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Supplementary appendix 3

This Equitable Partnership Declaration (EPD) was submitted by the authors, and we reproduce it as supplied. It has not been peer reviewed. *The Lancet*'s editorial processes have not been applied to the EPD.

Supplement to: Levine AC, Gainey M, Qu K, et al. A comparison of the NIRUDAK models and WHO algorithm for dehydration assessment in older children and adults with acute diarrhoea: a prospective, observational study. *Lancet Glob Health* 2023; published online Sept 27. https://doi.org/10.1016/S2214-109X(23)00403-5.

Equitable Partnership Declaration questions

Researcher considerations

1. Please detail the involvement that researchers who are based in the region(s) of study had during a) study design; b) clinical study processes, such as processing blood samples, prescribing medication, or patient recruitment; c) data interpretation; and d) manuscript preparation, commenting on all aspects. If they were not involved in any of these aspects, please explain why.

   This question is intended for international partnerships; if all your authors are based in the area of study, this question is not applicable.

   This should include a thorough description of their leadership role(s) in the study. Are local researchers named in the author list or the acknowledgements, or are they not mentioned at all (and, if not, why)? Please also describe the involvement of early career researchers based in the location of the study. Some of this information might be repeated from the Contributors section in the manuscript. Note: we adhere to ICMJE authorship criteria when deciding who should be named on a paper.

a) Study design: This study was co-designed by Dr. Adam C. Levine of Brown University in the United States and Dr. Nur H. Alam, senior scientist at icddr,b in Bangladesh, who are first and senior author on the manuscript respectively.
b) Clinical study processes: All of the study procedures and data collection were carried out by research team members at icddr,b in Bangladesh. Research was overseen by the site-PI, Dr. Nur H. Alam, and three junior physician researchers, including Dr. Nasrin, Dr. Sharif, and Dr. Noor, who are all included as co-authors. Data was collected by local Bangladeshi research nurses and health workers at icddr,b.
c) Data interpretation: Dr. Nasrin, Dr. Sharif, and Dr. Noor led all activities related to data management. Monique Gainey, program coordinator for the project who is Bangladeshi-American, also assisted in data management and interpretation, in collaboration with the study statisticians based at Brown University in the United States.
d) Manuscript preparation: Monique Gainey assisted with manuscript preparation. All authors, including Bangladeshi authors Dr. Alam, Dr. Nasrin, Dr. Sharif, and Dr. Noor, were involved in the editing of the manuscript. Dr. Sharif prepared the Bangla translation of the abstract.

2. Were the data used in your study collected by authors named on the paper, or have they been extracted from a source such as a national survey? ie, is this a secondary analysis of data that were not collected by the authors of this paper. If the authors of this paper were not involved in data collection, how were data interpreted with sufficient contextual knowledge?

   The Lancet Global Health *believe contextual understanding is crucial for informed data analysis and interpretation.*

As mentioned above, Dr. Alam, Dr. Nasrin, Dr. Sharif, and Dr. Noor oversaw data collection for this study in Bangladesh and are named authors on the paper.

3. How was funding used to remunerate and enhance the skills of researchers and institutions based in the area(s) of study? And how was funding used to improve research infrastructure in the area of study?

Potentially effective investments into long-term skills and opportunities within institutions could include training or mentorship in analytical techniques and manuscript writing, opportunities to lead all or specific aspects of the study, financial remuneration rather than requiring volunteers, and other professional development and educational opportunities.

Improvements to research infrastructure could be funding of extended trial designs (such as platform trials) and use of master protocols to enable these designs, establishment of long-term contracts for research staff, building research facilities, and local control of funding allocation.

Skills:
Junior physician researchers (Dr. Nasrin, Dr. Sharif, and Dr. Noor) involved in this study received skills training in both quantitative and qualitative methods as part of this five-year NIH funded research project, in addition to covering 100% of their salary during the study period. These researchers had the opportunity to co-develop the qualitative agendas and lead all focus group discussions as part of the qualitative research component of this project. In addition, they were encouraged to develop their own secondary analyses of this research. Dr. Nasrin, for instance, was supported in leading another manuscript for publication as well as several abstracts based on the data collected under this research grant, receiving mentorship in data analysis, literature review, and manuscript writing. The skills developed as part of this research helped Dr. Nasrin enter a PhD program in epidemiology as well.

