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# COMMITTEE B THEME GUIDE

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Zoonotic Diseases and Anti-Microbial Resistance



### **Committee B: Zoonotic Diseases and Anti-Microbial Resistance**

Antimicrobial Resistance (AMR) is a growing global health concern wherein microorganisms such as bacteria, viruses, and parasites develop the ability to withstand the effects of antimicrobial drugs. This renders previously effective treatments ineffective, leading to prolonged illnesses, increased healthcare costs, and higher mortality rates. AMR arises primarily due to the overuse and misuse of antibiotics in human medicine, as well as their widespread use in agriculture and livestock. The consequences of AMR ripple through healthcare systems, posing challenges in the treatment of infections and surgical procedures. If left unchecked, AMR could undermine modern medicine's effectiveness, jeopardizing advancements made in healthcare over decades.

Zoonotic diseases are infections that can be transmitted from animals to humans, often through direct contact or consumption of contaminated food. These diseases, such as Ebola, COVID-19, and avian influenza, can have profound impacts on global health. Zoonotic outbreaks can spread rapidly across borders, causing widespread illness, death, and straining healthcare systems. Factors like deforestation, climate change, and increased human-animal interaction contribute to the emergence of zoonotic diseases. To effectively address zoonotic threats, a multidisciplinary One Health approach is essential, integrating human, animal, and environmental health considerations. Vigilance, early detection, and global collaboration are vital to preventing and managing zoonotic disease outbreaks and protecting public health on a global scale.



Theme Guide for May 2 <sup>nd</sup>	
<b>Committee Session 1 – Healthcare practices and AMR</b>	
<p>Healthcare practices around the world play a pivotal role in the rise of antimicrobial resistance (AMR). Overuse and misuse of antibiotics, substandard infection control, and inadequate regulatory measures contribute to the acceleration of AMR. The global nature of healthcare means that AMR transcends borders, affecting both developed and developing nations. Addressing this challenge demands international collaboration, harmonized guidelines, and enhanced surveillance. By improving healthcare practices, emphasizing responsible antimicrobial use, and fostering awareness, we can collectively curb the growth of AMR and ensure the effectiveness of crucial treatments for infectious diseases on a global scale.</p>	
<p>Guiding Questions:</p> <ol style="list-style-type: none"> <li>1. How can healthcare providers reduce the over prescriptions of antibiotics?</li> <li>2. What are some alternatives to antibiotics in managing infections?</li> <li>3. How can we implement better infection and diseases control protocols in healthcare facilities such as hospital and clinics to control outbreak of anti-microbial resistance?</li> </ol>	
<p>Resources</p> <ul style="list-style-type: none"> <li>- <a href="https://www.who.int/publications/i/item/9789240075924">https://www.who.int/publications/i/item/9789240075924</a></li> <li>- <a href="https://www.tandfonline.com/doi/full/10.1080/16549716.2019.1599560">https://www.tandfonline.com/doi/full/10.1080/16549716.2019.1599560</a></li> <li>- <a href="https://apps.who.int/iris/bitstream/handle/10665/326454/WHO-HIS-SDS-2018.56-eng.pdf">https://apps.who.int/iris/bitstream/handle/10665/326454/WHO-HIS-SDS-2018.56-eng.pdf</a></li> </ul>	
<b>Committee Session 2 – Antibiotic use for agriculture</b>	
<p>Antibiotic use in agriculture poses significant problems for zoonotic diseases and antimicrobial resistance (AMR) worldwide. The practice of administering antibiotics to livestock for growth promotion and disease prevention contributes to the emergence of drug-resistant pathogens. Zoonotic diseases can spread through food chains, transferring resistant strains to humans. This dual challenge intensifies the global AMR crisis, compromising both animal and human health. Urgent measures are needed to regulate antibiotic usage in agriculture, adopt sustainable alternatives, and strengthen international cooperation to mitigate the risks of zoonotic transmission and the amplification of AMR threats.</p>	
<p>Guiding Questions:</p> <ol style="list-style-type: none"> <li>1. How does the interconnectedness of the global food supply chain impact the spread of antibiotic-resistance bacteria and zoonotic infections?</li> <li>2. Should WHO propose ban the use of certain drugs and antibiotics in animal production models to limit the spread of antimicrobial resistances?</li> <li>3. What are some promising alternatives to antibiotics in agriculture, such as probiotics, vaccines or improved farming practices? How effective are these alternatives, and what barriers exist to their widespread adoption?</li> </ol>	
<p>Resources</p> <ul style="list-style-type: none"> <li>- <a href="https://www.ontario.ca/page/antimicrobial-resistance-agriculture#:~:text=The%20Public%20Health%20Agency%20of,sprea%20of%20thes%20resistant%20types.">https://www.ontario.ca/page/antimicrobial-resistance-agriculture#:~:text=The%20Public%20Health%20Agency%20of,sprea%20of%20thes%20resistant%20types.</a></li> <li>- <a href="https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6017557/">https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6017557/</a></li> <li>- <a href="https://www.cdc.gov/drugresistance/food.html">https://www.cdc.gov/drugresistance/food.html</a></li> </ul>	

