LMICs and Global Governance of AI in Health

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Artificial intelligence (AI) is rapidly transforming global health, offering the potential to improve diagnostics, optimize healthcare delivery, and enhance disease surveillance. Low- and middle-income countries (LMICs) face significant healthcare challenges, including limited access to services, workforce shortages, and disparities in health outcomes. AI has the potential to address these gaps by creating digital health tools that complete tasks such as augmenting clinical decision-making, automating administration, and facilitating patient education and monitoring. However, AI also presents substantial risks. Bias in algorithms, misuse of sensitive health data, inequitable access, and insufficient regulatory oversight can exacerbate existing health disparities if not properly managed. This paper examines whether current global governance mechanisms are adequate to ensure that AI contributes to positive health outcomes in LMICs while mitigating associated risks.

The analysis draws on case studies from Kenya, Rwanda, India, Brazil, and Bangladesh, highlighting examples of national governance, pilot programs, and innovation in AI-enabled health systems. By evaluating these experiences, the paper identifies lessons for LMICs and provides recommendations for strengthening both national and global governance frameworks. The central research question has two parts: *To what extent do existing global AI governance mechanisms support improved health outcomes in low- and middle-income countries, and what additional policy measures may be recommended to ensure that AI technologies are implemented safely, equitably, and effectively in these settings?*

Global Governance of AI in Health

AI is already transforming health systems worldwide, from improving diagnostics to advancing the surveillance of deadly diseases. However, it also brings challenges such as bias,

data misuse, and inequitable access. How can states, regions, and global actors create policy that safeguards populations from these risks and ensures that AI contributes to improved health outcomes? The WHO report on *Ethics and Governance of Artificial Intelligence* for Health outlines recommendations for the governance of AI, such as data protection laws, transparency in regulatory procedures, development of public-private partnerships that develop AI technologies, ensuring use of AI to facilitate access to healthcare is inclusive and does not perpetuate existing social inequities, and engaging with nongovernmental and community organizations to attain diverse insights.[1] This report was created by experts in public health and several other fields to serve as a guiding document to outline both the opportunities and challenges of AI in health, in the hope that these principles will be used by policymakers and developers to adopt responsible and ethical approaches to governing AI use. However, the WHO's *guidance* is just that – it is guidance that is not legally-binding, and thus countries who continue to develop AI for use in healthcare settings are not obligated to follow such recommendations from WHO or other nongovernmental or international organizations. This is one of the largest challenges in the realm of global governance.

Alongside the gap in legally-binding measures to ensure safe and responsible AI development, is the issue of LMICs – whom are often left out of the equation when it comes to consultation on AI governance. The *EU AI Act* is the first legally-binding inter-state regulation on artificial intelligence, developed with the aim of establishing comprehensive AI law and protections.[2] While it may be beneficial for the global community to have existing regulations to

[1] World Health Organization, *Ethics and Governance of Artificial Intelligence for Health: WHO Guidance*. Geneva: World Health Organization, 2021. Pg. 81-113. https://iris.who.int/server/api/core/bitstreams/f780d926-4ae3-42ce-a6d6-e898a5562621/content

[2] European Union, *Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 June 2024 laying down harmonised rules on artificial intelligence and amending Regulations (EC) No 300/2008, (EU) No 167/2013, (EU) No 168/2013, (EU) 2018/858, (EU) 2018/1139 and (EU) 2019/2144 and Directives 2014/90/EU,*

point to for regulation development purposes, the Act's obligations in terms of documentation, transparency, and other requirements all impose costs and require significant resources and personnel. This in turn may cause LMICs to struggle against a "regulatory gap" and be left out of the European-dominated standard compliance market, further disadvantaging LMICs who cannot absorb the regulatory costs associated with large tech firms. According to HealthAI: The Global Agency Responsible for AI in Health, "While diverse stakeholder engagement is often promoted in global institutions, a closer examination reveals significant disparities in representativeness and challenges to meaningful participation in the formulation of AI governance policies. The majority of stakeholders engaged come from predominantly high-income countries."[3] LMICs will continue to face the challenge of developing AI governance frameworks that are most relevant and suitable for their local needs, while also navigating their alignment with emerging global standards.

