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## Editorial

Our global medical community welcomes the new year with renewed enthusiasm to contribute expertise on pressing global health and medical ethics topics that impact patient care, health professionals' training, and overall health system preparedness. To maintain robust policy statements, World Medical Association (WMA) members have contributed to the collaborative, inclusive, and transparent review process of the Declaration of Helsinki at three regional expert meetings in Tokyo in November 2023, Vatican City in January 2024, and Johannesburg in February 2024. WMA leadership has also stressed its call for medical neutrality, condemning any violations of international humanitarian law and demanding health workforce and public safety, in response to the ongoing conflict in Gaza and Israel. As the World Health Organization (WHO) has reported that providing health services in crisis and conflict remains one of the 13 urgent challenges for this current decade, the economic, environmental, political, and social impacts of crisis and conflict will continue to be unveiled in the upcoming months.

According to the World Economic Forum's *Global Risks Report 2024*, published in January 2024, four systemic elements – climate change, demographic bifurcation, technological acceleration, and geostrategic shifts – will influence the management of global risks during this decade. Notably, three primary climate issues include extreme weather events, critical change to Earth systems, and biodiversity loss and ecosystem collapse. The document has presented a ranked list of the perceived severity of diverse short- and long-term risks, as they relate to the global security landscape, stakeholder groups, and age, including climate and ecosystems, societal or political polarisation, misinformation and disinformation, inflation and economic uncertainty, and adverse outcomes of generative artificial intelligence technologies. Hence, these findings offer a call to action for global leaders and citizens to adopt the One Health concept to address these complex challenges affecting human, animal, and environmental health.

By recognising these emerging global health challenges, WMA members can offer valuable insight and perspectives on existing knowledge and practice gaps that hinder the delivery of high-quality medical and surgical services to patients across nations. As they represent more than 114 national medical associations (NMAs), they can propel global discourse that promotes the formation of multidisciplinary and multisectoral partnerships that incorporate innovative technology to reinforce national and global health security. These scientific contributions will support collective discussions on issues affecting global physicians, notably at the 226th WMA Council Session, which will be held in Seoul, Republic of Korea, from 18-20 April 2024.

In this issue, Dr. Rafael Laguens shared personal reflections about veterinary medical education and key priorities for the WMA and World Veterinary Association. Dr. Jaime Hernandez-Ojeda and Dr. Pablo Requena described perspectives related to conscientious objection in medicine. Dr. Christos Triantafyllou and colleagues discussed opportunities to strengthen health systems' quality in the WHO European Region. Dr. Daniel Lucas expressed how bioethicists can help counter misinformation in public health. Dr. Chantal Patel stressed the importance of adopting a moral approach to combat climate change. Dr. Tea Vukušić Rukavina and Dr. Marko Marelić commented on the challenges related to e-professionalism of health professionals. Dr. Natalia Solenkova offered insight on responding to public health misinformation and disinformation. Dr. Ankush Bansal and colleagues provided a high-level summary of the WMA delegation's participation at COP28 in Dubai. Finally, Dr. Damas Dukundane and colleagues presented a high-level summary of the Global Health Security session presented at the 74th WMA General Assembly.

We fully recognise the inspirational leadership contributions that WMA members offer throughout their daily clinical and community practice. In this issue, the German Medical Association invites WMA members and relevant guests to attend the Research with Vulnerable People conference, as part of an interdisciplinary discussion within the scope of the WMA Declaration of Helsinki Revision, in Munich, Germany, from 14-15 May 2024. Also, WMA members representing seven countries shared practical policies and activities that support immunisation efforts related to World Immunisation Week 2024. Together, we can collaborate on key local and national initiatives that strengthen clinical guidelines and policies and ultimately population health across the globe.

We look forward to continued networking at the 226th WMA Council Session in Seoul!

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## Interview with the President of the World Veterinary Association



*Rafael Laguens*

For this interview, Dr. Rafael Laguens, the President of the World Veterinary Association (WVA), shares his perspectives on his global health leadership, the future of veterinary medicine, existing challenges in veterinary medical education, and key priorities for WVA and World Medical Association (WMA) members, with Dr. Helena Chapman, the WMJ Editor in Chief.

**Please share two quotes and describe how these quotes reflect your journey as WVA president (2022-2024).**

The seventh Secretary-General of the United Nations, Kofi Annan said, *“More than ever before in human history, we share a common destiny. We can master it only if we face it together.”* Although we can perceive the differences that exist in our world, the veterinary profession offers a unique perspective to global health. The work of the WVA allows us to better understand the veterinary medicine profession across all continents, appreciate social, economic, political, religious, and cultural diversity, and recognise the persisting inequalities within and among countries. Together with clinical and public health expertise, veterinary medicine professionals worldwide share

common principles that are essential to promoting animal health and welfare, environmental health, food safety, and of course, public health.

Professor Peter Doherty, the first person with a veterinary degree to be awarded a Nobel Prize in Physiology or Medicine in 1996, stated, *“The need to deal with pathogens has driven the evolution of the vertebrate immune system, so it should not be surprising that experiments with infectious agents have often illuminated key elements of the underlying mechanisms.”* By reviewing the history of human and animal medicine, we can clearly observe their close connections and synergies in clinical diagnostics, surgical and pharmaceutical management, and prevention strategies. As we ensure that high-quality medical care is provided to different species, we recognise the importance of the interconnectedness between humans, animals, and the surrounding environment in protecting public

health. A rational and orderly exchange of information and experiences between all fields of human and animal medicine is crucial for optimal health of our global society. This Nobel Prize, which was shared between Professor Doherty and Dr. Rolf Zinkernagel (Swiss physician), illustrates this essential interface between human and animal medicine (Photo 1).

**Over the past year, what do you consider to be your most important leadership achievements as WVA president (2022-2024)?**

Over the past year, I have been honored to lead WVA efforts to strengthen official relationships with different international organisations, such as the World Health Organization (WHO), the Food and Agriculture Organization of the United Nations (FAO), the United Nations Environment Programme (UNEP), and the World Organisation



*Photo 1. Dr. Rafael Laguens with Professor Peter Doherty (right), recipient of the Nobel Prize in Physiology or Medicine in 1996. Credit: Rafael Laguens*

for Animal Health (WOAH). One noteworthy collaboration was formalised between the WVA and the WOAH, which aimed to “*advocate for better integration of veterinary services in One Health projects and initiatives at all levels, including legal frameworks to reduce the risk of, and prevent future pandemics.*” A second important achievement included the active participation of the WVA in the Antimicrobial Resistance Multi-Stakeholder Partnership Platform, which developed an urgent global vision, narrative, and targets to combat antimicrobial resistance and mobilize all relevant stakeholders. This platform includes governments, civil society, private sector, financial institutions, donors and researchers, who work across the human, animal, plant, and environmental health sectors.

Finally, I have had numerous opportunities to connect with medical and veterinary medicine professionals as well as help coordinate and contribute to scientific events, including the WVA and WVA national member association conferences. Overall, I greatly

appreciate the opportunities to collaborate with WMA leadership, staff, and members, such as sharing experiences regarding the management of both global associations and participating in discussions of common interest, such as issues of ethics and bioethics or actions to tackle antimicrobial resistance.

### How do you envision the future of veterinary medicine?

Looking into the future, I envision that veterinary medicine will gain more attention in terms of care for companion animals and biodiversity conservation. As people are increasingly seeking medical attention for their companion animals, this demand will drive changes in academic curricula, training, and clinical practice. Likewise, since citizens aim to keep all animals (pets, livestock, wildlife) in optimal health and well-being, more opportunities will be opened for veterinary practice related to implementing evidence-based guidance to protect animal welfare. Also, with the effects of climate change due to natural

and anthropogenic phenomena, initiatives to protect biodiversity and surrounding ecosystems will become a significant priority in veterinary medicine.

### Aside from the coronavirus disease 2019 (COVID-19) pandemic, how would you describe the anticipated challenges in veterinary medical education over the next decade across the globe?

As the world experienced the COVID-19 pandemic and the post-pandemic world, human and veterinary medicine professionals should be vigilant for emerging risks that affect the delicate balance of the surrounding ecosystem. Some of these challenges include priority zoonotic diseases such as rabies, avian influenza, and viral haemorrhagic fevers (e.g. Ebola), to cross-cutting issues including antimicrobial resistance, food safety, climate change, and weak healthcare infrastructure. To address these challenges, veterinary medicine professionals can lead efforts to prevent potential pathogen spillover by improving education on pandemic prevention, preparedness, and response, as well as integrating surveillance that links human, animal, and environmental health.

Using a multisectoral and multidisciplinary approach, we can increase awareness and understanding of antimicrobial resistance through effective education and training in human health, animal health, and agricultural production. Simultaneously, we can support concrete actions that substantially advance progress in containing, combatting, and ultimately reversing antimicrobial resistance. Together, as we can promote a healthy planet as a prerequisite for the health of people and animals, future veterinary medicine professionals will be prepared to face the triple planetary



Photo 2. Rafael Laguens speaking during the 10th Chinese Veterinary Medical Association Conference in August 2023. Credit: CVMA



crisis of climate change, biodiversity loss, and pollution.

**As WVA president, what are the three key priorities that WVA and WMA members should address in the next five years?**

Over the next five years, I firmly believe that WVA and WMA members can achieve all established organisational goals and collaborate

on joint initiatives. First, members can continue strengthening professional relationships by better understanding the scientific expertise and technical training that each profession offers to global discourse. Second, both associations can collectively organise global conferences, such as the World One Health Congress (<https://globalohc.org/>), in selected host countries. Finally, leaders can appoint experts from each association who

can collaborate on joint working groups on topics of mutual interest for human and veterinary medicine communities.

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## Two Models of Approaching the Goals of Medicine: The Dilemma that Sparks Different Perspectives in Conscientious Objection



*Jaime Hernandez-Ojeda*



*Pablo Requena*

The World Medical Association (WMA) has recently published the International Code of Medical Ethics (<https://www.wma.net/policies-post/wma-international-code-of-medical-ethics/>), to serve as a set of ethical principles applicable to members of the medical profession across the globe [1]. This code outlines and clarifies the professional responsibilities of physicians concerning their patients, fellow clinicians and health professionals, their own well-being, and the broader society. Concerning the matter of a physician's conscientious objection, this code states that "... on some issues there are profound moral dilemmas concerning which physicians and patients may hold deeply considered but conflicting conscientious beliefs.

*The physician has an ethical obligation to minimize disruption to patient care. Physician conscientious objection to provision of any lawful medical interventions may only be exercised if the individual patient is not harmed or discriminated against and if the patient's health is not endangered" [1].*

The issue with this section of the code is that the perception of discrimination can be subjective. Refusing to perform a legal abortion is frequently criticised as "discrimination" in mainstream bioethics, by the medical establishment, in politically progressive legislation, and in progressive cultural and legal advocacy. Moreover, in international pro-abortion advocacy, the terms "harm" or "endangered health" are often broadly construed to include non-physical consequences such as emotional distress, financial outcomes, and impacts on patient self-esteem. On the flip side, in countries where genital mutilation practices are legalised, doctors who decline to perform these procedures may be viewed as contradicting the offerings of the healthcare system to the population.

Therefore, the provision on medical conscience within the WMA employs neutral language to undermine the right of doctors to abstain from involvement in highly debated and occasionally life-threatening procedures, such as abortion or euthanasia, that conflict with their moral convictions. Furthermore, the code mandates physicians to actively resist laws and ethical guidelines that permit doctors to refrain from participating in interventions that contradict their consciences. The code states that "*the physician should follow, protect, and promote the ethical principles*

*of this Code. The physician should help prevent national or international ethical, legal, organizational, or regulatory requirements that undermine any of the duties set forth in this Code" [1].*

The matter of conscientious objection in medicine has evolved into an international controversy. If the WMA code is enforced or legally adopted, it is likely to force pro-life practitioners and those who uphold traditional Hippocratic Oath beliefs to limit their professional practice. It appears that we encounter two distinct perspectives on understanding the purpose of medicine that have different viewpoints regarding conscientious objection. First, the service-provider model of medicine asserts that the primary goal of medicine is to offer a service, specifically healthcare, with a crucial emphasis on respecting patient autonomy. Consequently, physicians are obligated to provide this service even when their personal values conflict with those of the patient. Second, a goal-directed approach identifies medicine as a pursuit aimed at the goods of health and healing, taking into account the values of both patients and physicians. This model understands that the phenomenon of conscientious objection requires embracing preexisting concepts of professional discretion and the development of virtue in clinical practice. These two models give rise to inquiries about the nature and purpose of medicine. What prompts a shift in the conception of medicine's purposes in recent years? Why does the Hippocratic Oath, after being in effect for thousands of years, appear to lose its validity in certain medical contexts?

## The Service-Provider Model in Medicine

The service-provider model postulates that medicine is transactional, primarily revolving around delivering a service, namely healthcare [2]. Citizens possess an inherent entitlement to healthcare access, encompassing rights to sexual and reproductive healthcare, the right to end one's life, among others. In this perspective, medicine is likened to other service provisions in society, like driving a cab or offering cleaning services. It advocates that consumer preferences should dictate the types of services and how they are delivered. Clinicians, in this view, are tasked with delivering medical services as requested by patients, and a doctor's ethical duties are centred on fulfilling this role.

According to this model, the primary purpose of the medical profession is to address the health needs of society. This forms the foundation of its structure, the government support it receives, and the underlying licensing processes [3]. Indeed, the effectiveness of medicine as a profession should be assessed by its success in fulfilling this essential role. It is important to acknowledge that medicine is, indeed, a profession. It involves a structured body of technical knowledge dedicated to serving the public interest. Physicians undergo extensive training to acquire a thorough understanding of the medical art and to deliver safe and effective care to patients. Upon licensure and induction into the profession, doctors profess to prioritise patients' health and well-being. They commit to setting aside personal interests and assume the role of advocates for their patients. This detachment and commitment to patients encapsulate the essence of medical professionalism [4].

Medicine is often regarded as an essential service, distinguishing it from other consumer services such as gardening or tattoo artistry. The average person might not be significantly impacted if they cannot hire a gardener or get a tattoo, but inadequate access to medical care can profoundly affect many individuals. The medical profession exists to fulfill a fundamental societal need, and the well-being of the population suffers when medical practitioners fail to fulfill this crucial role, as it is emphasised by some WMA policies [1].

Because medicine is considered an essential service, its success should be assessed by the comprehensiveness and quality of healthcare coverage in the community. The effectiveness of medicine is determined by its ability to offer a comprehensive range of medical interventions to patients in a timely and convenient manner. Medical professionals hold a monopoly over medical care, and if they fall short in fulfilling their role, they undermine the very purpose of medicine and fail to act in the public interest.

Physicians are often argued to assume the role of public servants, particularly when serving as employees of the state. In such cases, it is contended that they should provide healthcare in alignment with the standards and values set by the state. It is suggested that doctors should refrain from incorporating their personal values into healthcare practices and instead offer services authorised by relevant state authorities. Failure to provide appropriate state-sanctioned professional services could be viewed as a form of disrespect towards the profession's clients and may run counter to the principles of political neutrality endorsed in liberal ideals [5]. For instance, a gynaecologist refusing to perform elective abortions might be seen as taking a morally

paternalistic stance toward their patients, thereby undermining the ethos of liberal tolerance in medicine.

An implication of this perspective is that physicians should separate their personal views from their interactions with patients. Patients should be entitled to all safe and legal medical services, and a doctor's privately held moral beliefs should not hinder the availability of medical procedures. Physicians are free to hold personal beliefs in their private lives, but in their professional role, they must provide interventions as prescribed by the medical profession. The healthcare system, in turn, should strive to ensure the widespread availability of healthcare services. Efforts should be directed at minimising barriers to patient access, whether these are financial, logistical or stem from a physician's personal moral reservations about safe and legal medical procedures. Patients should have timely and convenient access to healthcare services [6].

