

Social Determinants of COVID-19 Outcomes in Latin America during Vaccine Rollout: A Real-World Study.

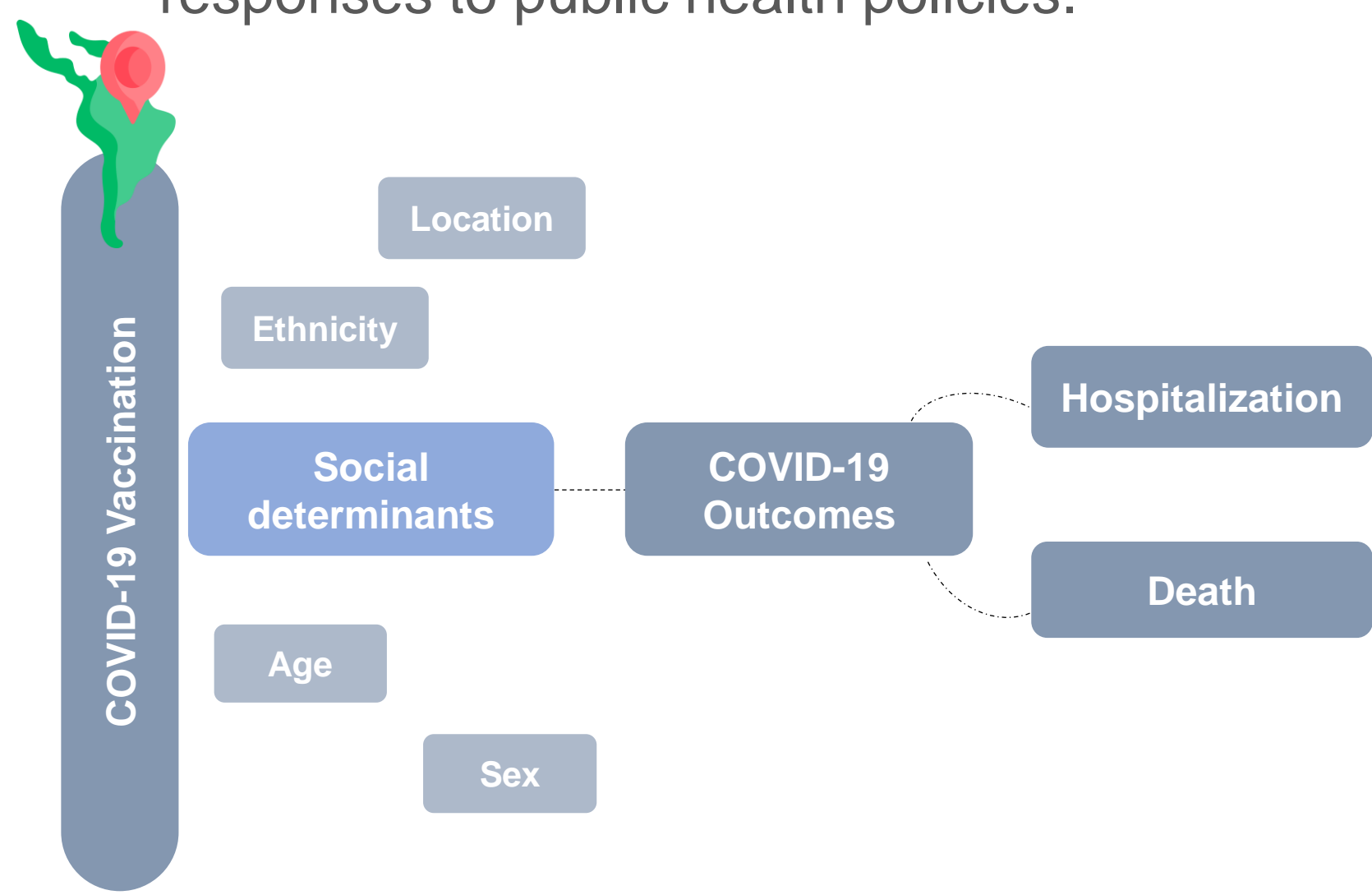
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INTRODUCTION

Latin American (LATAM) countries face underlying social challenges that shape responses to public health policies.



