

Contribution of urinary tract infections to antibiotic consumption in Europe

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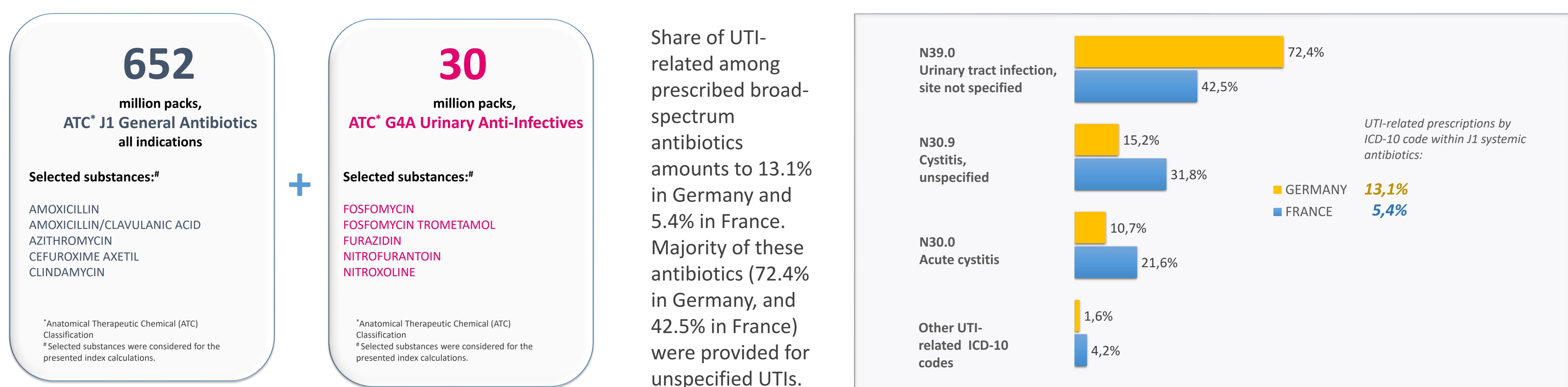
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Introduction

