

Protection provided by covid-19 vaccines and previous infection against the Omicron variant

Supplementary Material 2 – Results of Statistical Estimation

February 26, 2022, revised September 1, 2022

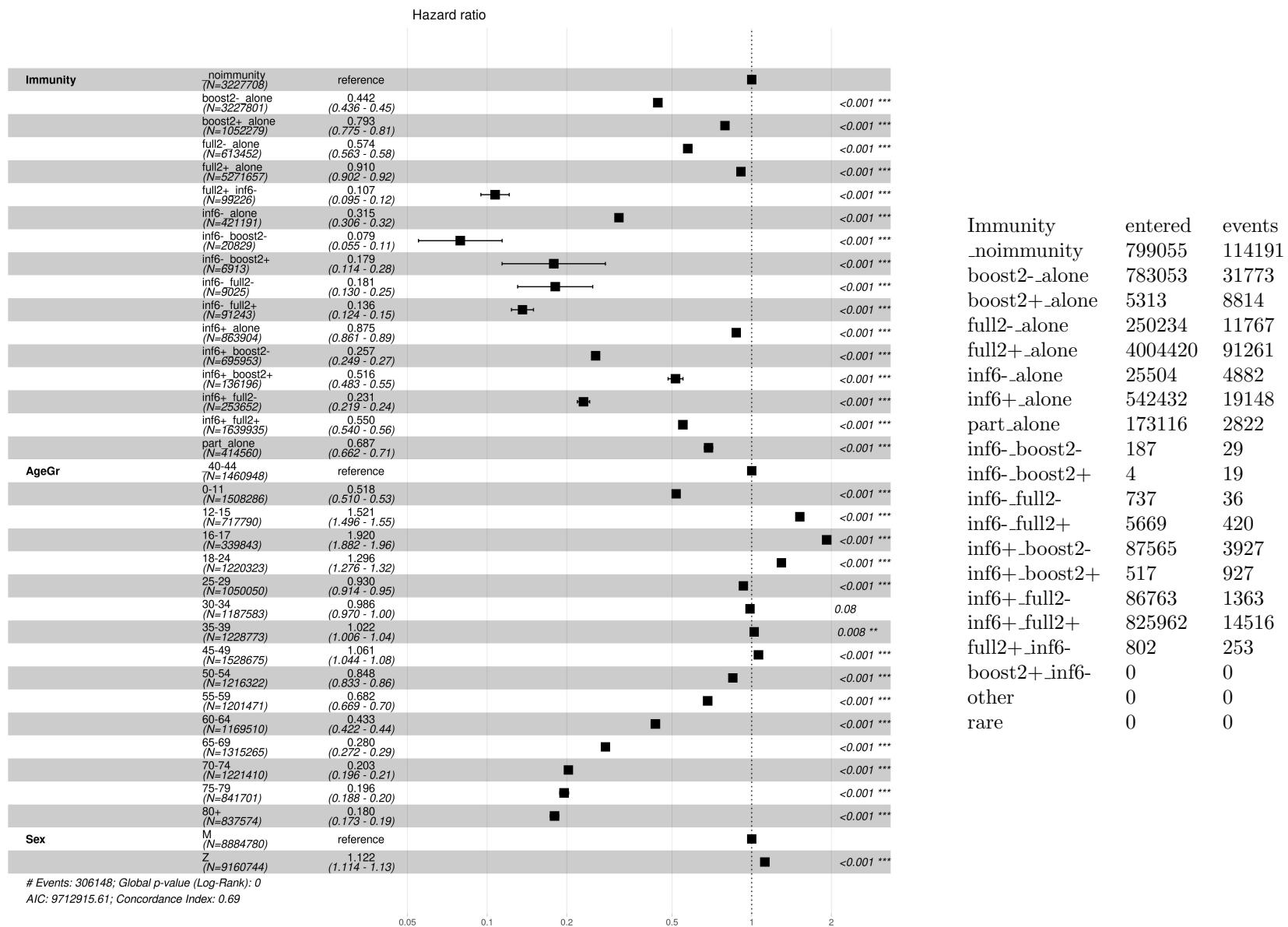
This material contains results of the analyses by Cox Regression (1–14,20) and by Logistic Regression (15–19).

Cox Regression The report from a Cox regression contains a forest plot and a descriptive statistic of involved covariates. The forest plot displays the estimates of HR's corresponding to individual categories of the covariates and their CI's. Below each category name, the number N of input records containing the category is displayed. For each covariate other than AgeGr and Sex, there is a table of categories with the number of subjects from the IHIS database finding themselves in the category at time zero (column Entered) and the number of individuals, suffering the outcome while being in the category (column Events).¹

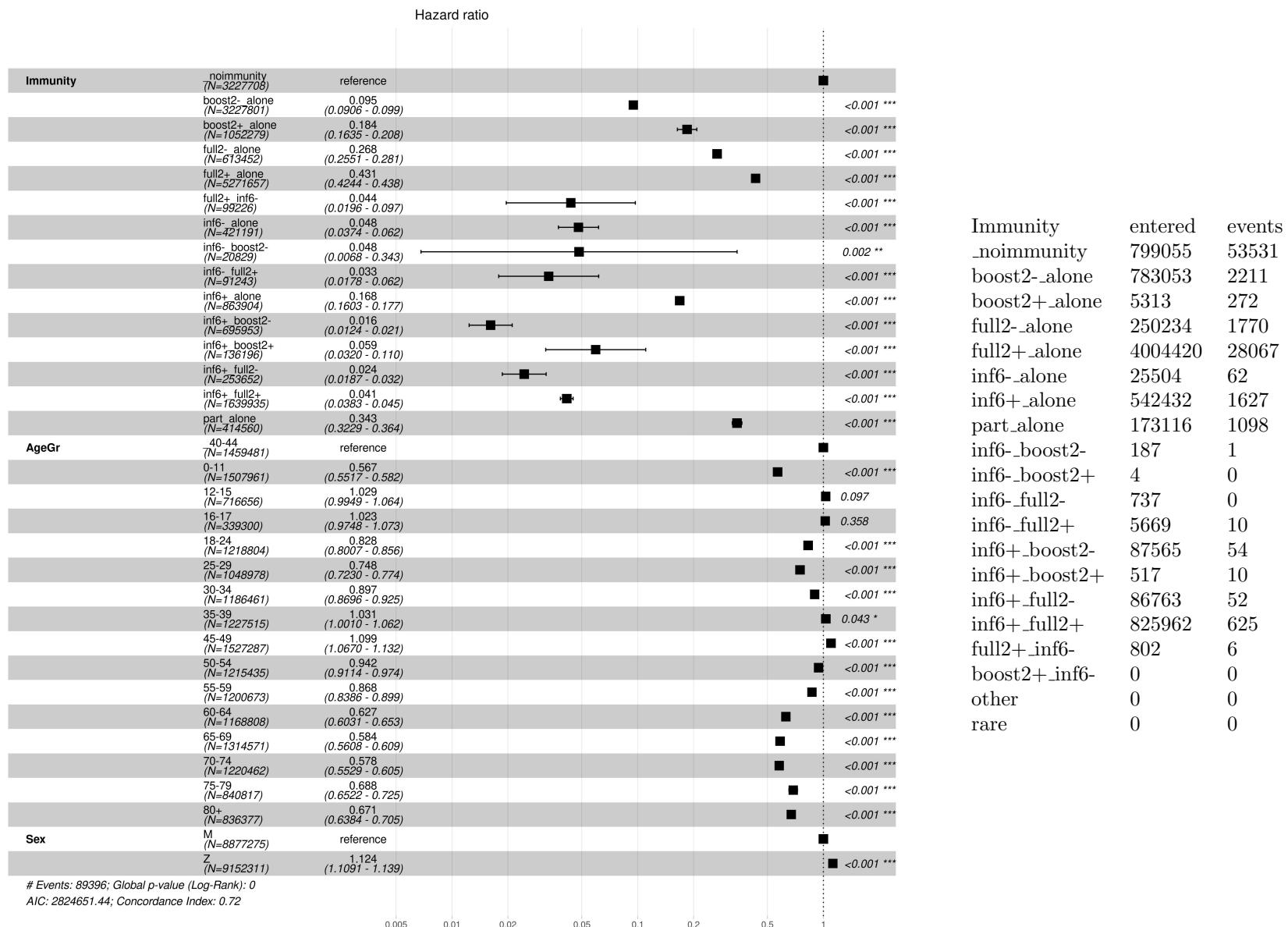
Logistic Regression The results of logistic regressions include forest plots of individual covariates and, in particular, the odds ratios of the Omicron and the Delta variant (row Variant).

¹It can happen that the Entered value is less than the Events one. For instance, as boosters started to be administrated as late as in October 21, only a small number found themselves in the category `boost2+a lone` at the beginning of the study. At the end of the period, on the other hand, there were more than one million people in the category (more than 60 days from the booster), so the number of event could be higher.

