

Ambulatory care-sensitive hospitalisations



Field of action 4: Reducing the burden and costs of disease

Adults

Background

Complications related to diabetes and its management including hypo- or hyperglycaemia can require hospital treatment. This indicator has been established on an international level and is published by Organisation for Economic Co-operation and Development (OECD) statistics every two years as part of an international comparison of the quality of ambulatory care [1]. Following OECD guidelines, only hospitalisations with diabetes as the main diagnosis are considered. While inpatient hospitalisations with diabetes as a secondary diagnosis are not taken into account, these make up a large number of hospitalisations due to the fact that diabetes prevalence increases with age [2].

Key messages

- ▶ In 2021 and 2022, the rate of ambulatory care-sensitive hospitalisations due to diabetes stagnated, after a sharp decline at the start of the COVID-19 pandemic in 2020.
- ▶ The rate of ambulatory care-sensitive hospitalisations is particularly high in the federal states with high diabetes prevalence and regions with high socioeconomic deprivation.

Figure 1: Temporal development of ambulatory care-sensitive hospitalisations with diabetes as the main diagnosis per 100,000 residents (15 years and over) by sex between 2015 and 2022 (age-standardised).

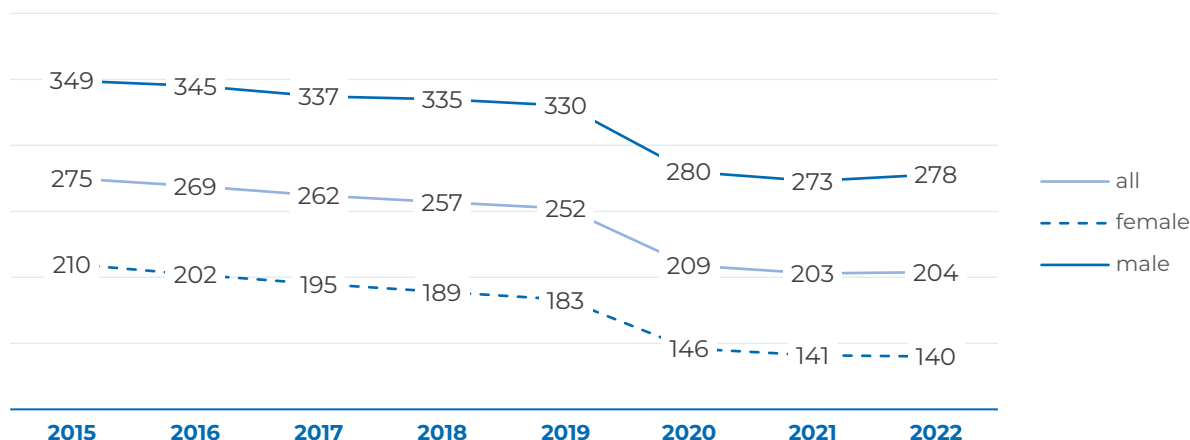


Figure 2: Ambulatory care-sensitive hospitalisations with diabetes as the main diagnosis per 100,000 residents (all 15 years and over) by age and sex in 2022.

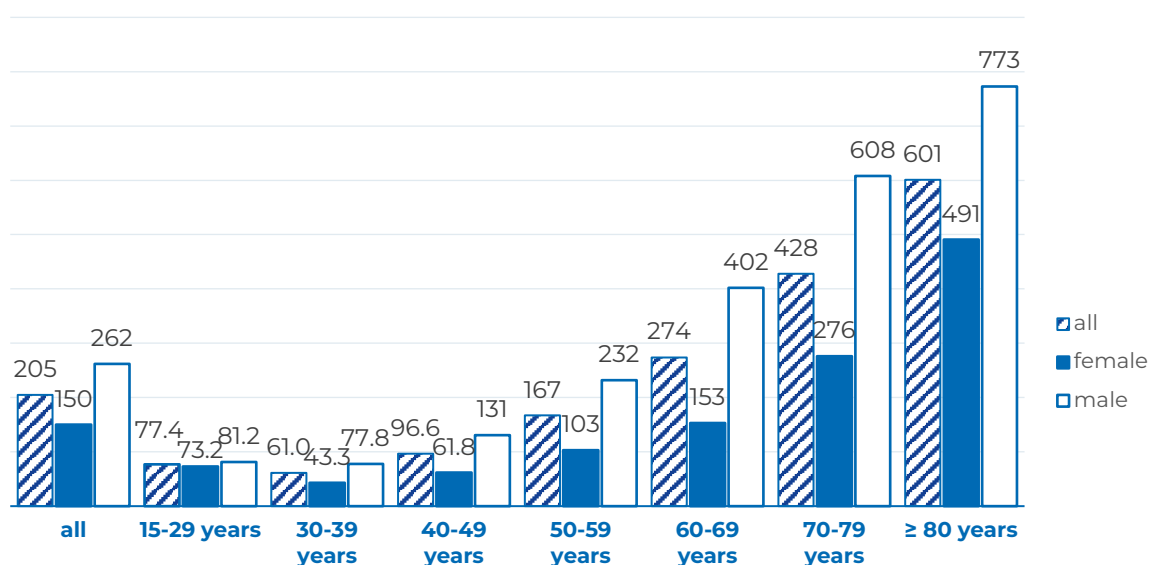


Figure 3: Ambulatory care-sensitive hospitalisations with diabetes as the main diagnosis per 100,000 residents (15 years and over) by regional socioeconomic deprivation and sex in 2022.

