

Background Guide – WHO

The World Health Organization (WHO)

The World Health Organization (WHO) is a specialized agency of the United Nations that directs and coordinates international health policies. WHO began when its Constitution came into force on April 7th, 1948 – a date we now celebrate every year as World Health Day. Today, the WHO consists of more than 7,000 people from more than 150 countries working in 150 country offices, 6 regional offices and at WHO headquarters in Geneva, Switzerland.¹

Tedros Adhanom Ghebreyesus is the 9th WHO Director-General, who is supported by a team of 16 Deputy Directors/Assistant Directors. The WHO is governed by the World Health Assembly (WHA) and the Executive Board. The World Health Assembly is the decision-making body of WHO. It is attended by delegations from all WHO Member States and focuses on a specific health agenda prepared by the Executive Board. The main functions of the World Health Assembly are to determine the policies of the Organization, appoint the Director-General, supervise financial policies, and review and approve the proposed program budget. The Health Assembly is held annually in Geneva, Switzerland.²

The Executive Board is composed of 34 individuals technically qualified in the field of health, each one designated by a Member State elected to do so by the World Health Assembly. Member States are elected for three-year terms. The Board meets at least twice a year; the main meeting is normally in January, with a second shorter meeting in May, immediately after the Health Assembly. The main functions of the Executive Board are to give effect to the decisions and policies of the Health Assembly, to advise it and generally to facilitate its work.³

The WHO has made many accomplishments in the past seven decades. Most notably, smallpox, one of the world's most devastating diseases known to humanity, was declared eradicated in 1980 following a global immunization campaign led by the World Health Organization.⁴

The History of Antibiotics

The discovery of antibiotics in the early 20th century drastically altered the way that bacterial infections were treated. Before the development of antibacterial treatment, common illnesses like pneumonia and diarrhea took major death tolls on even the most developed nations.⁵ After their development, antibiotics have been able to treat and prevent infections, especially in relation to surgery. The first known use of antibiotics came in 1909 when German

¹ “Who We Are.” *World Health Organization*, World Health Organization, 1 Sept. 2016, www.who.int/about/who-we-are/en/.

² “World Health Assembly.” *World Health Organization*, World Health Organization, 14 June 2018, www.who.int/mediacentre/events/governance/wha/en/.

³ “144th Session of the WHO Executive Board.” *World Health Organization*, World Health Organization, www.who.int/news-room/events/detail/2019/01/24/default-calendar/144th-session-of-the-who-executive-board.

⁴ “Smallpox.” *World Health Organization*, World Health Organization, 2 May 2018, www.who.int/csr/disease/smallpox/en/.

⁵ “The History of Antibiotics,” *Microbiology Society*, accessed January 31, 2019, <https://microbiologysociety.org/education-outreach/antibiotics-unearthed/antibiotics-and-antibiotic-resistance/the-history-of-antibiotics.html>.

physician, Paul Ehrlich, discovered that he could isolate certain cells without harming the others. Upon this discovery, Ehrlich treated syphilis for the first time using the term “chemotherapy”.⁶ Alexander Fleming discovered penicillin in 1928, which proved to be life-saving for World War II soldiers who were treated for infections.⁷ As antibiotics were beginning to emerge for more widespread use, evidence of resistance also became a concern by the mid-20th century. The threat of antibiotic resistance continued to grow as scientists saw more and more resistance strains developing. Since 1960s, pharmaceutical companies have begun to encounter challenges to produce effective antibiotics.⁸

Current Challenges

Due to the widespread use of antibiotics in medicine and agriculture, there have been alarming trends of increased prevalence of antibiotic-resistant bacterial strains. The rise in the number of antibiotic resistant strains in medicine comes from the natural ability of these bacteria to evolve. Certain human factors, such as overprescription, self-medication without prescription, and not finishing doses, along with wide antibiotic applications in the agriculture, require our immediate attention. In recent years, we have seen strains of pneumonia, tuberculosis, blood poisoning, gonorrhoea, and foodborne diseases become more resistant to antibiotics.

The overuse of antibiotics is also prevalent in the agricultural sector. In fact, 70% of the global consumption of antibiotics are used in animal and fish farming and to spray on crops. Some 131,100 tons were used on farmed animals in 2013, with the expectation to rise by 53% by 2030 as rising incomes lead to greater consumption of animal products. While it is unlikely that these antibiotics will be consumed by humans with the enforced drug withdrawal periods, they nevertheless may produce antibiotics resistant bacteria or “superbugs”, which once passed onto humans cannot be easily treated.⁹

Future Outlook

Drug-resistant infections are already on the rise with numbers suggesting that up to 50,000 lives are lost each year to antibiotic-resistant infections in Europe and the US alone, however, experts have argued the real figure is at least double that.¹⁰ The problem is projected to get much worse as by the year 2050, resistant strains are projected to kill more people than cancer. If no action is taken, the death toll could rise to 10 million people a year by 2050.¹¹ These figures primarily are due to the fact that infections that are relatively easily treated by antibiotics would become difficult or impossible to treat due to the resistant strains.

