



Seasonal influenza vaccination rates in elderly individuals in the German statutory health care system – a trend analysis of area-level data between 2009/2010 and 2013/2014

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Abstract

Background:

The utilization of seasonal influenza vaccination in Germany reported in previous studies revealed significant regional differences with a clear East-West gradient, which was even found within Berlin. In the present study, we analysed the temporal trend in influenza vaccination rates in individuals aged 60 years and older for the influenza seasons 2009/2010 to 2013/2014, nationwide and at regional levels (federal states and districts). The analyses were based on outpatient claims data from the 17 regional Associations of Statutory Health Insurance Physicians in Germany (ASHIPs; “Kassenärztliche Vereinigungen”).

Method:

The study is based on the ambulatory health care claims data from 2009 to 2014 according to the national law § 295 SGB V. The reference population (denominator) to calculate the vaccination rates was defined by the total number of statutory health care insured persons which is published annually in the so-called KM6 statistics by the German Federal Ministry of Health. Individuals between 60 and 109 years of age were selected. To assess the development of the vaccination rates over time, trend analyses were performed using joinpoint regression models based on the calculation of the annual percent change (APC).

Results:

Influenza vaccination rates decreased steadily until the 2012/2013 season reaching nationwide only 37%. The decline was less pronounced in the Eastern than in the Western federal states. In 2009/2010, vaccination rates ranged from 35 % in Baden-Württemberg to 64 % in Saxony-Anhalt. In 2012/2013, vaccination rates ranged only between 20 % in Baden-Württemberg and 57 % in Saxony-Anhalt. In the 2013/2014 flu season, a stabilization of the vaccination rates was observed with a slight increase from 37 % to nearly 38 % nationwide. The district-level vaccination rates were found to range between 65 % in the District of Demmin, federal state of Mecklenburg-Western Pomerania in the North-East, and about 13.5 % in Schwäbisch-Hall District, federal state of Baden-Württemberg in the South-West.

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The joinpoint regression model showed negative trends for the entire period from 2009 to 2014, nationwide and across all ASHIP-areas. The nationwide APC value was -5.8 %. However, the trend was only half as strong in the Eastern federal states including Berlin (APC -3.4 %) compared to the Western states (APC -7.1 %). All trends, except for Schleswig-Holstein and Hamburg, were statistically significant. From 2012/2013 to 2013/2014, the latter two regions showed stronger increases in influenza vaccination rates close to 5 and 3 percentage points, respectively, compared with the other 15 regions.

Discussion & Conclusions:

In general, we observed a substantial decline in influenza vaccination rates during the investigation period. In addition, we found large regional differences both at federal state and district level.

Although the present study does not allow causal inferences, a number of factors effecting national as well as area-level vaccination rates need specific consideration. On the one hand, regional discount agreements between Statutory Health Insurance Companies and the ASHIPs have partly led to shortfalls of the flu vaccine in recent years, which may have contributed to the observed decline in vaccination rates. On the other hand, controversial reports on the safety and efficacy of the pandemic-specific vaccines in the 2009/2010 season, when the influenza virus A(H1N1)pdm09 newly emerged, may also have influenced this trend. Furthermore, survey results indicate that influenza is not always perceived as a serious illness and that there exist general doubts on the safety and efficacy of the vaccination. Lastly, the lack of target group-specific communication about effectiveness of influenza vaccines may have diminished the patients' acceptance of influenza vaccination in general.

The current study results allow regional health policy stakeholders and decision makers to identify areas that would most probably benefit from customized measures to improve the future implementation of the national recommendations concerning the standard influenza vaccination in elderly individuals. The cooperation of all responsible actors in the field of preventive immunization is necessary in order to achieve the target of the 75 % influenza vaccination rate in the elderly population advocated by the European Commission in a reasonable time in Germany.

Keywords:

Influenza, seasonal influenza vaccination, influenza vaccination rates, STIKO-recommendations, regional variation, trend analysis

Citation:

Bätzing-Feigenbaum J, Schulz Maiké, Schulz Mandy, Acet S, Gisbert Miralles J. Seasonal influenza vaccination rates in elderly individuals in the German statutory health care system - a trend analysis of area-level data between 2009/2010 and 2013/2014. Central Research Institute of Ambulatory Health Care in Germany (Zi), Versorgungsatlas-Report No. 15/19. Berlin, 2015. Link: <http://www.versorgungsatlas.de/themen/alle-analysen-nach-datum-sortiert/?tab=6&uid=68>