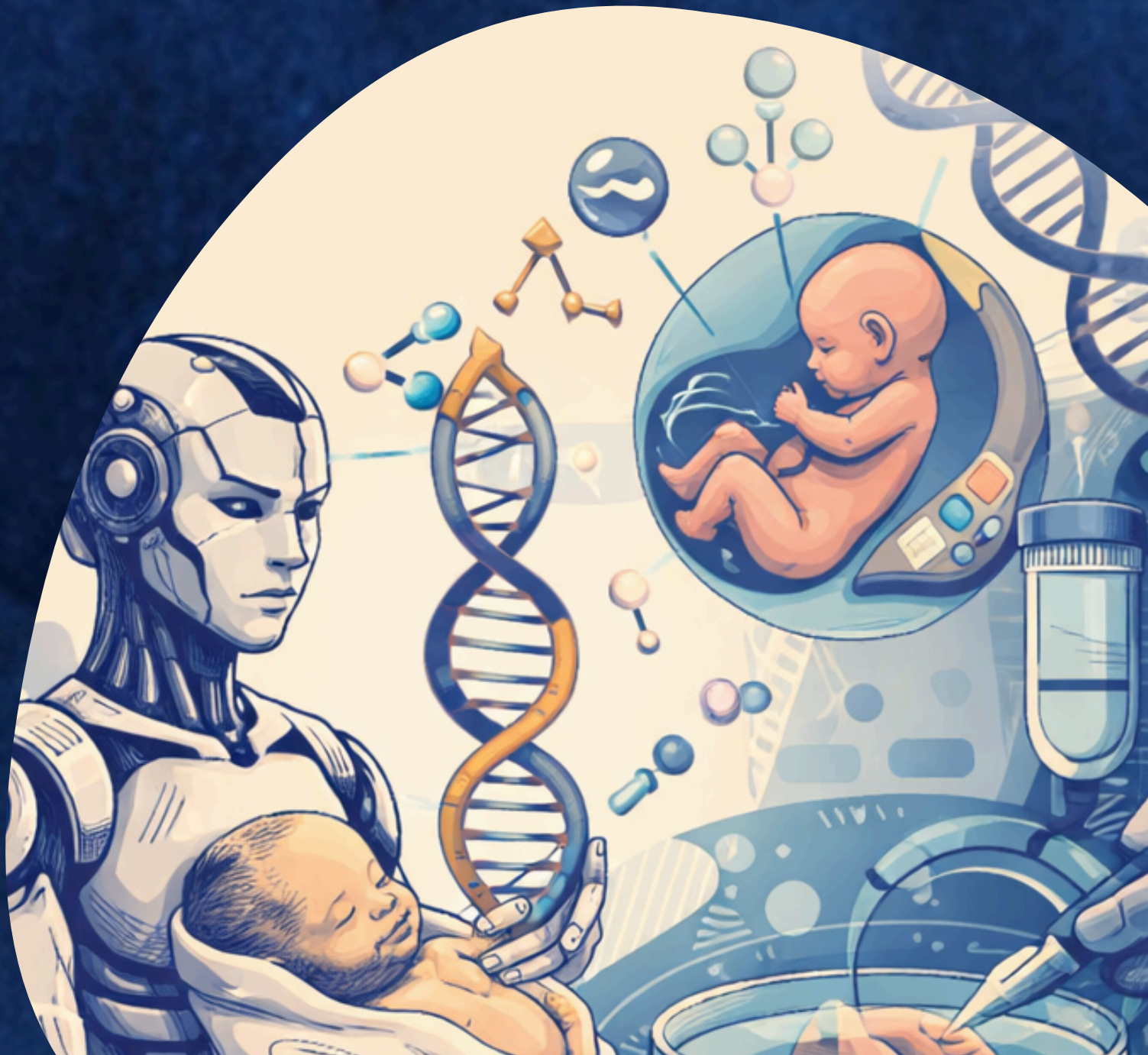
World Health Organization

cuyo tema es: Redefining Human Creation: International Regulation of Genetic Engineering and Artificial Reproduction.



