



Brief report

Regional variations in the frequency of patients with HIV in the outpatient sector in Germany, 2021

Manas K. Akmatov¹ • Emil Hu¹ • Robin Rösenberg² • Christian Kollan³ • Daniel Schmidt³ • Claudia Kohring¹ • Jakob Holstiege¹ • Markus Bickel⁴ • Jörg Bätzing¹

¹ Central Research Institute of Ambulatory Health Care in the Federal Republic of Germany, Berlin, Germany

² German Association of Physicians in HIV-Care (dagnä e.V.), Berlin, Germany

³ Department of Infectious Disease Epidemiology, Unit of HIV/AIDS, STI and Blood-borne Infections, Robert Koch Institute, Berlin, Germany

⁴ Infektiologikum, Frankfurt, Germany

DOI: 10.20364/VA-23.09

Abstract

Background

According to recent estimates about 90,800 people were living with HIV (human immunodeficiency virus) in 2021 in Germany. Of them, approximately 8,600 people had not yet been diagnosed with HIV. Further, there are estimates of the number of people living with HIV by sex and age, treatment status, risk groups and country of origin. Little is known about regional, especially small-area variations with respect to the frequency of patients with HIV in Germany. So far, regional estimates of the number of people with HIV are available at the level of German federal states. The aim of the current study was to investigate variations for different geographic areas, including small-area analysis.

Methods

Nationwide claims data collected by physicians according to §295 of the German Social Code Book V (SGB V) from the year 2021 were used in the current study. The study population consisted of all individuals with statutory health insurance (SHI) with at least one physician contact in 2021 (N=72,041,683). Individuals with the diagnosis codes B20, B22, or B24 with the additional diagnostic modifier “confirmed” according to ICD-10-GM (International Statistical Classification of Diseases and Related Health Problems, German Modification) coded in at least one quarter were defined as patients with HIV. Administrative prevalence of HIV per 100,000 persons was calculated overall as well as by sex, age and different geographic units. The smallest geographic unit available for the analysis were rural and urban districts (n=401 districts). The presence of spatial variations and local spatial clusters were analyzed at district level using Global Moran’s I and Local Moran’s I.

Results

In 2021, a total of 72,636 individuals were diagnosed with at least one of the three above mentioned codes, corresponding to an administrative prevalence of HIV of 101 per 100,000 persons. Of them, 56,895 were male (78%) and 15,741 (22%) were female. At the district level, administrative prevalence varied by a factor of 32 between 13 and 417 per 100,000 persons. As expected, the highest

Corresponding author: Dr. Manas K. Akmatov
Central Research Institute of Ambulatory Health Care in Germany (Zi)
Salzufer 8 – 10587 Berlin – Tel. +49 (30) 220056114 – E-Mail: makmatov@zi.de





prevalences were found in large cities, Berlin (417), Frankfurt am Main (406), Cologne (389), Hamburg (270), Munich (266), Stuttgart (257), Offenbach am Main (248), Mannheim (222), and Nuremberg (191). In contrast, sparsely populated rural districts had the lowest prevalences. The spatial autocorrelation was 0.24 ($p < 0.0001$; Global Moran's I). Several spatial clusters of high HIV prevalence were observed with the biggest cluster located in the southern part of the federal state Hesse and the eastern part of Rhineland-Palatinate. Namely, this cluster comprised seven districts in Hesse (Frankfurt am Main, Groß-Gerau, Hochtaunuskreis, Main-Taunus-Kreis, the city of Offenbach am Main, rural district Offenbach and Wiesbaden) and one district in Rhineland-Palatinate (Mainz). Another cluster, consisting of four districts, Cologne, Düsseldorf, Leverkusen and Rhein-Erft-Kreis, was found in the federal state, North Rhine-Westphalia. In addition, a smaller cluster consisting of two districts from two federal states was observed, namely Mannheim (Baden-Württemberg) and Ludwigshafen (Rhineland-Palatinate).

Conclusions

The current study provides for the first time regional estimates for the administrative prevalence of HIV in Germany. As expected, the prevalence of HIV varied regionally with higher figures observed in metropolitan areas. The number of patients with HIV, the age- and sex-distribution as well as the distribution on the federal state level were in line with estimates from the Robert Koch Institute. The geographic data on the frequency of patients with HIV with a finer spatial resolution can support the planning of medical care of patients with HIV. In addition, these data can serve as a basis for targeted preventive measures.

Keywords

Administrative prevalence, AIDS, ambulatory health care, cluster, HIV, prevalence, small-area variations, urban-rural variations

Citation

Akmatov MK, Hu E, Rüsenberg R, Kollan C, Schmidt D, Kohring C, Holstiege J, Bickel M, Bätzing J. Regional variations in the frequency of patients with HIV in the outpatient sector in Germany, 2021. Central Research Institute of Ambulatory Health Care in Germany (Zi). Versorgungsatlas-Report Nr. 23/09. Berlin 2023. URL: <https://doi.org/10.20364/VA-23.09>