

tically to communities from the start. Rather than focusing solely on what is being recommended, it's equally important for public health leaders to focus on how recommendations are communicated and disseminated. Early engagement of community representatives is critical so that various aspects of anticipated guidance can be discussed in detail, including rationales, trade-offs, and the most appropriate communication channels and formats. Engagement must not only come

 **An audio interview with Dr. El-Sadr is available at NEJM.org**

in the form of an emergency response, but must involve a consistent presence,

which can then be leveraged and activated further during times of urgent need.

The current moment in the Covid-19 pandemic is a pivotal one. There is an urgent need to confront a future in which SARS-CoV-2 will remain with us, threatening the health and well-

being of millions of people throughout the world. At the same time, it's important to acknowledge that objectively we are in a better place with regard to the virus than we've ever been and that in fact many people believe the pandemic is behind us. This reality compels us to avoid using alarmist language and to offer valid and feasible solutions to bring people along to a new, nonemergency phase of the pandemic. How we craft our policies, programs, and associated messaging in this context and who delivers the messages is as important as ever.

Disclosure forms provided by the authors are available at NEJM.org.

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This article was published on January 28, 2023, at NEJM.org.

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DOI: 10.1056/NEJMp2213920

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Behind-the-Scenes Investment for Equity in Global Health Research

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“One hand cannot tie a bundle.”

— Central African proverb

Increasing attention is being paid to the inequity that pervades global health research, which results from factors ranging from ignorance to colonialism and racism.¹ Academic and economic resources heavily favor countries in the Global North (e.g., the United States and European

countries), which therefore drive research agendas.² Researchers in the Global North largely determine which questions get answered. Although this model has led to important improvements in health worldwide, inequity prevents research from achieving its full potential. Scientists through-

out the world need to conduct, together, rigorous research driven by local agendas. Efforts to rectify inequities require all stakeholders to examine the way in which research is conducted, including how partnerships are formed and implemented, who receives recognition for successful research initiatives, and who is empowered and enabled to lead as principal investigators.

Funders, such as the National

National Institutes of Health (NIH) Investment in the Global South, Fiscal Year 2022.*		
Country	No. of Awards	Funding
Argentina	10	\$1,679,494
Bangladesh	4	\$593,884
Botswana	3	\$908,255
Brazil	9	\$3,948,065
China	3	\$1,169,882
Colombia	5	\$1,707,662
Costa Rica	1	\$438,001
Ethiopia	2	\$946,122
Gambia	1	\$110,841
Georgia	2	\$395,270
Ghana	10	\$2,040,298
Guatemala	1	\$99,019
Haiti	2	\$2,305,973
India	5	\$528,007
Jamaica	1	\$117,255
Jordan	1	\$288,957
Kenya	18	\$5,106,931
Lebanon	3	\$993,564
Malawi	2	\$1,185,846
Malaysia	1	\$134,387
Mali	10	\$2,030,106
Mexico	3	\$890,697
Mozambique	3	\$1,562,951
Nigeria	28	\$7,785,299
Pakistan	5	\$1,531,572
Peru	14	\$6,086,513
Rwanda	1	\$76,343
South Africa	86	\$40,621,173
Tanzania	8	\$2,139,865
Thailand	6	\$3,418,903
Uganda	39	\$12,069,034
Ukraine	2	\$530,539
Vietnam	2	\$722,092
Zambia	7	\$2,253,859
Zimbabwe	7	\$1,804,416
Total	305	\$108,221,075

