

Antimicrobial use in Kyrgyzstan: First results of the WHO/Europe-ESAC project.

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Introduction and purpose

There is no reliable data on antimicrobial use in non-European-Union (EU) south-eastern European countries (SEE) and newly independent states (NIS). We aimed to collect valid, representative, comparable total national wholesales data on systemic antimicrobial use in Kyrgyzstan, a NIS with a population of 5.392.600 (<http://hdrstats.undp.org>).

Methods

Valid 2011 total antimicrobial use data were analysed according to the WHO Anatomical Therapeutic Chemical (ATC)/Defined Daily Doses (DDD) methodology and expressed in DDD/1000inhabitants/day (DID). Wholesales data on antibacterials (ATC group J01), antimycotics (J02) and antifungals (D01BA) were provided by the Ministry of Health. Reimbursement data were provided for hospital care by the Health Insurance Company. Obtained data coverage was 100%.



Results

Total (outpatients and hospital care) antibacterial use was 25.1 DID (*Fig.1*). The top 5 antibacterial subgroups (ATC level 3) were: penicillins, ATC group J01C (8.8 DID, 35.1% of all antibacterials); other beta-lactam antibacterials, ATC group J01D (3.7 DID, 14.6%); quinolones, ATC group J01M (3.2 DID, 12.6%); tetracyclines, ATC group J01A (2.2 DID, 8.7%) and sulfonamides/trimethoprim, ATC group J01E (1.9 DID, 7.5%) (*Fig.2*). The top 5 antibacterials (ATC level 5) were: amoxicillin (5.2 DID, 20.8%); ampicillin (2.6 DID, 10.2%); ciprofloxacin (2.4 DID, 9.5%); cefazolin (2.0 DID, 8.1%); and doxycycline (1.4 DID, 5.5%) (*Fig.3*). Use of amphenicols was 0.5 DID (1.9%). Proportional parenteral antibiotic use was high representing 31.1% of total antibiotic use (7.8 DID) and included mainly ampicillin (2.2 DID), cefazolin (2.0 DID) and ceftriaxone (1.1 DID). Kyrgyzstan mainly imported antibacterials manufactured in NIS rather than from non-NIS (17.9 DID versus 9.2 DID) with Russia providing the highest volumes of antibacterials (12.9 DID) followed by India (4.1 DID) and Belarus (2.17 DID) (*Fig.4*). Total antimycotic and antifungal use was low (0.38 DID). The top 3 were: fluconazole (0.29 DID, 75.5% of all antimycotics and antifungals), griseofulvin (0.09 DID, 23.8%), and itraconazole (0.002 DID, 0.4%) (*Fig.2*).

