Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Taking such steps at the research conceptualisation stage allows ethical approaches to codeveloping recruitment and data collection strategies, treating forcibly displaced populations as more than data providers, and ensuring the participants' privacy and confidentiality.[13] Consideration of power hierarchies includes reflection on the dynamics between front-line researchers, who hold power despite being so-called local participants, and communities, leading to concrete steps to reduce power imbalances. Power hierarchies and politics also shape how data are analysed, published, and shared. Choices on which data are deemed relevant, how the analysis is presented, and how authorship is decided are all arenas in which power is exercised to prioritise some voices and silence others. Feminist values emphasise meaningful decision making and relational engagement, from research conceptualisation to publication and beyond.

Dismantling well established data collection practices, especially in forced displacement settings, requires a sustained commitment from all parties in the research ecosystem and changes to the architecture that enables these practices. COVID-19 has given us the opportunity to reflect on and challenge long-existing power hierarchies within research—a process that is needed to address lingering colonial and patriarchal power relations and avoid ethical pitfalls. We believe that applying a feminist lens is not merely about demolishing problematic structures, but also about collaboratively building up new ones for a more just world.

NSS reports salary support from the RECAP project by UK Research and Innovation as part of the Global Challenges Research Fund, grant number ES/P010873/1. All other authors declare no competing interests. The thinking underpinning this Comment began in a virtual workshop on the Ethical and Gender Considerations in Remote Data Collection and Research in Forced Displacement Settings, hosted by the authors on June 29, 2020, with the support of the Global Health Centre, the Graduate Institute of International and Development Studies, and GENDRO.

*Neha S Singh, Michelle Lokot, Chi-Chi Undie, Monica A Onyango, Rosemary Morgan, Anne Harmer, Jane Freedman, Shirin Heidari
neha.singh@lshtm.ac.uk

Health in Humanitarian Crises Centre, London School of Hygiene & Tropical Medicine, London WC1H 9SH, UK (NSS, ML); Population Council, Nairobi, Kenya (C-CU); Department of Global Health, Boston University School of Public Health, Boston, MA, USA (MAO); Department of International Health, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, USA (RM); Elrha, London, UK (AH); University of Paris 8, Paris, France (JF); GENDRO, Geneva, Switzerland (SH); Global Health Centre, Graduate Institute of International and Development Studies, Geneva, Switzerland (SH)

1 Médecins Sans Frontières. Stigma and disrupted care: facing COVID-19 in Bangladesh. 2020. https://www.msf.ie/article/stigma-disrupted-care-facing-covid-19-bangladesh (accessed Jan 5, 2021).
2 Mballa C, Ngebeh J, De Vriese M, Drew K, Parr A, Undie C. UNHCR and partner practices of community-based protection across sectors in the East and Horn of Africa and the Great Lakes Region. Nairobi, Kenya. 2020. UNHCR and Population Council. https://knowledgecommons.popcouncil.org/departments_sbsr-rh/1310/ (accessed Jan 5, 2021).
3 United Nations High Commissioner for Refugees. Global trends: forced displacement in 2019. June, 2020. https://www.unhcr.org/uk/statistics/unhcrstats/5ee200e37/unhcr-global-trends-2019.html (accessed Jan 5, 2021).
4 United Nations High Commissioner for Refugees. The digital lives of refugees: what's next? 2019. https://www.unhcr.org/jo/12182-the-digital-lives-of-refugees-whats-next.html (accessed Jan 5, 2021).
5 Slim H. Is racism part of our reluctance to localise humanitarian action? 2020. https://odihpn.org/blog/is-racism-part-of-our-reluctance-to-localise-humanitarian-action/ (accessed Jan 5, 2021).
6 Brun C, Lund R. Real-time research: decolonising research practices–or just another spectacle of researcher–practitioner collaboration? *Dev Pract* 2010; **20:** 812–26.
7 Lokot M. The space between us: feminist values and humanitarian power dynamics in research with refugees. *Gend Dev* 2019; **27:** 467–84.
8 Schroeder D, Cook J, Hirsch F, Fenet S, Muthuswamy V, eds. Ethics dumping: case studies from North-South research collaborations. Cham, Switzerland: Springer Nature, 2018.
9 Brooks A, Hesse-Biber SN. An invitation to feminist research. In: Hesse-Bilber SN, ed. Feminist research practice: a primer. Thousand Oaks, USA: SAGE Publishing, 2007.
10 Davies SE, Harman S, Manjoo R, Tanyag M, Wenham C. Why it must be a feminist global health agenda. *Lancet* 2019; **393:** 601–03.
11 Kapilashrami A, Hankivsky O. Intersectionality and why it matters to global health. *Lancet* 2018; **391:** 2589–91.
12 Pinet M, Leon-Himmelstine C. How can COVID-19 be the catalyst to decolonise development research? 2020. Oxfam. https://oxfamblogs.org/fp2p/how-can-covid-19-be-the-catalyst-to-decolonise-development-research (accessed Jan 5, 2021).
13 Calia C, Reid C, Guerra C, et al. Ethical challenges in the COVID-19 research context: a toolkit for supporting analysis and resolution. *Ethics Behav* 2021; **1:** 1–16.

