Working with Partner Countries to Strengthen Research Capacity Relating to Global Representation

1. Why capacity strengthening?

The capacity to conduct high-quality research, both at the country and site level, is an important and often limiting factor in the site selection and location of clinical trials. Before committing to working in a particular country, sponsors must have confidence in the adequacy and efficiency of regulatory and ethical review, along with assurances as to logistical feasibility. The Science for Africa Foundation, for example, notes that "with over 25% of the global disease burden, only about 4% of global clinical trials occur in Africa. This disproportion is driven by inadequacies in the clinical research capacity, regulatory process ambiguity, deficient regional patient and disease area data, and a lack of visibility of existing clinical research capabilities in Africa."[1]

Site selection within a particular country – in both low-and-middle-income countries and in certain locations within high-income countries – is similarly influenced by capacity concerns relating to factors such as the nature of the healthcare infrastructure, the size and skills of the clinical and clinical research workforce, laboratory capacity, and sophistication of clinical record systems.

There is a strong link between lack of access to healthcare and exclusion from research. This points to the importance of capacity strengthening in both health and research systems in achieving more diverse research participation. One possible route to enhancing the ability to reach previously underserved and excluded populations is to be intentional in proactively supporting locally-led capacity strengthening in countries where the organization has an interest in developing longer-term activity and partnerships (referred to in this document as "partner countries").

Such initiatives should be undertaken in partnership with key stakeholders, including national health departments, national research institutes, local healthcare and research systems, local communities, and philanthropic and national funders. **Priorities need to be set, directed, and supported by national and local health leaders with input from local communities.** Capacity strengthening will only be sustainable and of long-term benefit to both local populations and the research enterprise if it is

[1] https://scienceforafrica.foundation/programmes/clinical-research-and-trials-community (accessed 28 June 2024). In response to the challenge of lack of awareness, the Foundation has established a Clinical Trials Community: a new resource providing country-level information on clinical trial processes and capacity across Africa. See also the Clinical Trials Community Africa Network which will build on the Clinical Trials Community platform.

undertaken in response to local needs, and with the support and long-term commitment of those responsible for local health systems.

The role that external funders can play in strengthening clinical trial capacity is recognized and valued by research leaders in low-resource settings. Examples include the launch by the Science for Africa Foundation of its Cross Pharma Capacity Development Initiative (CPCDI) to work with "global pharma companies and stakeholders with an aim to draw together local and sector partners to collectively develop clinical trial capacity and sustainably bring more clinical trials to Africa;"[2] and the DBT Wellcome Trust India Alliance which "invests in transformative ideas and supportive research ecosystems to advance discovery and innovation to improve health and well-being" in India.[3]

2. Different levels of capacity strengthening

It is useful to distinguish three levels of research capacity strengthening, each with different actions and deliverables and often each with different actors.[4]

Three Levels of Research Capacity Strengthening

1. **Individual Capacity Strengthening** involves promoting the individual skills, experience, and career progression of selected researchers, study staff, and laboratory personnel, through means such as mentoring, providing access to training, and supporting opportunities to develop their knowledge and expertise. Such capacity strengthening may take place in the context of specific studies, or through support for freestanding initiatives such as online educational platforms,[5] competency frameworks,[6] and communities of practice.[7] The extent to which such initiatives have longer-lasting benefits, both for the individuals involved and for local research capacity, will be affected by the organizational and environmental factors outlined below.
2. **Organizational Capacity Strengthening** takes place at the level of the research institution, healthcare facility, or study site. This may, for example, include strengthening key aspects of local research infrastructure such as laboratory facilities, patient record systems, research management, ethics review, and financial accounting. Importantly, organizational capacity

[2] https://scienceforafrica.foundation/clinical-research-and-trials-community. See also https://scienceforafrica.foundation/media-center/collaborative-partnership-industry-elevate-healthcare-research-africa (accessed 28 June 2024)

[3] DBT/Wellcome Trust India Alliance.

[4] Capacity Development: UNDAF Companion Guidance. United Nations Development Group, 2017.

[5] See, for example, the work of The Global Health Training Centre

[6] See, for example, the MRCT Center's Joint Task Force Competency Framework

[7] See, for example Sant Fruchtman C, Bilal Khalid M, Keakabetse T*, et al*. Digital communities of practice: one step towards decolonising global health partnerships. *BMJ Global Health* 2022;**7:**e008174.

strengthening also needs to include sustainable employment opportunities and career progression for researchers and study staff in order to retain and advance individuals with expertise. The need to develop and maintain these opportunities over the longer term highlights the importance of internal and external stakeholders working closely together.