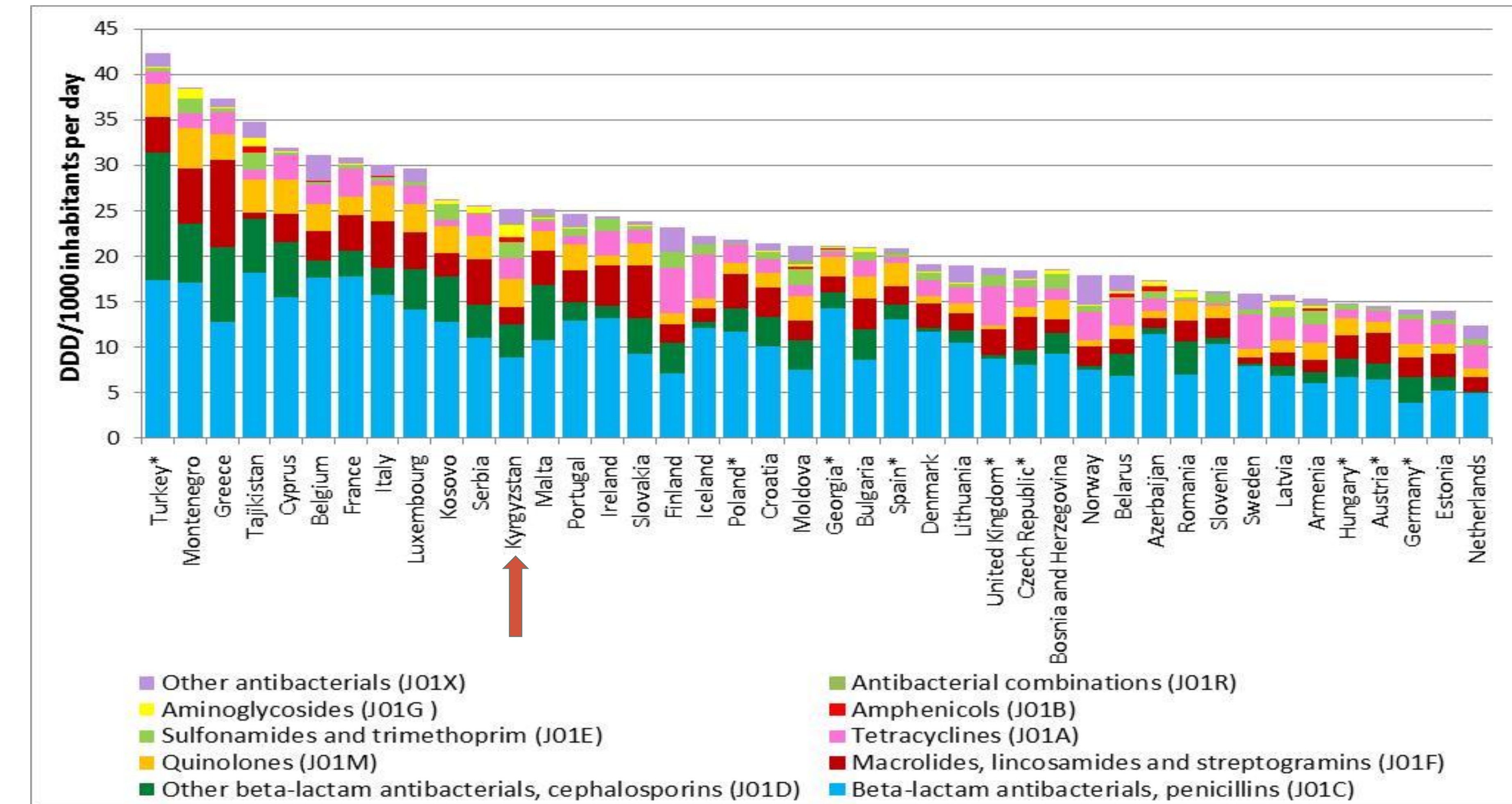


Fig.1 : Total antibiotic use in 2011, expressed in number of DDD per 1000 inhabitants per day in 12 European countries and Kosovo as compared to 29 ESAC-Net countries. (http://www.ecdc.europa.eu/en/healthtopics/antimicrobial_resistance/esac-net-database/Pages/database.aspx)

*Countries reporting only outpatient antibiotic use
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Conclusion

We present for the first time a standardized and validated data set of systemic antimicrobial use in Kyrgyzstan.

Most imported antibacterials were manufactured in Russia and may influence patterns of antibiotic use in Kyrgyzstan.

More in depth studies are needed to understand the remarkably high parenteral use of antibiotics which cannot be explained by hospital use only.

Striking high volumes of antimycobacterials are observed.

These data facilitate auditing of antimicrobial use and evaluation of the implementation of guidelines and public health policies to promote its judicious use.

