



The University of Florida's SunMUN III

General Assembly

UNCSTD: Ctrl + Alt + Delete Diseases



Eric Han & Arielle Watts



Conference Policies

Equity Statement

The SunMUN III team is dedicated to creating and maintaining a safe, inclusive, and equitable environment for all delegates, staff members, and advisors. Through collaboration, open-mindedness, and diplomacy, the SunMUN III Secretariat is committed to providing each and every participant with an equitable and positive experience.

To uphold this commitment, all SunMUN III secretariat members, directors, chairs, and staffers have completed training, including University of Florida Model United Nations equity standards training and Meridians Title IX training.

For any questions, comments, or concerns regarding equity, please contact our Chief of Staff, Alonzo Rojas, at sunmun.fl@gmail.com.

General Conduct Policies

The SunMUN III team is dedicated to enforcing proper conduct throughout the conference weekend. This includes but is not limited to:

1. Abiding by ALL hotel policies, including maintaining proper volume levels, respecting non-SunMUN III hotel guests, possession/use of illegal substances, underage drinking, etc.
2. Being present at ALL committee sessions. If a delegate must miss a committee session, they must contact their head delegate and their committee director immediately.
3. Delegates are expected to maintain respectful and equitable conduct towards all committee attendees and staff.

Sexual Misconduct Policy

The SunMUN III team is dedicated to providing a safe environment for all delegates, staff members, and advisors free from discrimination on any grounds and from harassment during the conference including sexual harassment. Sexual harassment is unwelcome conduct of a sexual nature which makes a person feel offended, humiliated and/or intimidated. Sexual harassment can involve one or more incidents and actions constituting harassment may be physical, verbal and non-verbal.

Examples of sexual harassment include but are not limited to:

- Making derogatory or demeaning comments about someone's sexual orientation or gender identity
- Name-calling or using slurs with a gender/sexual connotation
- Making sexual comments about appearance, clothing, or body parts
- Rating a person's looks or sexuality
- Repeatedly asking a person for dates or asking for sex
- Staring in a sexually suggestive manner
- Unwelcome touching, including pinching, patting, rubbing, or purposefully brushing up against a person
- Making inappropriate sexual gestures



- Sharing sexual or lewd anecdotes or jokes
- Sending sexually suggestive communications in any format
- Sharing or displaying sexually inappropriate images or videos in any format
- Attempted or actual sexual assault including rape

SunMUN III will enforce a zero tolerance policy for any form of sexual harassment, and will treat all incidents seriously and promptly investigate all allegations of sexual harassment. Any and all acts of sexual harassment will not be tolerated and may result in delegate excusal from the conference, with no payment refund in addition to mandatory reporting of all occurrences. An anonymous sexual harassment reporting form will be provided at the conference.

Photo Policy

SunMUN III staffers will be present at committee rooms, socials, and other SunMUN III events in order to take photos and videos of the conference weekend. These photos will be used in SunMUN III's closing ceremony, SunMUN III's social media, and possibly promotional material for SunMUN III and future iterations. If you are uncomfortable being photographed and/or recorded, SunMUN III would like to give you the opportunity to opt-out. To do so, please follow this link in order for our photography team to be aware of your situation: tinyurl.com/sunmunoptout

Dress Code Policy

All delegates attending SunMUN III are expected to attend committee sessions in Western Business Attire (WBA). WBA is expected due to its role in creating a professional work environment conducive to debate and diplomacy. Examples of WBA are collared, button-down shirts, blouses, blazers, slacks or formal pants, pencil skirts, closed-toe professional shoes, and a tie or bowtie.



Land Acknowledgment

SunMUN III and the University of Florida Model United Nations team acknowledges that the land we occupy for this conference is the homeland of the Seminole and Miccosukee people. We recognize that the Seminole and Miccosukee peoples, as well as many other tribes, were forced out of their rightful land. The consequences of this brutal removal on the Indigenous communities are still being felt to this day. SunMUN III and the UF Model United Nations team honor the history, perseverance, and strength of the Indigenous people on a national and international scale. As students in the state of Florida, we continue to educate ourselves and reflect on the state's history of colonization and advocate for awareness about Indigenous cultures and issues. During SunMUN III, we ask for everyone to reflect on the effects of colonization while in committee and participating in conference activities this weekend.

For more information on the Seminole people, please refer to the [Seminole Tribe of Florida website](http://seminoletribe.com).
seminoletribe.com

For more information on the Miccosukee people, please refer to the [Miccosukee Tribe website](http://miccosukee.com/miccosukee-tribe-history).
miccosukee.com/miccosukee-tribe-history



Committee Policies

Parliamentary Procedure

This committee will run following standard General Assembly Parliamentary Procedure. The primary vehicles for debate will be the moderated caucus, the unmoderated caucus, and the speaker's list. In order to foster substantive debate of the highest quality, this committee will prioritize one topic over the other after a series of debates and votes in Committee Session I to set the order of the topics. Delegates should not expect there to be significant (if any) debate on the second topic chosen. As the weekend advances, delegates will be expected to collaborate on and contribute to working papers, which will eventually turn into draft resolutions. The Chairs of this committee will have discretion over the number of working papers and draft resolutions submitted to the dais. Delegates should bear in mind that the last resolution passed supersedes any prior work it conflicts with. For awards, delegates will be evaluated on both their in room (speaking) and out of room (writing and bloc formation) skills. If you have any further questions, please do not hesitate to contact either of your Chairs.

Materials & Technology Policy

Directives and related documents, including press releases and communiqués, in all Crisis style committees will be written on loose leaf paper. Delegates will be able to use paper from their delegate padfolios, which will be distributed before the first committee session. Crisis notes and joint personal directives will be written and sent on paper using a two-pad system. Delegates will be able to write joint personal directives on paper and submit them to the crisis staff when crisis notes are collected. The use of cell phones is strictly prohibited during committee sessions, unless in the event of an emergency. Delegates may not use laptops or other similar technology for any reason during committee sessions, without the express permission of the Chair and/or Crisis Manager.

Plagiarism and Pre-Writing

SunMUN III has a zero-tolerance policy for plagiarism and pre-writing. Plagiarism is considered the passing of other people's work as your own. This includes crediting other delegate's clauses, directives, or ideas as your own. Plagiarism also includes the reuse of clauses submitted at other conferences, or the reuse of clauses on actual UN resolutions. Pre-writing, as defined by the SunMUN III team, includes writing directives, crisis notes, clauses, and other Model UN materials that increase a delegate's standing in awards OUTSIDE of the allotted committee time. SunMUN III has a zero-tolerance policy for both of these activities and encourages delegates to present original ideas that are created within the confines of the conference weekend.

SunMUN III encourages delegates to cooperate with the secretariat if they are accused of plagiarism or prewriting. Our USGs and/or Chief of Staff will conduct a thorough investigation into any claims and make a judgment on the provided evidence.



