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Early Omicron Results

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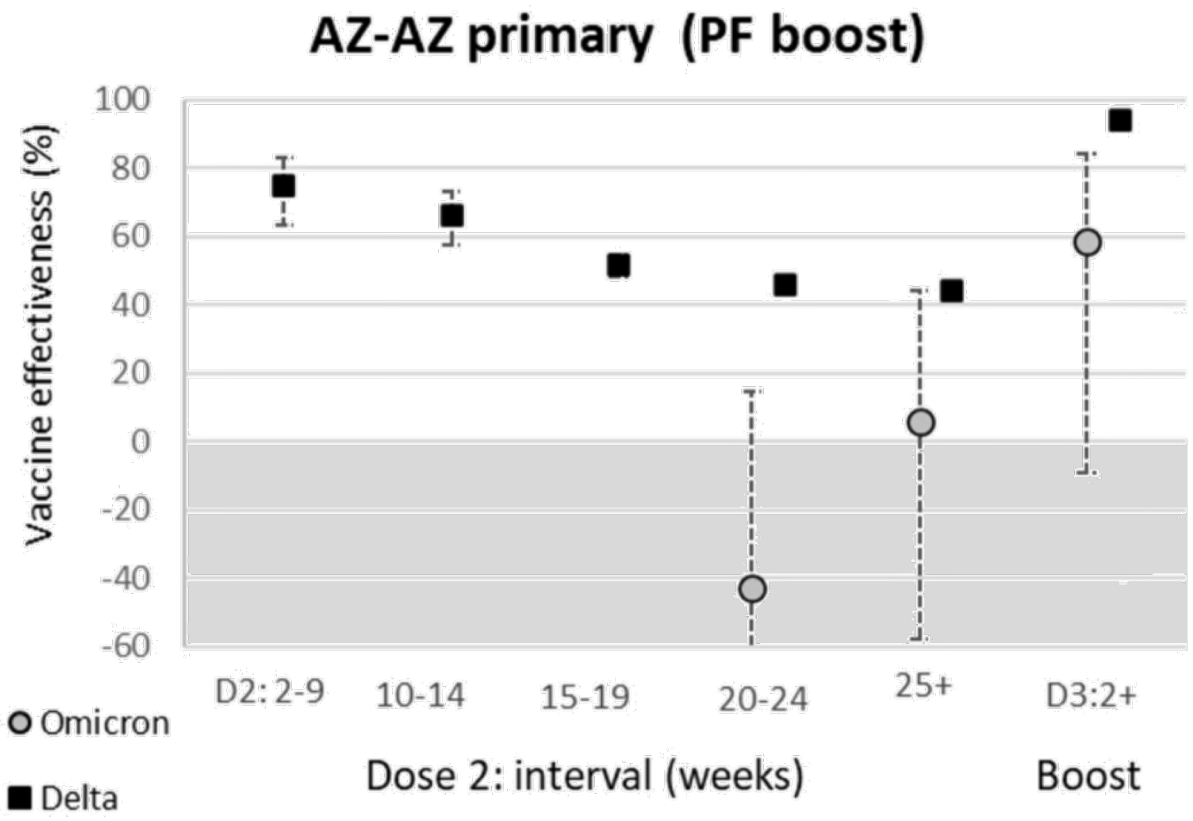
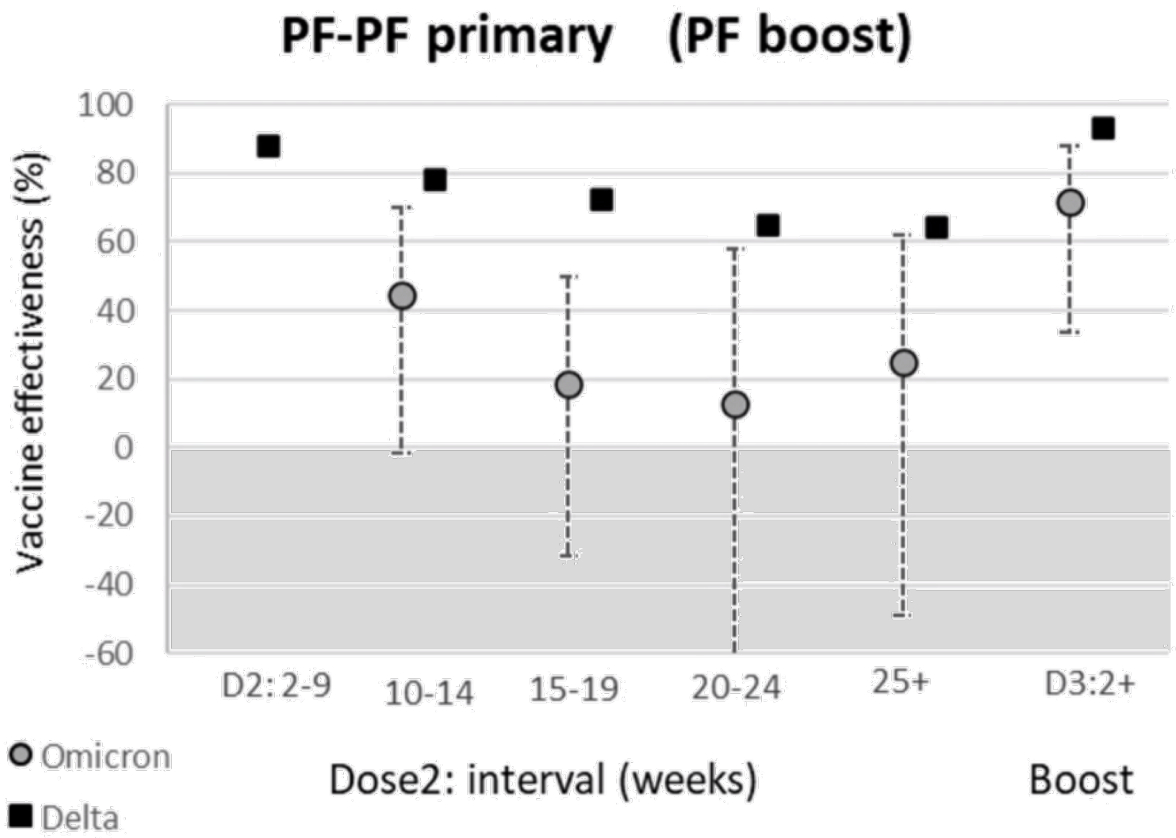
WARWICK
THE UNIVERSITY OF WARWICK

Matching to VE against Symptomatic Infection from UKHSA (from 9th Dec)