3. Strengthening an **Enabling National Environment** is an important element of research capacity, concerning national and structural influences on research, such as the political and regulatory context or national logistical constraints. Strengthening the capacity of the enabling environment is primarily the responsibility of national governments, particularly with respect to factors such as the design of regulatory systems, while the role of external stakeholders will inevitably be limited. However, sponsors, working in partnership with health and research leaders in the country, are potentially well-placed to exercise advocacy with respect to the importance of clarity and certainty within the regulatory environment to support the development of global trials.

These distinctions may not always be clear in practice, and there are important inter-dependencies between and among capacity-strengthening initiatives at the individual, organizational, and national levels. Recognizing these roles helps to clarify where opportunities and responsibilities lie, and where support from external stakeholders might be most effective and welcomed in any specific context. They are also a useful tool in planning for **sustainable capacity strengthening**, recognizing that focusing only on individual capacity support is unlikely to advance long-term change without associated actions at the institutional and national level.

3. *Points to Consider when Supporting Capacity Strengthening in Global Contexts*

- **Work with stakeholders in the partner country** (e.g., ministries of health, national/local regulatory and ethics bodies, research leaders, and sites) to **identify, understand, and analyze their needs** for improved research capacity, whether at the individual, institutional, or national level. Identify those needs that align with your organization's strengths and goals – i.e., where helping meet country-specific needs will also help achieve your goals.
- For maximum effectiveness, prioritize capacity-strengthening initiatives that **build on, expand, or substantiate existing initiatives** such as capacity-strengthening collaborations and communities of practice within the country or a wider geographical region (see Box 1[8]). Such an approach helps avoid duplication and helps ensure that different external stakeholders (such as commercial sponsors and academic researchers) work effectively with one another, as well as with local leadership.

[8] https://wellcomeopenresearch.org/articles/6-14/v1

- Assess how your capacity-strengthening initiative can **help provide a sustainable basis for future research activity**, avoiding the danger of developing bespoke processes that are only suitable for one research project or one external research partner. Longer-term sustainability in terms of both any **material** infrastructure developed (such as laboratory facilities or electronic records systems) and in terms of the **skills** needed to use, maintain, and enhance those systems should be considered from the outset. Plans to ensure the future renewal and development of those skills (e.g., through collaboration with and commitments from local universities, training institutes, and health authorities) are an essential part of sustainability. Collaboration across external partners to sustain, mature, and advance research should be intentional and supported. Plans for future **financing** of research systems, infrastructure, education, and training need to be addressed from the beginning, for example through jointly owned commitments with national stakeholders.

Box 1: Building on Collaborative Networks in Asia to Support COVID-19 Studies

The **Collaboration for Research, Implementation and Training in Critical Care in Asia-Africa** (CCAA – formerly CCA focusing on Asia) "supports emerging critical care clinical-research leaders in 9 Asian and 9 African countries to build a network of healthcare facilities that work together as a community of practice to improve quality of critical care and enable high quality multicentre clinical research."

Following the outbreak of COVID-19, the REMAP-CAP (Randomised Embedded Multifactorial Adaptive Platform Trial in Community-Acquired Pneumonia) trial team worked with CCA systems and collaborators to enable sites in Asia to participate in the REMAP-CAP trial. Methods described to help overcome known barriers to multi-center clinical trials in resource-limited settings included:

i. Strengthening an existing community of practice
ii. Using remote study site recruitment, training and support
iii. Harmonizing the trial requirements with existing care processes
iv. Embedding trial case report forms into the existing CCA registry platform
v. Context specific adaptation and data management
vi. Alignment with existing pandemic and critical care research in the CCA.

- Take a staged approach in supporting capacity strengthening. **Assess how current capacity within the site and region aligns with the complexity and risk of any proposed study**,[9] and identify how

[9] See for example Barrios, CH & Mano, MS. Is independent clinical research possible in low- and middle-income countries? A roadmap to address persistent and new barriers and challenges. American Society of Clinical Oncology Education Book 2021;

targeted support could strengthen capacity to undertake more complex studies in the future. Observational research, implementation research, and the development of registries, for example, all differ from one another and from interventional biomedical research in their demands on research capacity and infrastructure. The demands of conducting particular studies will vary depending on the nature of the interventions involved (for example, a one-off easy-to-administer intervention versus complex and repeated procedures, or those requiring specialized equipment) and the nature of the study (for example, post-approval or translational studies versus investigational studies).