Proportional Antimicrobial Use in Kyrgyzstan, 2011

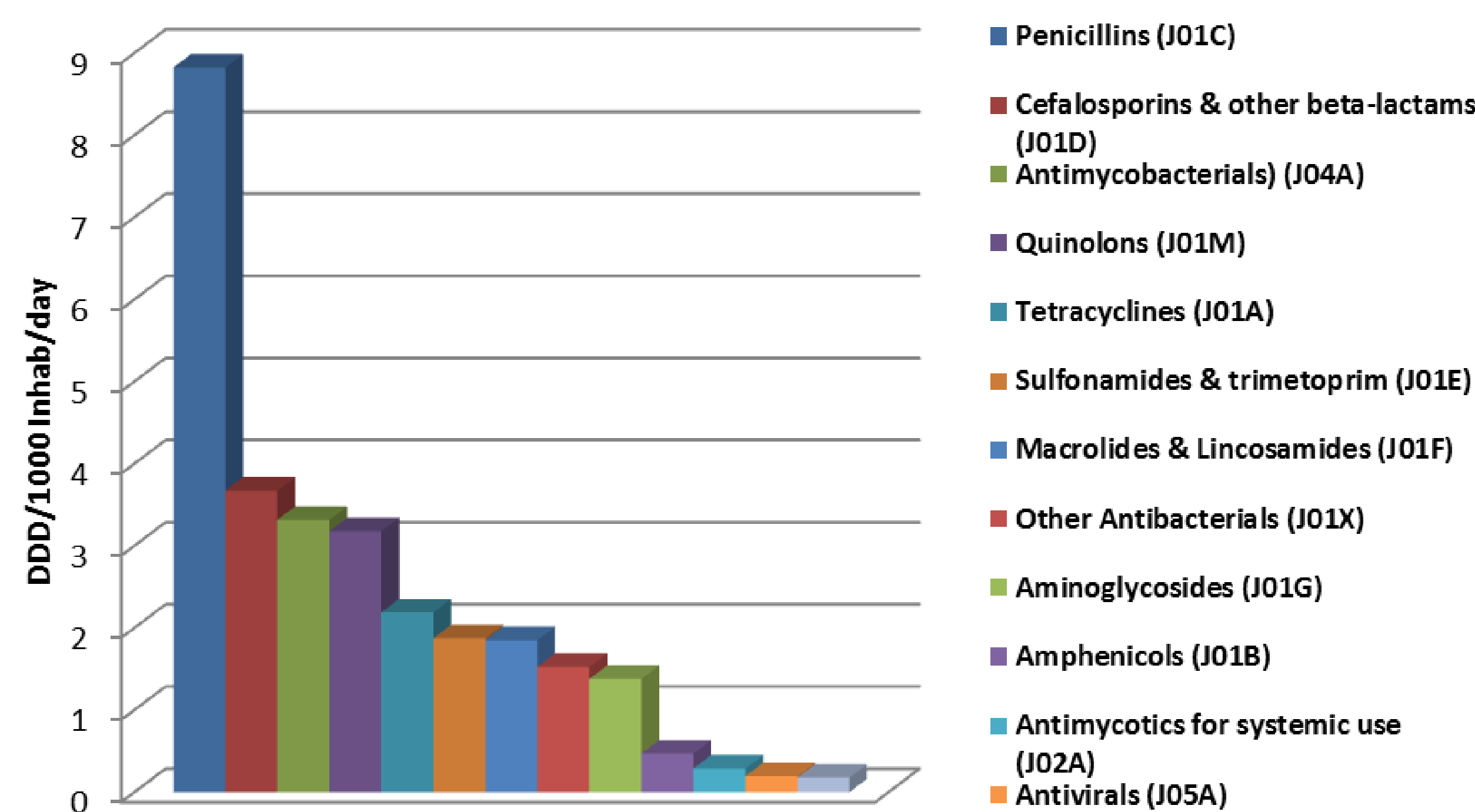


Fig.2: Absolute volume of use of the antibacterial subgroups, complemented with antimycotic and antivirals for systemic use and antimycobacterials at ATC3 level, expressed in DDD per 1000 inhabitants per day (DID), year 2011.