Topic A: Global Medicine Accessibility for Treatable Diseases

The WHO defines universal health coverage as "when all people have access to the full range of quality health services they need, when and where they need them, without financial hardship". The priority of universally accessible healthcare for all is necessary yet strenuous to achieve globally, as global health inequalities begin with the lack of access to appropriate care. Delegates of UNCSTD today are to construct a resolution to address global medical inaccessibility. Within this background guide are five detailed case studies on widespread and persistent diseases/health topics, each impacting different aspects of medical accessibility in various parts of the world. The goal is to familiarize delegates with broader medical subjects and develop ideas for improving a complex and varied problem.

To prepare for this committee topic, delegates should read this background guide to find a specific angle to resolve the broader topic. Delegates are encouraged to research issues on medical accessibility domestic to the country represented, beyond diseases discussed in this background guide. However, when introducing new diseases and issues delegates are expected to provide rudimentary background. Through debate, delegates are expected to identify their respective domestic topics and address them through encompassing policies pertinent to the entire globe. While UNCSTD is a scientific committee and naturally requires scientific and research-based claims and solutions, delegates should understand that the issue of medical accessibility often spans beyond chemistry. Delegates should focus on the distribution, production, and advancement of those technologies, and any other connection inspired by this background guide to resolve global health issues. Finally, this committee **emphasizes** the importance of accurate representation by each delegate. Delegates are expected to research their country's stance on various issues and propose policies that are relevant and appropriate.

This background guide will provide case studies on COVID-19, Malaria, Tuberculosis, Diabetes, and Mental Health and introduce various societal issues that created those problems.

Case Study: COVID-19

As the most recent global health catastrophe, the COVID-19 pandemic shone a light on many deficiencies in modern global health structures. The first cases of the newest coronavirus were detected in December 2019, and since then "has killed more than 7.3 million people worldwide".¹ However, beyond the numbers reported by global officials, experts estimated that the total death count may add up to 17.9 million people, nearly one out of ten deaths globally.²

The pandemic is caused by the SARS-CoV-2 coronavirus, which spreads between people in close contact. Symptoms range from fevers and chills to bodily pain, and loss of smell or taste. While most of the

¹ Centers for Disease Control and Prevention, "COVID-19 Timeline," Centers for Disease Control and Prevention (CDC, March 15, 2023), <https://www.cdc.gov/museum/timeline/covid19.html>.

² Christopher Troeger, "Just How Do Deaths due to COVID-19 Stack Up? | Think Global Health," Council on Foreign Relations, February 15, 2023, <https://www.thinkglobalhealth.org/article/just-how-do-deaths-due-covid-19-stack>.



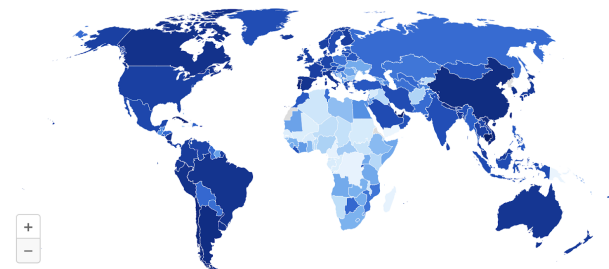
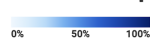
infected populations will recover without hospital intervention, “people over age 60 and those with existing medical conditions have a higher risk of getting seriously ill”.³

The COVID-19 pandemic demonstrated rapid response globally since its discovery. On January 7, 2020, Chinese scientists identified the virus as a novel coronavirus.⁴ Chinese release of the genetic sequence of the virus prompted global research and response efforts. On March 11th, 2020, the virus outbreak led WHO to declare COVID-19 as a pandemic as it spread to multiple continents. However, as cases exponentially rose globally, the first vaccines by Pfizer-BioNTech rolled out at impressive speed, receiving an Emergency Use Authorization from the US FDA for the COVID-19 vaccine on December 11, 2020, merely a year after the first discovery of the virus. During the time of rapid spread, countries implemented various containment measures including total city lockdowns, mandatory quarantines, isolations, and social distancing to stall the spread of infection, effectively starting the age of quarantines. CDC As global vaccination creates herd immunities in most of the human population, the WHO announced the end of the emergency phase of COVID-19 in May 2023.



The COVID-19 pandemic elicited drastic responses in various countries. A close look at the US response reveals unconventional decision-making. As early as February 4, 2020, the FDA approved the EUA for the CDC-developed SARS-CoV-2 diagnostic test kit, bypassing long testing requirements otherwise in place for medical test development.⁵ March 17, 2020, Moderna Therapeutics began the first human trials of a vaccine to protect against COVID-19 at a research facility in Seattle, Washington, 6 days after the WHO declared the virus outbreaks a pandemic. The speedy response is due to similarly rapid pressure from the pandemic itself: since April 10, 2020, there have been over 18,600 confirmed deaths and more than 500,000 confirmed cases in the US, making it the country with the most reported COVID-19 cases and deaths. CDC Funding in vaccine research is rewarded as the first vaccines receive their EUA in December.

Percent of Population At Least Partially Vaccinated



Map: U.S. News & World Report • Source: Our World in Data

USNews



As of January 26th, 2021, more than 23 million COVID-19 vaccine doses have been administered in the US.

The triumph in scientific and medical research is accredited for the quick distribution of vaccines in the US. However, global vaccine distribution is far from equal. There was a significant disparity in vaccination rates during the pandemic between high and low-income

³ World Health Organization, “Coronavirus Disease (COVID-19),” World Health Organization (World Health Organization, August 9, 2023), [https://www.who.int/news-room/fact-sheets/detail/coronavirus-disease-\(covid-19\)](https://www.who.int/news-room/fact-sheets/detail/coronavirus-disease-(covid-19)).

⁴ Ibid.

⁵ Ibid.



countries.⁶ WHO launched global communications and partnerships in medical research and resource allocation through the Access to COVID-19 Tools (ACT) Accelerator in April 2020. Yet the COVAX pillar within the ACT Accelerator, promoting “research, production, and equitable access to vaccines”, seemed to fail its job in the time of crisis as shown by the data in the table below, recent as of November 6th, 2022.

Following the panicking start of the pandemic was the birth of uncontrollable misinformation, “infodemic” as coined by WHO, regarding the virus, illness, and treatments. Misinformation regarding the pandemic caused multifaceted

consequences. First, the exaggeration of facts and rumors about impending lockdowns caused stress and panic in large populations causing resource shortages and mental health crises.⁷ Second, unscientific claims such as curing COVID-19 with essential oil, alcohol, cow excrement, cow urine, colloidal silver, and hand sanitizers delay patients in need from seeking effective treatment, as well as using potentially harmful remedies. Finally, myths about vaccines and masks caused major difficulty in compliance with mask and social distancing mandates, as well as vaccine avoidance. Overall, misinformation reinforced public mistrust against treatments and preventative measures, partly also due to the numerous EUAs issued by the FDA to expedite the implementation of vaccines and medication that otherwise require much longer testing and approval periods.