- Review the country or site periodically and continue to support the development of capacities and skills consistent with the progress of the site and its investigators and their study teams, and the national environment.
- Assess the **availability of sufficient numbers of experienced local PIs**, a key element of the capacity required to conduct clinical trials. There are many stakeholders involved in supporting the development of local researchers, including national governments, national universities, and national/regional research institutes and academies. External funders/sponsors can contribute in a variety of ways:
    - By ensuring that local researchers involved in multi-regional studies have **opportunities to develop their skills and be recognized for their contribution,** for example through opportunities such as authorship in any resulting publications and future studies (see Box 2).
    - By committing funding within a particular study specifically for **training opportunities** for local researchers, either directly relevant to the trial, or offering opportunities to build on skills developed within the trial.
    - By supporting **regional and international networking opportunities**, both within and beyond specific studies. Enhance the networking opportunities that arise as part of collaborative working across an multi-regional clinical trial by funding travel and expenses and offering remote access to events.
    - By supporting 'train the trainer' models in regional centers of excellence (such as those facilitated by the WHO's TDR programme[10]) and helping promote mutual learning through mentoring and twinning arrangements.[11] Opportunities for regional-level networking,

41:1–10. Table 1 identifies both barriers and capacity-related solutions for various forms of study less complex than phase 1-3 clinical trials.

[10] TDR (WHO Special Programme for Research and Training in Tropical Diseases): Regional Training Centres accessed 6 November 2023

[11] Cancedda C, Cotton P, Shema J, Rulisa S, Riviello R, Adams LV et al. Health professional training and capacity strengthening through international academic partnerships: the first five years of the human resources for health program in Rwanda. International Journal of Health Policy and Management. 2018 Nov;7(11):1024.

mutual learning, knowledge exchange, and access to high-quality training help ensure that increased capacity in one site in a country has wider reach across the region.

Box 2: Tools Supporting Equitable Research Partnerships

A number of tools have been developed by the academic sector to support equitable research partnerships in publicly funded research. The key principles and prompts are relevant to all kinds of research and are particularly important in the context of sustainable capacity strengthening where a key goal is to promote and support local research leadership. Some examples are listed:

- The Research Fairness Initiative guides
- The Association of Commonwealth Universities (ACU) Equitable Research Partnerships Toolkit: driving equity in international university research partnerships (see in particular section 6: checklists)
- EquiPar tool (London School of Hygiene and Tropical Medicine)
- UKCDR and ESSENCE Four Approaches to Supporting Equitable Research Partnerships

- Work with local partners to **address practical barriers and administrative delays** that may arise in local health and research systems such as poor data availability and quality. **Avoid creating "work-arounds" or alternative systems to circumvent existing barriers,** as this will hinder the creation of research processes and systems that are workable and sustainable for the long term. The more that research processes build on and are harmonized with clinical care practices, the easier it will be for healthcare practitioners to support the research endeavor. For example, data elements and their definitions should align research data collection with the medical record, and be transferred electronically from one to another if possible (see also Box 1)
- Provide financial support for **initiatives designed and delivered by local stakeholders to promote awareness and increase understanding of clinical research** – for both healthcare practitioners and local communities. Understanding what clinical research is and how it can help improve healthcare is an important element of strengthening the capacity for research. Increasing knowledge about the role of research is also a crucial element of achieving **effective community engagement and input** into a longer-term research program.

Annex: further guidance and analysis

The suggestions included in this tool emerged repeatedly in expert calls undertaken as part of the MRCT Center's global DEI project as well as through desk research. The 2022 UKCDR report Research capacity strengthening: lessons from UK-funded initiatives in low- and middle-income countries includes a bibliography of guidance and academic papers on research capacity strengthening in low-income settings since 2010. In addition, the following papers provide many practical examples of 'lessons learned' in capacity-strengthening initiatives that have informed this tool.

- Aryal D et al. Operationalization of the Randomized Embedded Multifactorial Adaptive Platform for COVID-19 trials in a low and lower-middle-income critical care learning health system. Wellcome Open Research 2021; **6**:14
- Barrios, CH & Mano, MS. Is independent clinical research possible in low- and middle-income countries? A roadmap to address persistent and new barriers and challenges. American Society of Clinical Oncology Education Book 2021; 41:1–10.
- Toto et al. Conducting clinical trials in sub-Saharan Africa: challenges and lessons learned from the Malawi Cryptosporidium study. Trials 2020; 21:680
- Franzen et al. Strategies for developing sustainable health research capacity in low and middle-income countries: a prospective, qualitative study investigating the barriers and enablers to locally led clinical trial conduct in Ethiopia, Cameroon and Sri Lanka. BMJ Open 2017; 7:e017246.
- Kilmarx PH et al. Increasing Effectiveness and Equity in Strengthening Health Research Capacity Using Data and Metrics: Recent Advances of the ESSENCE Mechanism. Annals of Global Health. 2023 Jun 2;89(1):38. (see in particular, Table 1)