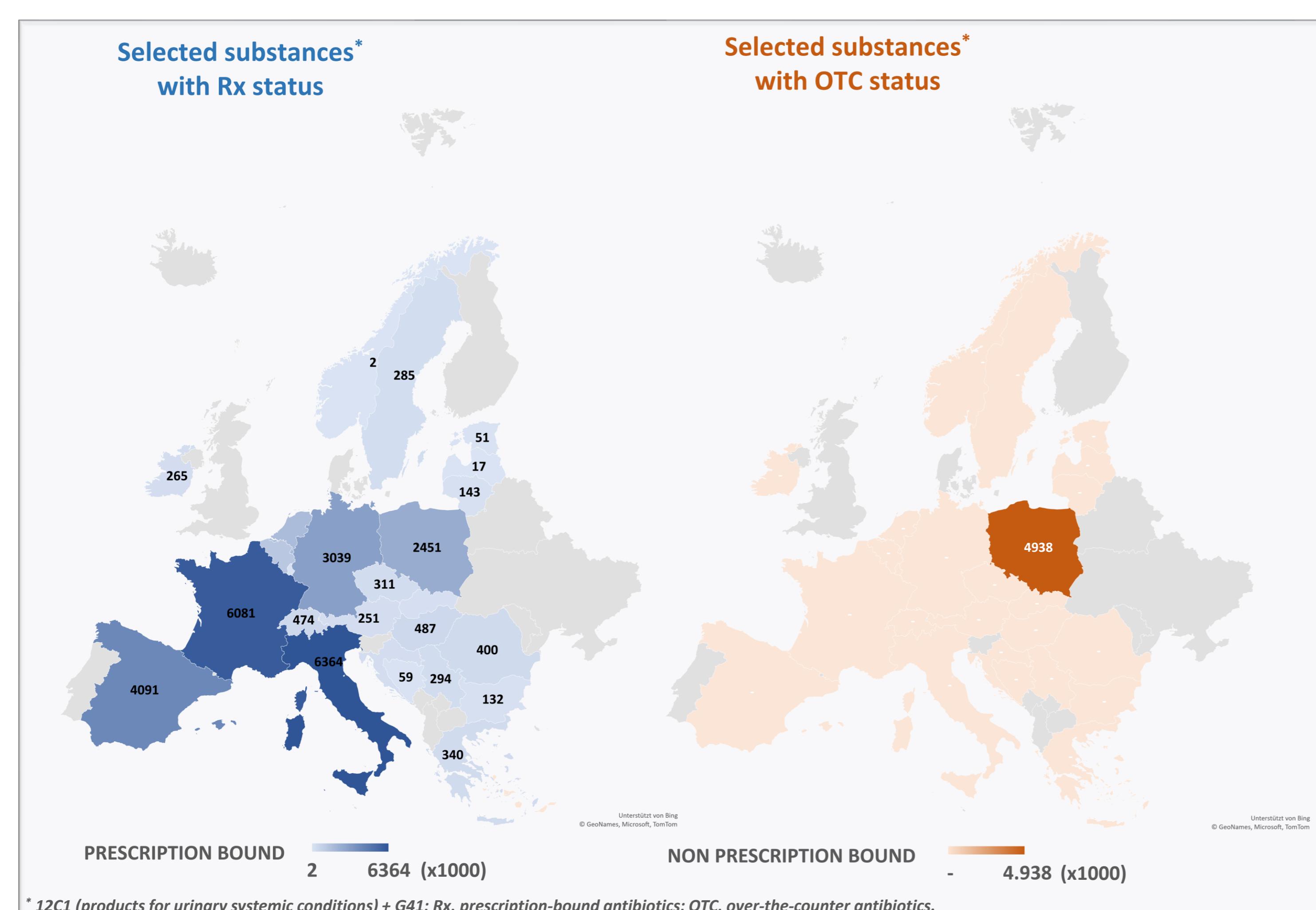
Loss of susceptibility towards antimicrobials poses a threat for the effective treatment of infectious diseases and has become a global public health concern [1]. Its impact within the EU is considerable, with estimated 33,000 yearly fatalities and 1.5 billion € yearly costs for health care needs and productivity loss [2]. Urinary tract infections (UTIs) are common conditions primarily treated by antibiotics, as recommended by various national and international guidelines. UTIs have previously been recorded among the most cited reasons for antibiotic use within the EU [3]. Rising antimicrobial resistance thus compels reconsidering the current use of antibiotics and alternative treatments for UTIs. Our novel insights regarding the prescription of antibiotics in Europe illuminate the urgency of this issue.

Results

652 million packages of broad-spectrum antibiotics were prescribed across Europe in 2019 for various medical indications and additional 30 million packages were prescribed specifically for the treatment of UTIs. Overall antibiotic consumption thus amounted to 1.5 packages per patient.



