



# Diagnostic and therapeutic density of healthcare services in newly diagnosed, home-dwelling patients with dementia

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## Abstract

### Background:

To date about 1.4 million patients with dementia (PwD) live in Germany. Due to increasing life expectancy the number of prevalent cases is estimated to double until 2050. Therefore, dementing illnesses significantly contribute to morbidity in the elderly and pose a major challenge for the healthcare system. The aim of the present study was to analyze the density of diagnostic and therapeutic healthcare services in newly diagnosed, home-dwelling PwD.

### Method:

This study is based on the complete nation-wide outpatient claims data of the panel doctors services according to §295 SGB of the year 2009. We identified prevalent and incident PwD aged 60 and older diagnosed by general practitioners or neuropsychiatrists. The density of healthcare services, i.e. neuropsychiatric testing, imaging, clinical chemistry and therapy-related services (medical attendance/talk) was assessed in newly diagnosed PwD living at home (analytical study population). Therefore, the percentage of PwD obtaining the service relative to the entire analytical study population was determined. Small-area estimates at the level of the 17 regional "Kassenärztliche Vereinigungen" (KV; ambulatory health services system in Germany) were sex- and age-standardized.

### Results:

For the year 2009 we identified almost 1 million prevalent (n=955,811) and 191,442 incident PwD. The prevalence and incidence rates based on outpatient claims data were 5.0% and 1.1%, respectively. Sex- and age-standardized rates varied across KV-regions with higher rates than average in the eastern regions of Germany and lower rates than average specifically in the western states Baden-Württemberg and Schleswig-Holstein.

The average proportion of neuropsychiatric testing in newly diagnosed, home-dwelling PwD was 34%. We observed lower rates (under 30%) in Berlin, Saxony and Bremen and higher rates (above 40%) in Bavaria, Mecklenburg-Western Pomerania, Rhineland-Palatinate and Lower Saxony. Any kind of clinical chemistry was obtained by 79% of PwD. Except for Saxony-Anhalt this proportion was even above 85% in all other eastern federal states. Overall, imaging was observed for 18% of PwD. Rates were slightly higher in western than in eastern Germany and in urban than in rural areas. A therapy-related medical service was found in almost all PwD, mainly due to accounting of the "Chronikerpauschale". 62% of PwD seeking medical care by neuropsychiatrists received therapy-related services with regard to medical attendance ("Betreuungskomplex") and 74% with regard to medical talk ("Gesprächsleistung").

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### **Conclusion:**

More than two thirds of PwD received clinical chemistry and therapy-related healthcare services. Neuropsychiatric testing and imaging procedures have been realized less frequently than expected and need further monitoring taking individual and regional healthcare structures into account. There is some evidence for differences in realizing dementia-related healthcare services between urban and rural areas. However, these differences need to be further examined by using additional sources of information and special study designs. The patient's sex and age seem to impact the density of dementia-related healthcare services, as well as the involvement of general practitioners and neuropsychiatrists.