A central governance challenge is the fragmented and often duplicative nature of international AI policymaking. Multiple institutions, including the World Health Organization (WHO), the Organization of Economic Co-operation and Development (OECD), the World Bank, the United Nations Educational, Scientific and Cultural Organization (UNESCO), and regional bodies such as the European Union and the African Union, are simultaneously developing principles and frameworks that are frameworks for AI use.[4] Although these

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(EU) 2016/797 and (EU) 2020/1828 (Artificial Intelligence Act), Official Journal of the European Union L 202, 2024. http://data.europa.eu/eli/reg/2024/1689/oj

[3] HealthAI, *Mapping AI Governance in Health: From Global Regulatory Alignments to LMICs' Policy Developments.* Geneva, Health AI, 2024. Pg. 9. https://clias.iecs.org.ar/wp-content/uploads/2024/10/HealthAI_GlobalLandscapeReport_Oct.2024.pdf

[4] OECD, *Recommendation of the Council on Artificial Intelligence.* Paris, 2019. https://legalinstruments.oecd.org/en/instruments/oecd-legal-0449; UNESCO *Recommendation on the Ethics of Artificial Intelligence.* Paris, 2021. https://www.unesco.org/en/legal-affairs/recommendation-ethics-artificial-intelligence

frameworks share commons themes such as transparency and accountability, they lack a unified implementation mechanism or coordinating authority. This institutional proliferation of AI governance results in inconsistent guidance, overlapping mandates, and a diffusion of responsibility amongst state actors. For some LMICs where regulatory and financial capacities are already strained, these parallel governance regimes create confusion surrounding which standards to prioritize.[5] Policymaking fragmentation also means that LMICs must engage across many forums to influence global rules, which is a difficult task due to limited representation in the negotiating processes. Without more coherent global coordination, existing governance structures risk exacerbating inequalities by producing AI norms that are technically or financially difficult for many LMICs to adopt.

Another dimension of global AI governance related to where agenda-setting power is concentrated. As Krasodomski and colleagues highlight, current governance mechanisms are fragmented and dominated by powerful states and private tech actors, leaving many LMICs marginalized in the debate.[6] Standardization processes such as setting technical safety benchmarks tend to be driven by institutions in which LMICs have limited influence. These processes shape how AI systems are developed and deployed globally, meaning that LMICs must often adopt regulatory requirements they had little part in creating. This dynamic reinforces a governance structure where the priorities of powerful actors, such as protecting intellectual property and maintaining export control, are prioritized over concerns that are more critical for LMICs, such as affordability and contextual adaptability.

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[5] World Health Organization, *Ethics and Governance of Artificial Intelligence for Health*.
[6] Alex Krasodomski et al., *Artificial Intelligence and the Challenge for Global Governance.* Chatham House, 2024. https://www.chathamhouse.org/2024/06/artificial-intelligence-and-challenge-global-governance?utm_source=chatgpt.com

As Krasodomski et al. argue, addressing this imbalance requires not only more inclusive global institutions, but also a rethinking of cooperation models to make them genuinely representative for all states, not just those in the Global North.[7] This involves creating and strengthening multilateral forums where low- and middle-income countries can meaningfully shape agendas, rather than merely respond to them. Greater engagement with and through regional bodies such as the African Union can also amplify local priorities and provide platforms for coordinated negotiation. In addition, promoting South-South collaboration can help redistribute influence by enabling countries with similar developmental and health-system challenges to share knowledge, co-develop standards, and build collective bargaining power. Together, these efforts could support the development of international AI governance norms that better reflect global diversity and are more adaptable to the needs, constraints, and aspirations of varied health systems.

Governance of AI in Kenya

Despite some of these challenges, specific LMICs are leading the way for innovation of AI technologies in health. In Kenya, the use of digital health tools has proven to be successful in complimenting prenatal and postnatal care. In a cluster randomized control trial, researchers evaluated the impact of implementing a digital health platform called PROMPTS (Promoting Mothers in Pregnancy and Postpartum Through SMS) in 8 different counties and 40 health facilities.[8] These messages, composed of information, appointment reminders, and an AI-enabled

[7] Krasodomski et al., *Artificial Intelligence and the Challenge for Global Governance.*
[8] Vatsa R., Chang W., Akinyi S., Little S., Gakii C., Mungai J., et al. "Impact Evaluation of a Digital Health Platform Empowering Kenyan Women Across the Pregnancy-Postpartum Care Continuum: A Cluster Randomized Control Trial. PLOS Med 22(2), 2025. https://doi.org/10.1371/journal.pmed.1004527

two-way helpdesk that triages and responds to patients' questions, provided over 750,000 women across Kenya with assisted medical care.

