

Capacity Building for Relevant Health Research in Developing Counties

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1. Introduction

A very important but often overlooked part of health and development support is assisting developing countries to become self-sufficient in meeting the health needs of their populations (CMH, 2001). Research plays a central role in this process by enabling the identification of needs, the selection of priorities and the development of strategies that are appropriate and relevant to countries. To ensure that the focus and relevance of the research is maintained, such research is best done within and by the countries themselves (Pang et al, 2003). An integral part of development support, therefore, is research capacity strengthening. Thus for developing countries to indigenise their health research systems it is essential to build research capacity which is essential to improve health status and attain better health (Nuyens, 2007; Sitthi-Amorn & Somrongthong, 2000).

There is ample evidence that the burden of disease in developing countries is very high particularly the burden of infectious, communicable and non-communicable diseases and health problems of mothers and children. Building indigenous research capacity will enable developing country scientists to translate results of studies carried out elsewhere into their individual national settings. Eventually results of such studies will increase the global knowledge base about the particular health problems and contribute to finding appropriate solutions to them (Beasley et al, 2007; Nchinda, 2002).

This paper describes some examples of health research capacity strengthening over the last few decades with specific reference to the Ghanaian Dutch Programme for Health Research and Development. We examine the challenges of sustainable research capacity building in contemporary times and suggests from these examples, mechanisms for building these capacities in a sustainable manner.

2. Contemporary examples of Research Capacity

Many institutions have partnered developing countries to develop their research capacity in the past. We have chosen to review and discuss only a few of them in the context of this paper because they have had long traditions of working with southern institutions. The examples chosen here include The Wellcome Trust, The Special Programme for Research & Training in Tropical Diseases (TDR), The Multilateral Initiative on Malaria, The Global Forum for Health Research and The Ghana-Netherlands Programme for Health Research and Development. The key objectives of many of these programmes could be encapsulated as:

1. Create equitable and sustainable South-South and North-South partnerships and networks between institutions.
2. Build a critical mass of local research capacity and develop vibrant research environments geared to national priorities across the South, including universities.
3. Support the human resources and infrastructure necessary for the administrative, governance, financial and management functions needed for institutions to deliver research excellence.
4. Develop and build leadership at individual, institutional and national levels so countries can better initiate and lead research activities.
5. Support research leaders to act as beacons and role models to enthuse young scientists to develop research careers.
6. Strengthen research training and build career pathways for the best and brightest researchers.

The Wellcome Trust

The Wellcome Trust's mission is to foster and promote research with the aim of improving human and animal health. Their broadly defined mission allows them to respond flexibly to medical needs and scientific opportunities. As well as tackling immediate priorities, their independence and long-term perspective enable them to support research that will benefit future generations. This rounded view extends to their work on the impact of biomedical research. They seek to improve understanding of the ways science and medicine has developed, and how research affects people and society today. The Wellcome Trust thus has a particular focus on health research, including biomedical and public health research.

The Trust has traditionally funded several Masters and PhDs in various health disciplines usually as part of institutional grants or research grants. They also provide career development grants to enable young scientists chart a career pathway for themselves which may include attachments to centres of excellence around the world. Recently, the trust has identified an urgent need to strengthen local research capacity in Africa, to tackle compelling questions about health and disease vital to enhancing people's health, lives and livelihoods. In order to enhance institutional capacity to undertake research, the Trust is therefore proposing to provide funding to support the creation of consortia and networks; between higher education institutes (HEIs) and research institutes located within Africa, and between these institutions and UK HEIs.

Special Programme for Research & Training in Tropical Diseases (TDR)

Research capability strengthening (RCS) is a cross-cutting programme area of TDR, established to strengthen the capacity of disease-endemic countries to carry out and sustain research (WHO/TDR, 2003). Over the years, TDR has supported individual career

development and institution strengthening involving over 400 research groups and institutions in about 80 disease-endemic countries. This ongoing development of core leadership and research capacity has enabled individual researchers and institutions in developing countries to be more responsive to public health needs in their own countries and to participate more effectively in the global research agenda. TDR has contributed to the formation of a new generation of public health leaders – many of them now directing disease control and research efforts in their own countries. Many of the research groups and institutes supported by TDR work in close collaboration with research partners from industrialized countries and play a key role in strengthening research capacity in other developing countries – enabling “best practices” to be shared via South-South linkages.

