

# UN World Health Organization Background Guide

## Georgia Tech Model United Nations



the 24th GTMUN  
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Figure 1: UNFPA Involvement in Maternal Healthcare in Pakistan

# Topic 1

## Promoting the Advancement of Global Maternal Healthcare

### Introduction

A major issue in the modern-day world, particularly with a focus on developing and underdeveloped nations, is the health of mothers during pregnancy, labor, and postnatal periods, collectively referred to as maternal healthcare.<sup>1</sup> Improving maternal health was a goal of the United Nations Millennium Development Goals, launched in 2000 at the Millennium Summit as goals to reach by 2015. It is also mentioned under Sustainable Development Goal 3, good health and wellbeing.

Maternal healthcare is incredibly important for families and communities, but especially for the health of the mother. It is also incredibly important to recognize each part of maternal health care: pregnancy, labor and postnatal periods. The importance of the mother's health after childbirth is often ignored.

<sup>1</sup> World Health Organization, "Maternal health."

In 2020, 287,000 mothers died after childbirth.<sup>2</sup> A large majority of deaths occur in low-income countries, with a high concentration in Saharan Africa and Southern Asia (see Figure 2 for a visualization). Today, the discrepancy in mortality rates is one of the biggest global health inequities in the world.<sup>3</sup>

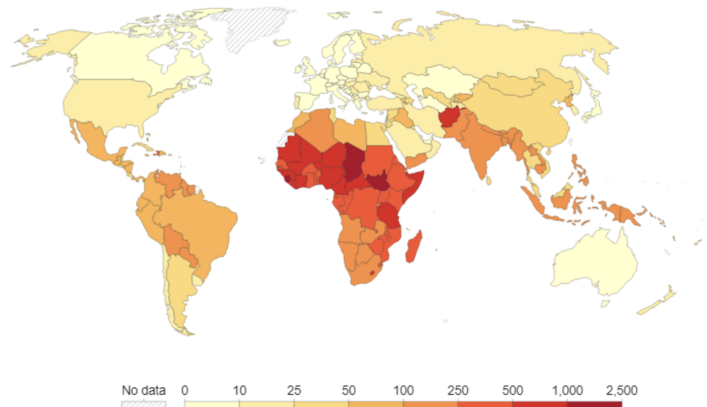
The healthcare a mother receives during childbirth and pregnancy in these areas is also poor. Healthcare during pregnancy, or antenatal care, tends to be more preventative. A mother's health is at risk in areas where malaria, HIV and other diseases are high, as they can cause harm to the baby. There is also the issue of teenage pregnancies, and the risk they might pose on the mother's body.

The World Health Organization currently works to improve the healthcare received by mothers through several initiatives. As mentioned before, Goal 3 of the SDGs calls for the global maternal death rate to drop to 70 deaths per 100,000 live births.<sup>4</sup> Another agenda is the Global Strategy for Women and Children's Health, set in place in 2015 under Secretary-General Ban Ki-moon.<sup>5</sup> However, there is still much that can be done to improve the standard of maternal healthcare globally.

#### Maternal mortality ratio, 2020

The maternal mortality ratio is the number of women who die from pregnancy-related causes while pregnant or within 42 days of pregnancy termination per 100,000 live births.

Our World  
in Data



Source: Gapminder (2010); WHO (2019); OECD (2022)

OurWorldInData.org/maternal-mortality • CC BY

Figure 2: Maternal Mortality Rates in 2020

## History

Childbirth has been recorded in history for thousands of years. Ancient talismans and carvings of goddesses of fertility have been found in several ancient societies. The process of childbirth in Europe was mostly a women-led event, since relatives and midwives would help deliver the child based on their own experience and knowledge of childbirth passed down from previous generations. Though midwives were generally knowledgeable about many practices within childbirth, such as being able to turn the baby the right way before birth, there still was a high mortality among pregnant women. In the medieval times, the mortality rate was 1 in 3 women, caused by infection, improper labor practices, and general lack of knowledge and experience. However, not all cultures

<sup>2</sup> World Health Organization, "Maternal mortality."

<sup>3</sup> Barcelona Institute for Global Health, "Maternal, Child and Reproductive Health."

