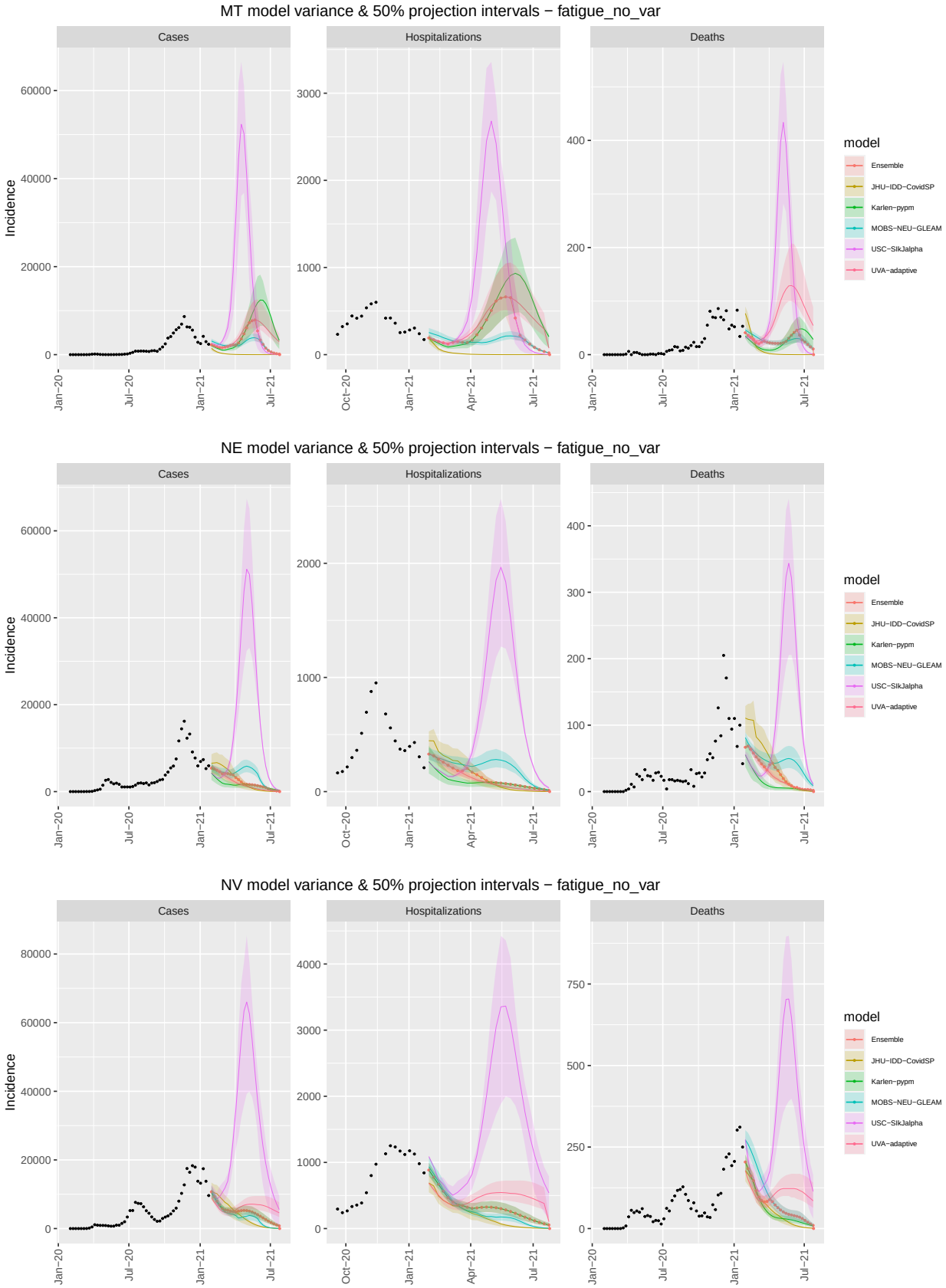

KY model variance & 50% projection intervals − fatigue_no_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive

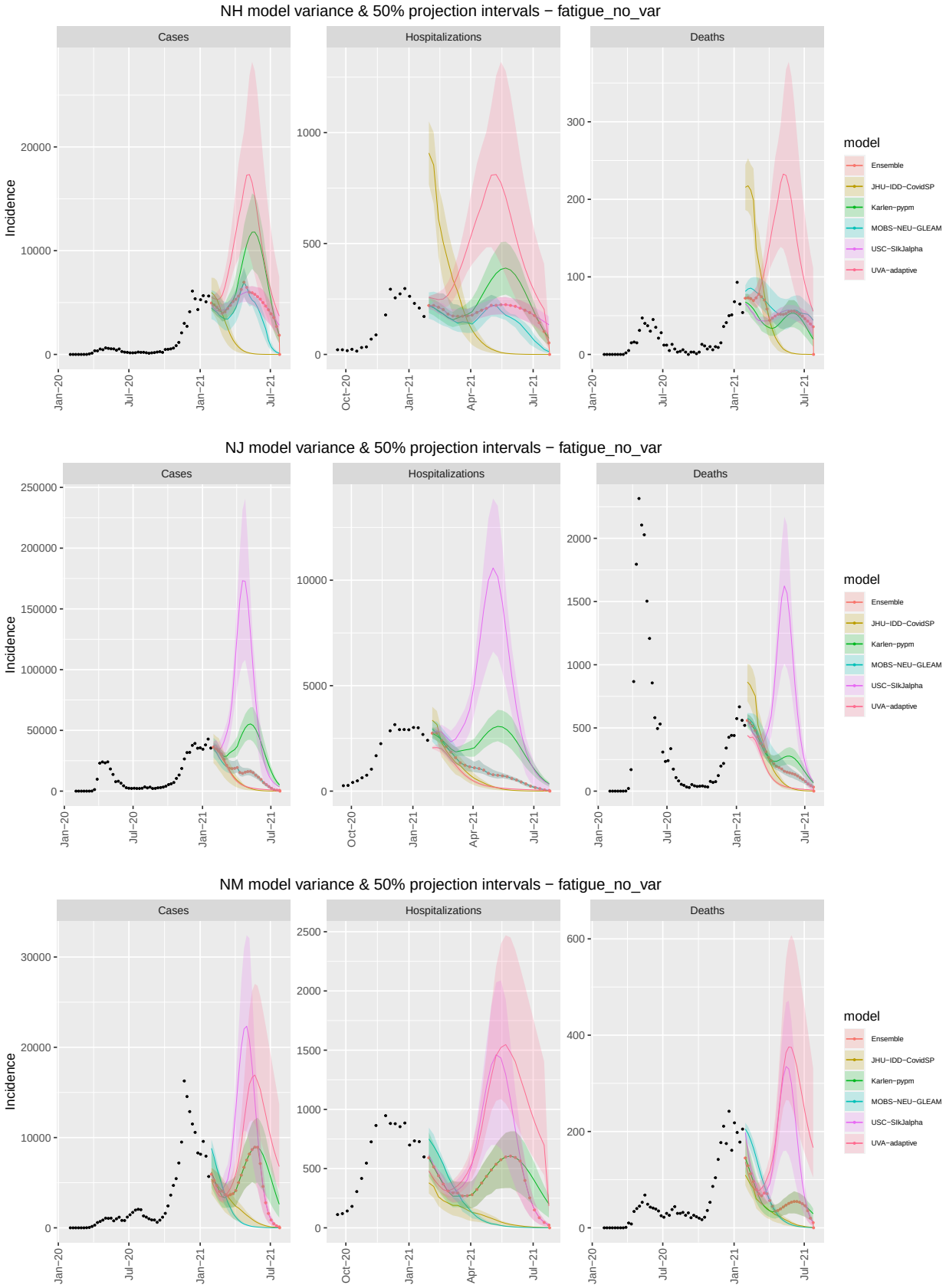

LA model variance & 50% projection intervals − fatigue_no_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive

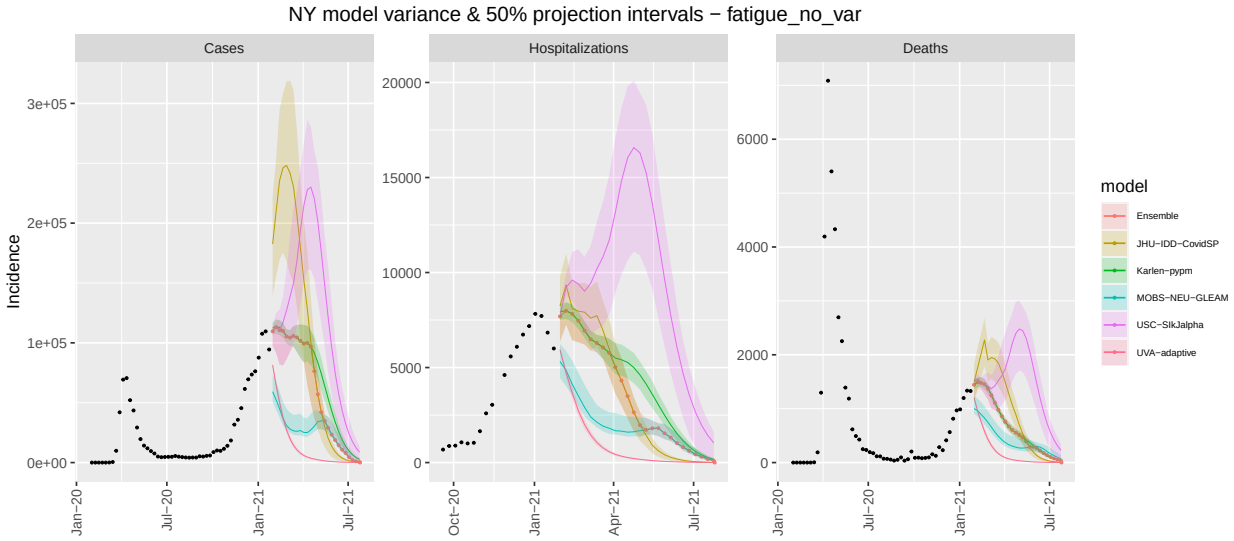

ME model variance & 50% projection intervals − fatigue_no_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive

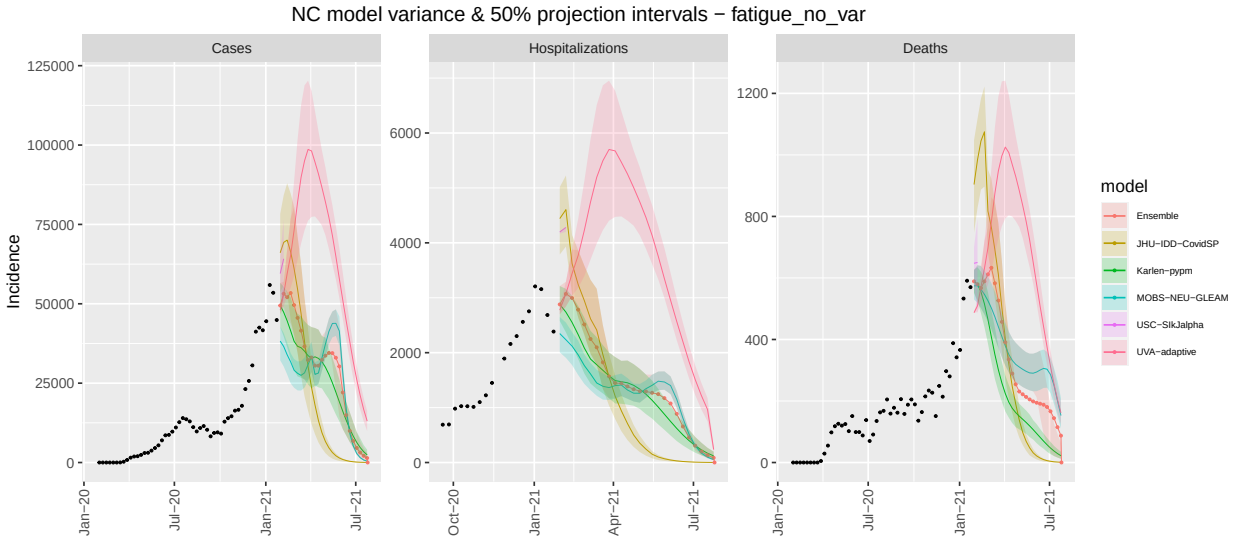

MD model variance & 50% projection intervals − fatigue_no_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive
MA model variance & 50% projection intervals − fatigue_no_var
MI model variance & 50% projection intervals − fatigue_no_var

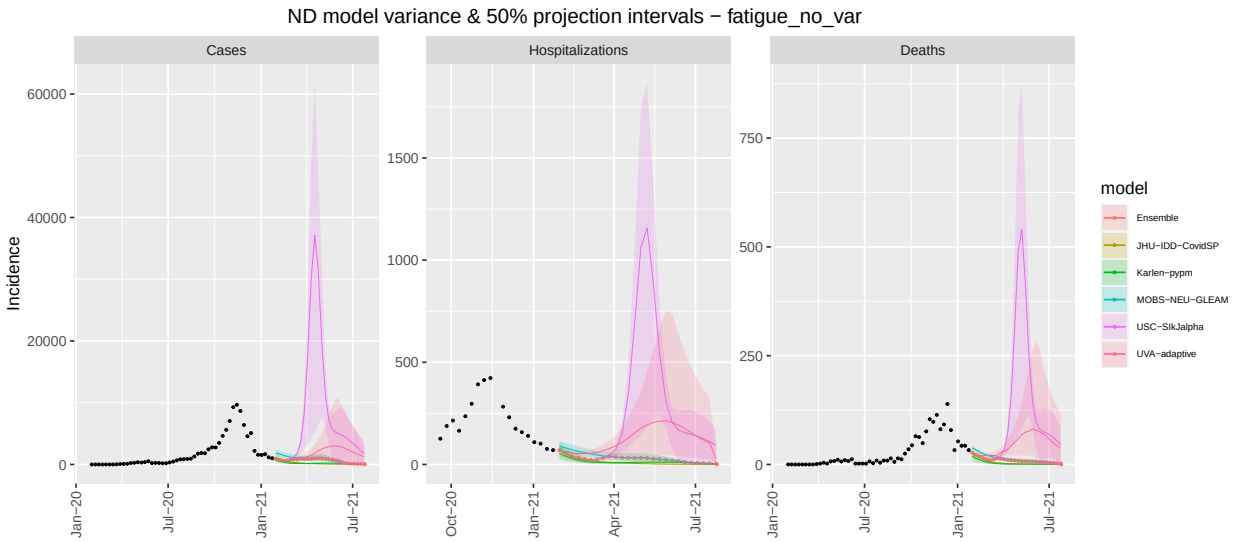

MN model variance & 50% projection intervals − fatigue_no_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive
MS model variance & 50% projection intervals − fatigue_no_var
MO model variance & 50% projection intervals − fatigue_no_var

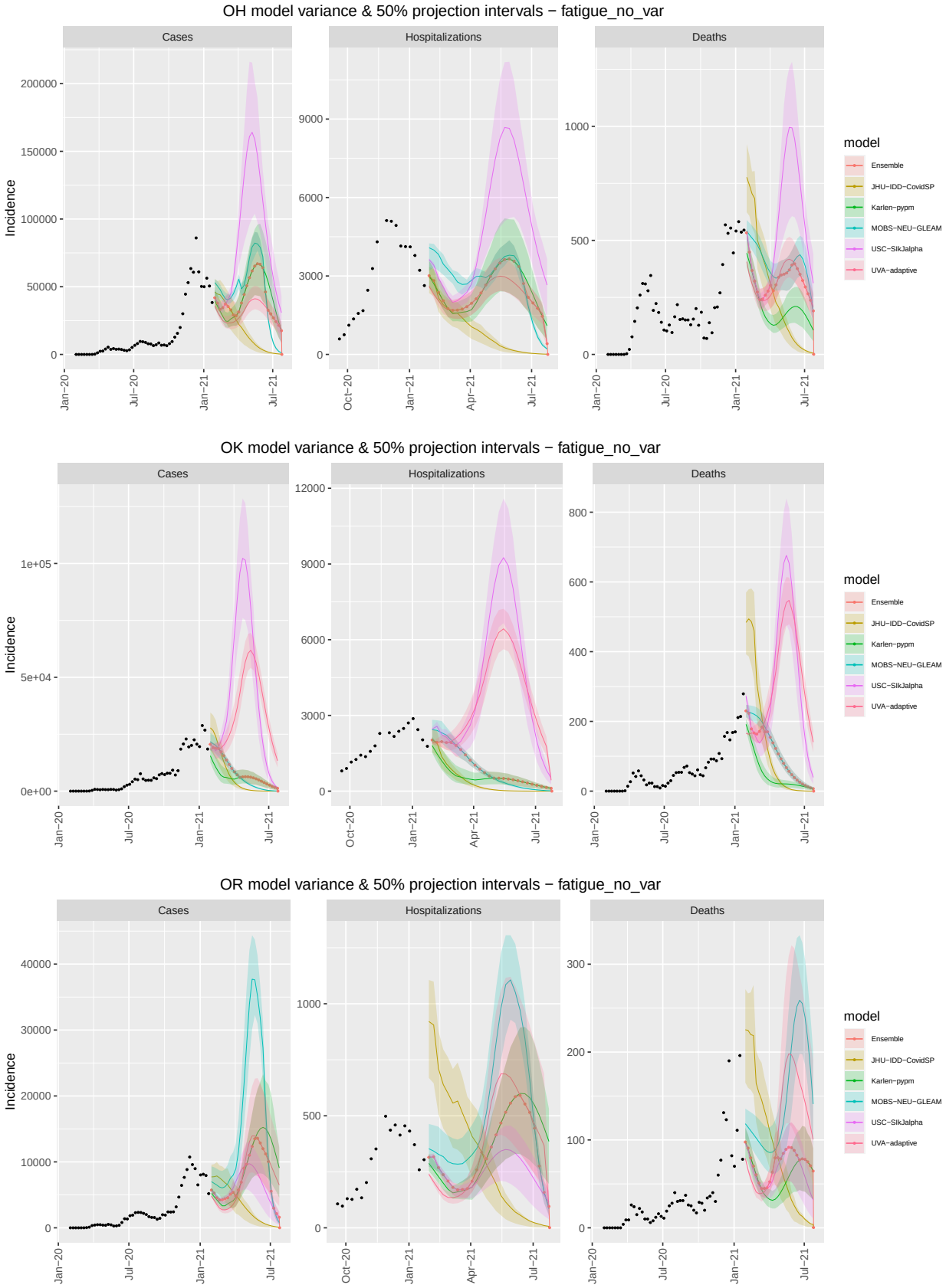

MT model variance & 50% projection intervals − fatigue_no_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive
NE model variance & 50% projection intervals − fatigue_no_var
NV model variance & 50% projection intervals − fatigue_no_var

