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# COMMITTEE D THEME GUIDE

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Water Safety



### **Committee D: Navigating Water Safety for Wellness and Ecosystem Health**

Water safety, sanitization, and access to clean water stand as pillars of paramount importance within the framework of One Health, underscoring the intricate interplay between human health, animal well-being, and environmental integrity on a global scale. The significance of these elements reaches beyond individual health, resonating with collective prosperity and sustainability. Clean water serves as a defense against the scourge of waterborne illnesses, safeguarding communities from diseases like cholera, typhoid, and gastrointestinal infections. Moreover, the broader ecological balance relies on the health of aquatic ecosystems nurtured by clean water sources. Agricultural productivity and global food security hinges upon reliable water supplies. Within the realm of One Health, the emphasis on water safety reverberates even further. Recognizing that many emerging infectious diseases stem from wildlife, safeguarding water sources safeguards against zoonotic diseases, preventing them at their source. By halting disease transmission between animals and humans, we preempt potential pandemics.

Neglecting water sanitization imperils progress on multiple fronts. Public health is jeopardized, particularly in vulnerable communities lacking access to clean water. Economic development falters due to increased healthcare costs and reduced workforce productivity. Health inequalities widen, disproportionately affecting marginalized populations. Championing water safety and clean water access is not merely a health imperative; it's a moral and ecological responsibility. It hinges on recognizing the intricate tapestry that links human, animal, and environmental well-being. By prioritizing water quality through holistic approaches, we proactively address global health challenges, nurturing a harmonious coexistence between humanity, animals, and the ecosystems we share.



| Theme Guide – May 2 <sup>nd</sup>   |
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| <b>Committee Session 1 – Proper Hygiene Techniques – WASH</b>   |
| <p>The World Health Organization (WHO) champions Water, Sanitation, and Hygiene (WASH) techniques as fundamental to water safety and public health. WASH encompasses strategies to provide clean water sources, improved sanitation facilities, and hygiene promotion. These interconnected measures prevent waterborne diseases, reduce health disparities, and enhance overall well-being. By prioritizing WASH, WHO underscores the essential link between access to clean water, proper sanitation, and improved health outcomes, particularly in vulnerable communities worldwide.</p>   |
| <p>Guiding Questions:</p> <ol style="list-style-type: none"> <li>1. How do humanitarian crises, such as natural disasters or conflicts, impact WASH services and public health, and what innovative approaches can be deployed to provide WASH solutions in emergency settings?</li> <li>2. What role can emerging technologies, like water purification innovations and data analytics, play in improving the delivery and monitoring of WASH services, especially in resource-limited settings?</li> <li>3. How does gender inequality intersect with WASH access and utilization, and what strategies can empower women and marginalized groups to take active roles in improving water, sanitation and hygiene in their communities?</li> </ol> |
| <p>Resources</p> <ul style="list-style-type: none"> <li>- <a href="https://www.who.int/activities/estimating-WASH-related-burden-of-disease">https://www.who.int/activities/estimating-WASH-related-burden-of-disease</a></li> <li>- <a href="https://www.who.int/news/item/06-07-2023-women-and-girls-bear-brunt-of-water-and-sanitation-crisis---new-unicef-who-report">https://www.who.int/news/item/06-07-2023-women-and-girls-bear-brunt-of-water-and-sanitation-crisis---new-unicef-who-report</a></li> </ul>   |
| <b>Committee Session 2 – Drinking Water Quality</b>   |
| <p>Regulating drinking water quality is paramount from a global health perspective. Stringent standards and monitoring ensure access to safe, clean water, mitigating the risk of waterborne diseases that disproportionately affect vulnerable populations worldwide. These regulations safeguard public health, reduce healthcare burdens, and contribute to global development. Beyond individual health, clean drinking water fosters economic stability, enhances education opportunities, and promotes gender equality. Robust global efforts in water quality regulation are pivotal in fostering a healthier, more equitable, and sustainable world for all.</p>  |

