Epidemics 54 (2026) 100883

Contents lists available at ScienceDirect

Epidemics

journal homepage: www.elsevier.com/locate/epidemics

Whose knowledge counts? Equity, epistemic justice, and reforming infectious disease research culture

Hanna-Tina Fischer [a,*], Augustina Koduah [b]

[a] Charité Center for Global Health, Charité – Universitätsmedizin Berlin, corporate member of Freie Universität Berlin and Humboldt Universität Berlin, Berlin, Germany
[b] Department of Pharmacy Practice and Clinical Pharmacy, University of Ghana, Ghana

ARTICLE INFO

Keywords:
Research culture
Epistemic justice
Intersectionality
Global health
Infectious disease modeling
Knowledge hierarchies
Pandemic preparedness

ABSTRACT

Infectious disease epidemiology is shaped by engrained research cultures that privilege biomedical and quantitative knowledge systems, systematically marginalizing qualitative, contextual, and locally informed approaches. These hierarchies reflect deeper inequities in who leads, who participates, and whose knowledge counts—disparities often patterned along geography, gender, language, and disciplinary background. This perspectives paper examines how funding priorities, academic training, and publishing norms sustain epistemic and structural exclusion, particularly for researchers based in the Global South. Drawing on Ghana's COVID-19 response, we show how reliance on externally developed epidemiological models mirrored broader marginalization in research authorship, agenda-setting, and decision-making. We argue that equity-focused reforms in funding, training, and publishing—grounded in epistemic and distributive justice—are necessary to transform infectious disease research culture. A more just and inclusive research culture is not only an ethical imperative but essential to the effectiveness and legitimacy of epidemic responses.

1. Introduction: power, privilege, and exclusion in infectious disease research

Infectious disease research does not operate in a vacuum. It is shaped by long-standing power asymmetries—between disciplines, institutions, and geographies—that determine whose knowledge is considered valid, who leads, and who gets left out. Despite growing calls for greater interdisciplinarity, research culture in infectious disease epidemiology continues to privilege biomedical paradigms—both in epistemological orientation and institutional dominance—often at the expense of contextual, qualitative, and locally grounded approaches (Acolin and Fishman, 2023; Buckee et al., 2021).

This is not simply a matter of disciplinary bias. It reflects a broader culture that rewards proximity to dominant institutions and epistemologies, while marginalizing those who operate outside them. Structural inequities embedded in funding systems, academic training, and publishing practices continue to marginalize researchers—especially those based in the Global South, those using non-dominant methods, and those working across disciplinary boundaries (Abimbola and Pai, 2020; Bedson et al., 2021). These barriers limit not only who gets to participate in shaping the research questions and tools, but also which perspectives are reflected in policy and practice.

2. Intersectional barriers in research participation

Exclusion in infectious disease research is not only geographic or disciplinary; it is intersectional. Gender, race, language, and career stage shape who gets access to funding, authorship, and recognition. Women and non-White scholars remain underrepresented in leadership and authorship roles, despite increasing diversity at early career levels (Zelner et al., 2023). English-language dominance further disadvantages non-native speakers, many of whom are based in LMICs, whose contributions may be dismissed due to writing style rather than substance. Early-career researchers without elite affiliations often struggle to access the informal networks that shape collaboration and visibility. Academic culture tends to reward rapid output and linear career trajectories, sidelining those with diverse paths. These exclusions are not incidental but embedded in the academic system itself. They affect who gets funded, who gets cited, and whose work informs policy and practice.

These inequities are visible in authorship metrics. A bibliometric analysis of global health publications (2014–2016) found that under 10 % of first authors for studies conducted in sub-Saharan Africa were

* Corresponding author.
E-mail address: hanna-tina.fischer@charite.de (H.-T. Fischer).

https://doi.org/10.1016/j.epidem.2025.100883
Received 1 March 2025; Received in revised form 14 November 2025; Accepted 16 December 2025
Available online 17 December 2025

based at institutions in the region (Ghani et al., 2021). Another review found that when collaborators from top U.S. universities were involved, only 23 % of first authors were affiliated with institutions in the country where the study took place (Hedt-Gauthier et al., 2019). These authorship patterns reflect structural inequalities, reinforced by funding flows: during the first year of the COVID-19 pandemic, the majority of research grants were awarded to institutions in high-income countries—even for projects focused on LMICs (UKCDR, and GLOPID-R, 2021).