Vaccination Status By Country Income Group

Income groups are based on World Bank income classifications.

	At Least One Dose	Fully Vaccinated	Booster Shot
High income	79.46%	74.47%	60.80%
Upper middle income	82.83%	78.31%	48.28%
Lower middle income	63.50%	56.79%	17.42%
Low income	23.43%	19.12%	1.41%

Data as of Nov. 6, 2022.

Chart: U.S. News & World Report • Source: Our World In Data

USNews

Case study: Malaria

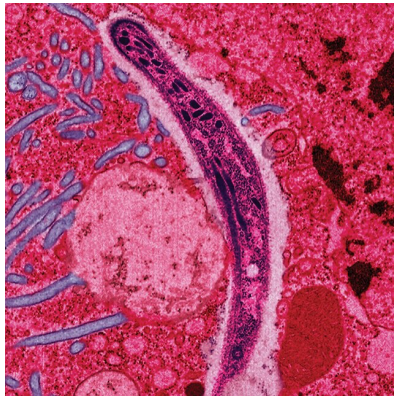
Malaria is one of the oldest diseases that accompanies humanity. Archeological findings show that the disease dates back as early as the Neolithic, its antigen being detected in Egyptian mummies from five thousand years ago.⁸ Five thousand years later the disease remains a great threat to global health. In 2022, malaria is responsible for an estimated 249 million cases and 608000 deaths in 85 countries.⁹ While mortality slightly reduced in 2022 compared to 2021, malaria incidence increased, indicating its persistent threat to global health.

⁶ Horus Alas, “The Best Performing Countries for Coronavirus Vaccinations,” US News & World Report (U.S. News & World Report, 2021), <https://www.usnews.com/news/best-countries/articles/covid-19-vaccination-rates-by-country>.

⁷ Maria Mercedes Ferreira Caceres et al., “The Impact of Misinformation on the COVID-19 Pandemic,” AIMS Public Health 9, no. 2 (January 12, 2022): 262–77, <https://doi.org/10.3934/publichealth.2022018>.

⁸ R.L. Miller et al., “Diagnosis of Plasmodium Falciparum Infections in Mummies Using the Rapid Manual ParaSight™-F Test,” Transactions of the Royal Society of Tropical Medicine and Hygiene 88, no. 1 (January 1994): 31–32, [https://doi.org/10.1016/0035-9203\(94\)90484-7](https://doi.org/10.1016/0035-9203(94)90484-7).

⁹ World Health Organisation, “Malaria,” World Health Organization (WHO, December 4, 2023), <https://www.who.int/news-room/fact-sheets/detail/malaria>.



Malaria is transmitted via vectors, mosquitoes that carry one of five *Plasmodium* parasite species that contain the malarial pathogens. Once infected, symptoms can range from mild fevers and chills to severe symptoms like fatigue and seizures. Young populations and populations with a compromised immune system are especially susceptible to severe symptoms.

As a vector-borne disease, malaria flourishes in hot and humid environments, where mosquitoes most easily reproduce. For millennia, tropical areas and regions close to the equator have been plagued by the disease, causing long-lasting impediments to the development of civilizations. Historically and to this day, malaria most horribly impacts Africa. Sickle cell anemia, a genetic disease caused by an inherited hemoglobin disorder that creates needle-like hemoglobin within red blood cells, should be extremely rare in a given population. However, the malaria protection property of the sickle cells allowed this genetic trait to survive, currently present in 20% of the population of African descent. Despite the sickle cell genes, WHO reports that the WHO African Region accounts for 94% of all malaria cases internationally.¹⁰

Malaria can be prevented and treated. Malaria prevention comes first as individual protection measures, such as wearing protective clothing and mosquito nets and repellants. Regional malaria prevention mainly relies on vector control: through eliminating mosquito vectors that transmit the parasites, disease incidence can be reduced. Two main methods of vector control are insecticide-treated nets (ITNs) and indoor residual spraying (IRS).¹¹ Two vaccines were recently created to combat malarial parasites, both showing significant improvements in infected children. The WHO recommended broad implementation of both RTS, S/AS01, and R21/Matrix-M vaccines for African children populations. Treatment for malaria, on the other hand, relies on antimalarial drugs. Of the five species of parasites, *Plasmodium falciparum* or *Plasmodium vivax* are responsible for the majority of malaria cases. Artemisinin is an antimalarial drug most effective against the *P. falciparum* species, while Chloroquine is most effective against the *P. vivax* species.



Although preventative measures and treatments against malaria are relatively inexpensive and available, counter-malaria efforts are threatened by antimalarial resistance in parasites¹². The WHO reports that partial artemisinin resistance emerged in *P. falciparum* parasites over the past decade. Researchers attribute the resistance to a certain mutated gene in the parasites. Artemisinin resistance delays the parasite clearance to up to a month instead of only 3 days.¹³ The longer clearance time will then allow the

¹⁰ Ibid.

¹¹ Ibid.

¹² Kenneth Arrow, *Saving Lives, Buying Time: Economics of Malaria Drugs in an Age of Resistance*. (Office Of Health Economics, 2006).

¹³ Richard Hodson, "The Challenges Facing Scientists in the Elimination of Malaria," *Nature* 618, no. 7967 (June 28, 2023): S19–19, <https://doi.org/10.1038/d41586-023-02047-0>.



parasites to develop further resistance. As the most widely used antimalarial drug, widespread artemisinin resistance will result in severe consequences in the long run. Other threats to counter-malaria efforts include the growing insecticide resistance in malaria vectors and the lowering effectiveness of insecticide-treated nets (ITNs). Future research in maintaining effective vector control and antimalarial drugs will be the key to eliminating malaria threats globally.

Case study: Tuberculosis

Following is a condensed version of the Crash Course lecture on Tuberculosis with selected information pertinent to the committee.¹⁴

In 1882, m.Tuberculosis was discovered by Robert Koch as the real cause of tuberculosis, thus ending centuries of obsession by western society with consumption. The discovery of the culprit of tuberculosis demonstrates it not as the illness that heightens the soul and shrinks the body, but as a disease of bacteria, overcrowdedness, and malnutrition. Efforts to deter tuberculosis brought revolutionary changes to public



health. Struggling to understand the exact method of transmitters, early researchers encouraged covering coughs, avoiding spitting in public, heightening hygiene in public and in home, and improving sanitary habits, all resulting in extraordinary changes to the lives of global citizens.¹⁵

Sanitariums were founded to separate the ill from the healthy, providing rest and nutrition until a patient improves. Combined with lower rates of poverty, tuberculosis saw a global decline between 1882 and 1930. However, improvements in tuberculosis were unevenly distributed from the start: while overall mortality dropped by 80% in the US, African American, Chinese American, and Native American populations saw significant lower decreases.¹⁶

From 1940 to 1965, researchers developed eight different classes of drugs to treat the disease, yet no new drugs have been developed since, as tuberculosis rapidly declined in rich countries and research was

¹⁴ Crash Course and John Green, "The Deadliest Infectious Disease of All Time | Crash Course Lecture," *YouTube*, March 25, 2024, <https://www.youtube.com/watch?v=7D-gxaic6UI>.