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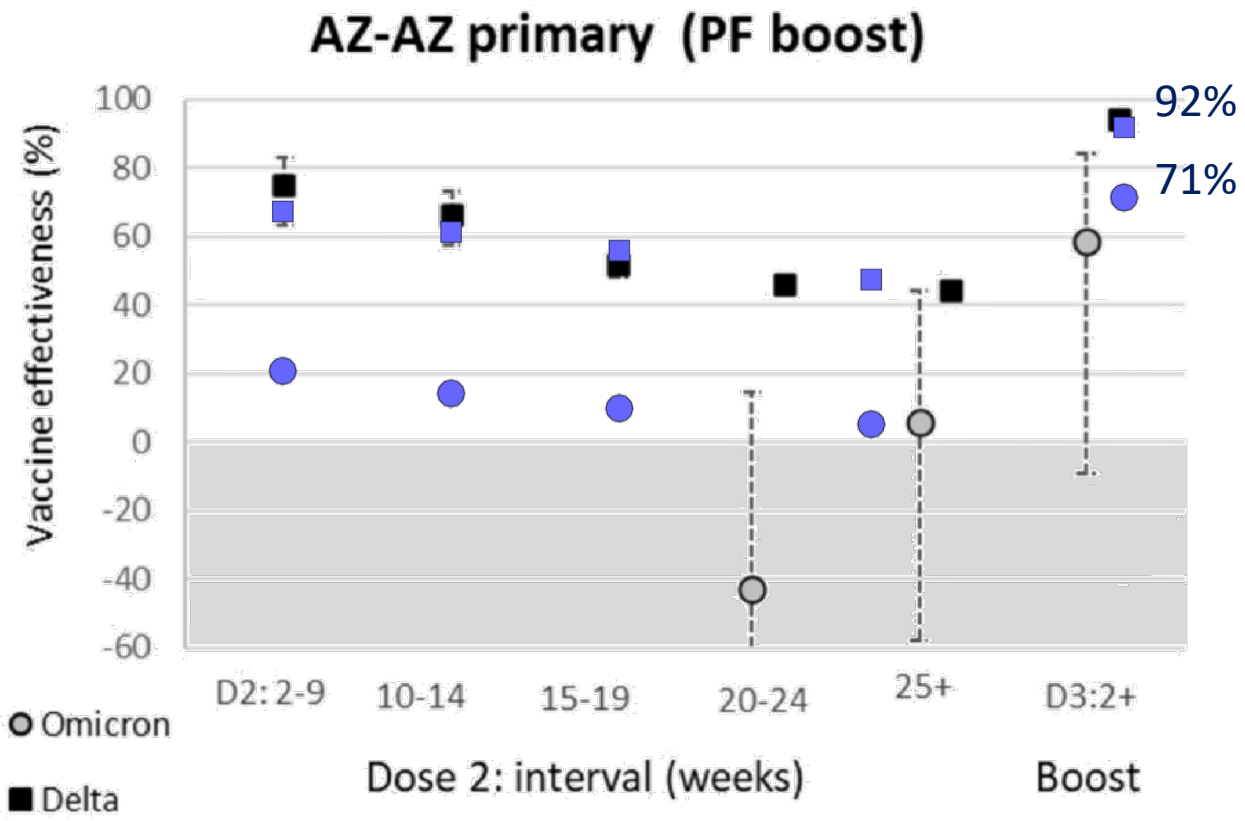