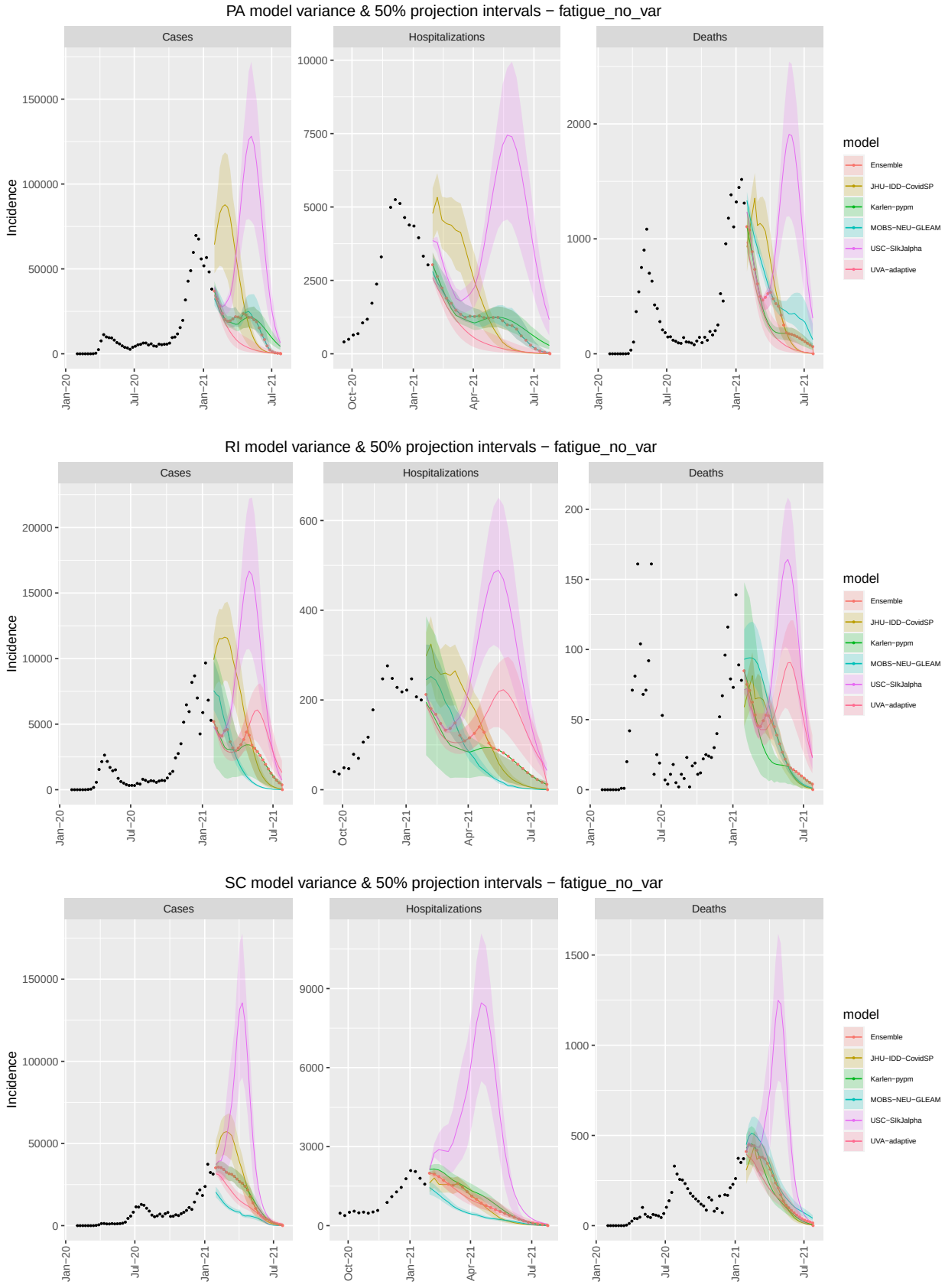

NH model variance & 50% projection intervals − fatigue_no_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive
NJ model variance & 50% projection intervals − fatigue_no_var
NM model variance & 50% projection intervals − fatigue_no_var

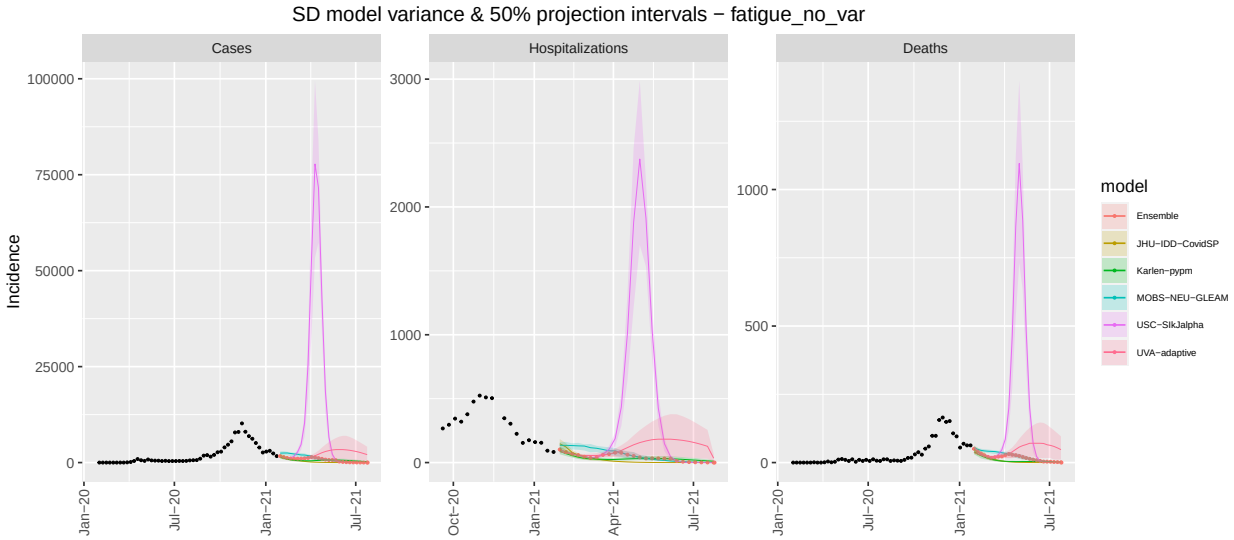

NY model variance & 50% projection intervals − fatigue_no_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive

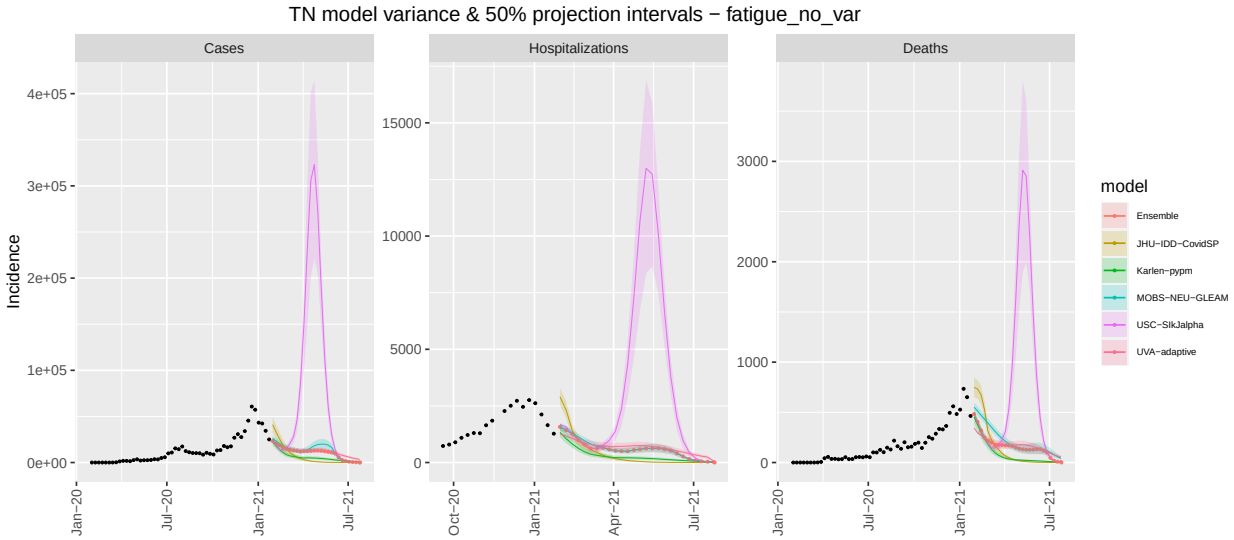

NC model variance & 50% projection intervals − fatigue_no_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive

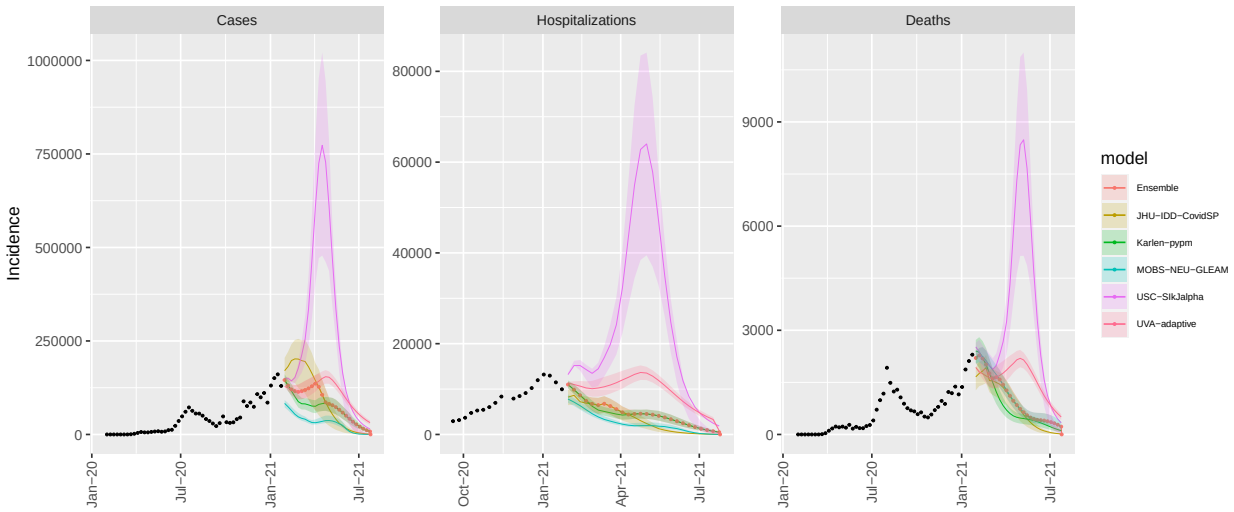

ND model variance & 50% projection intervals − fatigue_no_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive

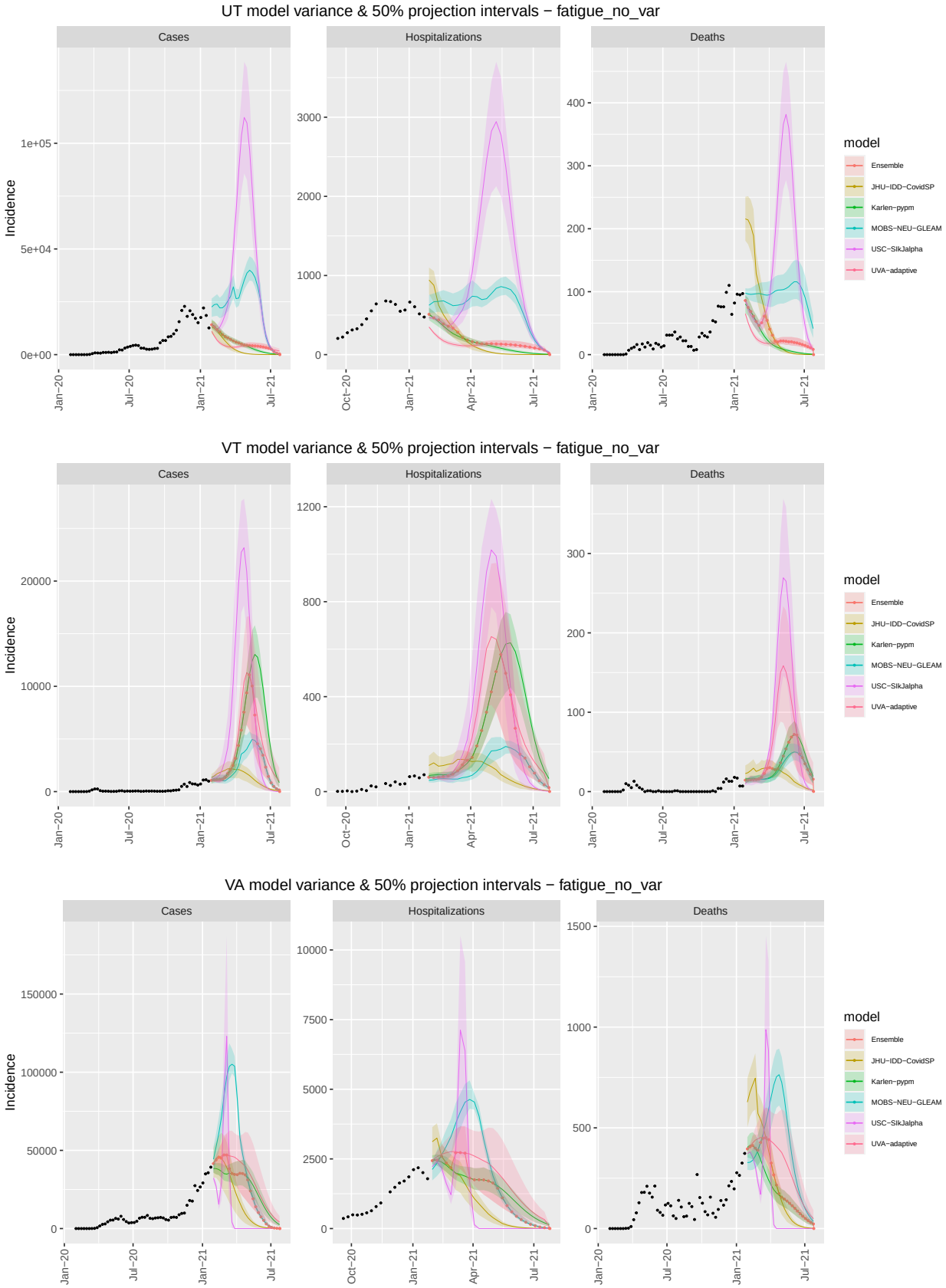

OH model variance & 50% projection intervals − fatigue_no_var
Cases
Hospitalizations
Deaths
Incidence
200000
150000
100000
50000
0
9000
6000
3000
1000
500
Jan−20
Jul−20
Jan−21
Jul−21
Oct−20
Apr−21
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive
OK model variance & 50% projection intervals − fatigue_no_var
Cases
Hospitalizations
Deaths
Incidence
1e+05
5e+04
0e+00
12000
9000
6000
3000
0
800
600
400
200
Jan−20
Jul−20
Jan−21
Jul−21
Oct−20
Apr−21
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive
OR model variance & 50% projection intervals − fatigue_no_var
Cases
Hospitalizations
Deaths
Incidence
40000
30000
20000
10000
0
1000
500
300
200
100
Jan−20
Jul−20
Jan−21
Jul−21
Oct−20
Apr−21
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive

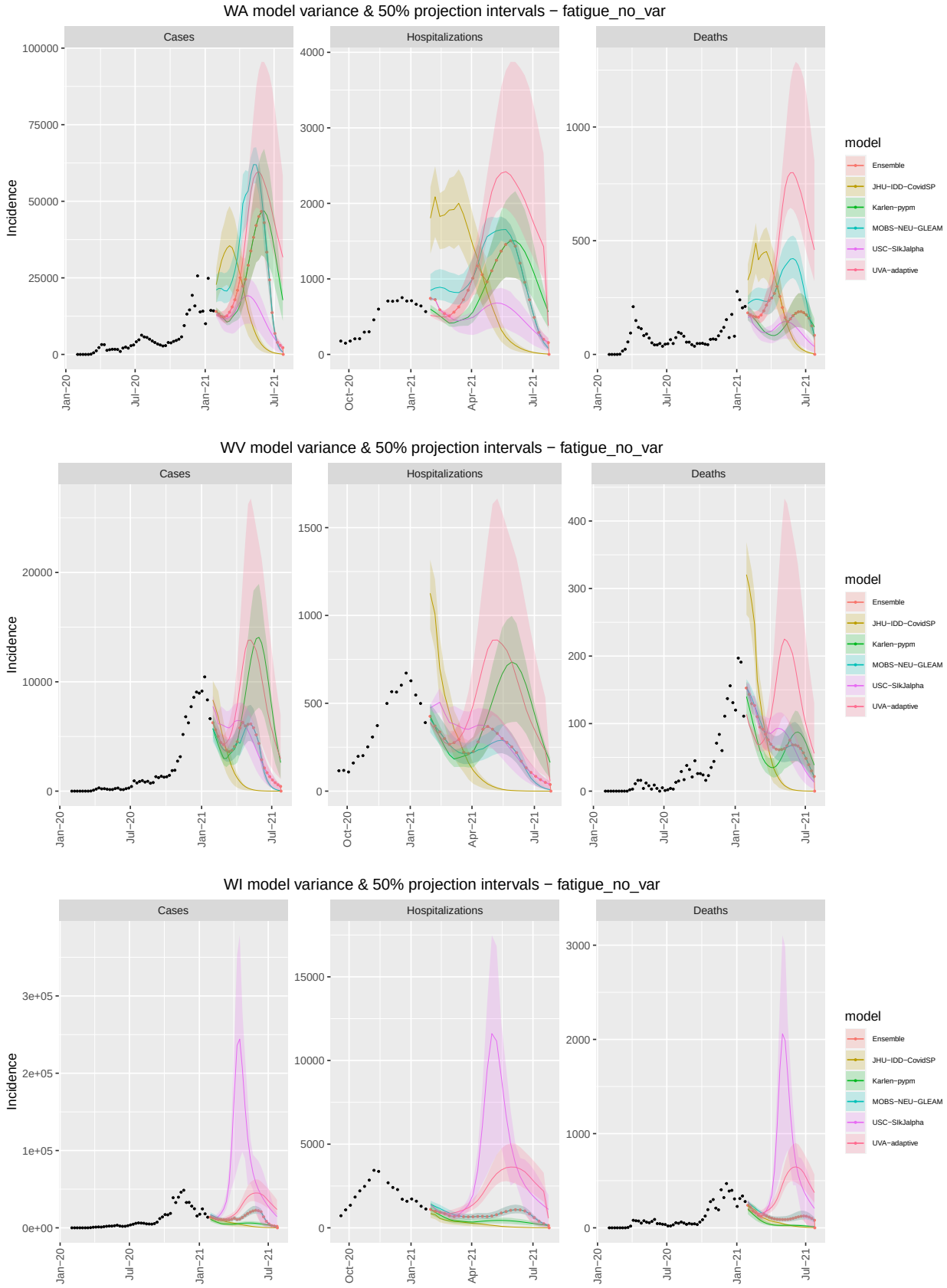

PA model variance & 50% projection intervals − fatigue_no_var
RI model variance & 50% projection intervals − fatigue_no_var
SC model variance & 50% projection intervals − fatigue_no_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive
Jan−20
Jul−20
Jan−21
Jul−21
Oct−20
Apr−21