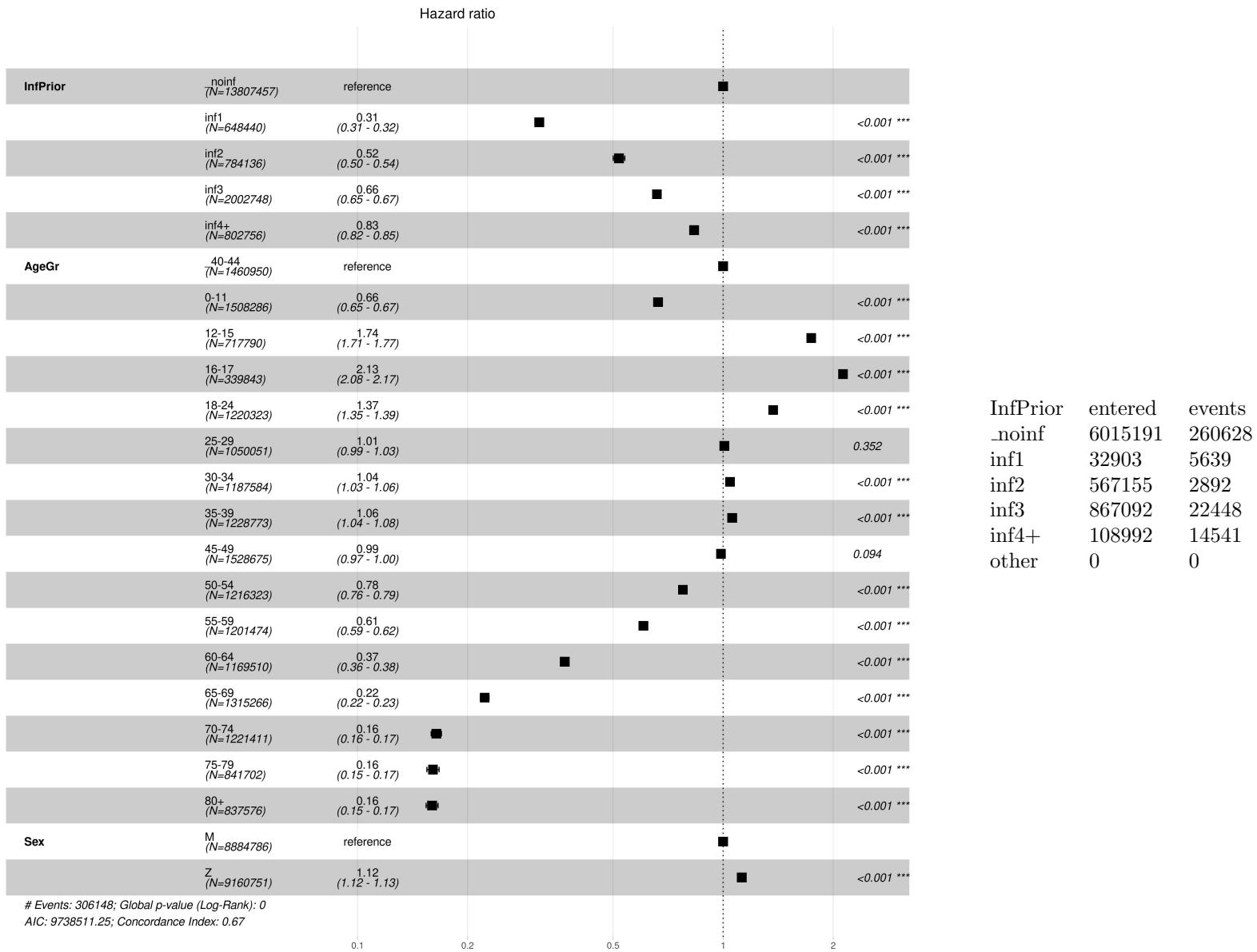
1 Infections – Omicron



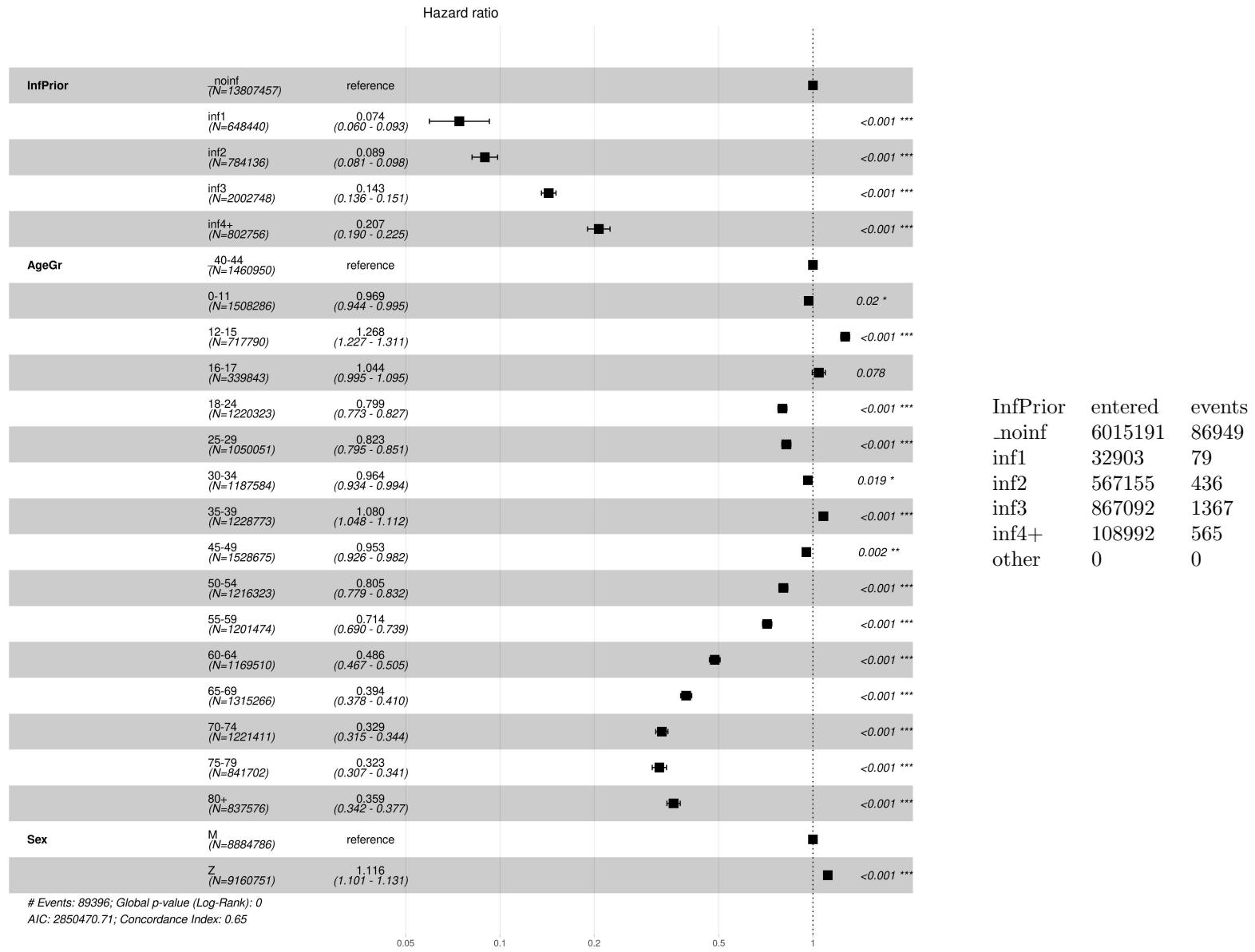
2 Infections – Delta



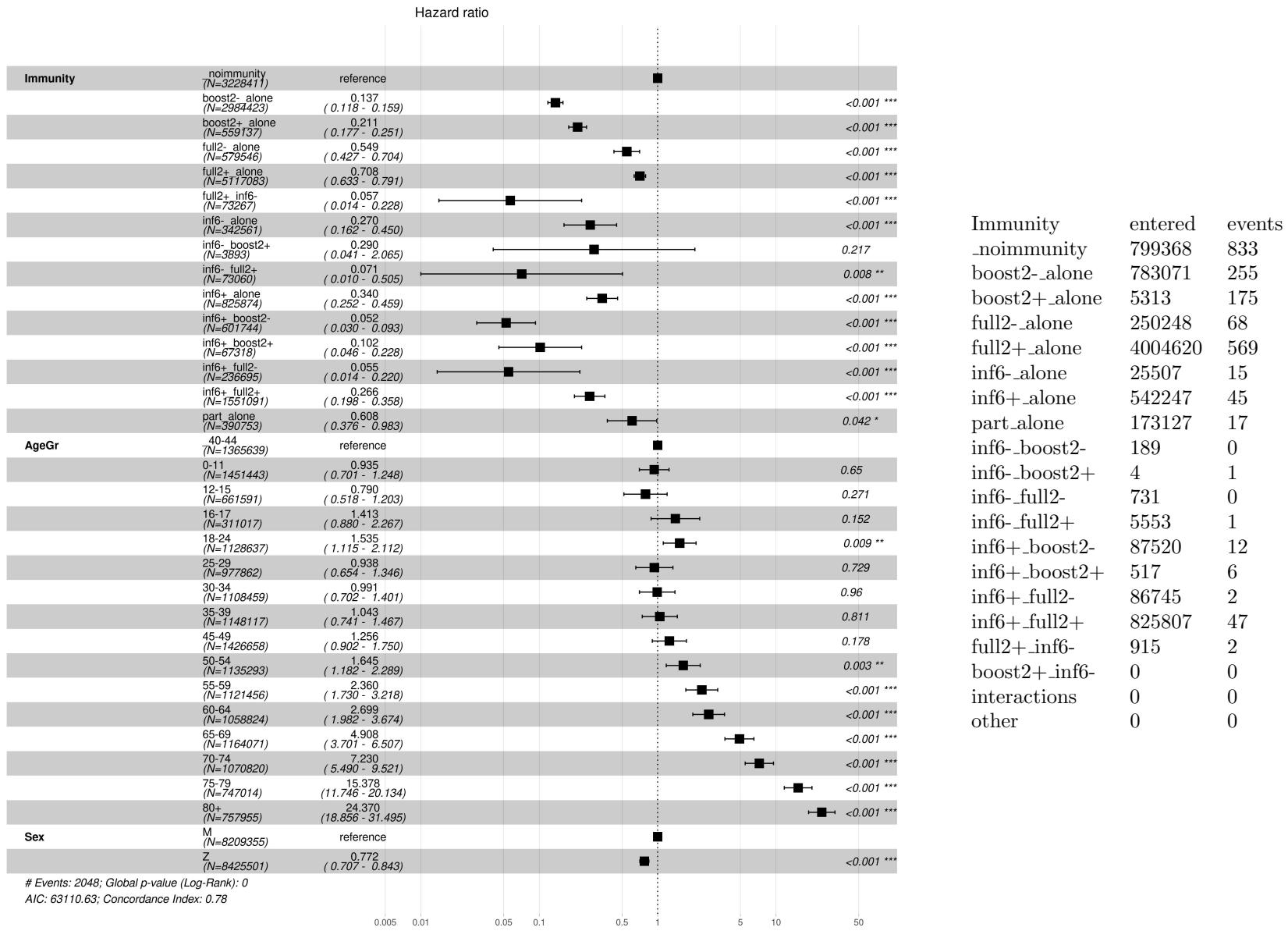
3 Protection by Infection – Omicron



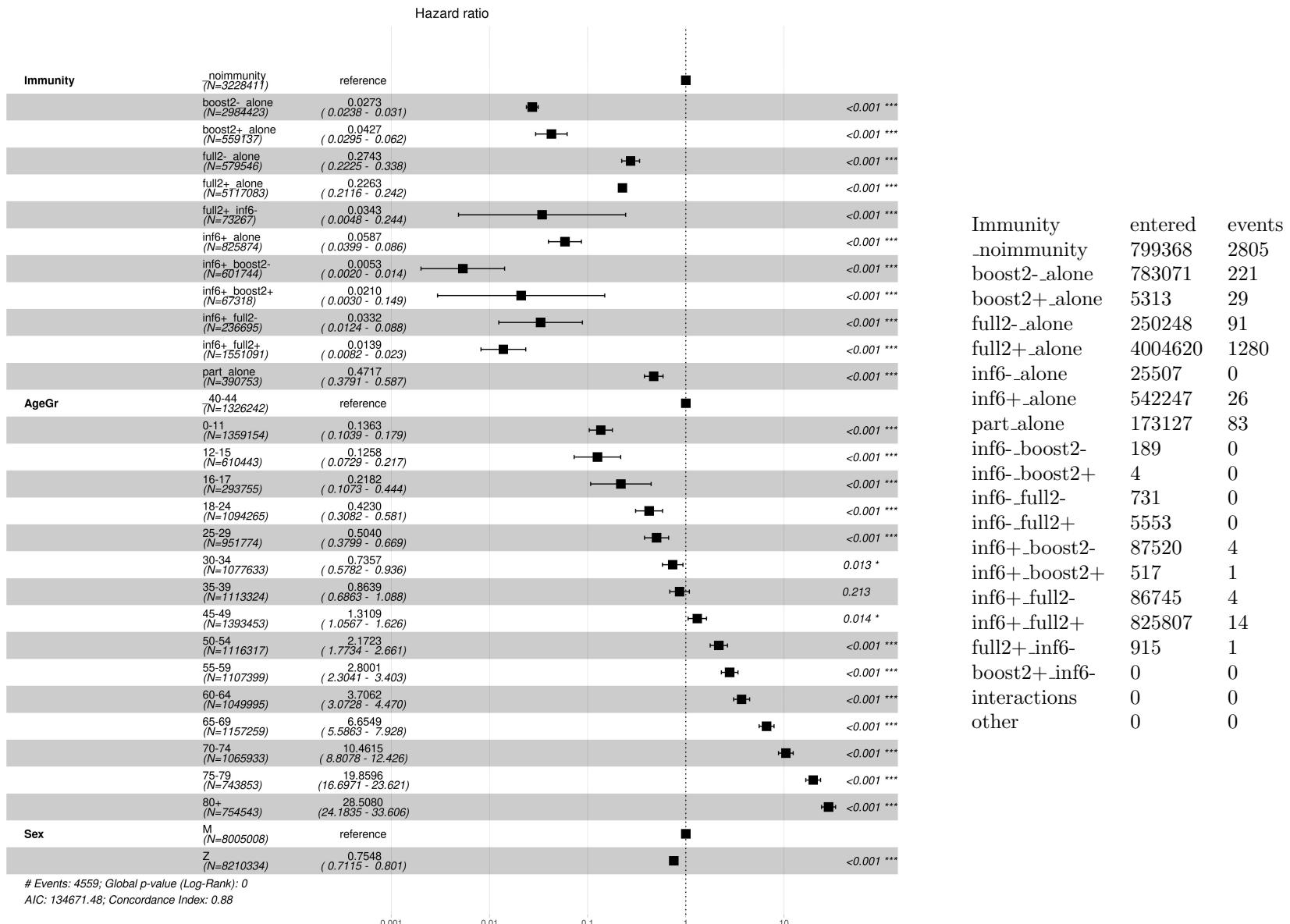
4 Protection by Infection – Delta



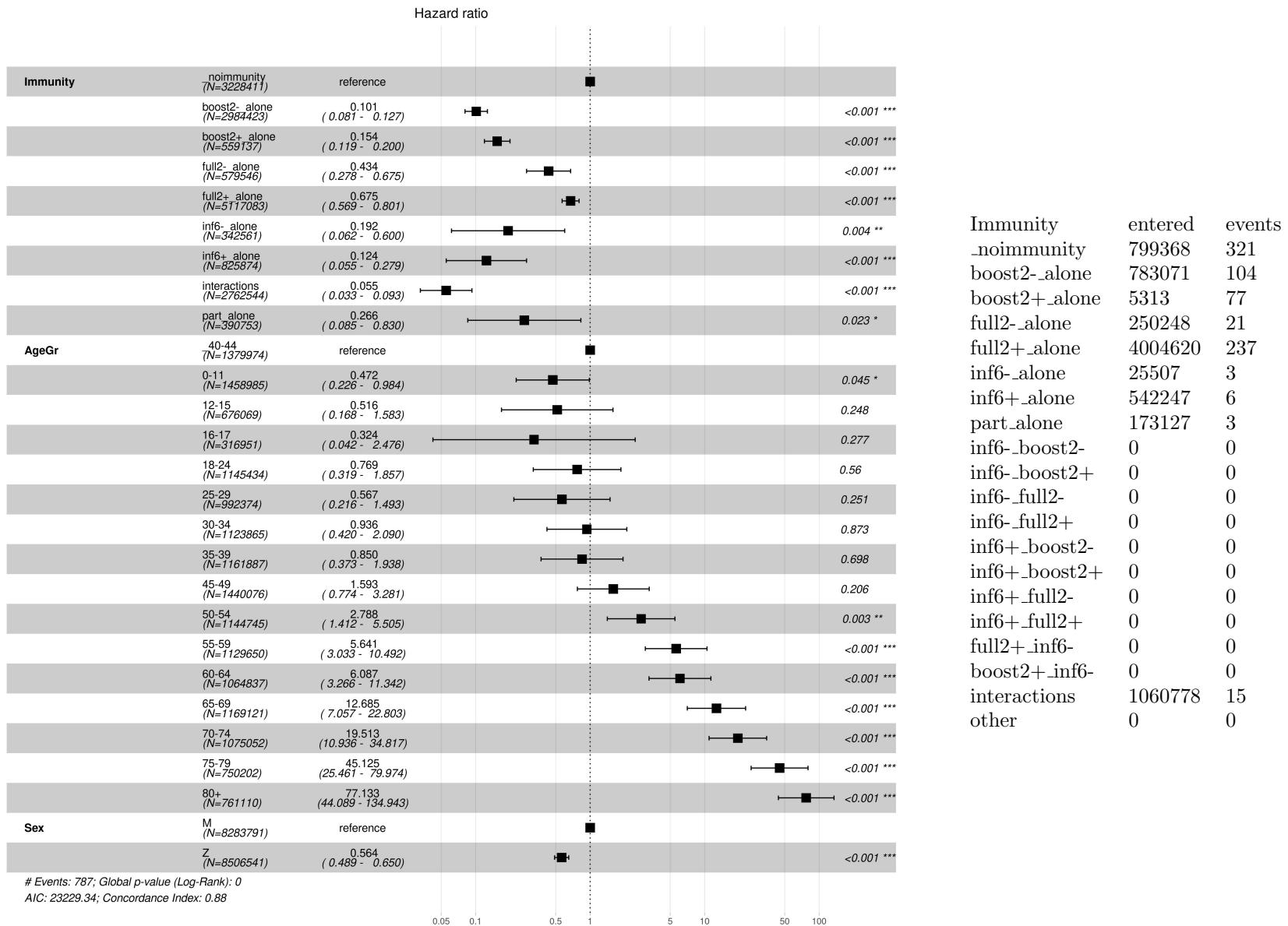
5 Hospitalizations – Omicron



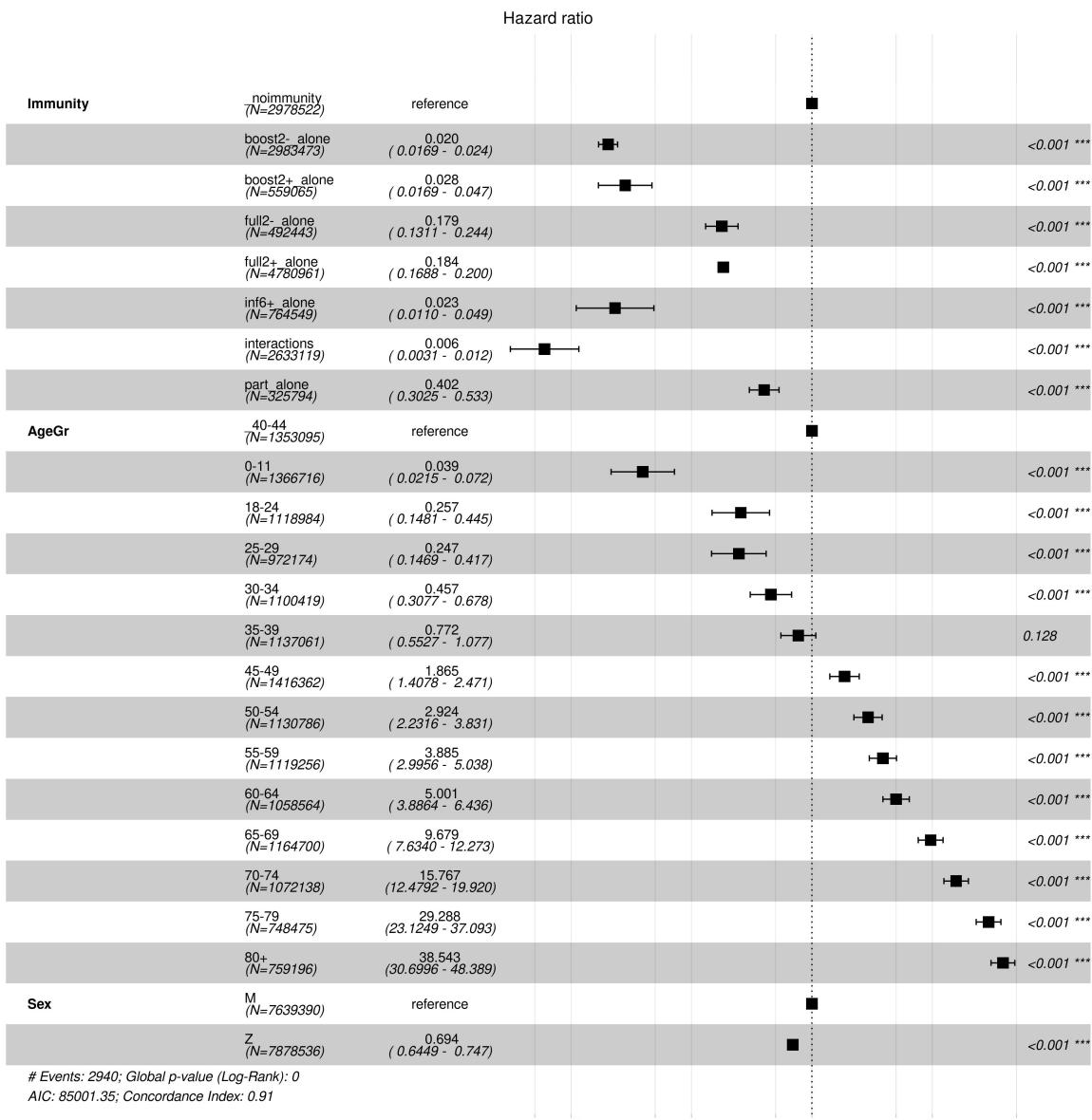