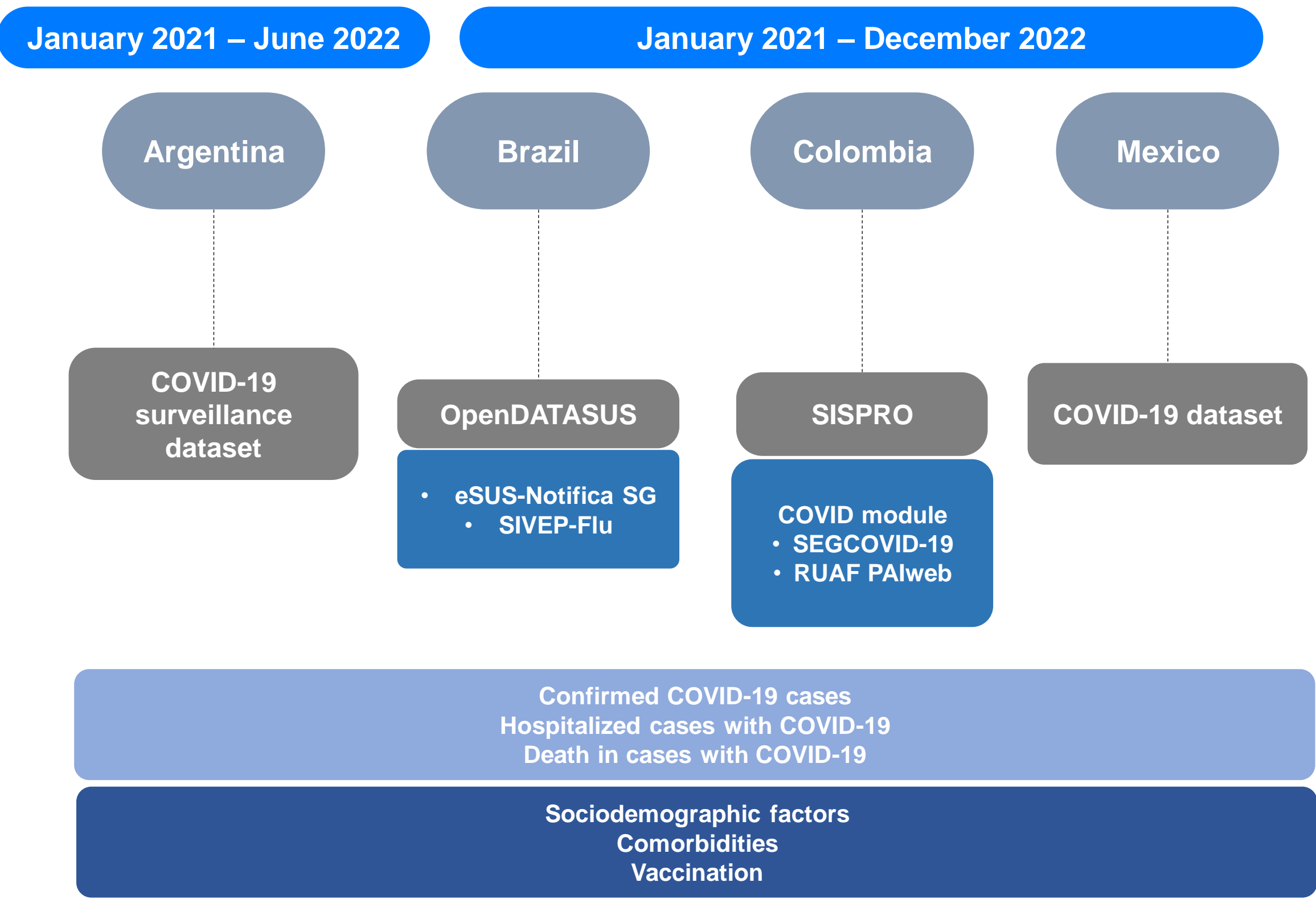
LATAM countries adopted a range of COVID-19 vaccines, encompassing various platforms such as mRNA, viral vector, and inactivated virus platforms.