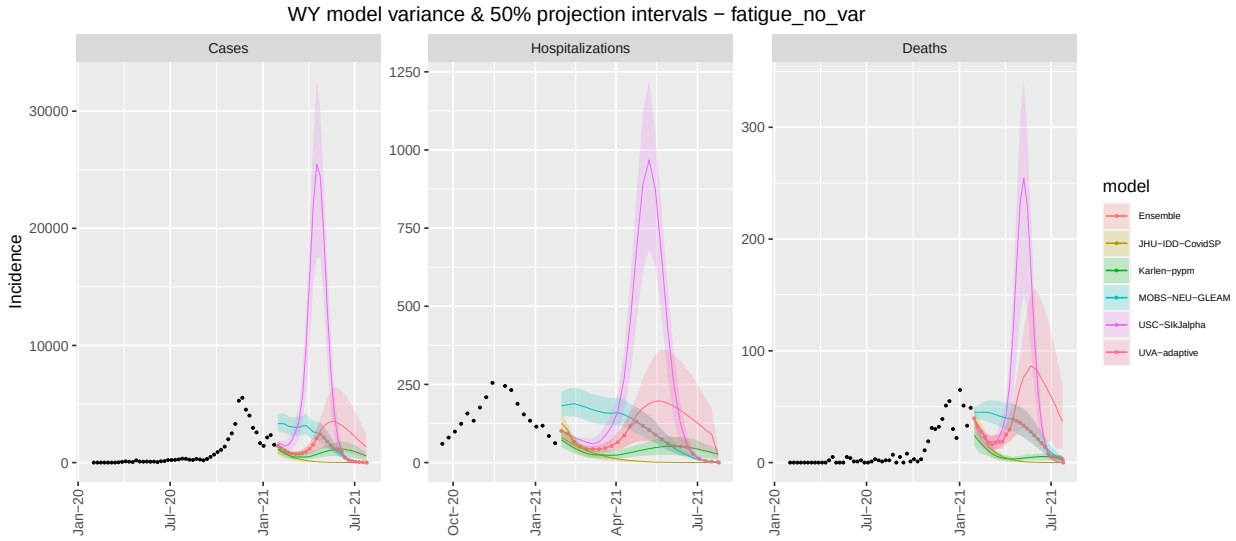

SD model variance & 50% projection intervals − fatigue_no_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive

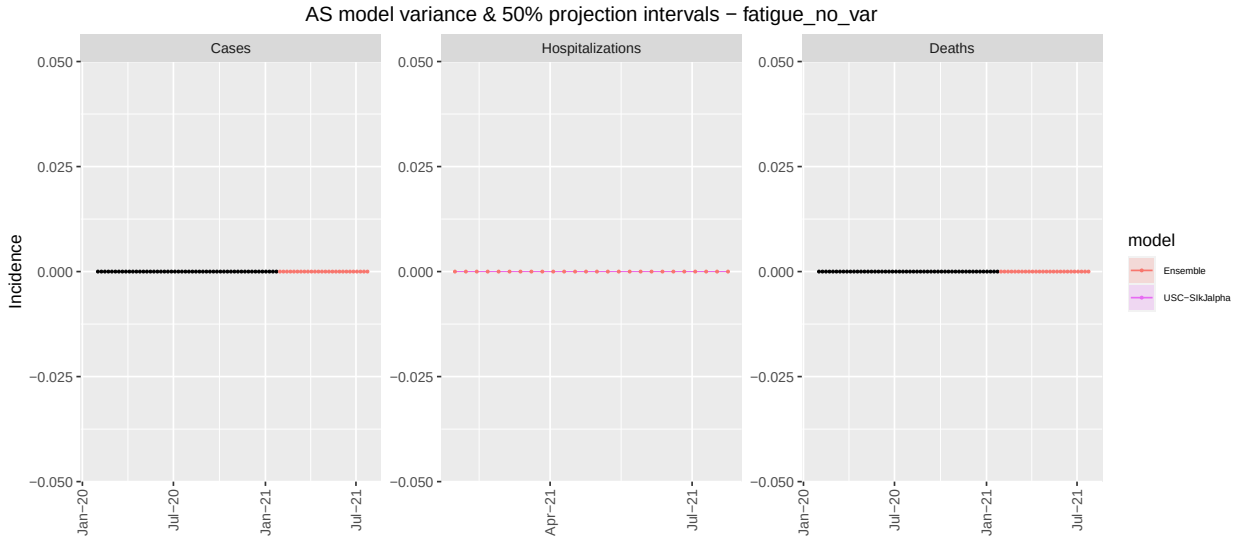

TN model variance & 50% projection intervals − fatigue_no_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive

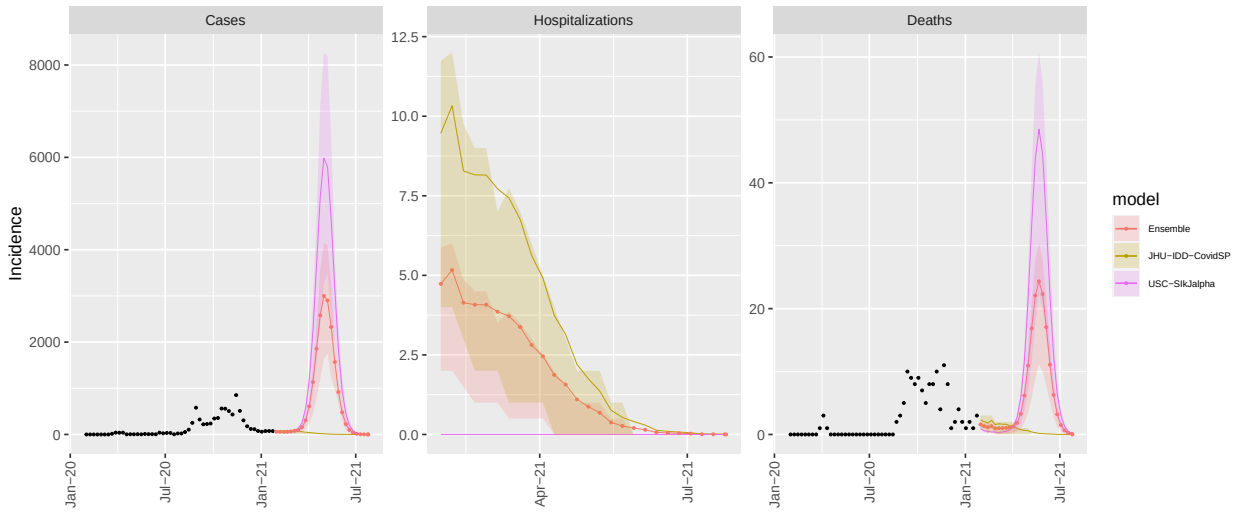

TX model variance & 50% projection intervals − fatigue_no_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive

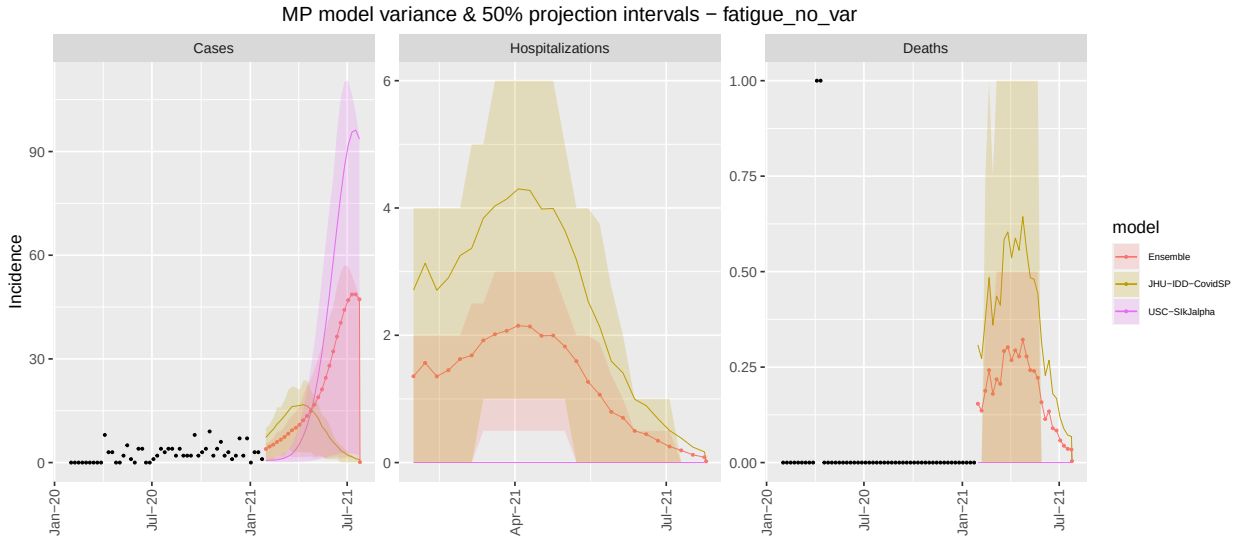

UT model variance & 50% projection intervals − fatigue_no_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive
VT model variance & 50% projection intervals − fatigue_no_var
VA model variance & 50% projection intervals − fatigue_no_var

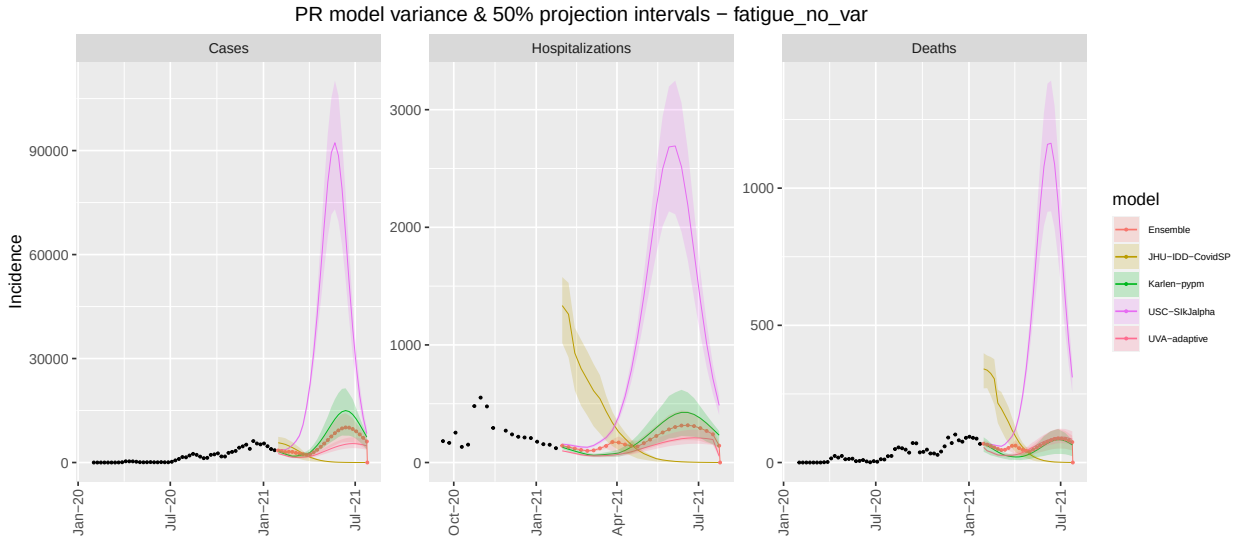

WA model variance & 50% projection intervals − fatigue_no_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive
WV model variance & 50% projection intervals − fatigue_no_var
WI model variance & 50% projection intervals − fatigue_no_var

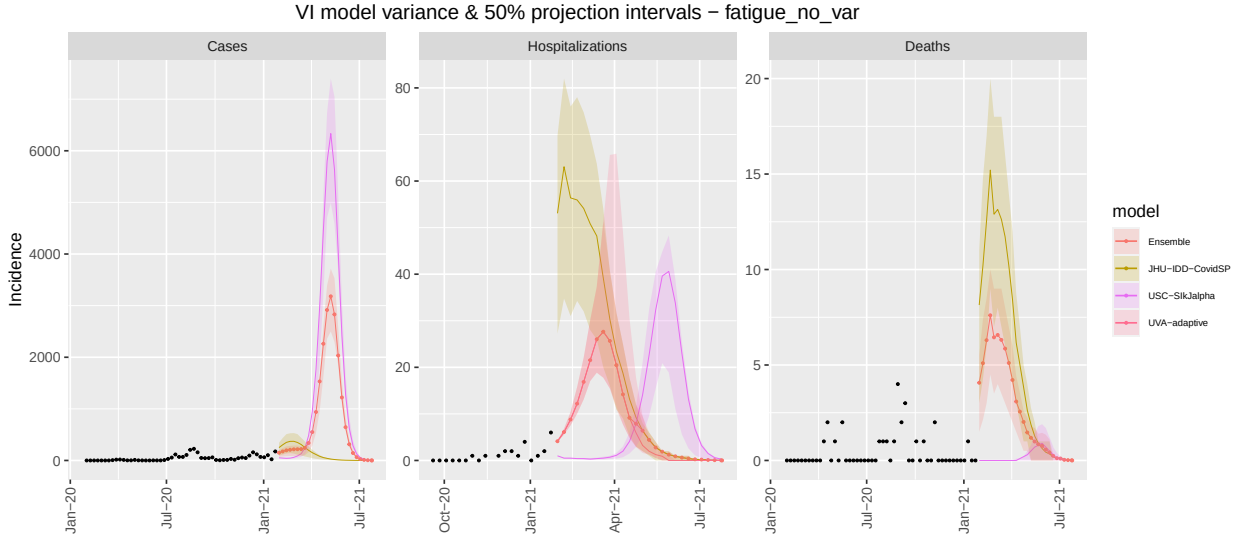

WY model variance & 50% projection intervals − fatigue_no_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive


AS model variance & 50% projection intervals − fatigue_no_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
USC−SIkJalpha

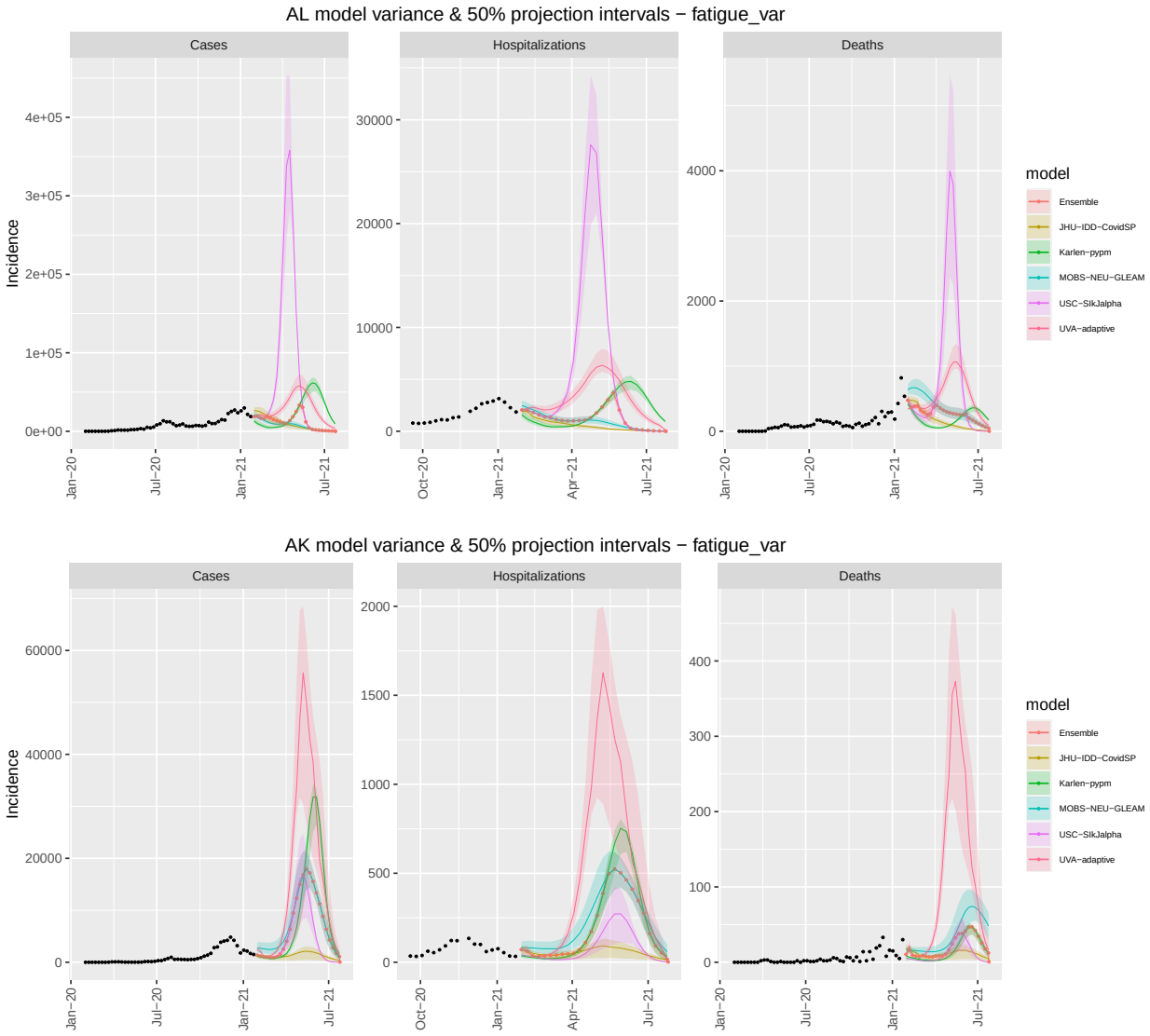

GU model variance & 50% projection intervals − fatigue_no_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
USC−SIkJalpha