Urgent needs of low-income and middle-income countries for COVID-19 vaccines and therapeutics

Published **Online** January 28, 2021 https://doi.org/10.1016/S0140-6736(21)00242-7

WHO and partners have learnt from the mis-steps in the response to the 2009 H1N1 influenza pandemic[1] and established the Access to COVID-19 Tools (ACT) Accelerator to promote equitable access to vaccines, therapeutics, and diagnostics.[2] However, many high-income countries already have bilateral agreements with manufacturers of COVID-19 vaccines.[3] The COVAX Facility of the ACT Accelerator has agreements to access 2 billion doses of WHO pre-qualified vaccines during 2021, but this represents only

20% of the vaccine needs of participating countries.[4] Most low-income and middle-income countries (LMICs) face difficulties in accessing and delivering vaccines and therapeutics for COVID-19 to their populations.[5] COVAX will require decisive action by Gavi, the Vaccine Alliance, WHO, and the Coalition for Epidemic Preparedness Innovations (CEPI), supported by the countries they serve and with financing for vaccine purchasing, to ensure people worldwide have equitable access to COVID-19 vaccines.[6–8]

For 80% of the populations in LMICs that will not benefit from COVAX-provided COVID-19 vaccines, finances for purchase or donations are needed. Government measures in response to COVID-19 and the broader global financial situation have led to increasing fiscal imbalances of heavily indebted countries.[9] Multinational agencies, financial institutions, and wealthier countries should consider measures that could provide relief to indebted LMICs. The World Bank, the International Monetary Fund, and others need to lead an international initiative to mobilise support for LMICs in need.

Many LMICs do not have an established platform for vaccinating their adult populations.[10] Although it is feasible to deliver COVID-19 vaccines to health-care and other front-line essential workers, in some LMICs it will be difficult to effectively reach and vaccinate with two doses all elderly populations and individuals with co-morbidities, given insufficient mechanisms to identify such groups. Governments and technical leaders will need to use transparent, accountable, and unbiased processes when they make and explain evidence-based vaccine prioritisation decisions, while also building confidence in COVID-19 vaccines and engaging with all the stakeholders.

The ultracold chain requirements of mRNA COVID-19 vaccines are likely to be an insurmountable hurdle in LMICs, outside of major cities. COVID-19 vaccine delivery will require considerable investment of resources, health-care staff, and careful planning to avoid opportunity costs, including a disruption of routine health services and a decline in essential childhood vaccination coverage, which could result in outbreaks of measles and other vaccine-preventable diseases. There were more deaths from measles than Ebola virus disease in 2019 in the aftermath of the Ebola outbreak in the Democratic Republic of the Congo, due to failure to maintain adequate childhood vaccinations.[11] The infrastructure for vaccination in many LMICs is already inadequate, as shown by the 19·7 million under-vaccinated infants globally, most of whom are in these countries.[12] Thus, preparation for all aspects of COVID-19 vaccine delivery in LMICs must begin now with the support of international partners.

Rassin Vannier/Getty Images

Strengthening the capacity of LMICs to do clinical trials and promoting LMIC participation in research are also crucial.[13] More LMICs need to participate in future vaccine trials and in testing the clinical effectiveness of different therapeutic agents to ensure that interventions and implementation are suitable for local contexts.