Even though TDR provides hands on relevant skills in the conduct of research through proposal development workshops, most of their training grants have also emphasised the traditional Masters and PhDs. In their Research Capacity Strengthening (RCS) strategy 2000-2005, RCS activities have been refocused within two major strategic directions i.e. **Researcher-driven capacity building** (Individual capacity building aimed at supporting individuals to gain R&D skills and competencies and to develop independent research careers; Long-term RCS institutional programmes) and **R&D-driven capacity building** (Targeted research and development-driven initiatives proposed as priorities by the different steering committees).

The Multilateral Initiative on Malaria (MIM)

The Multilateral Initiative on Malaria (MIM) is a global alliance of organisations concerned with malaria. It was launched to "strengthen and sustain, through collaborative research and training, the capability of malaria endemic countries in Africa to carry out research required to develop or improve tools for malaria control" (Rugemalila et al 2007). MIM through TDR and a broad range of partners including international research institutes and councils has applied a multi-pronged approach to achieve this goal. Better access to information, Internet connectivity, technical support for research collaboration, training and mentorship have been key to capacity strengthening in MIM (Davis, 2001). They award grants every year through a process managed by the MIM/TDR Task Force, provide opportunities for research partnerships, collaboration, technology transfer, equipment upgrade and training including support of individuals enrolled in PhD and Masters programs within the context of focused research projects.

The European & Developing Countries Clinical Trials Partnership (EDCTP)

The European & Developing Countries Clinical Trials Partnership (EDCTP) was created in 2003 as a European response to the global health crisis caused by the three main poverty-related diseases of HIV/AIDS, malaria and tuberculosis. EDCTP's approach is based on 'Joint Programme Activities'; existing and/or ongoing research activities of two or more EU Member States working independently on the same area. EDCTP recognises that researchers in sub-Saharan Africa are faced with the need for multicentre protocols, a demanding regulatory environment and universal ethical standards. With the right resources and training, sub-Saharan countries are provided the opportunity to take leadership and create a sustainable environment for conducting high-quality medical research.

To achieve this, EDCTP offers larger grants that focus on clinical trials (which are the principal function of EDCTP) as the core and provide opportunities for networking and

capacity development. EDCTP-funded activities are therefore based on networking and coordination of European national research and development programmes and with their partners in the south; networking and coordination of African national programmes; supporting relevant clinical trials; and strengthening the African capacity in this field. EDCTP believes that capacity development gives African researchers the opportunity to 'learn by doing', to utilise the developed capacity and to ensure a successful outcome and capacity retention. They therefore promote networking through north-south and south-south mentorship to create the critical mass that is required for sustainability.

Global Forum for Health Research

The Global Forum for Health Research was established in 1998 as an independent international foundation to promote more health research to combat the neglected diseases and conditions that are major sources of ill health in developing countries and to reduce other inequities in health and health research. In its initial years of activity, the Global Forum's role in the RCS field has been focused on development of priority-setting method, providing an annual forum for the exchange of ideas regarding the development of a systemic approach to RCS efforts, financing collaborative programmes and embarking on a vigorous advocacy campaign for health research (Global Forum for Health Research, 2000).

The Combined Approach Matrix developed by the Global Forum to determine health research priorities permits national authorities to identify research priorities and the areas in which RCS investments would be most productive for improving the health situation of the country (Nuyens, 2007). Thus analysis of the burden of diseases and risk factors, a cost effectiveness analysis, and an analysis of its comparative advantages of different options can be explored. In addition to organising the Global Forum for Health Research, the Forum contributes to RCS in a number of projects, co-finances and contributes to the Collaborative Training Program (CTP) with INCLEN, COHRED and the Alliance for Health Policy and Systems Research.