The Top - 10 antibacterials in KG, 2011

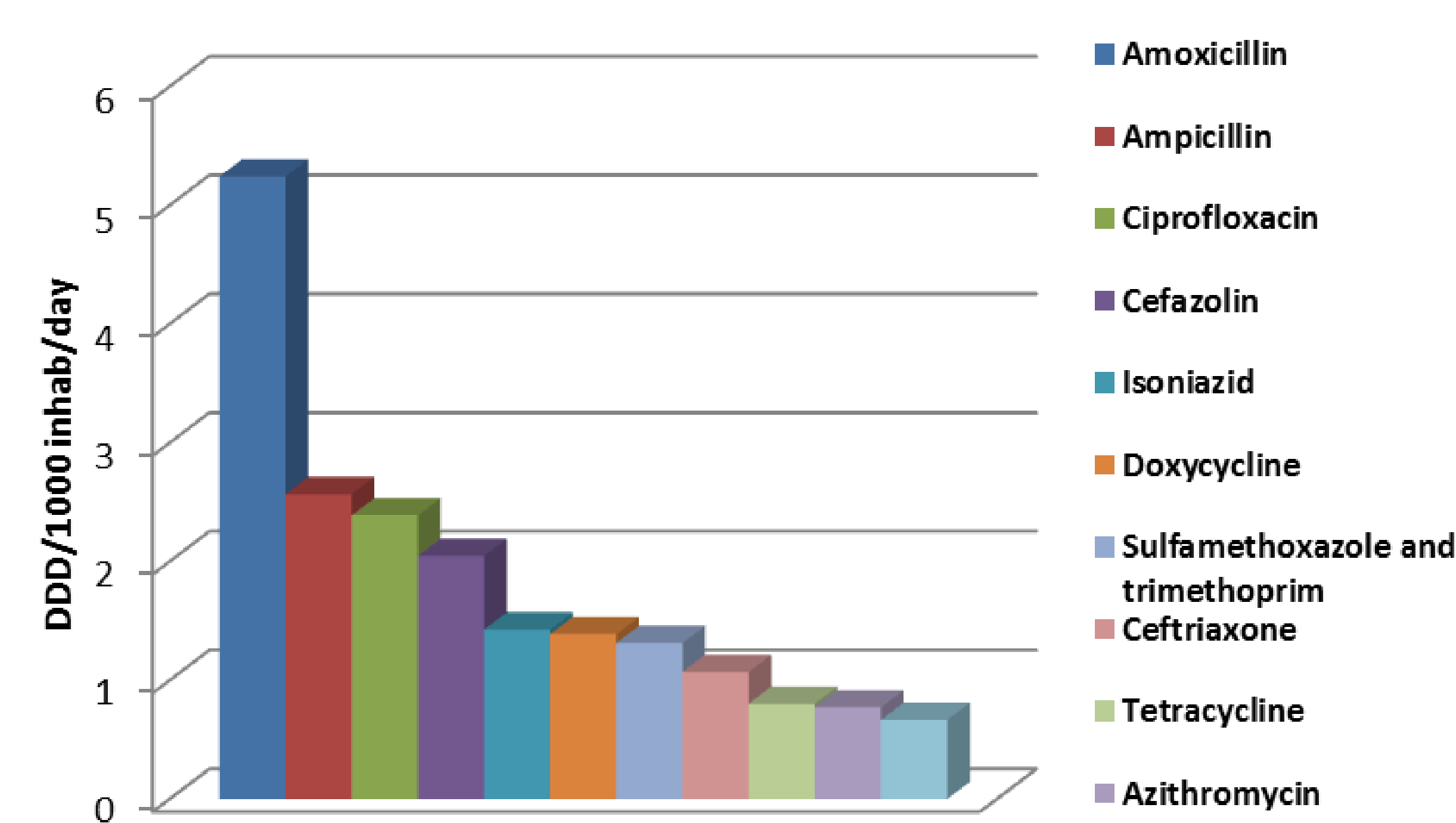


Fig.3: Absolute volume of use at substance - ATC5 level, expressed in DDD per 1000 inhabitants per day (DID), year 2011.