CSJBMUN II

Background guide

COLEGIO SAN JOSE DE BARRANQUILLA

MODEL OF UNITED NATIONS 2026

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CHAIR PRESIDENT(DAIS) PRESENTATION LETTER

Mia Bernal

Dear Delegates,

It is my pleasure to welcome you to the World Health Organization (WHO) Committee at the second edition CSJB MUN 2026. My name is Mia Bernal, and I will have the honor of serving as your President throughout this conference.

The WHO is a technical and consultative body that requires responsibility and a strong commitment to cooperation. As delegates, you will be expected to engage in respectful debate, support your positions with research, and work collaboratively, always maintaining diplomacy, communication, and promoting a critical thinking to reach possible solutions on topics of extreme importance in the world of today.

As President, my role is not only to guide the committee procedurally, but also to support you throughout the entire process. I want this committee to be a space where you feel comfortable asking questions, clarifying doubts, and improving your skills as delegates. Please do not hesitate to reach out if you need guidance or have any concerns regarding preparation or committee dynamics.

I encourage you to approach this experience with an open mind, dedication, and enthusiasm. I look forward to working with each of you and to a productive and enriching committee experience.

Sincerely,
Mia Esperanza Bernal Vargas
President, World Health Organization
CSJB MUN 2026

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CHAIR VICEPRESIDENT (DAIS) PRESENTATION LETTER

Frank Baute

Estimated Delegates,

Welcome to the World Health Organization (WHO) committee at the second edition of CSJB MUN 2026! My name is Frank Baute, and it is my absolute pleasure to be attending as the commission's vice president. Long days of sharing ideas, research, and (hopefully) constructive debate await us. Beyond just a moderator, I wish to be a role model you as delegates can look up to and reach out to.

I've always believed WHO is an incredible opener to an MUN journey. In fact, it was my very first committee all the way back in 2019. Yes, I'm that old. However, do not let that make you underestimate it. Discussions can range from medical matters to possible bio-warfare in matters of a few interventions.

This year, you have the chance to discuss breakthroughs in gene editing and its implications on human germline modification, as well as the establishment of effective oversight mechanisms of artificial wombs. The future of humanity is in your hands. It is you, as representatives of the most powerful nations worldwide, who must come up with effective resolutions and projects to tackle the misuse that comes with messing with the essence of humanity, our genes.

To the delegate reading this, whether this is your first conference or one of many in your journey, I encourage you to speak up. And I don't mean that so you intervene and rack up points in a rubric. I want your voice, ideas, and presence to matter in this committee. Investigate, rehearse your speeches, and get to crafting your interventions. Be the very best, and never give up.

Much appreciation,
Frank David Baute Andrade
Vice President, World Health Organization
CSJB MUN 2026

frank.baute@ibs.edu.co

2. INTRODUCTION TO THE COMMITEE

2.1. Committee history

The World Health Organization (WHO) is the specialized agency of the United Nations responsible for international public health. It was established on April 7, 1948, in the aftermath of World War II, as part of a broader effort to strengthen global cooperation and prevent future humanitarian crises. Its creation responded to the urgent need for a permanent international body capable of coordinating responses to health emergencies, controlling the spread of infectious diseases, and addressing transnational health challenges that no single country could manage alone.

According to its Constitution, the WHO defines health as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity," recognizing health as a fundamental human right. This definition expanded the traditional understanding of health and laid the foundation for a comprehensive global health agenda that includes disease prevention, health promotion, access to medical services, and the reduction of health inequalities among nations.

Throughout its history, the WHO has played a central role in major global health achievements. Notably, it led the successful eradication of smallpox in 1980, one of the most significant accomplishments in public health history. Additionally, it has coordinated international responses to pandemics such as HIV/AIDS, Ebola, and COVID-19, providing technical guidance, mobilizing resources, and supporting Member States in strengthening their healthcare systems. The organization has also developed key international frameworks, such as the International Health Regulations (IHR), which guide countries in preventing and responding to public health risks that cross borders.