According to Vatsa et. al, "With the recent rise of artificial intelligence (AI) as well, such tools can be layered with AI to efficiently triage problems and deliver targeted education to pregnant and postpartum women. Thus, if integrated effectively, digital health tools have the potential to reduce strain on the formal health care system and enhance access to critical information."[9] All participants in this study completed a consent process to inform them of data collection, and the results found that the use of PROMPTS led to a range of improvements across patients' pregnancy-postpartum medical care experience.

The innovation of digital health tools such as PROMPTS has the potential to alleviate Kenya's reliance on Global North countries and international organizations. According to the policy framework document, "Governance of Artificial Intelligence for Global Health in Africa," while there is low public awareness and political attention on AI in some Eastern and Central African states, certain countries such as Kenya have a growing community of AI researchers and reporting in the media.[10] While there is high demand for AI policy and regulation development in Africa overall, there are existing variances in the capacity for these developments that may exacerbate gaps in health inequity on the way to achieving sustainable development goals.

In March 2024, the United Nations General Assembly passed its first-ever resolution on AI, co-sponsored by Kenya, titled, "Seizing the Opportunities of Safe, Secure, and Trustworthy Artificial Intelligence Systems for Sustainable Development."[11] Additionally, Kenya's *Artificial*

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[9] Vatsa et. al, pp. 4.
[10] Science for Africa Foundation. *Governance of Artificial Intelligence for Global Health in Africa: A Review of Policy and Regulatory Frameworks,* v.3, 2025. https://scienceforafrica.foundation/sites/default/files/2025-04/Governance%20of%20AI%20for%20Global%20Health%20in%20Africa%20v3.pdf
[11] United Nations General Assembly. "Seizing the Opportunities of Safe, Secure, and Trustworthy Artificial Intelligence Systems for Sustainable Development," (A/RES/78/266),

Intelligence Strategy 2025-2030, launched in Nairobi in March 2025, "envisions the country as Africa's leading artificial intelligence hub for model innovation, driving sustainable development, economic growth, and social inclusion while positioning itself and an AI research and application leader on the continent."[12] This statement exemplifies a clear strategy for Kenya to pursue an ambitious development of AI tools through the coordination of a comprehensive national policy framework. By focusing on integrating AI into critical sectors such as healthcare, Kenya and other LMICs have the opportunity achieve greater socioeconomic stability and quality of life for their populations. Kenya's 2025-2030 strategy acknowledges the need for comprehensive regulations to address potential harms and ethical implications of AI, although further development surrounding AI practices and standardisation will be necessary to ensure the potential risks associated with AI use in healthcare are mitigated.[13]

Building on initiatives like PROMPTS, Kenya's AI strategy demonstrates how national governance can guide responsible innovation in LMICs. By piloting digital health tools, the Ministry of Health gains practical insight into the regulatory, infrastructural, and workforce requirements necessary to implement AI at scale, creating a feedback loop between research experimentation and policy development. This approach also enables Kenya to selectively align with international norms from organizations such as the WHO, while prioritizing the local health needs of the population. Participation in global forums, including the co-sponsorship of the UN resolution on AI for sustainable development, and engagement with regional bodies like the African Union allow Kenya to influence international standards and collaboration.

[12] Republic of Kenya. *Kenya Artificial Intelligence Strategy 2025-2030,* March 2025. https://kenya.ai/kenya-launches-national-ai-strategy-2025-2026-download-it-here/
[13] *Kenya Artificial Intelligence Strategy 2025-2030,* pp. 44.

Governance of AI in Rwanda

Following Kenya's example, Rwanda has also taken notable steps to integrate AI into its health system and support community health workers (CHWs). For example, PATH and its partners launched a trial in 2025 to assess how a generative AI knowledge assistant can help CHWs more effectively triage and treat common health issues, with the aim of reducing unnecessary referrals to health facilities.[14] Launched in collaboration with the Rwanda Biomedical Centre and the University of Global Health Equity, the trial evaluated the use of a large language model (LLM) to assist the CHWs in managing patient care. CHWs record patient consultations via smartphones, and the LLM generated suggestions for differential diagnosis, referral decisions, and management plans. Crucially, CHWs did not act on the LLM's recommendations during the study, but the outputs were compared against a panel of clinical experts to assess accuracy, safety, and appropriateness. [15] This type of research allows for policymakers and implementers to understand how AI can complement human decision-making in low-resource settings, without introducing additional risk factors to patients.