6 Hospitalizations – Delta



7 Oxygen therapy – Omicron

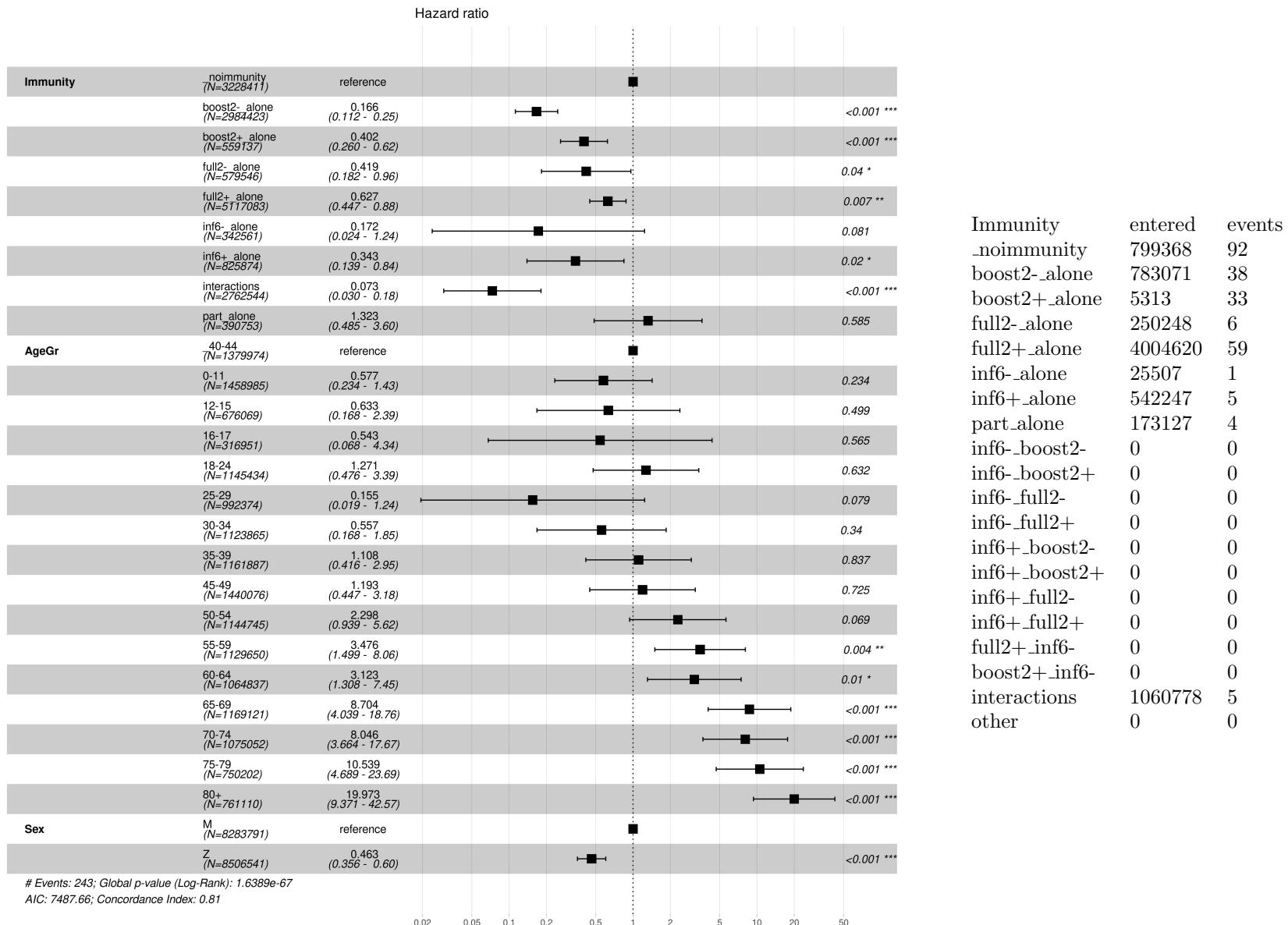


8 Oxygen therapy – Delta

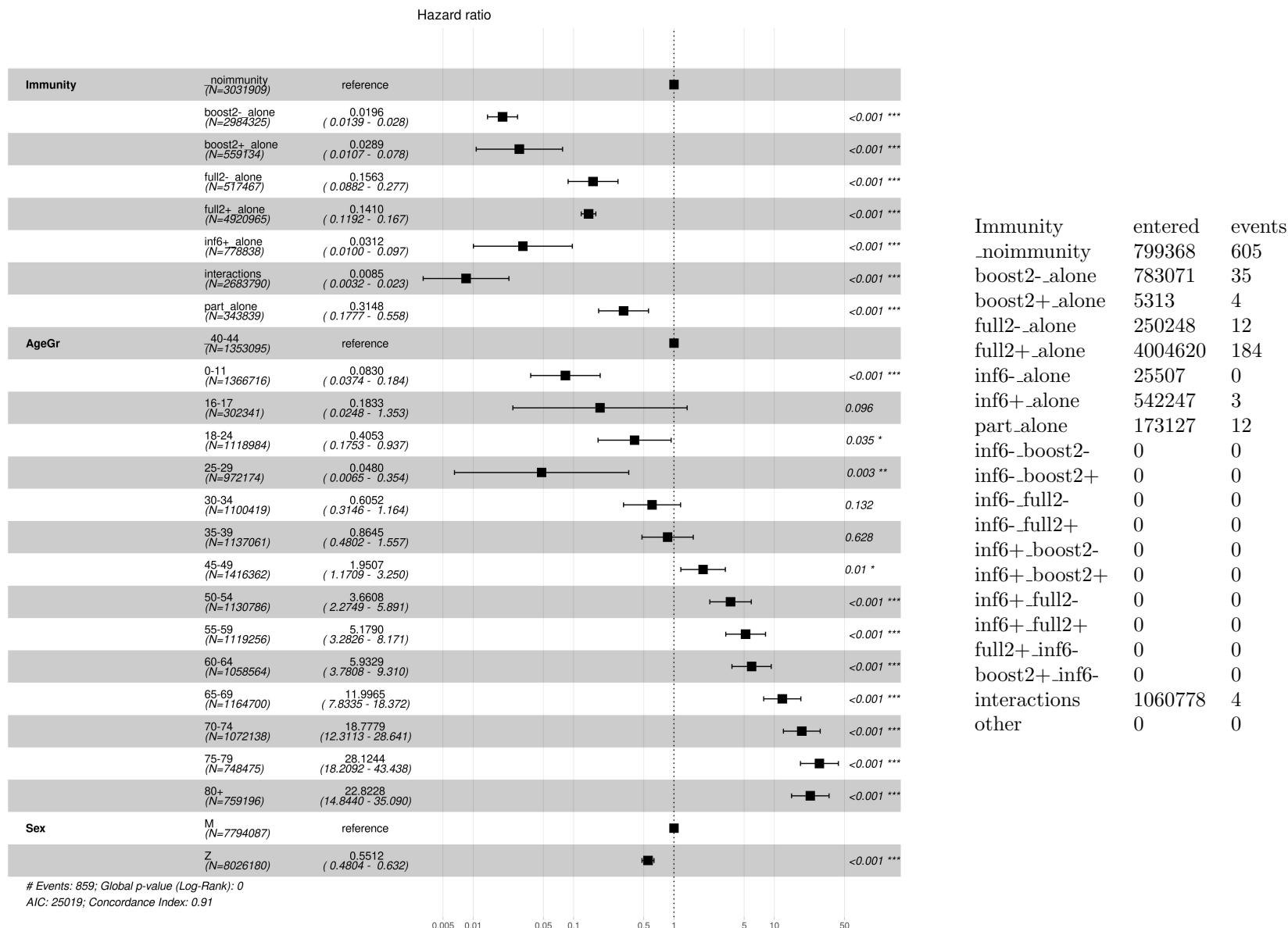


| Immunity | entered | events |
|---------------|---------|--------|
| _noimmunity | 799368 | 1939 |
| boost2-alone | 783071 | 126 |
| boost2+_alone | 5313 | 15 |
| full2-alone | 250248 | 41 |
| full2+_alone | 4004620 | 754 |
| inf6-alone | 25507 | 0 |
| inf6+_alone | 542247 | 7 |
| part-alone | 173127 | 49 |
| inf6-boost2- | 0 | 0 |
| inf6-boost2+ | 0 | 0 |
| inf6_full2- | 0 | 0 |
| inf6_full2+ | 0 | 0 |
| inf6+_boost2- | 0 | 0 |
| inf6+_boost2+ | 0 | 0 |
| inf6+_full2- | 0 | 0 |
| inf6+_full2+ | 0 | 0 |
| full2+_inf6- | 0 | 0 |
| boost2+_inf6- | 0 | 0 |
| interactions | 1060778 | 9 |
| other | 0 | 0 |