¹⁵ N. RICCARDI et al., "The Evolution of a Neglected Disease: Tuberculosis Discoveries in the Centuries," *Journal of Preventive Medicine and Hygiene* 61, no. 1 Suppl 1 (April 30, 2020): E9–12, <https://doi.org/10.15167/2421-4248/jpmh2020.61.1s1.1353>.

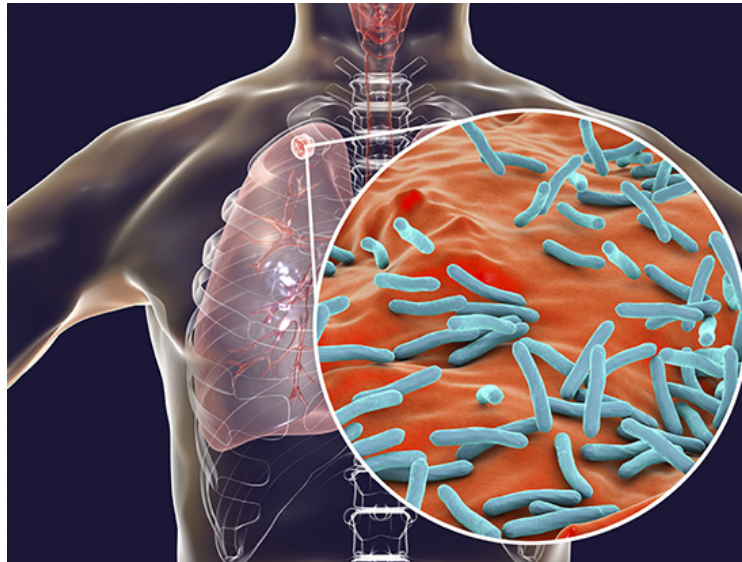
¹⁶ Daniel, Thomas M. "The History of Tuberculosis." *Respiratory Medicine* 100, no. 11 (November 2006): 1862–70. <https://doi.org/10.1016/j.rmed.2006.08.006>.



defunded.¹⁷ The lack of variable methods for curing tuberculosis caused sustained prevalence in developing countries as the disease gradually disappeared in the rich.

The HIV pandemic that started in the 1980s brought about another wave of TB deaths, as AIDS weakens one's immune system allowing TB to flourish in patients. From 1982 to 2005, “roughly as many people died of tuberculosis as died in WWI and WWII combined.”¹⁸ Little was done to expand access to either TB or HIV medication and resolve the interaction between the two diseases during those years.

Treatment for tuberculosis begins first with detection. Extremely effective molecular testing for detecting tuberculosis is available. However, due to its artificially high price by pharmaceutical companies, TB diagnosis still most commonly uses microscopy, how Robert Koch discovered TB in 1882, and microscopy has about a 50% chance of false negatives.¹⁹ Once a diagnosis is made, patients often follow Direct Observed Therapy (Short-Course) (DOTs) since the 1970s, which requires patients to visit healthcare facilities daily to take medication under supervision, ensuring consistent treatment. Fundamentally DOTs are based on healthcare mistrust of patients, putting immense logistical stress on patients' lives.²⁰



Tuberculosis is extremely susceptible to antibiotic resistance. Multidrug-resistant tuberculosis (MDR-TB) is entirely immune to standard TB treatments, which with delayed treatment and detection involve painful medication and injection with severe side effects including total hearing loss. Another strain, called pre-extensively drug-resistant tuberculosis, is immune to even more drugs, including those used to treat

¹⁷ World Health Organization, “Tuberculosis,” www.who.int, January 18, 2018, <https://www.who.int/news-room/questions-and-answers/item/tuberculosis>.

¹⁸ Ibid.

¹⁹ Ibid.

²⁰ O'Donnell, Aisling T., and Andrea E. Habenicht. “Stigma Is Associated with Illness Self-Concept in Individuals with Concealable Chronic Illnesses.” *British Journal of Health Psychology* 27, no. 1 (May 17, 2021). <https://doi.org/10.1111/bjhp.12534>.



MDR-TB. Without immediate detection of the correct strain of TB, patients who could be treated within 6-9 months with the correct protocol may extend treatment to years of ineffective suffering. Bedaquiline, an extremely effective drug against MDR-TB developed in 2013, the price remains high due to patent-sanctioned monopolies. It is estimated that 50,000+ people per year treated with MDR-TB will have no chance of cure without treatment.²¹ Prices for drugs remain high globally due to 1) artificially inflated prices by pharmaceutical companies and 2) fear of further antibiotic resistance if treatments are accessible to all.

In 2000, 2.3 million people died of tuberculosis, in 2021, 1.5 million died. The disease remains a crisis in modern society, especially in impoverished areas. However, with readily available treatments against even the toughest strains of TB, “in the 21st century, the real cause of contemporary tuberculosis is, for lack of a better term, us” – John Green²²

Case study: Diabetes

The \$1 sale of the insulin patent is perhaps the most commonly used story that emphasizes scientists’ commitment and selflessness toward the betterment of the world. Frederick Banting, after his invention of insulin in 1921, filed for the patent that was eventually sold to the University of Toronto.²³ Under the purpose section of the patent, Banting wrote “When the details of the method of preparation are published anyone would be free to prepare the extract, but no one could secure a profitable monopoly”. Banting’s wishes did not come true. More than a century of development later, well over 90% of insulin manufactured and sold today comes from virtually the same three pharmaceuticals: Eli Lilly, Novo Nordisk, and Sanofi. Floating high prices of insulin and various other diabetic medicines put a significant burden on patients to maintain effective and consistent treatments.

Insulin is a hormone produced by the pancreas that regulates blood sugar content in a person’s body, and disturbance in the body’s insulin level causes diabetes.²⁴ Essentially, if the pancreas doesn’t produce enough insulin (also known as Type I Diabetes), or the body’s cells do not respond well to that insulin (Type II Diabetes), diabetes occurs. If diabetes is uncontrolled for a prolonged period of time, patients develop hyperglycemia, leading to disorders of the circulatory, nervous, and immune systems. Diabetes is one of the most common chronic diseases in the world: 537 million diabetes patients were reported in 2021 globally. In 2019 diabetes and kidney disease due to diabetes caused an estimated 2 million deaths, a 3% increase in mortality when compared to 2000. Diabetes is also one of the four noncommunicable diseases, in contrast cumulatively saw a 22% decrease in mortality. The continued upsurge of the diabetic

²¹ ———. “Tuberculosis.” [www.who.int](https://www.who.int/news-room/questions-and-answers/item/tuberculosis), January 18, 2018.
<https://www.who.int/news-room/questions-and-answers/item/tuberculosis>.

