

Section 2: Informal Health Research Capacity Building Initiatives

2.1 Background

This section provides a general description of initiatives in research capacity building where researchers involved employees of the public health system in conducting research. This section outlines the contextual factors and the impact of these on the ability to use findings of the research to change health practice.

The specific objectives were:

- To identify initiatives in South Africa that involve health professionals in research
- To explore the context within which this involvement takes place in terms of:
 - Types of studies and their funding sources
 - Strengths and weaknesses of involving health professionals
 - Recruitment, payment and retention procedures of health professionals
 - Environmental culture and its effects on involvement of health professionals
 - Support and supervision of health professionals
 - Effect of involvement in research on professional health practice.
- To establish factors pertinent to enhancing research capacity development, particularly with regard to 'non traditional' researchers in South Africa.

Methods

Ten initiatives fitting the inclusion criteria were identified by the South African ENHR Committee members and by HST. It was established that three initiatives had not participated in research in recent years and one was found to have a conflict of interest in the study, thus they were excluded from this review. Due to the limited time allocated to this study, these initiatives were not replaced and thus six initiatives form the basis of this section. These initiatives are based in six of the nine provinces of South Africa. Of the six initiatives, two had been recommended by the ENHR committee, two by HST and two by a researcher.

Face-to-face interviews were held with three categories of research staff viz. principal investigators, project managers and researchers, and data collectors (who are health professionals).

An interview guide was developed and collected data on:

- History and profile of the initiative
- Infrastructure, organisational and management systems supporting the initiative
- Factors affecting or hindering progress of an initiative
- Recruitment, payment and retention of health professionals
- Monitoring and evaluation systems in place
- Impact of the initiative on health practice.

Results

Almost all institutions obtained funding from national and international sources. Four institutions reported to have strong links with other academic institutions abroad. Three institutions were managed by women and had women as senior researchers. All but one were large research units with different categories of staff ranging from senior researchers to research assistants. Most institutions were managed by white directors. The main areas of research conducted were biomedical, social and health systems research. Most institutions had staff development protocols and policies in place. All institutions reported to employ health professionals to conduct fieldwork. Only one director reported that community health workers were also part of the project. Most institutions conducted regular in-service training on research methods to build capacity amongst the health professionals. Frequent project meetings were used as training on a specific aspect of the project when necessary.

2.2 Discussion

The initiatives reviewed highlighted some key challenges of health capacity building of non-traditional researchers. These challenges relate to the research process; recruitment and retention; training of health professionals in research and gender implications; influence of research on practice and understanding the concept of health research capacity building.

The Research Process

The initiative highlight that the type of scientific process selected for research had a major influence on the nature of capacity development. The research process described in all cases was generally governed by the conditions set out in a proposal or in funding agreements. It is evident that the research conducted in these initiatives had limited built-in capacity building components. This might be influenced by many factors including that funding is directed to research instead of building skills for conducting research. In addition, senior researchers wrote most of the proposals and junior staff or health professionals were not involved.

In order to improve health research capacity building, ethics committees and funding agencies could encourage capacity building components to research proposals. The Medical Research Council (MRC) for instance, includes capacity development as one of the requirements for funding. Special attention on methodologies that promote participatory learning in research should be encouraged. In this instance, junior researchers could within time frame limitations, write small project proposals, collect and collate existing data or collect data for basic analysis depending on whether mentorship is available, or do monitoring and evaluation as part of health systems research. It has been shown that the criteria associated with successful capacity building include longer lead times, and transparent decision-making (Milen, 2001).

Recruitment and Retention

Most health professionals are recruited by advertisements in the media. Some projects use independent recruiters to recruit and select health professionals. Although this may increase the number and scope of applicants of individuals interested in research, they are unsuitable, as most recruiters are not familiar with health research requirements. Levels and types of capability are identified independently of research projects. The qualifications at times have not matched the skills and vice versa. The increasing cost of recruitment coupled with the fact that psychometric testing is

not universally favoured and that some people with potential may be less likely to attend interviews if some form of screening is involved, makes this approach unsuccessful.