The Ghanaian Dutch Health Research Programme

The Ghanaian-Dutch Collaboration for Health Research and Development is a partnership between Ghanaian and Dutch academic, research, government and non-governmental health service agencies that is based on a paradigm shift to undertake and promote collaborative, participatory, interdisciplinary, demand-driven and relevant health research. The partnership aims to provide appropriate relevant information to help the Health Sector achieve its goal of better health and health care and development for the people of Ghana. The areas identified for capacity enhancements in the programme are human resource development, infrastructure development and dissemination and utilisation (HRU, 2001).

Human resource development focuses on at all levels of health care delivery (i.e. national including policy makers and programme managers, regional and district level health providers) public and private, orthodox and traditional health care. These groups are usually identified through calls for letters of intent. Groups with good letters of intent but with little or no knowledge in research who will need training in basic research skills and also those with substantial knowledge but needing updating or further training in research are identified and provided tailor-made training programmes in research methodology and data analysis and report writing. In view of the challenges of accessing relevant literature across the country, documentation and information support is provided to facilitate access to literature.

The programme has therefore facilitated the development of an easily accessible (computerised) health research information system (publications, grey literature, completed and ongoing research projects, research institutes and researchers). On-line search and downloading facilities through access to the Internet for purposes of literature review is also provided (HRU, 2001).

To ensure effective dissemination training workshops are organised in the form of training in presentation of information to policy makers and other audiences; development of communication strategies such as policy briefs; workshops for scientific publications using data generated from the funded research for scientific journals and abstracts for conferences; and community based dissemination. In the view of the programme, demand for research enhances utilisation, thus the necessary environment for people to become interested in research need to be created to enhance utilisation. Some of the mechanisms that have been used include consensus building seminars with various target audiences including the universities, MOH managers and staff, NGOs etc, where the essence of research in their everyday duties are presented and some examples of researches are also presented.

3. General Discussions including challenges

Active promotion of evidence-based decision-making at all levels of the health care delivery system is a necessary step in the direction of improving the health of the population (Gonzalez Block & Mills, 2003). All the programmes discussed above have both positive features and weaknesses and there are many other RCS programmes that have not been discussed in this paper which may have slightly different approaches. These approaches to capacity building emphasise complementary approaches to human resource development and work best in the context of a systems and long-term perspective (Chandiwana & Ornbjerg, 2003). The scope of RCS programmes have been a subject of debate over the years and in this context the role of formal training in formal institutions and that of skills acquisition programmes such as attachments have come to the fore. The relevance of both formal training and skills acquisition training programmes cannot be overemphasised. However the balance of allocation of scarce resources between the formal degree awarding programmes and the skill acquisition programmes is still very speculative. Some further scientific work in this area may be necessary to guide resource allocation for RCS programmes.

Funding mechanisms and access to funding for RCS is a big issue. Most research institutions in the south are poorly funded. At best they are able to pay salaries and have almost no money left to do research. Countries should therefore be encouraged to make a commitment to prioritise and fund research from their own resource first before seeking support from outside. In 2006 a High Level Ministerial Meetings on Health Research was held in Abuja and Accra which led to a communiqué requesting all African Governments to allocate at least 2% of their health budget to fund health research. To date this communiqué has remained on paper except in Ghana where this has been implemented but not without problems. Government commitment is therefore essential in funding research because eventually, it has to play the leading role in the provision of the basic infrastructure. Thus as a key element of capacity building, countries must also address issues related to the enabling environment, in particular: leadership, career development, critical mass, infrastructure, information access and interfaces between research producers and users.

Mentorship to ensure a developmental relationship between a more experienced mentor and a less experienced a protégé has been recognised as a key component of many RCS programmes but operationalising it continues to remain a challenge. Opportunities for attachments to model institutions are difficult to come by. Where these opportunities exist, they are not well structured and sometimes young scientists are left confused. All the programmes described above have had some successes with mentorship but a lot still remains to be done. The experiences reported do not really show a clear pathway to achieve this goal. A more systematic documentation of the mentorship process with its key elements and process will be a useful.