The World Health Assembly (WHA) is the supreme decision-making body of the WHO. It meets annually in Geneva, Switzerland, and is attended by delegations from all Member States. The WHA is responsible for determining the organization's policies, appointing the Director-General, overseeing financial matters, establishing strategic priorities, and reviewing and approving the WHO's program budget. Through this structure, the WHO ensures that global health governance remains collaborative, inclusive, and responsive to emerging challenges.

2.2. Committee's objective and mission

The mission of the WHO Committee within the Model United Nations is to provide a platform for delegates to address global health challenges through cooperation, scientific reasoning, and ethical consideration. Delegates are expected to analyze complex issues not only from a medical perspective but also by considering their social, economic, and political implications, recognizing that public health is deeply interconnected with broader global dynamics.

The committee's approach is fundamentally collaborative and policy-oriented. Rather than focusing on immediate or coercive actions, delegates are encouraged to develop long-term strategies that promote prevention, accessibility, innovation, and equity in healthcare systems worldwide. This includes proposing frameworks that strengthen international coordination, improve access to healthcare technologies, and ensure that advancements in science—such as genetic engineering and artificial reproduction—are regulated in a way that respects human dignity and global ethical standards.

Ultimately, the committee seeks to foster solutions that are realistic, inclusive, and aligned with the WHO's core values. Delegates must balance national interests with global responsibility, ensuring that their proposals contribute to sustainable health outcomes and reduce disparities between countries. The emphasis lies in building consensus, promoting international cooperation, and safeguarding the fundamental right to health for all individuals.

2.3. Role and Scope of the Committee.

The World Health Organization operates as a specialized agency of the United Nations responsible for directing and coordinating international health efforts. Within this framework, the committee serves as a platform for Member States to address emerging global health challenges, develop policy recommendations, and promote international cooperation in the field of public health.

In this committee, delegates are expected to engage in constructive debate, representing the policies and perspectives of their assigned countries while working collaboratively to propose solutions to complex health-related issues. The scope of the committee includes the discussion of ethical, scientific, and regulatory dimensions of emerging medical technologies, such as human germline gene editing and artificial womb technologies (ectogenesis), with a focus on their implications for global health systems, human rights, and international governance.

It is important to note that, as a WHO committee, the body does not possess binding legislative authority. I**nstead, its role is to produce recommendations, guidelines, and frameworks that can inform national policies and contribute to the development of international standards**. Delegates should therefore focus on feasible, evidence-based solutions that emphasize cooperation, equity, and the responsible advancement of science and technology.

Additionally, delegates are encouraged to consider the diverse capacities of Member States, including differences in healthcare infrastructure, economic resources, and regulatory systems. Solutions should aim to be inclusive and adaptable, ensuring that proposed measures can be realistically implemented across different global contexts.

3. INTRODUCTION TO THE TOPICS.

3.1. Overview of the Topics.

A. Regulating Gene Editing and Human Germline Modification.

Recent advances in biotechnology have significantly expanded the possibilities of human genome editing, particularly through the development of tools such as CRISPR-Cas9, which allow for precise modification of DNA sequences (Kohn et al., 2016). While these technologies offer promising opportunities for medical research and the prevention of genetic diseases, they have also raised profound ethical, scientific, and regulatory concerns at the international level.

Human germline gene editing refers to genetic modifications made to human embryos, eggs, or sperm that are heritable and can be passed on to future generations. These interventions affect genetic material at its earliest stages, meaning that any alteration will permanently alter the human genetic lineage. In contrast, somatic gene editing involves the use of genome editing technologies in non-reproductive (somatic) cells, and therefore affects only the treated individual and produces changes that will not be inherited by future generations. Germline interventions, however, permanently alter the human genetic lineage, extending their consequences beyond individual patients to society (WHO, 2021). Because the long-term effects of genetic modifications are still uncertain, and unintended genetic changes could be passed down to future generations, germline gene editing raises profound concerns. Since these changes would affect not only individuals but also future populations worldwide, there is a strong need for international cooperation and shared decision-making to ensure that genetic research progresses responsibly.

