



**ArcMUN**

Aristotelio College Model United Nations

## **World Health Organization committee (WHO)**

### **The global Antibiotic Resistance crisis**

**Contributors:** Gourgouli Nikoleta, Chatziefraimidou Konstantina, Stamkopoulou Dimitra

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## GENERAL INSTRUCTIONS AND INFORMATION

In order for you to be fully prepared for the session, you should follow the next steps:

1. Get accustomed to the procedure of the session. Please feel free to read the procedure in the official website of ArcMUN 2017. (<http://aristoteliocollegemun.weebly.com/rules-of-procedure.html>) We will explain the procedure once more when in person, so please do not worry that much for the rules from now.
2. Read your Study Guide and indulge yourselves in individual research. Read the links provided in this guide and also do research in other websites and mass media. However, keep in mind that you should conduct your research based on official data provided by formal websites (i.e. the UN website, the European Commission etc.)
3. Know the policy of the country you are representing. You should always bear in mind that during the conference you will be representing a specific country and its policies and not your personal point of view on the issue debated.
4. You should know not only your country's view on the topic, but also some general information regarding alliances, geopolitical state, natural resources etc.
5. Write and send to the committee email before **February 1st**, a position paper, in which you will explain your **country's point of view, measures and possible suggestions on our topic; "The global Antibiotic Resistance crisis"**. Visit the session's website to see the official example of a position paper and how it should be structured.

## INTRODUCTION

Honorable delegates, as the chairs of WHO committee we welcome you to the 15th model of the United Nations. The topic we will be discussing on during the debate is one of utmost importance. Currently, major advance in research on new drugs is being made and these drugs are being used for the treatment of many diseases. Most of the more serious infectious diseases are caused by bacteria, and can be treated with the use of antibiotics.

**Antibiotics**, also known as antibacterials, are a type of antimicrobial medicine that is used for the prevention and treatment of bacterial infections. They affect certain vital for the bacteria pathways which results in their destruction. Some bacteria, though, happen to have certain genes that can cause them to be resistant to antibiotics. These bacteria are quite rare in the general population. Every time one patient is treated with antibiotics, all the bacteria are destroyed except those, if any, who are resistant to the particular antibiotic, as antibiotics remove drug-sensitive competitors, leaving resistant bacteria behind to reproduce as a result of natural selection. From then on this is the strand that is transmitted to the next patient. This phenomenon piles up and through the years, it results in whole population of bacteria being resistant. One good example of this is the use of penicillin. When first discovered, approximately 100 years ago, it was very effective. Today, though, it is rarely, if not ever, being used and that is because nowadays most of the bacteria strands are penicillin-resistant.

The extensive use and misuse of antibiotics resulted in more strands of bacteria becoming antibiotic-resistant. These bacteria can infect both humans and animals and are way more difficult to treat than non-resistant bacteria, requiring alternative medications or higher doses. Consequently, antibiotic resistance leads to higher medical costs, prolonged hospital stays, and increased mortality. If the Antibiotic Resistance Crisis is not confronted immediately it may lead to an era, in which people are dying because of a simple infection or a small injury. Thus, it is of vital importance that the world reduces the amount of antibiotics that are prescribed and used every year.

## INTERNATIONAL FRAMEWORK

On 21 September 2016, the President of the UN General Assembly convenes an one-day high-level meeting at the UN Headquarters in New York on "Anti Resistance", with the participation of Member States, non-governmental organizations, civil society, the private sector and academic institutions, in order to provide input.

The primary objective of the meeting is to summon and maintain strong national, regional and international political commitment in addressing antimicrobial resistance (AMR) comprehensively and multi-sectorally, and to increase and improve awareness of antimicrobial resistance.

The “Global action plan on antimicrobial resistance” has 5 strategic objectives:

1. To improve awareness and understanding of antimicrobial resistance.
2. To strengthen surveillance and research.
3. To reduce the incidence of infection.
4. To optimize the use of antimicrobial medicines.
5. To ensure sustainable investment in countering antimicrobial resistance.

United Nations General Assembly: Heads of State at the UN General Assembly in New York in September 2016 committed to taking a broad, coordinated approach to address the root causes of AMR across multiple sectors, especially human health, animal health and agriculture.

Member States reaffirmed their commitment to develop national action plans on AMR, based on the global action plan. WHO is supporting Member States to develop their own national action plans to address antimicrobial resistance.

In response to the first objective of the global action plan, WHO is leading a global, multi-year campaign with the theme “Antibiotics: Handle with care”. The campaign was launched during the first World Antibiotic Awareness Week in November 2015.

