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Navigating the global politics of artificial intelligence and healthcare

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Abstract

Policymakers face unprecedented challenges in navigating the global politics of artificial intelligence (AI) and healthcare. While AI offers transformative potential, it can exacerbate health inequities and contribute to negative health outcomes along its opaque, transnational value chain. This paper provides an overview of the most pressing global political concerns related to AI and healthcare that warrant policymakers' attention. These are 1. Defining artificial intelligence, 2. The scales of global political discourse on AI and healthcare, 3. AI and the global political economy of healthcare, 4. The emerging global governance landscape, 5. Security and conflict, 6. Global political risks and limitations of AI (mis)use, 7. The global politics of health data in the age of AI, and 8. The environmental impacts of AI. By doing so the paper offers a currently under-represented global political perspective on the responsible adoption of AI in healthcare, to support policy makers the responsible adoption of AI in healthcare.

Introduction

Technologies driven by artificial intelligence (AI) are transforming healthcare. Experts describe the technology as a game-changer in areas such as diagnosis, prevention, pharmacology, treatment, streamlining healthcare systems, patient management, and improving community care (Palaniappan et al. 2024; WHO 2021). Yet, AI adoption introduces risks and can worsen health outcomes. Policymakers increasingly face complex trade-offs around if, where, when, and – critically – who should develop and deploy AI in healthcare.

Responsible AI (RAI) offers one approach to help policymakers navigate these trade-offs. RAI is a set of principles that require AI systems to be developed and deployed in alignment with social, ethical, and legal principles and that contribute positively to the well-being of individuals and communities (Calegari & Dignum 2024). RAI aligns closely with the ideologies that drive public health, and we have increasingly seen decision-makers adopting it as a framework to guide AI's adoption in healthcare.

This uptake, however, tends to focus assessments on specific groups in narrowly construed local contexts. While this level of focus is essential, policymakers must also navigate a broader set of global political concerns. We must recognise that understanding the intersection of global politics, AI, and healthcare is vital if we are to realise the greatest societal benefits of the technology and mitigate its harms. Incorporating these trade-offs into the decision-making process is no easy feat given that opaque and fast-evolving transnational networks of traditional and new actors develop, deploy, and control AI technology. The lack of global governance to regulate these processes and the fierce competition between states to be leaders in the field further complicate matters.

The purpose of this discussion paper is to equip policymakers with the background knowledge to meet the global political challenges of adopting AI in healthcare responsibly. The paper does so by asking: What are the principal global political challenges policymakers face in adopting AI in healthcare?

The paper begins by defining AI, before exploring seven of the most pressing areas of global political concern related to AI and healthcare that demand policymakers' attention. These are 1. Defining artificial intelligence, 2. The scales of global political discourse on AI and healthcare, 3. AI and the global political economy of healthcare, 4. The emerging global governance

landscape, 5. Security and conflict, 6. Global political risks and limitations of AI (mis)use, 7. The global politics of health data in the age of AI, and 8. The environmental impacts of AI. In doing so, it offers a currently under-represented global political perspective on the responsible adoption of AI in healthcare. By shedding light on theses, it is hoped that this will empower policymakers to make more informed, just, and sustainable decisions about responsible AI in healthcare.

Defining artificial intelligence

The definition of AI is hotly contested. However, for our purposes here, the World Health Organization's definition (WHO 2023a: 74) provides a useful foundation given the organisation's focus on healthcare: 'AI is a branch of computer science, statistics and engineering that uses algorithms or models to perform tasks and exhibit behaviours such as learning, making decisions and making predictions.' Put more succinctly, AI refers to the 'computational capability of interpreting huge amounts of information in order to make a decision' (Dignum 2019: 3). Other definitions emphasise the autonomy of AI technology (European Parliament and Council 2024).

Part of the challenge of defining AI is that it serves as an umbrella term used to capture a range of ever-evolving technologies. Broadly speaking, AI encompasses the following fields: problem-solving, knowledge and reasoning, machine learning, interaction, natural language processing (NLP), and perception (Dignum 2019). Within these there are further subfields; for example, within machine learning there is deep learning (on which large language models (LLMs) such as ChatGPT primarily rely), neural networks, and reinforcement learning.