The rapid advancement of gene-editing technologies has outpaced the development of international regulatory systems, resulting in widely varying national laws, ranging from outright bans to limited research permits, and creating a fragmented global regulatory environment. This lack of oversight has raised concerns about scientific safety, ethical boundaries, and the potential for misuse of these genetic technologies.

Therefore, international organizations have emphasized the importance of clearly distinguishing between therapeutic applications, aimed at preventing serious inherited diseases, and genetic enhancement, which seeks to modify non-medical traits and raises risks related to inequality, discrimination, and human dignity.

Beyond its ethical and regulatory dimensions, germline gene editing is linked to the growing global burden of genetic and inherited diseases. According to the World Health Organization, an estimated 6% of all births worldwide involve a serious genetic or congenital condition, contributing significantly to infant mortality and long-term disability (WHO, 2023). While not all congenital conditions are genetic in origin, the global prevalence of serious congenital and hereditary disorders has intensified the debate about the potential future role of germline gene editing in preventing certain hereditary diseases.

From a scientific perspective, current evidence highlights that genome editing technologies, while increasingly precise, still have limitations, such as unwanted mutations and unintended genetic alterations. Reports from the U.S. National Academies of Sciences, Engineering, and Medicine (NASEM) emphasize that these risks are especially concerning in germline applications, where errors can be passed down through generations and amplified over time. As a result, many scientific bodies argue that these technologies are not yet safe enough for clinical germline use, reinforcing international calls for caution and restraint (NASEM, 2020). On the other hand, the global debate surrounding germline gene editing has also intensified due to concerns about equity and access to this technology. The potentially high costs and technical requirements of these technologies raise questions about whether their benefits would be concentrated in wealthier nations or populations, potentially exacerbating existing health inequalities. This leads us to conclude that without established inclusive governance frameworks, germline interventions could contribute to new forms of social stratification based on genetic traits, thus challenging the principles of universality in global health.

In response to the rapid scientific advancement and ethical concerns surrounding human genome editing, the World Health Organization (WHO) has assumed a leading role in promoting global governance in this area. In 2019, the WHO convened the Expert Advisory Committee on Developing Global Standards for Governance and Oversight of Human Genome Editing, which subsequently issued recommendations emphasizing transparency, international cooperation, and responsible oversight of both somatic and germline applications (WHO, 2021).

As part of its major initiatives, the WHO created a global registry for human genome editing research designed to enhance transparency and reinforce oversight, thereby reducing the risk of premature or unethical clinical applications (WHO, n.d.). Although the WHO does not have legally binding regulatory power, its normative guidance aims to support Member States in establishing coherent national regulatory frameworks that uphold ethical principles, respect human rights standards, and promote public health objectives. The future of human genome editing will ultimately depend on the ability of the international community to align innovation with ethical responsibility and equity.

B. International Oversight of Artificial Wombs (Ectogenesis) and the Future of Pregnancy.

Artificial womb technology, scientifically referred to as ectogenesis, describes the process by which a fetus develops outside the human body in an artificial environment designed to replicate the physiological conditions of the uterus. Although the process of complete ectogenesis (from conception to birth entirely outside the human body) remains hypothetical, partial ectogenesis has gained increasing attention in neonatal medicine as an innovative development of intensive care technologies for extremely premature newborns. According to the World Health Organization, complications related to prematurity are among the leading causes of death among children under five worldwide, highlighting the urgent need for innovative medical strategies to improve survival and long-term outcomes (WHO, 2023). In this context, artificial gestational support systems are being explored not as a replacement for natural pregnancy, but as a potential intervention aimed at reducing mortality and severe complications associated with extreme prematurity. According to the World Health Organization, complications related to prematurity are among the leading causes of death among children under five years old worldwide, highlighting the urgent need for innovative medical strategies to improve survival and long-term outcomes (WHO, 2023). In this context, artificial gestational support systems are being explored not as a replacement for natural pregnancy, but as a potential intervention aimed at reducing mortality and severe complications associated with extreme prematurity.

