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Global Initiative on AI for Health (GI-AI4H): strategic priorities advancing governance across the United Nations

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The Global Initiative on Artificial Intelligence for Health (GI-AI4H), established by the World Health Organization, serves to harmonize governance standards for artificial intelligence (AI). The GI-AI4H spearheads novel on-the-ground efforts, especially in low- and middle-income countries, to advance ethical, regulatory, implementation, and operational dimensions of global governance for health AI. The GI-AI4H's efforts across the United Nations drives safe, ethical, equitable, and sustainable health AI use for the global community.

Towards a sustainable global governance framework for artificial intelligence for health

Artificial intelligence (AI) has potential to improve the health of communities around the world. The World Health Organization (WHO), guided by the Global Strategy on Digital Health 2020–2025¹ and United Nation (UN) Sustainable Development Goals, endeavors to support 193 member states in the digital transformation of their health systems. In 2018, the WHO and International Telecommunications Union (ITU) laid foundation for collaborative work on AI for health through the WHO-ITU focus group on “Artificial Intelligence for Health” (GI-AI4H), which aimed to develop a standardized framework for assessing AI-based approaches in health, including applications for diagnosis, triage, and treatment decision-making². In 2023, three UN Specialized Agencies—the WHO, ITU, and World Intellectual Property Organization—launched the Global Initiative on Artificial Intelligence for Health (GI-AI4H) “to develop technical standards and policy guidance, facilitate knowledge and data sharing, and support evidence-based decisions on the introduction of AI solutions for health.”^{3–5} The GI-AI4H was established at the behest of a global need for harmonized governance standards for health AI. As innovation continues to evolve, GI-AI4H

efforts will be ongoing and necessary to promote alignment between countries and authorities of international health.

This paper highlights the four strategic priorities of GI-AI4H's global governance framework for health AI and the innovative on-the-ground efforts that drive countries towards safe, ethical, equitable, and sustainable AI use. The GI-AI4H is positioned to enhance and emphasize the engagement of low- and middle-income countries (LMICs) in health AI governance. The lack of LMIC representation hinders the understanding of unique challenges these countries face⁶, which are vital to the development of durable health AI governance practices. Enacting the GI-AI4H's four strategic priorities focused on ethical, regulatory, implementation, and operational dimensions of health AI governance reveals the essential ways in which countries can be supported in leveraging AI to strengthen their health systems and serve community needs. Since its inception, the GI-AI4H yielded substantial progress in the mobilization of resources and expertise to advance global governance standards for health AI.

Strategic Priority 1: Ethics

The WHO created several formative guidance documents that expound on the ethical dimension of global governance for health AI use across member

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states. In 2021, the WHO report “Ethics & Governance of Artificial Intelligence for Health” was the first harmonized set of international ethics guidance on how key stakeholders (e.g., AI designers and developers, ministries of health, and health care institutions and providers) can use health AI “in accordance with ethical norms and human rights standards”⁷. Recommendations are consensus-driven and sought to guard against health AI risks, promote ethical usage, and ensure benefits are equitable and grounded in respect for human rights^{7,8}. Recently in 2024, the WHO issued an updated set of ethics guidance for generative AI and the use of large multi-modal models (LMM) for health⁹. This guidance specifically aims to assist member states in mapping the benefits and challenges associated with use of LMMs for health and in developing policies and practices for appropriate development, provision, and use⁹. Other technical documents also provide measures to mitigate arising ethical concerns with health AI, such as ageism¹⁰ and privacy issues (e.g., COVID-19 proximity tracking)¹¹.

The GI-AI4H takes action to create practical user-facing tools that facilitate the uptake of ethical governance across countries, especially through connecting with health AI developers and implementers. One such tool is the “Ethics and Governance of Artificial Intelligence for Health” training course that distills key entry-level ethical knowledge about health AI governance to stakeholders, which informs and enables LMICs and countries with resource constraints to consider evolving ethical guidelines. This training course was accessed by stakeholders of over 25,000 people across 178 countries¹², thus contributing to the global dissemination and reinforcement of ethical standards.