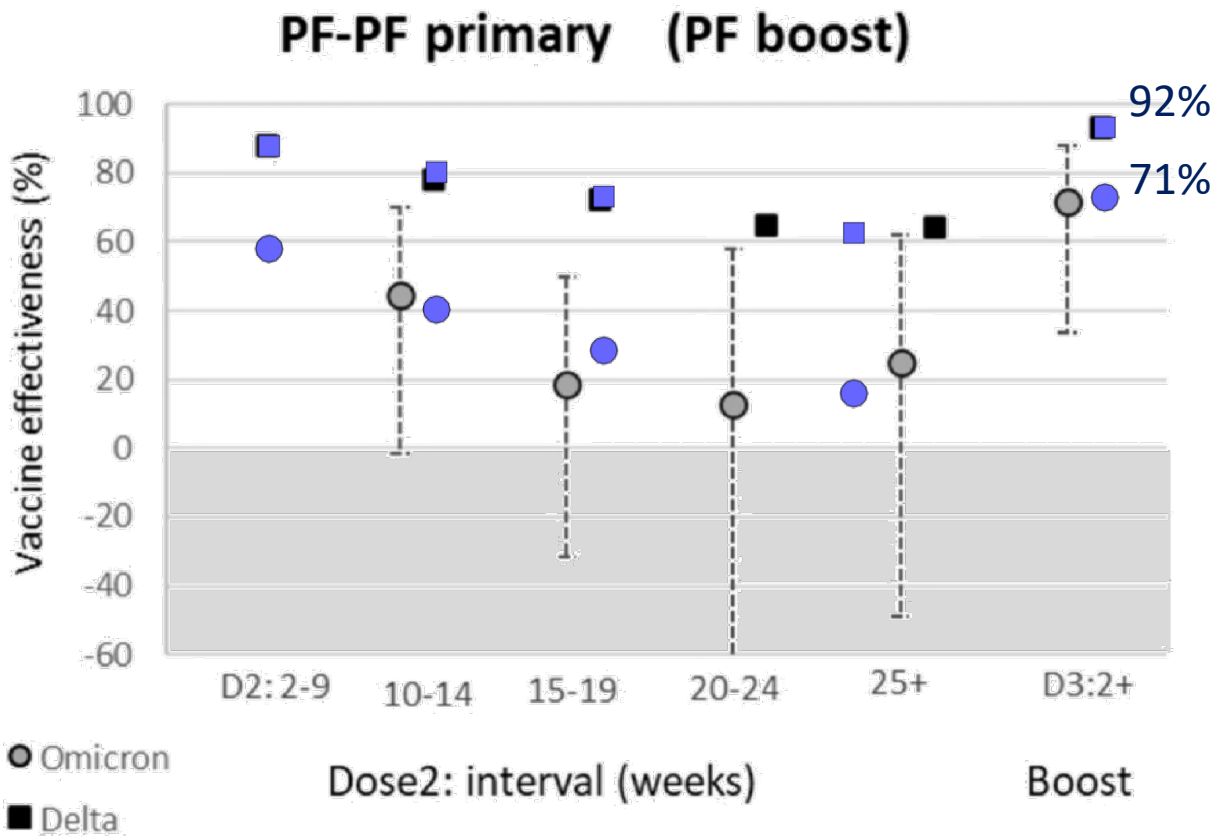
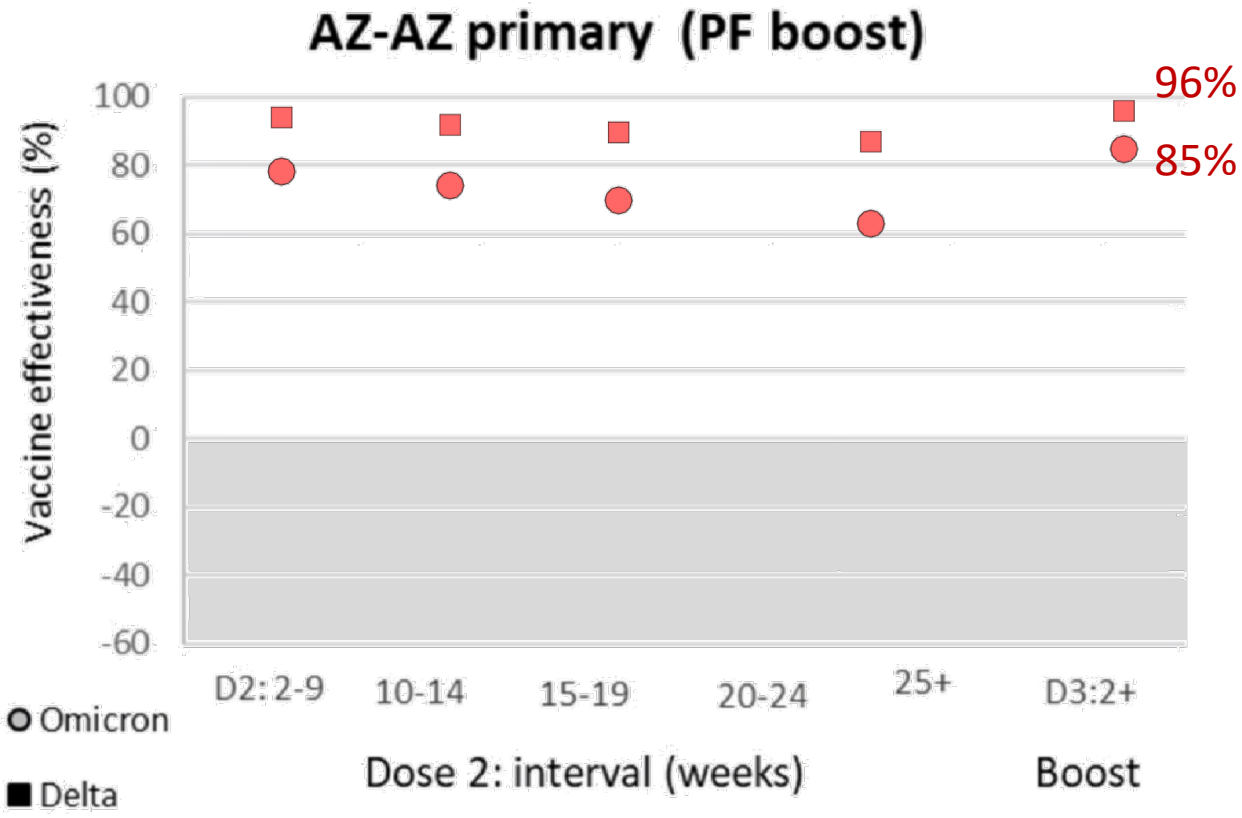
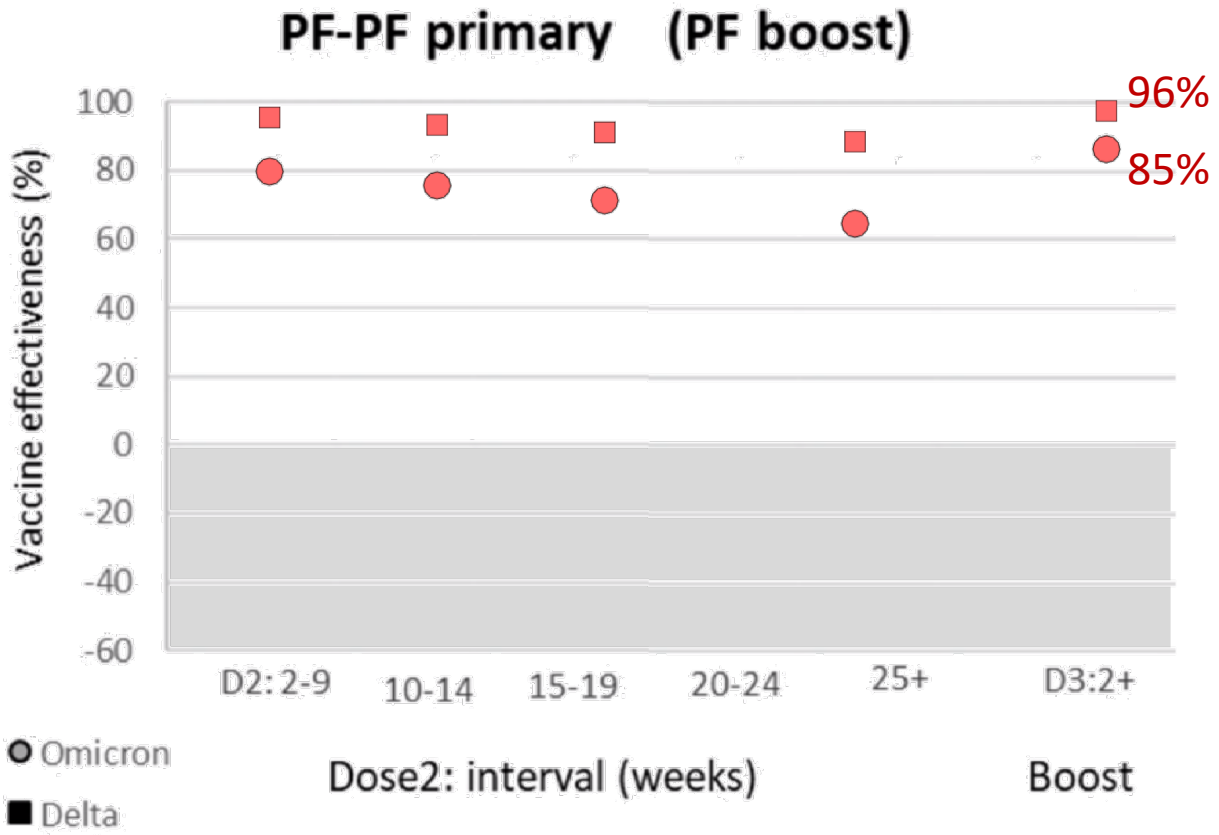