Tracking the safety and effectiveness of different COVID-19 vaccines over time in various populations and settings will necessitate improvements in pharmacovigilance.[14] Regulatory authorities in many LMICs need to be strengthened and could benefit from a programme of national and international support, as well as regional cooperation and reliance mechanisms.[15] As part of internationally coordinated actions, COVID-19 technologies should be transferred to LMIC-based manufacturers, accompanied by regulatory guidance. Efforts to boost local manufacturing capacity in LMICs will contribute to equity, global solidarity, and global health security. India and South Africa have called for the suspension of intellectual property rights related to COVID-19 vaccines to improve access for LMICs, a

move now supported by many other countries, but opposed by the pharmaceutical industry, which cites the disincentive to innovation.[16]

There are further challenges. Governments in LMICs with strong private health sectors, as those in high-income countries, will need to manage the inherent potential for inequity, whereby the rich could access COVID-19 vaccines before individuals with less access to private care who may be at increased risk of severe disease and death, such as older people and those with comorbidities. LMICs affected by war, civil conflict, economic crises, or natural disasters, or with large refugee populations or populations with special needs or vulnerabilities need additional support for vaccines and vaccination under extremely difficult operational conditions.

Re-examining global governance structures, including the UN and its Security Council, is much needed so that the voices and interests of billions of people in LMICs are better represented and recognised. Global support to multilateral institutions is essential to sustain their support to LMICs to facilitate vaccinations globally. The COVID-19 pandemic shows that no nation can stand alone. We are all part of a common humanity that requires us to respect our diverse experiences, cultures, and countries and forge partnerships that better serve the interests of all.

MEB and PH are developers of a COVID-19 vaccine construct, which was licensed by Baylor College of Medicine to Biological E Ltd, a commercial vaccine manufacturer for scale-up, production, testing, and licensure. JPF and GK are members of the WHO SAGE Working Group on COVID-19 vaccines. SG has a ChAdOx1 nCoV-19 patent application licensed to AstraZeneca. MH is Founder and Managing Director of SaudiVax. JHK reports personal fees from SK biosciences. GK is an Independent Director of Hilleman Laboratories Private Limited and Vice Chair of the Board of CEPI. HL reports grants and honoraria for training talks from GlaxoSmithKline, and grants and honoraria from Merck as a member of the Merck vaccine confidence advisory board, outside the submitted work. TS reports grants from National Institute of Allergy and Infectious Diseases, research contracts from GlaxoSmithKline, research contracts from ViiV Healthcare, and grants from Fast Grants. SS reports grants from the US Department of Defense, Bloomberg Foundation, State of Maryland, Ansun, Astellas, Cidara, F2G, T2, Shire, Shionogi, and Scynexis; personal fees from Acidophil, Amplyx, Janssen, Karyopharm, Intermountain Health, and Immunome; grants and personal fees from Merck, Reviral outside the submitted work. All other authors declare no competing interests. The authors' views and opinions in this Comment do not necessarily represent the views, decisions, or policies of the institutions, universities, or health systems with which they are affiliated. We thank Jeffrey Sachs, Chair of the *Lancet* COVID-19 Commission, and Yanis Ben Amor, member of the Secretariat of this Commission, for their invaluable review and feedback.

Lancet Commission on COVID-19 Vaccines and Therapeutics Task Force Members
peter.figueroa10@gmail.com

The members of the *Lancet* Commission on COVID-19 Vaccines and Therapeutics Task Force are: *J Peter Figueroa, Maria Elena Bottazzi (Co-Chair), Peter Hotez (Co-Chair), Carolina Batista, Onder Ergonul, Sarah Gilbert, Mayda Gursel, Mazen Hassanain, Jerome H Kim, Bhavna Lall, Heidi Larson, Denise Naniche, Timothy Sheahan, Shmuel Shoham, Annelies Wilder-Smith, Natalie Strub-Wourgaft, Prashant Yadav, and Gagandeep Kang.