The above are all examples of 'narrow' AI – that is, AI technology that performs tasks in very specific areas that normally require human expertise, and in these areas AI can even outperform humans. At the other end of the scale is artificial general intelligence (AGI), which is a general-purpose AI that can outperform human capabilities across a broad range of domains. This does not exist, and there is fierce debate around whether this is even possible or desirable.

The scales of global political discourse on AI and healthcare

There is considerable hype surrounding AI in general and AI in healthcare in particular. When engaging in policymaking on AI in healthcare, it is useful to consider where it operates across various interconnected scales (Tucker 2025a). By identifying these scales and emphasising their interconnections, we can more effectively situate healthcare sector policymaking on AI within its broader global political context.

At the first level we observe the current uses of AI in healthcare, or those in development. A key feature of this scale is that one can examine the technical aspects of AI systems and the context of their deployment. The focus on both the development and deployment stages is important, because engaging with the process of designing and training AI models plays a central role in RAI deployment (Dignum 2020). The level above this represents technological promises. Here AI is positioned as a forthcoming revolutionary technology that is the best

or only means to address a broad range of healthcare issues: an ideology known as techno-solutionism. The increased scale and scope of AI, and increased reliance on it, are seen as inevitable, and something society should accelerate. Most state, key non-state, and international actors in healthcare advance this position, or a slightly nuanced version of it (Hoff 2023; Strange & Tucker 2023; 2024b). Doing so limits the possibility of discussing non-AI solutions to healthcare problems, as well as critical reflection on the limitations and risks of using AI in the sector.

Finally, at the highest level, AI in healthcare often serves to support broader political agendas – related either to AI itself or to wider ideological goals. States and other actors may strategically promote AI in healthcare to boost political credibility and make certain policies (such as increased digitalisation or investment in national AI industries) more publicly acceptable (Maggor & Tucker 2025). At the same time, dominant discourses around AI can conceal underlying motives, such as promoting neoliberal or libertarian agendas favoured by influential state and non-state actors (Schaake 2024). For example, by portraying AI as a tool that empowers individuals to manage their own health, it can justify shifting responsibility away from public healthcare systems, effectively paving the way for (further) healthcare privatisation (Strange & Tucker 2024a). Ideas like transhumanism and even eugenics also enter public and policy discussions around AI and healthcare at this level (Brusseau 2023). While all three levels of AI deployment are interconnected, this broader political framing shapes expectations of what AI can achieve and ultimately influences which AI applications receive the support needed for their realisation.

With the definition in place, along with an understanding of what level the discourse on AI is being held, as well as its interconnectedness to other scales, we now examine some of the key global political concerns that policymakers must consider when assessing the responsible adoption of AI in healthcare.

AI and the global political economy of healthcare

AI has greatly disrupted the global political economy of healthcare. It is big business: healthcare and medicine ranked as the third largest sector in AI in terms of receiving global private investment in 2023 and 2024 (Maslej et al. 2025). This has largely been driven by investors in the US and China (North 2025). While this investment and corporate interest are often framed as positive developments, they present new challenges for policymakers to navigate. Despite corporate actors playing an important role in healthcare, a few technology corporations (which have not traditionally been involved in healthcare) are now accumulating vast amounts of power in the sector.

Take the US big tech actors, for example. Alphabet, Microsoft, Meta, and Apple have invested heavily in the AI healthcare arena for some time (Thomason 2024). With their wealth of existing customer data, this positions them strongly in comparison to the traditional medical technology (MedTech) industry and public healthcare. They also expend considerable resources to lobby against attempts to regulate AI nationally and internationally (Politico 2025).

New corporate actors, such as OpenAI, with their highly popular ChatGPT-4 generative AI application,[1] now play an increasing role in healthcare systems and data management as healthcare staff adopt the tool, either as recommended by their organisations or on their own initiative. This raises serious concerns regarding transparency, accountability, and privacy – especially when these companies operate transnationally and face limited global regulation over their practices (Wei et al. 2024; Strange & Tucker 2023).

Other states must now navigate issues of regulatory capture and interdependence in this changing multipolar order.