Matching to VE against Severe Disease (Hospital Admission)





Early UK Data: from 10th Dec '21

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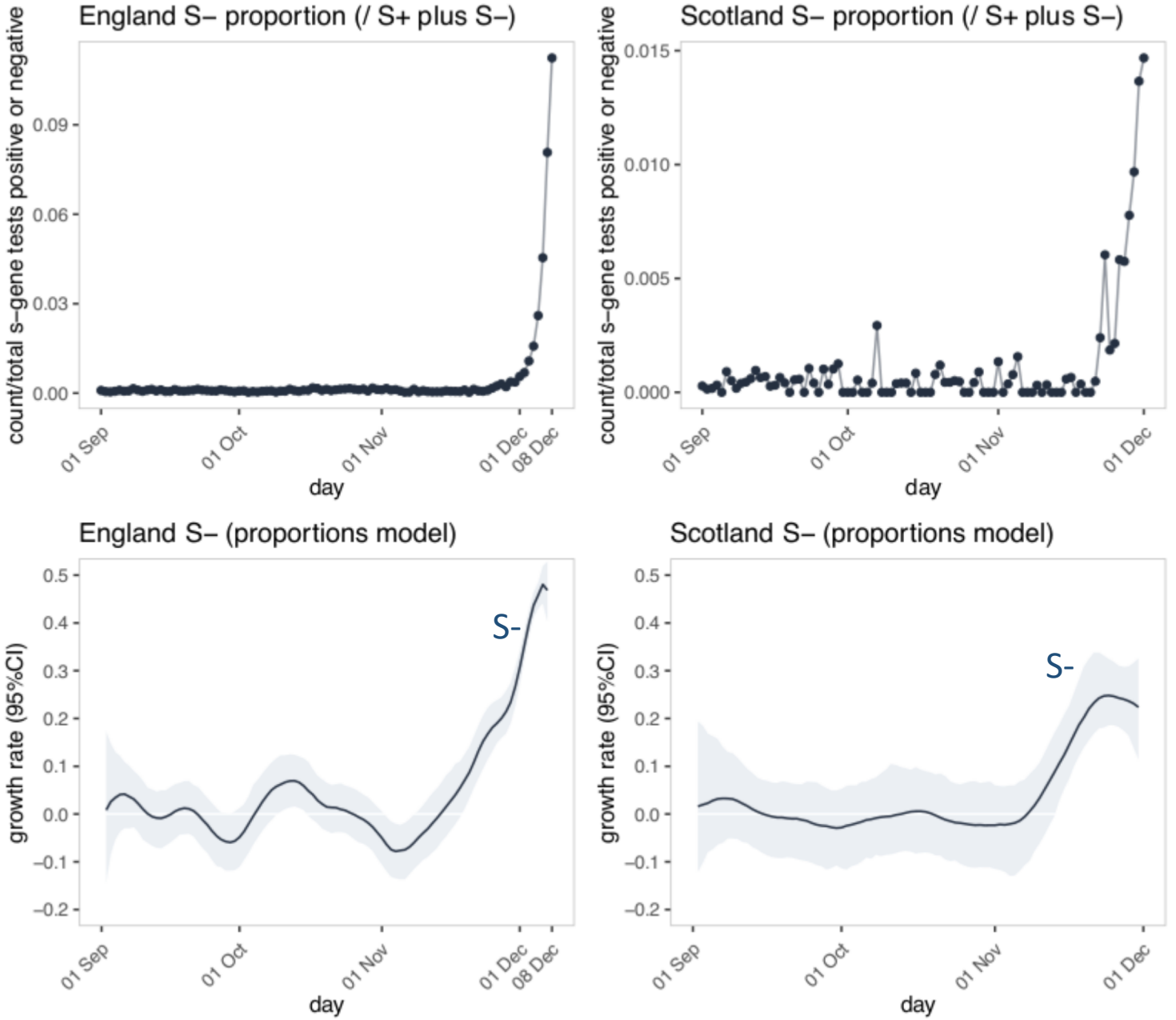
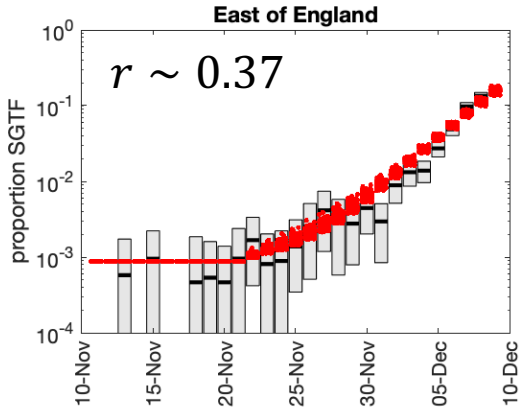
A better measure, that may account for some of the variability in TaqPath testing, is to use the proportion of all TaqPath results that return S-gene negative (compared to returning either positive or negative – removing unknowns & equivocals).

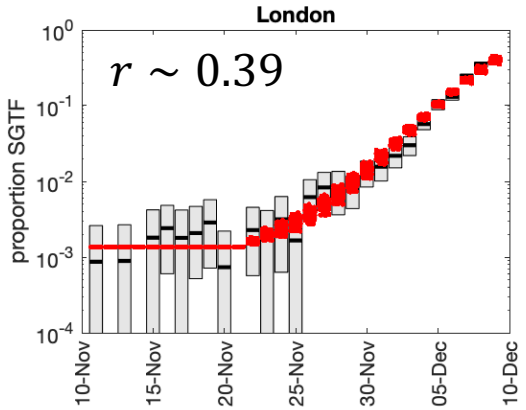
This again shows a rise in S-gene negative growth rate.

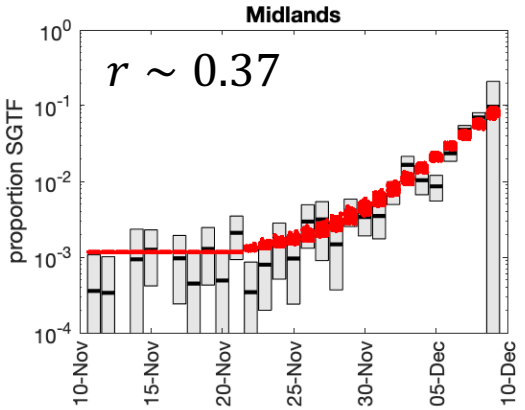
It is still unclear how much of this growth is attributable to imports rather than community transmission.