Professional discretion does not encompass contentious value-based questions in medicine, such as the availability of services like abortion, euthanasia or emergency contraceptives. In matters of value, doctors should align their practice with the values of the state, relevant medical authorities, and preferences of their patients. Any other approach would be inconsistent with one's responsibility as a public servant and an advocate for the interests of their patients [7].

The service-provider model promotes an ethical framework in medicine that prioritises compliance over the virtue and character of clinicians. It erodes traditional concepts of medical professionalism and substitutes them with an orientation toward government and market influences in medical practice. Particularly, this model creates a conflict between the exercise



of conscience and the foundational norms of the medical profession. The criteria established by professional associations are given almost absolute significance, relegating conscience to the domain of one's private beliefs. This scenario diminishes the perceived relevance of conscience in the exercise of effective clinical judgment. In fact, the moral perspectives of individual practitioners are cast as suspicious and potentially detrimental to patient well-being. This poses a challenge in a profession characterised by numerous ethically complex situations and the imperative for practitioners to cultivate a capacity for sound moral decisions.

The service-provider model sharply contrasts with a more traditional approach to medicine and healthcare. The former lacks an inherent orientation toward human goods such as health and the alleviation of suffering. Instead, its focus is on delivering a diverse array of services, some of which may relate to health, but many are unrelated to therapeutic health aspects. In contemporary medical practice, patients commonly request interventions that are not strictly aimed at promoting health and healing. For example, euthanasia involves actively ending a patient's life, contrary to the traditional medico-ethical principle that doctors should, above all, refrain from causing harm. However, in jurisdictions where legalised, euthanasia is labeled as medical assistance in dying and voluntary assisted dying. Some theorists argue that it is an integral part of basic healthcare. This example serves as an illustration of why one might approach with skepticism a "rigid" definition of medicine solely focused on the goods of health and the relief of suffering.

### **A Goal-Directed Model of Medicine**

The goal-directed model conceives medicine as a practice that is directed

towards certain goods, in particular the goods of health and healing. It asserts that the exercise of conscience is crucial in determining how these objectives apply to individual situations. Instead of relegating conscience to the domain of personal beliefs, this model acknowledges the moral nature of medical pursuits and identifies conscience as an indispensable aspect of the moral psychology of virtuous medical professionals. A virtuous clinician is adept at discerning and pursuing the medical and human good amidst the complexity of contemporary medical practice. A well-developed conscience endows practitioners with a heightened sensitivity to recognise the goods of health and healing. This sensitivity is achieved by considering relevant clinical and moral aspects, applicable laws and professional guidelines, patient wishes and preferences, and one's own accumulated wisdom as an experienced medical practitioner [8].

Asserting that medicine is oriented toward the goods of health and healing does not imply solely doctors should serve these goods, but it also emphasizes that comprehending medicine necessitates keeping these goods in focus. Doctors are engaged in the critical tasks of preserving lives and addressing illness and injuries; the role of doctors becomes meaningful when centred on their therapeutic actions. Medicine becomes incomprehensible if we disregard its fundamental orientation toward life and health. This assertion goes beyond describing doctors' actions; it delves into the philosophical claim about the essence of medicine as a social practice, asserting that it is defined by these inherent goods. Medicine is teleological, functioning as a practice defined by the goods it seeks. It is a cohesive and intricate form of socially established cooperative human activity, complete with its own internal goods and standards of excellence [9].

Medicine is a coordinated human effort directed toward the goods of health and healing, and it possesses virtues that arise from these goods.

This model dismisses the notion that medicine is exclusively focused on service provision, the respect for patients' rights and well-being, and/or the advocacy of patient preferences. This is not to imply that the model neglects patients' rights and welfare; these remain crucial factors that should guide healthcare practitioners' decision-making. However, this model envisions patients' rights and welfare within the framework of the medical good. The extent and boundaries of patients' rights and welfare are contingent upon what one considers to be essential for health and healing [3]. It would be illogical for a doctor to comply with a patient's request for a service that blatantly contradicts the principles of health and healing. For instance, a patient with xenomelia might seek a clinician's assistance in amputating a perfectly healthy limb. Nevertheless, it would be inconsistent with the objectives of medicine for the doctor to support the patient in this request, regardless of the patient's strong desire to remove a healthy limb. This same scenario happens in cases of genital mutilation, which is also against human rights.

Advocates of a goal-directed model of medicine highlight the crucial importance of fostering virtue and character in medical practitioners [8]. This stands in contrast to other models that prioritise duties at the expense of virtues. Virtues, seen as habits of excellence, enable practitioners to actualize the goods inherent in medicine. These medical virtues encompass qualities such as reliability, collegiality, composure, personability, good judgment, and transparency. To be recognised not just as competent but as a paragon of professional excellence, a clinician must embody at least some,

if not all, of these virtues. Additionally, virtues explicitly associated with the exercise of conscience, such as integrity, fidelity to one's professional calling, and habits of moral reflection, should be considered. To be truly dedicated to their profession and to exhibit a commitment to continuous improvement, clinicians must cultivate the moral awareness and fidelity integral to the exercise of conscience.

This model argues that the medical field benefits from cultivating virtuous medical practitioners. These practitioners would possess a robust ability for moral discernment, reflection, and reasoned decision-making, coupled with a profound sense of vocation in their approach to their work. Exploring avenues to support doctors in acquiring these virtues, which are considered essential for providing excellent medical care, is crucial. A facet of cultivating virtue involves internalising moral beliefs and commitments, shaping them into the guiding principles for morally meaningful actions, and serving as a source of moral motivation and direction for the individual. These internalised beliefs and commitments undoubtedly form an integral aspect of one's character. Healthcare professionals are required to internalise a conception of what defines good medical practice and, drawing from their personal experiences and guidance from peers, develop the ability to discern the medical good in specific circumstances. Importantly, they must construct their own moral and technical rationality, enabling them to accurately determine how the medical good should be realised in particular situations within clinical practice. A physician should aspire to develop virtues and enhance their ability for clinical judgment to effectively navigate the diverse clinical scenarios encountered in the practice of medicine, while holding the latitude to exercise their judgment.

As physicians need a certain level of professional autonomy to develop the essential virtues of medical practice, it is important to safeguard and preserve the discretionary space for physicians. This space allows individual clinicians to exercise both technical and moral discernment, enabling them to decide whether a specific intervention or practice contributes to the well-being of patients or poses potential harm. It is impossible for medical associations or health authorities to oversee medical practice in such a manner that professional discretion becomes irrelevant. Medicine is tangible, subject to variation, and influenced by specific contexts, while patients are unique individuals rather than uniform cases. Consequently, the informed judgment of individual practitioners becomes an essential element of providing effective healthcare. The significance of a physician's discretionary space lies in its connection to virtue, character, and the development of a professional identity. Without the freedom to act, physicians cannot cultivate the character and virtues essential for realising the intrinsic goods of the medical profession. Virtue is inseparable from agency, particularly in medicine, where expertise is gained through experiential decision-making in clinical settings. Deprived of the opportunity to exercise their capacities for moral and technical discernment and action, physicians would struggle to acquire the qualities necessary for excellence in medical practice.

In the goal-directed model of medicine, conscientious objections arise when a physician holds a dissenting perspective on the nature of medical goods. Many conscientious objections involve the physician's exercise of moral and technical judgment regarding the appropriate realisation of the medical good in a specific situation. This type of disagreement does not revolve only around religious or personal values; instead, it centers

on how we should conceptualize the goods of medicine in particular scenarios and the most effective means of achieving these goods. This type of conscientious objector believes that a specific medical practice, either in a general sense or within certain specific situations, does not contribute to the promotion of health and well-being. Considering this, it is essential to afford physicians the flexibility to practice in alignment with their well-thought-out judgments, just as we generally allow them in clinical practice to align their approach with their best clinical and moral insights.

## Reflections and Conclusion

The goal-directed model of medicine has been ingrained in medical practice since the Hippocratic Oath gained prominence in the Western world during the third century BC. This historical oath marks the earliest articulation of medical ethics, laying the foundation for enduring principles that retain paramount significance today, such as medical confidentiality and non-maleficence. However, as medicine progressed in modern times, this model faced challenges stemming from the abuse of medical paternalism, where the patient's perspective was often marginalised in favor of the doctor's values.

In response to this, the service-provider model emerged, seeking to underscore the patient's dignity and the importance of respecting their opinions in medical decision-making. Simultaneously, modern bioethics took shape, initially formulated around four principles outlined by Beauchamp and Childress (1979): respect for autonomy, nonmaleficence, beneficence, and justice [10]. In situations where these principles conflict, the paramount factor guiding decision-making is the respect for the patient's autonomy. However, it is crucial to acknowledge that a patient's

autonomy, though essential, is not absolute, and physicians play an active role in clinical decisions.

While the emphasis on respecting patient autonomy is commendable, it is imperative to recognise that physicians also possess their own autonomy. Physicians are not mere service providers, but actively engage in ethical decision-making. Although patient autonomy is crucial for informed decision-making, it alone is insufficient for ethical reflection guiding individuals in making sound decisions.

Medical ethics steadfastly advocates for respecting patient autonomy, partly in response to historical physician paternalism and an increasing awareness of the need to acknowledge human dignity in medical practice. Despite the emphasis on patient autonomy, some have mistakenly granted it an independence that may not always align with the patient's best interests. While patient consent is vital, decision-making should not singularly prioritise the patient's desires. Medical science, rooted in preserving a patient's life and alleviating suffering associated with illness, necessitates a collaborative and respectful exchange of perspectives between physicians and patients.

The engagement of conscience plays a crucial role in achieving proficient clinical judgment. It is essential not to view the moral viewpoints of individual practitioners with suspicion or as potentially harmful to patient well-being. This is particularly pertinent in a profession marked by numerous ethically complex situations, where practitioners are required to develop the ability to make sound moral decisions. A doctor should aim to cultivate virtues and improve their capacity for clinical judgment to adeptly handle the varied clinical situations encountered

in medical practice. This entails granting physicians the flexibility to apply their judgment. Deprived of the liberty to act, physicians are unable to foster the character and virtues necessary for realising the intrinsic goods of the medical profession.

Since the establishment of fundamental medical principles by the Hippocratic Oath in the Western world, a clear indication has emerged regarding the approach needed to preserve and cure while avoiding harm to human life, even in its early stages. This definition has exerted a profound influence on the ethical stance of the medical profession for centuries. Medicine, with its unique perspective on the importance of human life, warrants reflection on its purposes in the context of current bioethics, as encapsulated in the title of Galen's work: *"The best doctor is also a philosopher."*

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## Strengthening Health Systems' Quality in the World Health Organization European Region



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### Quality of Care as a Priority of the WHO European Region's Policy Agenda

Quality of care is recognised as a critical objective of health systems, essential for achieving long-term health goals. The World Health

Organization (WHO) defines quality of care as the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with evidence-based professional knowledge [1]. Additionally, the WHO emphasises other elements such as efficiency, equity, timeliness, and accessibility as vital for fully realising the benefits of quality care [2].

The term “permacrisis” is increasingly used to describe the convergence of multiple crises straining health systems, such as the pressing effects of the coronavirus disease 2019 (COVID-19) pandemic, wars and conflict settings, and the escalating health-related consequences of climate change. The pandemic has exposed pre-existing vulnerabilities in health systems while also spotlighting innovative solutions that could enhance healthcare delivery in the post-COVID-19 era [3-6]. Additionally, health systems and social care sectors are contending with exhausted frontline staff, depleted budgets, and a backlog of patients awaiting treatment. While the full legacy of this prolonged stress is not yet fully understood, it is clear that the situation demands more than short-term fixes. Effective responses require governance foresight, characterised by creativity, innovation, and collaboration across all sectors and partners [7].

To drive positive transformation and achieve universal health coverage (UHC), it is imperative to establish quality of care as a systemic organising principle. This principle should apply not only to individual healthcare services, but also to entire health systems, fostering a beneficial intersection between individual needs

and societal demands [8]. In other words, it reflects the need to integrate clinical sciences and public health.

Recognising the critical importance of quality of care and patient safety for health policy agendas and ethical care provision, the European Programme of Work, 2020–2025 – “United Action for Better Health in Europe” (EPW), is dedicated to supporting countries towards the implementation of evidence-informed policies and practices. This initiative aims to ensure that individuals receive safe, effective, timely, equitable, and people-centred care [9].

### The WHO Office on Quality of Care and Patient Safety, in Athens, Greece

To enhance collaboration and learning among countries and partners, and to foster an innovative approach in improving quality of care and patient safety within the European Region, the WHO Regional Office for Europe established the WHO Office on Quality of Care and Patient Safety, in Athens, Greece, in April 2021. This unit is dedicated to providing technical support, policy advice, and capacity building to countries, which can encompass the entire spectrum of healthcare quality improvement, ranging from healthcare delivery, healthcare workforce development, and the integration of new health technologies.

Operating with a visionary approach, quality of care is envisioned as a catalyst for transformative changes in the global healthcare landscape. This vision transcends individual healthcare organisations, aiming to reshape national health systems and the global healthcare sector at large. The Office's work includes

providing technical support for the development of strategies and frameworks to enhance quality of care, scaling up effective interventions, and facilitating the exchange of best practices and new ideas across borders. It plays a critical role in innovation and knowledge sharing in quality of care and patient safety, as well as in comprehensive policy analysis, thereby shaping policies that prioritise these areas. Building networks and alliances and emphasising stakeholder engagement, are also significant parts of its mission, fostering a collaborative environment for continuous improvement in healthcare quality and safety.

One of the breakthrough activities was the launch of the First WHO Autumn School on Quality of Care and Patient Safety, which was held in Lisbon, Portugal, from 23-27 October 2023 [10]. This event was hosted by the WHO Office on Quality of Care and Patient Safety, in a joint venture with the WHO Collaborating Center for Education, Research, and Evaluation of Safety and Quality Healthcare at the NOVA National School of Public Health, in Lisbon, Portugal. National representatives from the WHO European Region, key health system decision-makers, and global experts in quality of care and patient safety were brought together in this course.

The program provided an in-depth exploration of the latest advancements in healthcare quality and patient safety for high level decision- and policy-makers, showcasing pioneering case studies and insights from global leading experts. Through keynote lectures, plenary sessions, workshops, case studies, and networking opportunities, participants gained insights into critical healthcare quality and patient safety practices from across the European region. The course aimed to equip participants with

the knowledge and skills necessary to effectively optimise healthcare systems, improve patient outcomes, reduce waste, build resilience, and emphasize the importance of a well-prepared healthcare workforce capable of delivering high-quality care in challenging circumstances.

### **The Need for a New Vision for Quality of Care**

While many efforts are underway to strengthen quality of care and patient safety at the national level, data collected from the WHO European Region Member States highlighted that reporting of the quality of care dimensions remains highly heterogeneous across the European region. Data fragmentation and knowledge gaps have a profound impact on the decision-making process and health outcomes. Therefore, the adoption of agreed-upon metrics and a common vision for quality of care at the regional level underpins a data-driven transformation of healthcare systems.

The need for a new vision for quality of care is underscored by the evolving challenges in healthcare systems worldwide. UHC aims to provide high-quality care without financial hardship, but achieving this requires more than just access to services. Notably, the services must be effective and of high quality to improve health outcomes. The rapid pace of technological advancement and innovation in healthcare, the growing shortages in the healthcare workforce, and pressing issues like climate change and cybersecurity are reshaping healthcare current demands.