²² Ibid.

²³ Office of the Commissioner, “100 Years of Insulin,” FDA, June 16, 2022,
<https://www.fda.gov/about-fda/fda-history-exhibits/100-years-insulin>.

²⁴ World Health Organization, “Diabetes,” World Health Organisation (WHO, April 5, 2023),
<https://www.who.int/news-room/fact-sheets/detail/diabetes>.



population is a global health crisis, with the global diabetic population projected to increase by 51% by 2045.²⁵

Diabetes onset can be preventable or delayed²⁶. Physical exercises and a healthy diet to maintain a healthy body weight is recommended to control blood sugar levels. Study finds physical inactivity and obesity highly correlated to diabetes incidence.²⁷ Treatment for diabetes otherwise is highly reliant on medicine. Type I Diabetes patients require insulin therapy to survive due to the inability to produce enough insulin naturally. Type II Diabetes relies on various medicines including metformin and sulfonylureas, as well as insulin in difficult cases to lower blood levels. Consistent and constant medication is necessary to prevent complications in some cases of diabetes. Results of failure to maintain medication include life-threatening conditions like HHNS and diabetic ketoacidosis.

Accessibility of diabetic medicine is not evenly distributed, however. From a global perspective, medicine availability is significantly different based on country-income-level.²⁸ A study following 22 countries found that metformin, the most commonly used diabetic medicine, is available in 100% of pharmacies in high-income countries, compared to only 64.7% of pharmacies in lowest-income countries²⁹. Meanwhile, 93.8% of pharmacies in high-income countries carry insulin, compared to 10.3% in lowest-income countries.³⁰ A calculated total global mean availability of insulin in 100 IU/ml dosage was only 36.21%, highlighting the global shortage of insulin³¹.



Medicine inaccessibility impacts beyond low-income countries. A closer look at the US presents a peculiar problem: insulin is largely unaffordable. Select three pharmaceutical companies that formed a monopoly in the US to prevent meaningful competition for a century. Companies use a technique called patent evergreening to extend patent protection by implementing irrelevant or minor changes to the drug while unshelving older variants of insulin to maintain their monopoly. Due to a lack of legislative efforts until recently to encourage the development of a generic equivalent of insulin, diabetes became the most expensive chronic disease in the US. Monopolies in the insulin production market cause global price inflation. A study on 13 countries found some insulin priced at well over ten times the calculated cost-based price, which includes the cost of production, a profit margin, and taxes on profits.³²

²⁵ Diego F Cuadros et al., "Spatial Epidemiology of Diabetes: Methods and Insights," *World Journal of Diabetes* 12, no. 7 (July 15, 2021): 1042–56, <https://doi.org/10.4239/wjd.v12.i7.1042>.

²⁶ Mayo Clinic, "Type 2 Diabetes - Diagnosis and Treatment," Mayo Clinic, March 14, 2023, <https://www.mayoclinic.org/diseases-conditions/type-2-diabetes/diagnosis-treatment/drc-20351199>.

²⁷ Jinrong Wu et al., "Spatial Analysis of Incidence of Diagnosed Type 2 Diabetes Mellitus and Its Association with Obesity and Physical Inactivity," *Frontiers in Endocrinology* 12 (October 28, 2021), <https://doi.org/10.3389/fendo.2021.755575>.

²⁸ Clara K Chow et al., "Availability and Affordability of Essential Medicines for Diabetes across High-Income, Middle-Income, and Low-Income Countries: A Prospective Epidemiological Study," *The Lancet Diabetes & Endocrinology* 6, no. 10 (October 2018): 798–808, [https://doi.org/10.1016/s2213-8587\(18\)30233-x](https://doi.org/10.1016/s2213-8587(18)30233-x).

²⁹ Zaheer-Ud-Din Babar et al., "The Availability, Pricing, and Affordability of Essential Diabetes Medicines in 17 Low-, Middle-, and High-Income Countries," *Frontiers in Pharmacology* 10 (November 19, 2019), <https://doi.org/10.3389/fphar.2019.01375>.

³⁰ Ibid.

³¹ D. Beran et al., "A Perspective on Global Access to Insulin: A Descriptive Study of the Market, Trade Flows and Prices," *Diabetic Medicine* 36, no. 6 (April 7, 2019): 726–33, <https://doi.org/10.1111/dmce.13947>.

³² Melissa J. Barber et al., "Estimated Sustainable Cost-Based Prices for Diabetes Medicines," *JAMA Network Open* 7, no. 3 (March 27, 2024): e243474, <https://doi.org/10.1001/jamanetworkopen.2024.3474>.



New diabetic medicine faces inaccessibility issues for a different issue. GLP-1 agonist drugs like Ozempic and Trulicity are new generations of diabetic medicine available to patients. However, GLP-1 drugs' weight loss effects overshadowed its medical purpose for the diabetic and morbidly obese³³. Pharmaceutical companies' advertisements, combined with Hollywood and social media promotions highlighted the cosmetic weight loss aspect of the drugs. Popularity skyrockets, creating high demand and shortage since the drugs' release.³⁴ A study reports that GLP-1s are priced at \$968.52 per month, while the calculated cost-based price ranges from \$0.75 and \$72.49 per month³⁵. High demand for cosmetic use of the drug creates inaccessibility to patients actually in need globally.³⁶ Not only should diabetic medicine be accessible in poorer areas, where diabetic patients are more concentrated, but solutions to delivering said drugs on need-based order is also crucial to resolving the continued surge in global diabetic prevalence and mortality.

Case study: Mental Health

Mental health is the mental well-being of a person beyond the absence of mental disorders. In the wide continuum of mental health are various degrees of problems that prevent a person from “[coping] with the stresses of life, [realizing] their abilities, [learning] well and [working] well, and [contributing] to their community”³⁷. While mental turmoil and disease has always accompanied humanity through history, the late 19th to the 20th century saw the rapid construct of psychology, the study of the mind, opening the realm of systematically identifying and treating mental diseases. Mental health is integral to a person's overall well-being. However, the WHO reports that 1 in every 8 people in the world suffers from a certain mental illness.³⁸

Mental illness encompasses numerous substantively different diseases, ranging from categories including mood disorders, personality disorders, and eating disorders.³⁹ Risk factors for mental disorders also vary, including adverse circumstances such as poverty or violence, psychological and biological factors like emotional skills and genetics, as well as substance use. While the onset of mental disorders happens through all life stages, children and populations in



³³ Ibid.

³⁴ Sydney Lupkin, “Ozempic’s Popularity Leads to Shortages for People with Type 2 Diabetes,” NPR, July 10, 2024, <https://www.npr.org/sections/shots-health-news/2024/07/10/nx-s1-5006103/ozempic-wegovy-semaglutide-shortage-type-2-diabetes-obesity>.