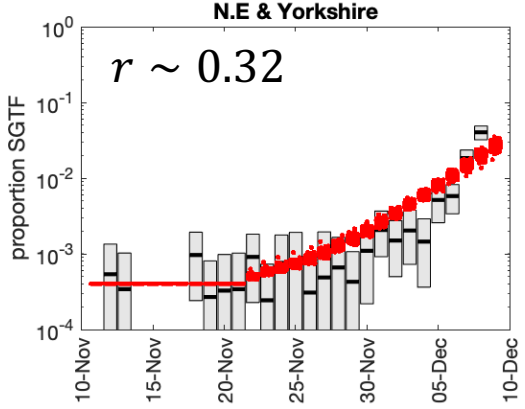


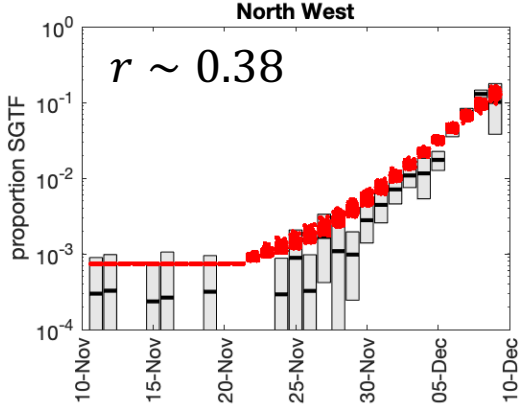
Fitting to SGTF data for Regions

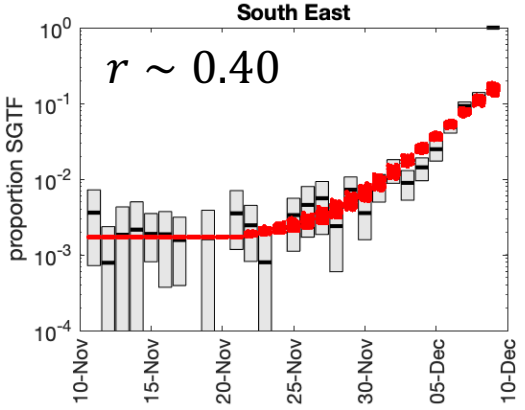


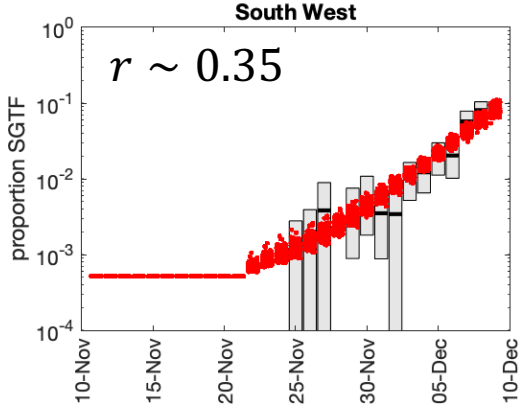


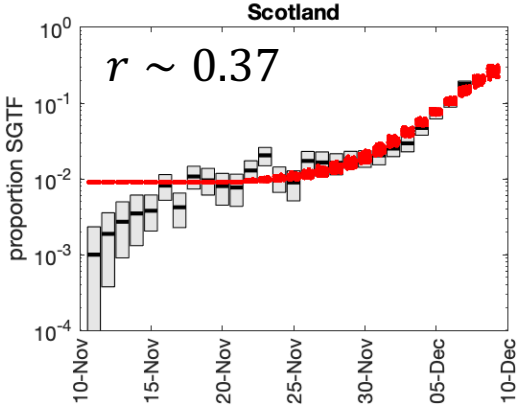










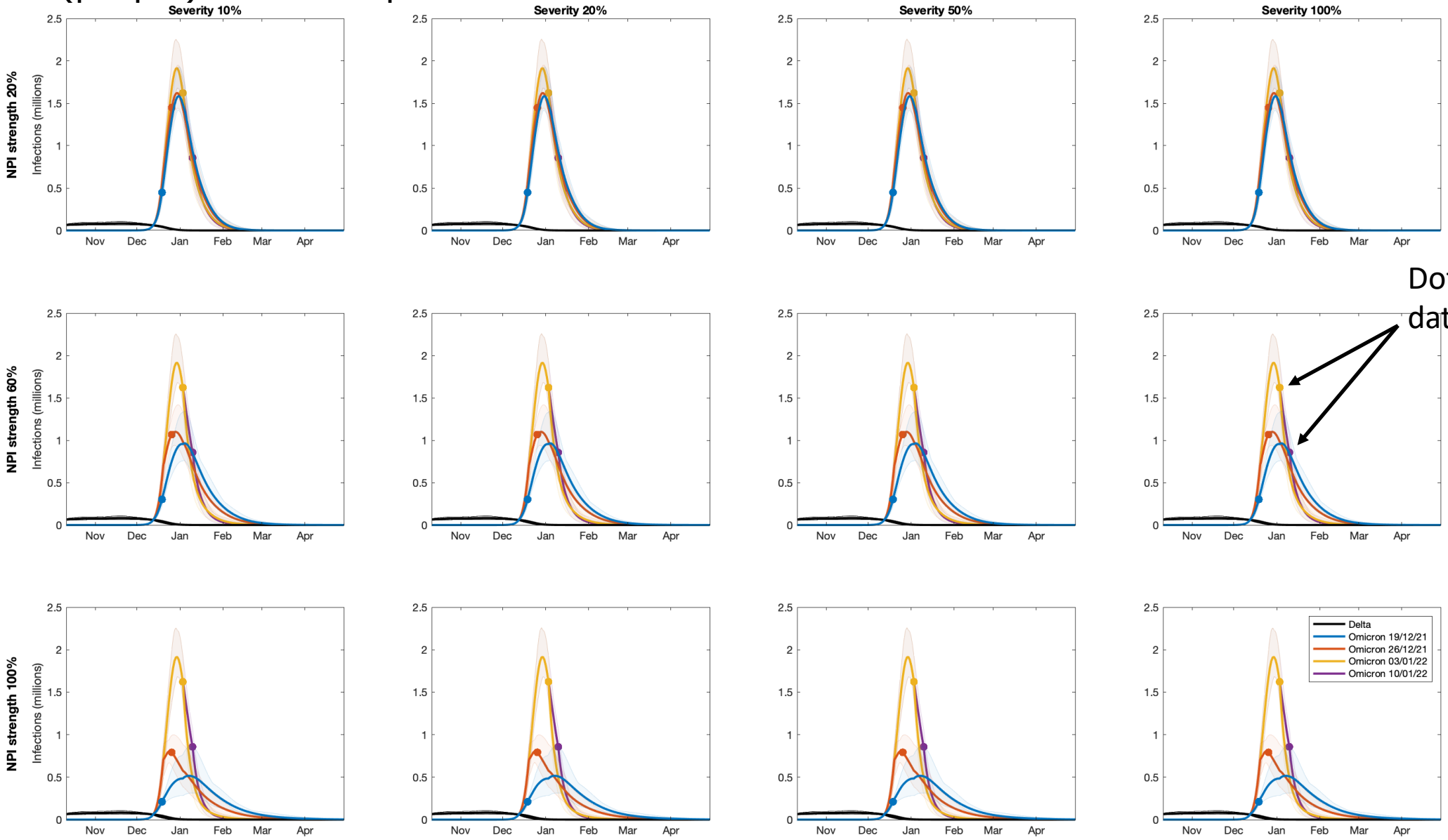


Now using SGTF data to fit the model independently to each region (outside of the normal MCMC routines).