While the US is still the dominant player in AI and healthcare, China, and to a lesser extent the EU, are challenging this position (Chornyy 2024). This new potential multipolarity disrupts the previous global political economy of healthcare. Other states must now navigate issues of regulatory capture and interdependence in this changing multipolar order. Such an undertaking is particularly problematic for low- and middle-income countries (LMICs), which often must rely on other states or international non-state actors to advance AI in their healthcare systems, perpetuating problematic power asymmetries and dependency. Similar concerns also emerge regarding transnational philanthropic organisations (e.g. the Gates Foundation) and their role in setting the global health agenda, given that they operate in a legal grey zone with limited accountability or transparency (Youde 2020).

The emerging global governance landscape

Global governance

Since around 2019, international organisations, as well as state and non-state actors, have increasingly exercised various levels of normative leadership on AI governance (HealthAI 2024). These regulatory efforts broadly fall into three categories: industry self-governance; soft law and standards, which currently dominate; and hard law and regulatory sandboxes, which are now growing in favour (World Bank Group 2024).

In terms of the global regulatory landscape specific to AI and healthcare, WHO has developed a range of soft law and sector-specific guidelines (Kijewski et al. 2024). These have focused on AI and healthcare from the perspective of ethics (WHO 2022), regulatory considerations (WHO 2023a), sexual and reproductive rights (WHO 2024b), ethics and governance for large multi-modal models (LMMs) (WHO 2024a) and AI in traditional medicine (WHO and ITU 2025). WHO and the International Telecommunication Union (ITU) have also established benchmarks to compare the current standard of care against AI-based methods for diagnosis, triage, or treatment decisions, as well as monitoring AI applications after their deployment (Wiegand et al.2018). Other international organisations have acknowledged the importance of healthcare-specific governance of AI. For example, the Organisation for Economic Co-operation and Development (OECD) published guidelines on AI in healthcare in 2021 (Hashiguchi et al. 2021).

WHO has made progress in advocating for health equity to be a guiding principle in the development of AI governance. Unlike many other international actors working on AI governance, WHO has provided practical guidance that is tailored to specific stakeholders and supported them to implement both soft and hard law governance mechanisms (Kijewski et al. 2024). This adoption has been facilitated by actors in the healthcare sector being accustomed

1 Updated versions of Chat-GPT 4and new modes have been released while this paper has been in press. Yet, Chat-GPT 4 remains a pivotal moment where we saw popular adoption of LLMs.

to (and benefiting from) clear regulation and strict standards, in contrast to some other sectors where AI is being applied. Further to this, while most states do not have specific regulations on AI in healthcare in place, AI development and use typically fall under other national and international legislation, for example on medical devices, medical software, or data protection (HealthAI 2024).

The development of international technical standards for AI in healthcare also plays a critical role. These standards, with their focus on technical and procedural aspects, enable the implementation of principles and strategies and remain the most common form of AI governance to date (ibid). Technical experts often develop these rules behind closed doors, despite calls for greater civil society participation in this process (Ada Lovelace Institute 2023). These experts define standardised methods and terms to assess the quality of AI models, such as accuracy, interpretability, robustness, fairness, privacy, or security. Key organisations in this space include the International Organization for Standardization/International Electrotechnical Commission (ISO/IEC) and the Institute of Electrical and Electronics Engineers (IEEE) (HealthAI 2024).[2]

WHO continues to play a central role in addressing the fragmented national and global governance landscape.

Significant gaps persist in the global governance of AI and healthcare. WHO continues to play a central role in addressing the fragmented national and global governance landscape. The global community stands at a critical moment in shaping the global governance framework for AI in the sector. As such, the US's repeated withdrawals from WHO are deeply concerning, as is the broader crisis in multilateralism.

Regional governance

A major shift in the landscape of global AI governance in healthcare occurred with the adoption of the European Union AI Act (EU AI Act) in 2024 (Schmidt et al. 2024). This horizontal regulation covers AI more broadly and applies a risk-based approach to specific areas of application. The EU AI Act classifies healthcare as a high-risk area, although standards are still being developed to clarify its interpretation. This classification means that AI applications in the sector must meet more stringent demands. These include requirements for higher-quality data, more representative datasets, detailed risk management, clear human oversight, and robust documentation (European Parliament and Commission 2024).

