



Vaccination against seasonal influenza infection among chronically ill individuals—an analysis of outpatient claims data from 2009 to 2018

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Abstract

Background

Individuals with underlying chronic diseases have a higher risk of serious complications or even death in case of influenza infection. The German Standing Vaccination Committee (STIKO) recommends influenza vaccination for individuals with underlying chronic diseases. These individuals benefit from an annual influenza vaccination. In Germany, less is known about compliance with recommendations for influenza vaccination among these individuals. Influenza vaccination uptake has only been studied in selected patient populations (e.g. patients with rheumatoid arthritis). The aim of this study was to examine influenza vaccination uptake among statutory health insured individuals with chronic diseases as recommended by the STIKO as well as to investigate its regional variations and temporal trends.

Methods

Nationwide ambulatory claims data from the years 2009 to 2018 were used in this study. The dataset contains pseudonymized diagnoses coded according to the ICD-10 classification, provided services coded according to the Uniform Value Scale (EBM) as well as information on sex, age and place of residence. The study population comprised individuals aged older than 1 year with at least one of the following chronic diseases: pulmonary, cardiovascular, liver, kidney, metabolic, neurological and musculoskeletal diseases, as well as primary and secondary immunodeficiencies, including HIV-infection. A person was defined as having a chronic disease, if a confirmed diagnosis was coded in at least two quarters of a year (the so-called M2Q criterion). Influenza vaccination coverage was calculated for each season as the number of chronically ill insurees with influenza vaccination divided by the total number of chronically ill insurees. Regional differences were examined at the level of regional Associations of Statutory Health Insurance Physicians and administrative districts. Data from two ASHIPs (Baden-Württemberg und Bavaria) were not included in the regional analysis due to the presence of selective contracts with health insurance providers which may result in underestimation of vaccination coverage.

Results

Influenza vaccination coverage varied across different patient populations between 19% (multiple sclerosis) and 44% (chronic kidney disease) in the influenza season 2017/2018. The coverage was higher among females than males, except HIV/AIDS-patients. Among the latter vaccination coverage was higher by 7 percent points among males (43.4%) than females (36.6%). The lowest proportion of vaccinated individuals was observed in the age group of 20–29-years. The coverage increased constantly until the age of 50–59-years old. From the age of 60 years there was a pronounced increase. The highest proportion of vaccinated individuals was observed in the highest age group '80+ years'.

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There were considerable regional variations across all patient populations. Vaccination uptake was higher in the eastern than western federal states (e.g. COPD: 54.4% in Saxonia-Anhalt and 33.2% in Westphalia-Lippe). In the observation period of 10 years a slightly declining trend in vaccination coverage was observed for most of the chronic diseases. A stagnating trend was observed in patients with HIV/AIDS and immune defects.

Conclusion

Influenza vaccination coverage among chronically ill individuals is low and far from the European Union defined target of 75%. The coverage varies across different patient populations and diseases. The disease-specific evaluation of the current study allows identification of patient populations with considerable vaccination gaps. In particular, patients with multiple sclerosis, chronic viral hepatitis, asthma and immune defects displayed poor vaccination compliance with only every fifth patient vaccinated against influenza. In addition, considerable regional variations in vaccination coverage were observed. Further efforts are necessary to improve vaccination uptake in patients with chronic diseases.

Keywords

Asthma, chronic diseases, chronic obstructive pulmonary disease, COPD, diabetes, Germany, HIV, immunodeficiency, influenza, multiple sclerosis, vaccination coverage

Citation

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