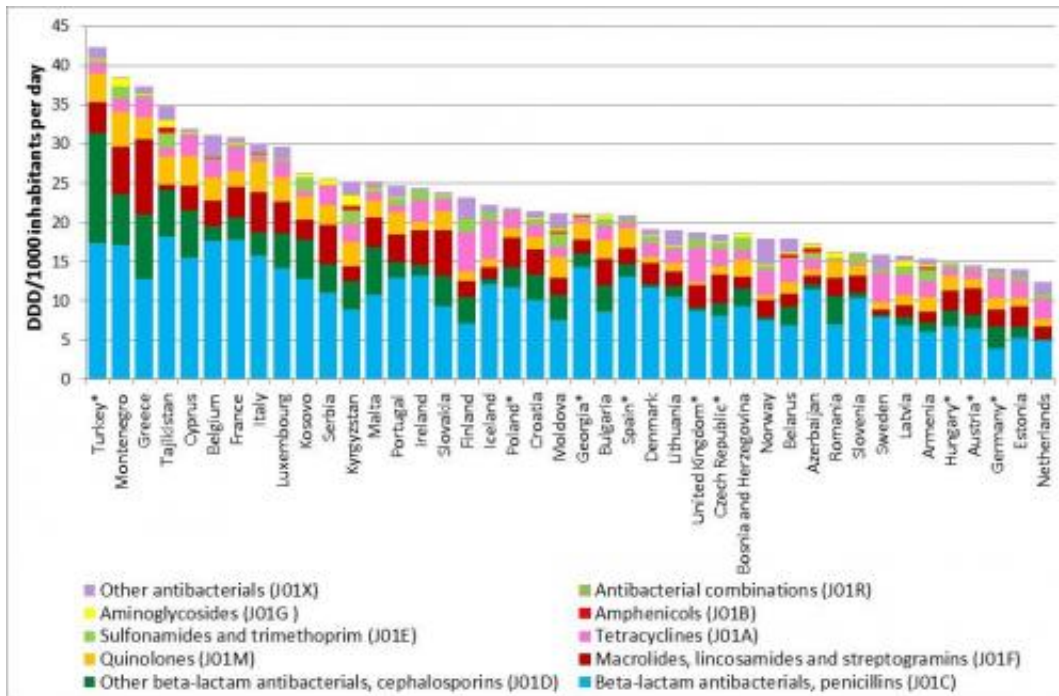


Data on antibiotic use in non-EU countries should stimulate development of action plans

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This figure shows total antibiotic use in each country studied. Credit: © Herman Goossens

A new study, published in *The Lancet Infectious Diseases* journal, provides the first ever reliable data on antibiotic use in non-European Union (EU) southern and eastern European countries and newly independent states.

The research, which was led by Dr Herman Goossens, of the Vaccine

and Infectious Disease Institute (VAXINFECTIO) at the University of Antwerp, Belgium, is a critical first step in identifying targets for improvements in the way antibiotics are used in these countries.

The authors hope that the findings will aid the development of national action plans to enhance judicious [antibiotic use](#), and curb the rising threat of [antibiotic resistance](#).

Dr Goossens and colleagues, who conducted the study on behalf of the WHO/Europe-ESAC Project Group, used surveillance methods already used to successfully monitor antibiotic use in EU countries to estimate average antibiotic use per person in thirteen non-EU countries and areas of the WHO European region [1], as well as collecting data on the types of antibiotics used, and how they were administered.

In many of the countries studied, health information systems were poor, and lack of [universal health coverage](#) made collecting reliable data on antibiotic use challenging. However, the researchers used information from a variety of sources, including wholesale sales data, to produce a robust estimate of overall antibiotic use in the countries studied, and the inclusion of sales data meant that this estimate also included over-the-counter non-prescription antibiotic use.

Of the countries studied, Turkey had the highest antibiotic use, with average antibiotic use per person nearly three times higher than the country with the lowest levels of antibiotic use included in the study, Armenia.

The finding that Turkey has outstandingly high levels of antibiotic use – the highest of any country in the WHO European region – has already resulted in the Turkish government formulating a national action plan on rational drug use, and the study authors hope that the new results will prompt similar action in the other countries studied.

In some countries, unexpectedly high usage of powerful broad-spectrum antibiotics, such as quinolones or combinations of amoxicillin and β -lactamase inhibitors, suggests that these drugs are being inappropriately used as first line treatments for infections, despite current guidelines recommending these drugs for second-line treatment only.

According to the authors, "High rates of self-medication with antibiotics might go along with the underuse of health services or might lead to diagnostic and health-care system seeking delays. Therefore, restriction of over-the-counter use of antibiotics is urgently needed, and could be partly achieved by implementing national regulatory instruments, public awareness campaigns, or enhancing efforts in educating health-care providers towards appropriate prescribing."

Across much of the region studied, especially the newly independent states [2], the researchers found substantially higher levels than expected of parenteral (injected or infused) antibiotic administration, which suggests that [antibiotics](#) may be being inappropriately used outside hospital settings in some countries.

"The purpose of collecting indicators of antibiotic use is to identify inappropriate prescribing and to provide a means to measure the effect of interventions," say the authors. "These data will raise awareness of inappropriate antibiotic use and stimulate policy makers to develop action plans. The established surveillance system provides a method to develop quality indicators of antibiotic use and to assess the effect of policy and regulatory actions."

In a linked Comment, Ramanan Laxminarayan and Thomas Van Boeckel write that, "Systematic, regular data on antibiotic consumption can have many uses. Much greater work is needed on assessing the determinants of antibiotic consumption. In the USA, spatial variations in antibiotic prescribing have been attributed to socioeconomic and cultural

differences that affect patient demand or physician prescribing, such as the use of childcare centres, access to health insurance, many competing antibiotic brands, and physicians competing to retain patients. Similar studies are needed in other parts of the world to understand how best to design appropriate stewardship programmes."

More information: [1] Included in the study were: Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Croatia, Georgia, Kosovo, Kyrgyzstan, Moldova, Montenegro, Serbia, Tajikistan, and Turkey

[2] The newly independent states are those which were formerly part of the Soviet Union: Armenia, Azerbaijan, Belarus, Georgia, Kyrgyzstan, Moldova, Tajikistan, Ukraine, and Uzbekistan

Paper: [www.thelancet.com/journals/lan ... \(14\)70071-4/abstract](http://www.thelancet.com/journals/lan.../S0140-6736(14)70071-4/abstract)

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