³⁵ Isabella Backman, “Prices of Expensive Diabetes Medicines and Weight-Loss Drugs Are Drastically Higher than Production Costs,” Yale School of Medicine (Yale School of Medicine, April 29, 2024), <https://medicine.yale.edu/news-article/prices-of-expensive-diabetes-medicines-and-weight-loss-drugs-are-drastically-higher-than-production-costs/#:~:text=In%20comparison%2C%20the%20current%20annual>.

³⁶ Kat Lay, “Study: ‘Gamechanger’ Diabetes Drugs Cost up to 400 Times More than Needed,” The Guardian, March 28, 2024, sec. Global development,

<https://www.theguardian.com/global-development/2024/mar/28/drug-companies-diabetes-drugs-medicines-ozempic-trulicity>.

³⁷ World Health Organization, “Mental Health,” World Health Organization, 2022, <https://www.who.int/news-room/fact-sheets/detail/mental-health-strengthening-our-response>.

³⁸ Jodi Morris et al., “Global Mental Health Resources and Services: A WHO Survey of 184 Countries,” Public Health Reviews 34, no. 2 (December 2012), <https://doi.org/10.1007/bf03391671>.

³⁹ World Health Organization, “Mental Disorders,” World Health Organization, 2022, <https://www.who.int/news-room/fact-sheets/detail/mental-disorders>.



other sensitive periods are especially fragile. Mental disorders can create disabilities, decrease lifespan, and make populations vulnerable to exploitation and suicide.

Although most country's governments recognize the importance of mental health, progress to implement changes and promote health resources lacks momentum. WHO's Mental Health Atlas started collecting data on global mental health resources in 2001.⁴⁰ A study in the 2011 Atlas reveals that only 60 percent of countries have a dedicated mental health policy; 71 percent possess a mental health plan; and 59 percent report having dedicated mental health legislation. There is also a major disparity in mental health expenditure between high and low-income countries. The most recent Atlas published in 2020 reports similar problems persisting: mental health resources differ significantly between high and low-income countries; pharmacological and psychosocial interventions remain inaccessible in many areas; policies in allocating said resources are incomplete.

Stigma on mental health may explain the disparity in access to mental health resources.⁴¹ Mental stigmatization presents in three forms: intrapersonal stigma, interpersonal stigma, and structural stigma. Intrapersonal stigma refers to shame and internalized stereotypes in patients; ignorance, prejudice, and discrimination are interpersonal stigma; structural stigma includes discriminatory policies or the lack of policies for mentally ill populations. Stigma impacts even medical professionals, who have shown an unwillingness to seek help due to fear of being perceived as less competent, less productive, and unsafe. Differences in cultural attitudes toward mental health make providing help and treating mentally ill populations especially difficult. Cultural differences in key elements like emotional expression, shame, power distance between therapist and patient, collectivism, and spirituality have profound impacts on people from different cultures. Identifying effective treatment for different populations, as well as improving willingness to seek help are necessary to holistic mental health accessibility.

The COVID-19 pandemic along with the debilitating virus brought a global mental health crisis. The WHO reports a 25% increase in mental illness prevalence two years after announcing COVID-19 as a pandemic.⁴² The WHO cites stress, social isolation, and fears during the pandemic as sources of this significant increase. Mental health services are also disrupted globally as pressure on medical facilities skyrockets, removing access to help from those in need. Poorer countries were more significantly impacted by the pandemic. Depression and anxiety prevalence during the



⁴⁰ World Health Organization, "Mental Health Atlas," [www.who.int, October 8, 2021](https://www.who.int/teams/mental-health-and-substance-use/data-research/mental-health-atlas#:~:text=Mental%20Health%20Atlas%20Project%20of), <https://www.who.int/teams/mental-health-and-substance-use/data-research/mental-health-atlas#:~:text=Mental%20Health%20Atlas%20Project%20of>.

⁴¹ Aisling T. O'Donnell and Andrea E. Habenicht, "Stigma Is Associated with Illness Self-Concept in Individuals with Concealable Chronic Illnesses," *British Journal of Health Psychology* 27, no. 1 (May 17, 2021), <https://doi.org/10.1111/bjhp.12534>.

⁴² World Health Organization, "COVID-19 Pandemic Triggers 25% Increase in Prevalence of Anxiety and Depression Worldwide," World Health Organization, March 2, 2022, <https://www.who.int/news/item/02-03-2022-covid-19-pandemic-triggers-25-increase-in-prevalence-of-anxiety-and-depression-worldwide>.



pandemic is higher in countries with lower human development index, higher gender inequality, and fewer hospital beds per capita.⁴³ Children and adolescents are among the most influenced by the pandemic, with a significant increase in anxiety and depression prevalence.⁴⁴ Stigmatization of infectious outbreaks also contributes to worsening mental health, magnifying COVID-19's influence on mental well-being.⁴⁵ In the post-COVID world, addressing and containing the mental health crisis created in the aftermath of the pandemic, as well as improving on current availability of care is imperative for long-lasting global mental well-being.

⁴³ Surapon Nochaiwong et al., "Global Prevalence of Mental Health Issues among the General Population during the Coronavirus Disease-2019 Pandemic: A Systematic Review and Meta-Analysis," *Scientific Reports* 11, no. 1 (May 13, 2021), <https://doi.org/10.1038/s41598-021-89700-8>.

⁴⁴ Urvashi Panchal et al., "The Impact of COVID-19 Lockdown on Child and Adolescent Mental Health: Systematic Review," *European Child & Adolescent Psychiatry* 1, no. 1 (August 18, 2021): 1151–77, <https://doi.org/10.1007/s00787-021-01856-w>.

⁴⁵ Leah S. Fischer et al., "Addressing Disease-Related Stigma during Infectious Disease Outbreaks," *Disaster Medicine and Public Health Preparedness* 13, no. 5–6 (June 3, 2019): 1–6, <https://doi.org/10.1017/dmp.2018.157>.



Questions to Consider

1. How can the committee develop systems to detect global health threats, devise treatment, and distribute treatment collectively?
2. How can the affordability of medicine, treatments, and hygiene resources be improved for treatable/curable diseases?
3. How can current medicines maintain their efficacy when facing fast-growing drug resistance to various pathogens?
4. How can the committee encourage timely treatment of diseases through education and reducing stigma on mental illnesses?
5. How can the committee ensure the distribution of factual medical information and advice to global citizens?



Topic B: Agricultural Antibiotic Resistance in Livestock

The previous ill-advised goal of livestock growing rapidly and remaining disease-free, all due to the routine use of antibiotics sounds like the beginnings of a cautionary tale. This approach, once seen as a breakthrough in modern agriculture and is currently a multibillion-dollar industry, has a hidden consequence: the emergence of antibiotic-resistant bacteria that undermine the effectiveness of these drugs. What began as a revolutionary tool to boost productivity has evolved into a global health concern, as resistant bacteria from livestock find their way into human populations, threatening our ability to treat infections effectively. Understanding the causes of antibiotic resistance in livestock is critical to addressing this complex issue that spans animal health, human health, and environmental stability.