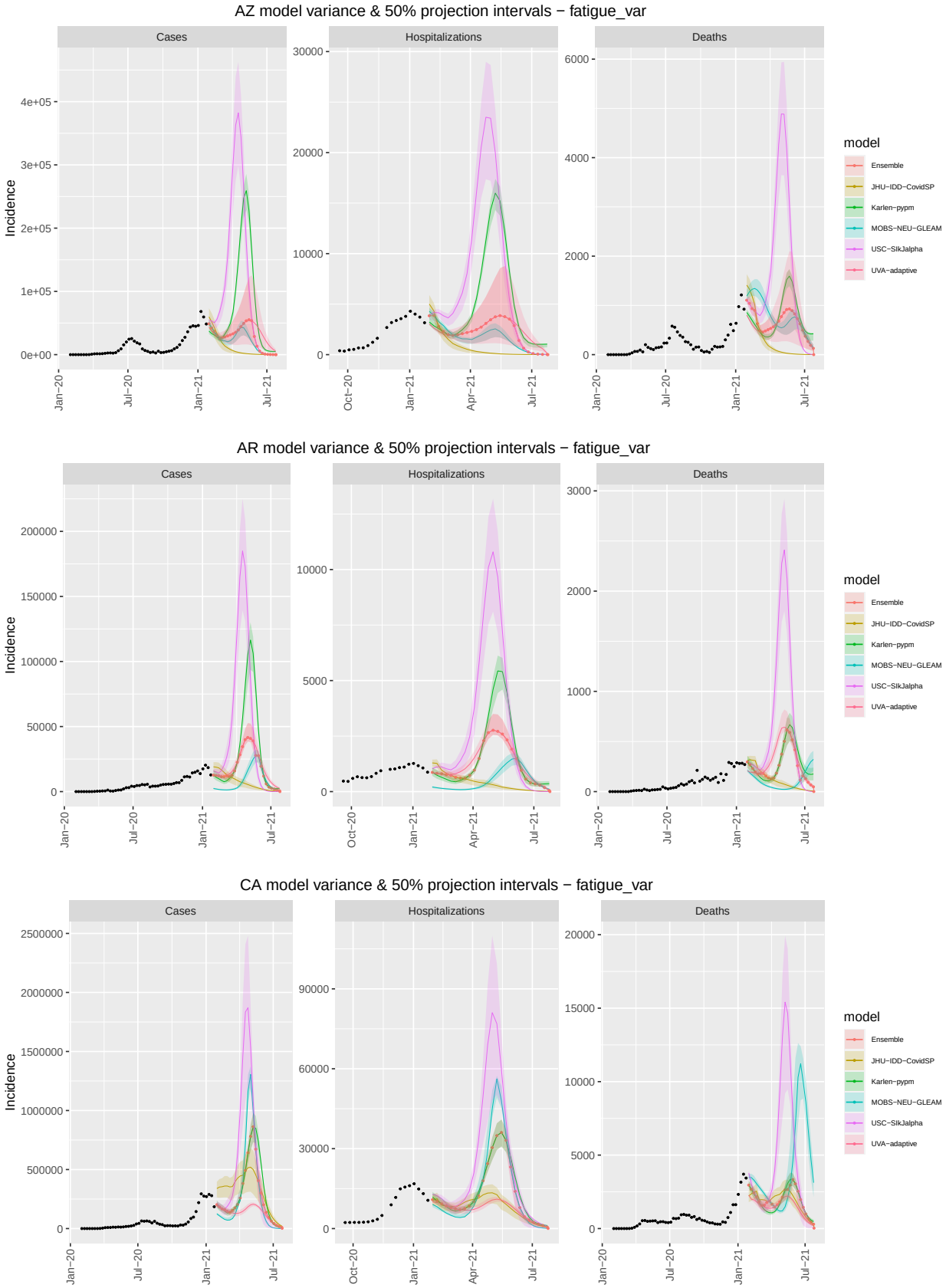

MP model variance & 50% projection intervals − fatigue_no_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
USC−SIkJalpha

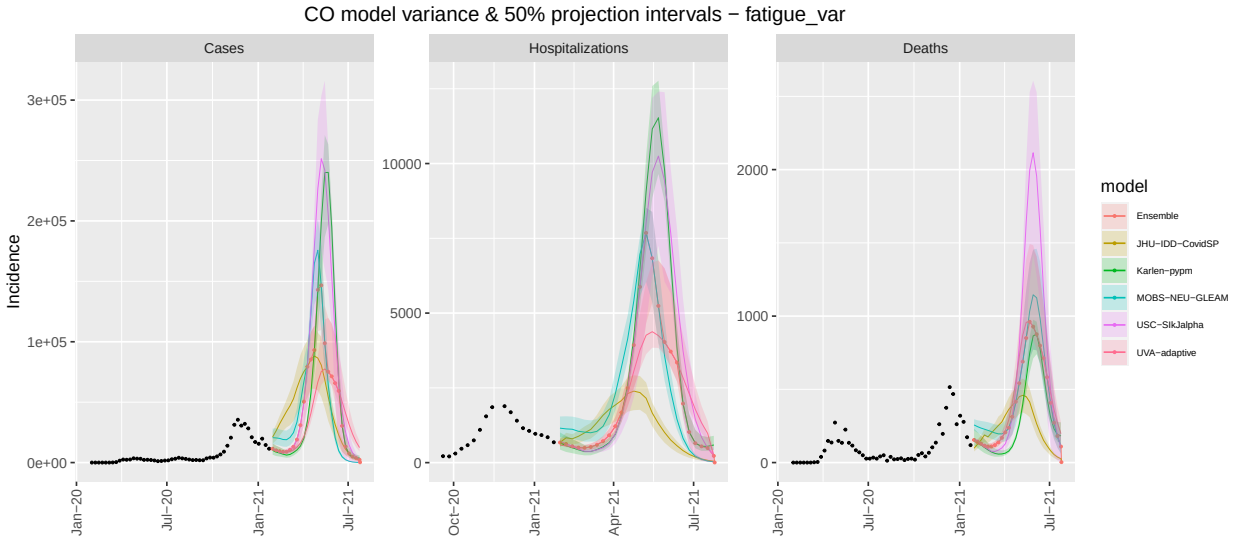

PR model variance & 50% projection intervals − fatigue_no_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
USC−SIkJalpha
UVA−adaptive

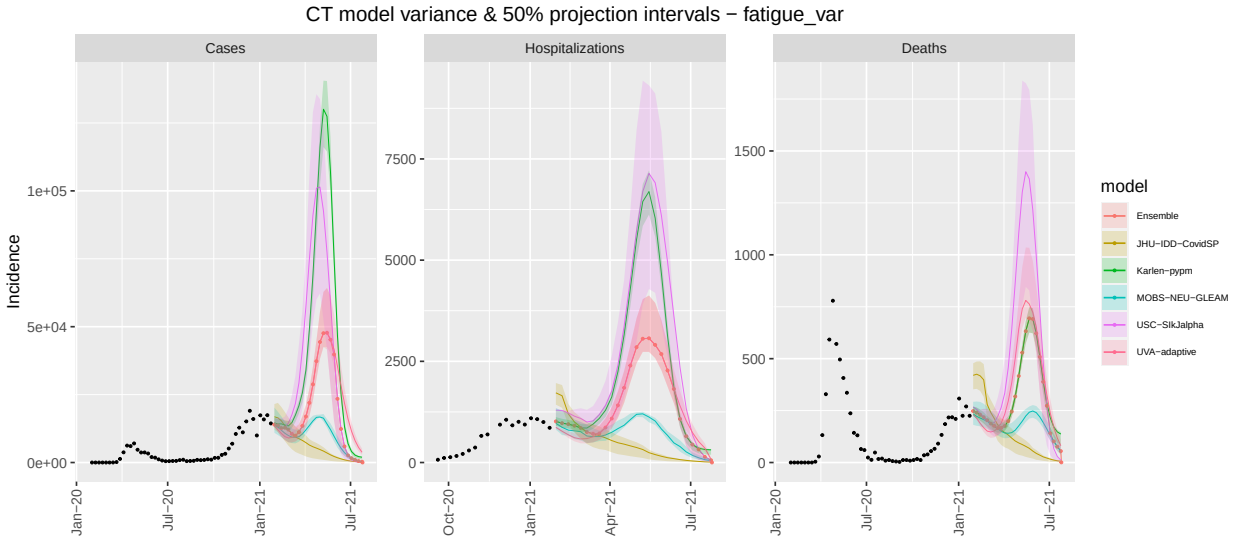

VI model variance & 50% projection intervals − fatigue_no_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
USC−SIkJalpha
UVA−adaptive

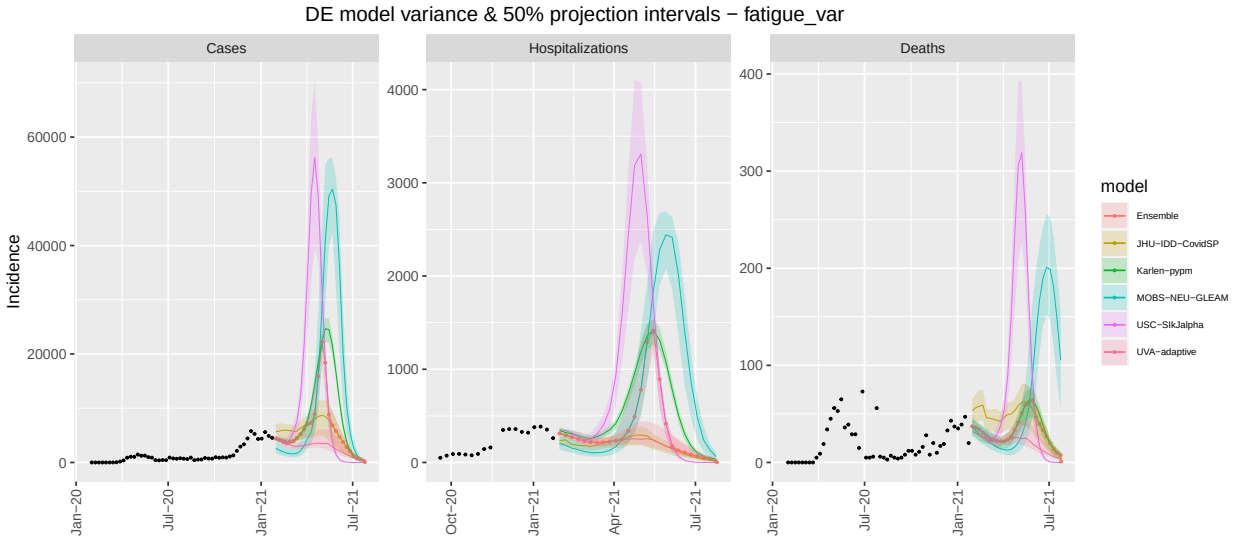
National model variation for the fatigue variant scenario

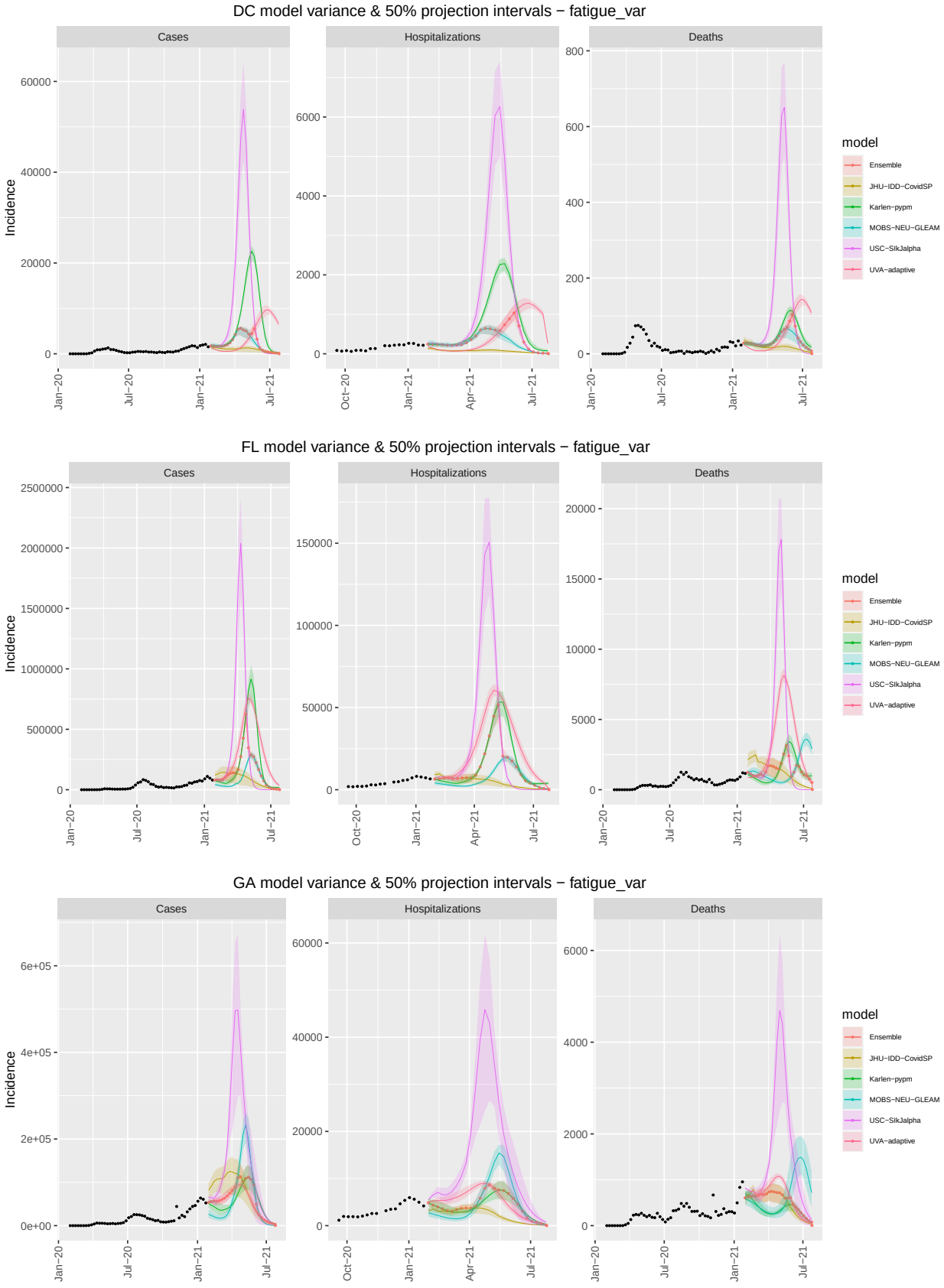


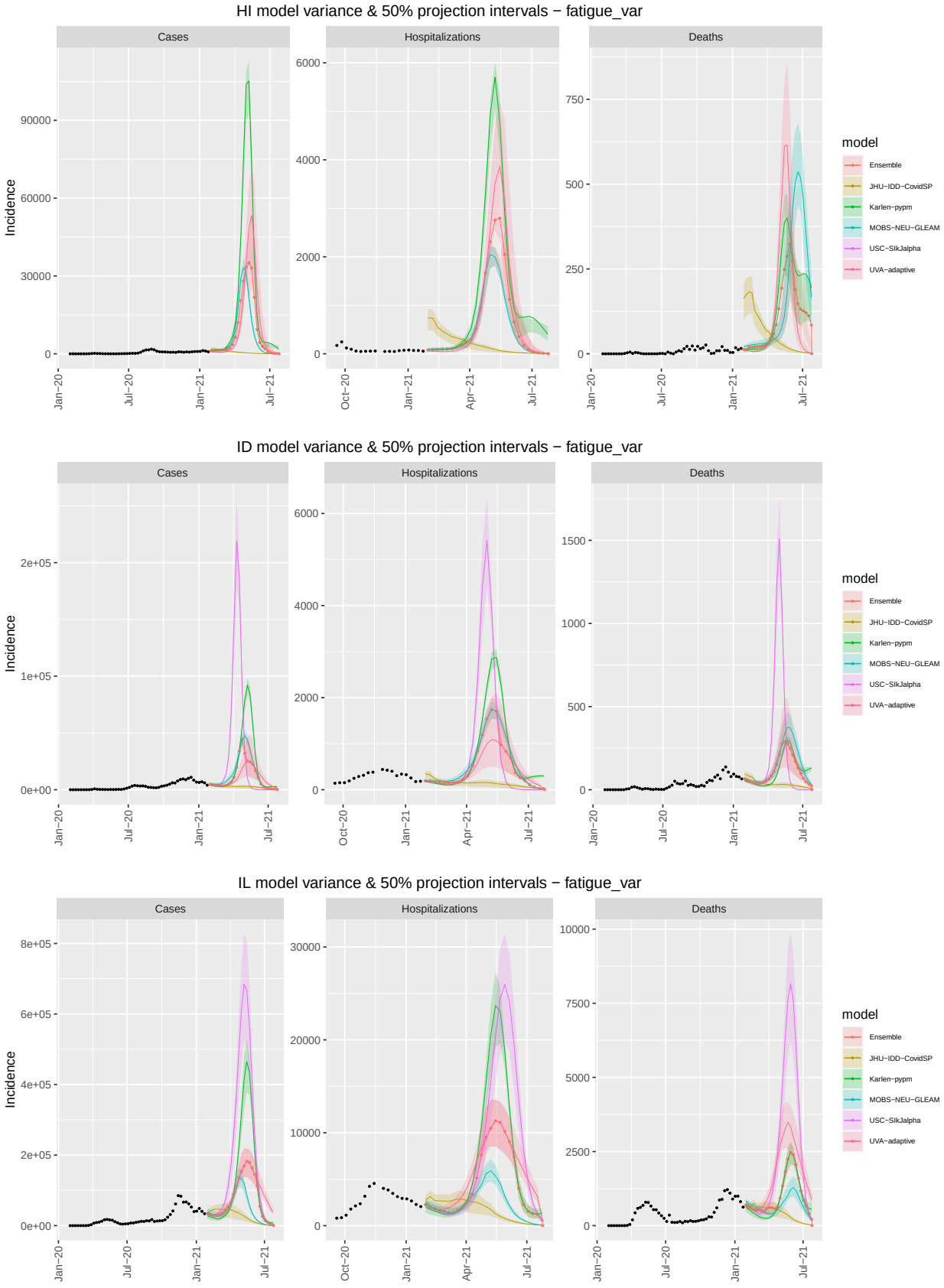

AZ model variance & 50% projection intervals − fatigue_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive
AR model variance & 50% projection intervals − fatigue_var
CA model variance & 50% projection intervals − fatigue_var