From a governance perspective, it is important to note that the EU AI Act did not emerge in isolation. It builds on previous EU efforts, such as the Ethics Guidelines for Trustworthy AI (European Commission 2019), the Medical Device Regulation (European Parliament and Council 2017), the In Vitro Diagnostics Regulation (European Parliament and Council 2021), and the General Data Protection Regulation (GDPR) (European Parliament and Council 2016).

The extraterritorial reach of the EU AI Act means it regulates not only actors within the EU but also those intending to use their AI systems in the EU market. Thus, similar to the Brussels effect following the adoption of the GDPR, and with no clear alternatives on the horizon, the EU AI Act may become the de facto global AI regulation (Minssen et al. 2024). Not only will this enable the EU to protect its own market, but the standards around the high-risk area of health under the act will, in part, shape the future direction of AI and healthcare globally.

2 These are closely related to national efforts to set standards, for example the UK Medicines and Healthcare Products Regulatory Agency's 'Impact of AI on the regulation of medical products: Implementing the AI White Paper principles' (MHRA 2024).

National and other actors in global governance

Powerful nation-states and blocs – notably China, the US, the UK, and the EU – have also pioneered efforts regulating AI and healthcare, shaping regulation to align with their various socio-political and economic agendas (HealthAI 2024). Other states such as Brazil, Singapore, India, Kenya, Rwanda, and Indonesia have also implemented a range of health-specific AI legislation (HealthAI 2024, 2025; Palaniappan et al. 2024). We are also witnessing a surge of national horizontal legislative endeavours on AI, as recently occurred in South Korea (Choi 2025). This will add national-level regulation to the global governance landscape of AI in healthcare. Finally, researchers and clinicians are forming international consortia to establish and propagate principles for trustworthy and responsible AI in healthcare to address the current governance gap (Lekadir et al. 2025).

The path forward

AI is often perceived as a challenge to traditional multilateral regulatory mechanisms. Its rapid development and diffusion frequently outpace the capacity of these frameworks to respond effectively. Compounding this, powerful states and corporate actors are actively working to obstruct efforts toward establishing national, regional and international regulation. However, one should remember that considerable friction slows the development and adoption of AI in healthcare. For example, legacy systems can be difficult and costly to upgrade, there may be a lack of financial and staffing resources, and existing regulation and norms often resist change before its potential harms can be assessed (McKinsey & Company 2024). WHO Europe (2025) have also highlighted that lack of regulatory certainty, limited strategic planning and oversight are barriers to further AI adoption in the region's healthcare sector. These factors all delay or limit the uptake of the technology, providing valuable time to implement both traditional and emerging forms of global governance of AI.

Considerable inequalities persist in the uptake of AI within and between countries, and global governance risks reinforcing and exacerbating existing power asymmetries. One way to address this could be through regionally harmonised initiatives that avoid assuming or enforcing universal uniformity (Dignum et al. 2025). This would include prioritising context-sensitive approaches, meaningful participation from local stakeholders, and bridging respect for local values and concerns with international cooperation. There is also a pressing need to confront the politics of data infrastructure and access to the data that trains AI in LMICs.

Security and conflict

The increasing role of, and dependency on, AI in healthcare raises concerns in relation to security and conflict. States face a trade-off between expanding the role of AI in the healthcare sector to benefit from the technology and risking exposure to new threats as healthcare becomes increasingly digitalised and reliant on AI systems to function.

This is no marginal issue: AI in healthcare features prominently in many states' national and regional AI geopolitical agendas. Thus, it is no surprise that healthcare has become a focus for hybrid forms of conflict. At state level, we saw this during the Covid-19 pandemic. Nefarious actors used AI-generated deepfakes and other content, disseminated with the assistance of AI to spread mis-/disinformation, significantly complicating states' ability to manage the pandemic and maintain social stability (UNICRI 2020). The expanded use of AI also increases the reliance on critical infrastructure, such as subsea data cables, data centres, and the electricity network

(Crichton et al. 2024). Defending these can be challenging for even the most well-resourced states (Trakimavičius 2021). Sustained cyber-attacks have also targeted critical infrastructure supporting AI adoption in LMICs, particularly those seeking to leap-frog technologically (Sukumar 2023).