University of the West Indies, Mona, Kingston, Jamaica (JPF); Texas Children's Center for Vaccine Development, Baylor College of Medicine, Houston, TX, USA (MEB, PH); Médecins Sans Frontières, Rio de Janeiro, Brazil (CB); Koc University Research Center for Infectious Diseases, Istanbul, Turkey (OE); Jenner Institute, Nuffield Department of Medicine, Oxford University, Oxford, UK (SG); Middle East Technical University, Ankara, Turkey (MG); College of Medicine, King Saud University, Riyadh, Saudi Arabia (MH); International Vaccine Institute, Seoul, South Korea (JHK); University of Houston College of Medicine, Houston, TX, USA (BL); London School of Hygiene & Tropical Medicine, London, UK (HL, AW-S); ISGlobal-Barcelona Institute for Global Health-Hospital Clinic-University of Barcelona, Spain (DN); University of North Carolina, Gillings School of Global Public Health, Chapel Hill, NC, USA (TS); Johns Hopkins University School of Medicine, Baltimore, MD, USA (SS); Heidelberg Institute of Global Health, University of Heidelberg, Heidelberg, Germany (NS-W); Drugs for Neglected Diseases Initiative, Geneva, Switzerland (NS-W); Center for Global Development, Washington, DC, USA (PY); Harvard Medical School, Boston, MA, USA (PY); Christian Medical College, Vellore, India (GK)

1 Kamradt-Scott A. What went wrong? The World Health Organization from swine flu to Ebola. In: Kruck A, Oppermann K, Spencer A, eds. Political mistakes and policy failures in international relations. Cham: Palgrave Macmillan/Springer, 2018: 193–215.
2 WHO. Access to COVID-19 Tools (ACT) Accelerator. April 24, 2020. https://www.who.int/docs/default-source/coronaviruse/access-to-covid-19-tools-(act)-accelerator-call-to-action-24april2020.pdf (accessed Jan 20, 2021).
3 Duke Global Health Innovation Center. Will low-income countries be left behind when COVID-19 vaccines arrive? Nov 9, 2020. https://globalhealth.duke.edu/news/will-low-income-countries-be-left-behind-when-covid-19-vaccines-arrive (accessed Jan 20, 2021).
4 WHO. Fair allocation mechanism for COVID-19 vaccines through the COVAX Facility. Dec 18, 2020. https://www.who.int/publications/m/item/fair-allocation-mechanism-for-covid-19-vaccines-through-the-covax-facility (accessed Jan 20, 2021).
5 So AD, Woo J. Reserving coronavirus disease 2019 vaccines for global access: cross sectional analysis. *BMJ* 2020; **371:** m4750.
6 World Bank Group. Vaccine announcement. Oct 15, 2020. https://www.worldbank.org/en/news/factsheet/2020/10/15/world-bank-group-vaccine-announcement---key-facts (accessed Jan 20, 2021).
7 Inter-American Development Bank. IDB mobilizes $1 billion for COVID-19 vaccine financing in Latin America and the Caribbean. Dec 16, 2020. https://www.iadb.org/en/news/idb-mobilizes-1-billion-covid-19-vaccine-financing-latin-america-and-caribbean (accessed Jan 20, 2021).
8 Asian Development Bank. ADB announces $9 billion COVID-19 vaccine initiative for developing Asia. Dec 11, 2020. https://www.adb.org/news/videos/adb-announces-9-billion-covid-19-vaccine-initiative-developing-asia (accessed Jan 20, 2021).
9 Ndiili N. Unprecedented economic attack on sub-Sahara African economies: how severe is the perceived slump? *Environ Syst Decis* 2020; published online May 25. https://doi.org/10.1007/s10669-020-09780-1.
10 Teresa Aguado M, Barratt J, Beard JR, et al. Report on WHO meeting on immunization in older adults: Geneva, Switzerland, 22–23 March 2017. *Vaccine* 2018; **36:** 921–31.
11 Ducomble T, Gignoux E. Learning from a massive epidemic: measles in DRC. *Lancet Infect Dis* 2020; **20:** 542.
12 WHO. Immunisation coverage. July 15, 2020. https://www.who.int/news-room/fact-sheets/detail/immunization-coverage (accessed Jan 20, 2021).
13 Addo-Atuah J, Senhaji-Tomza B, Ray D, et al. Global health research partnerships in the context of the Sustainable Development Goals (SDGs). *Res Social Adm Pharm* 2020; **16:** 1614–18.
14 Sultana J, Mazzaglia G, Luxi N, et al. Potential effects of vaccinations on the prevention of COVID-19: rationale, clinical evidence, risks, and public health considerations. *Expert Rev Vaccines* 2020; published online Oct 6. https://doi.org/10.1080/14760584.2020.1825951.
15 Preston C, Valdez ML, Bond K. Strengthening medical product regulation in low- and middle-income countries. *PLoS Med* 2012; **9:** e1001327.
16 Usher AD. South Africa and India push for COVID-19 patents ban. *Lancet* 2020; **396:** 1790–91.