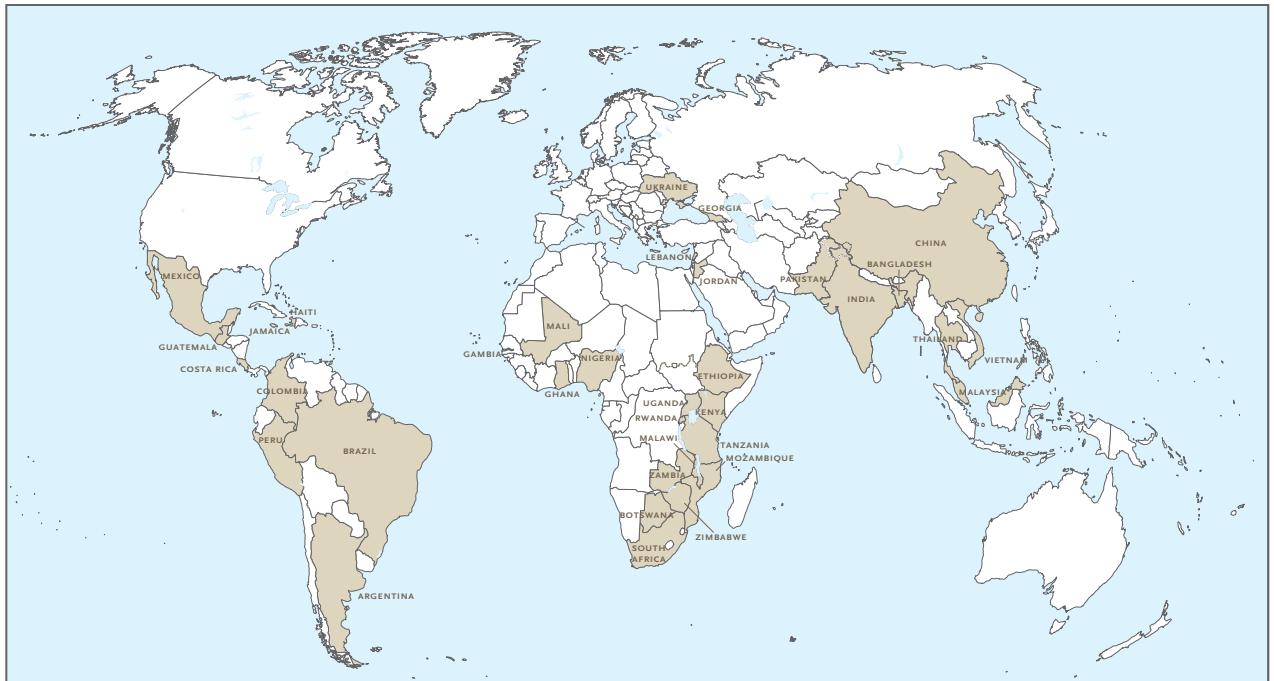
* Data include grants to low- and middle-income countries and are from the NIH Research Portfolio Online Reporting Tools.

Institutes of Health (NIH), can play an important role in supporting equity. The NIH is the largest public funder of biomedical research, investing more than \$32 billion annually. The agency has taken positive steps to address inequities in global health research, for example by launching the 5-year, \$74.5 million Harnessing Data Science for Health Discovery and Innovation in Africa (DS-I Africa) program in 2021 to create and support a robust pan-African network of data scientists and technologies. This project, led primarily by African researchers, addresses high-priority research questions in Africa and moves away from the predominant model in which investment in global health research disproportionately furthers the careers of participating U.S. investigators. In addition, the NIH recently issued a request for information on practices related to enhancing equity, generating mutual benefits, and sharing leadership in global health research, including how best to define roles and responsibilities.

We believe the NIH has made important progress by bringing together many hands to address inequity in global health research. Effective support for research in the Global South, however, requires additional investment in research capacity. One behind-the-scenes component of the research enterprise that contributes to inequities and hasn't been addressed is the indirect cost (IDC) rate. Funding for IDCs provides critical support for institutional infrastructure, including grants administration and facility operations, and fuels

the capacity to conduct research. U.S. academic institutions negotiate IDC rates with the NIH that currently range from 15 to 97% of a grant's direct costs (which include, e.g., personnel- and participant-related costs), with a median rate of 56%, according to the Federal Demonstration Partnership. The IDC rate for non-U.S. institutions, on the other hand, is fixed at 8%. The NIH awarded more than \$108 million in 305 grants to Global South institutions in fiscal year 2022 (see table and map), with \$9 million for IDCs. Had the IDC rate been equal to the median rate for U.S. institutions, these Global South institutions would have collectively received \$61 million for IDCs. Although targeted investments like DS-I Africa help build capacity, this disparity is troubling. All NIH grants have gone through a rigorous review process and have been determined to have a high potential for advancing science and health. The IDC rate should therefore be based on institutional needs, not geography.

A lower IDC rate would make sense if the costs involved in conducting research were lower outside the United States — for example, because salaries are lower in settings with lower costs of living. But research costs in the Global South can be higher than might be assumed. Physical infrastructure is often underdeveloped, and funding for supplies that are generally readily available in the Global North (e.g., basic laboratory equipment and blood-pressure cuffs) depends on individual projects. The costs of essential, day-to-day needs



Low- and Middle-Income Countries with National Institutes of Health (NIH) Investment, Fiscal Year 2022.