The PATH study exemplifies how LMICs can adopt evidence-based approached to AI governance. By piloting digital health tools in real-world settings and rigorously evaluating their performance, Rwanda is generating practical knowledge that informs national policy on AI integration as well as training for CHWs. It also positions Rwanda to contribute meaningfully to regional and global discussions on AI standards, demonstrating that LMICs can produce

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[14] Menon, V. et al., "Assessing the Potential Utility of Large Language Models for Assisting Community Health Workers: A Prospective, Observational Trial in Rwanda." PATH, March 2025. https://media.path.org/documents/Rwanda_Protocol_final.pdf?_gl=1*3thqib*_gcl_au*MTQzMzU3NTk3NC4xNzY0MDQ2OTc4*_ga*NDU4NzE1OTgwLjE3NjQwNDY5Nzg.*_ga_YBSE7ZKDQM*czE3NjQwNDY5NzckbzEkZzEkdDE3NjQwNDcwMDUkajMyJGwwJGgw

[15] Menon, V. et al., pp. 10.

governance insights and ethical safeguards even in resource-limited contexts. Rwanda and Kenya's contributions to regional bodies, such as the African Union, can also work to harmonize policies, share technical expertise, and expand collective bargaining power in global AI governance. Such an approach bridges national experimentation and global governance, which shows that careful trial design can mitigate the risks of AI use while fostering innovation to produce beneficial outcomes.

Governance of AI in India

India has emerged as a leader in AI-driven healthcare innovation among LMICs in Asia. With a population exceeding 1.4 billion, India faces challenges of healthcare access, workforce shortages, and regional inequities. The Indian government, through the National Institution for Transforming India (NITI Aayog), launched the *National Strategy for Artificial Intelligence in India* (AI for All, 2018), which includes a dedicated focus on AI for healthcare.[16] AI applications in India span diagnostic imaging, telemedicine, epidemic surveillance, and personalized patient care. For example, AI-enabled radiology platforms are used to detect tuberculosis and other lung diseases in rural regions where specialist radiologists are scarce. Machine learning algorithms have also been integrated into telemedicine systems to triage patient queries, prioritize high-risk cases, and assist frontline health workers. These tools have increased efficiency in government and private hospitals, reducing delays in diagnosis and treatment.[17]

India's approach emphasizes the integration of AI into public health systems while maintaining regulatory oversight. The *National Digital Health Mission* (NDHM) provides a

[16] NITI Aayog. *National Strategy for Artificial Intelligence #AIFORALL,* June 2018. https://www.niti.gov.in/sites/default/files/2023-03/National-Strategy-for-Artificial-Intelligence.pdf
[17] NITI Aayog, *National Strategy for Artificial Intelligence #AIFORALL,* pp. 19-20.

framework for health data collection and sharing, supporting AI applications while establishing privacy and consent standards. By piloting AI-driven solutions in rural and urban healthcare facilities, India generates practical evidence for both policy and implementation, enabling iterative refinement of AI governance frameworks.[18] India's initiatives highlight key lessons for LMICs outside Africa: the importance of leveraging digital infrastructure at scale, aligning AI innovation with national health priorities, and building regulatory capacity to mitigate risks. India also participates in international AI discussions, contributing insights from large-scale deployments in diverse socio-economic contexts, which can inform global governance frameworks that are more inclusive of non-African LMIC perspectives.

Governance of AI in Brazil

Brazil represents an important LMIC example from Latin America where AI is increasingly integrated into public health systems. As home to one of the world's largest publicly funded healthcare systems, the Sistema Único de Saúde (SUS), Brazil faces chronic resource constraints, regional inequalities, and high burdens of infectious and non-communicable diseases. However, artificial intelligence is transforming the healthcare sector in Brazil by optimizing both patient care and the management of medical resources. Initiatives such as *Conecte SUS* support the centralization and integration of health data in real time, facilitating access to medical services, improving diagnostics and treatments, and strengthening administrative efficiency.[19]

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[18] Government of India, Ministry of Health & Family Welfare. *Ayushman Bharat Digital Mission (ABDM) Annual Report 2023.* New Delhi, 2023. https://abdm.gov.in:8081/uploads/NHA_Annual_Report_2022_2023_4f3bc6e2a5.pdf

[19] Hortega Medeiros, A., et. al, "The Digital Revolution: Impacts of Digital Transformation and AI on Health, Education, and the Economy in Brazil," International Journal of Innovation (Vol. 12, Issue S4, 2024. https://go-gale-

To address some of the challenges, the Brazilian government introduced the *Brazilian Artificial Intelligence Strategy* (EBIA) in 2021, which outlines sectoral priorities for AI development including health, public administration, and education.[20] The strategy identifies priority areas for investment and highlights the importance of building the technical and institutional capacity needed for responsible implementation. At its core, the EBIA emphasizes ethical use, transparency, data protection, and inclusive innovation. These are principles that echo those promoted by global organizations while still being carefully adapted to Brazil's specific social, economic, and regulatory realities. By anchoring global norms in a national context, the strategy aims to ensure that AI technologies support equitable development and strengthen public services in ways that genuinely benefit the Brazilian population.