This gives a relative growth rate of Omicron compared to Delta of 0.3-0.4.
Such that Omicron is 2-4 fold more transmissible than Delta.

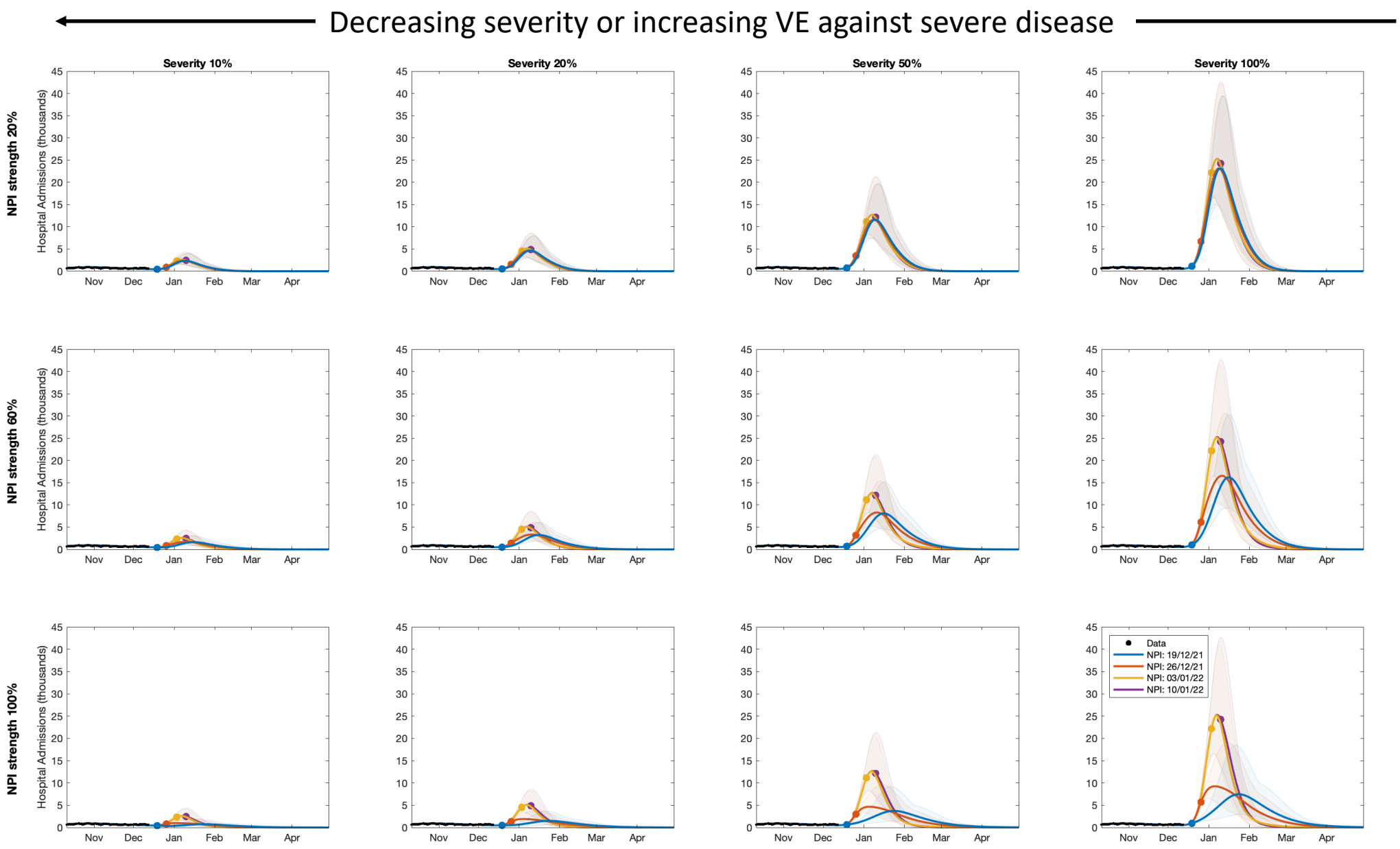
This is based on the UKHSA estimated VE against Omicron, and assuming past infection confers 90% protection against Omicron.

Projections of Infection – for different Severities (no impact on infection) and Different NPI strengths applied from 19th Dec (blue), 26th Dec (orange), 3rd January (yellow) 10th Jan (purple). NPIs are permanent