Retention of capacity in developing countries after training continues to be a challenge. Brain drain from the developing to the developed world is a well documented phenomenon and health research capacity is no exception. As in other disciplines, low remunerations in developing countries has been cited as a major factor, however the absence of the enabling environment to conduct good health research after training is a very important that cannot be overlook. Sometimes, small grant schemes to help scientist “re-enter” their countries of origin have been found to help them settle-in to find their feet. According to a review by the Global forum for health research, for those who manage to remain in their countries, capable and committed scientific leadership, continuity of funding for research and ability to attract a core of dedicated young scientists and provide them with independent research funding have been identified as key for success. Other important factors include adequate and appropriate infrastructure for research (buildings; equipment; supplies; communication facilities and scientific literature); scientific linkage to another (stronger) institution in the South or in the North and stable conditions of services with adequate remuneration.

The role of community based organisations (CBOs) and non governmental organisations (NGOs) in research has been shown in many part of Asia to facilitate implementation and use of findings at the community level. Such action oriented health research is sometimes critiqued as not being methodologically very strong but in practise, it demystifies research and makes it a tool for development (Wolffers et al 1998). The skills required for the facilitation of such “grass-root” research is not very easily available and ought to be developed in order to translate research findings into action.

There is currently little evidence on how to plan and measure progress in research capacity strengthening (RCS), or agreement to determining its ultimate outcomes. Traditional outcomes of publications in peer reviewed journals, and successful grant applications may be the easy and important outcomes to measure, but do not necessarily address issues to do with the usefulness of research, professional outcomes, the impact of research activity on practice, or on measuring health gain. Cooke 2005 suggests a two-dimensional framework for assessing Research Capacity Strengthening (RCS). This framework provides a structure by which measuring the impact of RCS could be achieved. The first dimension is the structural level of development activity which include individual, team, organisational, and the network or supra- organisational support level (networks and support units). The second dimension is his six cardinal principles of RCS namely:

1. RCS is built by developing appropriate skills and confidence through training and creating appropriate opportunities to apply the skills,
2. Linkages, collaborations and partnerships enhance RCS,
3. RSC should support research which is 'close to practice' to make useful,
4. RCS should ensure appropriate dissemination strategies to maximise impact,
5. RCS should include elements of continuity and sustainability, and

6. Appropriate infrastructure development enhances RCS.

This framework could be the basis by which RCS interventions could be planned, and progress measured. It could act as a basis of comparison across interventions, and could contribute to establishing a knowledge base on what is effective in RCS in healthcare

The success of efforts to build capacity in developing countries will ultimately depend on political will and credibility, adequate financing, and a responsive RCS plan that is based on a thorough situational analysis of the resources needed for health research and the inequities and gaps in health care. Greater national and international investment in capacity building in developing countries has the greatest potential for securing dynamic and agile knowledge systems that can deliver better health and equity, now and in the future.

4. **Suggestions for International Development Policy**

There is currently a mismatch between the increased disease and health burden and the technical and human capacity of developing countries to use existing knowledge, let alone to generate new knowledge to combat these diseases and health problems. It is therefore necessary to assist developing countries to build indigenous research capability so they can undertake studies in their own national settings the results of which will lead to the development of appropriate control strategies in their countries. The place of partnerships, South-South and North-South and networking is essential.

We would encourage development partners to commit 10% of their funding for the health sector to research and development in order to avoid the perennial issue of inadequate funding for research. Countries should also be encouraged to do same as per the declaration of the high level ministerial meeting on health research so that research will be institutionalise and mainstreamed.

Sustainable research including creation of suitable career structures, remuneration of researchers and the importance of building up suitable infrastructure for research to meet increasing demands and competence should be prioritised.

Finally, the paper calls for greater involvement of policy makers in developing countries in the entire capacity building process. They should set highly focussed research priorities, identify competencies not already existing and proceed to fill these gaps to ensure that research increases knowledge-based decision-making by the health leadership of the country.

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