Theme Guide for May 3 <sup>rd</sup>	
<b>Committee Session 1 – Hygiene practices and zoonotic threats</b>	
<p>Lack of clean water and sanitation and inadequate infection prevention and control promotes the spread of microbes, some of which are resistant to antimicrobial treatments. Proper hygiene techniques hold paramount significance in mitigating zoonotic threats on a global scale. As zoonotic diseases can leap from animals to humans through direct contact, contaminated surfaces, or consumption of contaminated food, meticulous hygiene practices are pivotal to breaking the transmission cycle. By promoting regular handwashing, safe food handling, and effective sanitation, we can curtail the risk of zoonotic infections spreading and reduce the potential for antimicrobial resistance. These practices not only safeguard human health but also uphold the interconnected wellbeing of animals and the environment, reinforcing the crucial One Health approach to addressing zoonotic threats.</p>	
<p>Guiding Questions:</p> <ol style="list-style-type: none"> <li>1. Should the WHO enforce WASH techniques more rigorous to limit the spread of zoonotic threats?</li> <li>2. How do cultural practices and societal norms influence the adoption of proper handwashing techniques in different regions?</li> <li>3. How can global surveillance systems and early detection mechanisms help prevent the spread of zoonotic diseases? What challenges exist in implementing effective surveillance on a global scale?</li> </ol>	
<p>Resources</p> <ul style="list-style-type: none"> <li>- <a href="https://academic.oup.com/cid/article/45/1/10/479057?login=false">https://academic.oup.com/cid/article/45/1/10/479057?login=false</a></li> <li>- <a href="https://www.nature.com/articles/s41467-017-00923-8">https://www.nature.com/articles/s41467-017-00923-8</a></li> <li>- <a href="https://www.frontiersin.org/articles/10.3389/fvets.2020.582743/full">https://www.frontiersin.org/articles/10.3389/fvets.2020.582743/full</a></li> </ul>	
<b>Committee session 2 – Inaccessibility to quality, affordable medications</b>	
<p>The lack of access to quality, affordable medication has far-reaching implications, culminating in the proliferation of zoonotic diseases and antimicrobial resistance (AMR) on a global scale. Limited access to essential medications can hinder effective disease management in both human and animal populations, potentially leading to prolonged illnesses, improper treatment, and increased transmission of zoonotic agents. Furthermore, the absence of affordable medications can drive communities towards unregulated markets and self-medication practices, often involving inappropriate antibiotic use. This amplifies the risk of antimicrobial resistance emergence and spread, heightening the threat of treatment-resistant infections across species. Addressing medication accessibility is essential to curbing zoonotic disease transmission and combating AMR, reinforcing the interconnected nature of global health challenges.</p>	
<p>Guiding Questions:</p> <ol style="list-style-type: none"> <li>1. How can international organizations such as the World Health Organization, influence pharmaceutical pricing, patent systems, and research priorities to improve medication affordability and accessibility?</li> <li>2. In communicates facing medication inaccessibility, how might alternative healthcare practices and traditional medicine contribute to the emergence of treatment-resistant infections and zoonotic diseases?</li> </ol>	

### Resources

- [https://apps.who.int/gb/ebwha/pdf\\_files/WHA71/A71\\_12-en.pdf](https://apps.who.int/gb/ebwha/pdf_files/WHA71/A71_12-en.pdf)
- <https://pureportal.strath.ac.uk/en/publications/self-medication-using-antibiotics-at-community-pharmacies-in-low->
- <https://www.cbc.ca/radio/day6/antibiotic-resistance-china-cracks-down-on-metoo-cheez-it-crackers-turn-100-rexdale-s-hometown-hero-more-1.6271713/low-income-countries-face-covid-19-vaccine-shortages-but-they-also-need-antibiotics-experts-say-1.6271737#:~:text=Lack%20of%20access%20to%20certain,to%20global%20health%20and%20development.>
- <https://accesstomedicinefoundation.org/resource/lack-of-access-to-medicine-is-a-major-driver-of-drug-resistance-how-can-pharma-take-action>