Causes of Antibiotic Resistance in Livestock

The widespread use of antibiotics in livestock farming has significantly contributed to the rise of antibiotic resistance. This resistance occurs when bacteria evolve to survive despite the presence of drugs designed to kill them, rendering those drugs ineffective. In the context of agriculture, antibiotic resistance is a major concern as it impacts animal health, human health, and the environment. The non-therapeutic use, lack of comprehensive regulation, intensive farming, crowded conditions, and economic incentives are key agonists behind a cycle of overuse and dependency that take advantage of long-term health and sustainability.

Non-Therapeutic Use of Antibiotics in Livestock

One of the leading causes of antibiotic resistance in livestock is the non-therapeutic use of antibiotics, particularly for growth promotion and disease prevention. In many agricultural operations, antibiotics are added to animal feed or water at subtherapeutic levels, which are lower than the doses used to treat active infections (Shea et al., 2004). This practice is primarily aimed at promoting faster growth and increased feed efficiency, as animals grow larger with less feed over a shorter period when low-dose antibiotics are used. These antibiotics alter gut flora and reduce subclinical infections, contributing to higher production yields. However, low-dose, prolonged antibiotic exposure creates an environment conducive to the development of resistance. Bacteria exposed to antibiotics at low levels may survive and adapt, eventually passing their resistant traits to future generations. This selective pressure allows only the resistant bacteria to thrive and multiply, often leading to strains that no longer respond to commonly used antibiotics. Once resistant bacteria establish themselves in an animal population, they can spread rapidly through direct contact, contaminated water, or meat products, amplifying the risk of resistance.



Lack of Comprehensive Regulation and Enforcement:



The regulatory landscape surrounding antibiotic use in agriculture varies significantly across countries and regions, contributing to inconsistent practices that drive antibiotic resistance. In some nations, there are stringent guidelines limiting the use of antibiotics in animals strictly to cases of infection and requiring prescriptions from veterinarians. However, in many parts of the world, especially in low- and middle-income countries, there are minimal or no regulations governing antibiotic use in livestock. This regulatory gap allows for the routine, unchecked use of antibiotics for non-therapeutic purposes, facilitating the emergence of resistant bacteria.

Even in countries with regulatory frameworks, enforcement remains a challenge. Insufficient monitoring, lack of transparency, and limited resources hinder the ability of authorities to effectively control antibiotic use on farms (Da Silva et al., 2023). For instance, farms often rely on generic antibiotics that are inexpensive and readily available, making it difficult to track usage and detect misuse. This lax oversight means antibiotics are sometimes used without proper dosage guidelines, increasing the likelihood of under-dosing and the selection of resistant bacteria. Without robust enforcement mechanisms, even the best regulatory policies struggle to prevent the spread of antibiotic resistance in agricultural settings. This committee will be tasked with creating these frameworks and a national structure for antibiotic use.

Intensive Farming and Crowded Conditions

Intensive farming practices, characterized by high animal density and confined living spaces, are another major driver of antibiotic resistance. In these environments, animals are kept in close quarters, making it easier for diseases to spread rapidly through a herd or flock. To prevent outbreaks, farmers often rely on preventative antibiotic treatments administered to entire groups of animals, regardless of whether they show symptoms of illness. This practice, known as "prophylactic" or "metaphylactic" treatment, is aimed at minimizing the economic losses associated with disease but comes at a high cost in terms of antibiotic resistance (Long et al., 2022). The crowded and often unsanitary conditions typical of intensive farms create ideal breeding grounds for bacteria. High-stress environments weaken the immune systems of animals, making them more susceptible to infections and more dependent on antibiotics for survival. As antibiotics are regularly administered to mitigate these conditions, bacteria are frequently exposed to drugs, which accelerates the rate at which they develop resistance. These resistant bacteria can easily be transferred among animals, farm workers, and, potentially, to the broader community through direct or indirect pathways. Intensive farming practices, therefore, not only contribute to resistance but also create a system where antibiotics become an indispensable crutch, perpetuating a cycle of dependency and resistance.

Economic Incentives and the Cost of Production

Economic pressures in the livestock industry play a critical role in the excessive use of antibiotics, fueling the rise of resistance. Farmers face substantial pressures to maximize output while minimizing costs, particularly in competitive markets where profit margins can be slim (U.S Department of Agriculture, 2012). The use of antibiotics for growth promotion and disease prevention offers a



low-cost way to increase productivity, making it an attractive option for farmers seeking to remain profitable.

The economic benefits of antibiotic use—faster growth rates, reduced mortality, and greater feed efficiency—often outweigh the perceived risks of resistance in the short term. For many farmers, investing in better hygiene practices, improved housing conditions, and more balanced nutrition could reduce the need for antibiotics. However, these changes often require significant upfront investment, which may not be feasible for small-scale or financially constrained farmers. As a result, antibiotics present a cheaper and more immediate solution, despite the long-term consequences. The economic incentives favoring antibiotic use, particularly in low-cost production systems, create a reinforcing cycle where reliance on these drugs becomes ingrained in farming practices, further entrenching antibiotic resistance.

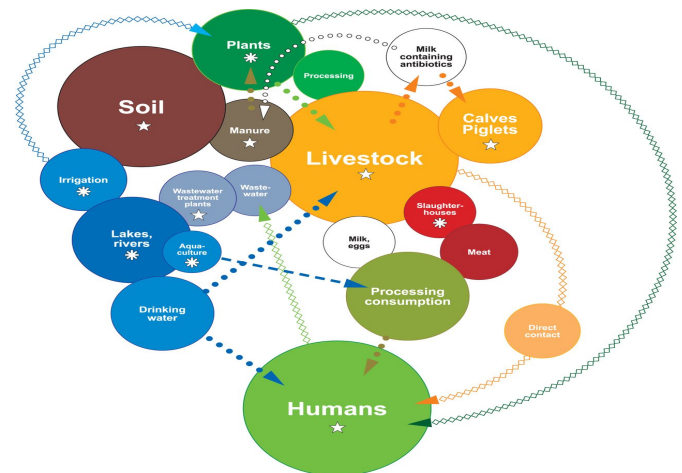
Impact on Human Health

Antibiotic resistance has become a serious global health crisis, and agriculture plays a significant role in its proliferation. The use of antibiotics in livestock farming—often for purposes other than treating illness—has created a perfect breeding ground for resistant bacteria that can spread to humans. As these resistant bacteria enter our food systems, environments, and communities, they jeopardize public health, making infections harder and sometimes impossible to treat.