<sup>4</sup> UNFPA, "Maternal health."

<sup>5</sup> Ban Ki-moon, "Global Strategy for Women's and Children's Health."

would exclusively involve women in the birthing process. For example, in early Japan, childbirth was a very public event that both men and women would attend. It was also common in both of these cultures for religious affiliates to say prayers for the woman giving birth.



Childbirth slowly improved over time as more medical advancements were made. The invention of forceps made the delivering process much easier, as it aided in guiding the baby out of the womb. Supplemented by other scientific research on diseases and microbes, the childbearing process slowly became safer. Schools on midwifery and childbirth were established, and slowly the medical procedure around childbirth became entrusted in the hands of doctors. Giving birth in a hospital became much more common throughout the 20th century.

As the maternal mortality rate (MMR) substantially decreased as countries became more developed, a discrepancy in maternal health care between developed and under-developed countries became evident. Thus, at the start of the 21st century, the United Nations established the Millennium Development Goals as a set of standards to work towards until 2015. Goal 5 focused on improving maternal health. The specific goals within goal 5 include reducing the MMR and increasing universal access to reproductive health. The MMR decreased incredibly between 1995 and 2015 (nearly by half), almost meeting the goal of a three-quarter decrease. On the other hand, universal access to reproductive health proved to be much more difficult, as only half of women globally had adequate access.<sup>6</sup>

## Current

The modern-day issue of global maternal healthcare involves several issues, both some that have been addressed in the past and some that have yet to be discussed. These include, but are not limited to, the goals under MDG goal 5, an increase in maternal healthcare equity, addressment of unwanted pregnancy, and discussions of care post pregnancy.

Improvements in maternal healthcare have slowed substantially since 2015, when the Millennium Development Goals concluded.<sup>7</sup> In 2020, 83% of pregnancies were attended by a medical personnel, up from 70% in 2010.<sup>8</sup> As for universal access to maternal healthcare, the World Health Organization has also set a new goal of 80% access by 2030.

<sup>6</sup> United Nations, "Goal 5: Improve Maternal Health."

<sup>7</sup> World Health Organization, "Global progress in tackling maternal and newborn deaths stalls since 2015: UN"

<sup>8</sup> The World Bank, "Births attended by skilled health staff (% of total)."

Today, low income countries have a MMR of 430 deaths per 100,000 live births in 2020. In comparison, the rate was 12 deaths per 100,00 live births in high-income countries. However, some developed nations also have incredibly high MMR. For example, the United States had a mortality rate of 32.9 deaths per 100,000 live births in 2021. There are also discrepancies between non-Hispanic White populations, Hispanic populations, and Black populations.

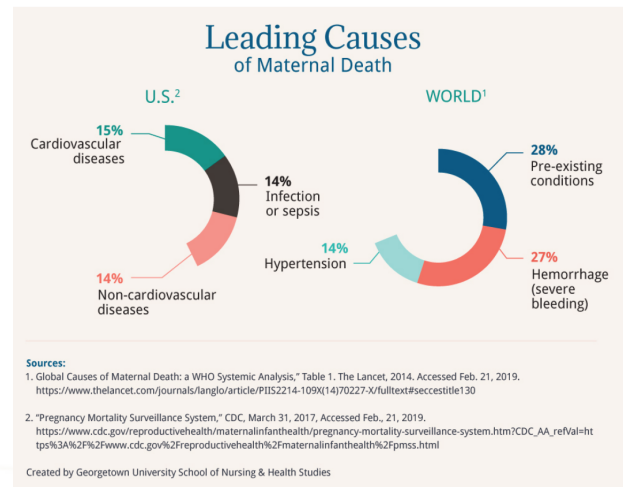


Figure 3: Leading Causes of Maternal Mortality

Another cause of maternal mortality includes induced abortions. Under desperate measures, mothers may turn to unsafe abortion practices that can lead to higher deaths.<sup>9</sup> However, more research needs to be conducted in this field, as a Chilean experiment suggests that stricter abortion laws lead to a decrease in maternal mortality.<sup>10</sup>

While preventative measures and professional care are incredibly important in maternal health, it is also important to recognize the importance of care during the postnatal period. The first few weeks are critical for both the baby and the mother. On March 30 of 2022, the World Health Organization released guidelines for maternal and newborn care. These aim to create routines in which mothers can follow that will improve their wellbeing, the wellbeing of their child and their relatives. Included are preventative measures, assessments, nutrition suggestions, screening recommendations for disease and postnatal depression, and other helpful guidelines. In particular, women are likely to not be screened for postnatal depression, which can cause stress on the child and relatives.