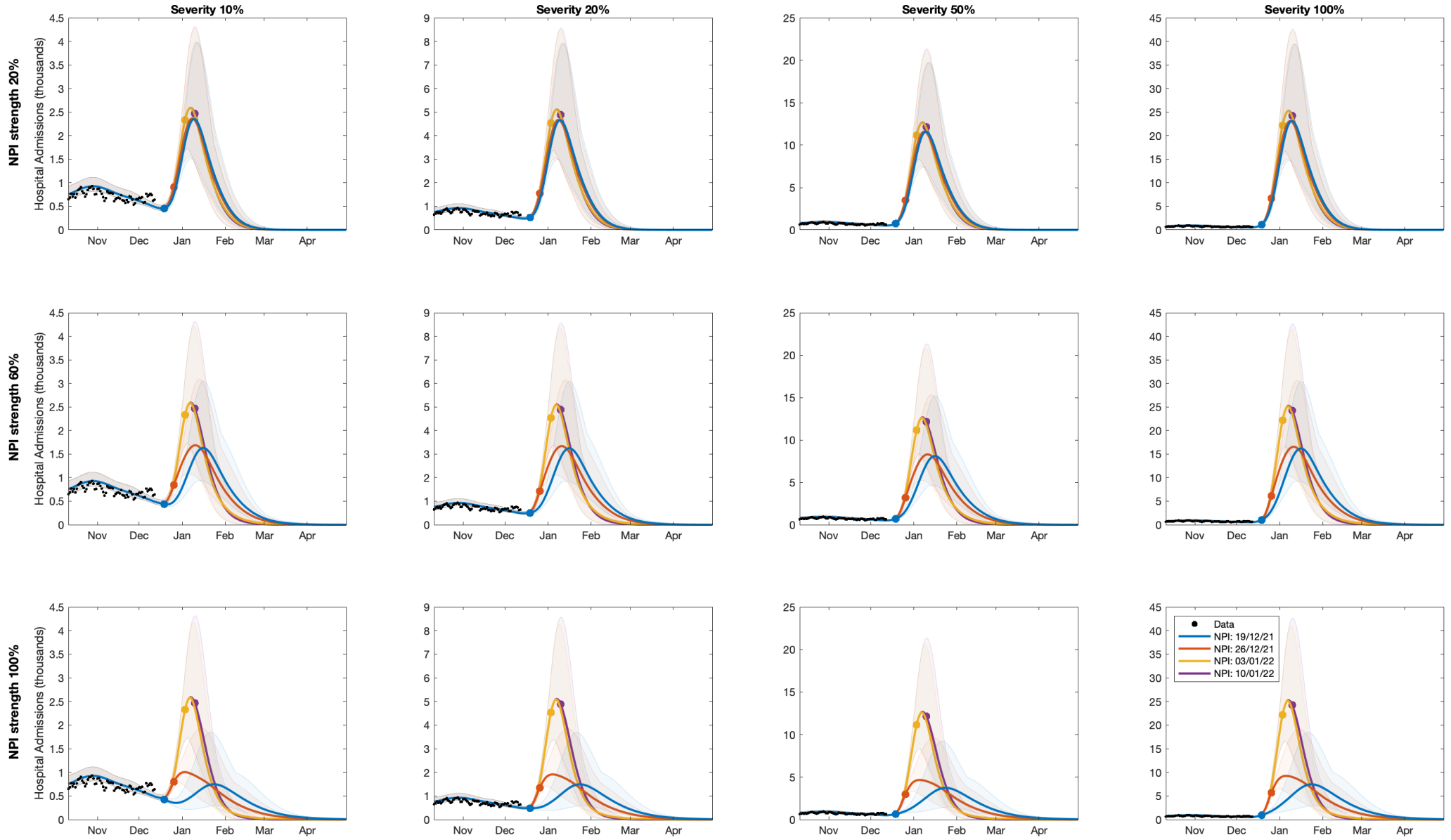
Dots show the date of controls

Projections of Hospital Admissions –NPIs are permanent



Projections of Hospital Admissions –NPIs are permanent

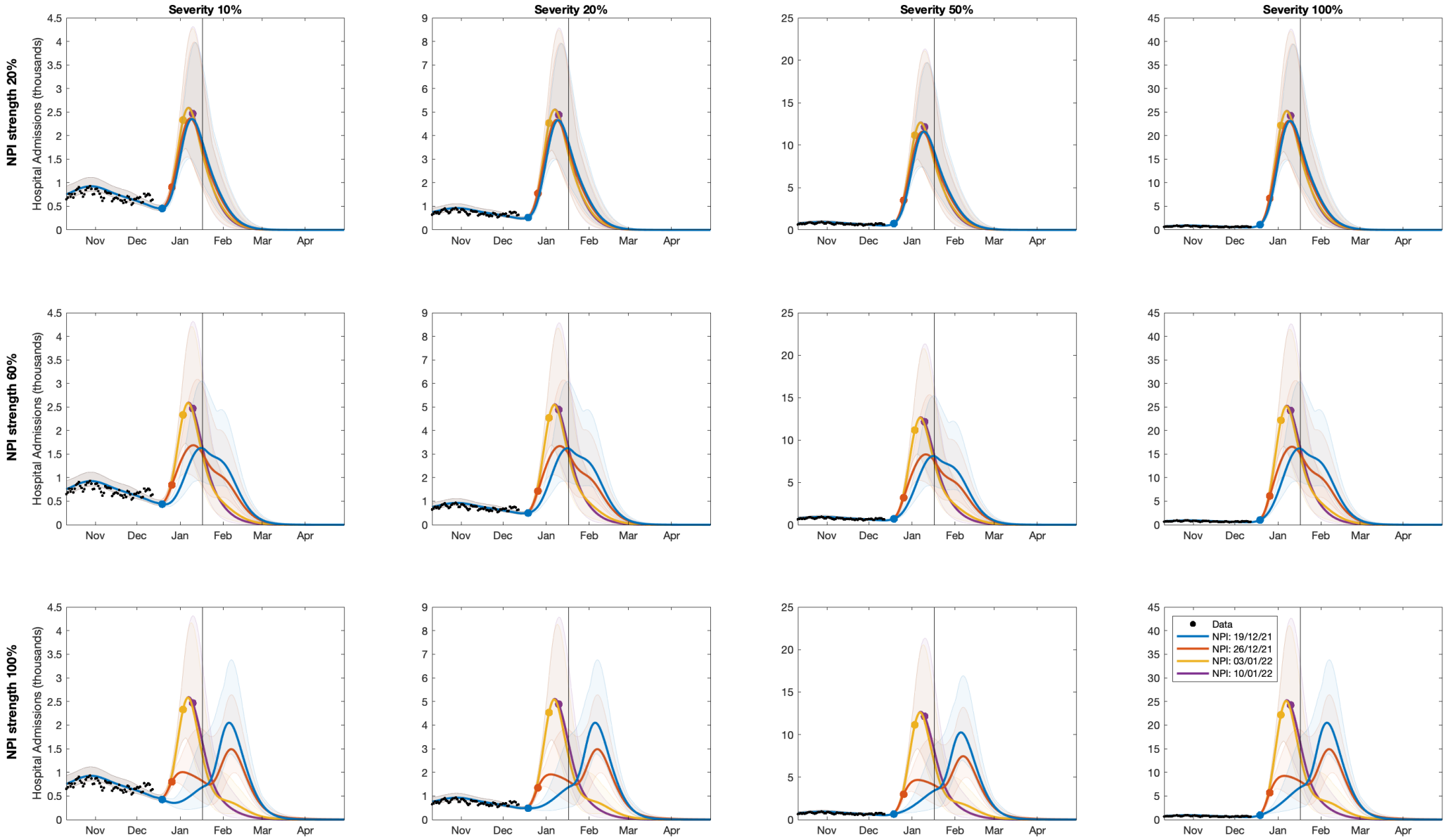
Decreasing severity or increasing VE against severe disease



