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COVID-19 and Respiratory Conditions in Vaccinated and Unvaccinated People

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Objectives

To better understand the long-term respiratory impact of COVID-19, this study aims to determine which respiratory conditions are associated with diagnosed COVID-19 by vaccination status in both hospitalised patients and the general population.

Method

OpenSAFELY-TPP was used to access linked data from 24 million people registered with general practices (GPs) in England using TPP SystmOne software. Three cohorts were defined: one **pre-vaccine availability** during the wild-type/Alpha variant eras (exposed January 2020–June 2021; outcomes ascertained up to April 2024) and two (**vaccinated/unvaccinated**) during the Delta variant era (exposed June–December 2021; outcomes ascertained up to April 2024). We estimated adjusted hazard ratios comparing the incidence of respiratory conditions after diagnosis of COVID-19 with the incidence before or without COVID-19 for: **asthma**, **chronic obstructive pulmonary disease (COPD)**, **pneumonia**, and **pulmonary fibrosis**.

Results

All permissions have been obtained and analyses are ongoing. We anticipate that the pre-vaccination cohort will include up to 18.7 million people, including ~1.01 million COVID-19 diagnoses. The vaccinated cohort will include up to 14.1 million individuals, including ~870,000 COVID-19 diagnoses. The unvaccinated cohort will include up to 3.3 million individuals, including ~150,000 COVID-19 diagnoses.

Conclusions

This study provides new insights into the impact of COVID-19 on respiratory conditions by vaccination status and hospitalisation, and in subgroups according to pre-existing conditions and smoking. This may have important implications for public health and health service provision due to the large number of COVID-19 diagnoses during the pandemic.

