

## **CLEIMUN 2020**

“Diplomacy in a Challenging Global Environment”

COMMITTEE: World Health Organization (WHO)

QUESTION OF: The Mis-use of Antibiotic Drugs and Fighting the Resulting Superbugs

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### **Background Information**

Superbugs, or more commonly referred to in the medical community as Antibiotic Resistant Bacteria, are a category of diseases that have immunity towards some antibiotics. Although diseases evolve and become naturally immune towards antibiotics, human influence has sped this process dramatically, leading to superbugs that we cannot fight with any known antibiotics. Humans have been using antibiotics for a long time, and before the 1900s, they did not realize it. The first antibiotic scientifically discovered, however, was arsphenamine in the 1900s. This led to massive scientific innovation and an influx in antibiotic production. As the public became more comfortable with the idea of antibiotics, misuse began.

### **The Problem**

Misuse of antibiotics can be accidental, on purpose, or unnecessary. According to the CDC, thirty percent of all antibiotics prescribed are “unnecessary”. Many people believe that due to their nature, antibiotics can only do good. Therefore, they continue to use them, and eventually are using an unnecessary amount. When these “unnecessary” antibiotics are taken, they may kill off sensitive bacteria, but they are also “training” other bacteria to fight against that drug. Some doctors are also at fault for this problem, as they prescribe unnecessary antibiotics.

There is also a major problem with underuse. To fully fight an illness, people should always follow the exact instructions on their prescription. However, many people fail to finish their prescription, ultimately not killing off the disease. Now, the disease can recognize those antibiotics and, in a way, prevent them from killing the disease off. To use another example, if a person is injected with a weak disease, or vaccinated, the immune system can learn how to fight that disease without being hurt. However, if you inject a person with a very powerful and fatal disease, the immune system could shut down. The weak disease, in this case, is the antibiotic cycle not being completed. The disease learns how to fight those antibiotics, just as our immune system learns how to fight diseases. The CDC calls these resistant bacteria “one of the most urgent threats to the public’s health.”

Illnesses we have been fighting successfully for years are now labeled with the term “Difficile”, or difficult. Take, for example, the genus *Clostridium*. In some species of this genus, the disease is easily fought. However, due to recent antibiotic misuse, there is a “*Clostridium Difficile*” infection. This infection is immune to many antibiotics and is therefore hard to treat with conventional methods. This disease is considered common in the United States, with 200,000 cases per year. *Clostridium Difficile* can open the door to life-threatening infections, while weakening your immune system so other diseases can slip past more easily. It also is now one of the most nosocomial, or hospital-acquired illnesses (HAI).

With the rise of superbugs, one of the most worrying places to be is actually in a hospital.

According to Jeff Laggasse at HealthCare Finance Magazine, “Each day, one out of 25 patients in the U.S. contracts a hospital-acquired infection resulting in billions of wasted dollars and an eye-popping 90,000 deaths annually.” Most of these HAI’s are also superbugs, and are recently

acquired after antibiotic use. Nosocomial superbugs are some of the most worrying. If you are admitted to a hospital, chances are something is already wrong with your body. When in a hospital, many people's immune systems are busy fighting illness or not working at all. With the immune system compromised, HAI's are easily acquired. Since these HAI's could be superbugs as well, the hospitals often find them extremely difficult to get rid of and even more difficult to fight. As these HAI's infect more people, they become harder to fight and more prevalent, creating a cycle of disease. Even diseases that were effectively fought in the past, such as Tuberculosis and Influenza, are making a nosocomial comeback, killing those who most likely would not have been affected if they were not in the hospital.

### **Past Efforts**

Hospitals currently are developing ways to fight superbugs and nosocomial diseases, increasing sanitation and decreasing infection rates. Hospitals in the United States have developed a "special soap" made of chlorhexidine that reduces infection. These hospitals bathe most of their patients in this soap, even if they do not have symptoms of a superbug. This is due to the fact that "15% of hospital patients and 65% of nursing home residents harbor drug-resistant organisms, though not all of them will develop an infection," says Dr. Susan Huang. This method has helped somewhat locally, but not enough to work on a global scale. The World Health Organization (WHO) has developed multiple programs in order to stop the rise of superbugs. In November, there is even a designated week internationally recognized as "Antibiotics: Handle with Care" awareness week. WHO also recently announced a global action plan that would fight the rise of superbugs. This plan, among other things, shows the type and how much of each antibiotic to take per illness, fighting accidental and unnecessary misuse. This

plan also states that “some 2.4 million people could die over the next 30 years in Europe, North America and Australia due to superbug infections.” This is especially a problem in under developed countries, where there may not even be a stable medical system. Diseases travel, and when they reach an underdeveloped country without any medical system, they can wreak havoc on the surrounding population. However, there is some good news: more than ninety percent of the world lives in a country that has developed a plan for superbugs.

