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BACKGROUND

- More data from a wider range of different healthcare systems are warranted to better understand mortality burden in patients hospitalized with COVID-19 during different variant waves.
- We compared 28-day in-hospital mortality in adults hospitalized with COVID-19 caused by Wild-type, Alpha, Delta, or Omicron variants. Whether the difference in risk by variant might vary by age was also evaluated.

METHODS

- Cohort study, adult patients hospitalized with COVID-19, 10 centers in 9 countries: Germany, Italy, Kenya, Lithuania, Mexico, Poland, Portugal, Sweden, and United Kingdom
- February 2020 to October 2022
- Wild-type, Alpha, Delta, Omicron (sequencing or based on national variant distribution)
- 28-day in-hospital mortality
- 18-49, 50-69, and ≥70 years (significant interaction)

SUMMARY OF MAIN FINDINGS

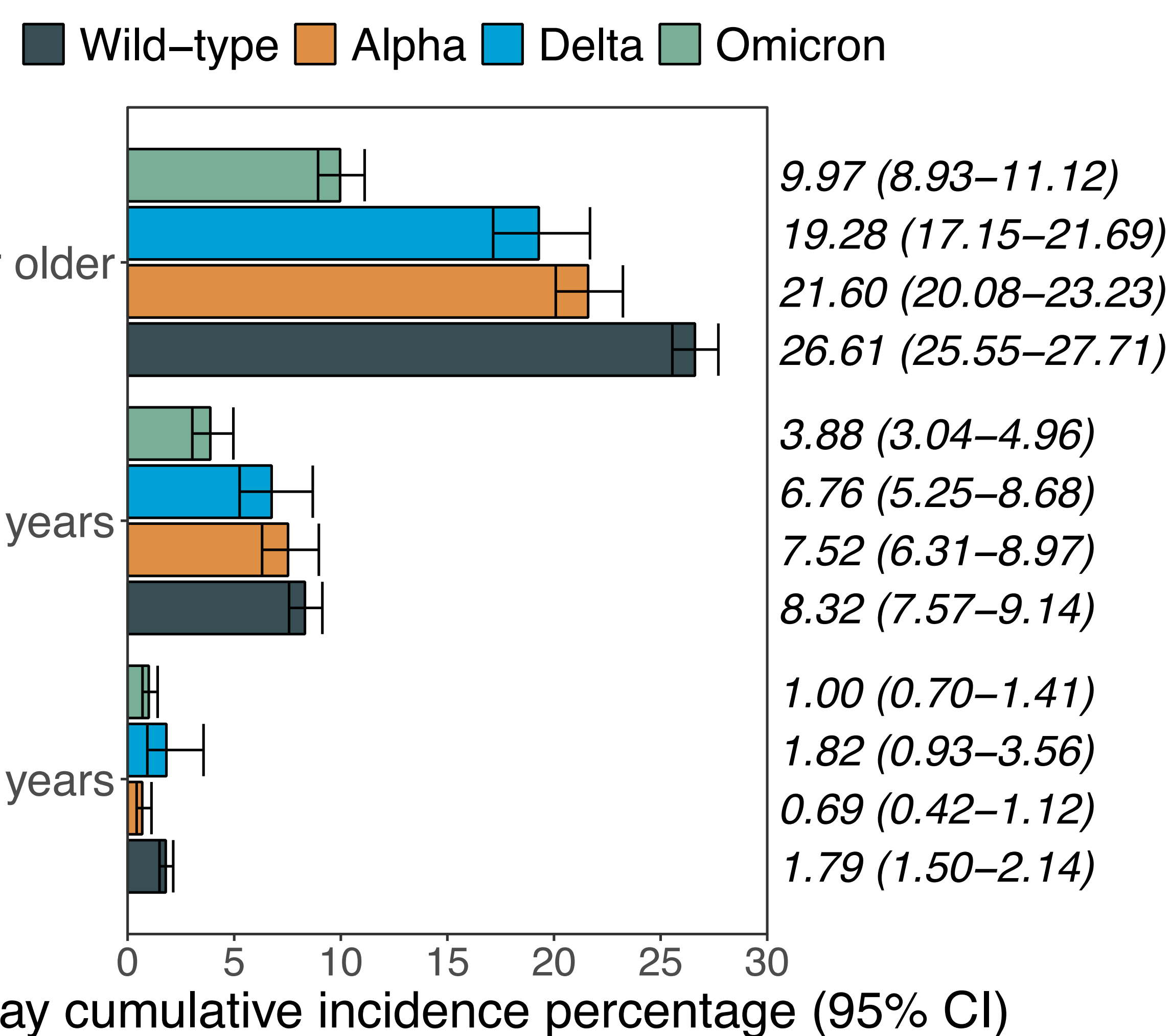
- Cumulative incidence of 28-day in-hospital mortality decreased throughout the study period, particularly during the Omicron period.
- Adjusted hazards of in-hospital mortality varied across different age groups, COVID-19 vaccination status, and different settings.
- Among participants >70 years, Alpha and Delta had an increased risk of in-hospital mortality versus Omicron. Not observed when restricting the analyses to unvaccinated participants.
- BA.1 carried a higher risk of death than that seen with other more recently circulating BA.2 and BA.5 sublineages (data not shown).