3. Epistemic hierarchies and the terms of participation

Infectious disease epidemiology tends to equate rigor with quantification. Statistical modeling is treated as the gold standard, while other ways of knowing are often discounted. This is not a critique of modeling per se, but of how research culture defines what counts as valid knowledge and who counts as a knowledge producer (Lees et al., 2021).

Researchers trained in social science and qualitative methods, particularly those based in African institutions, often face an uphill battle in accessing funding, leading projects, or publishing in high-impact journals (Bedson et al., 2021; Buckee et al., 2021). Grant structures tend to privilege Northern institutions and siloed disciplinary expertise. Collaborations are frequently structured around extractive models, with Southern partners brought in late, tasked with implementation or data collection, and excluded from authorship or research agenda-setting (Abimbola & Pai, 2020; Bardosh et al., 2020). Often justified as pragmatic or capacity-based, such arrangements entrench epistemic hierarchies and are reinforced by "parachute research," where Northern-led teams design studies and deploy Southern partners solely for data collection, with limited involvement in authorship, analysis, or interpretation. These practices not only limit visibility and recognition but also distort the knowledge base on which public health policies are built. Research rooted in lived experience or local insight often goes unseen unless reframed in dominant terms (Lees et al., 2021).

What counts as "rigorous" research is also shaped by publishing norms that favor positivist approaches and technical language (Adams, 2016). Research that prioritizes lived experience, local adaptation, or structural determinants of health often struggles to gain visibility unless it is filtered through quantitative lenses. This hierarchy is not accidental—it reflects a broader research culture that undervalues context, mistrusts qualitative data, and often fails to reflect on its own positionality (Lees et al., 2021).

This paper argues that building a more inclusive and equitable research culture in infectious disease epidemiology requires more than adding social science into existing frameworks. It demands a shift in how we define expertise, how we build partnerships, and how we reward knowledge production. Using Ghana's COVID-19 response as a case example, we highlight how imported epidemiological models—often developed in and for high-income settings—led to policy misalignments that mirrored deeper structural exclusions in the research process. We examine how these dynamics are sustained and propose concrete steps to move toward a research culture that is not only interdisciplinary, but also equitable and responsive to the contexts in which epidemics unfold.

4. Case study: COVID-19 modeling and equity in Ghana

Ghana's experience during the COVID-19 pandemic illustrates how research inequities are both methodological and structural. These inequities were reflected in the modeling cultures that shaped global pandemic forecasting. Epidemiological models were not neutral technical tools but products of entrenched hierarchies about whose data and expertise counted. Assumptions developed in high-income contexts—on household structure, labor mobility, or social protection—were treated as universal parameters, while contextual insights from Ghanaian economists, anthropologists, and public-health scholars were sidelined as anecdotal. In this sense, modeling practices reproduced the same epistemic hierarchies that determine whose voices shape global health research more broadly. Drawing on models developed in and for high-income contexts, public health authorities implemented interventions—including strict lockdowns and movement restrictions—without adequate attention to the realities of Ghana's large informal economy. These policies assumed conditions that did not exist, such as widespread access to social protection or the ability to work remotely (Mueller et al., 2021). Studies have shown that such measures disproportionately burdened informal sector workers, disrupting livelihoods and exacerbating pre-existing vulnerabilities (Anku-Tsede, Arthur, 2021; Nkansah-Dwamena & Fevrier, 2022). Compliance studies in public transport stations, for instance, revealed widespread logistical and behavioral obstacles to implementing prevention guidelines—underscoring the disjuncture between policy design and infrastructural reality (Bonful et al., 2020).

This case illustrates, in concrete form, how the epistemic hierarchies outlined earlier become operational within modeling communities: the same funding, authorship, and training imbalances that shape global research participation also determine whose models are trusted and whose are ignored.

