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Study title: Exploration of the economic effect of vaccination in persons under 60 years of age: a real-world analysis in Germany

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Study Title

Exploration of the economic effect of vaccination in persons under 60 years of age: a real-world analysis in Germany

Abstract

Background:

Besides data on the clinical and public health impact, national immunization technical Advisory Groups (NITAGs) worldwide also consider the economic impact of immunization when deciding about the immunization strategy to implement. Model-based economic evaluations provide a quantitative estimate of the costs and/or benefits of an immunization program. However, real-world data analysis can provide crucial insights into the economic burden of disease and the effect of immunization within a healthcare setting. The economic effect of vaccination is significantly influenced by vaccination coverage. Yet, in adults under 60 years data on influenza vaccination coverage rates (VCR) and the economic impact of influenza vaccination in Germany is scarce.

Methods:

A retrospective nationwide representative claims data-based study covering data for the seasons 2016/17 to 2020/2021 was performed. Analyses are differentiated for age (<60 years, >60 years), sex, and underlying condition, defined according to specifications from the Robert Koch-Institute and the literature. VCR are reported descriptively. Parameters on healthcare resource utilization (HCRU) and costs are based on descriptive cohort comparisons. Two groups with corresponding subgroups are compared: Persons below 60 years with and without vaccination. A descriptive approach was preferred over a statistical adjusting approach because the group of vaccinated persons under 60 years might be subject to selection bias due to unobservable vaccinations at the workplace. Vaccinated and unvaccinated patients were compared using bivariate analysis, taking into account the medical and risk medical conditions and costs.

Results:

Across seasons, regardless of risk status, VCR in persons below 60 years of age ranges from 6.4% to 12.1%. VCR is especially low in persons aged 18 to 34 (2.5% to 5.7% within the observational period). In the 35 to 59 age group, vaccination rates are about three times higher (8.5% to 15.7%), but still at a low level. An underlying condition is a significant factor for higher vaccination rates in this age group. On average across seasons, influenza-related inpatient costs in vaccinated adults below 60 years are 7.6% lower than in unvaccinated adults (€4,057 vs. €4,393), regardless of risk status. Observed economic effects of influenza vaccination are also stable, when at risk-status is considered.

Conclusions:

Seasonal influenza infection can lead to substantial healthcare resource utilization and costs. Limitations arises from incorrectly documented hospitalizations associated with influenza in claims data, resulting in uncertainty about the magnitude of the clinical and economic burden. Yet, descriptive analyses indicate an economic benefit from influenza vaccination in adults below 60 years. Actions aiming at facilitating access to influenza vaccination, particularly in the non-elderly population with and without comorbid conditions, for example through vaccination in pharmacies, should therefore be encouraged.