

Landmark recommendations on development of artificial intelligence and the future of global health

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A landmark review of the role of artificial intelligence (AI) in the future of global health published in The Lancet calls on the global health community to establish guidelines for development and deployment of

new technologies and to develop a human-centered research agenda to facilitate equitable and ethical use of AI. The review and recommendations were developed by Nina Schwalbe, MPH, adjunct professor in the Heilbrunn Department of Population and Family Health at the Columbia University Mailman School of Public Health, and Principal Visiting Fellow at United Nations University—International Institute for Global Health, and Brian Wahl, Ph.D., assistant scientist in the Department of International Health at the Johns Hopkins Bloomberg School of Public Health.

Advances in information technology infrastructure and mobile computing power in many low and middle-income countries (LMICs) have raised hopes that AI could help to address challenges which are unique to the field of global health and accelerate the achievement of the health-related Sustainable Development Goals (SDGs) and Universal Health Coverage (UHC). However, the deployment of AI-enabled interventions must be exercised with care and caution for individuals and societies to benefit equally, especially in the current context of the digital tools and systems being rapidly deployed in response to the novel coronavirus disease 2019 (COVID-19).

"Especially during the COVID-19 emergency, we cannot ignore what we know about the importance of human-centered design and gender bias of algorithms," said Schwalbe. "Thinking through how AI interventions will be adapted within the context of the health systems in which they are deployed must be part of every study."

"This review marks an important point in our rapidly developing digital age at which to reflect on the impressive opportunities that AI may hold, but also consider what we are urgently missing to protect those most at risk—exciting developments but many are being rolled out without adequate evidence or appropriate safeguards" said Dr. Naomi Lee, Senior Executive Editor at The Lancet.

According to Wahl and Schwalbe, artificial intelligence is already being used in high-resource settings to address COVID-19 response activities, including patient risk assessment and managing patient flow. They point out, however, that while artificial intelligence could support the COVID-19 response in resource-limited settings, there are currently few mechanisms to ensure its appropriate use in such settings.

As the field of AI is rapidly evolving in global health, and in light of the COVID-19 response, the review highlights the following recommendations:

- Incorporate aspects of human-centered design into the development process, including starting from a needs-based rather than a tool-based approach;
- Ensure rapid and equitable access to representative datasets;
- Establish global systems for assessing and reporting efficacy and effectiveness of AI-driven interventions in global health;
- Develop a research agenda that includes implementation and system-related questions on the deployment of new AI-driven interventions;
- Develop and implement global regulatory, economic, and ethical standards and guidelines that safeguard the interests of LMICs.

Schwalbe and Wahl developed these recommendations through an extensive review of the peer-reviewed literature to help ensure that AI helps to improve health in LMICs and contribute to the achievement of the SDGs and UHC, to the COVID-19 response.

"In the eye of the COVID-19 storm, now more than ever we must be vigilant to apply regulatory, ethical, and data protection standards. We hold ourselves to [ethical standards](#) around proving interventions work before we roll them out at scale. Without this, we risk undermining the vulnerable populations we are best trying to support" said Schwalbe.

The review was supported by Fondation Botnar, a Swiss-based foundation that champions the use of AI and digital technology to improve the health and wellbeing of children and young people in growing urban environments.

"We are proud to have supported this critical and timely review", said Stefan Germann, CEO of Fondation Botnar. "In anticipation of the adoption of the new WHO Global Strategy on Digital Health later this year, and the rapid deployment of technologies in response to COVID-19, we need to raise the discussions on the human rights issues and necessary governance structures around data use and sharing, and the role of institutions such as the WHO in providing leadership."

More information: Nina Schwalbe et al, Artificial intelligence and the future of global health, *The Lancet* (2020). [DOI: 10.1016/S0140-6736\(20\)30226-9](https://doi.org/10.1016/S0140-6736(20)30226-9)

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