The deeper issue, however, lies in how these models and interventions were generated and translated into policy and practice. Frempong et al. (2021) critically examine the COVID-19 models used in Ghana and argue that many relied on limited or misaligned datasets, with assumptions shaped by international modeling paradigms rather than local knowledge systems. Their analysis underscores how technocratic modeling, when decoupled from community realities, risks reinforcing epistemic exclusion. During the pandemic, Ghanaian researchers were often absent from the early stages of model development, consulted only as implementers or reviewers rather than co-creators of knowledge. This sidelining occurred despite evidence that local scholars were already developing bespoke models attuned to Ghanaian conditions (e.g. Ofori et al. (2022)). Yet, even these locally developed models often adhered to global epidemiological frameworks that prioritized transmission metrics over sociocultural variables. Important insights on community trust, social cohesion, and informal labor dynamics—crucial to understanding the likely effects of restrictions—were often marginalized in favor of metrics deemed globally relevant (Razavi et al., 2020; Richards, 2016). Scholars have also critiqued the resulting "data-driven" narrative for reproducing epistemic injustices—where local voices were excluded from framing the problem, choosing the indicators, or shaping the interpretation (Lauer & Shenton, 2017).

The marginalization of Ghanaian modelers from the early design stages reflected the broader structural barriers discussed earlier—funding asymmetries, authorship hierarchies, and assumptions about where "rigor" resides. Models produced in Northern institutions carried epistemic authority, while locally developed models had to justify their legitimacy through alignment with external frameworks. This hierarchy in credibility mirrored inequities in who received modeling grants, who hosted the data infrastructure, and who appeared as corresponding authors.

These exclusions in modeling mirrored the structural inequities discussed earlier—from Northern control of research funding to publishing norms that equate quantitative authority with objectivity. The Ghana example therefore bridges methodological and cultural critique: it shows how modeling decisions themselves reproduce inequitable research cultures.

Ghana's experience is emblematic of a broader pattern in global health research, where externally derived models and exclusionary practices systematically marginalize local expertise and priorities. The disconnect between policy design and contextual realities is not incidental—it reflects a research culture that undervalues situated knowledge and perpetuates structural inequities in participation and recognition. Mathematical models of Ghana's epidemic dynamics, while technically rigorous (Neebo Wiah et al., 2020; Rhodes et al., 2020), rarely engaged with the ethical implications of whose knowledge counted and how. Studies have argued that even well-calibrated

interventions like border closures had minimal epidemiological impact but substantial economic and social costs, particularly for cross-border traders and informal workers (Emeto et al., 2021).

Addressing these dynamics requires more than better technical calibration; it demands a shift in how we define valid evidence, equitable partnerships, and responsible authorship. These are fundamentally ethical questions, and any meaningful reform must be rooted in principles that recognize the value of diverse epistemologies and the rights of all researchers to contribute on equal terms. The inequities revealed through modeling during Ghana's COVID-19 response are thus not exceptional but symptomatic of a global research culture that treats technical modeling as apolitical. Recognizing the ethical and political dimensions of modeling is central to building equitable systems of knowledge production.

5. Ethical foundations for structural change

Calls for reform in infectious disease research culture must rest on an explicit ethical foundation. At stake are not only technical or procedural shortcomings, but fundamental questions of distributive and epistemic justice—who has access to resources, who sets research agendas, and whose knowledge is deemed legitimate, and, as modeling demonstrates, whose assumptions define reality. Distributive justice demands that research funding and authorship opportunities be equitably shared, not concentrated in historically privileged institutions. Epistemic justice highlights the need to recognize and respect diverse ways of knowing, especially those rooted in lived experience or local contexts. Procedural fairness requires inclusive decision-making structures where underrepresented voices can meaningfully shape priorities.

Without attending to these ethical dimensions, reforms risk becoming tokenistic or reinforcing the very hierarchies they aim to dismantle. Thus, the transformation of research culture must be understood as an ethical imperative as much as a strategic necessity. These inequities are not inevitable. They are the product of systems—funding mechanisms, training models, and publishing conventions—that can be reformed. Against this ethical backdrop, we identify three priority areas where structural change is both necessary and achievable: funding, training, and publishing.

This table outlines key structural barriers that perpetuate epistemic and distributive injustice in infectious disease research and proposes actionable reforms aligned with a justice-oriented research culture.

5.1. Equitable funding structures

Funding mechanisms should incentivize co-leadership by LMIC-based researchers. This includes ring-fenced resources for Global South institutions, criteria that reward equitable governance, and long-term investments in institutional capacity (Bardosh et al., 2020). These principles apply equally to modeling consortia, where grant leadership and data-infrastructure control often remain concentrated in Northern institutions.

Table 1
Barriers to Equity and Inclusion in Epidemic Research—and Pathways for Reform.