Quality of care should, therefore, adapt and guide these innovations, focusing on effectiveness, safety, and people-centredness, alongside with access, equity, and efficiency. This

reshape involves embracing patient engagement, leveraging digital health and new technologies, and integrating new care models and business approaches to ensure comprehensive and effective healthcare delivery [8,11,12].

The current situation highlights a need for comprehensive policies that integrate modern healthcare approaches, focusing on patient safety, effectiveness, and accessibility. Moving forward, it is crucial to foster collaboration among Member States, support and promote technological advancements, and prioritise patient-centred care. By adopting a unified vision for quality improvement, the European Region can overcome existing challenges and pave the way towards a healthier future for all its citizens.

### **Disclaimer**

The authors affiliated with the World Health Organization (WHO) are alone responsible for the views expressed in this publication, and they do not necessarily represent the decisions or policies of the WHO.

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## Bioethicists in Public Health: A Chance to Counter Misinformation?



Daniel Lucas

Emerging alongside the coronavirus disease 2019 (COVID-19) pandemic, we have seen the rapid circulation of misinformation, often called an infodemic. According to the World Health Organization (WHO), “*an infodemic is too much information including false or misleading information in digital and physical environments during a disease outbreak [and] it causes confusion and risk-taking behaviours that can harm health*” [1]. In the context of the COVID-19 pandemic, the infodemic has resulted in frequent observations of the disregard of recommended policies to contain virus transmission as well as vaccine hesitancy (including opposing vaccination). In this article, I will briefly present the philosophical reasoning regarding phenomena such as an infodemic. This reasoning suggests that misinformation, fake news, and related phenomena do not simply appear, but rather they are manufactured and implemented into discourse. I will shortly highlight some of the most important discussion points that suggest a better strategy to tackle the deliberate spread of misinformation, as compared to past approaches.

As argued elsewhere [2], spreading

misinformation is especially successful in a specified epistemic structure. However, what is an epistemic structure? An epistemic structure is the social surroundings in which knowledge is produced and shared. While we all live in somewhat limited structures, there are important differences regarding these limitations. Chris Thi Nguyen introduced a helpful distinction between epistemic bubbles and echo chambers [3]. While often used synonymously, Nguyen argues that while we all live in bubbles, most do not live in echo chambers.

Furthermore, while living in the former is not harmful, epistemically, living in the latter is. For example, our hobbies and interests form bubbles. If I am interested in 19th-century novels and opera, I might not be informed about contemporary literature and music. Moreover, as my friends share my interests, I am most likely in an epistemic bubble regarding music and literature. Someone might easily pop this bubble and introduce me to Taylor Swift and Zadie Smith, and I may start to listen to contemporary music and read contemporary literature. How come?

Nguyen defines epistemic bubbles as follows: “*Loosely, an epistemic bubble is a social epistemic structure in which some relevant voices have been excluded through omission. Epistemic bubbles can form without ill intent, through ordinary social selection processes and community formation*” [3]. Being an academic in central Europe, it is not unlikely that I will be surrounded by people who listen to one genre of music rather than the other genre. I simply did not become acutely aware of other genres. However, that was not because I was kept away from them intentionally;

it just happened to be so. An echo chamber works entirely differently: “*An echo chamber, on the other hand, is a social epistemic structure in which other relevant voices have been actively discredited. [...] Echo chambers work by systematically isolating their members from all outside epistemic sources [...]. In epistemic bubbles, other voices are merely not heard; in echo chambers, other voices are actively undermined*” [3].

If other voices are actively undermined, the general openness described in the cases of epistemic bubbles is not a given anymore. What makes them chambers and not mere bubbles is that any new information can only strengthen members' beliefs. Nguyen calls this the disagreement-reinforcement mechanism: “*Members can be brought to hold a set of beliefs such that the existence and expression of contrary beliefs reinforces the original set of beliefs and the discrediting story*” [3]. One can quickly see how this helps the manufacturers of misinformation: they cannot be falsified. That also offers an argumentative advantage in situations where knowledge is limited: they knew from the beginning. Unlike scientists, physicians, and policymakers who must adapt to new information, those who spread misinformation must bend the facts in a catchy yet convincing way so that those who initially believed a false story are difficult to persuade. Complicating this pattern, as they listen to radio programs, watch television shows, and conduct internet searches, they often look for information that concurs with their already established beliefs [4]. Hence, they capture some true beliefs but an inability to perceive and react to information contradicting those beliefs [5].

Minimising the effects of echo chambers will most likely be successful before they are implemented, since echo chambers function like closed communities. Once you are a “community member”, it is difficult to exit the community. To combat this challenge, we should support adopting new strategies to strengthen public health and science communication.

As a hopeful note, we understand that those who believe in and spread misinformation are not necessarily anti-science, but rather that they believe that they have the relevant scientific knowledge. Moreover, as studies suggest [6], they are partly right: people with anti-consensus views in some cases are better informed than those with consensus views. Nevertheless, at the same time, they overestimate their level of knowledge and general understanding of the topic. Regarding COVID-19 vaccination, Light et al. (2022) found that “[a]s opposition to getting a COVID-19 vaccine increases, both general and COVID-specific objective knowledge decreases, and subjective knowledge of how a COVID-19 vaccine would work increases” [6]. Here, objective knowledge describes a consensus among scientists in the field, while subjective knowledge is the belief of laypersons that they share this consensus. If people object to the COVID-19 vaccination, then they are a) likely to know less about how these vaccinations work and b) more likely to be overconfident regarding their knowledge [6].

Notably, it shows that believing and spreading misinformation is not (necessarily) connected to an anti-scientific worldview; it is more likely a pro-scientific worldview with a deep misunderstanding of what scientific knowledge is. However, there is a definite need for scientific expertise

and, therefore, for experts. Those who function as experts in these echo chambers are what Lily Tappe and I call pseudo-experts [2]. We define pseudo-experts as people who “*claim knowledge they do not have and gain importance by having contrary opinions to mainstream research, and are seen as insiders of the academic community*” [2].

Most of these pseudo-experts hold academic degrees (including the majority with doctoral degrees) and have or have had academic positions, and their academic background can but must not be connected to their area of expertise. As one example, Sucharit Bhakdi, former professor of microbiology, who retired in 2012, claimed (among other things) that there would only be one COVID-19 wave. Because his predictions were incorrect, he did not only lose his scientific credibility, but also his standing within the anti-consensus community. As another example, Stefan Homburg, former professor of finances, claimed that non-pharmaceutical interventions were ineffective, and that excess deaths were due to the vaccination campaigns. He often links studies with weak epidemiological designs and opinion pieces (including use of journals flagged as predatory) to support his claims, knowing that his many followers on X (formerly known as Twitter) cannot verify the scientific validity.

One might wonder why people like Homburg are so successful. My hunch would be that these individuals function as experts, have an answer to every claim, and ride on the articulated fear and worry of the general public. While experts (if sincere) stick to their area of expertise, pseudo-experts can claim any area of expertise as their own. This should be considered if we want science communication, especially regarding public health policies, to be successful.

In summary, I argued that misinformation is most likely to be successful in closed epistemic structures like echo chambers. These structures are built in a way that keeps its members from receiving any information that does not concur with their already established beliefs. Furthermore, pseudo-experts take over the role of actual experts in these echo chambers, since topic matter experts are needed to discuss complex scientific topics, albeit the general understanding that people seek knowledge within their communities.

How do bioethicists contribute to this situation? A bioethicist functions as someone who is not an expert in any respective field (e.g. virology), but rather as a meta-expert who knows better than others about what is occurring in the respective fields. Four elements accompany the understanding of a bioethicist’s role in tackling the spread of misinformation during a pandemic or similar public health crisis.

First, bioethicists can be less easily pressured to share a personal opinion on a scientific or social issue. As they are not experts themselves, they can only explain what the scientific evidence has reported to date, including what topics need further research. Bioethicists (on a professional level) usually do not have a standpoint in the discussion, which often challenges staging a scientific debate that would otherwise suggest disagreement on a higher level than observed.

Second, as meta-experts, their perspective is not from one individual field, and it is less likely that some specific areas will be emphasised over other areas. For example, expertise on transmission pathways from German virologists and epidemiologists was widely shared across media platforms, and although warranted, this public



debate omitted the discussion of mental health and other related topics.

Third, bioethicists are usually better trained in inter- or even transdisciplinary research as well as understanding and translating different scientific languages. These skills help facilitate diverse discussions between scientists, share expertise with policymakers, and strengthen science communication within the wider community.

Fourth, since bioethicists have a clearer understanding of hidden normative premises behind some policies, they can more clearly communicate the rationale behind some policy decisions than other experts in specified fields. As with regard to the transdisciplinary research, this is helpful when facing policy makers and serving as communicators to the general public. But they should ensure that they do not become the voice of the policy or administrative authorities.

Although my suggestions provide an additional perspective to the general discussion, they do not solve all the problems, and limitations remain to be discussed. As John Evans pointed out more than 15 years ago [7], the expertise that bioethicists can offer is not the same expertise that experts in specified areas can provide to the public. His principal argument is that there is no common morality in the way that there is common ground in

specified areas of the sciences. I want to tackle this objection in two ways. First, I do not claim that bioethicists are similar to other scientific experts (e.g. virologists), but rather meta-experts (or experts on expertise). Second, Evans's view on the common ground in the sciences seems somewhat naïve. There is room for disagreement in the sciences, especially when evidence is challenging to find or not yet available. Deliberation about morality might work differently than an expert dissent in a specified area, but dissent is a common phenomenon in any specified area.

Bioethicists should consider their position, distinguish their role as a bioethicist and a citizen, and be aware of their limits [8]. Through these reflections, they can offer a holistic perspective on a range of scientific issues, without falling into the pseudo-expert category.

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## Our Moral Obligations vis a vis Climate Change



Chantal Patel

The *Sixth Assessment Report* of the Intergovernmental Panel on Climate Change (IPCC), which was published in 2023, outlined the concerns and the impact of climate change on the global population and noted that human activities have been largely responsible for global warming since 1750 [1]. Scientists confirmed that 2023 was the hottest year on record, claiming that the Earth's global average surface temperature was more than 2°C higher than pre-industrial levels. Subsequently, an estimated 200 million people could be displaced by climate change, including frequent extreme weather conditions, fires, and droughts, and an urgent call must tackle climate change to avert irreversible damage [2]. Also, the *Global Risks Report 2024* highlighted that environmental risks make up half of the top 10 risks over the next decade, with the top four risks being extreme weather events, critical change to Earth systems, biodiversity loss and ecosystem collapse, and shortage of natural resources [3]. With the loss of two million lives over the last 50 years, and economic losses running into trillions of dollars, there is concern around the impact of climate change – now, referred to as the climate crisis – seeking urgent redress.

Current debates have focused on the practical measures imposed by respective governments for its citizens to mitigate the effects of climate change. Some individuals have taken personal action to reduce their own contributions to their ecological footprint beyond what is imposed by their respective governments. The *Hamburg Climate Futures Outlook 2023* paints a pessimistic outlook of achieving deep decarbonisation by 2050, given that the current drivers, corporate responses, and consumption patterns undermine global decarbonisation efforts [4]. The matter appears to include the ambivalent attitudes of individuals, companies, and governments. Despite societal debates on the urgent need to address climate change, there is little appetite to rein in global consumption in pursuit of continued growth.

Although current measures will be insufficient to tackle the impacts of climate change, one aspect missing from public discourse has been our moral obligation to care for the planet. As available data portray that greenhouse gas emissions are highest in China, Germany, India, Ireland, the United Kingdom (UK), and the United States [5], two questions remain: “who” is the most to blame for climate change, and “who” should pay for the damage? A global approach is essential to address these climate concerns, including detecting inequalities between countries, but this in itself is unlikely to help minimise the damage inflicted on the planet that will impact all global citizens.

Nevertheless, I acknowledge that individual states have obligations and responsibilities to take the necessary measures to safeguard citizens' interests, especially vulnerable

communities. For example, the UK Government adopted their *Climate Change Strategy 2021–2024*, which focussed on five strategic pillars toward achieving net zero by 2050 [6]. To successfully implement the strategy, the government must engage with its citizens, and citizens should understand the nature and scale of the problem with a focus on their moral responsibility. Currently, society is divided on the scale of the problem, given how climate impacts are reported. Furthermore, the advent of social media platforms continues to significantly influence public perception related to the real-time risks of climate impacts.

Recently, authors have argued that small-scale individual actions in a large world are inconsequential and would make little difference in safeguarding the planet [7]. Many citizens have adopted this approach to divest themselves of any individual or collective responsibility in addressing this urgent matter [8]. However, if we support individuals in taking their obligations seriously, then we need to openly identify and discuss these moral obligations. As such, public discussions must focus on the scientific data that demonstrate climate damage as well as identify the expectations at an individual level.

The failure to anchor the discussion within individual moral obligations means that some individuals may turn a blind eye to the irreversible planet damage. For example, individuals who are not directly affected by extreme weather may feel that they owe no moral obligation to society, as they may remain unconvinced about the alarmist nature of climate action, despite the scientific evidence [9]. In contrast, those individuals who are directly affected may tell a different

tale of the striking climate impacts on their health and well-being. Hence, by positioning the climate debate around the harms that it has already inflicted via the moral lens, individual states and global organisations may support collective activities. By understanding the scale of the problem, depoliticising the concerns, and moving away from a capitalist stance, we can clarify our individual and collective responsibilities for climate action.

In the current narrative on climate change, there is a tendency to shy away from discussing the individual's role in managing climate matters and focus on framing the government's responsibility at the local, regional, national or global level. For example, the government acts by imposing various measures, such as recycling and timely legislation, to minimise carbon emissions. Hence, a focus on our individual moral obligations might assist in shifting our individual stance to becoming more active in supporting current decarbonisation efforts.

As one example, we can reflect upon the tobacco cessation campaigns and assess how we can adapt any techniques to climate change. Over the past decades, we have witnessed that sustained public health campaigns with clear messaging on tobacco cessation has led to a global decline in tobacco use. The World Health Organization reported that 150 countries have successfully reduced tobacco use, including a notable 35% decline in tobacco use in Brazil [10]. However, did this focus on one's moral obligation motivate individuals to take personal action to support tobacco cessation efforts? One longitudinal study examined this question in a sample of tobacco

smokers, and authors suggested that moralisation predicted an increase in the perceived personal risk among some smokers [11].

In this current discourse on climate change and relevant actions, defining moral obligations and responsibilities is a necessity and should serve as a central theme, in efforts to avert catastrophic and irreversible damage to the planet. Further debate should include whether we accept the moral obligations and responsibilities as evidence for framing climate damage via a moral lens. I contend that as a global society, urgent actions are needed, and we have nothing to lose by adopting a moral approach to tackling climate change. Without this personal and political commitment, the costs of irresponsibility will become prohibitive to all current citizens and future generations [12].

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## E-professionalism of Healthcare Professionals: An Ongoing Challenge



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In the digital age, the relationship between people and digital media has become stronger aligned, observed by the increased social media participation of healthcare professionals. As a result, e-professionalism, which encompasses attitudes and behaviours that reflect traditional paradigms of professionalism among healthcare professionals, has emerged as a new phenomenon relevant for all health professions [1]. One important type of social media includes social networking sites, which are defined as websites and applications that allow users to create, share, and comment on content, as well as serve as platforms for social networking. The number of social media users is growing exponentially across the world, as active internet users increased from

8% in 2005 to 56.8% (4.8 billion people) in 2023 [2]. Additional reports demonstrated that Facebook had 3.3 billion users, Instagram had 2 billion users, and Twitter had 556 million users in 2023, of which Croatia accounted for 2.4 million Facebook users and 1.5 million Instagram users [3].