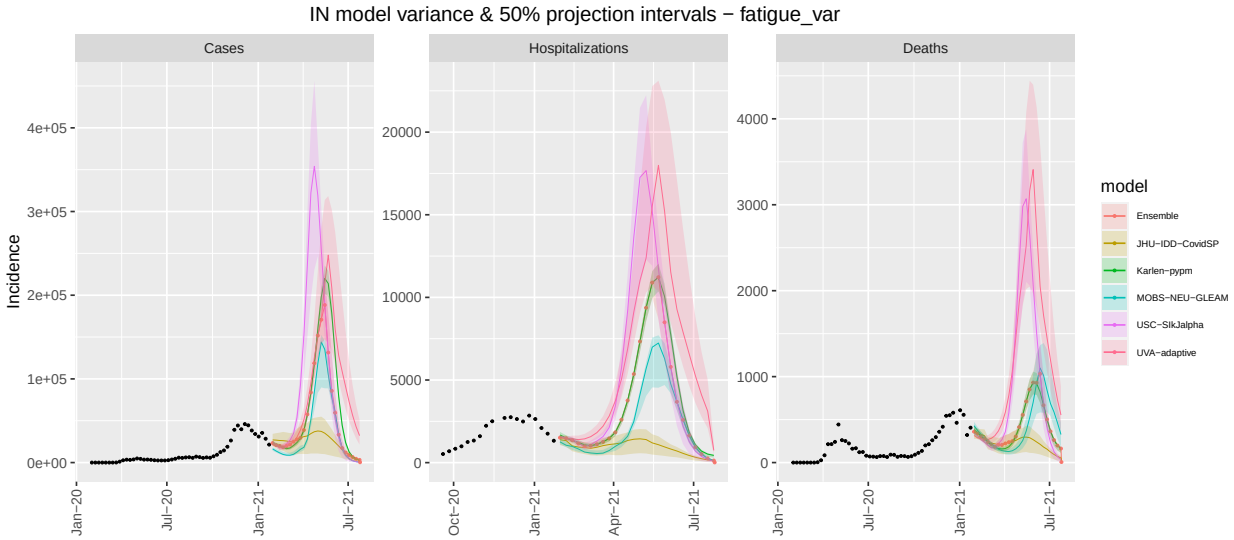

CO model variance & 50% projection intervals − fatigue_var
Cases
Hospitalizations
Deaths
Incidence
3e+05
2e+05
1e+05
0e+00
10000
5000
0
2000
1000
0
Jan−20
Jul−20
Jan−21
Jul−21
Oct−20
Apr−21
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive

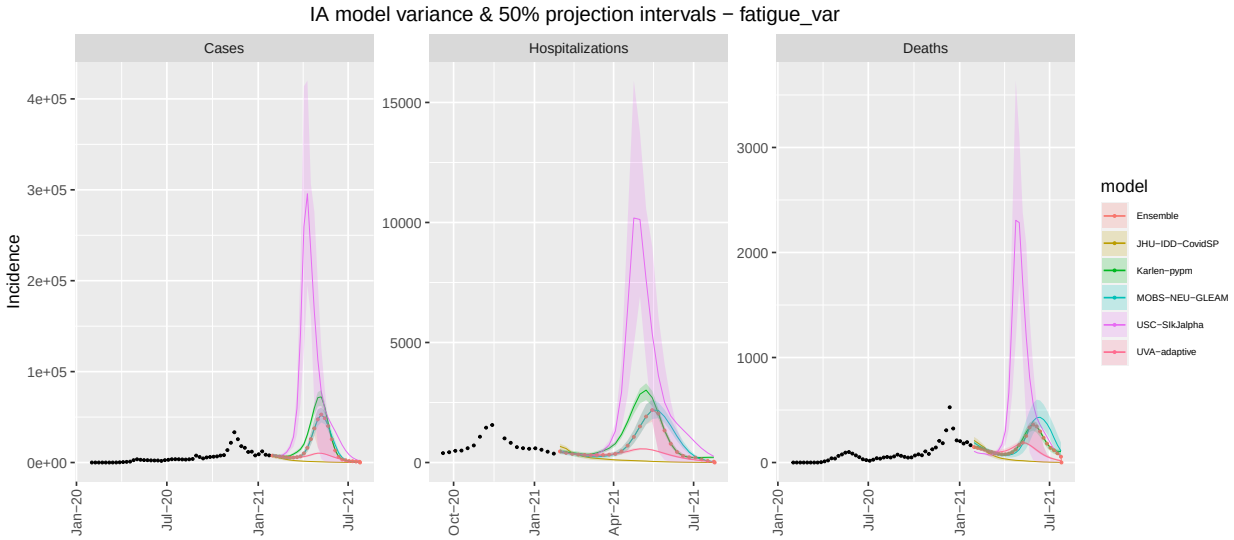

CT model variance & 50% projection intervals − fatigue_var
Cases
Hospitalizations
Deaths
Incidence
1e+05
5e+04
0e+00
7500
5000
2500
0
1500
1000
500
0
Jan−20
Jul−20
Jan−21
Jul−21
Oct−20
Apr−21
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive

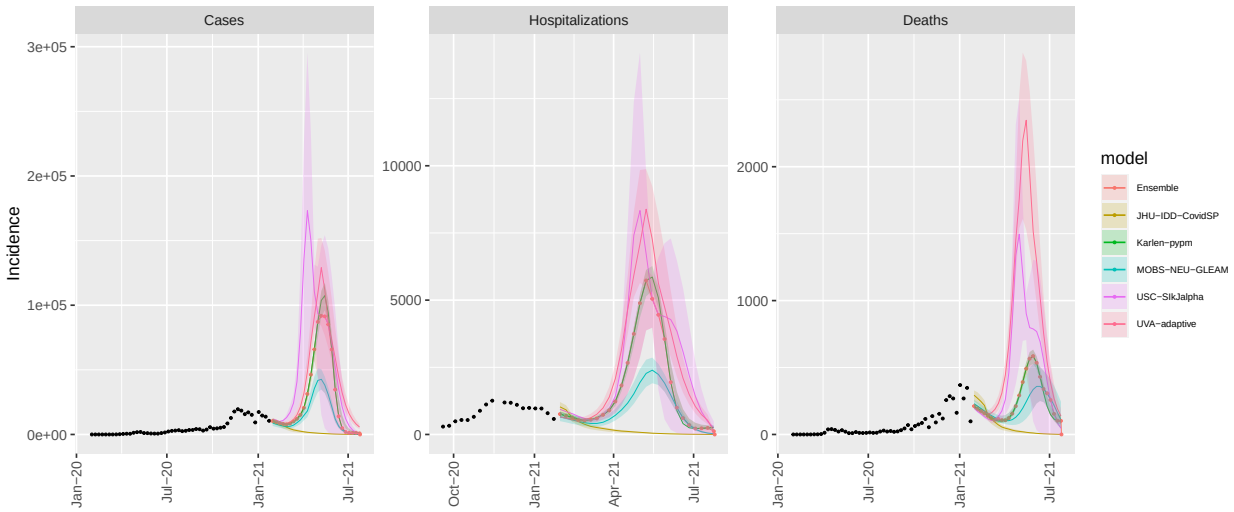

DE model variance & 50% projection intervals − fatigue_var
Cases
Hospitalizations
Deaths
Incidence
60000
40000
20000
0
4000
3000
2000
1000
0
400
300
200
100
0
Jan−20
Jul−20
Jan−21
Jul−21
Oct−20
Apr−21
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive

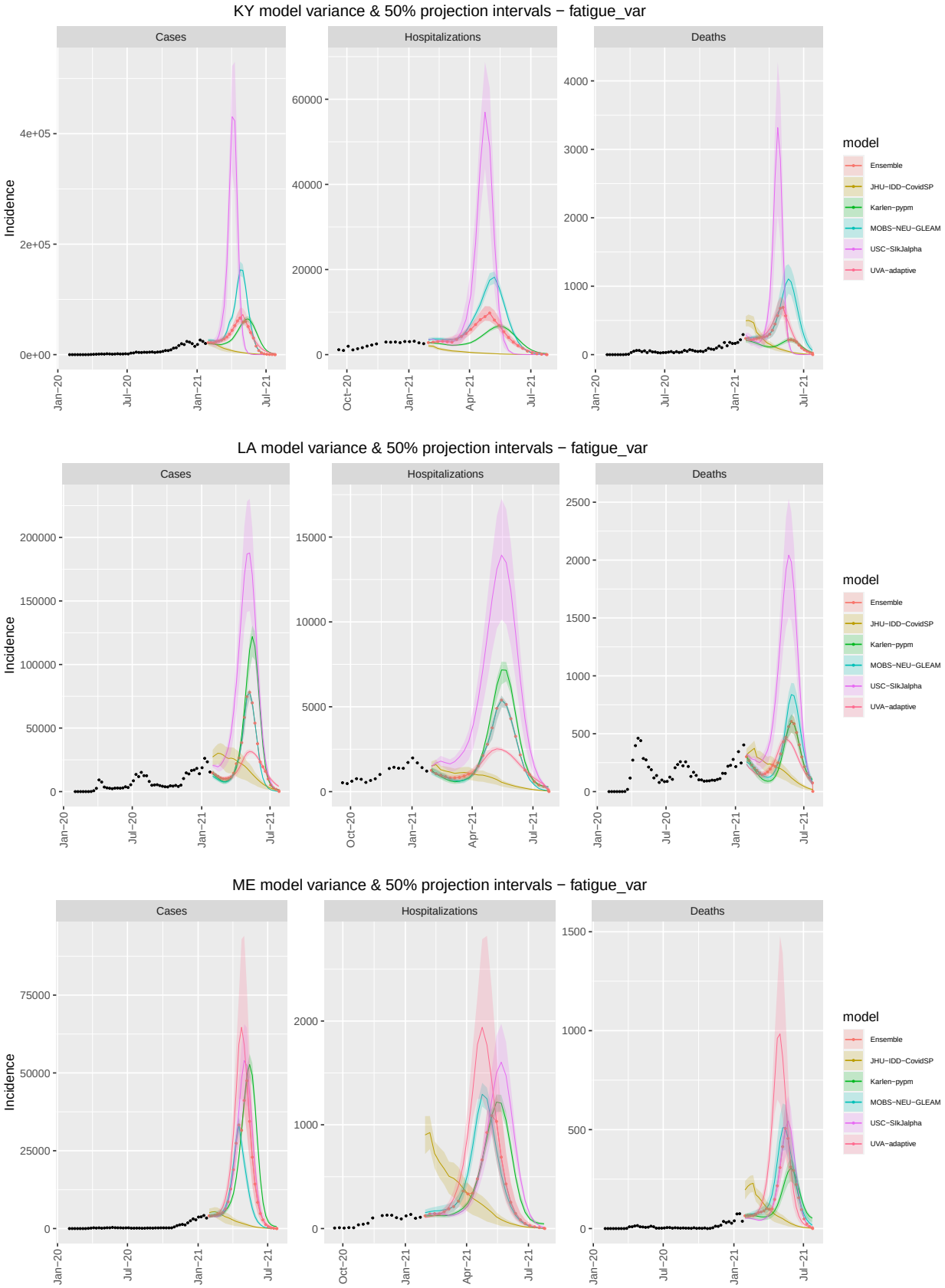

DC model variance & 50% projection intervals − fatigue_var
FL model variance & 50% projection intervals − fatigue_var
GA model variance & 50% projection intervals − fatigue_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive
Jan−20
Jul−20
Jan−21
Jul−21
Oct−20
Apr−21

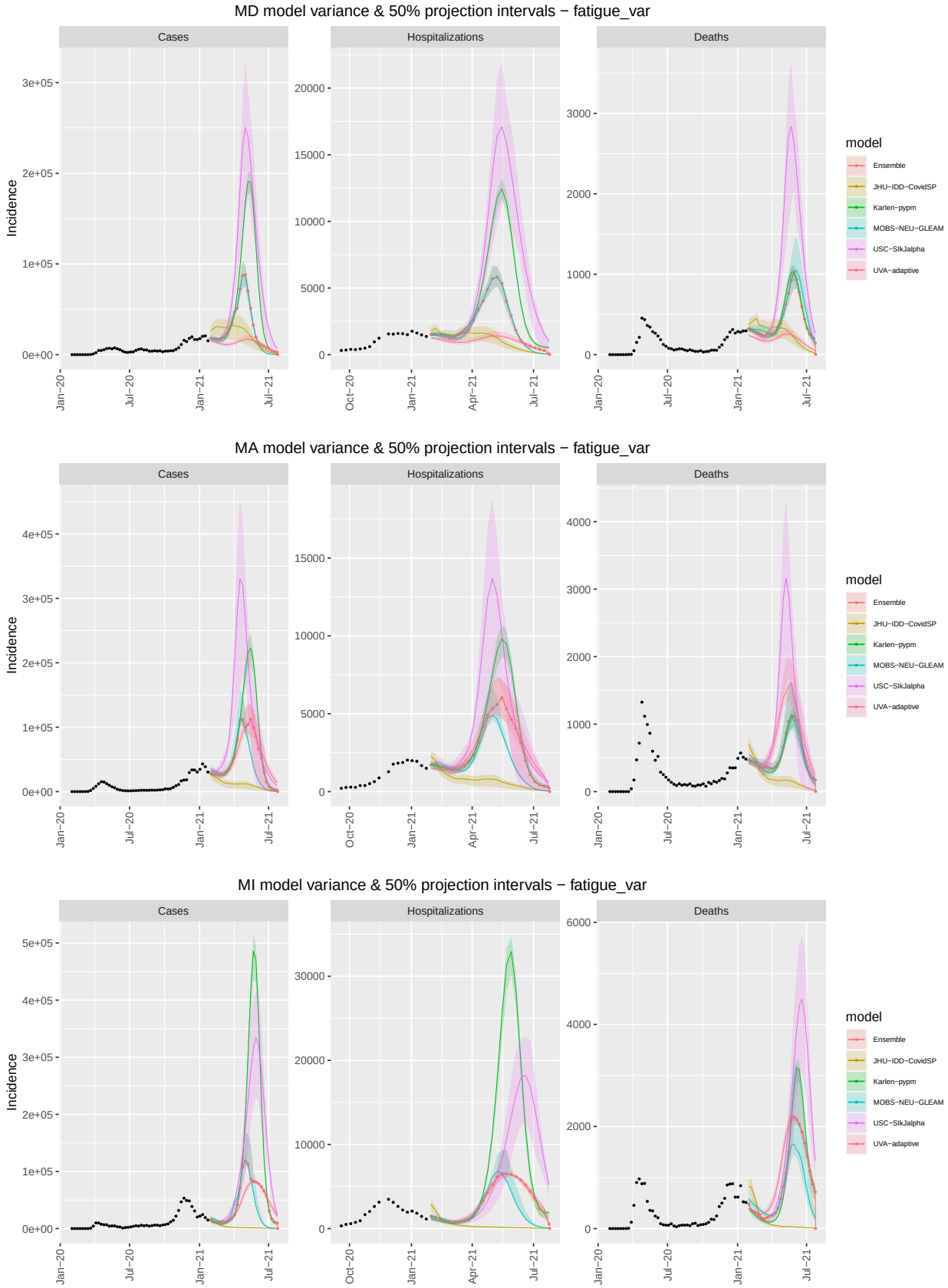

HI model variance & 50% projection intervals − fatigue_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive
ID model variance & 50% projection intervals − fatigue_var
IL model variance & 50% projection intervals − fatigue_var

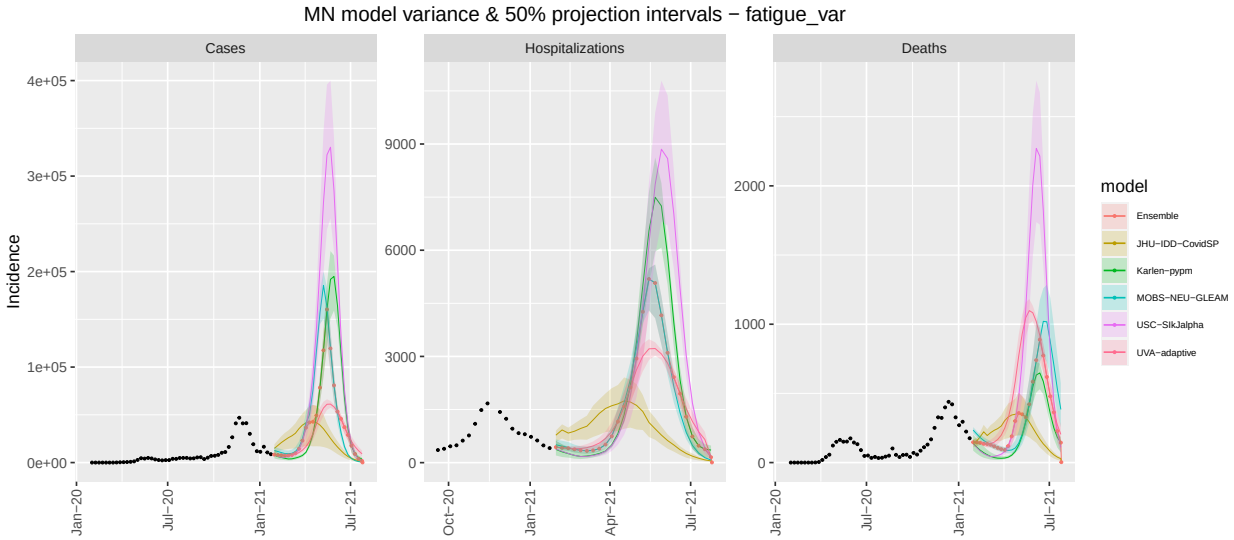

IN model variance & 50% projection intervals − fatigue_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive

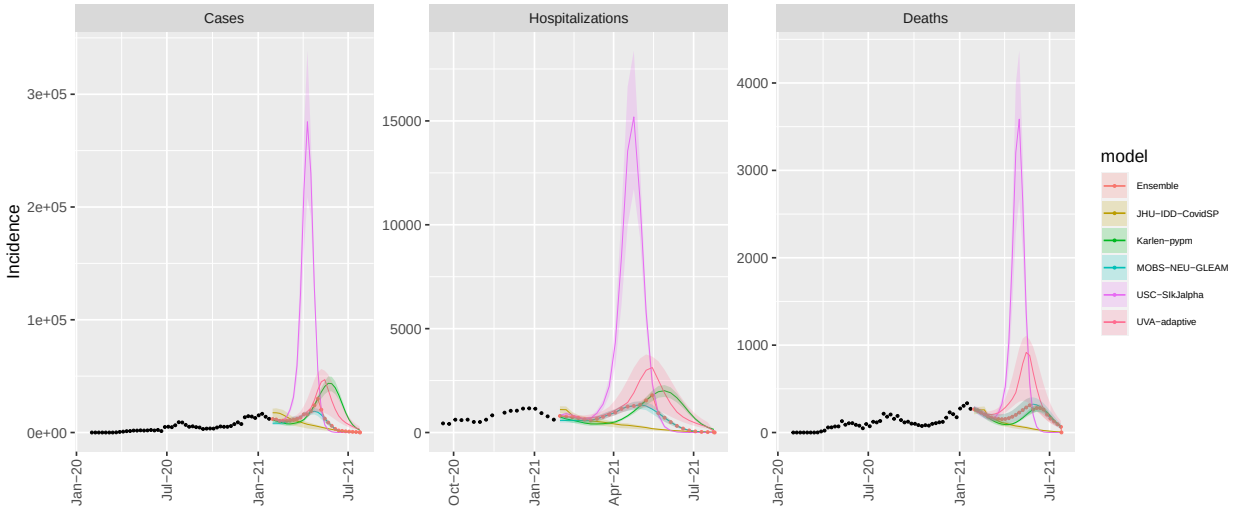

IA model variance & 50% projection intervals − fatigue_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive

