



**WHO Report
on Surveillance
of Antibiotic
Consumption**

**2016-2018
Early implementation**



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ISBN 978-92-4-151488-0

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Suggested citation. WHO report on surveillance of antibiotic consumption: 2016-2018 early implementation. Geneva: World Health Organization; 2018. Licence: CC BY-NC-SA 3.0 IGO.

Cataloguing-in-Publication (CIP) data. CIP data are available at <http://apps.who.int/iris>.

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Printed in Switzerland

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Executive summary

Antimicrobial resistance is a major threat to health and human development, affecting our ability to treat a range of infections. Treatments for a growing number of infections have become less effective in many parts of the world due to resistance. The link between antimicrobial resistance and use of antimicrobials is well documented. However, little information is available on antimicrobial use in low-income countries. This report presents 2015 data on the consumption of systemic antibiotics from 65 countries and areas, contributing to our understanding of how antibiotics are used in these countries. In addition, the report documents early efforts of the World Health Organization (WHO) and participating countries to monitor antimicrobial consumption, describes the WHO global methodology for data collection, and highlights the challenges and future steps in monitoring antimicrobial consumption.

Need for a standardized approach to measuring antimicrobial consumption

In order to obtain a thorough and comprehensive picture of antimicrobial resistance and to be able to identify areas in which actions are needed, surveillance data are essential. This includes data on antimicrobial resistance and also antimicrobial consumption. Surveillance systems should provide data that can be easily compared, exchanged or used locally, nationally and globally. Unfortunately, many low- and middle-income countries lack the capacity to establish and maintain systems to collect and make use of data on antimicrobial consumption.

The WHO methodology for a global programme on surveillance of antimicrobial consumption provides a common technical basis for setting up a surveillance system on antimicrobial consumption and allows for standardized data collection at the national level. The approach has largely been adapted from the European Surveillance of Antimicrobial Consumption Network (ESAC-Net) of the European Centre for Disease Prevention and Control (ECDC) and from the protocol developed by the WHO Regional Office for Europe for its Antimicrobial Medicines Consumption Network.

Overview of results

Since 2016, WHO has supported capacity building in monitoring antimicrobial consumption in 57 low- and middle-income countries through workshops, trainings and technical support. At this stage, 16 of these countries were able to share their national data with WHO. Other countries are currently in the process of data collection and validation. In total, 64 countries and Kosovo¹ contributed data on antibiotic consumption for this report, with the bulk of data coming from the European region and countries with pre-existing, mature surveillance systems.

The consumption data showed wide intra- and interregional variation in the total amount of antibiotics and the choice of antibiotics consumed. The overall consumption of antibiotics ranged from 4.4 to 64.4 Defined Daily Doses (DDD) per 1000 inhabitants per day. In most countries amoxicillin and amoxicillin/clavulanic acid were the most frequently consumed antibiotics. These substances belong to the Access category of the Model List of Essential Medicines, which includes antibiotics recommended as first- or second-line therapy for common infectious diseases and which should be available in all countries. In 49 countries, the Access category of antibiotics represented more than 50% of antibiotic consumption. Broad-spectrum antibiotics such as third generation cephalosporins, quinolones and carbapenems are categorized as Watch antibiotics and should be used with caution because of their high potential to cause the development of antimicrobial resistance and/or their side-effects. This report shows great diversity in the level of consumption of antibiotics in the Watch category, which accounted for less than 20% of total antibiotic consumption in some countries, but more than 50% in others. Reserve group antibiotics, which should only be used for specific indications such as infections with multidrug-resistant bacteria, accounted for less than 2% of total antibiotic consumption in most high-income countries and were not reported by most low- and middle-income countries. Antibiotics such as second generation cephalosporins and some tetracyclines, which have so far not been classified in the Access, Watch and

¹ In accordance with United Nations Security Council Resolution 1244 (1999).



Reserve (AWaRe) categories, accounted for a substantial proportion of total consumption, more than 10% in the majority of countries. Data interpretation should take the country context into account with respect to the data sources selected, burden of infectious diseases, access to medicines, structure of the health care systems, and antimicrobial resistance rates of the main pathogens.

Way forward

WHO aims to increase the number of countries participating in the global programme on surveillance of antimicrobial consumption and to continue supporting low- and middle-income countries in their efforts to build and improve surveillance systems on antimicrobial consumption adapted to the national context. Efforts to build national capacity will continue, including increasing knowledge on utilizing data on antimicrobial consumption to optimize antimicrobial use, to help ensure the sustainability of national antimicrobial consumption surveillance programmes in the long term. The AWaRe categorization provides a suitable framework for target setting, especially with respect to the use of Access antibiotics, and can be included as an indicator for monitoring and evaluation in the future. To improve coordination, the global monitoring of antimicrobial consumption will be included in the Global Antimicrobial Resistance Surveillance System (GLASS) IT platform in 2019. This will provide national antimicrobial resistance programmes and other users of GLASS access to data on both antimicrobial consumption and antimicrobial resistance.

The early implementation phase of the WHO global programme on surveillance of antimicrobial consumption revealed the challenges and impediments to establishing national surveillance of antimicrobial consumption in resource-limited countries.

to expand and consolidate surveillance of antimicrobial consumption is essential.

Key messages

- Data on antimicrobial consumption provide an important basis for countries to better understand the patterns and amount of antibiotics used at the national level, which can inform policies, regulations and interventions to optimize the use of antibiotics.
- This report shows the great variation in quantity and type of antibiotics consumed between the included countries. While the observed variation may be due to the selection and coverage of data sources, it also reflects an actual difference in antibiotic use.
- The use of antibiotics appears to be very high in some parts of the world, suggesting their overuse, whereas it is low in others, which may indicate limited access to these life-saving medicines.
- Findings from this report confirm the need to take action to ensure that antibiotics are used appropriately, such as enforcing prescription-only policies and implementing antimicrobial stewardship programmes.
- Governments and the international community should also ensure equitable access to antibiotics, for example through strengthening of regulatory frameworks, procurement and supply chains.
- The process of implementing national surveillance of antimicrobial consumption has prompted countries to review national regulations, procurement and supply chains of medicines as a starting point to strengthen overall pharmaceutical systems.
- The lack of data from large parts of the world emphasizes the need for continued financial, technical and human resources support

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