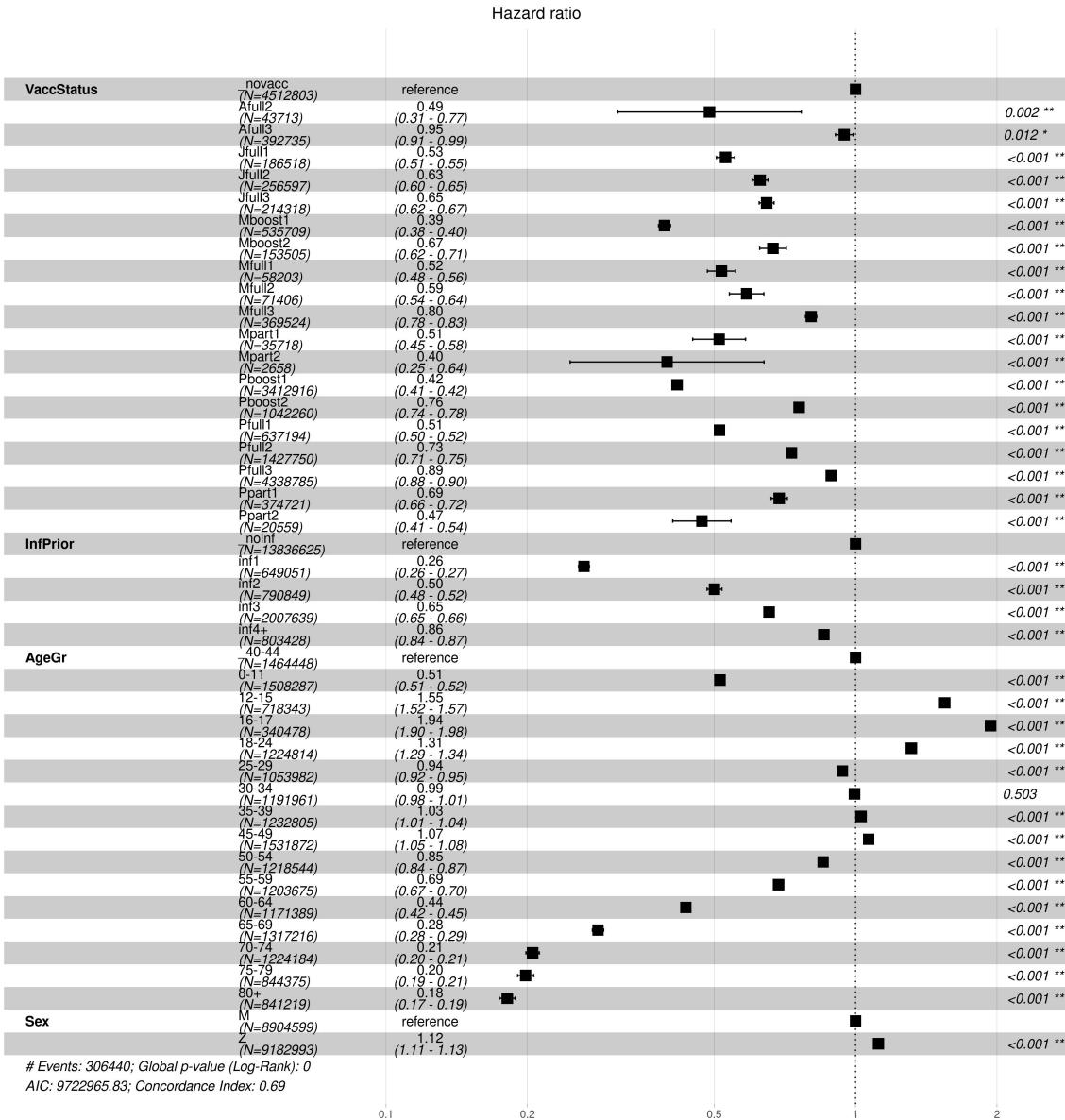
9 ICU therapy – Omicron



10 ICU therapy – Delta

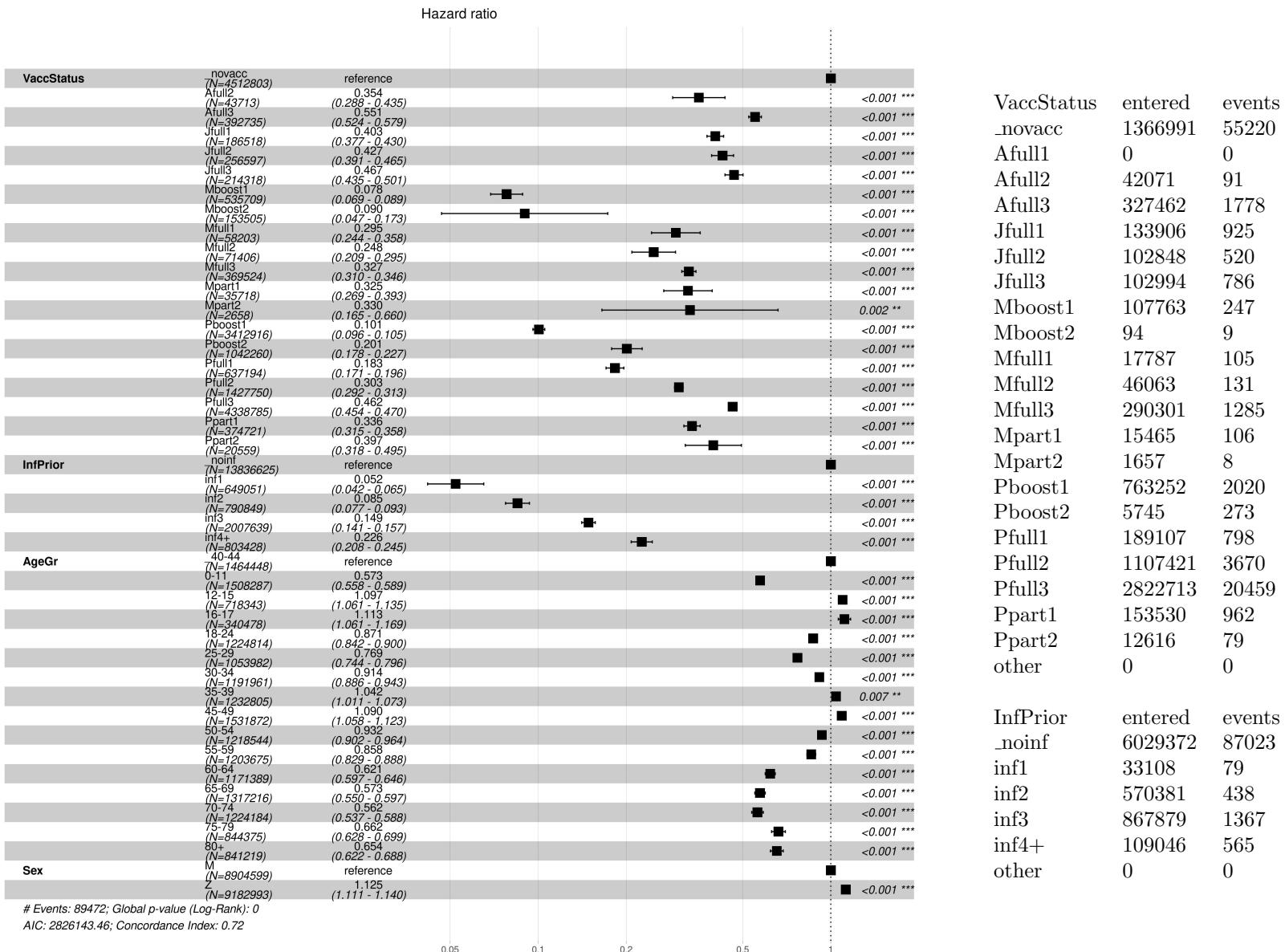


11 Infections by Vaccines - Omicron

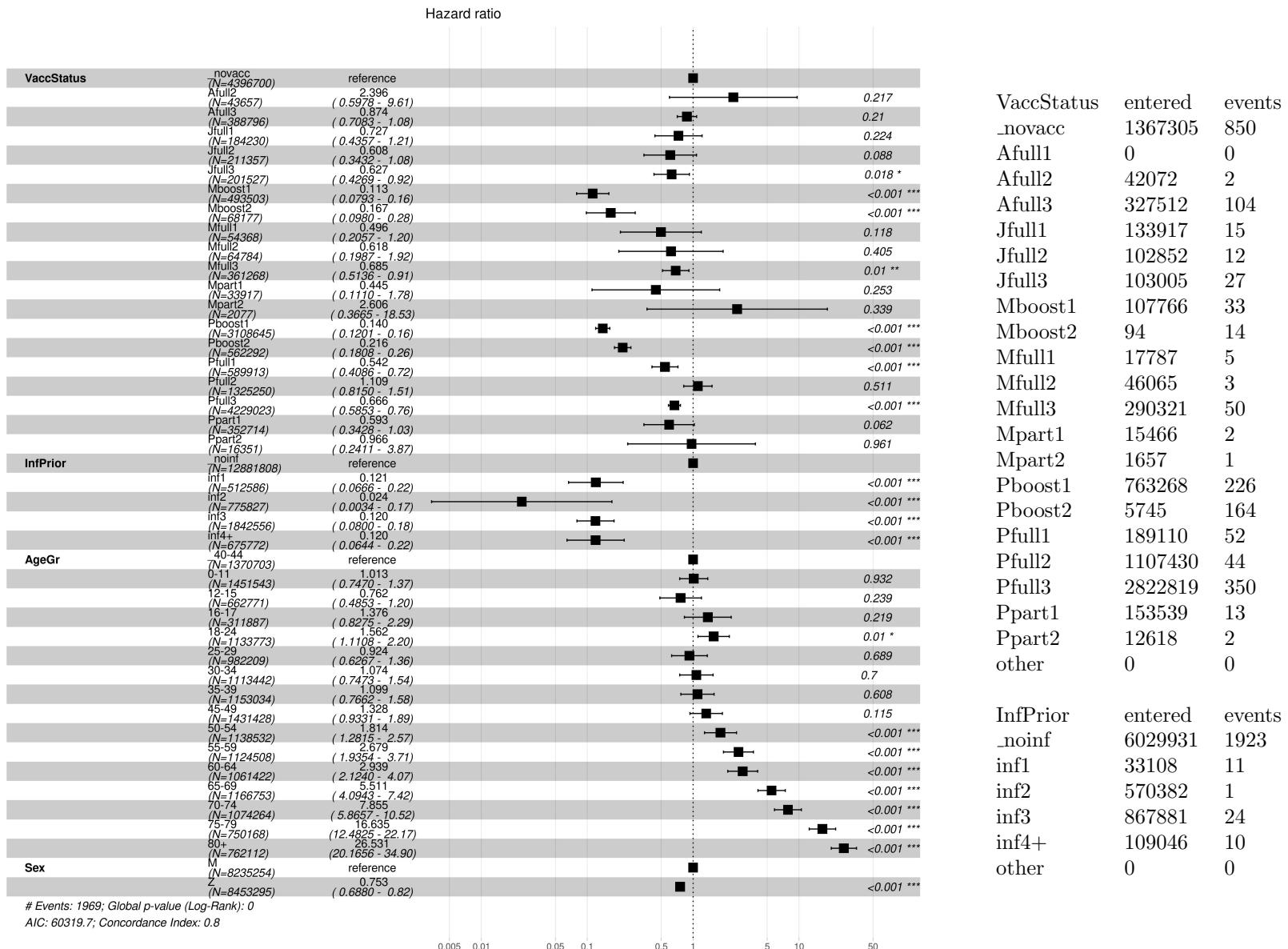


| VaccStatus | entered | events |
|------------|---------|--------|
| _novacc | 1366991 | 138221 |
| Afull1 | 0 | 0 |
| Afull2 | 42071 | 19 |
| Afull3 | 327462 | 2127 |
| Jfull1 | 133906 | 1915 |
| Jfull2 | 102848 | 2634 |
| Jfull3 | 102994 | 2976 |
| Mboost1 | 107763 | 4696 |
| Mboost2 | 94 | 923 |
| Mfull1 | 17787 | 814 |
| Mfull2 | 46063 | 540 |
| Mfull3 | 290301 | 5285 |
| Mpart1 | 15465 | 229 |
| Mpart2 | 1657 | 17 |
| Pboost1 | 763252 | 31043 |
| Pboost2 | 5745 | 8840 |
| Pfull1 | 189107 | 10510 |
| Pfull2 | 1107421 | 8255 |
| Pfull3 | 2822713 | 84716 |
| Ppart1 | 153530 | 2492 |
| Ppart2 | 12616 | 188 |
| other | 0 | 0 |
| InfPrior | entered | events |
| _noinf | 6029372 | 260863 |
| inf1 | 33108 | 5643 |
| inf2 | 570381 | 2915 |
| inf3 | 867879 | 22471 |
| inf4+ | 109046 | 14548 |
| other | 0 | 0 |