The development of digital media affects all aspects of society as a whole and has created a new way of communication culture. Instead of exclusively focused on exchanging information, it enables social interactions between individuals who may or may not know each other. The relative ease and simplicity with which users can create, post, share, tag or comment on content, simultaneously allow users to have a higher level of participation and expressiveness in the digital world. However, one frequently overlooked fact is that every activity on digital media (including internet searches) leaves a digital footprint that cannot be erased. Thanks to services such as “The Wayback Machine”, even a deleted website remains preserved forever or users of digital media are subject to the “perfect recall of silicon memory” [4]. Notably, our social media posts – illustrating “where we have been” and “what we have posted” – can represent a false digital perception of ourselves (“what we seem like”) and has been particularly highlighted among healthcare professions.

### **SMePROF Project**

Funded by the Croatian Science Foundation, the Dangers and Benefits of Social Networks: E-professionalism of Healthcare Professionals (SMePROF) project was conducted in Zagreb, Croatia, from May 2018 to November 2023. Dr. Tea Vukušić Rukavina (University of Zagreb

School of Medicine) served as the leading researcher, along with other team members who were experts from the University of Zagreb School of Dental Medicine (Dr. Joško Viskiĉ), University of Zagreb School of Medicine (Dr. Danko Reliĉ, Dr. Marko Mareliĉ, Dr. Lovela Machala Poplašen), and the Croatian Catholic University (Dr. Kristijan Sedak). In the project implementation, Dr. Marjeta Majer also participated and provided support for the qualitative research.

Since e-professionalism requires an interdisciplinary team, the SMePROF team included doctors of medicine from various specialties (psychiatry, family medicine, school and adolescent medicine), doctors of dental medicine (specialists in fixed prosthodontics and orthodontics), and researchers from the social sciences (information-communication experts and sociologists). The objectives were to: 1) analyse the frequency and habits of the use of social networks among healthcare professionals (e.g. students, professors, and healthcare professionals in medicine, dentistry, nursing); 2) determine whether and how the content posted on social networks affects professionalism competence; 3) examine the dangers and benefits of healthcare professionals using social networks; and 4) explore how safety and professionalism can be improved in daily professional tasks.

*Part 1. Defining E-professionalism among Medical/Dental Students and Faculty.* From 2018–2022, the researchers conducted a cross-sectional study and documental analysis to examine how students and teachers at the University of Zagreb Schools of Medicine and Dental Medicine perceive the potential opportunities and challenges in using social media

for professional purposes. After reviewing the scientific literature on the dangers and benefits of social networks, the team developed a survey instrument to collect these study variables for analysis [5-7]. They also conducted a documental analysis of Facebook profile content of students and teachers. Study findings showed that e-professionalism is widely understood, and that medical and dental healthcare professionals use social media differently. For example, dental professionals were more desensitised to visual representations of patients and more prone to patient interactions on social media, leading to an increased risk of exhibiting unprofessional behaviour.

*Part 2. E-professionalism of Medical and Dental Healthcare Professionals in Croatia.* From 2021-2022, the researchers collaborated with the Croatian Medical Chamber and the Croatian Chamber of Dental Medicine to expand the data collection to administer the survey and conduct focus groups with a sample of medical and dental healthcare professionals as well as perform a documental analysis of the content of their Facebook profiles. First, the team used a survey-specific questionnaire (“SMePROF Project Survey Questionnaire on Social Media Usage, Attitudes, Ethical Values and E-professional Behaviour of Doctors of Medicine and Doctors of Dental Medicine”), which was derived from the project focusing on medical and dental students entitled, “Dangers and Benefits of Social Networks: E-professionalism of Healthcare Professionals–SMePROF” [6,8,9]. This questionnaire used in the study on MDs/DMDs was composed of eight instruments that measured: 1) sociodemographic characteristics and habits of social networking sites (SNS) usage; 2) knowledge of SNSs; 3) reasons for SNS usage; 4) impression management on SNSs;

5) security on SNSs; 6) attitudes toward professionalism; 7) attitudes toward e-professionalism; and 8) perceptions of e-professional content on SNSs. The instrument, which was used to measure the perception of e-professional content on SNSs, was first developed by White et al. [10], and aimed to measure the perceptions of e-professional content on SNSs among medical and dental healthcare professionals, and after validation, incorporated 17 variables [11].

Second, using the scientific literature and trained expertise, the team prepared an interview guide for focus groups with selected medical and dental healthcare professionals and participants from the general population. The interview guide, which was developed based on the previous research and face validity among interdisciplinary researchers from the SMePROF team, aimed to investigate their social media use habits, attitudes towards e-professionalism, and perceptions of unprofessional posts encountered. Finally, the analysis of Facebook profile content of medical and dental healthcare professionals was completed using a novel SMePROF rubric for assessment of unprofessional Facebook content [7], with an improved rubric and criteria to minimise subjective interpretation. Study findings demonstrated that although both professions were careful in their online interactions, the general Croatian population had a narrower perception regarding the professionalism of social media posts on profiles of medical and dental healthcare professionals.

*Part 3. Effectiveness of Published Guidelines that Promote E-professionalism.* In collaboration with the Croatian Medical Chamber and the Croatian Chamber of Dental Medicine, the researchers incorporated empirical and expert

findings of the SMePROF project into the development of guidelines for the promotion of e-professionalism using social networks of medical and dental doctors, which were published in October 2020 [12,13]. In 2023, the researchers administered surveys to determine whether medical and dental students in other Croatian cities modified their attitudes and perceptions of e-professionalism before and after the publication of the guidelines. Although researchers are currently analysing the survey results, they successfully developed and validated a series of new measurement instruments enabling the assessment of e-professionalism within and between individual healthcare professions [7,9,11]. Study findings, including the validated instruments, have been shared with the scientific community through reputable scientific journals.

### Challenges and Future Directions in Researching E-professionalism

Innovation was vital to tackle the intricate and ever-evolving realm of social networks research. Exploring social networks from the standpoint of social media users often felt daunting and challenging. During our five-year project, we encountered the shutdown of old platforms (Google+) as well as the emergence of new social networks (TikTok), which required constant and dynamic adaptation of research methodology. We also observed social movements (#medbikini) that resulted in rapid changes in the interpretation of scientific findings, which we could only overcome by introducing novel approaches for controlling and assessing gender bias using qualitative designs [7,14-16].

Throughout the SMePROF project, researchers have recognised the rapid evolution of social media and have acquired knowledge and insight into the strategies for managing

and assessing the novel concept of e-professionalism. However, one question remains: Recognising the global nature of social media, how has e-professionalism changed over time or across cultures? Using other interpretive lenses (e.g. social sciences), rather than only healthcare professions, next research initiatives can explore the economic, legal, communication, and sociological perspectives of e-professionalism in order to help fill additional gaps in practice.

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## Navigating the Public Health Information Space: Responding to Disinformation with Global Expert Insights and Potential Strategies



*Natalia Solenkova*

Public health misinformation and disinformation have emerged as pervasive and insidious threats, undermining efforts to protect and promote public health on a global scale. Their roots are deeply intertwined with the broader societal trends, technological advancements, and geopolitical dynamics. In an age marked by the rapid proliferation of digital platforms and social media, false narratives can spread quickly and widely, reaching millions of individuals within seconds [1].

As a critical care physician who has been on the frontlines of the coronavirus disease 2019 (COVID-19) pandemic since its beginning in the United States, I have witnessed the quick propagation of COVID-related disinformation. At the start of the pandemic, we were fighting the deadly virus, but as the pandemic evolved, we also had to combat the infodemic that resulted in patients choosing ineffective or even harmful strategies over recommended life-saving treatments. False public health statements were made by political leaders, technology moguls, and other people with no medical or public health training. Sadly, members of our own medical

community have contributed significantly to the rapid spread of untrue statements that call for the dismantling of national and international regulatory bodies, with messaging that ultimately confuses the public [2].

The consequences of public health disinformation are far-reaching and profound, as they can contribute to vaccine hesitancy, decreased adherence to public health guidelines, and exacerbated health disparities. Moreover, they can fuel social unrest, political polarisation, and erosion of trust in democratic institutions. Recognising the urgent need to address this multifaceted challenge, organisations, governments, and communities around the world have attempted to mobilise efforts to combat public health misinformation and disinformation in their countries. However, the global success of these individual and collective efforts has been variable, underscoring the particular importance of sharing successful strategies globally.

### Highlights from the Panel Discussion

As we navigate the complex landscape of public health misinformation and disinformation, it is essential to engage in open dialogue, share best practices, and work collaboratively worldwide. In an attempt to raise awareness within the global medical community about the dangers of disinformation, the Associate Members of the World Medical Association (WMA) convened a panel discussion entitled, “Disinformation in Healthcare: How to Respond,” in February 2024. Four panellists – Ms. Katie Owens, Dr. Siddhartha

Datta, Dr. Natalia Pasternak, and Dr. Osahon Enabulele – described their experiences with public health disinformation, reflected on strategies that were effective and ineffective in combating public health disinformation, and explored potential opportunities to address public health disinformation.

Ms. Katie Owens, who serves as the Information and Communication Officer at the European Commission’s Directorate General for Health and Food Safety, defined misinformation and disinformation and delineated the distinction between both terms by emphasising the deceptive intent or motives for political or financial gain. She contextualised the historical background to public health disinformation, particularly regarding vaccine hesitancy, and noted an escalation of conspiracies facilitated by technological advancements. Ms. Owens outlined actions undertaken by the European Commission during the COVID-19 pandemic, including the implementation of tools to monitor, analyse, and counter disinformation. These measures included an action plan on disinformation, including a rapid alert system, a COVID-19 disinformation monitoring program, the European Democracy Action Plan, and a strengthened code of practice in collaboration with fact-checkers and academic researchers. Regarding misinformation, she highlighted the efficacy of pre-bunking over debunking, emphasising the importance of preemptive communication strategies, identifying knowledge gaps, and optimising channels for science communication. She underscored the significance of ongoing monitoring

and analysis, particularly concerning disinformation spread across traditional and social media channels.

Dr. Siddhartha Datta, who acts as Regional Advisor for the Vaccine-preventable Diseases and Immunisation program of the Division of Country Health Programs at the World Health Organization (WHO)'s Regional Office for Europe, described malformation as factual information taken out of context to mislead, harm or manipulate and acknowledged the rapid dissemination of false information in the contemporary era compared to previous years. Dr. Datta centred his presentation on vaccination as one primary component of healthy behaviours and underscored the multifactorial nature of caregivers' decisions regarding vaccination. As he delineated various factors influencing vaccination decisions, including individual concerns about side effects and vaccine safety, family dynamics, community vaccination patterns, and healthcare system accessibility, he stressed the importance of instilling confidence in health professionals through tailored communication strategies, active listening, and individualised advice. He highlighted the training modules aimed at equipping health professionals to address vaccine hesitancy effectively and advocated for integrating vaccine literacy into broader health education curricula, including the role of game-based learning in shaping future decision-makers.

Dr. Natalia Pasternak, who is a Brazilian science writer and communicator, professor of science communication and policy at the Colombia University's School of International and Public Affairs, president of the Instituto Questão de Ciência in Brazil, and member of the Committee for Skeptical

Inquiry in the United States, shared her experiences as a science communicator across various media platforms as well as promoted the importance of adapting communication styles to different audience groups. She underscored the necessity of teaching scientific principles and critical thinking to diverse stakeholders, including health professionals, policymakers, journalists, and politicians. Dr. Pasternak emphasised the need for comprehensive training for health professionals to address patient concerns and conspiracy theories effectively. Drawing from her experiences testifying about COVID-19 vaccines in the Brazilian legislature, she highlighted the nuances of scientific communication to policymakers and stressed the critical role of transparency in public health measures, particularly in fostering trust among the general public, legislators, regulatory bodies, and policymakers.

Dr. Osahon Enabulele, who serves as the WMA Immediate Past President, Past President of the Nigerian Medical Association, Coordinator of the Coalition of African Medical Associations, Past President of the Commonwealth Medical Association, Director General of the Dr. Osahon Enabulele Foundation, and Director-General of the Initiative for Citizens Health and Good Leadership Development, articulated the causes of misinformation and disinformation as pathological (societal resistance to science, deliberate acts of conspiracy theories), public distrust of science (Kano drug trial), structural issues (low health literacy, cultural, traditional, and religious beliefs, poor communication), politics (interference, unscientific claims by politicians), media (knowledge deficit), and disempowered communities (poor living, poor

education, unengaged communities, unclear benefits, no role models). He proposed a multi-faceted approach to address these underlying factors, such as developing legal and policy frameworks (addressing resistance of societies and deliberate acts of conspiracy theorists), establishing timely actions against the public distrust of science (community involvement in research, real-time information about disinformation outcomes, effective ethics committees), building collaborative networks (media collaboration, fact checks), promoting structural actions (training health professionals, improving public health awareness, supporting advocacy and effective evidence-based responses to false claims), supporting political actions (limitation of political interference, exemplary leadership by politicians), and empowering communities (community engagement, recognition of role models). He stressed that the expression of an individual's rights should not impinge on citizens' rights, well-being, and health.

## Conclusion

In summary, the insights shared by our esteemed panellists underscore the critical importance of combating disinformation for safeguarding public health on a global scale. An effective approach against public health disinformation necessitates a comprehensive and multi-faceted strategy that incorporates measures that can improve information space and address other contributing factors.

First, working with information space requires addressing the ways information is being produced, disseminated, and received, which would include addressing content, information sources, dissemination channels, media and social media platforms and their algorithms,

regulatory and policy frameworks, and science and communication literacy. However, focusing on the information space alone will not be effective without addressing other contributing factors that determine health decisions in different global communities, including the ways health information is received in these communities. Therefore, the second set of measures should target socioeconomic disparities, psychological biases, cultural and religious beliefs, historical and cultural context, political interference, economic interests, and trust in institutions, which will allow the development of strategies tailored to the needs and characteristics

of different global communities and groups of patients. Forming interdisciplinary collaborations across sectors and borders is essential to protect the integrity of public health information and safeguard the health and well-being of individuals and communities worldwide.

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## WMA Members Contribute Insight on Global Vaccination Efforts



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As one key public health strategy, vaccines boost natural immune responses that protect against invading pathogens, preventing between 3.5 and 5 million annual deaths globally [1]. The history of vaccine development, starting with the smallpox vaccine in 1796, has highlighted how the scientific method was used to guide the trial-and-error period related to vaccine safety and efficacy. Vaccines, which protect against more than 20 grave diseases, are a testament to scientific advancements, which help reduce health expenditure (alleviating financial struggles that can lead to poverty), minimise antibiotic use by protecting microbial diversity, and control pathogen growth and transmission especially with the effects of climate change [2].

Notable vaccination progress was halted during the coronavirus disease 2019 (COVID-19) pandemic, due to

hospital surges in health care services, disruptions in vaccination programs, observed socioeconomic disparities across communities, and public fear to seek routine medical care at hospitals. Likewise, the reemergence of cholera and measles outbreaks has been linked to weak health system infrastructure, inadequate vaccination coverage, demographic growth and urbanisation, and climatic factors. In 2022, 44 countries reported cholera cases (compared to 35 countries in 2021), and 37 countries experienced significant malaria outbreaks (compared to 22 countries in 2021) [3,4]. As measles cases and deaths had increased by 18% and 43% in 2022, respectively, expanded coverage for vaccine-preventable diseases is needed to reverse these trends [3,4].

The World Health Organization (WHO), however, has recently reported significant progress in expanding global vaccination

coverage. Health leaders shared that there are 14.3 million zero-dose children, or the number of children missing any vaccinations, when compared to 18.1 million in 2021 [5]. Also, reports showed that 84% of children had received the third dose of diphtheria, tetanus, and pertussis vaccines (compared to 81% in 2021), 83% of children were administered the first dose of measles vaccines (compared to 81% in 2021), and 21% of female children had acquired the first dose of human papillomavirus (HPV) vaccines (compared to 16% in 2021) [5].