Research infrastructure:
Just under a quarter of research funding provided to icddr,b for this project was dedicated to improving research infrastructure locally at their Dhaka Hospital rather than direct study costs. The Site-PI was involved in decision-making regarding local funding allocation at all stages of the research process.

4. How did you safeguard the researchers who implemented the study?

Please describe how you guaranteed safe working conditions for study staff, including provision of appropriate personal protective equipment, protection from violence, and prevention of overworking.

This study was conducted at the icddr,b Dhaka Hospital. Icddr,b is a premier research institution with hundreds of ongoing research studies and clear protocols and policies for protecting research staff. As much of this research was carried out during the COVID-19 pandemic as well as a local

cholera epidemic in Dhaka, Bangladesh, all research personnel were provided with personal protective equipment, including gloves, N95 masks, and hand sanitizer, as well as training for their proper use. Masking was required for all study staff during the entirety of data collection for this study. Staff schedules were developed to ensure that study staff had at least two days off each week and did not work more than 40 hours per week, as well as sick leave, parental leave, and vacation time.

Benefits to the communities and regions of study

5. How does the study address the research and policy priorities of its location?

How were the local priorities determined and then used to inform the research question? Who decided which priorities to take forward? Which elements of the study address those priorities?

Icddr,b was originally created in the early 1960s to study cholera, a deadly diarrhoeal disease that remains an important cause of morbidity and mortality in Bangladesh and much of the global south to this day. One of the most important treatments for cholera and other severe diarrhoeal diseases, oral rehydration solution (ORS) was originally developed and tested at icddr,b in the 1970s before becoming a standard treatment worldwide for moderate dehydration that has been credited with saving at least 50 million lives over the past 50 years. As continuing to improve care for cholera and diarrhoeal diseases remains a key priority for icddr,b, this research fit perfectly with the overall mission of the organization.

6. How will research products be shared in the community of study?

For instance, will you be providing written or oral layperson summaries for non-academic information sharing? Will study data be made available to institutions in the region(s) of study? The Lancet Global Health *encourages authors to translate the summary (abstract) into relevant languages after paper editing; do you intend to translate your summary?*

We have translated the summary (abstract) into Bangla as recommended by Lancet Global Health. In addition, we have presented the results of this research locally at icddr,b several times over the course of the this research award.

7. How were individuals, communities, and environments protected from harm?

a) How did you ensure that sensitive patient data was handled safely and respectfully? Was there any potential for stigma or discrimination against participants arising from any of the procedures or outcomes of the study?

No sensitive data was collected as part of this study. All paper case report forms were kept in locked offices at icddr,b, and all data was entered into a password protected database. Data was de-identified at the earliest possible opportunity and prior to sharing outside of icddr,b.

b) *Might any of the tests be experienced as invasive or culturally insensitive?*

The questions asked and clinical examinations performed on patients by research staff are relatively standard for medical encounters in this setting.

c) *How did you determine that work was sensitive to traditions, restrictions, and considerations of all cultural and religious groups in the study population?*

As the research was carried out in a setting with a religious Muslim majority, we ensured that all female patients were examined by female research nurses.

d) *Were biowaste and radioactive waste disposed of in accordance with local laws?*

Not applicable.

e) *Were any structures built that would have impacted members of the community or the environment (such as handwashing facilities in a public space)? If so, how did you ensure that you had appropriate community buy-in?*

Not applicable.

f) *How might the study have impacted existing health-care resources (such as staff workloads, use of equipment that is typically employed elsewhere, or reallocation of public funds)?*

Impact on existing health-care resources was minimal as all research staff for this study were hired from outside the icddr,b clinical staff pool. All study equipment and supplies were purchased with study funding. In addition, all patient care costs were covered by the study funds for all patients enrolled in the study.

8. Finally, please provide the title (eg, Dr/Prof, Mr/Mrs/Ms/Mx), name, and email address of an author who can be contacted about this statement. This can be the corresponding author.

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