Patients at high risk for a severe clinical course of COVID-19 — Small-area data in support of vaccination and other population-based interventions in the time of temporarily limited resources by December 2020

Jakob Holstiege* • Manas K. Akmatov* • Claudia Kohring • Lotte Dammertz • Frank Ng • Thomas Czihal • Dominik von Stillfried • Jörg Bätzing

*Equal contribution

DOI: 10.20364/VA-21.01

Abstract

Background
Research has shown that some individuals such as seniors or those with chronic conditions have a higher risk of a severe course of COVID-19. The aim of the study was to provide estimates of vulnerable populations at higher risk of a severe COVID-19 course in Germany based on the current state of the art.

Methods
We used nationwide outpatient claims data from the years 2010 to 2019 collected according to the § 295 of the Social Code Book V. Three risk groups for a severe COVID-19 course were defined based on age- and comorbidity-related associations: 1. Individuals in the age group of 15 to 59 years with at least two comorbid disorders (for some individuals one disorder was sufficient); 2. Individuals in the age group of 60 to 79 years with at least one disorder and 3. All individuals over 80 years old irrespective of the presence of chronic conditions. We considered 15 chronic diseases or disease groups based on the current state of knowledge.

Results
Overall, 26% of individuals over 15 years were at higher risk of a severe COVID-19 course in 2019. This corresponds to an absolute number of nearly 18.5 million individuals in Germany, including 3.8 million in risk group 1; 9.2 million in risk group 2 and 5.4 million in risk group 3. On the regional level of Associations of Statutory Health Insurance Physicians the proportion of individuals at high-risk ranged between 21% in Hamburg and 35% in Saxony-Anhalt. Small-area estimates varied between 18% in Freiburg (Baden-Wurttemberg) and 39% in the district Elbe-Elster (Brandenburg).

Conclusion
The present study provides small-area estimates of vulnerable populations for a severe COVID-19 course. These data are of particular importance for planning of preventive measures such as vaccination.

Corresponding author: Dr. Jakob Holstiege
Central Research Institute of Ambulatory Health Care in Germany (Zi)
Salzufer 8 – 10587 Berlin – Tel. +49 30 4005 2467 – E-Mail: jholstiege@zi.de

Keywords

COPD, COVID-19, diabetes mellitus, heart failure, high-risk patients, hypertension, immunodeficient diseases, multimorbidity, SARS-CoV-2, pandemic preparedness, vaccination

Citation

Holstiege J, Akmatov MK, Kohring C, Dammertz L, Ng F, Czihal T, von Stillfried D, Bätzing J. Patients at high risk for a severe clinical course of COVID-19 — Small-area data in support of vaccination and other population-based interventions in the time of temporarily limited resources by December 2020. Central Research Institute of Ambulatory Health Care (Zi). Versorgungsatlas-Report No. 21/01. Berlin 2021. DOI: 10.20364/VA-21.01. URL: https://www.versorgungsatlas.de/themen/alle-analysen-nach-datum-sortiert/?tab=6&uid=116