In August 2020, the WHO adopted the *Immunisation Agenda 2030* at the World Health Assembly, as an ambitious strategy to sustain political commitment to universal health coverage, including vaccination coverage [6,7]. Building upon the *Global Vaccine Action Plan (2011-2020)* and eradication efforts related

to polio and measles, this strategy promises to uphold objectives to expand vaccination coverage through four elements – operational planning, ownership and accountability design, monitoring and evaluation approach, and communications and advocacy strategy [7]. In short, WHO leaders have expressed their goal: “*A world where everyone, everywhere, at every age, fully benefits from vaccines for good health and well-being*” [7].

Furthermore, immunisations and optimal health outcomes are directly and indirectly linked to at least 14 of the 17 Sustainable Development Goals (SDGs) of the 2030 UN Agenda for Sustainable Development [2,6,8]. For example, vaccines can help improve work productivity and economic sustainability, which can support economic growth (SDG 8) and reduce poverty (SDG 1). They can protect against pathogens and other enteric diseases, which can ensure clean water and sanitation (SDG 6) and reduce hunger (SDG 2). By conserving microbial diversity and reducing the use of antimicrobial agents, they can protect the marine and terrestrial ecosystems (SDG 14 and SDG 15) and the planet (SDG 13) [2]. In turn, equitable access to vaccines can reduce inequalities (SDG 10), promote quality education (SDG 4), and support gender equality (SDG 5), collective action and partnerships (SDG 17), peace and justice (SDG 16), and sustainable urban and rural communities (SDG 11) [2,8]. These connections showcase the importance of the One Health approach (human-animal-environmental nexus) to better understand these direct and indirect connections between one public health approach (vaccines and immunisations) and the desired outcome (optimal population health).

Notably, 2024 marks the 50th anniversary of the Expanded Programme on Immunisation (EPI),

which was launched by the WHO in 1974, to promote the coverage of childhood immunisations [9]. The list initiated with six vaccines (Bacillus Calmette-Guérin, diphtheria, pertussis, tetanus, polio, measles), and today includes seven additional vaccines (Haemophilus influenzae type B, Hepatitis B, rubella, pneumococcal disease, rotavirus, HPV, COVID-19 for adults), for a total of 13 vaccines [9]. Key milestones include the eradication of smallpox in 1980, as well as the elimination of polio by 99%, due to key partnerships with the WHO, U.S. Centers for Disease Control and Prevention, United Nations International Children’s Emergency Fund (UNICEF), Rotary International, Bill and Melinda Gates Foundation, and Gavi the Vaccine Alliance. As the rapid spread of misinformation and disinformation was acutely observed during the COVID-19 pandemic, global leaders should prepare comprehensive communication strategies for future public health initiatives.

World Immunisation Week, which is held annually from April 24-30 (<https://www.who.int/campaigns/world-immunization-week/2024>), provides an opportunity to promote joint public action to safeguard the population (including children) from vaccine-preventable diseases. Global health leaders recognise that the One Health approach offers a holistic view that can foster robust collaborations between scientific disciplines and sectors, which can support infection control practices and antimicrobial stewardship across human, animal, and agricultural sectors as well as equitable vaccine delivery and coverage across communities. In this article, physicians from seven countries – Brazil, Bulgaria, Myanmar, Nigeria, Philippines, Trinidad and Tobago, and Turkey – shared insightful contributions about

local and national efforts to promote immunisations through community activities and relevant policies across their national health systems.

## Brazil

The Brazilian National Immunisation Program (Programa Nacional de Imunizações, PNI), one of the greatest achievements of the Brazilian public health system, was established in 1973 and celebrated its 50th anniversary in 2023 [10]. This program has helped promote and maintain high immunisation coverage for vaccine-preventable diseases and has successfully eradicated smallpox, measles, rubella, congenital rubella syndrome, poliomyelitis, and neonatal tetanus [11]. However, Brazilian health leaders continue to face significant challenges with expanding immunisation coverage to its 209 million residents, especially with marginalised communities widely spread across the country and spread of vaccine hesitancy due to misinformation [12]. They continue to support robust efforts to improve national surveillance, prevention, and control for pneumonia, diphtheria, whooping cough, and diarrheal diseases (<https://www.gov.br/saude/pt-br/vacinacao>).

In recent years, successful immunisation campaigns have led to a reduction in the overall perceived risk about eradicated diseases, leading to a drop in national vaccination rates [13]. The Brazilian Ministry of Health has proposed several initiatives to reverse this trend and build public trust in vaccines, including training of health professionals, investing in the cold chain, improving the information system and dose registration, supporting vaccine industry production, and combating the infodemic. In 2023, the Government of Brazil established the National Vaccination Movement (Movimento

Nacional Pela Vacinação), which incorporated the Health with Science platform to combat misinformation about vaccine adherence, enhanced vaccine dose registration into the National Health Data Network (Rede Nacional de Dados em Saúde, RNDS), and ensured political commitment (estimated US \$30 million) to support vaccination approaches for local decision-making activities [14].

The World Immunisation Week offers a global platform for health leaders to leverage their expertise and work directly with community members, where they can help exchange successful practices and initiatives for expanded immunisation coverage. Over the past two years, Brazilian leaders have specifically supported community actions and massive communication campaigns involving renowned celebrities and musicians, which have subsequently halted the declining national vaccination rates with the first signs of recovery in 2023. Recognising these accomplishments, the Brazilian Medical Association (AMB) continues to collaborate with its affiliated medical societies, where they can reinforce the successful implementation of Brazil's vaccination strategies and promote PNI's immunisation initiatives across the Americas region.

## Bulgaria

The Bulgarian Medical Association has continued to raise awareness about vaccinations as the most effective public health intervention and reassure society about their safety, efficacy, and beneficence. According to the Bulgarian National Immunisation calendar (<https://vaccine-schedule.ecdc.europa.eu/Scheduler/ByCountry>), the average national (mandatory) vaccination coverage in 2023 was 92%, compared

to the desired 95% coverage (e.g. diphtheria, measles, mumps, pertussis, poliomyelitis, rubella, tetanus, tuberculosis) (<https://www.mh.government.bg/bg/informaciya-za-grazhdani/immunizacii/>). With relatively high levels of immunisation coverage, vaccine-preventable diseases are rare; however, society at large may not fully appreciate the real benefit of such immunisations [15]. Dr. Gergana Nikolova (Bulgarian Medical Association's Management Board) reflected upon this hesitancy as "fear" (e.g. why fears of the vaccine were greater than fears of cancer) and found that the infodemic campaigns had spilled over from COVID-19 vaccines to the National Immunisation calendar of mandatory vaccines [16]. Also, Dr. Nikolay Branzalov (Bulgarian Medical Association's Vice-Chairperson) regularly consults with vaccine-hesitant parents in his primary practice, where he actively schedules appointments with patients who have upcoming immunisations and collaboratively discusses the scientific evidence on vaccines' benefits and harms. Notably, nearly 100% of his patients are vaccinated with mandatory immunisations.

As a top priority, health leaders of the Bulgarian Ministry of Health have led efforts to adopt several national programs that support the National Immunisation calendar, where mandatory preventive immunisations and revaccinations are administered free of charge (recommended vaccines for a nominal fee) by general practitioners or regional health inspectors at acquired ages (<https://www.mh.government.bg/en/>). First, the national program for seasonal flu and pneumococcal vaccinations (2023-2026) provides free vaccines in individuals over age 65, with the goal of achieving 35% coverage against seasonal flu, and 15% coverage against pneumococcal infections by 2026.

Notably, the percentage of vaccinated individuals has increased from 7.8% in 2019, 11.4% in 2020, and 13.2% in 2021. Second, the national program for primary prevention of cervical cancer (2021-2024) offers free vaccines against HPV for girls of ages 10-13. Although HPV vaccinations were initially well accepted, due to targeted anti-vaxxer campaigns, coverage has declined from 4% in 2019, 2% in 2020-2021, and 1% in 2022. The newly established HPV Coalition, bringing together physicians and public figures, calls for expanding the programmatic scope to boys of ages 10-12. Third, the national program for the prevention of rotavirus gastroenteritis (2022-2025) has led to reduced hospitalisations and emergency room visits (by 85-95%), with approximately 40% of newborns vaccinated against rotavirus [17].

Health leaders of the Bulgarian Medical Association continue to streamline their efforts to support local and national vaccination campaigns that help build public trust in vaccine efficacy and safety, leading to increased adherence to the recommended vaccinations of the National Immunisation calendar. They collaborate with partner institutions and stakeholders such as UNICEF and patient organisations to host regular informational events and campaigns on vaccine safety, distribute institutional- or state-sponsored surveys (e.g. Bulgarian Ministry of Health), and support team discussions that help interpret scientific data on vaccine safety. Finally, members recognise that these essential collaborations can emphasise how evidence-based scientific findings guide the development of national immunisation guidelines, help combat the spread of misinformation and disinformation in society, and ultimately reduce vaccine-preventable diseases for Bulgarian citizens.

## Myanmar

The Myanmar health system has reported two priorities related to immunisations – restoring and maintaining routine immunisations and delivering vaccinations across the country (including marginalised communities) – recognised as a fundamental human right and essential public health measure that promotes community well-being [18]. In 2022, 10 million Myanmar citizens lacked access to basic healthcare vaccines and 300,000 children missed their regular immunisations, as a result of blocked clinic and vaccine access by the Myanmar military and security forces [18]. The coup d'état's systematic and widespread use of tactics against innocent civilians and health professionals, has increased risk of physical and emotional harm (including severe injury and death), and the UN and other international organisations have reported these acts as crimes against humanity [19,20]. Global attention should be placed on the underreported atrocities against civilians by the Myanmar's military junta, including the purposeful manipulation of vaccination access and distribution as well as denial of essential health care services, which ultimately hinders global health security [21].

Days prior to the military takeover on 1 February 2023, the International Monetary Fund (IMF) provided US \$372 million to Naypyidaw authorities for COVID-19 vaccination efforts. However, the military junta failed to submit any procurement reports for transparency in these financial transactions. Subsequently, millions of dollars for the COVID-19 vaccination fund were reported missing, and the military junta accounted for US \$350 million in COVID-19 funding [22]. Furthermore, Dr. Htar Htar Lin, the former leader of Myanmar's

COVID-19 immunisation campaign, together with her husband, seven-year-old son, and family dog, were escorted into military custody in June 2021. Her alleged crime was her attempt to return US \$94,580 to the UN, as to reduce risk of military seizure of these funds [23].

There is desperate need of UN and international community respond to the issue in Myanmar with the same urgency that they responded to the crisis in Ukraine and Israel. Moving forward, UN organisations and the global community must ensure the implementation of the *UN Security Council Resolution 2286 (Protection of Civilians in Armed Conflict)*, which strongly condemns attacks on health care personnel in conflict situations and supports that all necessary measures are taken to improve health care protection and access in Myanmar [24]. Leading health and humanitarian agencies, like the UN, World Medical Association (WMA), International Court of Justice (ICJ), and International Criminal Court (ICC), can reinforce that responsible committees regularly document cases of manipulated vaccination aid in Myanmar, critically analyse each case, and share public reports. Furthermore, collaborations with community stakeholders can foster engagement opportunities with appropriate parties to ensure immunisation supplies and establish secure corridors for delivery. For example, by connecting with ethnic health care groups in liberated regions, leaders can provide immunisations via access points in China, Thailand, India, and Bangladesh. Specific to Asia, the UN can expand networks with the Association of Southeast Asian Nations (ASEAN) (<https://asean.org/>), with 10 member states (Indonesia, Malaysia, Philippines, Singapore, Thailand, Brunei, Vietnam, Lao PDR, Myanmar,

Cambodia), to support immunisation efforts in Myanmar. As a global community, we are reminded that preventable diseases have no boundaries, and timely action is crucial to mitigate risk to our neighbouring countries' health.

## Nigeria

Nigerian leaders, serving a country of an estimated 195 million residents, are challenged to achieve universal immunisation coverage for children across the nation, especially as coverage has continued to decline from 81.5% in the early 1990s, 30% in 1996, to 12.9% in 2003 [25]. According to the WHO, an estimated 868,000 annual deaths occur in children under five years of age in Nigeria, primarily due to vaccine-preventable diseases [26]. To address this burden, community health professionals travel across the country, by terrain vehicles and boats, to reach marginalised populations, including nomadic groups, seasonal migrants, and fishing and agricultural settlements [27]. They often use mainstream and social media to promote health messaging to help strengthen trust in vaccine adherence and dispel myths [28].

Established in 1978, the National Programme on Immunisation in Nigeria (or EPI) supports the prevention of vaccine-preventable diseases among children and adults. In 2023, the HPV vaccine was introduced into the immunisation schedule, as cervical cancer is the third most common form of cancer and the second most common cause of cancer mortality (about 8,000 annual deaths) in Nigerian women [29]. Although the National Programme on Immunisation has enthusiastically reported the eradication of endemic polio in 2020, it continues to encounter challenges toward the adherence to recommended (gratuitous) immunisations across

the 36 states in the country [30]. Health leaders have openly discussed approaches to combat vaccine hesitancy, as a result of perceived insecurity (e.g. community health professionals cannot conduct home visits to administer vaccines due to security issues like armed robbery and kidnapping), cultural beliefs (e.g. vaccines will cause stunted growth in children), and the spread of misinformation and myths (e.g. vaccinations for population control or sterility) [25].

Over the past decade, the Nigerian federal and state governments have periodically used innovative jingles and skits on mainstream media to increase awareness of the safety and efficacy of recommended vaccinations. Leaders also organised these educational campaigns (in the local dialect) at religious places of worship and town hall meetings, as religious and traditional leaders are highly respected in Nigerian communities and can help demystify any public concern or erroneous beliefs toward vaccinations. Also, Nigerian medical professional associations (Medical Women's Association of Nigeria, MWAN; Nigerian Medical Association, NMA; Paediatric Association of Nigeria, PAN) and non-governmental organisations actively promote immunisations through concurrent community health programmes (e.g. nutrition, sanitation and hygiene, breastfeeding, family planning) that help build public trust of vaccinations. By forming collaborations between local organisations, community stakeholders, and international health institutions (e.g. WHO, UNICEF), African health professionals can help lead advocacy efforts to enhance national immunisation coverage in health facilities across urban and rural settings.

## Philippines

Vaccination efforts in the Philippines, a country of approximately 118 million residents, have been integral to the country's public health initiatives that protect population health. Since the 1990s, the Philippines has faced challenges in achieving a 95% mandatory vaccination coverage rate for children [31]. Globally, the Philippines ranked fifth for having 18 million zero-dose children and seventh for the number of children without measles vaccinations in 2021 [32]. Recognising this challenge, the Philippines health system reinforced vaccination efforts, including polio vaccines to 11 million children, leading to the successful end to a polio outbreak in June 2021. As health leaders celebrate this achievement, they understand the need to continually reinforce vaccination adherence, as 1.5 million Filipino children remain unprotected (unvaccinated or incomplete vaccination scheme) from the poliovirus, and many communities have an increased risk of poliomyelitis. In 2022, the UNICEF Philippines marked World Polio Day by raising awareness of the importance of the polio vaccine and highlighting that 1 million children across the country had not received any of the four doses of the polio vaccine [33].

In 2022, the WHO and UNICEF published a joint news release report that revealed a significant and sustained global decrease in childhood vaccinations, noted as the largest decline over the past three decades [34]. In the Philippines, although the COVID-19 pandemic significantly impacted health care service delivery, including immunisation programs, health leaders successfully administered COVID-19 vaccines with an unprecedented highest daily number of 229,769 vaccination doses administered on 20 May 2021 [31].