ADDITIONAL KEY INFORMATION

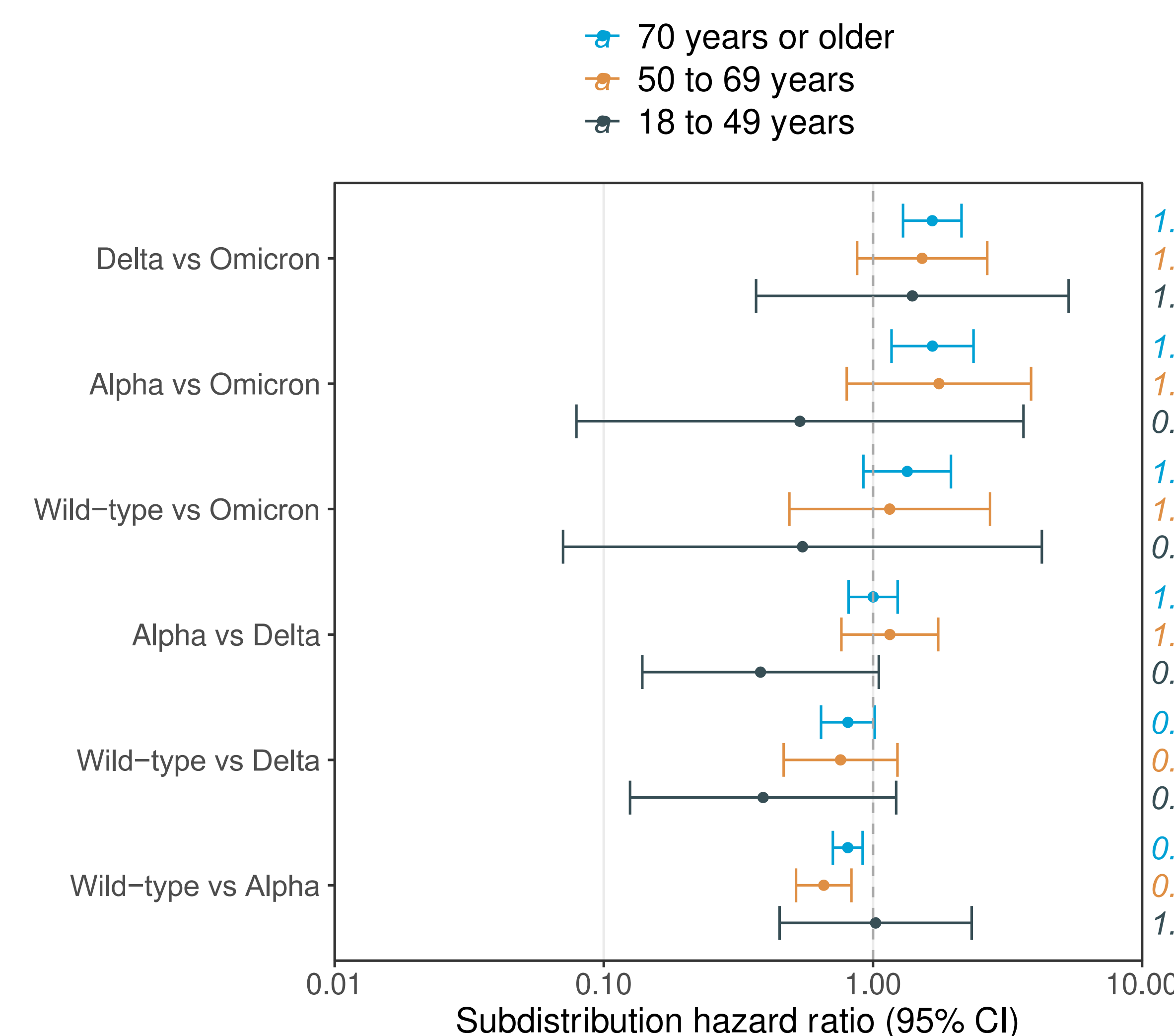
- More info about EuCARE: <https://eucareresearch.eu/>
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CONCLUSIONS
The decrease in in-hospital mortality seems to reflect a combined effect of immunity from vaccinations and previous infections, although differences in virulence between variants may also have contributed.