Healthcare facilities also face a barrage of AI-supported attacks. In 2021 a global survey found that more than one-third of responding health institutions experienced at least one ransomware attack in the preceding year and of all respondents, one third paid a ransom (Mishra 2024). In 2023, the healthcare sector suffered more cybersecurity incidents than any other critical sector in the EU (European Commission 2025). This risk intensifies as many systems designed to support AI in healthcare are connected to others, creating third-party vulnerabilities. Given all this, WHO considers cyber-attacks in healthcare a considerable threat to international security and global health (UN2024). The coordinated cyber-attacks on healthcare before and following the Russian invasion of Ukraine highlight how digitalisation of healthcare can make it a vulnerable and high-impact target in war (Samarasekera 2022).

AI has been successfully used to enhance the cybersecurity of health data and services. However, ensuring this security is becoming increasingly problematic as transnational, opaque, and fragmented AI systems are embedded in healthcare at multiple levels by various national and international actors.

Global political risks and limitations of AI (mis)use

Considerable care is needed to design and monitor AI systems to avoid bias and discrimination. This is especially problematic where the decision-making process of some AI systems is not understandable or explainable.

Despite the hype, AI in healthcare carries significant risks and limitations. These include algorithmic and data bias (Aliferis & Simon 2024), inaccuracy (Perez 2019), hallucinations (Kim et al. 2025), and lack of transparency and accountability (Fehr et al. 2024). There are also the dangers of the use of AI in contexts and on populations for which it was not designed, as well as the dangers of data leaks and misuse (Buolamwini 2024; OECD 2024). These risks do not affect all communities and states equally. For example, while AI can be used to identify and address racial bias in healthcare, it can also reproduce and worsen existing structural discrimination through algorithmic and data bias (Brunel University London & Health Action International 2023). Considerable care is needed to design and monitor AI systems to avoid bias and discrimination. This is especially problematic where the decision-making process of some AI systems is not understandable or explainable. This is referred to as the 'black box problem', a significant concern in the high-stakes world of healthcare (Rudin 2019).

A Western biomedical reductionist position also dominates in AI model development. This approach treats the body as quantifiable, sidelining cultural and contextual factors as unimportant (Shipton & Vitale 2024). This is highly problematic given the need to consider the local context for AI systems to deliver the most beneficial health outcomes. Further to this, there is a tendency toward the 'politics of avoidance' in AI health, whereby the root causes of healthcare challenges and the social determinants of health are ignored, or seen as inconsequential, in light of AI's perceived potential (Shipton & Vitale 2024).

One of the most worrying trends is that the hype around AI and healthcare is being used to justify reductions in vital healthcare spending (Davies 2019). Indeed, WHO emphasises that broad public healthcare provision is essential if AI's future benefits are to be realised (Tucker 2025b; WHO 2023b).

While we have seen significant friction in implementing AI in healthcare in high-income countries (HICs), this is even more pronounced in LMICs. Adoption is constrained by limitations such as poor-quality electronic health records; the high cost of data annotation, model development, hardware acquisition, and maintenance; and shortages of skills, resources, and infrastructure (López et al. 2022). As a result, in Latin America and the Caribbean, for example, AI use in the healthcare sector remains fragmented and mainly appears at the meso and macro levels of healthcare management (Saban et al. 2023). Yet, AI in healthcare holds enormous potential in LMICs. We are already seeing considerable efforts to realise this – for example, the largest number of AI start-ups in Africa operates in the health sector (Global Center on AI Governance 2025). However, these initiatives face considerable challenges as the global political economy of AI development and health data has concentrated power and resources in the hands of a few key actors in the US and China.

The global politics of health data in the age of AI

The governance of health data has emerged as a central concern in the global political economy of AI, with data sovereignty becoming a critical axis of contestation.

Data is the lifeblood of AI, playing a critical role in its training. Health data is highly sought after, with massive growth in the global market for big data in healthcare (Precedence Research 2025). The governance of health data has emerged as a central concern in the global political economy of AI, with data sovereignty becoming a critical axis of contestation. Data sovereignty refers to the principle that digital data is subject to the legal jurisdiction of the state in which it is collected. As AI-enabled healthcare systems increasingly depend on transnational data flows, tensions have intensified between protecting national interests and enabling cross-border innovation. A lack of harmonised regulation, asymmetrical geopolitical power relations, and harm caused by data extraction from LMICs further exacerbate these tensions.