OBJECTIVE

To explore social determinants related to hospitalization and death among COVID-19 cases in LATAM in the context of the vaccine rollout.

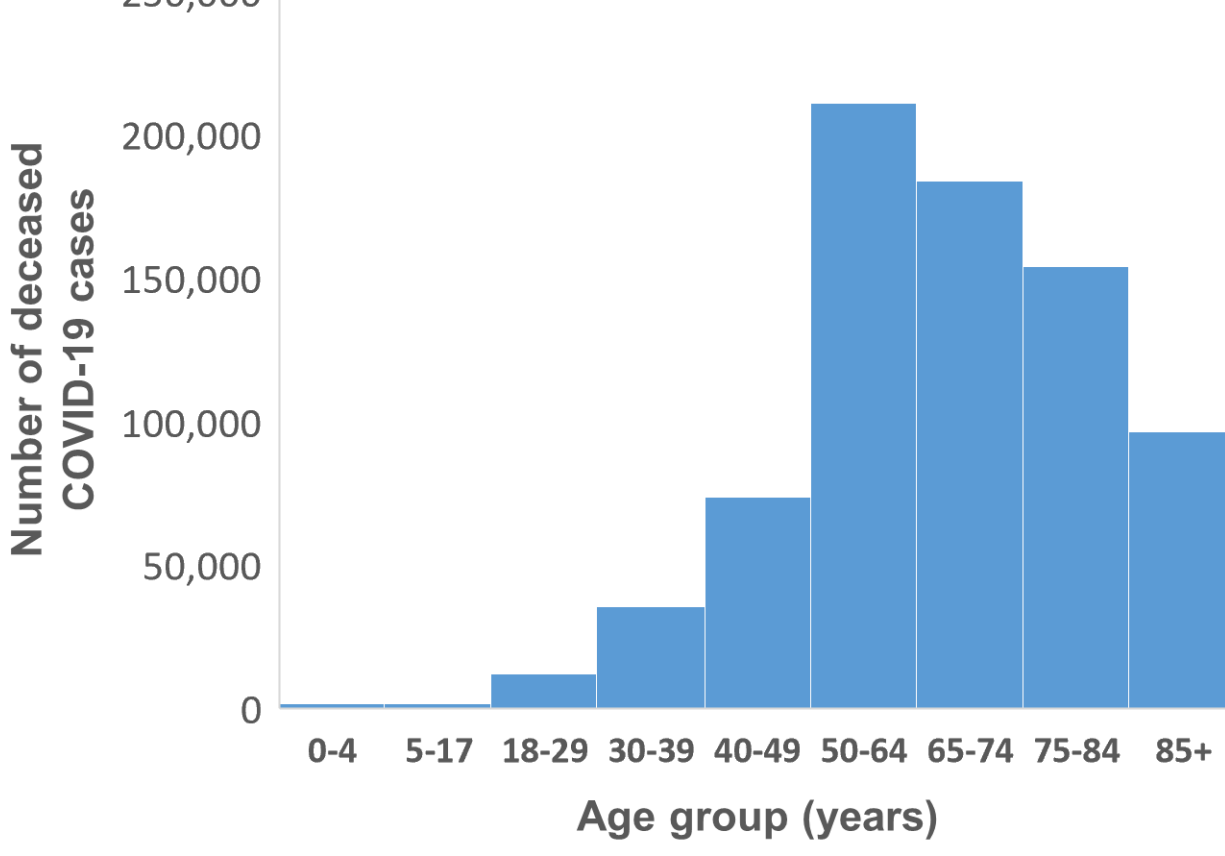
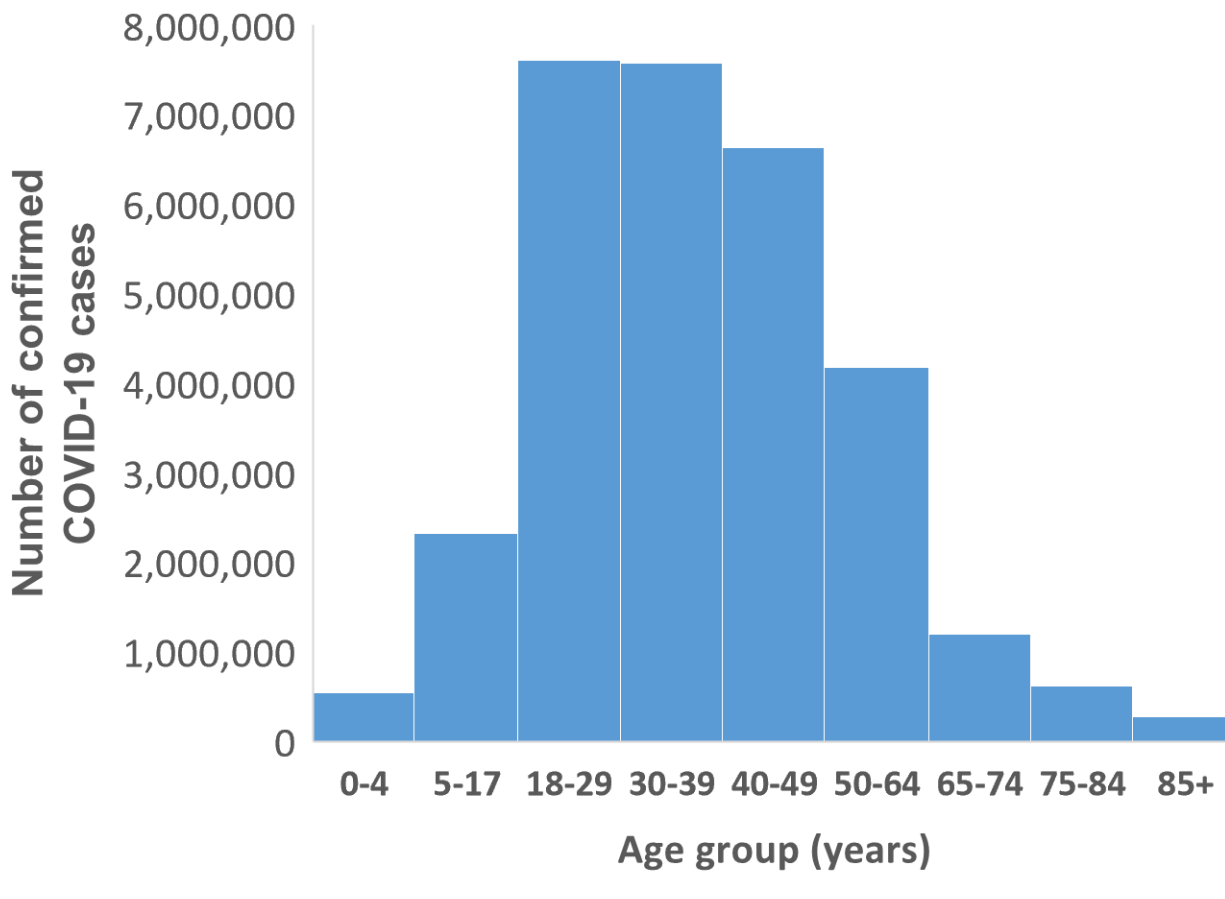