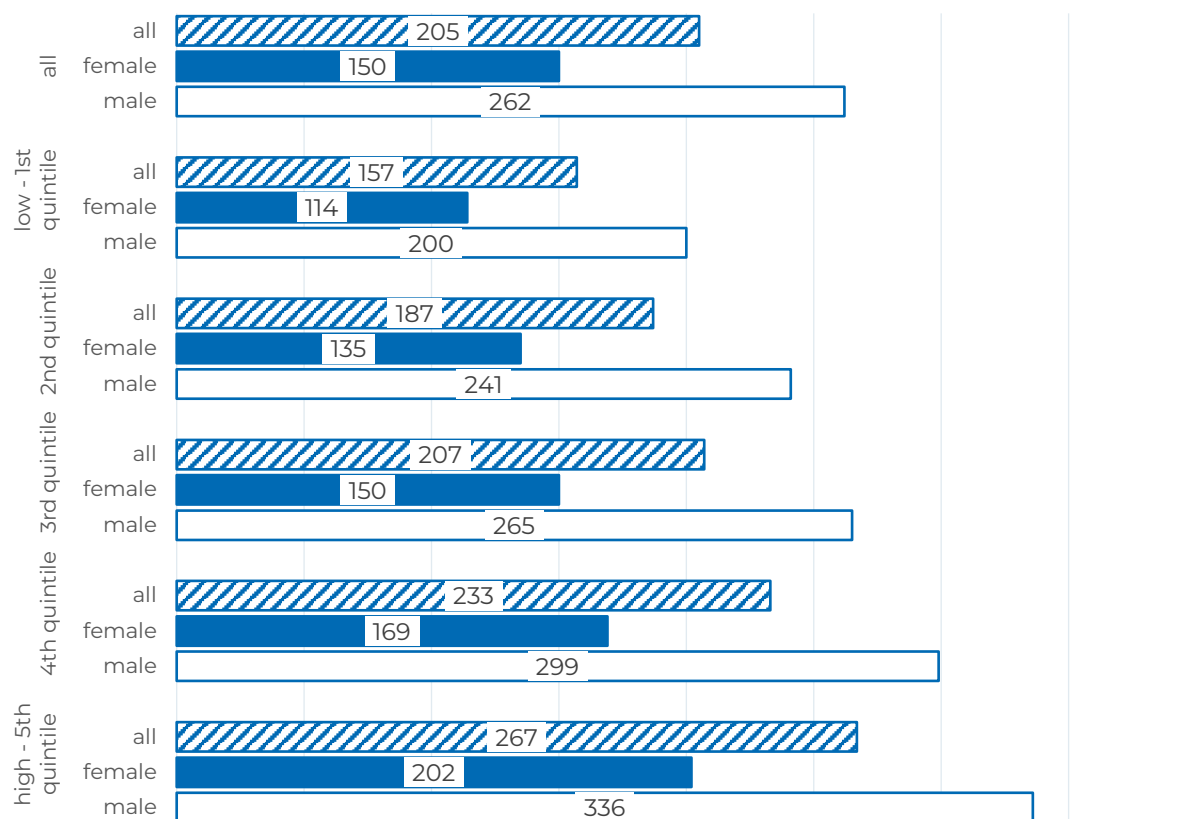
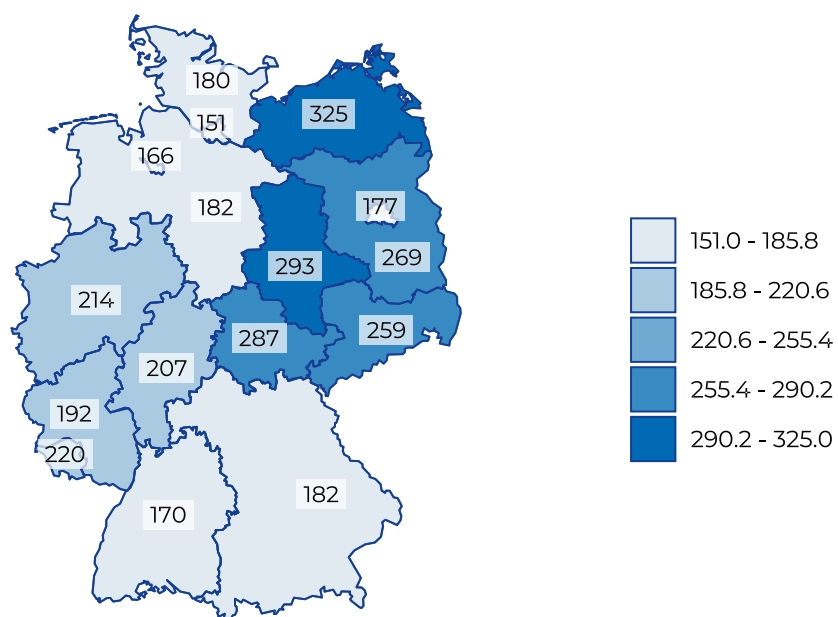