## **CAUSES OF THE ANTIBIOTIC RESISTANCE CRISIS<sup>1</sup>**

### Overuse

Epidemiological studies have demonstrated a direct relationship between antibiotic consumption and the emergence and dissemination of resistant bacteria strains. Despite warnings regarding overuse, antibiotics are overprescribed worldwide.

### Inappropriate Prescribing

Incorrectly prescribed antibiotics also contribute to the promotion of resistant bacteria. Studies have shown that treatment indication, choice of agent, or duration of antibiotic therapy is incorrect in 30% to 50% of cases. Incorrectly prescribed antibiotics have questionable therapeutic benefit and expose patients to potential complications of antibiotic therapy.

### Extensive Agricultural Use

In both the developed and developing world, antibiotics are widely used as growth supplements in livestock, primarily to promote growth and to prevent infection. Treating livestock with antimicrobials is said to improve the overall health of the animals, producing larger yields and a higher-quality product.

The antibiotics used in livestock are ingested by humans when they consume food. The transfer of resistant bacteria to humans by farm animals was first noted more than 35 years ago. These bacteria can cause infections in humans that may lead to adverse health consequences.

The agricultural use of antibiotics also affects the environmental microbiome. Up to 90% of the antibiotics given to livestock are excreted in urine and stool, then widely dispersed through fertilizer, groundwater, and surface runoff and the resultant geographical spread can be considerable.

### Availability of Few New Antibiotics

The development of new antibiotics by the pharmaceutical industry, a strategy that had been effective at combating resistant bacteria in the past, had essentially stalled due to economic and regulatory obstacles. Of the 18 largest pharmaceutical companies, 15 abandoned the antibiotic field.

Because antibiotics are used for relatively short periods and are often curative, antibiotics are not as profitable as drugs that treat chronic conditions, such as diabetes, psychiatric disorders, asthma, or gastroesophageal reflux. Another factor that causes antibiotic development to lack economic appeal is the relatively low cost of antibiotics.

## Regulatory Barriers

Even for those companies that are optimistic about pursuing the discovery of new antibiotics, obtaining regulatory approval is often an obstacle. Between 1983 and 2007, a substantial reduction occurred in the number of new antibiotic approvals. Difficulties in pursuing regulatory approval that have been noted include: bureaucracy, absence of clarity, differences in clinical trial requirements among countries, changes in regulatory and licensing rules, and ineffective channels of communication.

## **POSSIBLE SOLUTIONS**

The problem can be addressed from numerous scopes. Some of them include the actions that should be taken in order for the public to be well-informed, the monitoring of prescription of such medicine and the reduction of their use in agriculture. In addition, it is considered urgent that research towards newer and faster diagnostic techniques should be funded in order to prevent unnecessary prescription of antibiotics. It is important that there is a continuing, steady development of new antibiotics and other strategies (including immunotherapeutics and vaccines, diagnostics and antibiotic stewardship programs to improve targeted therapy, and well-coordinated and -funded domestic and international monitoring, tracking, and prevention and control plans) to respond to new drug-resistant threats.

1. C. Lee Ventola, The Antibiotic Resistance Crisis, Part 1: Causes and Threats

## **POINTS TO CONSIDER DURING THE DEBATE**

- ❖ What measures has your country taken towards the reduction of the effects of this crisis?
- ❖ What steps should the member states take in order to ensure public awareness of the issue?
- ❖ How can the research of new antibiotics become once more attractive to pharmaceutical companies?
- ❖ Should prescription of such medicine be monitored and regulated more closely? How?
- ❖ The fact that antibiotic resistance is one of the biggest threats to global health and food security nowadays.
- ❖ What further measures should countries take in order to ensure the containment of the antibiotic resistance crisis?

## **SUGGESTED BIBLIOGRAPHY**

<http://www.who.int/mediacentre/factsheets/antibiotic-resistance/en/>

<http://www.who.int/countries/en/>

<https://www.cdc.gov/drugresistance/>

[http://emerald.tufts.edu/med/apua/about\\_issue/about\\_antibioticres.shtml](http://emerald.tufts.edu/med/apua/about_issue/about_antibioticres.shtml)

<http://www.nhs.uk/news/2016/05May/Pages/Review-calls-for-global-action-to-tackle-antibiotic-resistance-crisis.aspx>

<http://www.fda.gov/ForConsumers/ConsumerUpdates/ucm092810.htm>

For any further information please contact us via email at [who.arcmun@gmail.com](mailto:who.arcmun@gmail.com)

Your board,

Gourgouli Nikoleta, Chatziefrimidou Konstantina