AI-enabled diagnostic technologies are also expanding rapidly. These tools have increased the accuracy of medical examinations and reduced analysis time, enabling earlier diagnoses that can lower hospital costs associated with prolonged treatments by up to thirty percent.[21] One startup accelerated by the Eretz.bio incubator at Albert Einstein Hospital has illustrated the potential of these innovations by using AI to monitor clinical data in real time and predict complications before they become critical. Telemedicine, strengthened by AI, has also played a central role in advancing digital health, particularly in remote and rural areas of Brazil. AI is increasingly allowing remote consultations and chronic disease monitoring to be conducted

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com.proxy.library.carleton.ca/ps/retrieve.do?tabID=T002&resultListType=RESULT_LIST&searchResultsType=SingleTab&retrievalId=0b654a97-e43c-44ce-9dd9-3bffc08a5ee1&hitCount=1&searchType=AdvancedSearchForm&currentPosition=1&docId=GALE%7CA831083467&docType=Editorial&sort=RELEVANCE&contentSegment=ZONE-MOD1&prodId=AONE&pageNum=1&contentSet=GALE%7CA831083467&searchId=R1&userGroupName=ocul_carleton&inPS=true

[20] Government of Brazil, *Brazilian Artificial Intelligence Strategy - EBIA,* 2021. https://www.gov.br/mcti/pt-br/acompanhe-o-mcti/transformacaodigital/inteligencia-artificial

[21] Hortega Medieros A., et. al, ""The Digital Revolution: Impacts of Digital Transformation and AI on Health, Education, and the Economy in Brazil," pp. 4.

outside of hospitals, which is expanding access to specialized care across Brazil and globally. This expansion enables more people to receive high-quality medical attention without traveling long distances.

At the national governance level, Brazil has been working to align AI innovation with robust data protection standards. The *Lei Geral de Proteção de Dados* (General Law on the Protection of Personal Data, LGPD), enacted in 2018, introduced one of the most comprehensive data privacy frameworks outside Europe and provides regulatory support for the safe use of health data in AI systems.[22] The National Data Protection Authority (ANPD) oversees compliance and develops guidelines for high-risk sectors such as digital health. Although Brazil's regulatory capacity remains under development, these institutions play an important role in managing risks associated with algorithmic bias, data misuse, and transparency. Moreover, Brazil participates actively in regional digital governance forums through the Organization of American States (OAS) and collaborates on research with the Pan American Health Organization (PAHO), giving Latin American LMICs more visibility in global discussions about AI governance.

Brazil's experience demonstrates that LMICs outside Africa can also lead meaningful AI innovation while navigating governance challenges. With strong federal institutions, expanding digital infrastructure, and a large public health system, Brazil illustrates how national AI strategies can strengthen surveillance capacity, improve clinical decision-making, and enhance health system efficiency when embedded within a clear regulatory framework. At the same time, Brazil's case reflects broader structural limitations common to many LMICs: uneven regional

[22] Brazil. *Law No. 13,709 of August 14, 2018 (General Data Protection Law).* Presidency of the Republic, Civil House. http://www.planalto.gov.br/ccivil_03/_ato2015-2018/2018/lei/L13709compilado.htm

capacity, constrained funding for digital transformation, and the need to balance global governance norms with local realities. As Brazil continues to implement AI tools, its contributions to international forums can help diversify global governance debates, making them more responsive to LMIC priorities in South America.

Governance of AI in Bangladesh

Bangladesh offers a compelling example of how densely populated LMICs in South Asia are integrating AI into public health systems. With around 160 million people and significant rural–urban health disparities, Bangladesh has turned to digital technologies to strengthen primary healthcare delivery, epidemiological surveillance, and maternal-child health services. [23] AI tools have been increasingly incorporated into Bangladesh's public health programs. One prominent example is the use of machine learning algorithms to enhance tuberculosis (TB) detection.