As mentioned previously, Secretary-General Ban Ki-moon established the Global Strategy for Women's and Children's Health. These recommendations were designed to allow for countries to develop their own plans with regards to maternal healthcare. The plan also establishes reasoning as to why countries should pursue better maternal healthcare in order to establish this issue as one that all people should be involved in. Additionally, in 2021, the World Health Organization established five goals for 2025 under the Ending Preventable Maternal Mortality (EPMM) initiative.<sup>11</sup> As defined in the title, these goals are in effect to improve upon preventable mortality by establishing minimum global standards for maternal healthcare. Though the world has made much progress in better maternal healthcare, discrepancies still exist between countries and between races.

<sup>9</sup> Latt, Milner, and Kavanagh, "Abortions laws reform may reduce maternal mortality"

<sup>10</sup> Koch, "Impact of Reproductive Laws on Maternal Mortality: The Chilean Natural Experiment."

<sup>11</sup> World Health Organization, "New global targets to prevent maternal deaths."

# Directives

The issue of maternal healthcare involves several sub-discussions, including accessibility, equal-access, and much more. Delegates are tasked with finding comprehensive solutions while remaining diplomatic. Due to the nature of the discussion, the chairs will not accept any forms of misogyny, racism, or other disrespectful language. As the leaders in charge of revamping global maternal healthcare, here are some questions to consider for position papers and resolutions:

- How can the WHO get more funding for research and materials to improve global maternal healthcare?
- What does your country do to improve the standard of healthcare received by mothers?
- How can this committee make the issue of maternal healthcare more inclusionary?
- How can non-medical conditions, such as refugee status or an unstable environment, change how this committee enacts resolutions?
- What steps can this committee take in the future to prepare for a global health crisis like the COVID-19 pandemic?
- How can global education on pregnancy, childbirth and the postnatal period be improved?

## Key Terms

*Labor:* In this context, labor relates to the series of contractions of the uterus that lead up to childbirth

*Maternal Healthcare:* the overall health of women through their pregnancy, childbirth and postnatal periods

*Maternal Mortality Rate (MMR):* a measurement of the number of maternal deaths per 100,000 live births

*Postnatal:* relating to the period after childbirth

*Pregnancy:* the period starting from conception and going until birth

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Figure 1: Assorted Antibiotic Capsules. Fahrni. iStock/Getty Images Plus

## Topic 2

# Combating Global Antibiotic Resistance

## Introduction

An antibiotic is a type of medicine that is used to fight off a bacterial infection.<sup>12</sup> Bacteria are either killed or are inhibited from reproducing. Antibiotics have changed the course of history. For example, penicillin is a notable antibiotic to treat *Staphylococcus* infections on the skin and was even widely used in World War II.

Antibiotic resistance, abbreviated as ABR, is defined as the change in response of microbes to antibiotics that causes them to survive. The change occurs as a result of mutations in the DNA of a bacterium, which then encodes for proteins that carry out processes within the bacteria. However, not every mutation leads to ABR. It only becomes a problem when a mutation encodes resistance to a specific antibiotic.

<sup>12</sup> Centers for Disease Control and Prevention, "Antibiotic Use Questions and Answers."

Many people do not recognize the proper uses of antibiotics, as well as the dangers that come with increased antibiotic resistance. Improper education on proper use of antibiotics by the user, and improper prescription by medical professionals both contribute to antibiotic resistance. Antibiotics are important in treating bacterial infections, and can be very effective when used properly. Such improper use includes if one stops taking an antibiotic too early, takes too high of a dose, or even continues to take antibiotics after the prescribed time. Over time, certain strains of bacteria have been dubbed “superbugs” due to their high resistance to several types of antibiotics. Organizations such as the Centers for Disease Control and Prevention (CDC) and the Global Antimicrobial Resistance and Use Surveillance System (GLASS) work to monitor the use of antibiotics, presence of antibiotic resistance, and research bacteria that are prone to antibiotic resistance. The discussion of antibiotic resistance within the global community also falls under Sustainable Development Goal 3, Good Health and Wellbeing, as well as has been a topic of discussion in the United Nations General Assembly.