In a global context, preterm birth remains as a major public concern. According to the World Health Organization, and estimated of 13.4 million babies were born preterm in 2020, in a rate from 4% to 16% across countries (WHO, 2023). Also, one of the leading causes of death among children under five years old are the complications related to prematurity. In this context, artificial womb technology has been explored through the year as a potential life-saving intervention for extremely premature infants with complications, rather than as a replacement for the traditional pregnancy process. However, these expansion of such new technologies raises complex ethical concerns, legal and human rights considerations worldwide.

From a human rights perspective, the development of ectogenesis raises important questions about fundamental international principles of dignity and equality established by the United Nations. The Universal Declaration of Human Rights affirms that ˝all human beings are born free and equal in dignity and rights˝ and have an equal access to these rights without discrimination (United Nations, 1948). On the other hand, from a health perspective, the Office of the High Commissioner for Human Rights recognizes that individuals have the right to make decisions about their own bodies, including reproductive decisions (OHCHR, n.d.). The importance of these principles become increasingly relevant as ectogenesis proposes the possibility of transferring gestation from the human body to medical technological systems, raising concerns regarding to reproductive autonomy, parental rights, and the ethical implications of biomedical interventions. In addition, the international human rights standards establish that states have the obligation to ensure that health policies and scientific advancements protect and respect human rights, reinforcing the need for regulatory approaches that balance the innovation with equity o this type of interventions.

As artificial gestational technologies progress from research stages to potential clinical application, the international community must address the challenge of balancing scientific innovation with precaution. This requires the development of global governance approaches capable of ensuring ethical oversight, prevent the misuse of these technologies, protect the vulnerable populations, and promote an equitable access, always respecting cultural, legal, and ethical diversities among member states. Since ectogenesis is a potential technology to significantly transform pregnancy and neonatal care, international cooperation and long-term regulation will be essential to ensure its safe and responsible use within global health systems.

3.2. Context.

Advances in biotechnologies are playing a crucial role in shaping global health, redefining how medical interventions are approached and raising challenges for international regulation. According to the United Nations Educational, Scientific, and Cultural Organization, the advances in life sciences and biotechnologies require clear international guidelines to support States in the development of ethical and legal frameworks for biomedical practices, highlighting the importance for strengthening international oversight mechanisms (UNESCO, 2005). This growing difference between rapid scientific progress and the development of regulatory frameworks has become a significant concern for policymakers, particularly in areas such as human genetic modification and reproductive technologies.

At the same time, the expansion of medical technologies is occurring alongside persistent global health inequalities. Data from the World Bank shows that access to complex and advanced medical technologies remains concentrated in high-income countries, while in low and middle-income countries there are still significant limitations in healthcare infrastructure and funding (World Bank, 2022). These disparities raise important concerns about equitable access to new biomedical technologies and the risk that those technologies and the risk that they could exacerbate current global health disparities.

In response to these challenges, international governance frameworks have emphasized in the importance of ethical standards and human rights protections in the development and applications of scientific advancements. As the United Nations has highlighted consistently that the scientific progress should be aligned with the main social goals, including equity and respect for human dignity (United Nations, 2021). However, the lack of global regulations has led to uneven national responses, making it difficult to maintain consistent oversight and accountability.
Within this context, effective international cooperation is essential to address the diverse challenges of biomedical innovations. Coordinated actions and efforts among Member States and international organizations are necessary to ensure consistent oversight and ethical accountability. As these technologies continue developing, strengthening global governance systems will be a key aspect for ensuring that scientific progress is managed responsibly, contributing on improved health outcomes.

3.3 Key Concepts and Definitions.

a) Regulating Gene Editing and Human Germline Modification.

- **Germline Gene Editing:** Genetic modification applied to human embryos, eggs, or sperm that results in heritable changes, meaning the alterations can be passed on to future generations.

- **Somatic Gene Editing:** A form of genetic modification that targets non-reproductive cells, affecting only the treated individual without passing changes to future generations.