In partnership with international research institutions, Bangladesh deployed AI-assisted digital X-ray systems capable of identifying TB with high sensitivity in low-resource settings where trained radiologists are scarce. These systems have improved case detection rates and reduced diagnostic delays. Bangladesh has also adopted a range of AI-supported prediction and surveillance models to monitor and respond to outbreaks of dengue, chikungunya, COVID-19, and influenza, helping health authorities anticipate case surges and allocate resources more effectively.

[23] Ashraful Alam, M., et al., "Implications of Big Data Analytics, AI, Machine Learning, and Deep Learning in the Health Care System of Bangladesh: Scoping Review,' Journal of Medical Internet Research (Vol. 26, Issue 9), 2024. http://dx-doi-org.proxy.library.carleton.ca/10.2196/54710

Beyond infectious diseases, AI tools have been integrated into mental health services, clinical decision-support systems, patient risk stratification, and emergency department triage, where they assist providers in prioritizing care and improving diagnostic accuracy. In the maternal and child health sector, several innovative AI-powered mobile platforms have been piloted to support community health workers by tracking pregnancies in real time, identifying high-risk cases earlier, and offering personalized, evidence-based health reminders to expectant mothers. Together, these applications illustrate Bangladesh's growing efforts to leverage AI to strengthen public health delivery, particularly in settings where shortages of skilled health professionals and uneven access to care remain persistent challenges.[24]

Bangladesh's regulatory environment is also evolving to address risks associated with digital health expansion. The country has begun developing data governance frameworks as part of its national digital health strategy, including guidelines on data privacy, interoperability, and ethical use of AI. The government's *Bangladesh Digital Health Strategy 2023-2027* has facilitated the rapid expansion of electronic health systems and created a foundation for AI adoption.[25] Although full regulatory capacity is still developing, Bangladesh participates in regional forums through the WHO South-East Asia Regional Office (SEARO) and collaborates with partners such as UNICEF, UNDP, and the World Bank to strengthen institutional readiness. This positions Bangladesh to contribute South Asian perspectives to global discussions on AI governance, particularly around real-world challenges of algorithmic deployment in densely populated, resource-constrained health systems.

[24] Ashraful Alam, M., et al., pp. 12, 14.
[25] Bangladesh Ministry of Health & Family Welfare, *Bangladesh Digital Health Strategy 2023-2027.* Dhaka, 2024.https://dghs.portal.gov.bd/sites/default/files/files/dghs.portal.gov.bd/page/4124d18a_ab99_40e2_8fef_ff4052948739/2024-12-10-09-05-7d1979bca8a5e70363b9047b62fd143b.pdf

Lessons from LMIC Innovation

The experiences of Kenya, Rwanda, India, Brazil, and Bangladesh illustrate several key lessons for LMICs navigating the rapidly evolving landscape of AI in health. Firstly, these cases demonstrate that national governance frameworks play a critical role in enabling responsible AI experimentation. By establishing foundational regulatory structures such as data protection laws, national AI strategies, and ethical guidelines, LMIC governments can create environments where innovation is encouraged while risks remain controlled. Kenya's national strategy, Rwanda's regulated clinical trials, India's integration of AI into their national digital health strategy, Brazil's implementation of the LGPD, and Bangladesh's emerging digital governance architecture all exemplify how domestic regulation can successfully support the safe scaling of AI technologies.

Secondly, these countries highlight the value of pilot programs as mechanisms for generating evidence, refining policies, and training health workers. Such pilots reveal how AI performs in real-world contexts, uncover implementation challenges, and inform context-specific regulatory responses. Rwanda's controlled trials for community health workers, Kenya's PROMPTS maternal health initiative, India's AI-enhanced diagnostic platforms, Brazil's epidemic-prediction models, and Bangladesh's AI-assisted COVID-19 and dengue surveillance tools all illustrate how pilots function as iterative learning processes. These initiatives not only validate the effectiveness of AI tools but also strengthen health system capacity and frontline workforce readiness.

Thirdly, these cases demonstrate that LMICs can meaningfully influence global AI governance despite persistent inequalities in representation. countries like Kenya and Brazil are

increasingly active in UN and regional digital governance forums, while India and Bangladesh contribute empirical evidence and policy insights to WHO and other multilateral bodies. By sharing lessons derived from deploying AI in diverse, resource-constrained health systems, LMICs help shape global standards in ways that reflect their own priorities related to affordability, equity, and contextual adaptability. Their participation also challenges Global North dominance in agenda-setting by introducing locally grounded perspectives into international rule-making processes.