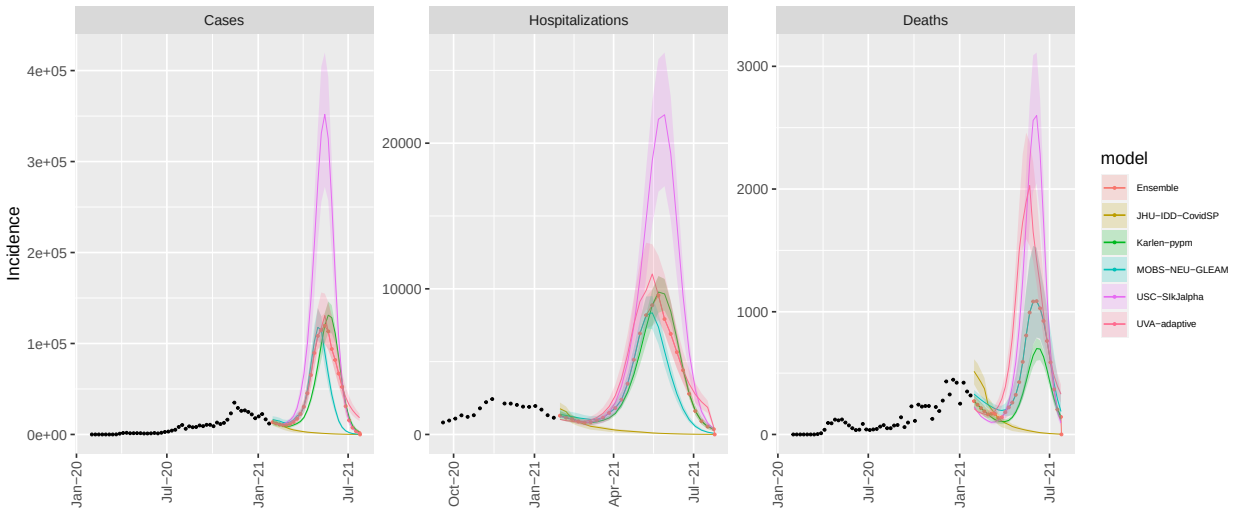

KS model variance & 50% projection intervals − fatigue_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive

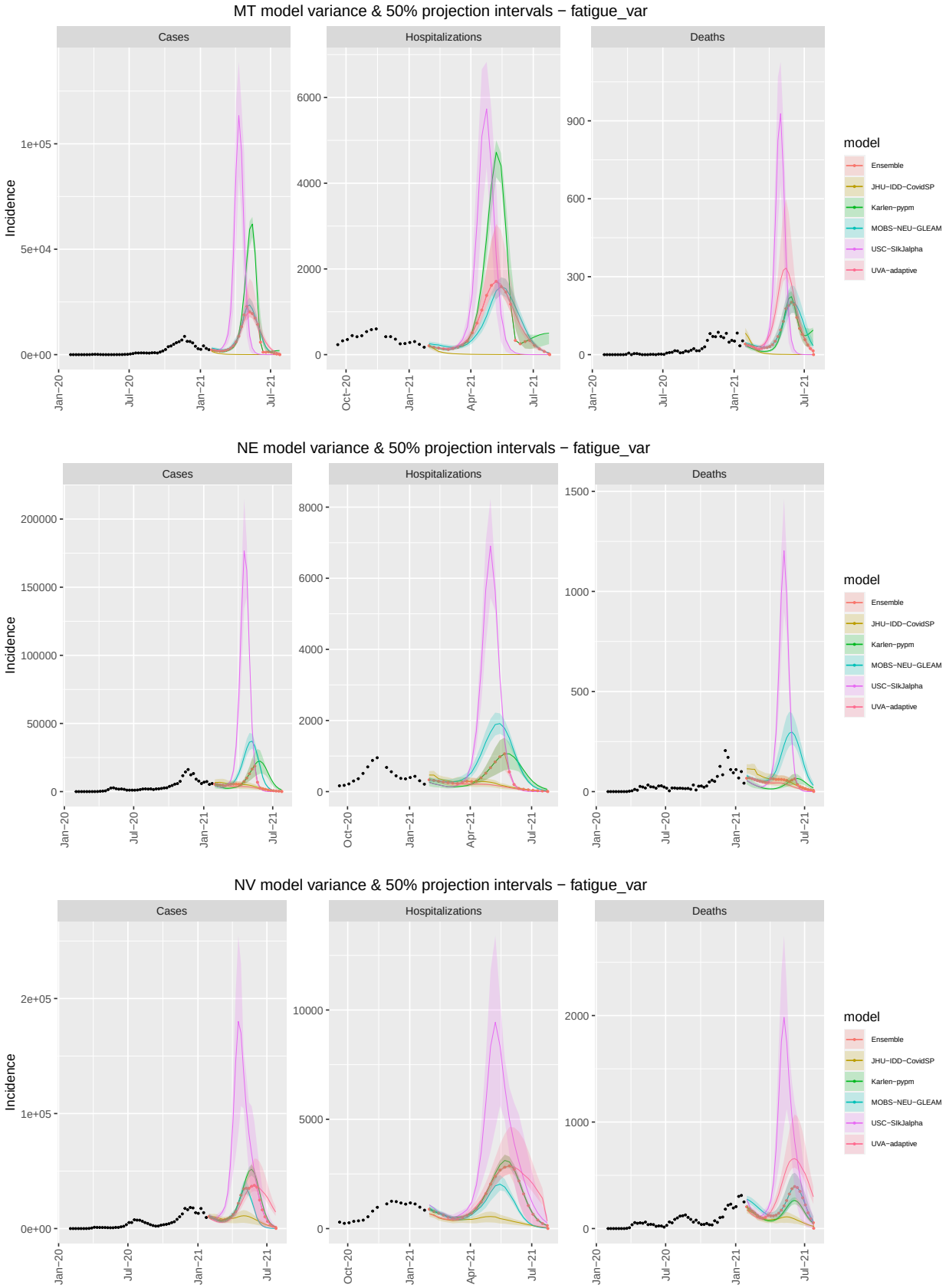

KY model variance & 50% projection intervals − fatigue_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive
LA model variance & 50% projection intervals − fatigue_var
ME model variance & 50% projection intervals − fatigue_var

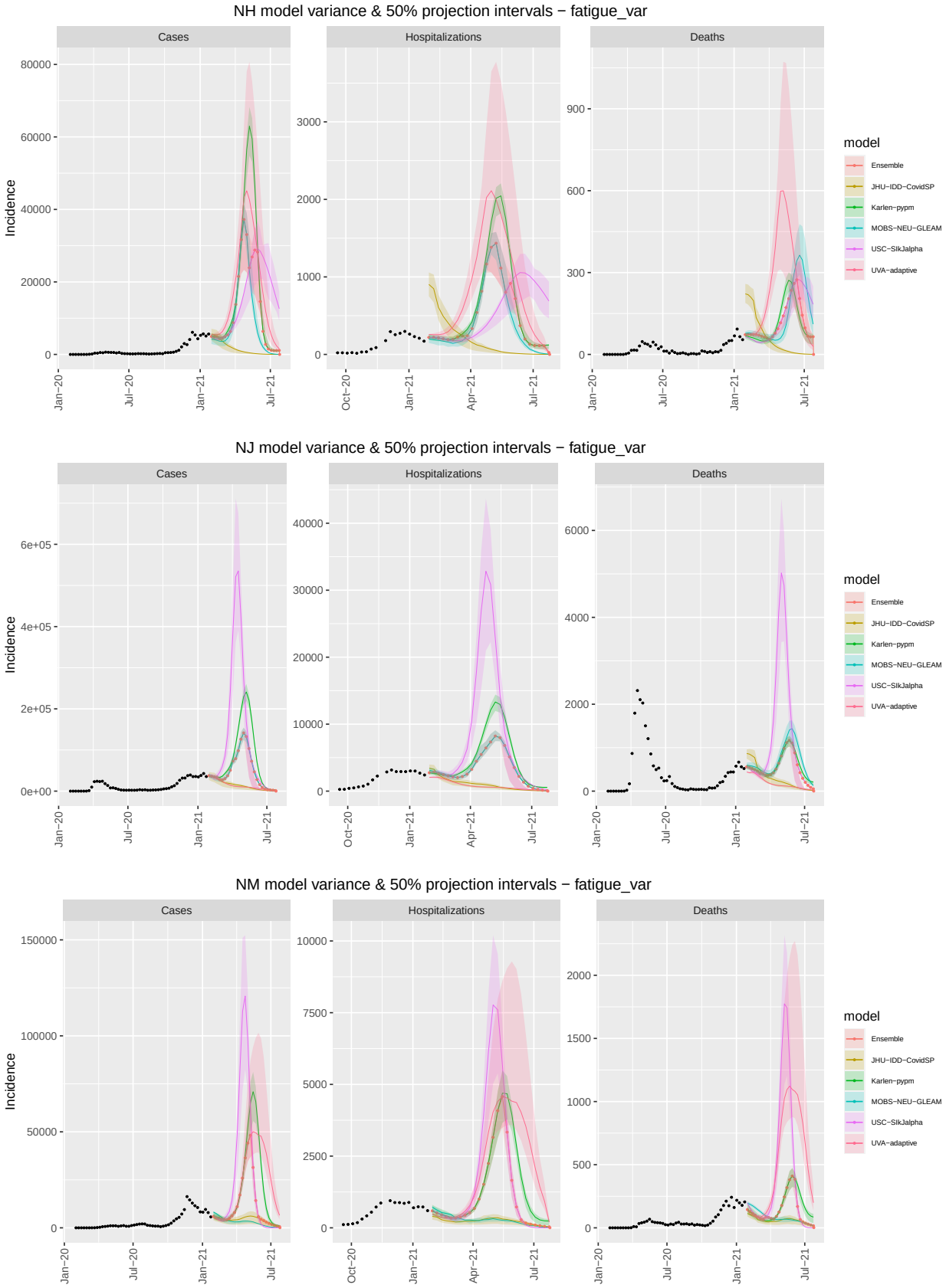

MD model variance & 50% projection intervals − fatigue_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive
MA model variance & 50% projection intervals − fatigue_var
MI model variance & 50% projection intervals − fatigue_var

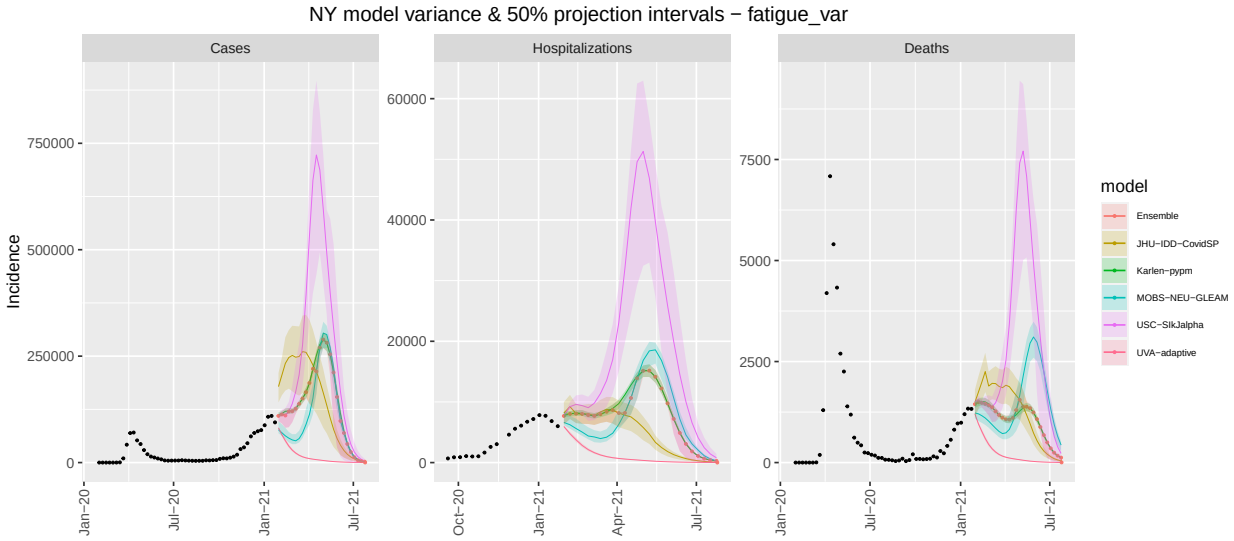

MN model variance & 50% projection intervals − fatigue_var
Cases
Hospitalizations
Deaths
Incidence
4e+05
3e+05
2e+05
1e+05
0e+00
9000
6000
3000
0
2000
1000
Jan−20
Jul−20
Jan−21
Jul−21
Oct−20
Apr−21
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive

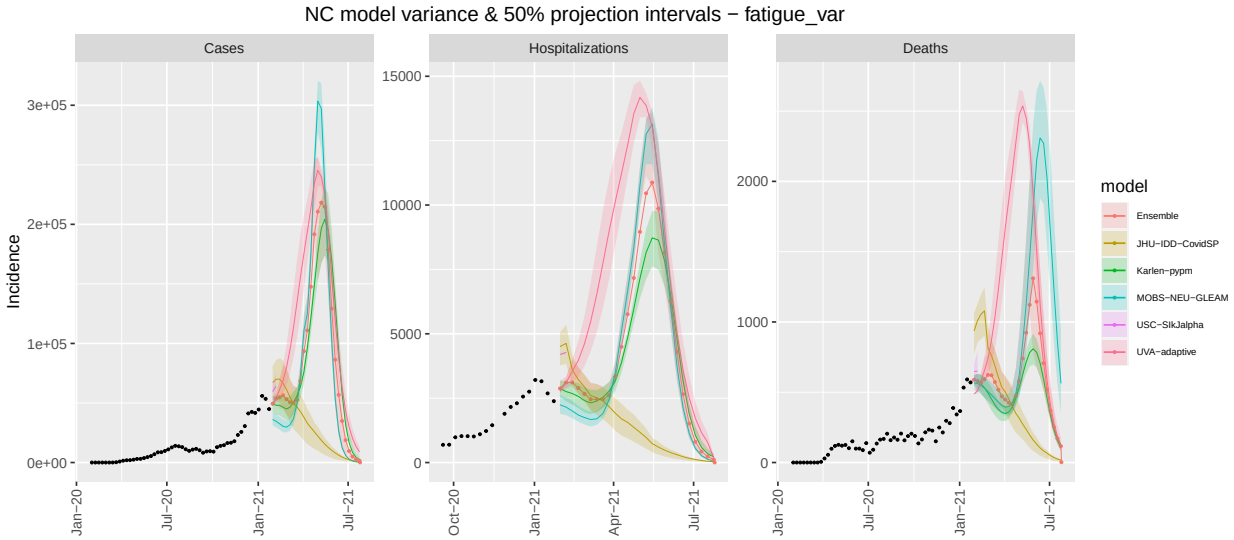

MS model variance & 50% projection intervals − fatigue_var
Cases
Hospitalizations
Deaths
Incidence
3e+05
2e+05
1e+05
0e+00
15000
10000
5000
0
4000
3000
2000
1000
Jan−20
Jul−20
Jan−21
Jul−21
Oct−20
Apr−21
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive

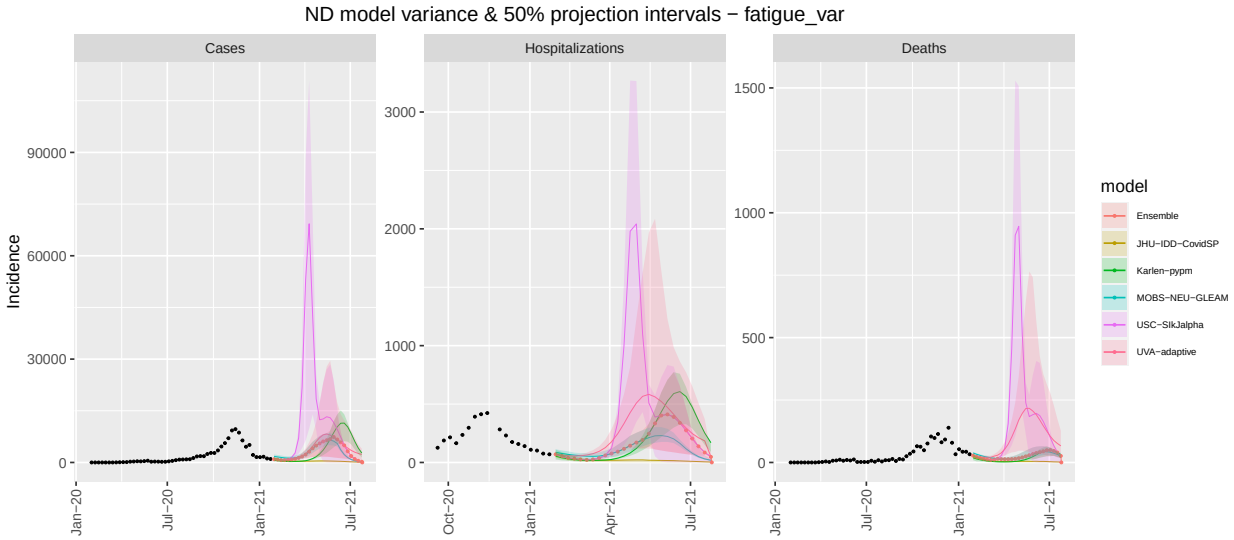

MO model variance & 50% projection intervals − fatigue_var
Cases
Hospitalizations
Deaths
Incidence
4e+05
3e+05
2e+05
1e+05
0e+00
20000
10000
0
3000
2000
1000
Jan−20
Jul−20
Jan−21
Jul−21
Oct−20
Apr−21
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive

