

# The Path to Open Medicine: Driving Global Health Equity through Medical Research

## Executive Summary

In the aftermath of the COVID-19 pandemic, the need to achieve global health equity became more self-evident than ever. Illustrating this point, recent World Bank data indicate that the life expectancy gap between lowest and highest-ranking nations has widened to 30 years. Healthcare can no longer only worry about regional, or national interests. The focus of the world community on global health equity must target resource constraints, discrimination, biases, and other obstacles that lead to poorer health in poorer countries.

### The role of Open Medicine in achieving equity

In addition to frontline care, medical research publishing has a critical role to play in the quest for global health equity by promoting and investing in Open Medicine, the subcategory of Open Science that pertains to biomedical and clinical research. Open Science asserts that the benefits of global health knowledge should be universally shared and that the scientific process should be inclusive, sustainable, and equitable.

The vision of Open Science imagines that researchers from all countries will be empowered to be both producers and consumers of scientific knowledge, with opportunities for scientific education and capacity development for all. This position paper explores the three main pillars of Open Medicine:

- open access to scholarly publications (open access, OA),
- open data sharing (open data), and
- open sharing of procedures, methodologies, algorithms, and software (opensource/ open code).

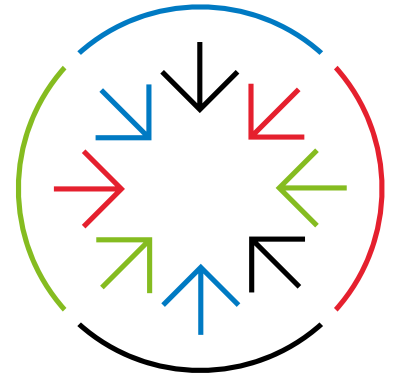
Any discussion of Open Medicine must keep patient outcomes and risk to patients at front of mind. For example, misleading data about proper medications to treat COVID-19 might lead to harm many human lives.

Yet, the necessary infrastructure, policies, and practices to achieve the goals of Open Medicine are still not fully in place. For example, publications and data are not shared openly to benefit all stakeholders. Many research institutions remain siloed with academic career advancement paths and rewards that don't always support Open Medicine. Lastly, research funding frequently benefits high-income countries (HICs), while neglecting lower- and middle-income countries (LMICs), creating an imbalance of knowledge production and consumption.

### Engaging all stakeholders

For Open Medicine to advance global health equity, the global community will need to embrace the following core ideas that span the health landscape:

1. There are four key stakeholders in the Open Medicine landscape: funders, institutions, publishers, and researchers.
2. All stakeholders must make internal changes and collaborate to find a viable path forward that aligns with the values of Open Medicine. No stakeholder can achieve the goals of Open Medicine alone.
3. All stakeholders affirm that the future of Open Medicine must achieve equity in how biomedical knowledge is produced as well as consumed across the globe. The production of health and medical knowledge should no longer be siloed and privileged to only certain regions and countries.



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## How did we get here and where are we headed?

The paper is divided into three parts. Part 1 traces historical events leading to today's system of scientific research, funding, knowledge dissemination, and recognition. This model largely confines health and medical knowledge production to those in HICs. By evaluating our shared past and the emergence of structural barriers to global health equity, we are better positioned to share a part in updating or dismantling them. Part 2 examines where the current state of the scientific community is now, asking, are the ideals of Open Medicine playing out as envisioned? Also, are the benefits of Open Medicine shared across humanity, or with only a select few? Lastly, Part 3 proposes concepts and recommendations that enlist all stakeholders in efforts to align Open Medicine with its goals and aspirations.

**Publishers** are well-positioned to adapt to changing Open Medicine requirements in the publishing process with new technologies, including artificial intelligence (AI)-based solutions, which can track and link all elements of publications (pre-print, different article versions, open data, and open source/code) across various platforms, instead of linking content only from a single organization.

**Institutions and libraries** can support Open Medicine in several ways. They can provide education and information to researchers and students and create institutional repositories. Institutions can establish OA publication funds and convert institution-based journals to OA. Plus, there are new avenues of negotiation with publishers that factor in more advanced formulas to enable OA. Institutions and researchers alike will be well-served by shifting data curation and sharing responsibilities to institutions.

**Funders** are aware of the benefits of OA publishing and are powerful stakeholders for driving uptake. To succeed, it will take an active role of funders having an equal awareness of the costs and time involved in OA publishing. In addition to direct funding for APCs and other costs of OA publishing to researchers, there is a history of funder support for OA publishing infrastructure. Another approach taken by some funders is the development of OA publishing platforms commissioned by the funding organizations themselves.

All three of the above stakeholders need to take a more proactive role in global **Diversity, Equity, and Inclusion (DEI)** efforts. Publishers can examine their portfolios from the perspective of increasing LMIC researcher access to article processing charge (APC) waivers. Institutions in LMICs can seek and provide stable funding for research and development activities, including Open Medicine infrastructure and training. Funders have started to prioritize increased global DEI in biomedical and health systems research by creating funding programs targeted to researchers in LMICs and to those in HICs that collaborate equitably with researchers in LMICs. On all these fronts, more can be done.

As academic publishers, institutions, and funders make fundamental shifts to their policies and reward structures to facilitate greater data sharing, **researchers** may find that historical barriers to open data are beginning to fall away. Researchers can now leverage Open Science technologies and principles at every stage of a research project. It may seem daunting, but researchers can take advantage of training programs offered by libraries or training projects.

### Open Medicine will take open collaboration

There is no panacea to bring the community into closer alignment with Open Medicine. It will take a balanced, complex approach that considers the responsibilities and collaboration of all stakeholders. We look for a bold, yet pragmatic, approach among publishers, funders, institutions, and researchers to tackle the issues before us. To get there, it will take a commitment to open dialogue and cooperation for the biomedical research and development community to shift towards global health equity through Open Medicine.