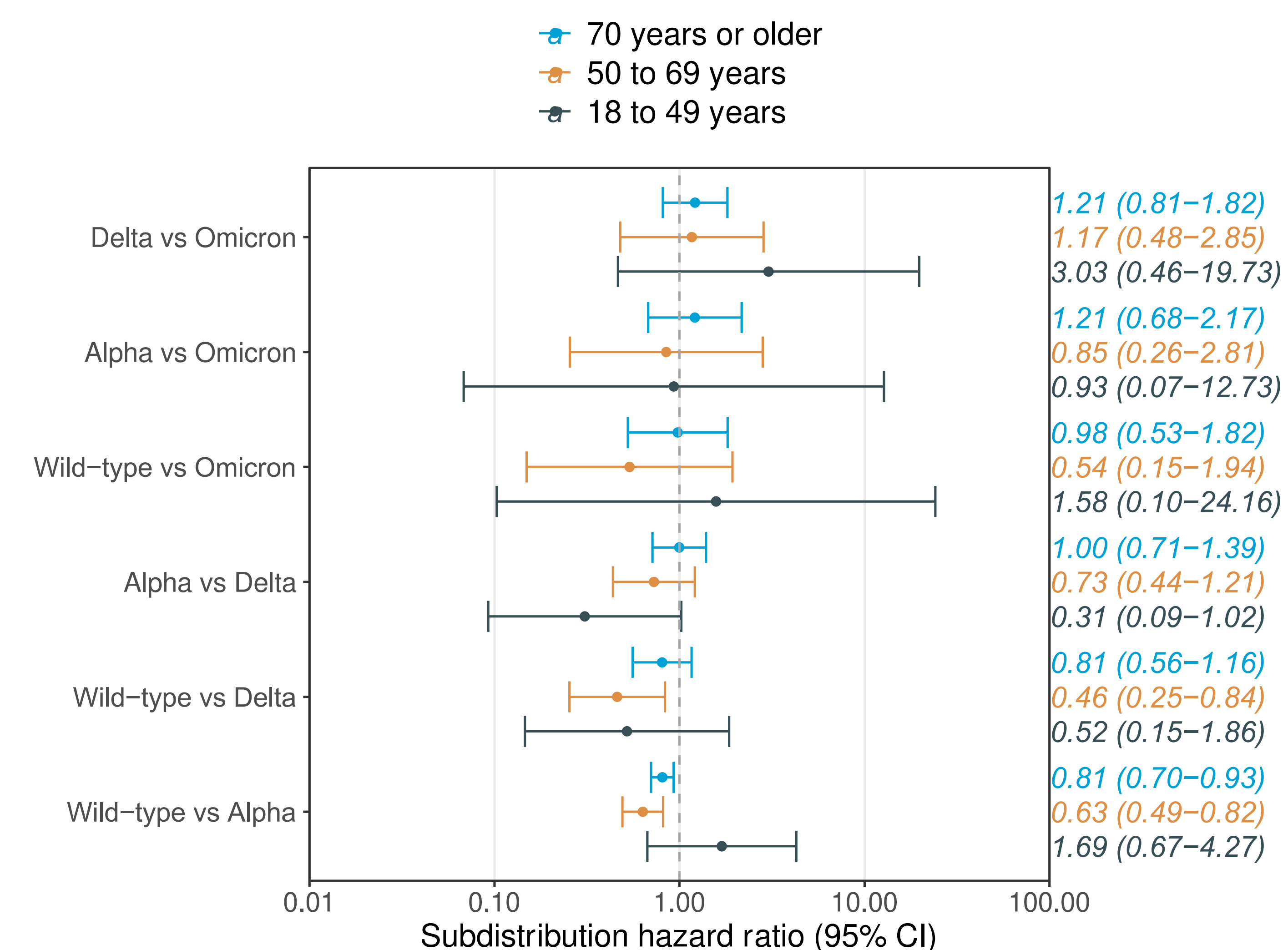
Cumulative incidence of in-hospital mortality



Adjusted^a hazard ratio for in-hospital mortality
All participants



Adjusted^a hazard ratio for in-hospital mortality
Unvaccinated participants



^aAdjusted for age, sex, calendar time, and comorbidities