- **CRISPR-Cas9**: A genome-editing technology that allows scientists to make precise, targeted changes to DNA sequences, widely used in biomedical research due to its efficiency and accessibility.

- **Off-target Effects:** Unintended genetic alterations that occur when gene-editing technologies modify DNA at unintended locations, posing safety risks.

- **Heritable Genetic Modification:** Genetic changes that are incorporated into the germline and can be transmitted across generations, raising long-term ethical and societal implications.

- **Genetic Enhancement:** The use of gene-editing technologies to improve non-medical traits such as intelligence, physical ability, or appearance, often associated with ethical concerns regarding inequality and human dignity.

- **Therapeutic Applications:** The use of gene-editing technologies to prevent or treat serious genetic diseases, distinguishing medical necessity from enhancement purposes.

- **Bioethics:** The field that examines the ethical implications of biological and medical research, particularly relevant in debates about genetic modification and human intervention.

b) International Oversight of Artificial Wombs (Ectogenesis) and the Future of Pregnancy.

- **Ectogenesis:** The development of a fetus outside the human body in an artificial environment designed to replicate the conditions of the uterus.

- **Partial Ectogenesis:** A process in which artificial womb technology supports the development of a fetus after premature birth, rather than replacing the entire gestation period.

- **Full Ectogenesis:** The theoretical concept of complete gestation outside the human body, from fertilization to birth.

- **Premature Birth (Preterm Birth):** Birth occurring before 37 weeks of gestation, often associated with increased risks of mortality and long-term health complications.

- ·**Neonatal Intensive Care:** Specialized medical care provided to newborns, particularly premature infants, often forming the technological foundation for developments in ectogenesis.

- **Viability:** The stage of fetal development at which a fetus can survive outside the womb with medical assistance, a key concept in legal and ethical debates.

- **Reproductive Autonomy:** The right of individuals to make decisions about reproduction and control over their own bodies, central to discussions about artificial gestation.

- **Reproductive Autonomy:** The right of individuals to make decisions about reproduction and control over their own bodies, central to discussions about artificial gestation.

- **Legal Personhood:** The recognition of an entity as having legal rights and protections, a concept debated in relation to fetuses and emerging reproductive technologies.

4. GUIDING QUESTIONS

4.1 Regulating Gene Editing and Human Germline Modification:

- ·To what extent should human germline gene editing be permitted for therapeutic purposes, and where should the line be drawn between medical treatment and genetic enhancement?

- ·What role should international organizations play in establishing global standards for the governance of germline gene editing technologies?

- ·How can Member States ensure effective oversight and regulation of gene-editing research while still promoting scientific innovation?

- ·What measures can be implemented to minimize the risks associated with off-target effects and unintended genetic consequences?

- ·How can the international community address ethical concerns related to heritable genetic modifications, particularly regarding future generations who cannot provide consent?

- ·In what ways could unequal access to gene-editing technologies contribute to global inequalities, and how can this be prevented?

- ·Should there be binding international regulations on germline gene editing, or should governance remain primarily at the national level?

- ·How can transparency and accountability in genetic research be strengthened at both the national and international levels?

4.2 International Oversight of Artificial Wombs (Ectogenesis) and the Future of Pregnancy.

- ·What potential role should artificial womb technologies play in improving outcomes for premature infants, and what limitations should be considered?
- ·How should international frameworks address the ethical implications of transferring gestation from the human body to artificial environments?
- ·To what extent could ectogenesis impact reproductive autonomy, and how should this be reflected in policy decisions?
- ·What legal challenges could arise regarding the status and rights of the fetus in artificial gestation systems?
- ·How can Member States regulate artificial womb technologies to ensure patient safety, ethical standards, and medical responsibility?
- ·In what ways could the development of ectogenesis affect existing healthcare systems, particularly neonatal care, and maternal health services?
- ·How can equitable access to artificial gestation technologies be ensured, especially in low- and middle-income countries?
- ·What safeguards should be established to prevent the commercialization or misuse of artificial reproductive technologies?

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