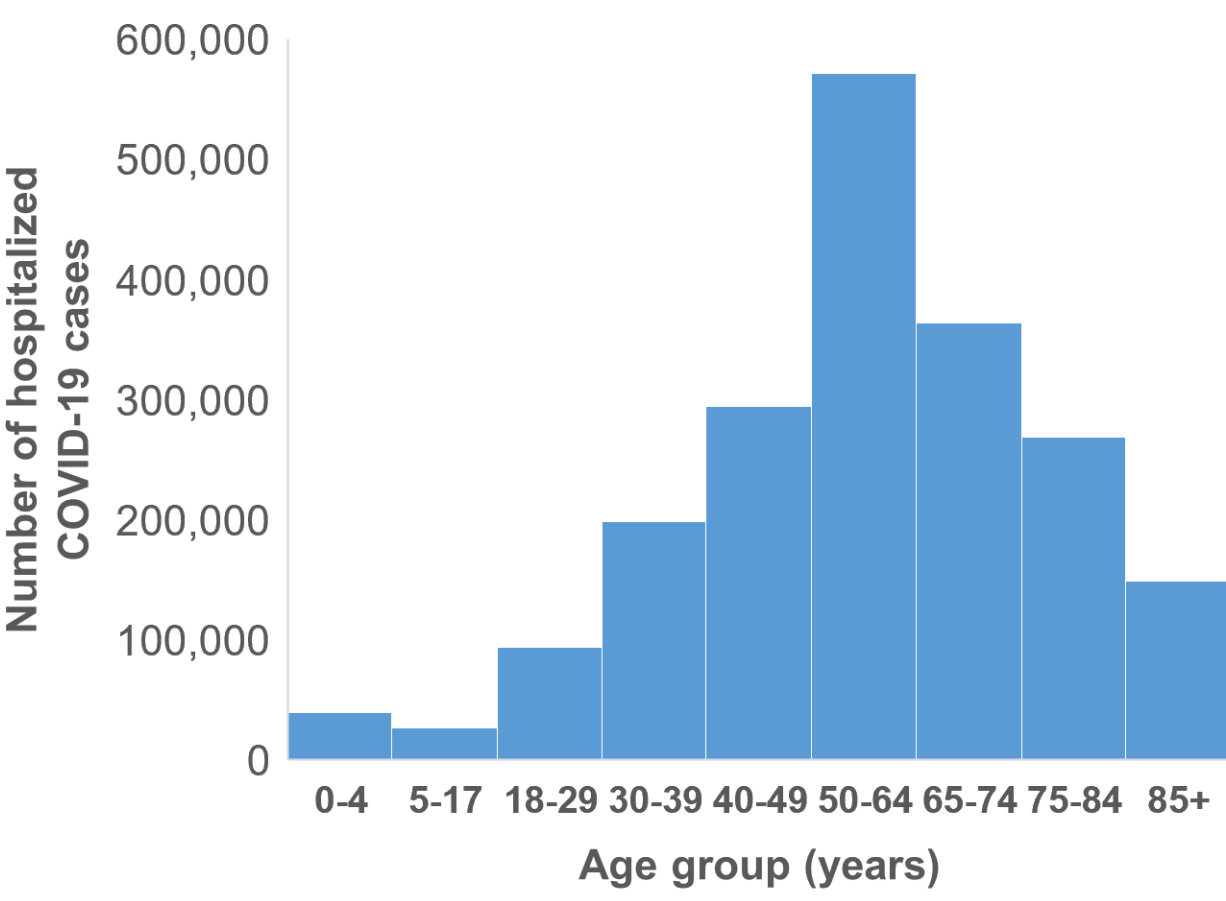
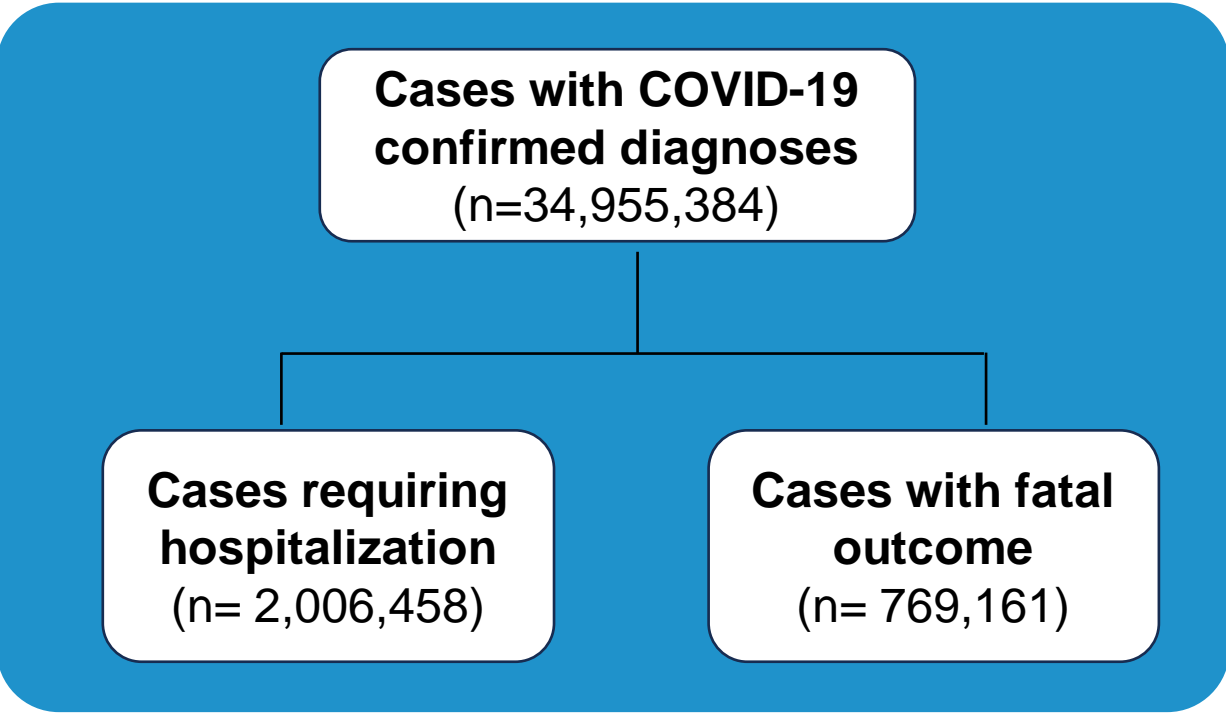
METHOD