## History

The word antibiotic was first used by Selman Waksman in the 1900s. Waksman researched properties of several antibiotics, including penicillin, the discovery of which is attributed to Alexander Fleming. Penicillin is a molecular antibiotic found in fungi that is used to combat *Staphylococcus* bacteria. Fleming observed that *Penicillium notatum*, a fungus growing on some *Staphylococcus* plates, would stop the staph bacteria from growing where it existed. Henceforth this fungus has been used to treat staph infections on the skin. However, because of the effectiveness of this new “wonder drug,” resistance soon followed. Antibiotics are prescribed to stop certain functions within bacteria that lead to its death or by stopping its ability to replicate or spread. There are two main types of antibiotics: broad spectrum antibiotics, which are able to affect all bacteria, and narrow spectrum antibiotics, which only affect certain types of bacteria. Penicillin, for example, is a wide spectrum antibiotic, and thus it was used to treat a variety of bacterial infections.

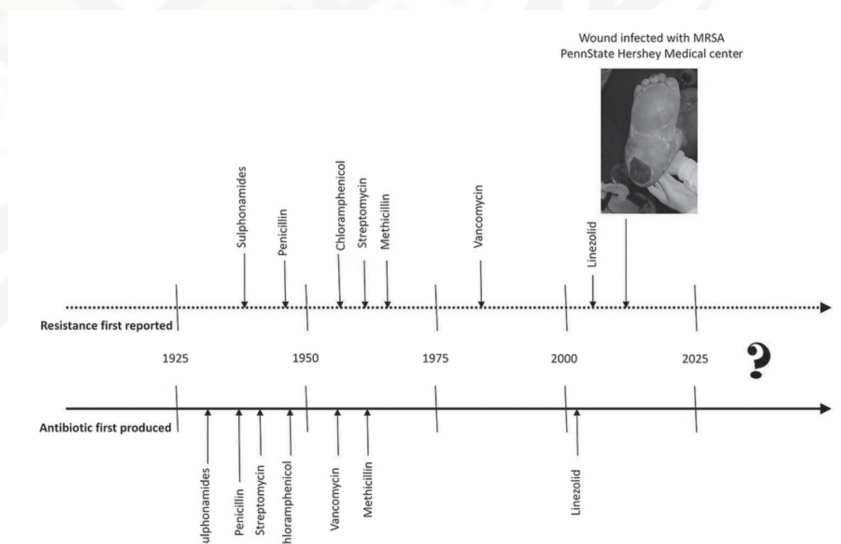


Figure 2: Timeline of Introduction of an Antibiotic and Resistance

However, in 1942, resistance to penicillin was being documented in *Staphylococcus aureus*, which is evidence of the quick turnaround for antibiotic resistance.<sup>13</sup> A visual of this turnaround for several notable antibiotics can be seen in Figure 2.

As previously stated, antibiotic resistance spurs from random mutations that arise in the bacteria's genetic code. Since bacterial reproduction occurs at a fast rate, averaging a few hours to a few days but even occurring as fast as a few minutes, the rate at which mutations can occur is high. These mutations can vary in function—for example, a mutation that encodes for an enzyme that breaks down the antibiotic—but regardless, they lead to a loss in antibiotic effectiveness.<sup>14</sup>