The Philippines, along with other middle-income countries, experienced a high number of children missing one or more doses of diphtheria, tetanus, and pertussis routine immunisations in 2021, recognised as a measure of immunisation coverage within and between countries. After reaching a peak of 87% in 2014, the country's immunisation coverage among children steadily dropped to 68% in 2019 and then 62.9% in 2022. In addition to reestablishing efforts to ensure that more children are protected from vaccine-preventable diseases, there is an urgent need to shift to "vaccination programs for all ages and all groups" [35].

In November 2023, the Pharmaceutical and Healthcare Association of the Philippines (PHAP) and member Pfizer Philippines in collaboration with the Philippine Press Institute (PPI), and in strategic partnership with the Philippine Medical Association (PMA), the Philippine Foundation for Vaccination (PFV), and the Philippine Alliance for Patient Organizations (PAPO), conducted the "Injecting Hope" seminar-workshop for journalists and patient groups, to support "The Big Catch-Up" and acknowledge the essential role of media in providing reliable public health information [36]. Furthermore, the PMA proposed strategies to enhance trust in life-course immunisation (LCI), including the annual National Vaccination Days, synchronised digital individual immunisation records, national digital immunisation cards, vaccination records as a requirement for school admission, vaccine history included in annual physical examinations for employment, and infectious disease lectures in K-12 school curricula. These efforts aimed to help increase public awareness, support vaccination activities, and



assist health professionals as they monitor patient reactions and report adverse effects to the Department of Health. The PMA, working with the Department of Health, remains at the forefront of advocating for increased trust and adherence to recommended vaccinations, among families and communities [37].

## Trinidad and Tobago

As a country in the Caribbean and by extension the Region of the Americas, Trinidad and Tobago (T&T) has recognised Vaccination Week in the Americas (VWA) since 2002. It aligns with World Immunisation Week that standardised the observance of Immunisation Week globally in 2012. This week is significant to medical practitioners in T&T as it heightens awareness and educational efforts on the historical timelines and benefits of immunisation for our residents. For VWA 2023, the Honourable Terrence Deyalsingh, the Minister of Health T&T, reminded citizens that the history of vaccinations in curbing the effects of fatal infectious diseases is well established [38]. For example, T&T has been polio-free since 1972, had the last recorded case of measles in 1991, and had no cases of rubella and yellow fever since 1997 [38]. Immunisation services are provided at no charge to T&T citizens and residents through the EPI.

This EPI, a joint effort of the WHO, Pan American Health Organization (PAHO) and the Ministry of Health of T&T, was established in the 1970s. It adheres to the philosophy that every child should be immunised against vaccine-preventable diseases, and its vision is to identify and completely immunise all infants, children, pregnant women, and men as early as possible, in accordance with a national immunisation schedule (<https://health.gov.tt/services/immunization>). Vaccines are

made available through the EPI Unit, and country-wide immunisation is embedded in the services provided through more than 100 primary health care access points. The Ministry of Health's Immunisation Manual for Health Professionals describes the *Public Health (Nursery Schools and Public Schools Immunisation) Act*, Chapter 28:03 of 1973, which requires immunisations against poliomyelitis, diphtheria, tetanus, measles, and yellow fever for school entry.

In recent years, the historically high immunisation coverage in the Caribbean has been declining, and T&T is no exception. The COVID-19 pandemic has worsened the immunisation trends, leaving gaps in human, financial, and material resources within countries' immunisation programs [39]. At a country level, efforts are being made to improve immunisation coverage, especially within the 0-5 year age group. For example, primary care facilities in strategic locations have been opened outside of regular hours to encourage parents to bring their infants and young children for wellness checks and immunisations. Community outreach initiatives have incorporated educational campaigns that emphasise the benefits of vaccines.

The Trinidad and Tobago Medical Association (T&TMA) stands on its motto, 'Teach, Treat, Mentor and Advocate', which is upheld in its approach to current and emerging public health concerns or emergencies, including immunisations. When the Association was asked to assist with the national COVID-19 vaccination campaign, it supported vaccinations to more than 70,000 persons. The Association encourages global health professionals to be mindful of and support local immunisation programs so that all countries can achieve their immunisation goals. A resilient and

robust immunisation system keeps our population safe from preventable infections and subsequent morbidity or mortality.

## Turkey

Although data illustrating national vaccination coverage across 81 Turkish provinces are unavailable from the Ministry of Health, the WHO has reported at least 95% coverage for the third dose of diphtheria-tetanus-pertussis vaccines in 69 provinces, first dose of measles vaccines in 40 provinces, and second dose of measles vaccines in 43 provinces [40]. With these achievements, Turkish leaders recognise that the irregular migratory routes from some countries, like Afghanistan, have most likely contributed to the ongoing measles epidemic in the nation (with 4,547 reported cases, as of October 2023) since December 2022 (<https://data.euro.who.int/CISID/>) [41,42]. Hence, Turkish health leaders are concerned about safeguarding population health through upholding the national vaccination guidelines.

Although the WHO has set the target of 90% coverage of HPV vaccinations to support efforts to eliminate cervical cancer by 2030, the Turkish Ministry of Health has not included this vaccine in its National Vaccination Schedule (NVS) [43]. As the lower socioeconomic levels bear a higher burden of cervical cancer morbidity and mortality, one primary concern is that HPV vaccinations are inaccessible to a large percentage of the populace, especially as one HPV vaccination costs US \$76.80 (when the minimum wage is US \$561.62). Considering the financial burden, one rotavirus vaccination costs US \$57.51 and has not yet been included in the NVS. Hence, socioeconomic inequalities for vaccine coverage remain significant in

Turkey, especially across eastern and southeastern Anatolia [44,45]

The continued spread of misinformation related to adverse events following immunisations aligns with growing vaccine hesitancy across the world. According to the Institute for Health Metrics and Evaluation, a multi-nation survey (with 496,868 responses) examined perceived vaccine safety and efficacy, of which Turkish respondents believed that vaccines were safe (43.0%), sometimes safe (32.6%), and unsafe (24.4%), as well as effective (47.2%), sometimes effective (31.0%), and not effective (21.9%) [46]. Furthermore, according to *Turkey Health Report 2020*, individuals without vaccinations (zero-dose) were 2.8% and 2.2% of children between 12-23 month of age in 2003 and 2018, respectively [44]. With limited national and regional data, including the gaps noted between administered surveys, it is important to fully understand the impact of national emergencies (e.g. COVID-19 pandemic, earthquakes affecting 11 million people) that have collectively led to a weakened health care infrastructure.

As the Turkish Ministry of Health does not widely share health surveillance data with the public, health leaders cannot effectively develop evidence-based policies. To build public trust related to the benefits of vaccination, the Turkish Medical Association's Immunisation Working Group founded the Coalition for Immunisation to support immunisation advocacy [47]. Moving forward, the Turkish Medical Association can support the Turkish Ministry of Health, helping leaders strengthen political commitment to implementing WHO's immunisation targets and sustainable immunisation services related to vaccine-preventable diseases.

## Conclusion

The World Immunisation Week 2024 presents a global platform to recognise ongoing immunisation efforts across all countries as well as address barriers toward achieving projected global and national vaccination rates. Collectively, global leaders can identify gaps in their national vaccination coverage, share lessons learned from their vaccination campaigns, and take prompt action to implement the *Immunisation Agenda 2030* framework across their national health systems. Since immunisations and optimal health outcomes overlap with the SDGs, global leaders can simultaneously align overarching goals with plans to expand vaccination coverage and hence strengthen national primary care health systems.

Notably, WMA members hold strategic leadership roles, where they can actively leverage their expertise and help guide the implementation of these four operational elements of the *Immunisation Agenda 2030* framework across national health systems. This collective article offers an overview of community initiatives and relevant polities that highlights achievements, states encountered challenges, and advocates for timely community action to ensure equitable access to vaccines for expanded coverage for all ages. These valuable collaborations demonstrate strong health leadership across the African, Americas, European, South-East Asian, and Western Pacific regions, while ensuring political commitment for expanded vaccination coverage to promote optimal health outcomes and strengthen global health security.

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*Mahesh Prasad Bhatt*

A representative delegation from the World Medical Association (WMA) attended the 28th Conference of the Parties (COP28) to the United Nations Framework Convention on Climate Change (UNFCCC). The conference was presided over by Dr. Sultan Ahmed Al Jaber of the United Arab Emirates (UAE) and held at the Expo 2020 Center in Dubai from 30 November to 12 December 2023. The WMA delegation, led by Dr. Lujain Alqodmani and Dr. Ankush Bansal, consisted of seven delegates from Austria, India, Kuwait, the United Kingdom, and the United States (Photo 1).

The WMA delegation worked closely with the World Health Organization (WHO), the Global Climate and Health Alliance (GCHA), and other non-governmental organisations

(NGOs), universities, and professions in the greater healthcare community. Their activities included daily policy meetings among healthcare professionals, researchers, and trainees coordinated by the GCHA across multiple topic areas of interest to healthcare professionals.

The conference topic areas included Loss and Damage Fund (including the Santiago Network and Warsaw International Mechanism), Global Stocktake, Global Goal on Adaptation, Just Transition, Mitigation Work Program, Long-term Finance, Articles (6.2 on Bilateral Trading, 6.4 on Carbon Markets,

6.8 on Non-market Approaches), Gender and Climate, National Adaptation Plans, Agenda for Climate Empowerment (ACE),



Photo 1. The WMA delegation (Week 1) included Dr. Johanna Schauer-Berg, Dr. Lujain Alqodmani, Dr. Ankush Bansal, and Dr. Muba Hassan (left to right). Credit: WMA

Agriculture and Food Security, Capacity Building, and Green Climate Fund.

## Health Day

The WMA delegates agreed that the most notable development of COP28 was the initiation of the first themed Health Day on 3 December 2023.

At the event opening, Dr. Tedros Ghebreyesus, the WHO Director General, emphasised that health is the human face of climate change and that the health workforce, as one of the largest workforces worldwide, have an important role to speak up for a cleaner, healthier future.

The Honourable Dr. Terrance Michael Drew, who serves as both the Prime Minister and Minister of Health of St. Kitts and Nevis, captured the audience with his passionate speech. As an active physician himself, he highlighted the poignant reality that nations, particularly small-island developing states (SIDS), contribute little to greenhouse gas emissions yet bear a disproportionate burden of health impacts due to climate change. Additionally, he described the severe

disruptions to medical infrastructure caused by extreme weather events, including tropical storms and hurricanes.

## Ministerial High-Level Meeting on Health

The second notable development during COP28 was the first Ministerial High-Level Meeting on health at a COP. Dr. Lujain Alqodmani, WMA President and the only invited speaker representing an NGO, gave an inspiring call to action to the more than 49 Ministers of Health and representatives to over 25 additional Ministries of Health present at the meeting (Photo 2).

## COP28 Health Declaration

Prior to the meeting, the WMA endorsed an international declaration calling on nations to apply the health perspective when supporting rapid, sustainable, equitable action on climate change [1]. By the close of COP28, approximately 143 nations had signed this declaration, which had increased to 146 nations by 1 February 2024 (Photo 3).



Photo 3. The WMA delegation (Week 1) included Dr. Johanna Schauer-Berg, Dr. Ankush Bansal, and Dr. Muba Hassan, with Dr. Maria Naira (WHO Director of the Department of Public Health and Environment), after the launch of the new Declaration on Climate and Health. Credit: WMA

## COP28 Food Systems Declaration

The *COP28 UAE Declaration on Sustainable Agriculture, Resilient Food Systems, and Climate Action* was generated at COP28 and signed by 158 nations [2]. The tenets of this declaration emphasise the urgency to address food security and nutrition with an equity lens, “in the face of mounting hunger, malnutrition, and economic stresses.”

## Fossil Fuel Phase-out

Despite a GCHA co-sponsored effort and analysis showing over 46 million healthcare professionals worldwide standing for a fossil-fuel phase-out, the consensus was for transition with the goal of net zero (not phase out) by 2050. This net zero language included carbon capture and storage for so-called “hard to abate” sectors. The agreement also used gas as a “transition” fuel, no agreement on phase-out of coal, and no action on limiting fossil fuel subsidies.



Photo 2. WMA president Dr. Lujain Alqodmani delivered a powerful speech at the High-Level Ministerial Meeting. Credit: WMA

## Loss and Damage

The COP28 started with a significant early win on climate change. The Loss and Damage (L&D) Fund, which was launched on Day 1, intended to compensate climate-vulnerable nations. About US \$700 million were pledged by the UAE, Germany, Japan, the European Union, the United Kingdom, and the United States. Although this is a small amount needed for this pledge, it nevertheless illustrates a start.

An additional US \$1 billion was pledged by a total of 41 non-state actors on finance and implementation on climate and health, including The Global Fund, The Rockefeller Foundation, Green Climate Fund, Bloomberg Philanthropies, Wellcome Trust, and Asian Development Bank.

Finally, the Santiago Network, the technical branch of L&D negotiations operationalised during COP28, will be hosted by the United Nations Office for Disaster Risk Reduction (UNDRR) and the United Nations Office for Project Services (UNOPS), with support from the Pacific Development Bank.

## Global Stocktake

The Global Stocktake (GST), a type of accountability report on meeting the metrics and deadlines of the Paris Agreement, was discussed in detail for the first time at a COP. The agreement on GST incorporated language on fossil fuels (see the Fossil Fuels Phase-out section), including tripling renewable energy by 2030, doubling energy efficiency, reducing methane emissions, greening the transportation sector, stopping deforestation, and reforming the financial sector.

## Global Goal on Adaptation

Although health is a prime target in the Global Goal on Adaptation (GGA) agreement, there was no agreement on indicators and targets or finance. For healthcare, the importance of the GGA is resilience against climate-change health impacts, developing climate-resilient health systems, and reducing morbidity and mortality from climate-change health impacts. This topic will likely be discussed at the Intersessional in June 2024.

## Party Meetings



*Photo 4. Dr. Mobammed Mobamud Derow and Dr. Ali Haji Aden (Minister of Health, Somalia) with Dr. Muha Hassan and Dr. Johanna Schauer-Berg (left to right). Credit: WMA*

The WMA delegation met with several national party delegations during weeks 1 and 2 of COP28 (Photos 4-5).

### Week 1

Dr. Muha Hassan met with representatives from the Somali delegation. First, Dr. Ali Haji Aden (Minister of Health, Somalia) pointed out the significant disruption to health services and financial loss that Somalia faces due to periods of extreme weather events, fluctuating from floods to droughts. He also shared the need to focus efforts towards adaptation and building climate resilient systems. Second,

Mr. Hareed (National Ozone Unit Coordinator, Somalia Ministry of Environment) underscored Somalia's commitment to the Global Cooling Pledge as an initiative that binds countries to reduce their cooling-related emissions by at least 68% by 2050. Additionally, he highlighted a concerted effort to enhance research capacity within hospitals, aiming to collect vital data on the health impacts



*Photo 5. Dr. Muha Hassan and Dr. Johanna Schauer-Berg engaged in an extensive discussion on health aspects of the negotiations with Mr. Matthias Knopper and Mrs. Ilonka Horvat, representatives of the Austrian delegation. Credit: WMA*

of climate change.

Dr. Johanna Schauer-Berg met with Dr. Stela Drucioc (Republic of Moldova) to discuss the public health benefits of implementing reporting on co-benefits, especially air pollution at a national level. Then, Dr. Ruperta Lichtenecker (Director, Austrian Competence Center for Climate and Health) shared her experiences as lead author for the Austrian strategy for climate neutral health care.