The EU has sought to address concerns over data sovereignty (for its member states at least) and to capitalise on its wealth of public health data by establishing the European Health Data Space in 2025 (European Parliament and Council 2025). The EHDS will facilitate data sharing across the region while also strengthening European data sovereignty around health by limiting access for non-member states. Other regions have signalled that they also wish to undertake similar initiatives (AI Expo Africa 2025). At a global level, WHO advocates for the greater collection and sharing of global digital health data, in part to allow for AI-powered insights to tackle global health challenges (Shaffer 2020).

However, these national and regional legislative frameworks and calls for collaboration risk reproducing structural inequalities by excluding LMICs from access to health data. Without adequate investment in data governance infrastructure and equitable access provisions for LMICs, data sovereignty risks becoming a mechanism of digital enclosure. This is because access to health data serves as a foundational resource for AI innovation in healthcare. The global distribution of this access remains deeply uneven, in favour of HICs and a small group of big tech companies largely based in the US (Roberts 2024). It is not only access to data that is of concern. The extraction of health (and other) data from LMICs can be seen as a compromising these LMICs' digital sovereignty, an area of increasing prominence for LMICs.

The lack of quantity and quality of health data is often framed as a bottleneck in the potential advancements that AI can facilitate (Benke & Benke 2018). However, to meet this need we are witnessing the extraction and exploitation of health data from LMICs, as well as from

marginalised populations in HICs. This practice has drawn extensive critique for replicating and exacerbating existing power asymmetries, a phenomenon described as 'data colonialism' (Ferryman 2021). There are also challenges in preserving the health data sovereignty of LMICs and Indigenous communities (Cordes et al., 2024).

The environmental impacts of AI

Policymakers often underestimate these environmental costs in debates on AI.

Environmental sustainability in the context of AI use in healthcare presents a double-edged sword. On the one hand, for example, AI-assisted medical drones in Ghana have reduced the carbon emissions of traditional methods of delivering emergency medical supplies (Damoah et al. 2021). On the other hand, AI in healthcare often relies on large datasets, with complex algorithms and frequent model updates, all of which generate considerable environmental impacts (Ueda et al. 2024). These impacts include significant electricity and water usage, e-waste, and the extraction of rare earth minerals (Lucivero 2024). For example, water-thirsty data centres, which are essential to train the currently favoured branch of AI, have intensified droughts in areas of Chile, leading to negative health outcomes for the local population (Ren & Wierman 2024). This environmental cost is not evenly distributed. The uneven regional distribution of AI's environmental costs mirrors historical practices of settler colonialism and racial capitalism (AINOW 2023). At the local level, the negative environmental impact of AI disproportionately affects marginalised groups (Crawford 2021; Lucivero 2024). Policymakers often underestimate these environmental costs in debates on AI. There is a great deal of variation in terms of the environmental impacts depending on the type of AI application.

Summary: policymaking and responsible AI

This paper sought to support policymakers in how to navigate the global politics of AI in healthcare. It has done so by providing a background on some key global political forces impacting AI in healthcare of which policy makers should be aware. Navigating these is a daunting challenge for policymakers. Yet, failure to do so risks causing more harm than good. This can include negative health outcomes for individuals and populations, weakening healthcare systems, increased conflict, and environmental degradation.

While RAI is gaining traction in healthcare, it often overlooks the global political realities that influence how AI is developed, deployed, and governed. Rather than treating AI as a neutral tool, this paper urges policymakers to interrogate who benefits, who controls the infrastructure, and who bears the risks. It highlights how current practices risk deepening inequalities, especially for LMICs and marginalised communities, and calls for more inclusive, transparent, and context-aware governance. It offers an overview to help decision-makers assess global political risks, ask critical questions, and design policies that align with public health values and global equity goals. By foregrounding power, politics, and global interdependence, the paper reframes RAI as a strategic tool for navigating complexity. It is hoped that this will empower policymakers to make more informed, just, and sustainable decisions about responsible AI in healthcare.

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