### How Antibiotic Resistance Spreads

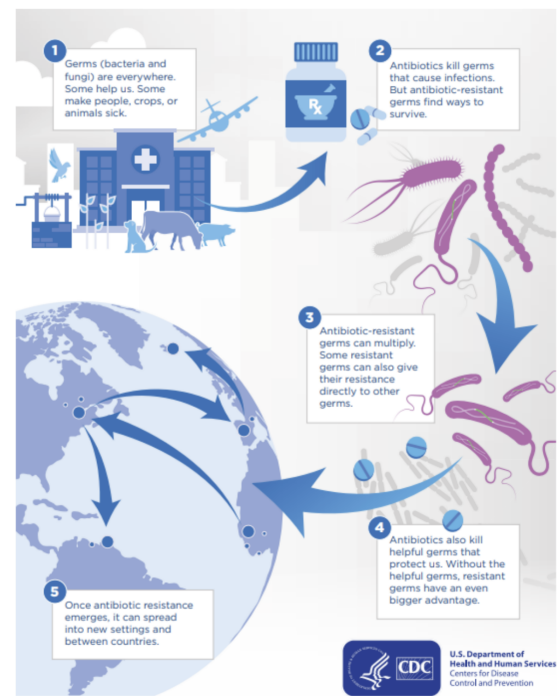


Figure 3: How Antibiotic Resistance Spreads

Antibiotic resistance can be determined through several methods, though commonly it is based on the response of the bacteria to a certain concentration of antibiotic. This can be done by plating the bacteria on an agar medium, and using discs soaked in an antibiotic and measuring the zone of inhibition, or the area around the disc in which the bacteria does not grow, as seen in Figure 4. Molecule tests can also be used to scan for specific genes that are known to encode enzymes or other antibiotic-resistance mechanisms within the bacteria. In order for the bacterial to be officially determined as resistant to an antibiotic, the bacterial population must consistently show quantifiable resistance and the method must be precise and well-documented.<sup>15</sup>

## Current Situation

Though antibiotics have done wonders with regard to global health, the increase in antibiotic resistance is an ever-growing issue of high importance. Globally, antibiotic resistance kills around 1.27 million people.<sup>16</sup> Antibiotic resistance can be caused by a variety of factors, namely under usage, over usage, and incorrect prescription.

<sup>13</sup> Mariya Lobanovska and Giulia Pilla, "Penicillin's Discovery and Antibiotic Resistance: Lessons for the Future?"

<sup>14</sup> Missouri Department of Health and Senior Services, "What is Antibiotic Resistance."

<sup>15</sup> Helen C. Davidson, Mark E. J. Woolhouse and J. Cris Low, "What is antibiotic resistance and how can we measure it?"

<sup>16</sup> Centers for Disease Control and Prevention, "National Infection & Death Estimates for Antimicrobial Resistance."

With increased ease of access of antibiotics, over usage becomes a problem, and antibiotic resistance increases. If a person continues to take antibiotics, the bacteria that it targets die or stop spreading. If one becomes resistant, it will survive and be able to reproduce despite efforts of the antibiotic. Thus, after a certain period of time, all of the bacteria present will be resistant to the antibiotic. This process can



Figure 4: Bacterial Resistance Shown on Agar Plates

be visualized in Figure 5. As mentioned before, this process has been occurring in *Staphylococcus aureus* for several decades. Specific strains of staph bacteria, such as methicillin-resistant *Staphylococcus aureus* "MRSA," are incredibly resistant to methicillin and similar antibiotics, and present

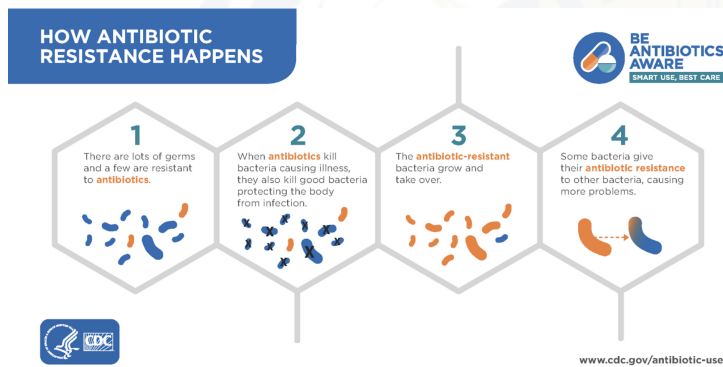


Figure 5: Process of Antibiotic Resistance

major challenges in hospitals. MRSA infections usually occur on the skin and can be overcome over time, but in some cases the infection can cause pneumonia or even a bloodstream infection, which is much more severe and can be life threatening.<sup>17</sup> Increased presence of superbugs such as MRSA pose a significant threat, especially to hospitals with immunocompromised patients.

