

Measuring Health Inequalities and Disparities in Influenza and COVID-19 Vaccination Status across 28 European Countries

Objectives: High levels of vaccine hesitancy were widely reported during the COVID-19 pandemic, yet less is known about how vaccine uptake varied across socioeconomic groups and how these patterns compare with routine vaccinations such as seasonal influenza. This study examines income-related inequalities in influenza and COVID-19 vaccine uptake across Europe and assesses equity-adjusted vaccination performance.

Methods: We conducted a cross-sectional analysis using data from the Survey of Health, Ageing and Retirement in Europe (SHARE), including adults aged 50 years and over in 28 European countries (N = 49,063). Income-related inequalities in self-reported influenza and COVID-19 vaccination were measured using the Erreygers-adjusted concentration index. To jointly assess vaccination coverage and equity, we applied Wagstaff's Achievement Index, enabling cross-country comparisons of equity-adjusted vaccination performance.

Results: COVID-19 vaccination coverage exceeded influenza vaccination in all countries; however, socioeconomic inequalities were prevalent for both vaccines. Pro-rich inequalities were observed in 11 countries for influenza vaccination and 16 countries for COVID-19 vaccination, while pro-poor inequalities were rare. Inequalities were generally more pronounced for influenza vaccination. Although COVID-19 vaccination coverage was higher, uptake remained disproportionately concentrated among higher-income groups in many countries. Inequality measures for influenza and COVID-19 vaccination were moderately correlated across countries, suggesting persistent patterns of inequity. Achievement Index rankings revealed substantial cross-country differences once equity was taken into account, even among countries with similar coverage levels.

Discussion: Despite extensive efforts to promote equitable COVID-19 vaccine rollout, income-related inequalities in uptake were overall greater than those observed for seasonal influenza. These findings underscore the importance of complementing coverage statistics with distribution-sensitive measures when evaluating vaccination programmes and designing policies to reduce inequities.