Despite increased global awareness and support for the ethical use of health AI, attaining international alignment on key ethical priorities remains an uphill battle. GI-AI4H contends with value pluralism across member states, where diversity in community beliefs and needs often affects how ethical governance manifests in practice. Through GI-AI4H’s strategic priority on ethics, member states must grapple with which values to prioritize during the development and use of health AI and assess their subsequent health impact to communities. This enables countries to discern what constitutes ethical health AI in their context and develop nuanced ethics governance accordingly. GI-AI4H also recognizes that more work is needed to garner shared perspectives across underrepresented populations (e.g., children¹³, older adults, racial/ethnic minorities, pregnant people, and those with low digital literacy, disabilities, or rare diseases) to build trust, mitigate biases, and further harmonize ethics guidance.

Strategic Priority 2: Regulation

Global regulation of health AI across member states remains fragmented. While there are laws and policies that touch on issues of AI, such as privacy, data protection, and bias, they lack formal cohesion^{14,15}. Efforts to develop regulations for health AI innovations on an international level are underway. For example, in 2019, the WHO-ITU’s FG-AI4H created the Working Group on Regulatory Considerations (WG-RC) to enhance dialogue between health AI stakeholders (e.g., regulatory authorities, policymakers) and identify key determinants that affect international regulatory governance². The learnings from this group formed the 2023 “Regulatory Considerations on Artificial Intelligence for Health” guidance, which informed the direction of GI-AI4H’s regulatory strategy¹⁶. Furthermore, in 2022, the International Medical Device Regulators Forum (IMDRF) spearheaded guidance for Good Machine Learning Practice, which serves to promote the safe, effective, and quality development of artificial intelligence and machine learning (AI/ML)-enabled software as medical devices (SaMDs)¹⁷.

Critical to GI-AI4H’s regulatory strategy is to strengthen cooperation between international regulatory bodies and harmonize regulatory standards for health AI. Developing robust guidance requires coordinating regulatory experts and engaging diverse stakeholders across member states. In 2024, the 77th World Health Assembly held a strategic roundtable with stakeholders from “academia, ministries of health and information and communications technology, the regulatory and private sectors” to identify global priorities for the WHO, GI-AI4H, and partners so that equity,

inclusion, human rights, and privacy is at the forefront of ethical, safe, and equitable use of AI in health¹⁸. Convenings such as these foster communication across international regulatory bodies and advance policies for the global regulation of health AI, a key initiative to unify the voices of member states.

Beyond GI-AI4H’s goal to harmonize global regulatory standards for health AI, the initiative is also concerned with how to best encourage global compliance. Global regulation of health AI could yield incredible public benefits, such as improved protections to both high income country (HIC) and LMIC patients’ health, privacy, safety, data, and rights. However, compliance with proposed regulatory tasks that are essential to safety and reliability, such as pre-specifying and documenting the health AI’s development process (e.g., dataset origination and selection, model parameters, deviations from original plans) and its intended uses, is resource intensive and difficult to establish in lower resourced settings. Thus, GI-AI4H’s regulatory strategy also strives to develop efficient compliance programs across member states to promote the adoption of evolving health AI regulatory policies.

Strategic Priority 3: Implementation

GI-AI4H also has a strategic priority to enhance responsible and culturally adapted deployments of health AI into health systems across member states¹⁹⁻²¹. While a miniscule fraction of health AI models developed ever reach the implementation stage, this gap is widened in LMICs with varying healthcare norms, infrastructure, and resources. There also exists no official pipeline or incentives that support collaboration or knowledge sharing between member states. The GI-AI4H aims to bridge these gaps by carrying out regional consultations and assisting member states at the local level, from tailoring health AI to “local contexts and healthcare settings” to “building capacity to localize AI models,” in order to foster sustainable deployments. Focused local efforts across member states are key to transforming the implementation dimension of global governance for health AI.