Another factor that contributes to increased antibiotic resistance is an incorrectly prescribed antibiotic. Because diagnostic testing of bacteria causing an infection can take time to receive, medical professionals often make assumptions on the best antibiotic that can be used to treat an infection faster. If the antibiotic is wrongly assigned, it can be less effective and therefore can be easier to be overcome by the bacteria. It is also possible that the dosage could be incorrectly prescribed due to a lack of information and research on the bacteria at hand.

Global antibiotic resistance has been a discussion of the United Nations for several years. One initiative enacted by the WHO in October of 2015 is the Global Antimicrobial Resistance and Use Surveillance System (GLASS), whose purpose is to standardize antimicrobial surveillance surveillance. This initiative includes resistance to fungi, viruses and parasites as well as viruses, and also surveys antimicrobi-

Countries, territories, and areas enrolled in GLASS-AMR and/or GLASS-AMC by end of 2021

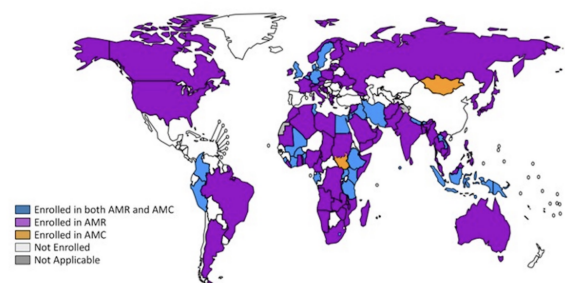


Figure 5: Process of Antibiotic Resistance

<sup>17</sup>National Institutes of Health, "Stop the Spread of Superbugs."

al surveillance surveillance. This initiative includes resistance to fungi, viruses and parasites as well as viruses, and also surveys antimicrobial consumption worldwide. However, not every country is enrolled in the initiatives, seen in Figure 6. Much can still be done to address antibiotic resistance.<sup>18</sup>



<sup>18</sup> World Health Organization, "Global Antimicrobial Resistance and Use Surveillance System (GLASS)."

# Directives

The purpose of this committee is to meet and discuss possible strategies to combat global antibiotic resistance. Therefore, both national and international fronts should be considered. This issue encompasses a wide range of issues; thus, delegates should further research in order to develop well-rounded resolutions. Delegates should be knowledgeable in the differences in definitions pertinent to this topic, including antibiotics, bacteria, germs, and microbes. Delegates do not need to be well informed of this topic in order to succeed in committee. As the global authorities on global health initiatives to combat antibiotic resistance, here are some questions to consider:

- How can education on proper uses of antibiotics be increased?
- What are some immediate measures that can be taken to combat further increase in resistance?
- Should antibiotic prescription be under more strict guidelines?
- What steps, if any, is your country taking to combat resistance, increase research, or control antibiotics?
- How can your country ensure antibiotics are not overused?
- How can bacterial populations be controlled in hospitals?
- What are the major superbugs, and what can be done to address controlling them?

## Key Terms

*Antibiotic*: a substance used to stop vital processes of or kill a bacteria in order to stop a bacterial infection

*Antibiotic Resistance*: describes the resistance of a bacteria to antibiotics

*Antimicrobial Resistance*: describes the resistance of a microbe to antimicrobials

*Bacteria*: a small unicellular organism that can be beneficial or harmful to humans by processes such as aiding with food digestion or causing infections, respectively

*Genetic code*: segments of DNA carrying genetic information that code for proteins that aid vital functions in organisms

*Microbe*: a microorganism, such as bacteria or fungi

*Mutation*: a change in the DNA sequence of an organism that can cause a different protein to be produced

*Superbug*: a nickname for bacteria with high resistance to several antibiotics

*Virus*: a nonliving, genetic-code carrying entity that can cause infection

*Zone of Inhibition*: the area around an antibiotic-soaked disc on a nutrient-rich (ex. agar) plate in which a bacteria does not grow

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