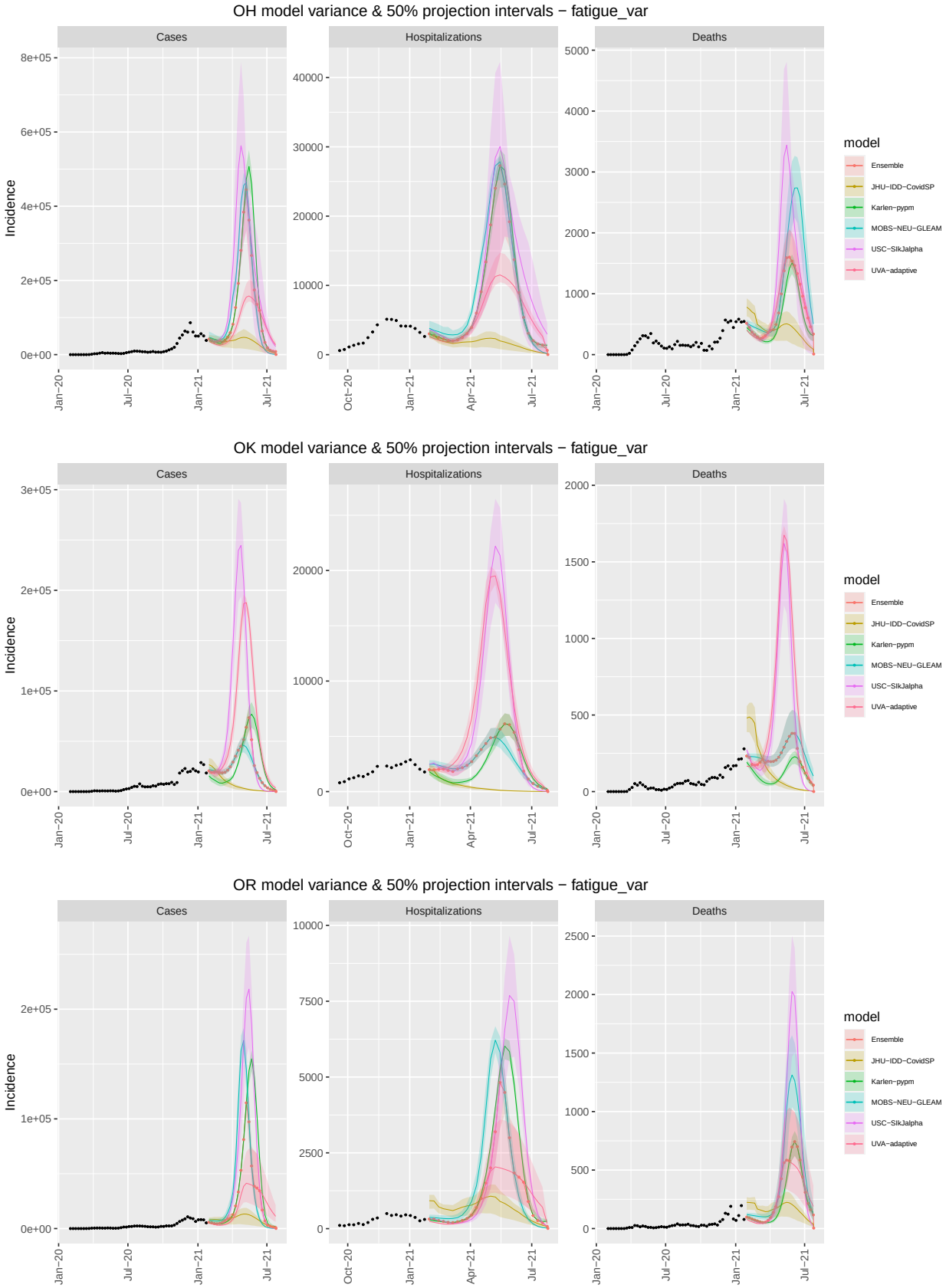

MT model variance & 50% projection intervals − fatigue_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive
NE model variance & 50% projection intervals − fatigue_var
NV model variance & 50% projection intervals − fatigue_var

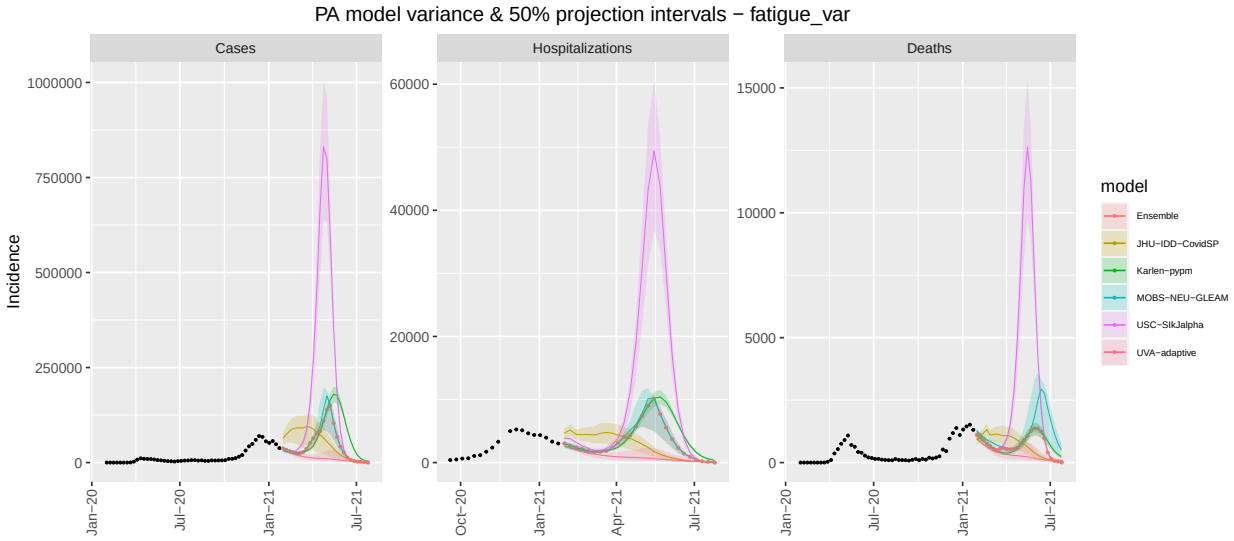

NH model variance & 50% projection intervals − fatigue_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive
NJ model variance & 50% projection intervals − fatigue_var
NM model variance & 50% projection intervals − fatigue_var

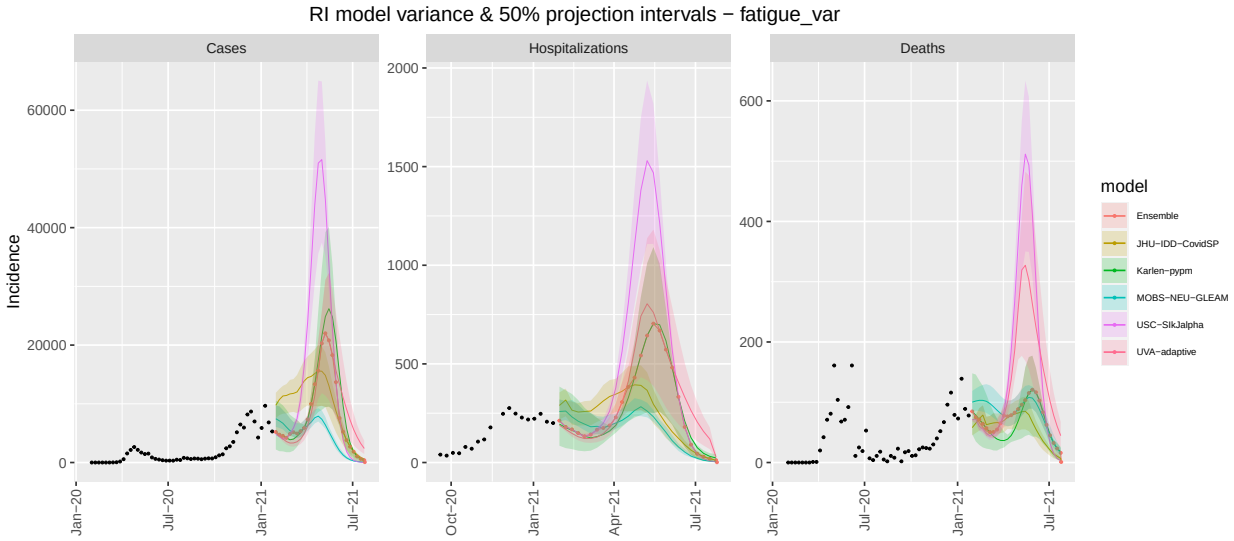

NY model variance & 50% projection intervals − fatigue_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive

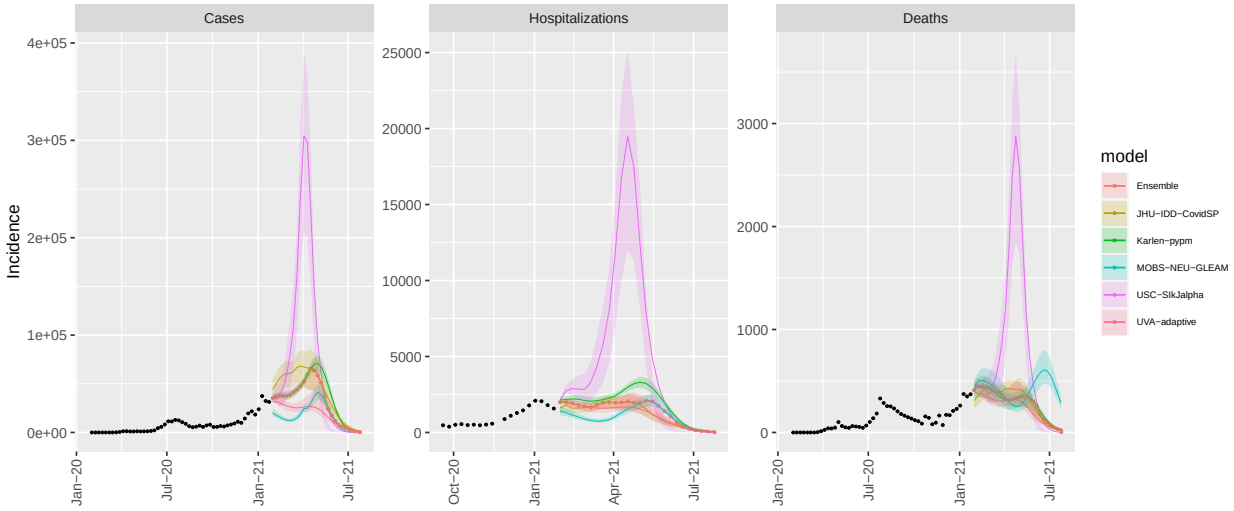

NC model variance & 50% projection intervals − fatigue_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive

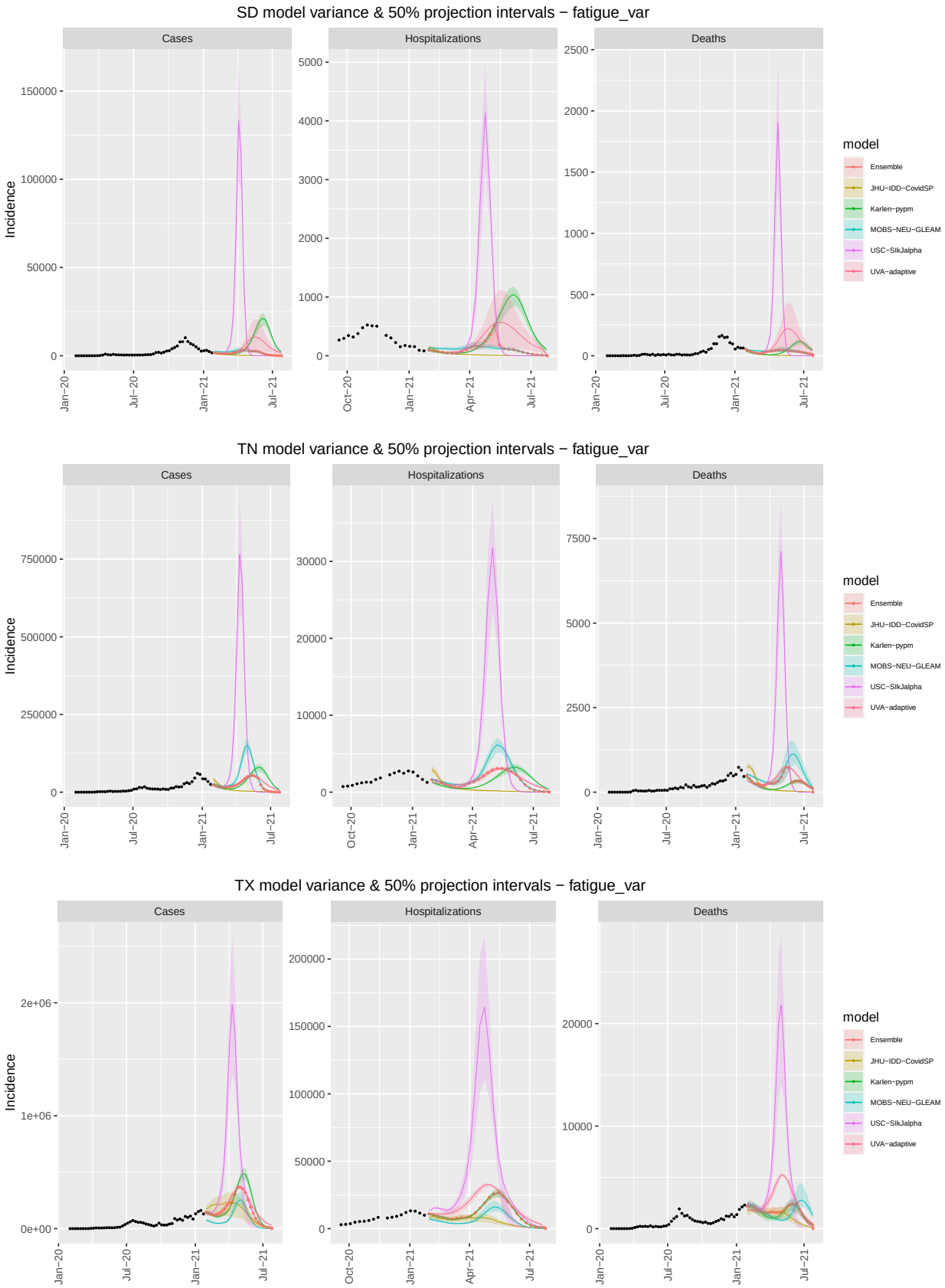

ND model variance & 50% projection intervals − fatigue_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive

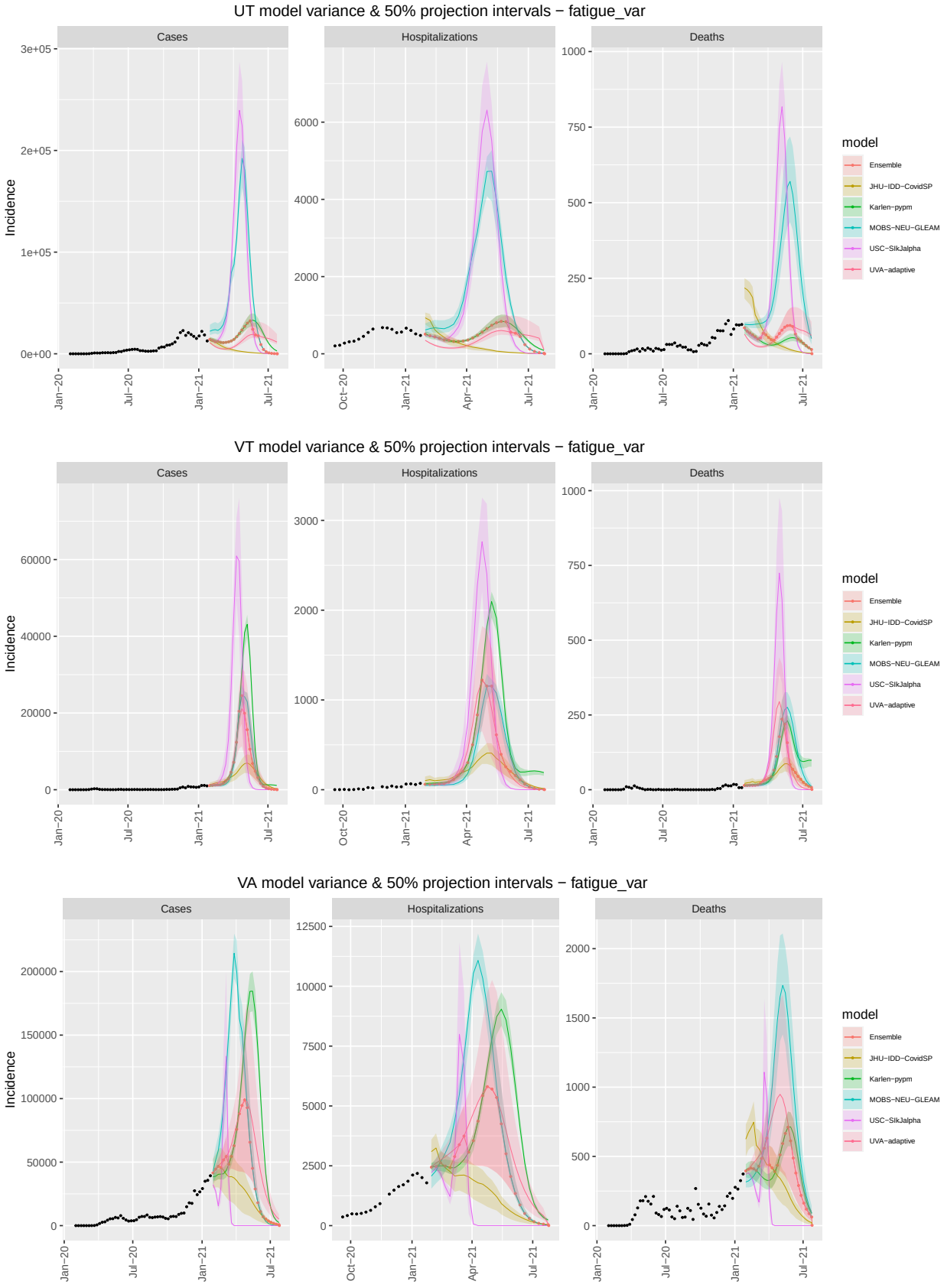

OH model variance & 50% projection intervals − fatigue_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive
OK model variance & 50% projection intervals − fatigue_var
OR model variance & 50% projection intervals − fatigue_var