Dr. Ankush Bansal met with Dr. John Balbus (Director, U.S. Office of Climate Change & Health Equity) and Admiral (Dr.) Rachel Levine (Assistant Secretary of Health, U.S. Department of Health & Human



Services, HHS) (Photos 6-7). They keenly understood that climate change is fundamentally a public health issue. Since June 2022, they have worked on health system resiliency and decarbonisation in the entire government health sector and have shared best practices with the private health sector through the White House-HHS climate sector pledge. The goal is 50% GHG reduction by 2030 and net-zero by 2050, and thus far, 130 organisations and 900 hospitals have signed on to this pledge. They gave examples of three large health systems in the United States that have significantly reduced carbon emissions and cut energy expenses. These efforts are now expanding globally through the President's Emergency Plan for Adaptation and Resilience (PREPARE) initiative, which includes features of the landmark United States legislation known as the Inflation Reduction Act (IRA). Additionally, the United States is working with the United Kingdom National Health Service (NHS) on supply procurement to establish global standards to reduce carbon emissions. Although the United States supported these efforts, without commenting on L&D, leaders signed both the climate change and food systems declarations. Dr. Balbus' key messages were that physicians

are the front-line in climate change advocacy, which needs to be a priority of physicians to their policymakers. He also urged further research and publication on the health effects of climate change on individuals and communities so that he and his counterparts could use evidence to effect change when engaging with policymakers.

*Week 2*

Dr. Mahesh Bhatt and Dr. Suryakanta Acharya had met official delegations of several South Asian countries including India to know their perspectives on Climate Change and Health.

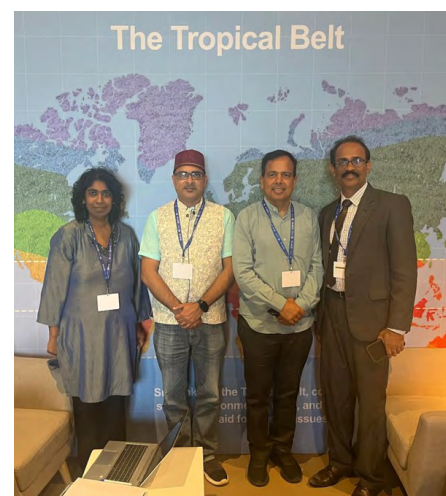
Indian officials had spoken at length about making a fine balance of adaptation and mitigation strategies to enable developing countries to buy time for strict mitigation norms (Photo 8). India had not signed the Health Declaration because of disagreements related to points on strict mitigation norms.

The Sri Lanka delegation spoke about the derailment of 'Health and Climate Change' programs because of economic meltdown due to the unstable political situation (Photo 9). They had reiterated greater roles of UN and other intergovernmental

agencies, NGOs, and civil societies to help Health and Climate Change programs back on track.



*Photo 8. Dr. Mahesh Bhatt and Dr. Suryakanta Acharya with Mr. Shard Sapra (Climate Change Scientist, Ministry of Environment, India). Credit: WMA*



*Photo 9. Dr. Mahesh Bhatt and Dr. Suryakanta Acharya with members of the Sri Lankan delegation. Credit: WMA*



*Photo 6. Dr. Ankush Bansal with Admiral (Dr.) Rachel Levine (Assistant Secretary of Health, U.S. Department of Health & Human Services). Credit: WMA*



*Photo 7. Dr. Ankush Bansal and Menna Zayed (pharmacy student from Egypt) with Dr. John Balbus (Director, U.S. Office of Climate Change & Health Equity). Credit: WMA*

Bangladesh officials mentioned several initiatives on renewable energy transitions to reduce dependency on fossil fuel. They are more focused on adaptation strategies like climate resilient agriculture to ensure food security and climate resilient health systems to lessen damage from global climate change.

The Azerbaijan delegation fully supported the adaptation and



Photo 10. Dr. Mabesh Bhatt and Dr. Suryakanta Acharya with members of the Azerbaijani delegation. Credit: WMA

mitigation strategies to combat climate change, and notably, COP29 was later confirmed that it will be held in Baku, Azerbaijan, from 11 to 22 November 2024 (Photo 10).

## Analysis of Health Presence at COP28

Led by Dr. Alqodmani, the WMA delegation spearheaded an effort on the presence of health delegates at WMA. Our analysis determined that 2.4% of the 81,039 delegates at COP28 represented the health sector, including 50 health ministers participating in Health Day activities.

## Presentations and Panels by WMA Delegates

At this COP, the WMA delegation was quite active in side events as presenters or panellists.

Dr. Bansal first presented at the Education Center in the Green Zone on 3 December 2023, as part of a panel hosted by YOUNGO and entitled, *Prescribing Change: Shaping a Climate-Ready Healthcare Future*.

He then served as a panellist on a session hosted by both Harvard

University's Tseng-Hsi (T.H.) Chan School of Public Health and François-Xavier Bagnoud (FXB) Center for Health & Human Rights, entitled, *Linking Agendas on Climate Change & Health at the UNFCCC and World Health Assembly*, at the WHO Pavilion on 12 December 2023 [3]. Dr. Bansal discussed WMA policies on climate change and health, the WMA work at COP, and World Health Assembly (WHA), and how the WMA advocates for synergy and action among the WMA, UNFCCC, and WHA. Dr. Bansal also presented a summary of the health issues from climate change and some of the results from COP28 to the Kenyan Medical Association by virtual meeting on 15 December 2023, upon the request of the Chair of the Kenya Medical Association's Planetary Health Committee.

Dr. Hassan was invited to deliver a talk on how digital health technologies contribute to climate change mitigation efforts and development of climate resilient technologies in the healthcare sector, as part of *Digital Health and Youth* session hosted by YOUNGO at the Climate Live pavilion.

On 6 December 2023, Dr. Schauer-Berg served as panellist for the *Linking Agendas of the UNFCCC and the World Health Assembly in Latin America and the Caribbean* session. The panel was kindly hosted at the Guatemala Pavilion, on behalf of the Independent Alliance of Latin America and the Caribbean (AILAC) and facilitated by the Harvard T.H. Chan School of Public Health and the Inter-American Institute for Global Change Research (Photo 11). Dr. Schauer-Berg highlighted WMA's advocacy action on climate and health as well as the unique position of physicians who are clinical experts, directly connect with their patients and communities, and are keenly aware of their patients' vulnerabilities. She emphasised that physicians should therefore have a seat on the global platform, especially on the creation and implementation of climate change preparedness plans, emergency planning, and response on local, national, and international levels to achieve health in all policies.



Photo 11. Dr. Jobanna Schauer-Berg (WMA) and fellow panellists Dr. Maria Guevara (Médecins Sans Frontières), Dr. Milena Sergeeva (Global Climate and Health Alliance), Dr. Marco Vinicio Ochoa (Vice Minister, Natural Resources and Climate, Guatemala), Dr. Andrea Hurtado Epstein (Health Care Without Harm), and the session's facilitators Dr. Elizabeth Willets (Harvard T.H. Chan School of Public Health) and Dr. Anna Stewart-Ibarra (Inter-American Institute for Global Change Research) at COP28 (left to right). Credit: WMA

## Collaboration with Global Health Community

The WMA delegation has collaborated with physicians, nurses, pharmacists, academics, students, and scientists in the climate and health space from around the world through the GCHA and daily policy meetings. The WMA delegation contributed to these meetings, based on monitoring of negotiation meetings, party outreach, and analysis of health presence at COP28 (Photo 12).

## Future Direction and Strategy at Subsequent COP Meetings

The WMA delegation and Workgroup on Environment were disappointed that their side event proposal at the WHO Pavilion on health system resiliency was not accepted. Nevertheless, the delegation actively participated in panels for side events and attended numerous meetings, high-level events, and monitored

topic negotiations. Additionally, the delegation networked with other academic, professional, and advocacy organisations focused on health and participated in daily policy meetings through the GCHA.

In preparation for COP29 in Baku, Azerbaijan, and COP30 in Belem, Brazil, the WMA Workgroup on Environment will discuss and plan for side event proposals, pre-planning of targeted party meetings towards the goals and policies of the WMA with respect to climate change and health, and participation at the UNFCCC intersessional and the WHA. It is also recommended that interested individuals representing national medical associations should consider participating as delegates at future COP meetings.

A report will be presented at the 226th Council Session in Seoul, Republic of Korea.

*“The climate crisis is a health crisis and a human rights crisis”*

- David R. Boyd, U.N. Special Rapporteur on Human Rights and the Environment

*“Medicine is a social science, and politics is nothing else but medicine on a large scale. Medicine, as a social science, as the science of human beings, has the obligation to point out problems and to attempt their theoretical solution. The politician, the practical anthropologist, must find the means for their actual solution. Physicians are the natural attorneys of the poor, and social problems fall to a large extent within their jurisdiction.”*

- Rudolf Virchow



Photo 12. Dr. Ankush Bansal, Dr. Johanna Schauer-Berg, and Dr. Muba Hassan with health professionals, as part of the Global Climate and Health Alliance (GCHA) at COP28. Credit: WMA

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## Strengthening Global Health Security Dialogue at the 74th WMA General Assembly in Kigali, Rwanda



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As the global community recognises the burden of emerging and reemerging disease risks, especially of zoonotic origin, health professionals continue to leverage their clinical knowledge and skills in patient care, community health and education, laboratory diagnostics, and policy activities. Their leadership role is crucial to identify innovative approaches that can support health service delivery (including times of hospital surges), prevention and control efforts for infectious disease outbreaks, and accurate health messaging to the public, which was well demonstrated during the coronavirus disease 2019 (COVID-19) pandemic. Even placing their own health at risk at times, their critical contributions to health service delivery cannot be overlooked. The

emergence of the COVID-19 pandemic marked a wake-up call for the global community to strengthen health system preparedness and support global health workforce training [1]. However, it also raised another issue on how national leaders holistically define and conceptualise “health security”, especially how it relates to health system resilience, multi sectoral collaborations, and global partnerships [2].

The Global Health Security Agenda (GHSa) (<https://globalhealthsecurityagenda.org/>), comprised of more than 70 nations, non-governmental organisations, and private companies, was formed in February 2014, to promote the International Health Regulations (2005), which were adopted at the

58th World Health Assembly (WHA) in 2005 and then implemented at the 59th WHA (*Resolution WHA59.2*) in 2006 [3,4]. These regulations help reinforce infectious disease preparedness, surveillance, and response efforts related to cholera, plague, and yellow fever [5]. The International Health Regulations were originally adopted in 1969, focusing on six infectious diseases (cholera, plague, relapsing fever, smallpox, typhus, yellow fever), and subsequently amended to remove smallpox (due to its eradication efforts) in 1981. However, the global community has observed multiple outbreaks since 2014 – such as Ebola in West Africa (2014-2016), Middle East Respiratory Syndrome in the Republic of Korea (2015), Zika in the Americas (2015-2016) – and more recently, the COVID-19 pandemic. GHSa leaders developed nine GHSa Action Packages to operate as working groups that promote technical regional and global collaborations to address established objectives, on the topics of antimicrobial resistance, biosecurity and biosafety, immunisation, laboratory systems, legal preparedness, surveillance, sustainable financing for preparedness, workforce development, and zoonotic disease [6].

The GHSA's mandate was renewed until 2024, based on consensus from the 2015 Seoul Declaration and 2017 Kampala Declaration, and for a third time until 2028, based on the 2022 New Seoul Declaration [7]. The *GHSA 2024 Framework* serves to guide leaders in achieving the established goals (2019-2024), as they prioritise sustainable national and global collaborations to improve health system resilience (including health service delivery) to combat emerging health threats [8]. Embraced by the World Health Organization (WHO) and countries like Rwanda, health systems can surveillance, resource preparation and mobilisation, and prevention and response measures that strengthen capacity, reduce health expenditure and related financial burden, and permit continued essential health service delivery in parallel to the concurrent health priorities (e.g. non-communicable diseases) or emergencies (e.g. pandemic response, natural disasters).

As part of the 74th World Medical Association (WMA) General Assembly, the Rwanda Medical Association (RMA) Organising Committee coordinated the Global Health Security scientific session on 5 October 2023 in Kigali, Rwanda. This session aimed to raise awareness and elicit discussion on the current state of global health security across nations, existing knowledge and practice gaps that hinder reinforcing security efforts, and innovative solutions to help prepare countries to mitigate risk of emerging and reemerging One Health (human-animal-environmental nexus) risks [9]. The Opening Session provided an opportunity to learn about high-level efforts to improve global health security from esteemed leaders from the Rwanda Ministry of Health and WHO Office in Rwanda (Photo 1). Then, experts offered their

insight and perspectives related to enhancing global health security in three scientific sessions, entitled, *Leaving No One Behind: Together to Fulfill the Global Health Security Mandate* (Session 1), *Walking towards Sustainable Global Networking Era in Fighting Emerging Pandemics* (Session 2), and *Sustainable Global Health Security: The Role of Multinationals and Biotechnology Firms* (Session 3). Finally, the RMA Scientific Committee moderated a high-level discussion on the role of national medical associations in delivering on the *GHSA 2024 Framework* and concluded with a session summary and recommendations for the collective WMA call to action.

Enabulele (WMA President, currently WMA Past President) and Dr. David Ntirushwa (RMA President, currently RMA Immediate Past President) provided welcome remarks to health leaders representing more than 60 countries. They reminded the audience of the team consensus to select the *Global Health Security* theme for this scientific session, due to the urgent need to discuss the observed achievements, challenges, and lessons learned by countries during the COVID-19 response efforts. Dr. Ntirushwa noted that the diverse representation of WMA countries at this event offered a valuable opportunity for networking and sharing knowledge and



Photo 1. Leaders from the World Medical Association, Rwanda Medical Association, Rwanda Ministry of Health, and World Health Organization Office in Rwanda. Credit: WMA

## Opening Session

As part of the Opening Session, Dr. John Baptist Nkuranga (RMA President-Elect, currently RMA President) welcomed the WMA members to the WMA 74th General Assembly and introduced the invited speakers to offer their perspectives related to national and global health security (Photo 2). First, Dr. Osahon

experiences related to global health security, emphasising that collective responsibility lies beyond one nation.

Dr. Yvan Butera (State Minister, Ministry of Health of Rwanda) shared a novel perspective on how the redesign of health systems can help nations improve health security, including the *GHSA 2024 Framework* and targets of the Sustainable Development Goals (SDGs). He



Photo 2. Panellists of the Opening Session of the Scientific Program with WMA participants. Credit: WMA

commented that ensuring political commitment to invest in specialised health services can prioritise prevention and population health [10]. In a recent interview for the 2023 TIME100 Africa Summit, he emphasised a similar sentiment that “The wellbeing of people is central to the wellbeing of a country” [11].

Dr. Brian Chirombo (WHO Representative to Rwanda) provided the keynote presentation, defining health priorities and illustrating health system achievements over the past decade, including lessons learned during the COVID-19 pandemic. He commented on how Rwanda's health leaders have developed multi-sectoral partnerships within local communities as well as across the nation and region. He agreed that the *GHSA 2024 Framework* can guide national health systems to combat emerging health risks to population health. As he joined the WHO Office in Rwanda in 2021, after leaving his post in South Africa, he enthusiastically shared his commitment to his new leadership position: “As a secretariat to the Ministry of Health, it is our mandate to accompany the Government in its journey towards achieving a stronger health care system which can meet the growing demand for quality

health care and the changing health needs of the population” [12].