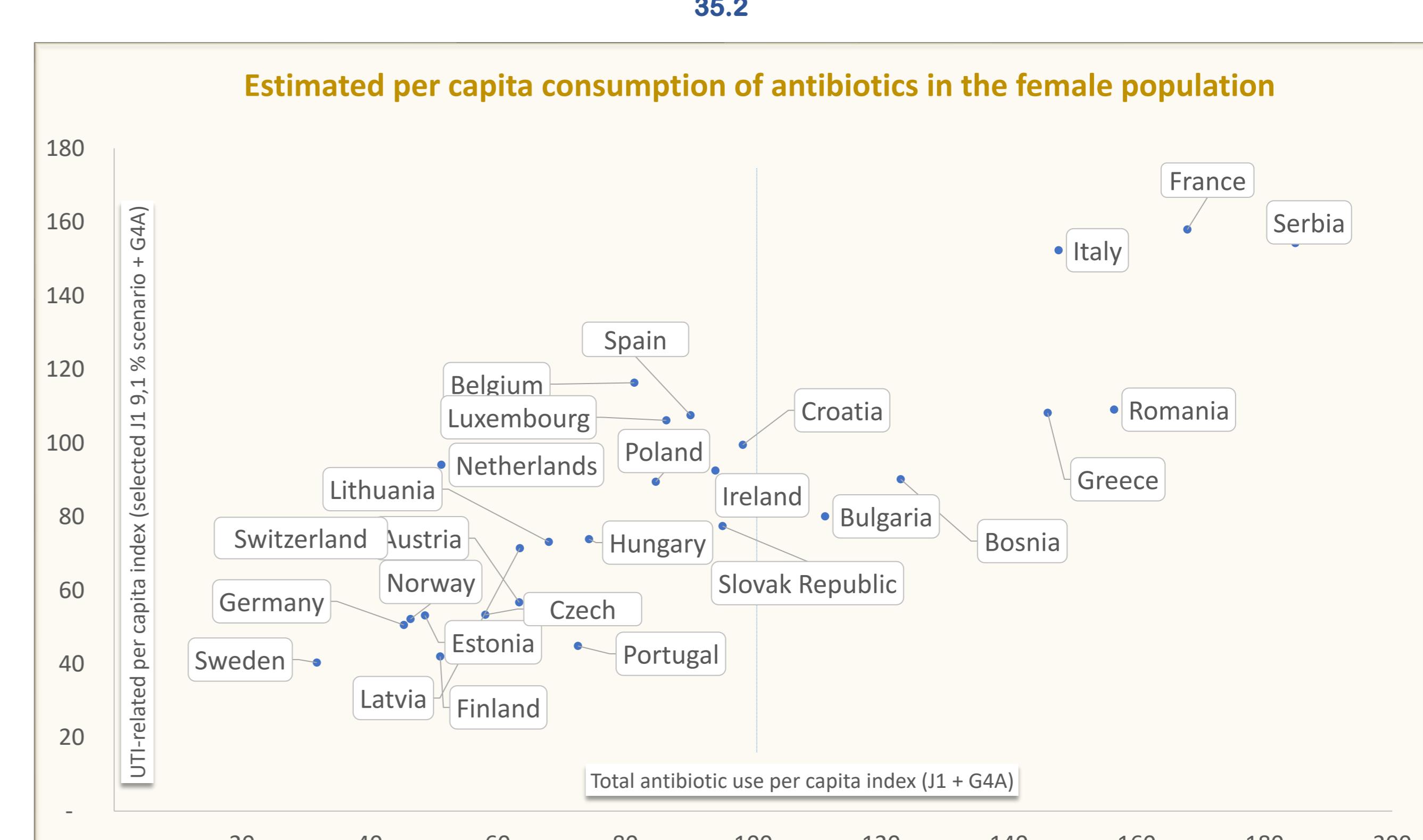
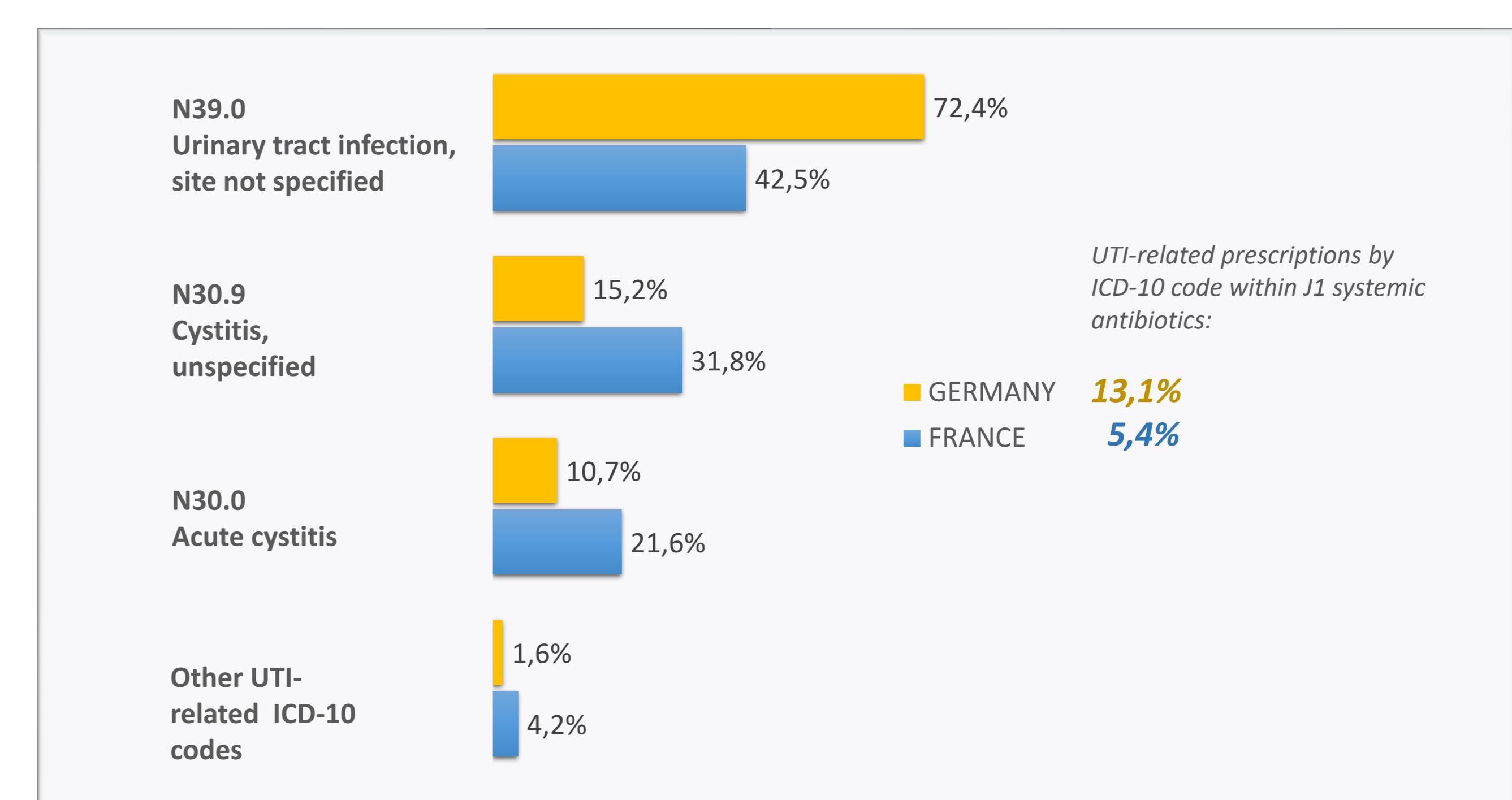
Assuming the proportion of general antibiotics prescribed for UTIs varies between the values determined for France and Germany, a conservative estimate results in a 9.1% average or 59.6 million packages of antibiotics. Adding the 30 million packages of UTI-specific antibiotics, **total number of UTI-related antibiotic prescriptions across Europe rises to an average of 89.6 million**, corresponding to 13.1% of total number of antibiotic packages considered.



Per capita consumption of antibiotics varies and is predominantly higher in South European countries. Relatively high consumption of antibiotics in Poland is likely attributable to over-the-counter (OTC) availability of antibiotics rather than prescriptions.

Material and Methods

Data on the prescription of broad-spectrum and UTI-specific antibiotics in European outpatient care (excluding the UK) were obtained from IQVIA MIDAS 2019. Broad-spectrum antibiotic consumption in Germany and France was matched with ICD-10 prescription codes for a conservative estimate of the share of UTI-related treatments. Results were used together with data from OECD and Statista 2020 to map per capita UTI-related to total antibiotic consumption across Europe.



Conclusions

Antibiotic consumption in Europe is generally high and notably affected by UTI-related prescriptions. Varying consumption across Europe reflects heterogeneous indications and scope for significant reductions [4]. Since use of antimicrobial treatments is strongly associated with development of resistance and high levels of resistance persist in the EU/EEA countries for several bacterial species and antimicrobial groups [4,5], effective alternative treatments will be particularly relevant for future therapeutic strategies.

Acknowledgments

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