Retrospective study using national COVID-19 surveillance databases from **Argentina, Brazil, Colombia, and Mexico**, from January 2021 to December 2022. **Multivariate logistic regression models** were used to identify **sociodemographic factors** associated with **hospitalization** and **death** among laboratory-confirmed COVID-19 cases, adjusting for confounders (age, sex, ethnicity, comorbidities, and vaccination status). No specific vaccine brands were accessed or evaluated. Multiple SARS-CoV-2 variants of interest and concern circulated in LATAM during the period, including Gamma (P.1), Lambda (C.37), and Mu (B.1.621), which were first identified within the region.

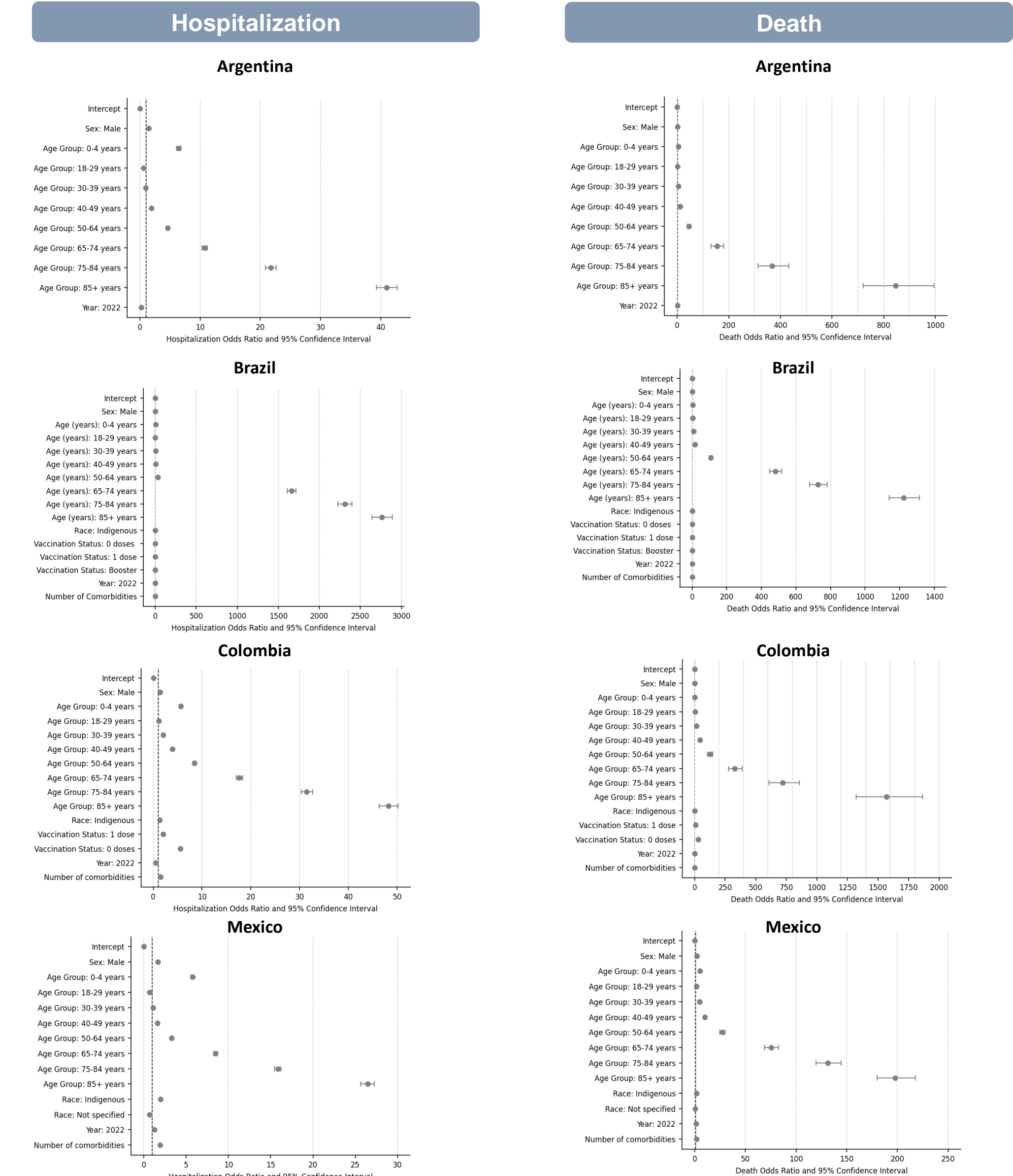


RESULTS

Characteristics of Included cases and outcomes



- Hospitalized cases were predominantly **male** (55.3%) and **over 50 years old** (28.5%).
- In Brazil, the highest proportion of hospitalized cases were from **São Paulo** (29.9%) and **Minas Gerais** (13.1%), whereas in Colombia, they were from **Bogotá** (24.5%) and **Antioquia** (11.5%).
- Indigenous ethnicity accounted for 0.2% to 1.5% of hospitalized cases across countries.



- Higher odds of hospitalization and death among **older cases** and **males** across all countries. The odds of death were significantly higher in cases of **indigenous ethnicity**, ranging between 1.05 (95%CI 0.98-1.12) in Colombia and 1.82 (95%CI 1.74-1.91) in Mexico.
- Unvaccinated (0 doses)** COVID-19 cases had higher odds of hospitalization and death compared to fully-vaccinated (Complete primary schedule) cases.

CONCLUSIONS

- These findings highlight the influence of social determinants—such as **age, sex, and ethnicity**—on COVID-19 outcomes in LATAM during vaccine rollout.
- Older age and male sex is related to severe COVID-19 outcomes.
- The COVID-19 pandemic intensified the existing challenges faced by indigenous communities, reflecting in higher odds of severe outcomes in these populations.
- Addressing these factors is relevant to mitigating the impact of emerging diseases in the region.

Limitations

This analysis is based on laboratory-confirmed COVID-19 cases, which could lead to an underestimation of the actual case count due to **changes in testing policies over time**. Furthermore, hospitalizations and deaths included in this study are associated with COVID-19 cases but are not necessarily directly attributed to the virus.

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