### Session 1: Leaving No One Behind: Together to Fulfil the Global Health Security Mandate

*“The true measure of a society’s progress is how it responds to health emergencies and ensures the health and safety of its citizens”*

- Dr. Tedros Adhnom Ghebreyesus, WHO Director-General

In the first session, panellists provided diverse perspectives on the value of incorporating stakeholders at the community, national, and regional levels into the global health dialogue, in order to fulfil the GHSA mandate (Photo 3). Dr. Kayitesi Kayitenkore (RMA Inaugural President) moderated the session, reiterating the importance of the global commitment to “leave no one behind” and the “endeavour to reach the furthest behind first” toward achieving the targets of the 2030 Agenda for Sustainable Development. He reminded participants that as the world continues to recover from the direct and indirect effects of the COVID-19 pandemic, coupled with climate change, it is important to identify the most

vulnerable populations (e.g. extreme poverty, marginalised) who are disproportionately affected.

Dr. Nathalie Umutoni (Director of Operation, Center for Impact, Innovation and Capacity Building for Health Information Systems and Nutrition, CIICHIN SEEK-IN) addressed the role of research in anticipating, preventing, and timely responding to global health threats. She commented that epidemiological research using geospatial data can offer real-time maps to decision-makers, helping communities and countries identify the location of harmful exposures or risks and assess the progress of targeted interventions in a proactive (vs reactive) manner. She highlighted the challenges of limited research capacity in some low- and middle-income countries, especially noting limited available funding, few specialised research training programs, weak regulatory systems, and disconnected links between research, policies, and action.

Ms. Bunmi Femi-Oyekan (Cluster Regulatory Lead, Sub-Saharan Africa of Pfizer’s International Regulatory Sciences and Policies) highlighted that the role of medical regulatory systems (e.g. national regulatory agencies) is key to maintaining well-functioning health systems with the oversight of laws, rules, and policies to ensure that pharmaceutical products (e.g. medicines, vaccines) are safe, effective, and fulfil quality specifications. She emphasised that universal access to quality pharmaceutical products, guaranteed through strong national and international regulatory mechanisms, can help mitigate the impact of infectious disease outbreaks on population health. With multiple challenges – such as fragmented regulatory systems, absent or ineffective frameworks where good reliance practices are poorly utilised, gaps in digital infrastructure, and

lengthy bureaucratic processes – the African Medicines Agency (<https://www.nepad.org/microsite/african-medicines-agency-ama>) is working to accelerate access through the adoption of regulatory best practices, harmonisation of regulatory standards on a continental level, alignment with international standards and practices, and capacity building across the initiatives.

Ms. Maggie Rarieya (Global Partnerships Director, African Medical and Research Foundation, AMREF Health Africa) recognised the key role of the prepared health workforce in supporting epidemic and pandemic preparedness and capabilities at the national and global levels. These frontline defenders represent the backbone of global health security, crucial in efforts to improve national capacity to predict, prevent, detect, and effectively respond to infectious diseases and other emerging threats. Specific tasks include surveillance and early detection, effective management of vaccination and immunisation programs, infection prevention and control, contact tracing quarantine measures, risk communication, and

public education, which serve as cornerstones to resilient and strong health systems that ensure better preparedness for future global health threats.

## Session 2: Walking towards Sustainable Global Networking Era in Fighting Emerging Pandemics

*“To raise new questions, new possibilities, to regard old problems from a new angle, requires creative imagination and marks real advance in science”*  
- Albert Einstein

In the second session, panellists shared their unique experiences and perspectives in medical, veterinary, and Earth sciences related to applying innovative approaches and expanding global networks to promptly combat emerging health risks affecting global communities (Photo 4). Dr. Eustache Penniecook (Founding Dean, Adventist University of Central Africa’s School of Medicine) moderated the session, requesting that WMA members reflect upon the cutting-edge technologies ranging from vaccine production to research sharing as well as tailor their analyses

to how leveraging expertise across disciplines can revolutionise scientific inquiry and discovery and ultimately enhance national and global health security.

Dr. Helena Chapman (Earth Action Program, U.S. National Aeronautics and Space Administration and Booz Allen Hamilton) described the One Health concept and *One Health Joint Plan of Action (2022-2026)*, which builds upon the *Resolution WHA74.7 (Strengthening WHO preparedness for and response to health emergencies)*, to help refine how nations can prevent, predict, detect, and respond to emerging and re-emerging health threats related to the human-animal-environment nexus [13,14]. She commented that the implementation of this action plan should be guided by cooperation and shared responsibility, multisectoral action and partnership, gender equality, and inclusiveness and equality. By highlighting two urgent health challenges – harnessing new technologies and building public trust – she illustrated concrete examples of how health professionals can incorporate Earth observation data into public health surveillance to develop operational tools to identify disease or hazard hotspots and mitigate risk of exposure (e.g. cholera or malaria disease forecasting, air quality monitoring) [15]. She encouraged WMA members to leverage their expertise and join communities of practice – like the Group on Earth Observations (GEO) Health Community of Practice (<https://www.geohealthcop.org/>) – where they can form multidisciplinary partnerships, enhance community engagement, and support capacity training on cross-cutting scientific topics.

Professor Musso Munyeme (School of Veterinary Medicine, University of Zambia) stressed that as the majority of novel emerging infectious



Photo 3. Panellists of Session 1 of the Scientific Program. Credit: WMA



diseases are of zoonotic origin with anthropological drivers (e.g. land use changes due to rapid urbanisation, agriculture intensification, international travel, trade), controlling future pandemics will require multisectoral and multidisciplinary collaborations to streamline a robust response. As he highlighted the recent formation of the Quadripartite organisations – WHO, Food and Agriculture Organization of the United Nations (FAO), United Nations Environment Programme (UNEP), World Organisation for Animal Health (WOAH) – to incorporate the One Health approach into global policies, noting the need to balance the diversity of stakeholder and sector representation in global health collaborations [16]. As Chair of the PREZODE Steering Committee, he described the aim to prevent zoonotic pandemic outbreaks by ensuring sustainability of solutions based on One Health principles through five pillars – understanding zoonotic risks and activities, co-designing solutions to reduce zoonotic risks, strengthening early warning systems to detect zoonotic risks, forming a prototype of a global information system for surveillance and early detection, and engaging stakeholders in One Health networks and policies (<https://prezode.org/>).

Professor Sir Ian Gilmore (President, British Medical Association) underscored the reality of how the COVID-19 pandemic left substantial direct impacts on mental health as well as the indirect harm (collateral damage). As pandemic-related social isolation, fear of infection, and financial insecurity contributed to increased levels of anxiety, depression, and stress in society, simultaneous disruption of substance use treatment services hindered coping mechanisms. With the 40% increase of the global burden of alcohol use disorders since 1990, he reported that there was a

US \$3.3 billion increase in alcohol sales (27% increase between 2019-2022) in Australia. He concluded that evidence-based policy interventions should limit the negative impact of excessive alcohol consumption within society, to prioritise mental health and well-being across global communities, especially among vulnerable and disadvantaged communities that experience health inequalities and increased risk of addiction.

help identify research gaps and facilitate the development of relevant policies and timely partnerships (Photo 5). Dr. Faustin Ntirenganya (Associate Professor of Surgery, University of Rwanda's College of Medicine and Health Sciences; Director, NIHR Research Hub on Global Surgery in Rwanda) moderated the session, demonstrating that goal-oriented and focused partnerships have improved the research capacity



Photo 4. Panellists of Session 2 of the Scientific Program. Credit: WMA

### Session 3: Sustainable Global Health Security: The Role of Multinationals and Biotechnology Firms

*"We have made important progress, but we still have a long path to travel to improve the way that multilateral organizations work together to support countries. We must listen to what countries tell us and act upon their guidance."*

- Dr. Tedros Adhanom Ghebreyesus, WHO Director-General

In the third session, panellists offered concrete examples of national and international health initiatives that

in surgical disciplines across Rwanda.

Ms. Fatima Abba (Pandemic Preparedness and Response Advocacy, Bill & Gates Foundation) commented on the Gates Foundation's financial commitment early on in the COVID-19 pandemic – US \$5 million by January 2020, US \$100 million by February 2020, and US \$250 million by April 2020 – for a total of more than US \$2 billion by January 2022. She underscored emerging threats (including chemical, biological or nuclear hazards), and how climate change, urbanisation, deforestation, and heightened travel and trade could exacerbate these risks

and contribute to the rapid spread of novel pathogens. She opened a call for collaboration on three key priority areas: 1) accelerating outbreak detection up to the minute; 2) developing new diagnostic, treatments, and vaccine technologies which can take years even decades; and 3) advancing equitable access.

Dr. Emile Rwamairabo (Professor of Urology, Vice President of Rwanda Agency for Accreditation and Quality Healthcare) presented how ensuring healthcare quality and safety during pandemics is challenging, often leading to compromises in established protocols. As the COVID-19 pandemic exemplified the critical need to maintain essential health services, he commented that Rwanda's response showcased a multifaceted approach, where leaders implemented robust testing and contact tracing alongside the continuous delivery of routine healthcare services. Notably, Rwanda health authorities and community leaders implemented *Operation Save the Neighbor*, a home-based care system designed to alleviate the burden of the hospital surge and prioritise the protection of health professionals in their frontline role through medical (including personal protection equipment) supplies, training, and mental health support. Looking forward, he commented that building resilient health systems requires the evaluation of systemic limitations, including infrastructure, workforce training, and international collaborations, as well as community engagement, technological integration, and adaptable healthcare policies for future pandemic preparedness.

Dr. Otmar Kloiber (WMA Secretary General) presented an overview of the consensus framework for the ethical collaborations between patients' organisations, healthcare professionals and the pharmaceutical

industry, which was adopted in 2014 [17]. He shared four guiding principles – prioritising patients, supporting ethical research and innovation, ensuring independence and ethical conduct, and promoting transparency and accountability – as a consensus between five organisations (WMA; International Federation of Pharmaceutical Manufacturers and Associations, IFPMA; International Association of Patients Associations, IAPO; International Council of Nurses, ICH; International Pharmaceutical Federation, FIP). After he shared the underlying WMA policies (WMA Declaration of Helsinki in 2013 and WMA Statement concerning the Relationships between Physicians and Commercial Enterprises in 2009), he encouraged national medical associations to adapt this consensus framework for their own policy and cooperation models [18,19].

### Recommendations

Led by the RMA Organising Committee, the scientific session offered an open platform to showcase high-quality presentations by global

experts that presented diverse perspectives of national and global health security. Each themed session illustrated how WMA members and other global physicians can streamline their efforts to identify emerging risks to public health, explore innovative approaches to mitigate harmful risks, and ultimately reinforce global health security across nations. The team captured key summary points after each themed session and identified four salient themes where the global medical community can take immediate measures to support global health security.

First, the medical community can lead efforts to strengthen global collaborations that advocate for increased engagement among nations, international organisations, and health institutions, to enhance the collective preparedness and response actions. One fundamental step should integrate knowledge sharing, joint research applications, and coordinated health system efforts to combat emerging pandemics. Second, the adoption of a comprehensive One Health approach and alignment of national plans with the *One Health*



Photo 5. Panellists of Session 3 of the Scientific Program. Credit: WMA

*Joint Plan of Action (2022-2026)*, will be essential to simultaneously address emerging health threats affecting the delicate balance of humans, animals, and the environment. By embracing cross-cutting scientific tools and technologies, including remote sensing and geospatial data applications, health professionals can contribute their expertise to the development of operational tools that can provide real-time risk maps of hotspots of harmful exposures or pathogens to improve health decision-making activities across communities.

Third, by ensuring sustainable pandemic preparedness, the global community can encourage the development and adoption of sustainable approaches that prepare leaders to manage endemic and

epidemic scenarios as well as recognise the potential collateral impacts within society. It will be crucial to promote long-term planning, resource allocation, and response mechanisms, while ensuring ethical collaborations and adherence to high-quality safety standards for patient care during health crises. Finally, investments in epidemic intelligence, preparedness, and response, coupled with public-private sector engagement (including biotechnology firms and philanthropic organisations), can expand professional networks between health and business sectors that leverage expertise and foster innovation across complex challenges affecting the health and safety of global communities.

## Conclusion

As the RMA Organising Committee successfully hosted the 74th WMA General Assembly, it demonstrated that African medical associations are critical players in contributing their scientific expertise and expanding regional networks and partnerships toward reshaping a responsive global health systems (Photo 6). Notably, the leadership team represented the African Francophone region, with knowledge of national and regional health priorities (including strengths and limitations), and engaged with key clinicians, scientists, researchers, and policy-makers to support evidence-based policy interventions. The agenda focused on addressing key elements that affect global health security, including the inclusion



Photo 6. Delegates of the 74th WMA General Assembly in Kigali, Rwanda. Credit: WMA

of all stakeholders to achieve the GHSA mandate, global networking to combat emerging health risks, and the participatory role of multinational organisations and biotechnology firms. By strengthening global collaborations, promoting a comprehensive One Health approach, ensuring sustainable pandemic preparedness, and investing in epidemic intelligence, preparedness, and response, our global community can be one step ahead of the next pandemic.

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## Research with Vulnerable People: A Targeted Interdisciplinary Discussion within the Scope of the WMA Declaration of Helsinki Revision

**Dear Colleagues,**

On behalf of the Organising Committee, we cordially invite all World Medical Association (WMA) members and relevant guests to attend the Research with Vulnerable People conference at the State Chamber of Physicians of Bavaria (Mühlbauerstrasse 16, 81677) in Munich, Germany, from 14-15 May 2024.

Co-organised by the German National Academy of Sciences (Leopoldina) and the German Medical Association (GMA), in collaboration with the WMA and the American Medical Association (AMA), and with kind support from the State Chamber of Physicians of Bavaria, this targeted interdisciplinary discussion will gather leading experts on the ethics of research involving human subjects to explore and analyse the concept of vulnerability in different research settings.

### Comprehensive Program

The meeting, which will be held in-person and in English, aims to contribute valuable input from multiple experts in medical ethics to the ongoing revision of the WMA Declaration of Helsinki (<https://www.wma.net/what-we-do/medical-ethics/declaration-of-helsinki/>). Specifically, the discussion will focus on the comprehensive review of vulnerable groups, including children, the elderly, pregnant people, and people with disabilities, in this landmark document.

For this scientific event, the following speakers will share their insight for collective analysis and discussion:

**Samia Hurst**, Director of the Institute for Ethics, History, and the Humanities, University of Geneva, Switzerland

**Pierre Mermet-Bouvier**, Senior Manager of eCOA, ICON, France

**Rieke van der Graaf**, Department of Global Public Health & Bioethics, UMC Utrecht, Netherlands

**Florencia Luna**, Principal Researcher at the Facultad Latinoamericana de Ciencias Sociales (FLACSO) and Consejo Nacional de Investigaciones Científicas y Técnicas (CONICET), Argentina

**Hilary Marston**, Chief Medical Officer of the Food and Drug Administration (FDA), United States

**Olaf Witt**, University Hospital Heidelberg, Germany

**Adam C. Berger**, Director of the Division of Clinical and Healthcare Research Policy, National Institutes of Health (NIH), United States

**Alex John London**, Director of the Center for Ethics and Policy, Carnegie Mellon University, United States

**Jack Resneck**, MD, Chair of WMA Declaration of Helsinki Workgroup, AMA immediate past president

**Urban Wiesing**, MD, PhD, Chair of Leopoldina Workgroup on vulnerable groups

**Mohammed Ghaly**, Professor of Islam and Biomedical Ethics at the Research Center for Islamic Legislation & Ethics (CILE) at the College of Islamic Studies, Qatar

### Registration Information

We encourage all WMA members and relevant guests to register for this in-person event (in English) by using the following link (<https://www.leopoldina.org/en/form/registration-conference-research-with-vulnerable-people/>). Registration is free of charge and includes two lunches, two dinners, and a tour of Munich.

Please mark your calendar for 14-15 March 2024, and join us in Munich for this important discussion on the ethics of research involving vulnerable populations.



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