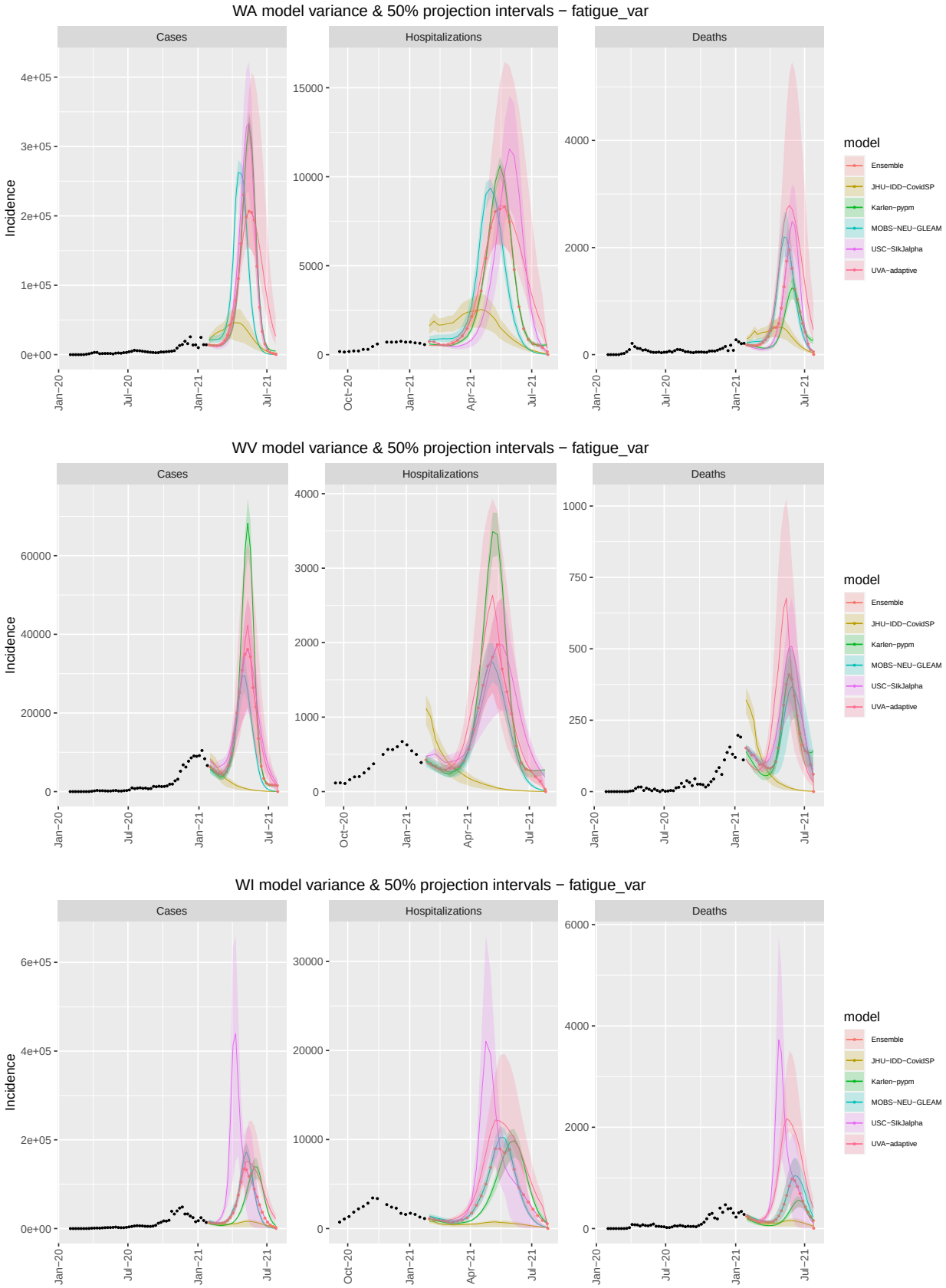

PA model variance & 50% projection intervals − fatigue_var
Cases
Hospitalizations
Deaths
Incidence
1000000
750000
500000
250000
0
60000
40000
20000
15000
10000
5000
Jan−20
Jul−20
Jan−21
Jul−21
Oct−20
Apr−21
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive

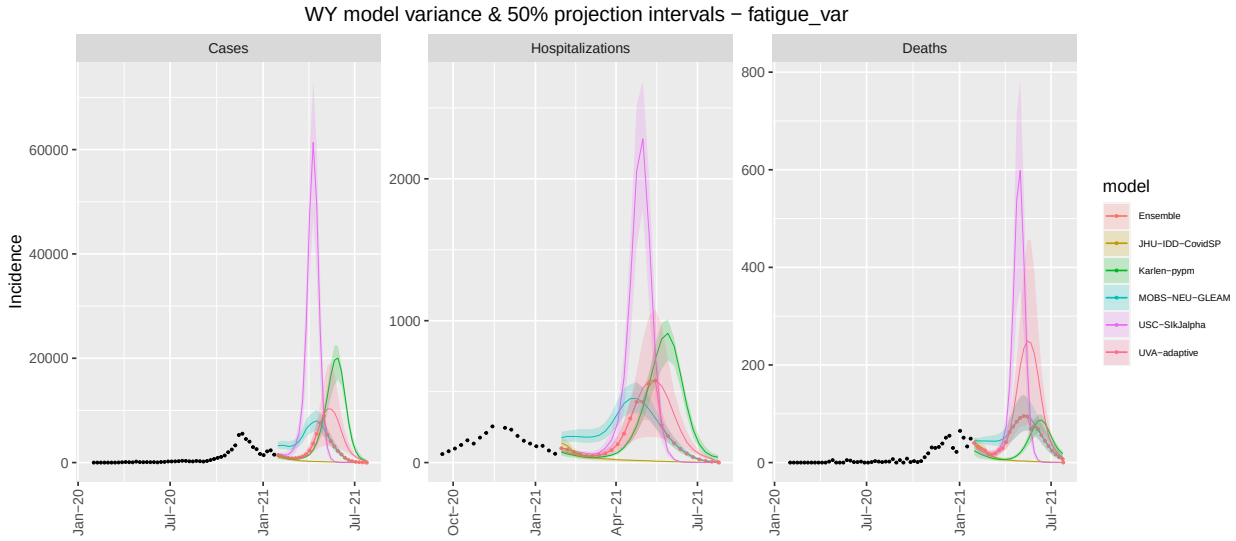

RI model variance & 50% projection intervals − fatigue_var
Cases
Hospitalizations
Deaths
Incidence
60000
40000
20000
0
2000
1500
1000
500
600
400
200
Jan−20
Jul−20
Jan−21
Jul−21
Oct−20
Apr−21
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive

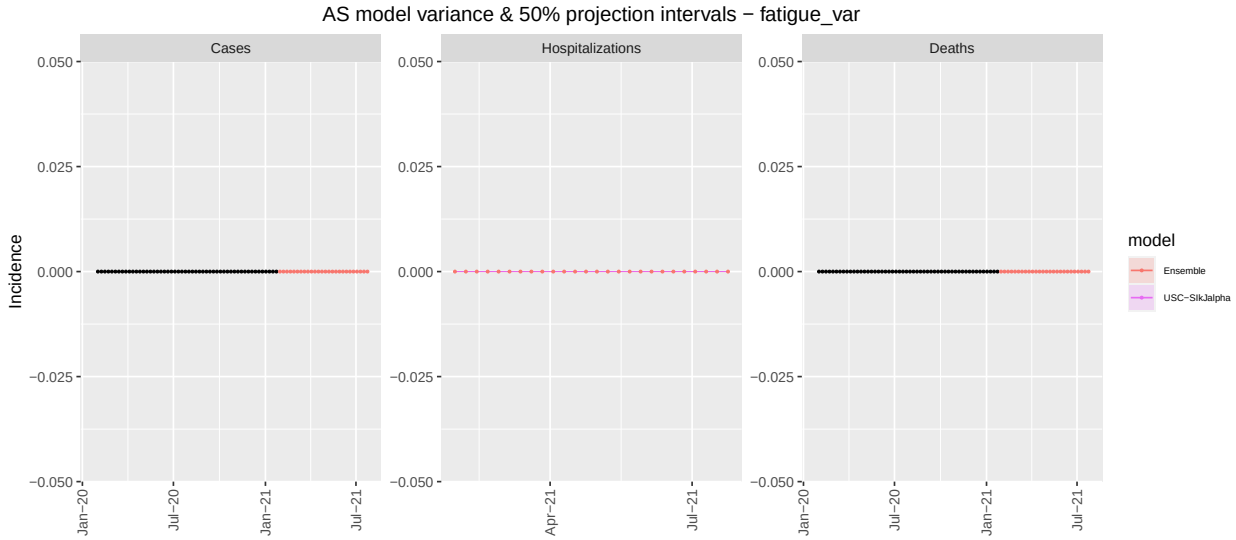

SC model variance & 50% projection intervals − fatigue_var
Cases
Hospitalizations
Deaths
Incidence
4e+05
3e+05
2e+05
1e+05
0e+00
25000
20000
15000
10000
5000
3000
2000
1000
Jan−20
Jul−20
Jan−21
Jul−21
Oct−20
Apr−21
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive

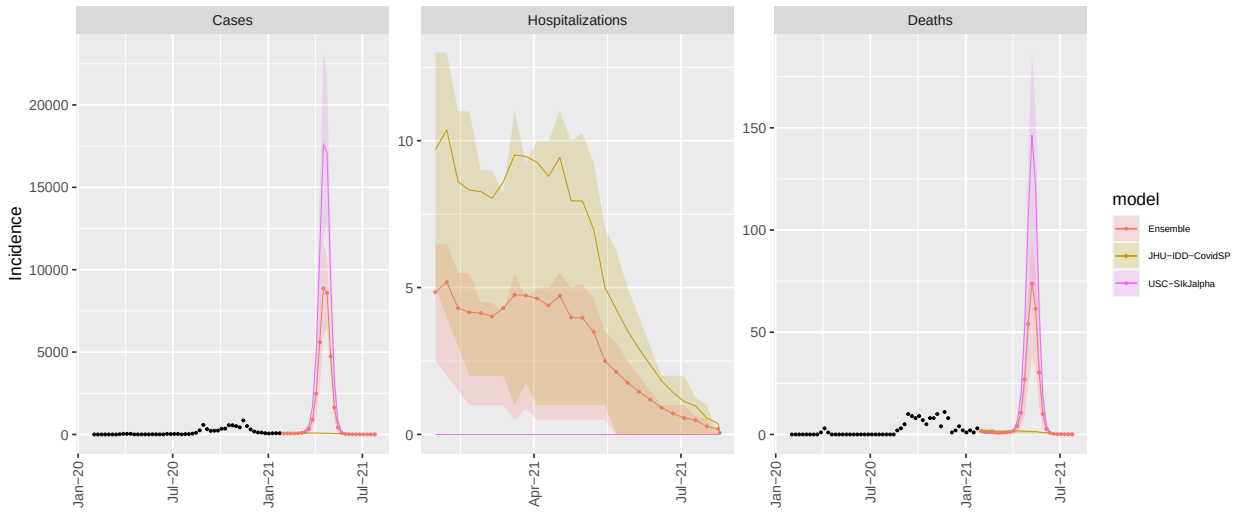

SD model variance & 50% projection intervals − fatigue_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive
TN model variance & 50% projection intervals − fatigue_var
TX model variance & 50% projection intervals − fatigue_var

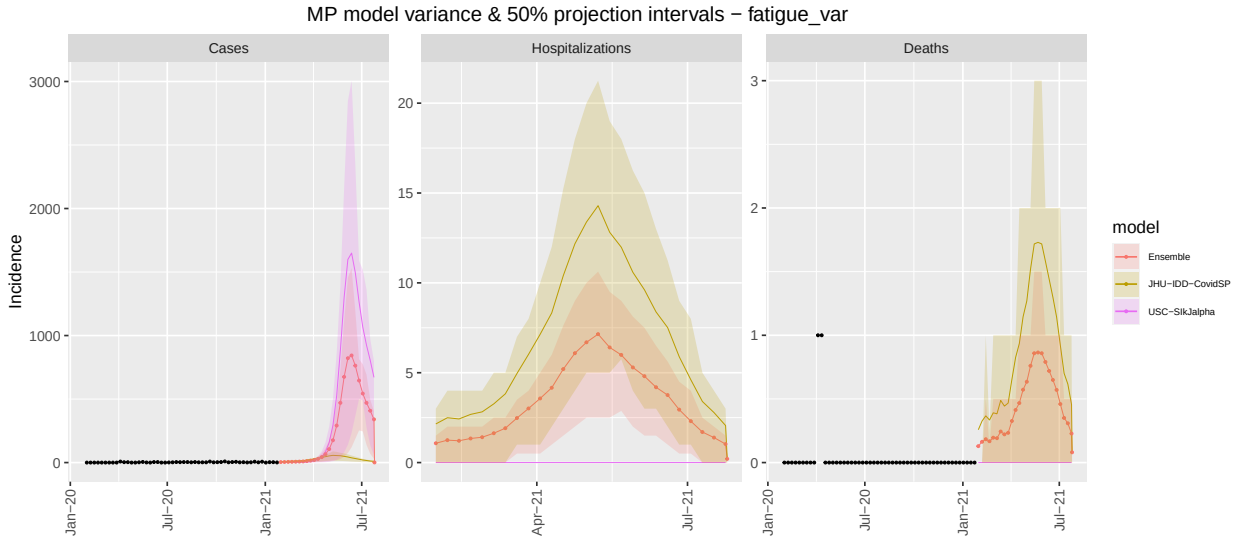

UT model variance & 50% projection intervals − fatigue_var
VT model variance & 50% projection intervals − fatigue_var
VA model variance & 50% projection intervals − fatigue_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive
Jan−20
Jul−20
Jan−21
Jul−21
Oct−20
Apr−21

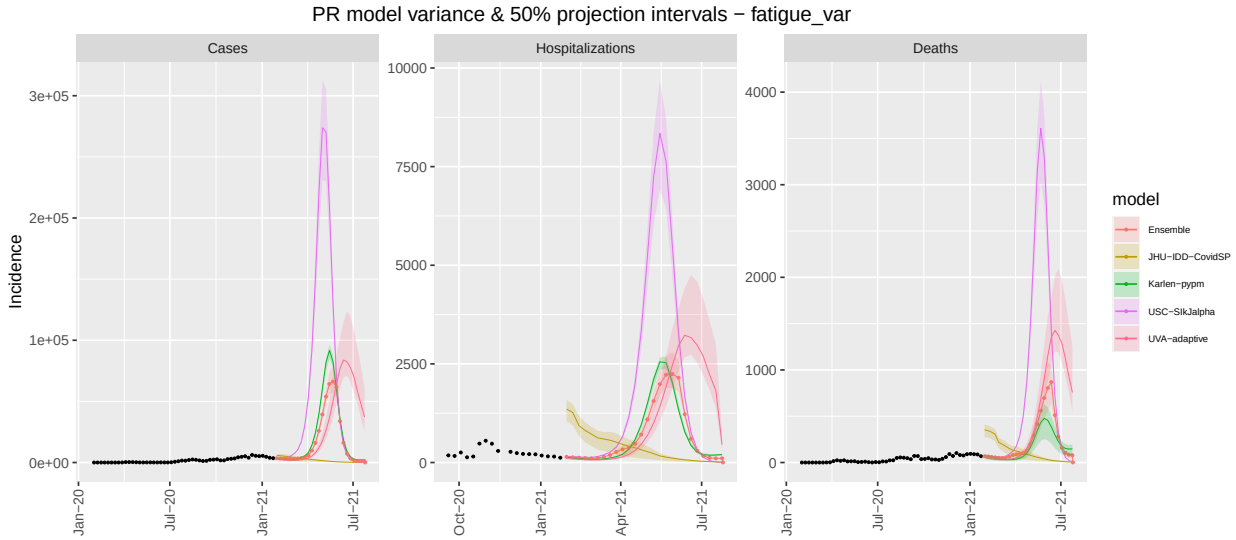

WA model variance & 50% projection intervals − fatigue_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive
WV model variance & 50% projection intervals − fatigue_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive
WI model variance & 50% projection intervals − fatigue_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive

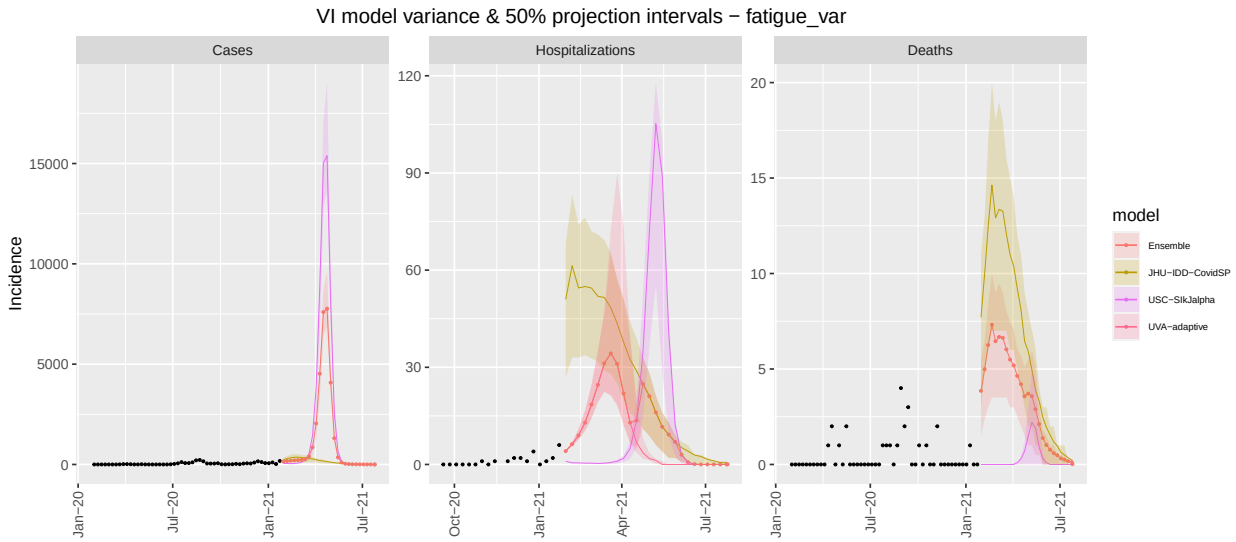

WY model variance & 50% projection intervals − fatigue_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
MOBS−NEU−GLEAM
USC−SIkJalpha
UVA−adaptive


AS model variance & 50% projection intervals − fatigue_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
USC−SIkJalpha


GU model variance & 50% projection intervals − fatigue_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
USC−SIkJalpha


MP model variance & 50% projection intervals − fatigue_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
USC−SIkJalpha


PR model variance & 50% projection intervals − fatigue_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
Karlen−pypm
USC−SIkJalpha
UVA−adaptive


VI model variance & 50% projection intervals − fatigue_var
Cases
Hospitalizations
Deaths
Incidence
model
Ensemble
JHU−IDD−CovidSP
USC−SIkJalpha
UVA−adaptive