Barrier	Manifestation	Proposed Reform
Epistemic hierarchy	Prioritization of statistical modeling over contextual and qualitative data	Publishing norms that value mixed-methods and lived experience
Funding inequality	Northern institutions control major grants, minimal LMIC co-leadership	Ring-fenced LMIC funding; shared governance requirements
Disciplinary silos	Lack of cross-training; tokenistic collaboration	Integrated curricula; interdisciplinary co-mentorship
Authorship injustice	LMIC researchers underrepresented in first/senior author roles	Equitable authorship guidelines; transparency in contributions

5.2. Inclusive and interdisciplinary training

Epidemiology programs, especially in high-income settings, must include qualitative methods, participatory approaches, and critical theory (Ali et al., 2024). Likewise, social science programs should include basic public health methods. These trainings should be co-developed with LMIC institutions to avoid reproducing hierarchies they intend to dismantle (Manna et al., 2024). In the modeling community, this means training modelers to engage critically with social context and ensuring co-training opportunities with social scientists and LMIC partners.

5.3. Shifting publishing norms

Academic journals must broaden their sense of what constitutes valid evidence. This means welcoming diverse methodological traditions, reforming authorship criteria, and diversifying editorial boards to include a broader range of disciplinary and regional expertise. Mixed-methods and community-based research must be valued not only as supplements to quantitative studies but as essential contributions to the field (Adams, 2016; Zelner et al., 2023). For modeling research, journals can promote equity by encouraging inclusion of social and behavioral dimensions, requiring transparency on collaboration structures, and broadening reviewer pools beyond quantitative specialists.

5.4. Reforming modeling practices for equity and inclusion

Infectious-disease modeling sits at the heart of epidemic decision-making, yet the culture surrounding model development, validation, and use often mirrors the inequities embedded in wider research systems. Models shape not only predictions but also narratives of expertise—deciding whose assumptions define risk and whose realities are left out (Rhodes et al., 2020). These recommendations build directly on the systemic barriers described above: funding asymmetries, narrow definitions of rigor, and extractive collaboration models. Addressing them within modeling practice requires not only new technical standards but also deliberate redesign of training pathways, governance structures, and data policies.

1. Collaborative design and shared governance are essential. Modeling consortia should include social scientists, ethicists, and local data producers from project inception. Co-developed modeling frameworks help ensure that assumptions about behavior, mobility, and policy feasibility reflect contextual realities rather than abstract ideals. Funding calls can require documented co-leadership between data scientists and LMIC-based collaborators.
2. Transparency and data reciprocity are equally important. Open-source model code and equitable data-sharing agreements are essential. Too often, Southern partners provide the data that power models but lack access to the analytic pipelines. Shared repositories that attribute data provenance and enforce co-authorship rights would help redistribute epistemic authority.
3. Training and reflexivity should also be prioritised. Modeling curricula should incorporate qualitative and participatory approaches alongside technical skills. Reflexive training—encouraging modelers to question their own positionality, data gaps, and value assumptions—would promote ethical awareness and reduce the unintended reproduction of bias.
4. Finally, models must recognize diverse forms of validation. Community feedback, stakeholder sense-checking, and mixed-method validation should be recognized as legitimate complements to statistical fit.

Building an equitable modeling culture therefore requires more than

technical accuracy; it requires procedural fairness and epistemic humility. By embedding collaboration, transparency, and reflexivity into modeling practice, the field can move from predictive dominance to co-produced understanding—strengthening both the legitimacy and effectiveness of epidemic response. Embedding these reforms within routine modeling practice would directly counter the exclusionary dynamics seen in contexts such as Ghana, where model development and data access were dominated by external actors.

6. Conclusion: toward an equitable and inclusive research paradigm

Equity in research culture is not a secondary concern; it is foundational. When researchers from underrepresented contexts are excluded or undervalued, the resulting models, policies, and interventions are likely to be misaligned with on-the-ground realities. This is not simply a matter of inclusion for its own sake, but of ensuring that infectious disease responses are informed by the full range of knowledge, perspectives, and lived experience. Inclusion is not only a moral imperative — it is central to relevance, legitimacy, and impact.

To dismantle epistemic hierarchies, we must change the systems that sustain them. That means restructuring funding to support equitable partnerships, redefining methodological rigor, and reforming publishing to reflect a plurality of voices. A transformative research culture must not only integrate diverse methodologies but also confront the power structures that determine whose voices and values count in global public health. This will not happen through good intentions alone; it requires systemic accountability.