The United Nations estimated that up to 82 percent of all diseases could be resistant to antibiotics in some degree. By 2050, superbugs are estimated to cost over 100 trillion dollars and even reverse the poverty cycle and people into more depths of poverty than ever before. The United Nations considers this problem to be on par with a global pandemic or climate change. The United Nations also states that, although many countries have developed an action plan, that still is not enough to fight this impending and imminent threat. The United Nations strongly recommends more scientific research on the topic to see how much this epidemic will cost and how we can solve it the most efficient way possible.

### **Possible Solutions**

According to the UN Foundation, the world's first need is to look at how much this will cost, so that we can fight it efficiently. Then, we need to focus our money towards scientific research, as one solution will only work for one disease. The world also needs to look at the disproportion between developed and underdeveloped countries and look at how the disproportion plays out with superbugs. The world needs to address the growing and fatal problem of nosocomial, or hospital-acquired, diseases. The world needs to address antibiotic misuse and inform the public about the danger of superbugs.

Overall, in a world of “Diplomacy in a Challenging Global Environment”, countries of the United Nations need to come together in order to solve this superbug problem. Superbugs are not a nationalistic problem, nor are they a thing that should cause tension. The fight against superbugs should instead ignite unity, as the fight against superbugs is a fight for the whole world.

#### Works Cited

"Antimicrobial Resistance." *World Health Organization*, 15 Feb. 2018,

[www.who.int/news-room/fact-sheets/detail/antimicrobial-resistance](http://www.who.int/news-room/fact-sheets/detail/antimicrobial-resistance). Accessed 16 July 2019.

"C. Difficile Infection." *MayoClinic*,

[www.mayoclinic.org/diseases-conditions/c-difficile/symptoms-causes/syc-20351691](http://www.mayoclinic.org/diseases-conditions/c-difficile/symptoms-causes/syc-20351691). Accessed 16 July 2019.

Dodson, Kate. "The Road Ahead in the Fight Against Superbugs." *UN Foundation*, 29 Apr.

2019, [unfoundation.org/blog/post/the-road-ahead-in-the-fight-against-superbugs/](http://unfoundation.org/blog/post/the-road-ahead-in-the-fight-against-superbugs/). Accessed 16 July 2019.

"Facts about Antibiotic Resistance." *CDC*, 22 Dec. 2016,

[www.cdc.gov/antibiotic-use/community/about/fast-facts.html](http://www.cdc.gov/antibiotic-use/community/about/fast-facts.html). Accessed 16 July 2019.

Gorman, Anna. "How to Fight 'Scary' Superbugs That Kill Thousands Each Year? Cooperation -

and a Special Soap." *USA Today*, Gannett Satellite Information Network, 12 Apr. 2019, [www.usatoday.com/story/news/health/2019/04/12/superbugs-washing-special-soap-combats-antibiotic-resistant-bugs/3445695002/](http://www.usatoday.com/story/news/health/2019/04/12/superbugs-washing-special-soap-combats-antibiotic-resistant-bugs/3445695002/).

"Invisible pandemic': WHO offers global plan to fight superbugs." *Daily Times*, 21 June 2019,  
[dailytimes.com.pk/415940/invisible-pandemic-who-offers-global-plan-to-fight-superbugs](http://dailytimes.com.pk/415940/invisible-pandemic-who-offers-global-plan-to-fight-superbugs/)  
/. Accessed 16 July 2019.

Lagesse, Jeff. "Hospital-acquired infections keep rising, wasting billions, finds Leapfrog."  
*HealthCare Finance*,  
[www.healthcarefinancenews.com/news/hospital-acquired-infections-keep-rising-wasting-billions-finds-leapfrog](http://www.healthcarefinancenews.com/news/hospital-acquired-infections-keep-rising-wasting-billions-finds-leapfrog). Accessed 16 July 2019.

"The History of Antibiotics." *Microbiology Society*,  
[microbiologysociety.org/education-outreach/antibiotics-unearthed/antibiotics-and-antibiotic-resistance/the-history-of-antibiotics.html](http://microbiologysociety.org/education-outreach/antibiotics-unearthed/antibiotics-and-antibiotic-resistance/the-history-of-antibiotics.html). Accessed 16 July 2019.