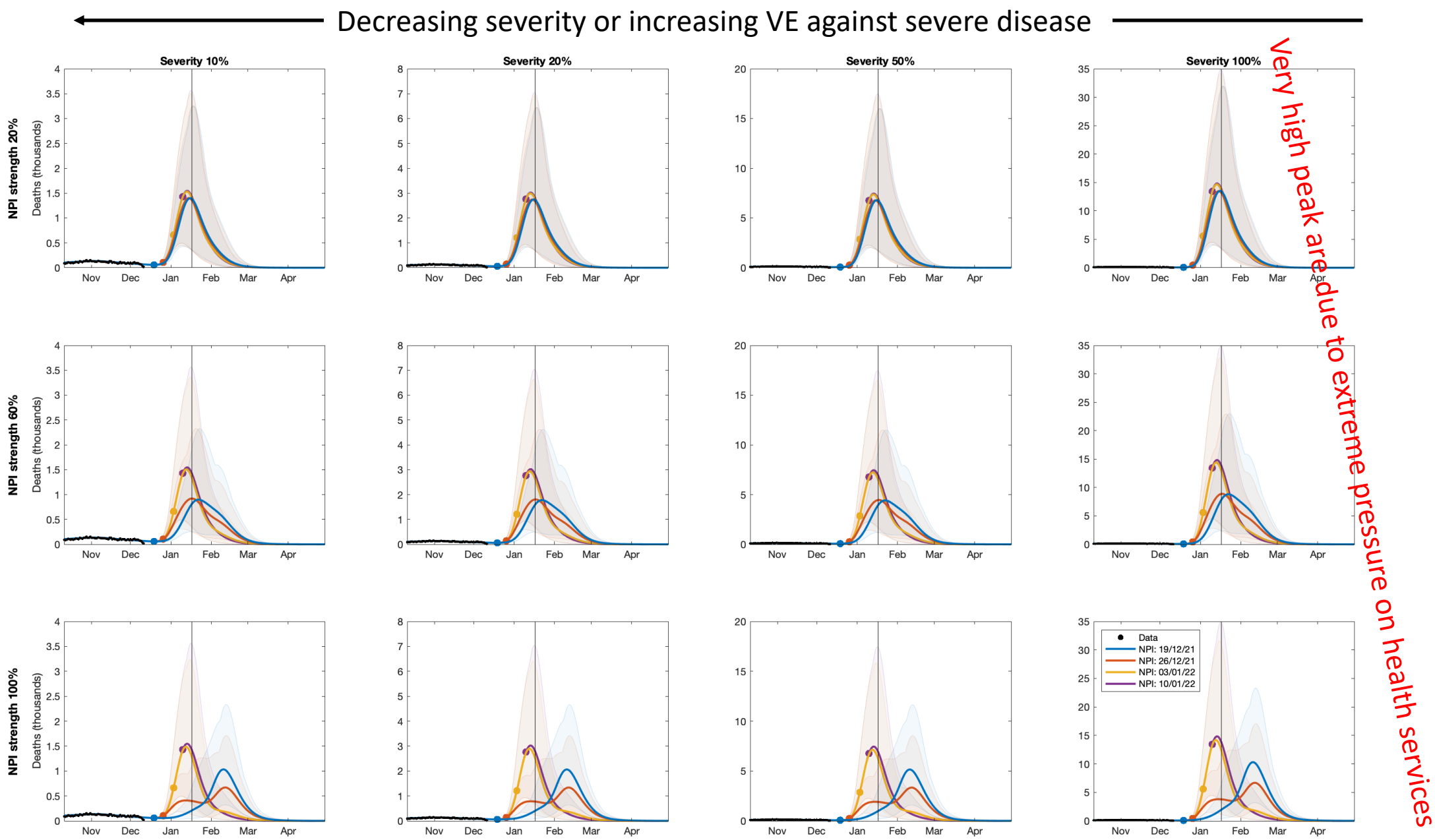
Different y-scales for clarity

Projections of Hospital Admissions – NPIs until booster roll-out complete (Jan 15th 2022)

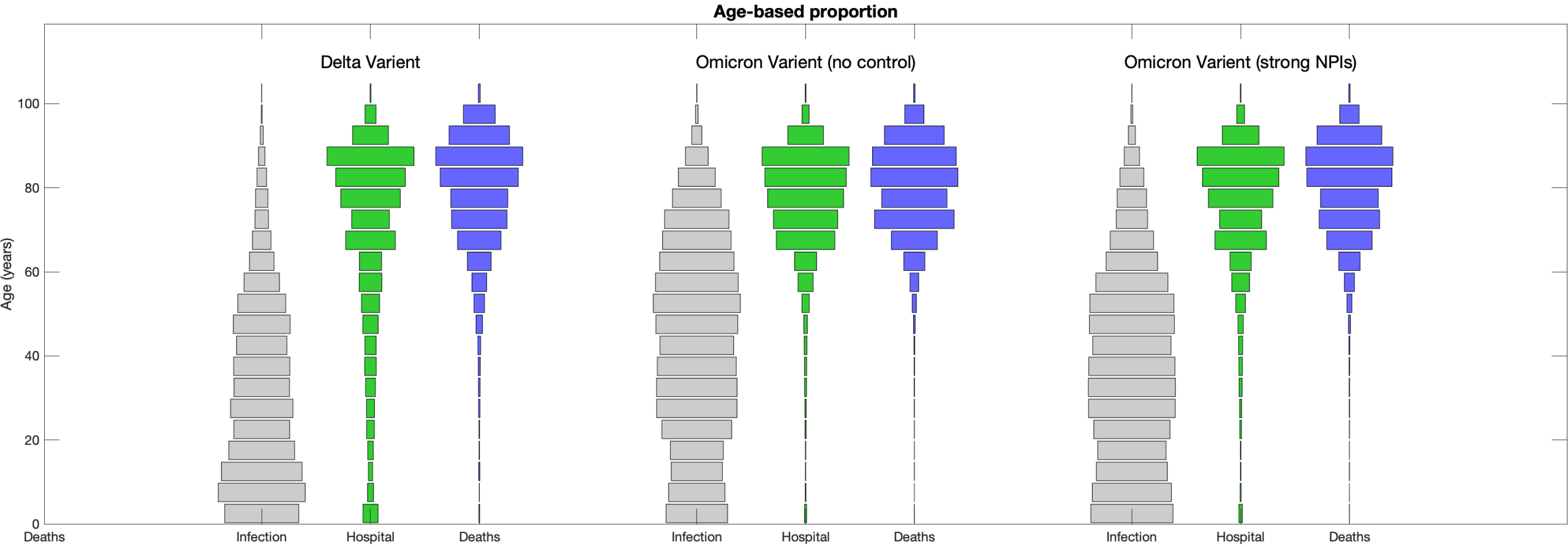
Decreasing severity or increasing VE against severe disease



Projections of Deaths – NPIs until booster roll-out complete (Jan 15th 2022)



Age-based proportions of infection, hospital admissions and deaths



Thoughts and Caveats

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1. Warwick model is now directly matching to SGTF data, which is showing extremely rapid growth ($r \sim 0.4$) in most regions of the UK -- although SGTF data is of variable quality.
2. We have assumed 85% vaccine efficacy against hospital admissions following the booster dose, and have assumed this is long-lasting. We have assumed 6million individuals boosted per week.
3. The high growth rates, if associated with similar severity to Delta, leads to very high hospital admissions at the January peak, even with strong NPI controls enacted quickly.
4. The complete release of NPIs on 15th January is projected to trigger a subsequent wave, but this can be mitigated if protection measures are released gradually.
5. Data on hospital admissions with Omicron is severely lagged, which hampers assessment of severity and estimates of associated vaccine efficacy.
6. Estimation of both hospital admissions and deaths are confounded by unknown severity of Omicron and unknown VE (second-dose and boosters) against severe disease. We have explored a range of Severities, from as severe as Delta to just 10%.