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| <p>Guiding Questions:</p> <ol style="list-style-type: none"> <li>1. How do drinking water quality regulations address disparities in access to clean water and what strategies can be employed to ensure equitable distribution, particularly in marginalized regions?</li> <li>2. How do water quality regulations impact a nation's economy and what economic arguments support robust investments in clean drinking water from a global health standpoint?</li> <li>3. How do international regulatory frameworks, such as the WHO Guidelines for Drinking-Water Quality, impact the standardization of clean drinking water globally, and what are the challenges in implementing and enforcing these standards?</li> </ol>  |
| <p>Resources</p> <ul style="list-style-type: none"> <li>- <a href="https://www.who.int/teams/environment-climate-change-and-health/water-sanitation-and-health/water-safety-and-quality/drinking-water-quality-regulation">https://www.who.int/teams/environment-climate-change-and-health/water-sanitation-and-health/water-safety-and-quality/drinking-water-quality-regulation</a></li> <li>- <a href="https://www.who.int/news-room/fact-sheets/detail/drinking-water#:~:text=Globally%2C%20at%20least%20%20billion,risk%20to%20drinking%2Dwater%20safety.">https://www.who.int/news-room/fact-sheets/detail/drinking-water#:~:text=Globally%2C%20at%20least%20%20billion,risk%20to%20drinking%2Dwater%20safety.</a></li> <li>- <a href="https://glaas.who.int/">https://glaas.who.int/</a></li> </ul> |

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| <p>Theme Guide – May 3<sup>rd</sup></p>   |
| <p><b>Committee Session 1 – Physical Contaminants in Water</b></p>  |
| <p>Physical contaminants in drinking water, such as sediment, heavy metals, and suspended particles, pose substantial global health concerns. These contaminants can result from industrial pollution, inadequate infrastructure, or natural sources. When consumed, they can lead to acute health issues like gastrointestinal problems and long-term risks such as developmental disorders and cancer. On a global health scale, addressing physical water contaminants is pivotal, requiring comprehensive monitoring, treatment, and infrastructure improvements to ensure safe and clean drinking water for all, mitigating their adverse impact on public health.</p> |
| <p>Guiding Questions:</p> <ol style="list-style-type: none"> <li>1. What are the primary sources of physical contaminants in drinking water worldwide, and how do they vary between developed and developing regions? How can this knowledge inform global health interventions?</li> <li>2. How can we quantify the economic burden of treating health conditions resulting from exposure to physical contaminants in drinking water globally, and how does this impact healthcare systems and budgets?</li> </ol>   |
| <p>Resources</p> <ul style="list-style-type: none"> <li>- <a href="https://www.who.int/publications/i/item/9789241516198">https://www.who.int/publications/i/item/9789241516198</a></li> <li>- <a href="https://www.sciencedirect.com/science/article/pii/S1674237023000522">https://www.sciencedirect.com/science/article/pii/S1674237023000522</a></li> <li>- <a href="https://iopscience.iop.org/article/10.1088/1755-1315/448/1/012047/meta">https://iopscience.iop.org/article/10.1088/1755-1315/448/1/012047/meta</a></li> </ul>  |
| <p><b>Committee Session 2 - Chemical Contaminants in Water</b></p>  |
| <p>Chemical contaminants in drinking water, encompassing heavy metals, pesticides, industrial chemicals, and emerging pollutants, present profound global health challenges. They can lead</p>  |

to severe health problems, including cancer, neurological disorders, and reproductive issues, impacting millions worldwide. Vulnerable communities often bear the brunt of this crisis. Addressing chemical water contamination on a global health scale is imperative. It necessitates rigorous monitoring, advanced treatment technologies, and international cooperation to ensure access to safe drinking water, mitigating the substantial health risks associated with chemical pollutants.

Guiding Questions:

1. How can a One Health approach be leveraged to prevent zoonotic diseases linked to contaminated water sources, and what interdisciplinary strategies can help break the transmission cycle between animals and humans?
2. How can international cooperations and regulatory frameworks effectively balance the need for pesticide use in agriculture with the goal of minimizing pesticide residues in drinking water globally?
3. What advanced techniques and methodologies are available for monitoring and detecting heavy metals in drinking water, and how can global health organizations ensure their widespread use in regions vulnerable to heavy metal contamination?

Resources

- <https://www.who.int/teams/environment-climate-change-and-health/water-sanitation-and-health/chemical-hazards-in-drinking-water>
- <https://www.sciencedirect.com/science/article/abs/pii/S0278691599001362>