

P2040 Antibiotic prescribing in German acute care hospitals: current national estimates and trend of decreasing consumption of cephalosporins and fluoroquinolones between 2013 and 2017

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Background: Background: Continuous hospital-wide antibiotic use surveillance has recently been established in Germany. Participating hospitals contribute on a voluntary basis (see also: www.antiinfektiva-surveillance.de), and receive yearly feedback reports for benchmarking. The aim of the present study was i) to provide a national estimate for hospital use per general population and, ii) to test whether suspected changes in use patterns (such as decreasing cephalosporins) can be confirmed in longitudinal analysis.

Material/methods: Electronically delivered quarterly consumption data were transformed into ATC-WHO defined daily doses (DDD) and "recommended" (hospital-adapted) daily doses (RDD) (www.antiinfektiva-surveillance.de) and expressed as DDD or RDD per 100 patient days. The 2017/18 sample included 207 acute care general hospitals corresponding to 13% of beds and 19.3% of all patient days reported nationally, and the analysis was stratified according to hospital size (<200, 200-399, 400-800, >800 beds) and teaching status. By using pooled means per stratum with 95% CIs (Cochrane-Armitage test) and adding 3-5% for pediatric and psychiatric inpatient services we extrapolated the data to a national estimate per 1,000 population and day (DID). Hospitals with complete data between 2013 and 2017 (n=102) were evaluated for changes in overall use and drug class use (Chi square test).

Results: The national estimate for hospital antibiotic use in Germany was 2.53 DID (95%CI 2.5-2.6). Penicillins, cephalosporins and fluoroquinolones comprised 31.8, 25.9, and 12.5 percent of all DDDs (30.1, 23.3, 15.1 percent of all RDDs). The relation between penicillins and cephalosporins (penicillin proportion) was 55% (DDD) or 56% (RDD). It was >50% (RDD-wise) in all hospital strata and greater in non-surgical (67%) than surgical services (49%). Longitudinal analysis showed a stable overall use density with a significant increase in the use of penicillins and significant decreases in the use of cephalosporins and fluoroquinolones between 2013 and 2017 (Figure).

Conclusions: The current analysis provides a first national estimate for recent hospital antibiotic use per population which is similar to other low-consuming countries. We also show that there has been a significant increase of penicillins over cephalosporins and fluoroquinolones in the last 5 years, and penicillins are now the dominant drug class in particular in non-surgical services.

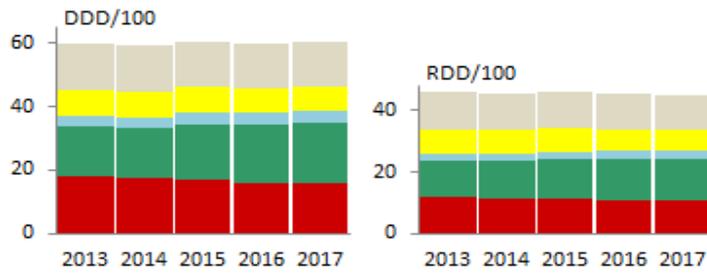


Figure: Longitudinal analysis of antibiotic use density (in DDD/100 [left panel] and RDD/100 [right panel]) in 102 German acute care hospitals 2013-2017. Red=Cephalosporins, green=penicillins, light blue=carbapenems, yellow=fluoroquinolones, grey=other.