We call on funders, journals, and institutions to adopt equity audits, shared governance mechanisms, and inclusive authorship policies. Without these changes, the field will continue to reproduce the same asymmetries it claims to challenge. Building a just research culture is not symbolic work.; it is foundational to ensuring that epidemic science is legitimate, and truly global.

CRediT authorship contribution statement

Augustina Koduah: Writing – review & editing. **Hanna-Tina Fischer:** Writing – original draft, Conceptualization.

Funding

This perspective paper has no specific funding, but the research grant the researchers are working on, 'Pandemic non-pharmaceutical interventions to flatten the curve: needs, effectiveness and impact in the global South—the example of Ghana' is funded predominantly by funds from the Berlin University Alliance (BUA) as part of the Excellence Strategy of the German federal and state governments (grant number 113_MC_GlobalHealth). Funders are not involved in the review process.

Declaration of Competing Interest

The authors declare the following financial interests/personal relationships which may be considered as potential competing interests. Hanna-Tina Fischer reports financial support and article publishing charges were provided by Charite University. If there are other authors, they declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

No data was used for the research described in the article.

References

Abimbola, S., Pai, M., 2020. Will global health survive its decolonisation? Lancet 396 (10263), 1627–1628. https://doi.org/10.1016/S0140-6736(20)32417-X.

Acolin, J., Fishman, P., 2023. Beyond the biomedical, towards the agentic: A paradigm shift for population health science. Soc. Sci. Med 326, 115950. https://doi.org/10.1016/j.socscimed.2023.115950.

Adams, V. (Ed.), 2016. Metrics: What Counts in Global Health. Duke University Press. https://doi.org/10.2307/j.ctv1168c3w.

Ali, S., Li, Z., Moqueet, N., Moghadas, S.M., Galvani, A.P., Cooper, L.A., Stranges, S., Haworth-Brockman, M., Pinto, A.D., Asaria, M., Champredon, D., Hamilton, D., Moulin, M., John-Baptiste, A.A., 2024. Incorporating Social Determinants of Health in Infectious Disease Models: A Systematic Review of Guidelines. Med. Decis. Mak. 44 (7), 742–755. https://doi.org/10.1177/0272989x241280611.

Anku-Tsede, O., & Arthur, R. (2021, 2021//). Adversity or Opportunity? Exploring the Effect of COVID-19 on Ghana's Informal Economy. Advances in Human Factors, Business Management and Leadership, Cham.

Bardosh, K.L., de Vries, D.H., Abramowitz, S., Thorlie, A., Cremers, L., Kinsman, J., Stellmach, D., 2020. Integrating the social sciences in epidemic preparedness and response: A strategic framework to strengthen capacities and improve Global Health security. Glob. Health 16 (1), 120. https://doi.org/10.1186/s12992-020-00652-6.

Bedson, J., Skrip, L.A., Pedi, D., Abramowitz, S., Carter, S., Jalloh, M.F., Funk, S., Gobat, N., Giles-Vernick, T., Chowell, G., de Almeida, J.R., Elessawi, R., Scarpino, S. V., Hammond, R.A., Briand, S., Epstein, J.M., Hebert-Dufresne, L., Althouse, B.M., 2021. A review and agenda for integrated disease models including social and behavioural factors. Nat. Hum. Behav. 5 (7), 834–846. https://doi.org/10.1038/s41562-021-01136-2.

Bonful, H.A., Addo-Lartey, A., Aheto, J.M.K., Ganle, J.K., Sarfo, B., Aryeetey, R., 2020. Limiting spread of COVID-19 in Ghana: Compliance audit of selected transportation stations in the Greater Accra region of Ghana. PLoS One 15 (9), e0238971. https://doi.org/10.1371/journal.pone.0238971.

Buckee, C., Noor, A., Sattenspiel, L., 2021. Thinking clearly about social aspects of infectious disease transmission. Nature 595 (7866), 205–213. https://doi.org/10.1038/s41586-021-03694-x.

Emeto, T.I., Alele, F.O., Ilesanmi, O.S., 2021. Evaluation of the effect of border closure on COVID-19 incidence rates across nine African countries: an interrupted time series study. Trans. R. Soc. Trop. Med Hyg. 115 (10), 1174–1183. https://doi.org/10.1093/trstmh/trab033.