Pathways of Antibiotic Resistance Transfer from Agriculture to Humans

One of the key ways agricultural antibiotic resistance impacts human health is through the transfer of resistant bacteria from livestock to people. These resistant bacteria can travel through multiple pathways, including: (Manyi-Loh, 2018)

- **Food Chain Contamination:** Resistant bacteria from livestock often enter the food supply when animals are slaughtered and processed. If meat is not adequately cooked or handled properly, consumers may ingest these bacteria, increasing the risk of developing difficult-to-treat infections. Additionally, the use of manure from treated animals as fertilizer can introduce resistant bacteria into crops, which can then spread to humans through produce.
- **Environmental Dissemination:** Animal waste often contains antibiotic residues and resistant bacteria, which can be spread into the environment through runoff, soil contamination, or improperly treated waste. This contamination impacts water supplies and soil, creating indirect pathways for human exposure to resistant bacteria. Recreational waters or even agricultural





irrigation sources contaminated with resistant bacteria can directly impact communities and food supplies.

- **Direct Contact:** People who work closely with livestock, such as farmers, veterinarians, and slaughterhouse employees, are at a higher risk of coming into direct contact with resistant bacteria. This close contact increases the likelihood of these individuals being colonized by resistant bacteria, which can then be spread to family members and community members, escalating the risk of difficult-to-treat infections.

Treatment- Resistant Infections in Humans

The growing difficulty of treating infections is perhaps the most concerning health risk associated with agricultural antibiotic resistance. Non-therapeutic antibiotic use in livestock applies a selective pressure that allows resistant bacteria to flourish while other bacteria are suppressed. When these resistant bacteria infect humans, they are more likely to withstand traditional treatments. For example, foodborne pathogens such as *Salmonella*, *Campylobacter*, and *Escherichia coli* have developed resistant strains that can complicate treatment, leading to prolonged illness, heightened risk of severe symptoms, and increased complications.

Resistant zoonotic diseases—diseases that can be transmitted from animals to humans—also pose significant health challenges (European Food Safety Authority, 2022). Methicillin-resistant *Staphylococcus aureus* (MRSA), for instance, includes strains likely originating from livestock, making it particularly challenging to control when it spreads within communities and healthcare settings. The risks extend further for vulnerable populations, such as young children, the elderly, and immunocompromised individuals. Resistant infections in these populations are harder to treat and often lead to severe complications, prolonged hospitalization, and a higher risk of death, underscoring the widespread implications of antibiotic resistance for human health.

The Evolution of Previous Legislation in Agriculture

Particularly within livestock production, antibiotics have transformed the landscape of food production since the mid-20th century. Initially hailed as a revolutionary method for enhancing animal growth and preventing disease, the widespread non-therapeutic application of these drugs has inadvertently fostered the emergence of antibiotic-resistant bacteria, posing serious threats to human health. As infections caused by resistant bacteria become increasingly difficult to treat, global health organizations and regulatory bodies have begun to recognize the urgent need for effective legislation to manage antibiotic use in agriculture. By examining the successes and challenges of past legislative efforts, we can better understand the implications for public health and food safety, as well as the pressing need for ongoing reforms in agricultural antibiotic use.

Brief Historical Context

The use of antibiotics in agriculture began in the mid-20th century when penicillin and other antibiotics were discovered to have growth-promoting effects in livestock. This practice quickly gained



popularity among farmers seeking to improve feed efficiency and increase production. In the 1940s and 1950s, farmers began to recognize that antibiotics could promote growth and enhance feed efficiency in livestock (Davies, 2010). Studies demonstrated that low doses of antibiotics could lead to significant weight gain in animals, making them more profitable to raise. This discovery led to the widespread adoption of antibiotics in feed and water for healthy animals, a practice initially intended for disease prevention and growth promotion rather than treatment of infections. The livestock industry quickly embraced this practice, viewing antibiotics as a critical tool to optimize production efficiency and profitability. The introduction of antibiotics not only improved livestock health but also helped address the challenges posed by overcrowded conditions and the spread of infectious diseases in intensive farming operations. By the 1970s, the use of antibiotics had become commonplace in the poultry and swine industries, where the need for rapid growth and low-cost production became paramount. This non-therapeutic use raised alarms among public health officials as antibiotic-resistant bacteria began to emerge, leading to widespread concern about the implications for human health.

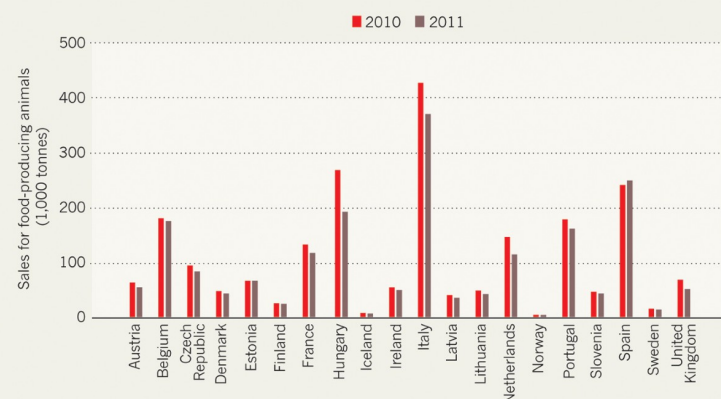
Legislative Responses:

In the United States, the Food and Drug Administration (FDA) has played a crucial role in regulating antibiotic use in agriculture. In 1977, the FDA proposed to withdraw approval for the use of certain antibiotics as growth promoters, citing the risk of antibiotic resistance. However, the proposal faced significant pushback from the agricultural industry, delaying comprehensive regulatory action for decades.

The European Union has been at the forefront of efforts to regulate antibiotic use in agriculture. In 2006, the EU banned the use of antibiotics for growth promotion across its member states. This ban was a significant step toward reducing antibiotic resistance, reflecting the EU's commitment to public health and food safety. In addition, the European Medicines Agency (EMA) and the European Food Safety Authority (EFSA) have developed guidelines for the prudent use of antibiotics in veterinary medicine, emphasizing the need for responsible practices among farmers and veterinarians.

EU COUNTRIES CUTTING BACK ON ANTIBIOTICS IN FARM ANIMALS

The amount of antibiotics used — adjusted here for different population sizes — varies widely from one EU country to another. Most importantly, every country on this list, except Spain, reduced its agricultural use of antibiotics from 2010 to 2011.





Legislation regarding antibiotic use in agriculture varies significantly in other regions. In countries like Canada and Australia, regulatory frameworks have been established to manage antibiotic use in livestock, though they may not be as comprehensive as those in the EU. For instance, Canada has developed guidelines aimed at promoting the responsible use of antibiotics in food animals, including encouraging veterinary oversight and reducing the reliance on antibiotics for non-therapeutic purposes.

In contrast, many developing countries face considerable challenges in regulating antibiotic use in agriculture due to a lack of resources, infrastructure, and enforcement mechanisms. The World Health Organization (WHO) has called for global action to address antibiotic resistance, emphasizing the need for international collaboration and support for countries with weak regulatory frameworks (World Health Organization, 2014). The lack of legislation in developing countries is important for delegates to deeply consider, as this is a large part of our committee. It creates abundant room for innovation and growth, while simultaneously respecting cultural values.



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