The Top - 10 countries manufacturing antibacterials, 2011

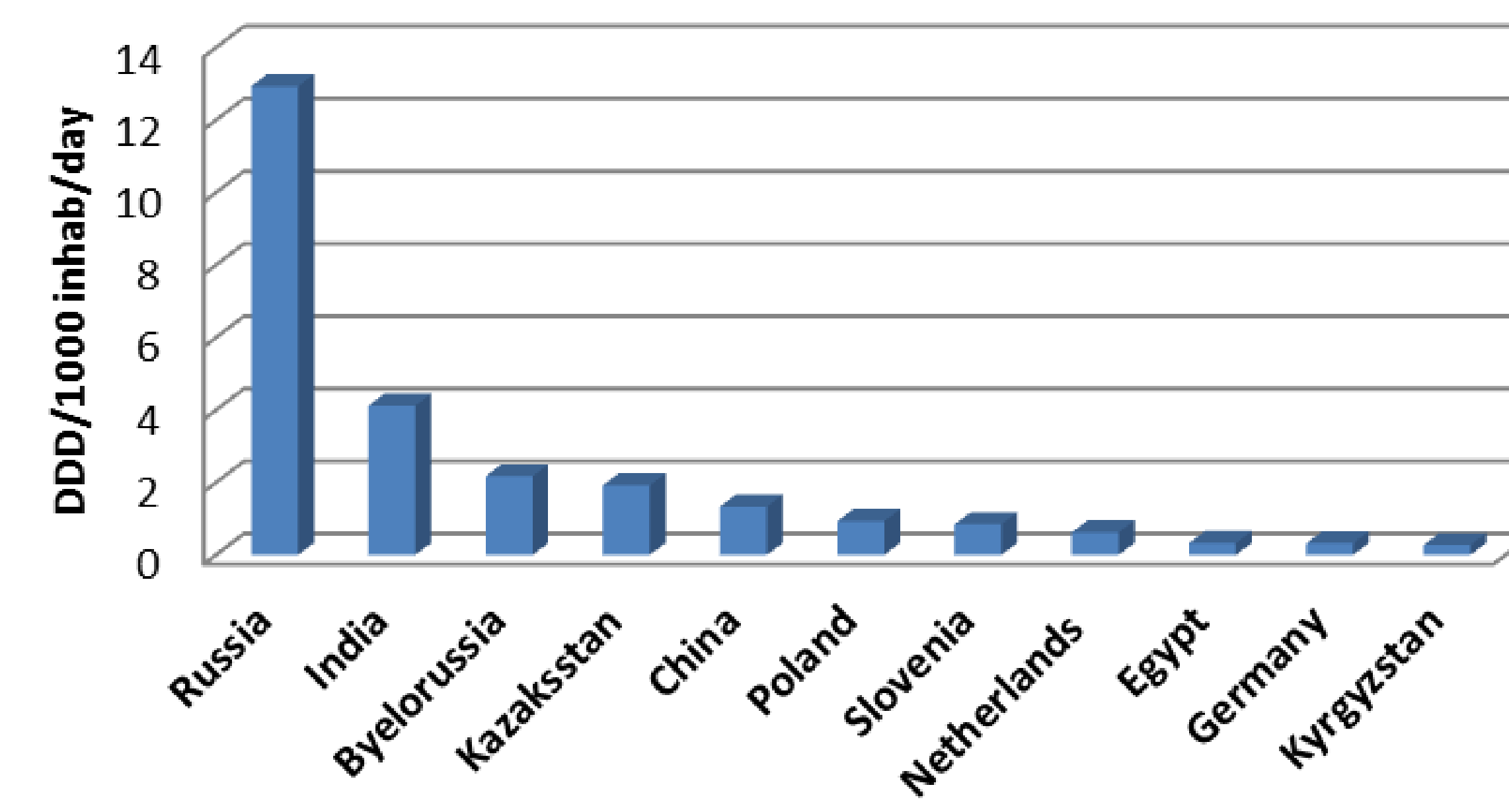


Fig.4 : Countries exporting antibacterilas for systemic use in Kyrgyzstan, expressed in DDD per 1000 inhabitants per day (DID), year 2011.