Frempong, N.K., Acheampong, T., Apenteng, O.O., Nakua, E., Amuasi, J.H., 2021. Does the data tell the true story? A modelling assessment of early COVID-19 pandemic suppression and mitigation strategies in Ghana. PLoS One 16 (10), e0258164. https://doi.org/10.1371/journal.pone.0258164.

Ghani, M., Hurrell, R., Verceles, A.C., McCurdy, M.T., Papali, A., 2021. Geographic, Subject, and Authorship Trends among LMIC-based Scientific Publications in High-impact Global Health and General Medicine Journals: A 30-Month Bibliometric Analysis. J. Epidemiol. Glob. Health 11 (1), 92–97. https://doi.org/10.2991/jegh.k.200325.001.

Hedt-Gauthier, B.L., Jeufack, H.M., Neufeld, N.H., Alem, A., Sauer, S., Odhiambo, J., Boum, Y., Shuchman, M., Volmink, J., 2019. Stuck in the middle: a systematic review of authorship in collaborative health research in Africa, 2014-2016. BMJ Glob. Health 4 (5), e001853. https://doi.org/10.1136/bmjgh-2019-001853.

Lauer, H., Shenton, J., 2017. Counterproductive contributions to African epidemiology. Madr. J. Immunol. 1 (1), 28–39. https://doi.org/10.18689/mjim-1000108.

Lees, S., Sariola, S., Schmidt-Sane, M., Enria, L., Tan, K.A., Aedo, A., Peeters Grietens, K., Kaawa-Mafigiri, D., Group, C.-C.R.C.S.S.W., 2021. Key social science priorities for long-term COVID-19 response. BMJ Glob. Health 6 (7). https://doi.org/10.1136/bmjgh-2021-006741.

Manna, A., Koltai, J., Karsai, M., 2024. Importance of social inequalities to contact patterns, vaccine uptake, and epidemic dynamics. Nat. Commun. 15 (1), 4137. https://doi.org/10.1038/s41467-024-48332-y.

Mueller, V., Sheriff, G., Keeler, C., Jehn, M., 2021. COVID-19 Policy Modeling in Sub-Saharan Africa. Appl. Econ. Perspect. Policy 43 (1), 24–38. https://doi.org/10.1002/aepp.13078.

Neebo Wiah, E., Danso-Addo, E., Ekow Bentil, D., 2020. Modelling the Dynamics of COVID-19 Disease with Contact Tracing and Isolation in Ghana. Math. Model. Appl. 5 (3). https://doi.org/10.11648/j.mma.20200503.13.

Nkansah-Dwamena, E., Fevrier, K., 2022. Are We All in This Together?": The Socioeconomic Impacts and Inequalities of the COVID-19 Pandemic in Ghana's Informal Economy. J. Asian Afr. Stud. 59 (4), 1302–1322. https://doi.org/10.1177/00219096221131824.

Ofori, S.K., Schwind, J.S., Sullivan, K.L., Cowling, B.J., Chowell, G., Fung, I.C., 2022. Transmission Dynamics of COVID-19 in Ghana and the Impact of Public Health Interventions. Am. J. Trop. Med Hyg. 107 (1), 175–179. https://doi.org/10.4269/ajtmh.21-0718.

Razavi, A., Erondu, N., Okereke, E., 2020. The Global Health Security Index: what value does it add? BMJ Glob. Health 5 (4). https://doi.org/10.1136/bmjgh-2020-002477.

Rhodes, T., Lancaster, K., Lees, S., Parker, M., 2020. Modelling the pandemic: attuning models to their contexts. BMJ Glob. Health 5 (6). https://doi.org/10.1136/bmjgh-2020-002914.

Richards, P., 2016. Ebola How a People's Science Helped End Epidemic. Bloomsbury Publishing.

UKCDR, & GLOPID-R. (2021). *Funding and undertaking research during the first year of the COVID-19 pandemic: COVID CIRCLE lessons for funders*. ⟨https://www.glopid-r.org/wp-content/uploads/2021/11/funding-and-undertaking-research-during-the-first-year-of-the-covid-19-pandemic-covid-circle-lessons-for-funders.pdf⟩.

Zelner, J., Naraharisetti, R., Zelner, S., 2023. Invited Commentary: To Make Long-Term Gains Against Infection Inequity, Infectious Disease Epidemiology Needs to Develop a More Sociological Imagination. Am. J. Epidemiol. 192 (7), 1047–1051. https://doi.org/10.1093/aje/kwad044.