Taken together, these experiences highlight that with strategic planning, investment in technical capacity, and selective alignment with global norms, LMICs can leverage AI not only to improve health outcomes but also to assert a more influential role in shaping global AI governance. Rather than remaining passive recipients of frameworks developed elsewhere, LMICs can be innovators and norm-shapers whose real-world evidence and governance models contribute to more inclusive, equitable, and contextually appropriate global standards for the safe and effective use of AI in health.

Policy Recommendations

In an effort to strengthen AI governance in health for LMICs, several policy directions can be recommended:

1. **Inclusive Global Participation:** International institutions should ensure equitable and meaningful representation of LMICs in AI standard-setting processes, governance discussions, and expert working groups. Beyond simply having a seat at the table, LMICs need the opportunity to shape technical norms, ethical guidelines, and implementation

frameworks in ways that reflect their health-system realities. Such participation would enable them to influence emerging global standards rather than having to adopt frameworks designed primarily for high-income contexts.

2. **Regional Cooperation:** Regional bodies such as the African Union can play a pivotal role in coordinating policy approaches across member states. By promoting harmonized regulations, shared technical expertise, joint capacity-building programs, and pooled negotiating power, regional cooperation can help LMICs respond more effectively to cross-border health challenges and strengthen their collective influence in global AI governance arenas.
3. **Capacity Building:** Many LMICs lack the technical infrastructure, specialized workforce, and financial resources needed to deploy AI tools safely and effectively. Investments in digital infrastructure and local research facilities are essential. In addition, training programs for health professionals, regulators, and data specialists, along with sustainable funding mechanisms, can help build long-term institutional capacity to evaluate, procure, and monitor AI systems.
4. **Ethical Safeguards:** Robust ethical governance frameworks are necessary to prevent harm and ensure public trust. This includes strengthening data protection laws, establishing clear and culturally appropriate informed consent procedures, and implementing bias detection and mitigation strategies to reduce disparities in care. National regulations should also mandate transparency, auditability, and accountability mechanisms for AI systems used in clinical and public health settings.
5. **South-South Collaboration:** Collaboration among LMICs offers valuable opportunities for sharing context-relevant knowledge, adapting innovations to similar resource

constraints, and co-creating best practices for governance. Successful models, from digital health surveillance to AI-supported primary care, can be exchanged and scaled through joint research projects and regional innovation hubs. These partnerships also strengthen LMICs' collective voice in international debates, allowing them to advocate more effectively for equitable, context-sensitive AI governance norms.

Conclusion

Rapid advancements in artificial intelligence, including large language models and generative AI, present both opportunities and challenges for LMIC health systems. These technologies can enhance diagnostics, clinical decision-making, patient education, and health system efficiency. However, they also introduce risks related to data security, algorithmic bias, misinformation, and ethical oversight. Future governance frameworks must be adaptive, incorporating continuous monitoring, evaluation, and feedback loops to ensure AI implementation is safe, effective, and contextually appropriate. LMICs that proactively engage with emerging technologies while aligning them with national health priorities and investing in capacity-building will be better positioned to achieve sustainable development goals and equitable health outcomes.

Current global governance mechanisms provide foundational guidance for AI in health but remain fragmented, under-enforced, and dominated by high-income countries. LMICs often face challenges in accessing resources, participating meaningfully in governance processes, and aligning with complex international regulations. The experiences of Kenya, Rwanda, India, Brazil, and Bangladesh demonstrate that evidence-based innovation, strategic national governance, and selective engagement with global norms can produce measurable health

benefits. Kenya's PROMPTS program, Rwanda's AI-assisted community health initiatives, India's digital health infrastructure, Brazil's AI-supported public health surveillance, and Bangladesh's AI-informed disease tracking illustrate how LMICs can integrate AI effectively while managing risk.

These cases collectively show that LMICs can play a meaningful role in shaping global AI governance. Strengthening representation in international forums, fostering regional cooperation, and embedding ethical and equity-focused safeguards are essential to ensure inclusive, responsible, and context-sensitive AI deployment. By learning from LMIC-led innovations, the global community can advance toward more equitable and effective AI governance in health, balancing promise and risk to achieve sustainable improvements in population health.