However, a lack of implementation frameworks that consider practical disparities in LMICs hinder the equitable reach of health AI and its benefits. While there are a number of cost-effective AI-driven cervical cancer screening tools that can serve as priority interventions in LMICs with high human papilloma virus (HPV) rates (e.g., sub-Saharan African countries), barriers to adoption persist^{22,23}. Pre-implementation considerations such as the member states’ technical infrastructure, access to healthcare services, and digital literacy levels, are integral to health AI implementation plans. GI-AI4H further enhances understanding about these localized implementation facilitators and barriers by engaging with health AI end users (e.g., healthcare professionals, IT teams) in respective member states. GI-AI4H recently established a full workstream with the WHO’s Regional Office for South-East Asia and stakeholders from India and China to build capacity for AI that supports and advances evidence-based traditional medicine^{12,24}. Targeted efforts such as these facilitate the implementation of health AI that respects value pluralism and the “cultural and biodiversity heritage and rights” specific to member states¹².

The GI-AI4H recognizes the path towards sustainable health AI implementation requires mapping tools to member states’ needs. GI-AI4H prioritizes the creation of resources that serve to enhance global knowledge sharing of effective AI implementation use cases. A global knowledge base of health AI tools can help member states discern applicability to their health systems and minimize potential population harms or biases. The WHO and GI-AI4H’s investments in AI workforce development and promoting community engagement and collaboration also prepare member states to deploy forthcoming health AI in an equitable, safe, and responsible manner for their communities.

Strategic Priority 4: Operations

GI-AI4H efforts also serve to strengthen member state infrastructure so that implemented health AI is sustainable. While the global focus is on the development and deployment of health AI, the effectiveness and quality maintenance of these tools is also critical to safeguard communities over

time. Understanding the operational needs required by a health system to sustain and scale health AI innovations ensures their prolonged positive impact. Through building up capacity in health systems and competencies among users, especially in LMICs, the GI-AI4H enables member states to appraise and monitor integrated health AI tools to ensure they remain meaningful to communities and improve global health outcomes^{18,20,21}.

The GI-AI4H's development of robust ethical, regulatory, and implementation frameworks informs the operational dimension of global governance for health AI. Sustainable operations in LMICs requires aligning core community values with health system infrastructure capabilities, compliance requirements, and standards of care. GI-AI4H encourages the strategic pooling of resources and cooperative agreements across member states to overcome systemic constraints and fortify operational support for implemented health AI²¹. For example, establishing a commitment to contribute relevant data to a global repository in different health facets would allow for teams across member states to independently and continuously develop, monitor, and audit health AI tools across respective domains²⁵. Access to the latest representative data enables member states to evaluate ongoing robustness and applicability of health AI models to their intended settings. The GI-AI4H will direct investments and community support to bolster operational resources (e.g., human, financial, technical) that promote sustainability of health AI tools.

Finally, the GI-AI4H will need to establish accountability plans that hold stakeholders across member states responsible for fostering the safe and equitable use of health AI. Only then will enacted global governance standards be durable and truly serve the interests of the global community. There is a need to balance innovation and setting guardrails, such as the safeguarding of data privacy (e.g., assigning access permission levels) as collaborative sharing of key population data across member states is increasingly encouraged. On a larger scale, the GI-AI4H also prepares the global community to develop environmental guardrails that factor in the environmental impact of health AI (i.e., whether the negative climate effects of AI are localized in LMICs or marginalized communities) before deployment at scale²⁶. This work further ensures health AI operations across member states contributes to a sustainable ecosystem that yields positive and equitable net benefits to global health.

Conclusion

GI-AI4H's four strategic priorities focused on the ethical, regulatory, implementation, and operational dimensions of health AI governance are foundational in the advancement of equitable, safe, and effective AI for the global community. GI-AI4H builds on a global momentum to establish health AI governance guidance that are durable and balanced in their approach, unifying and strengthening diverse capabilities across member states. In its first year, the GI-AI4H has achieved substantial progress in fostering engagement and collaboration with member states, especially through on-the-ground efforts in LMICs, to drive sustainable practices that ensure health AI benefits all.

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Competing interests

The authors declare no competing interests.

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