⁶ “The History of Antibiotics,” Microbiology Society.

⁷ C. Lee Ventola, “The Antibiotic Resistance Crisis Part 1: Causes and Threats,” *PT* 40, no. 4 (April 2015): 277-283. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4378521/>

⁸ Ventola, “The Antibiotic Resistance Crisis Part 1: Causes and Threats,” 277-283.

⁹ Mary Jane Brown, “Antibiotics in Your Food: Should You be Concerned?”, last modified June 17, 2017, <https://www.healthline.com/nutrition/antibiotics-in-your-food>.

¹⁰ “Review on Antimicrobial Resistance,” Wellcome Trust, accessed February 2019, <https://amr-review.org/>.

¹¹ Faye Flam, “New Weapons Against Antibiotic-Resistant Bacteria”, last modified July 11 2018, <https://www.bloomberg.com/opinion/articles/2018-07-11/new-weapons-against-antibiotic-resistant-bacteria>.

In addition to the general mortality projections, some medical practices already have had to forgo certain surgeries and procedures due to the risks associated with infections and the situation is only expected to get much worse. If steps are not taken to address this issue, there could be serious economic and social ramifications. In fact, it is projected that antibiotic resistance could cost the world up to 100 trillion USD and a reduction of 2% to 3.5% in Gross Domestic Product (GDP) between now and 2050.¹²

In recent years, the WHO and national governments have taken measures to combat the spread of antibiotic resistance. One way in which this is being addressed is through the development of new medicines to combat resistant strains. Currently there are 28 new antibiotics in the late stages of clinical development and several are new classes to which bacteria have not yet developed resistant mechanisms. One other potential solution is phage therapy where bacteriophages (viruses that kill bacteria) are used to kill off resistant bacterial strains. Phage therapy is still in early development in terms of pharmaceutical medicine but remains a very promising treatment that requires more funding to further research.¹³

Countries are also taking measures to address the systemic causes of increased resistance by placing more stringent restrictions on the uses and production of antibiotics. For example, in the United Kingdom, there has been a concerted effort to reduce unnecessary or inappropriate antibiotic use in the healthcare system through incentivized targets introduced in general practitioner practices and hospitals to halve inappropriate prescribing by 2020.¹⁴ Efforts like these are also supported by WHO's Global Action Plan on antimicrobial resistance which consists of five primary objectives: to improve awareness and understanding of antimicrobial resistance, to strengthen surveillance and research, to reduce the incidence of infection, to optimize the use of antimicrobial medicines, and to ensure sustainable investment in countering antimicrobial resistance. In accordance with these goals, the WHO has also published steps that can be taken by individuals to help prevent the spread and development of antibiotic resistant bacteria.¹⁵

Committee Directive

The purpose of this committee is to delve into the issue of antibiotic resistance and to pass concrete guidelines to help Member States make changes to their healthcare industries and the use of antibiotics in the agriculture. These advocated changes and the actions of this committee should be within the jurisdiction of the WHO and respect the sovereignty of all nations.

¹² Judy Stone, "New Antibiotic Resistance Report Is The Stuff Of Nightmares", last modified December 12, 2014, <https://www.forbes.com/sites/judystone/2014/12/12/new-antibiotic-resistance-report-is-the-stuff-of-nightmares/#5da66ce622b1>.

¹³ Madlen Davies, Callum Adams, and Claire Newell, "The true cost of antibiotic resistance in Britain and around the world", last modified March 29 2018, <https://www.telegraph.co.uk/news/2018/03/26/almost-died-true-cost-antibiotic-resistance-britain-around-world/>.

¹⁴ Madlen et al., "The true cost of antibiotic resistance in Britain and around the world."

¹⁵ "Antibiotic Resistance," World Health Organization, last modified February 5, 2018, <https://www.who.int/news-room/factsheets/detail/antibiotic-resistance>.

This committee would like to pose the following challenges to its delegates at the PCMUN conference on March 29, 2019:

1. How to regulate and incentivize hospitals and doctors to prescribe medicines responsibly?
2. How to regulate and incentivize pharmaceutical companies to prioritize social responsibilities over profits?
3. How to regulate and incentivize farmers to use less antibiotics on farm animals?
4. How to establish and contribute to a global fund to support further research on antibiotic resistance?