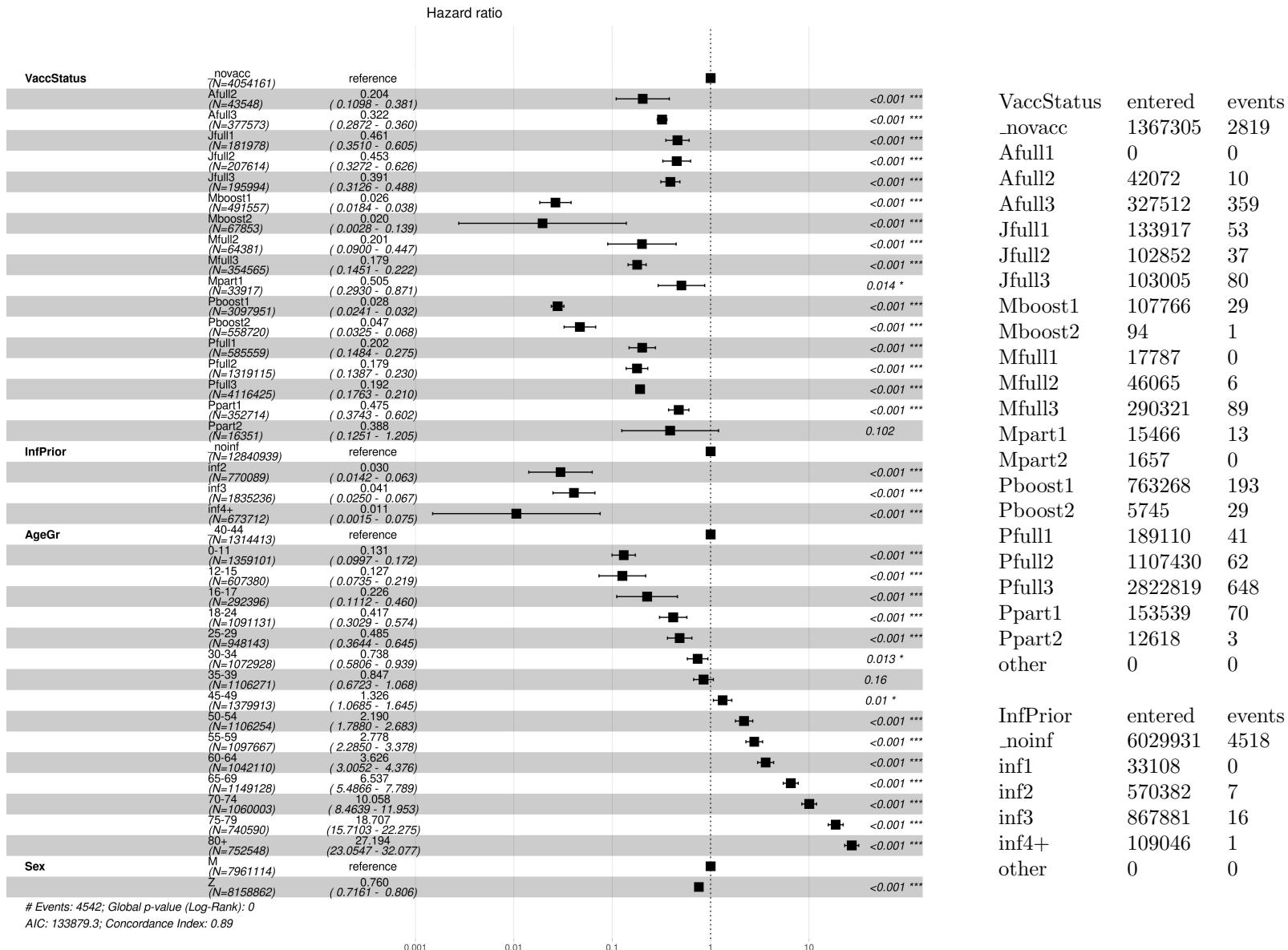
12 Infections by Vaccines - Delta



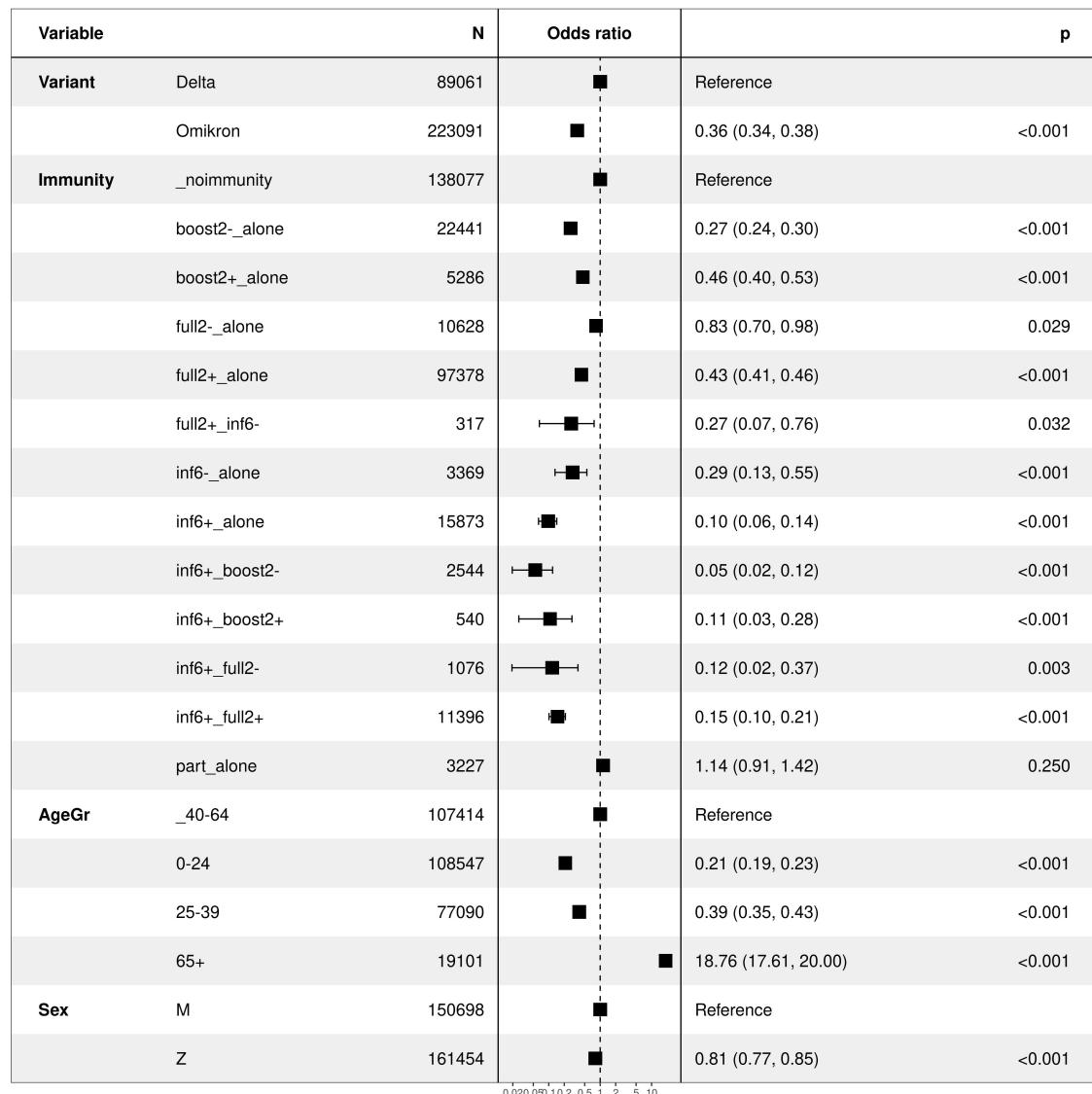
13 Hospitalizations by Vaccines - Omicron