Data are from the NIH Research Portfolio Online Reporting Tools.

such as utilities, Internet access, and maintenance of laboratory equipment can be much higher than in the Global North. In addition, traveling to present research findings and participating in global conferences, which are critical components of research equity, are expensive. Inadequate resources for these activities compound the challenges faced by many investigators in the context of economic instability, supply-chain disruptions, and fluctuating exchange rates. Many Global South institutions calculate that their IDC rate would need to be well above 8% to account for these costs; conducting NIH-funded research may therefore mean losing resources.

Although several NIH grant mechanisms directly address capacity building in the Global

South (e.g., D43 training grants and G11 infrastructure-strengthening grants), they don't overcome the discrepancy in IDC rates and therefore don't go as far as possible in ameliorating inequities and creating opportunities for advancing science. For example, funding for IDCs could be used to allow local laboratories to process their own specimens, rather than spending thousands of dollars on specialized couriers and dry-ice cold chains to send them to facilities in the Global North. This investment might ultimately reduce overall costs while fostering local research capacity.

Career development is another area in which higher IDC rates could advance the NIH's investment in equity. The K43 Emerging Global Leader Award pro-

vides up to 5 years of funding for skill development and research experience for junior investigators at non-U.S. institutions. Although these awards greatly benefit individual investigators, their institutions frequently struggle to adequately support them in conducting research by ensuring dedicated time for fulfilling the responsibilities of a principal investigator. Administrative capacity in Global South institutions is often minimal, which requires investigators to spend time on grants management rather than science. Limited staffing also necessitates that even investigators with research funding devote much of their time to teaching or providing clinical care. Higher IDC rates could enable non-U.S. institutions to shift resources to better protect time for research.

Although it would be politically challenging, raising the IDC rate by increasing overall spending on global health research would be in keeping with NIH goals for achieving equity and improving health. The NIH could decide to apply equitable IDC rates to all funded research, regardless of geography; Congress would then have to approve associated budget increases. Once this adjustment was implemented, non-U.S. institutions would need to submit the necessary documentation for IDC rate negotiation, as U.S. institutions do. It would be important for the effects of increased support for institutional capacity to be tracked to justify continued investment and to encourage similar investments from Global South governments.

Investment in NIH-funded research is known to yield a high return. In 2017, for example, the NIH reported that extramural funding generated \$68.8 billion in economic output (which includes jobs and research-related services and materials); NIH investment also often stimulates private investment in research in the same area. The effects of NIH funding for non-U.S.-based research are unknown and should be studied; however, a high return on investment in research and development in the Global South has been well documented in other areas, including support for clinical-trial infrastructure, production capacity for new health products, and pre-

vention and treatment of poverty-related and neglected diseases.^{3,4}

Incorporating diverse perspectives in biomedical research can help produce better science.⁵ Empowering non-U.S. investigators with appropriate institutional capacity to pursue their research agendas could lead to additional discoveries and advances in human health. Such discoveries can have important implications locally and for the United States, as has been seen during recent Ebola outbreaks, the Covid-19 pandemic, and the 2022 outbreak of monkeypox (which has recently been renamed mpox by the World Health Organization). Investigators in the settings where new outbreaks arise are well positioned to find effective interventions. We could bolster our ability to respond to disease outbreaks by directing more resources toward making better diagnostic tests, vaccines, and treatments available where outbreaks emerge, thereby preventing their spread and resulting illness and deaths.

We believe the IDC rate warrants reconsideration by the NIH and other funders to reflect the true costs of and needs for conducting research in non-U.S. settings. Additional steps could include discussions with international research partners (e.g., the African Research Universities Alliance, the Africa Centres for Disease Control and Prevention, and the African Academy of Sciences) to determine how best to use multilateral investments to

strengthen research systems. Investment of Global South resources, including investments by government institutions, nongovernmental organizations, and philanthropists, will also be essential in supporting research agendas and capacity. Updating the IDC rate could represent a key opportunity for advancing the most impactful science conducted by the most talented investigators worldwide.

Disclosure forms provided by the authors are available at NEJM.org.

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This article was published on January 28, 2023, at NEJM.org.

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DOI: 10.1056/NEJMp2213809

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