Figure 4: Ambulatory care-sensitive hospitalisations with diabetes as the main diagnosis per 100,000 residents (15 years and over) by federal state in 2022.



Results

Between 2015 and 2019, rates of hospitalisation with diabetes as the main diagnosis per 100,000 residents is relatively constant with a slight decrease. Subsequently, the rate drops sharply in 2020 and stagnates at that level in 2021 and 2022. For women, the rate is 150 and for men 262 per 100,000 residents in 2022. The decline during the COVID-19 pandemic is also evident in all federal states. In 2022, higher rates were recorded notably in Mecklenburg-Western Pomerania (325 per 100,000 residents) than in Hamburg, the federal state with the lowest rate (151). For both women and men, the highest rates of ambulatory care-sensitive hospitalisations due to diabetes are found in regions with high socioeconomic deprivation.

Conclusion

Between 2015 and 2019, the rate of ambulatory care-sensitive hospitalisations due to the indication diabetes decreases slightly. In 2020, there is a sharp decline, which must be interpreted in the context of the COVID-19 pandemic. An analysis by the Leibniz Institute for Economic Research (RWI) shows a sharp decline in all outpatient-sensitive hospital cases – also due to diabetes – from the beginning of the pandemic in March 2020 [3]. The hospital report 2022 [4] confirms the finding that after the sharp drop of ambulatory care-sensitive hospital cases with the start of the pandemic these stay at a lower level. A change in behaviour regarding the utilization of health care services is assumed. Overall, women show significantly lower rates compared to men. Regional differences persist in 2022, and the highest rates for ambulatory care-sensitive hospital cases are observed in the federal states with already high prevalence of diabetes. Regions with high socioeconomic deprivation are also associated with higher diabetes prevalence [5], which contributes to the higher rates of ambulatory care-sensitive hospital cases in these regions. The rate of inpatient hospital cases with diabetes as a secondary diagnosis, which is significantly higher than the rate reported here due to the high prevalence of diabetes in older age groups, is not part of the concept presented here, which focuses on the quality and structure of outpatient care.

Methodology and data sources

Definition

The indicator ambulatory care-sensitive hospitalisations is defined as the number of inpatient cases with diabetes as the main diagnosis (E10.-/E11.-/E13.-/E14.-) per 100,000 residents (aged 15 years and over) per year.

Reference population

All hospital cases that are billed in accordance with the Diagnosis-related groups (DRG) remuneration system.

Data source

Diagnosis-related groups statistics (DRG statistics) that include all approximately 19 million inpatient cases per year in Germany.

Calculation

- ▶ **Observed values:** The number of hospitalisations in relation to 100,000 residents.
- ▶ **Stratification:** The stratification by federal state is based on place of residence. Stratification by regional socioeconomic deprivation is based on the German Index of Socioeconomic Deprivation (GISD; Years 2019-20: GISD Release 2020; [6] Years 2021-22: GISD Release 2022 v0.2) [7, 8]. The GISD provides information on all rural and urban districts and divides them into quintiles ranging from low to high socioeconomic deprivation. The indicator was calculated stratified for each quintile after linkage of the GISD with hospitalisations at the district level (ecological correlation).
- ▶ **Age standardisation:** Direct age standardisation used five-year age groups for the ages 15 to 19 until 80 to 84, and a separate group for the ages 85 and over. The resident population of Germany as of 31 December 2022 was used as the reference population.

Data quality

Diagnosis-related Groups (DRG) statistics contain information on all hospitalisations in Germany. They include main and secondary diagnoses, operations and other procedures, as well as information on patients' age, sex and place of residence. The data are documented on a case by case basis, which means that a person hospitalised more than once will be classified as several cases. Data quality depends on coding practices and other aspects of documentation.

Data download

Robert Koch Institute. (2024). Results of the National Diabetes Surveillance 2015 – 2024 [Data set]. Zenodo. <https://doi.org/10.5281/zenodo.14935276> (in German)

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External links

- ▶ Statistisches Bundesamt (Destatis). Qualitätsbericht: Entgeltsysteme im Krankenhaus- DRG- Statistik und PEPP-Statistik. 2023 [cited 10.02.2025]. Available from: <https://www.destatis.de/DE/Methoden/Qualitaet/Qualitaetsberichte/Gesundheit/fallpauschalenbezogene-krank-enhausstatistik.html>.
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