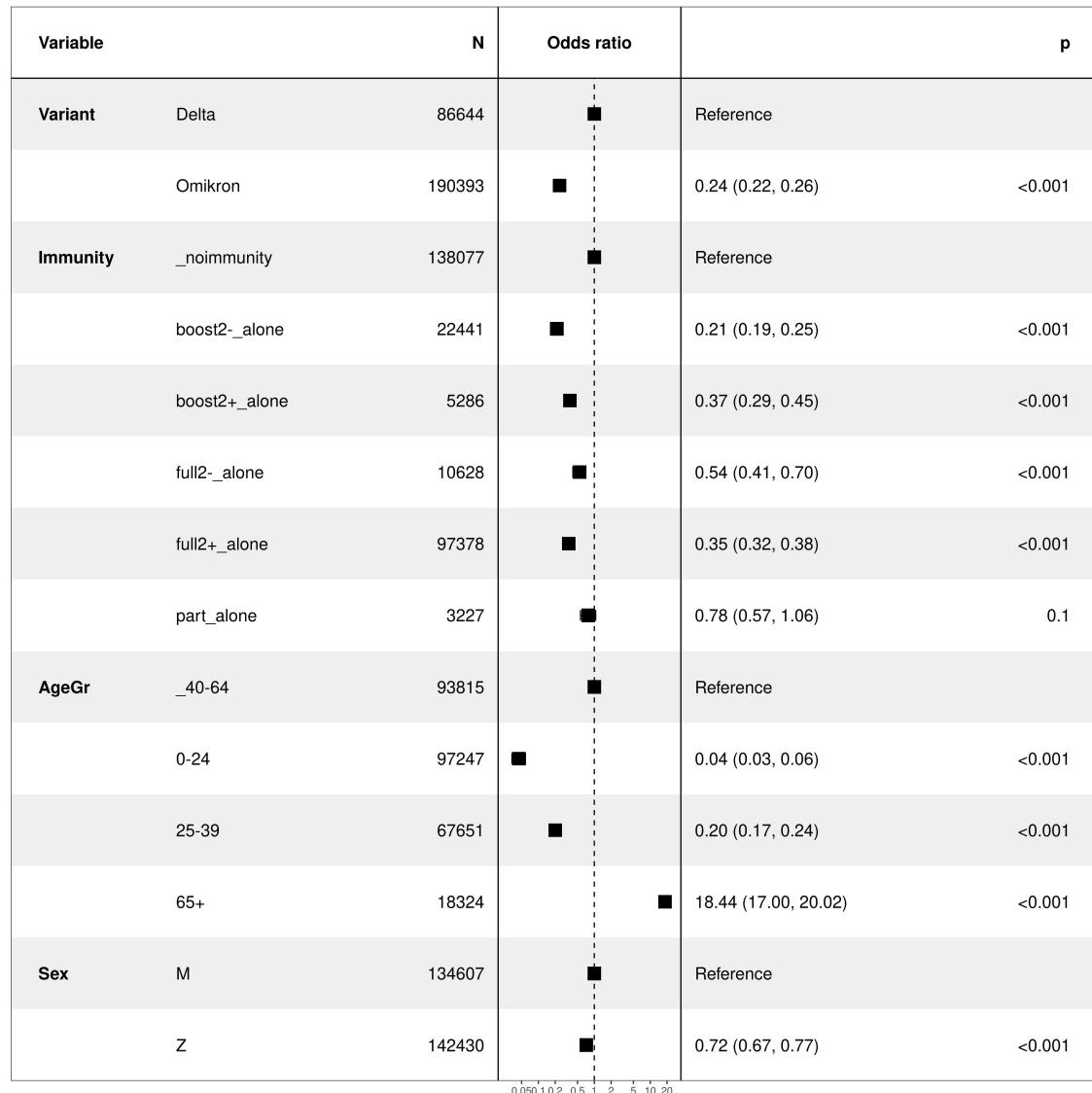
14 Hospitalizations by Vaccines - Delta



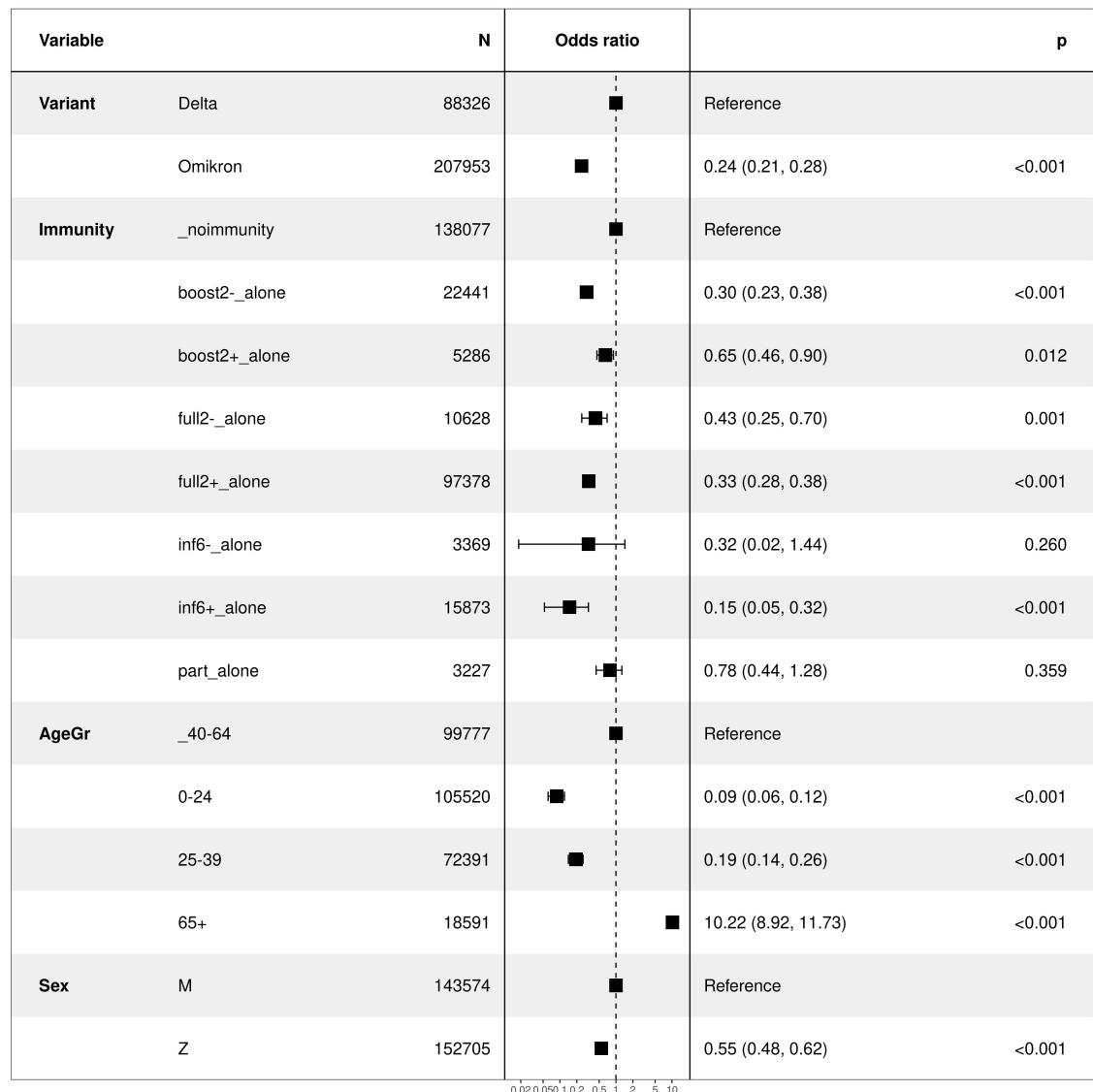
15 Hospitalization given Infection



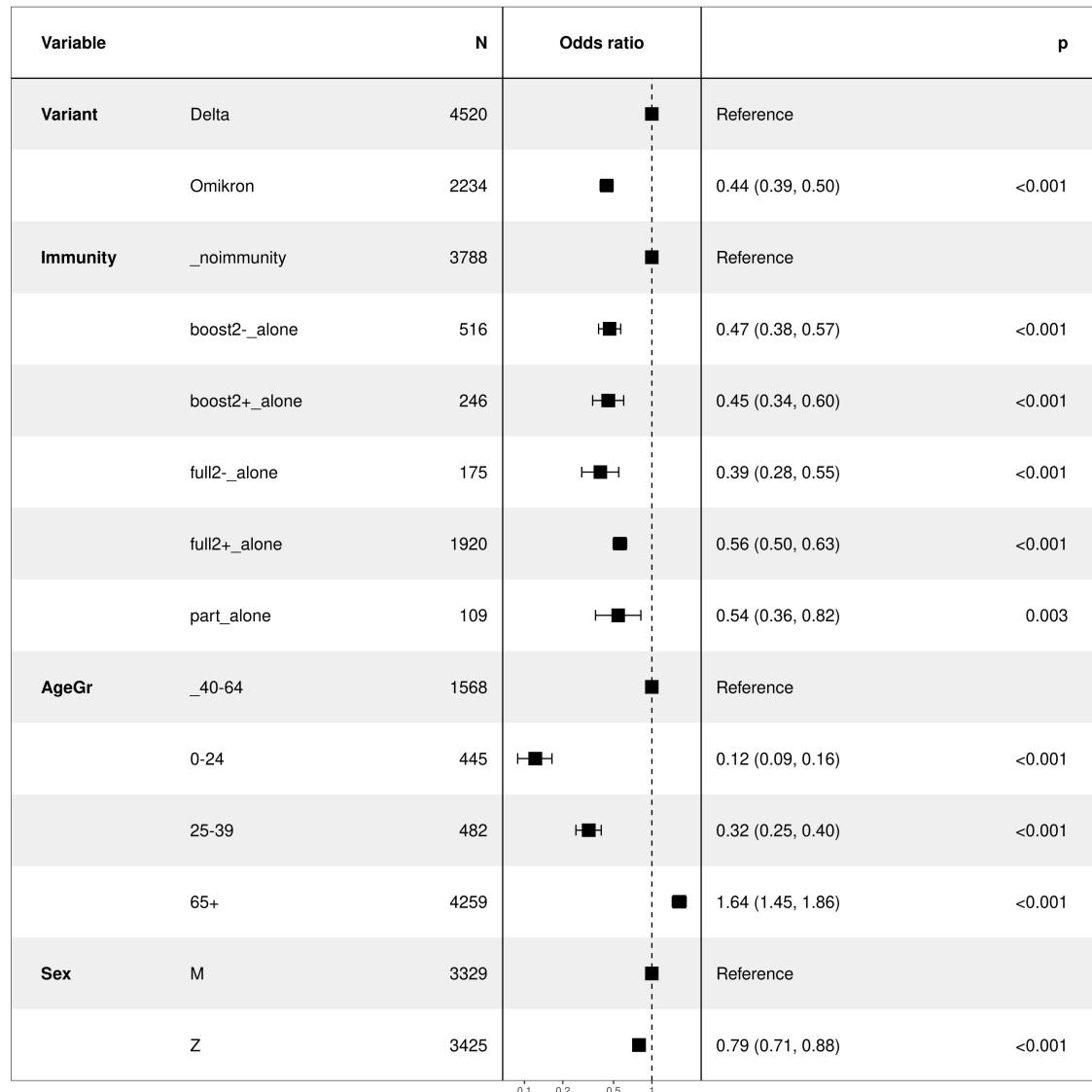