Documentation of Search

Date of Search	**Database Used**	**Search Items**	**Total # Articles**	**Reviewed Articles**
Nov. 2/25	Carleton E-library	Governance of AI, WHO, Artificial Intelligence	2	World Health Organization. *Ethics and Governance of Artificial Intelligence for Health: WHO Guidance.* Geneva: World Health Organization, 2021. Krasodomski, A., Gwagwa, A., Jackson, B., et al. *Artificial Intelligence and the Challenge for Global Governance.* Chatham House, June 2024.
Nov. 2/25	EU Website	Artificial Intelligence	1	European Union. *Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 June 2024 laying down harmonised rules on artificial intelligence and amending Regulations (EC) No 300/2008, (EU) No 167/2013, (EU) No 168/2013, (EU) 2018/858, (EU) 2018/1139 and (EU) 2019/2144 and Directives 2014/90/EU, (EU) 2016/797 and (EU) 2020/1828 (Artificial Intelligence Act. Official Journal of the European Union* L 202, 2024.
Nov. 5/25	IDRC Website		1	Health AI. *Mapping AI Governance in Health: From Global Regulatory Alignments to LMICs' Policy Developments.* Geneva: Health AI, 2024.
Nov. 8/25	Carleton E-Library		1	Vatsa R., Chang W., Akinyi S., Little S., Gakii C., Mungai J., et al. "Impact Evaluation of a Digital Health Platform Empowering Kenyan Women Across the Pregnancy-Postpartum Care Continuum: A Cluster Randomized

				Control Trial. PLOS Med 22(2), 2025.
Nov. 10/25	Google search	Kenya, Governance of AI, Africa	2	Science for Africa Foundation. *Governance of Artificial Intelligence for Global Health in Africa: A Review of Policy and Regulatory Frameworks,* v.3, 2025. Republic of Kenya. *Kenya Artificial Intelligence Strategy 2025-2030,* March 2025.
Nov. 10/25	OECD Website	AI Governance	1	OECD. *Recommendation of the Council on Artificial Intelligence.* Paris: OECD Publishing, 2019.
Nov. 10/25	UNESCO Website	Artificial Intelligence	1	UNESCO. *Recommendation on the Ethics of Artificial Intelligence.* Paris: UNESCO, 2021.
Nov. 15/25	Carleton E-Library	Artificial Intelligence, Rwanda, Health	1	Menon, V.; Shimelash, N.; Rutunda, S.; Nshimiyimana, C.; Archer, L; Emmanuel-Fabula, M.; Berhe, D.; Gill, J.; Hezagira, E.; Remera, E.; Riley, R.; Wong, R.; Denniston, A.; Mateen, B.; Liu, X. "Assessing the Potential Utility of Large Language Models for Assisting Community Health Workers: A Prospective, Observational Trial in Rwanda." PATH, March 2025.
Nov. 15/25	Google Search	India Government, Artificial Intelligence Strategy	2	NITI Aayog. *National Strategy for Artificial Intelligence #AIFORALL,* June 2018. Government of India, Ministry of Health & Family Welfare. *Ayushman Bharat Digital Mission (ABDM) Annual Report 2023.* New Delhi: Government of India, 2023.
Nov. 22/25	Carleton E-Library	Brazil, AI	1	Hortega Medeiros, A.; Rezende da Costa, P.; Kramer Costa, B.; Cavalcanti da Silva, L. "The Digital

				Revolution: Impacts of Digital Transformation and AI on Health, Education, and the Economy in Brazil." International Journal of Innovation. (Vol. 12, Issue S4, 2024).
Nov. 22/25	Google search	Brazil Government, data protection, AI, Bangladesh, Health strategy	2	Brazil. *Law No. 13,709 of August 14, 2018 (General Data Protection Law).* Presidency of the Republic, Civil House. Bangladesh Ministry of Health & Family Welfare, *Bangladesh Digital Health Strategy 2023-2027.* Dhaka, 2024.
Nov. 25/225	Carleton E-Library	Bangladesh, AI, Health	1	Ashraful Alam, M.; Uz Zaman Sajib, M.R.; Rahman, F.; Ether, S.; Hanson, M.; Sayeed, A. "Implications of Big Data Analytics, AI, Machine Learning, and Deep Learning in the Health Care System of Bangladesh: Scoping Review." Journal of Medical Internet Research (Vol. 26, Issue 9), 2024.

Inclusion/Exclusion Table

	Included	**Excluded**
Article Type	• Peer reviewed • International Organizations websites • Grey literature • Government policy documents/official reports • Research articles	• Unauthorized sources • Blogs • News/magazines • Opinion pieces
Methodology	• Qualitative studies • Quantitative studies	

Geographic Scope	• Focus on low- and middle-income countries	• High-income countries
Time Frame	• After 2015	• Before 2015

This assignment used AI in the following ways: assistance with improving writing quality/clarity, translation from other languages, brainstorming research ideas.

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