16 Oxygen given Infection



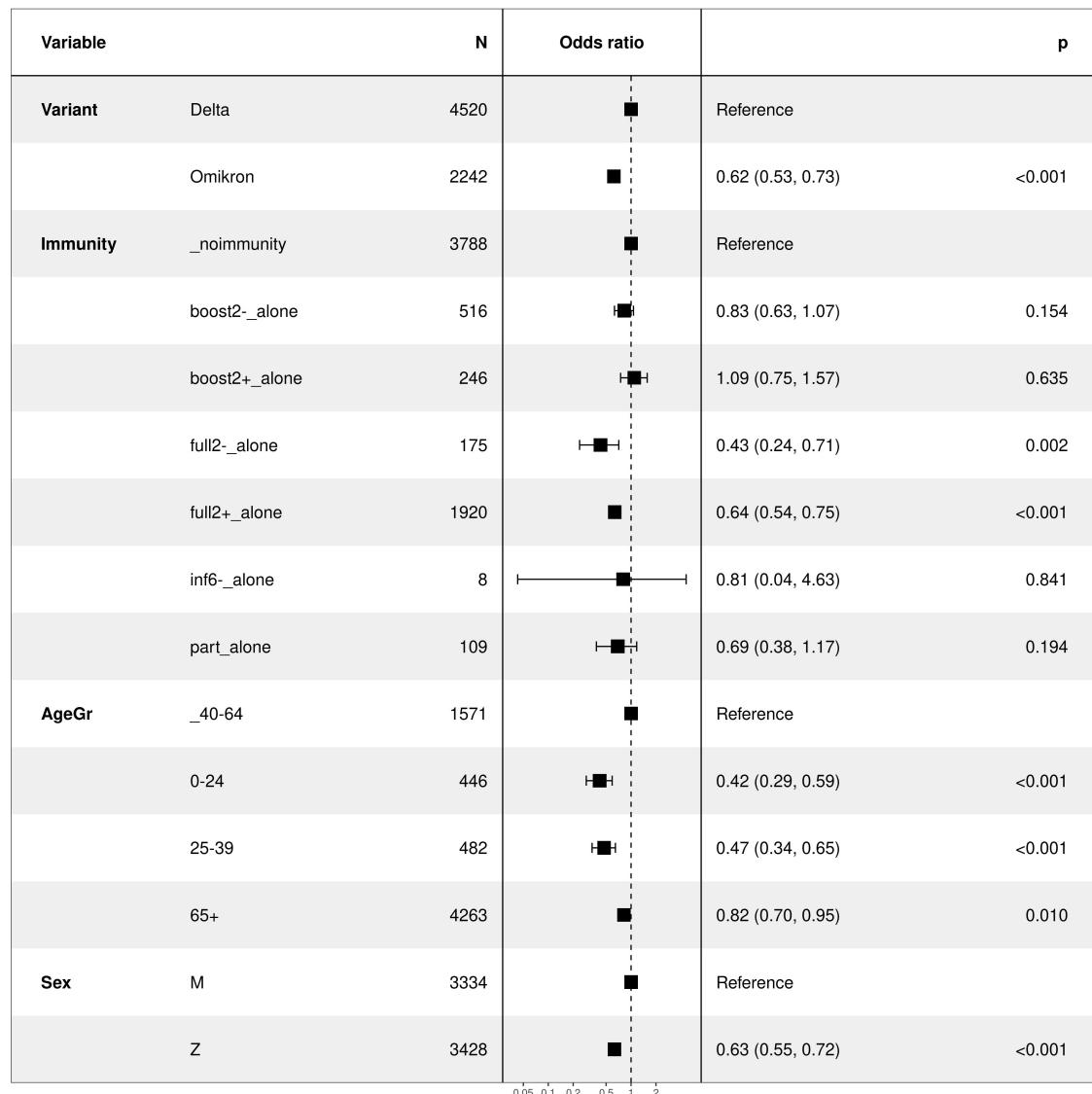
17 ICU given Infection



18 Oxygen given Hospitalization



19 ICU given Hospitalization



20 Infections – Omicron – Sensitivity