The main concern raised about CBIs was that of discontinuity of involvement by health professionals when the project ends. It was evident that there were no long-term plans built into the projects and organisations within which the health professionals worked, to ensure retention of staff. In very few cases (where researchers were able to secure funding), health professionals were able to 'move' from project to project with the same senior researchers and so experience continuity and growth in health research. All health professionals interviewed agreed that they appreciated support for problem solving from senior researchers. However, once experienced, they took pride in managing difficulties without involving seniors. Ability to enrol in postgraduate education or short courses were also factors mentioned that promote retention and staff morale.

Training, continuing education, support and career pathway

It is evident from the cases that structured training does play a part and that there is a considerable need for research capacity building for health professionals. In one example given, all staff were being trained about HIV/AIDS although this was not a specific focus of the project, but as part of wider social responsibility.

The range of skills learnt, amongst non-traditional researchers were interviewing, counselling, using a personal computer, reading a map, learning about various types of diseases not known before, dealing with grief and stress, and patience. English, spoken but particularly written, is often problematic although most projects use English for formal communication. Sometimes training activities were translated into the dominant language. Some participants suggested that research terminology needs explanation for non-traditional researchers, and both literacy and numeric skills need to be developed. A certain level of data analysis instruction could be given, depending on existing knowledge of the individuals e.g. in some cases Epi-info as well as word processing and Excel spreadsheets were learnt successfully.

The type of training most often referred to as successful reflected active learning strategies, including, role-playing and group discussions. This was supported by both senior and junior researchers. Exposure to an organizational culture, which permits debate and reflection, was viewed to increase development.

Some senior researchers suggested that research should be demystified by dispelling the myth that only highly skilled people or scientists could do research. Both for this reason and for training purposes, jargon should be avoided. A common understanding of the words and terminology should be developed. The 'strict' training of non-traditional researchers ensures meticulous data collection and reduces fabrication of data.

The senior researchers felt that they were giving considerable support while the juniors perceived the support as minimal or non-existent in many instances. This difference in perception also existed for the level of ability of non-traditional researchers who expressed that they are capable of certain tasks, whilst senior researchers said they were not yet at that level of ability. Mentoring is of great benefit and this would include guidance that is very clear and specific, as well as sharing problem-solving skills.

Many non-traditional researchers expressed the wish for more or better acknowledgement of their contribution to the research process, as well as some feedback on the research. Two of the non-

traditional researchers interviewed expressed the dream of becoming principal investigators. In one project particularly, the distinction between scientists and non-scientists was very clearly demarcated.

Gender implications on capacity building

Gender equality is promoted and protected in South Africa, however in practical terms, women, particularly in childbearing and child-rearing ages, find they are still restricted from participating fully in research. Ehlers (2000) documented the historical situation, which has particularly disempowered women nurses. This may still account for the limited involvement of health professionals in the wider research arena as well as in becoming senior researchers. Nurturing future leadership is necessary for research-policy-action (Chunharas 2000). Furthermore, Lee et al (2002) points that involvement in research also improves the political awareness of nurses, which would enhance their ability to influence policy. However, in the initiatives reviewed many health professionals were women in their thirties and forties- a life stage when young children and family pressures need their time and attention. For some, working as data collectors allowed for flexibility. Others working as data collectors or as non-traditional researchers aspired to publish or become co-investigators and later principal investigators. Efforts to increase health professionals' involvement with research are therefore important.

Historically, it has been observed that senior researchers and directors of the research units and research institutions are headed mainly by men who are white. An employment equity policy has been put in place and the beneficiaries of research training initiatives appear to be women and individuals from disadvantaged backgrounds with limited research experience.

As shown by the human development index, opportunities in basic education are limited for girl children and those from rural areas. This means that there are fewer opportunities and alternative pathways to universities for women and those from poor areas, creating further inequity in opportunities for training in health research. There is a need for a comprehensive and long-term plan for capacity building to level the field on gender and race in research (ENHR in South Africa, 2001).

Influence on practice and policy

From the discussions held, it was recommended that health service providers should be involved early on in a project to help facilitate change in practice and policy. Junior researchers were not able to give examples of significant changes to practice or further independent research conducted.

Advocacy was mentioned to be integral to research, in that research is not complete until government officials and politicians have been persuaded to adopt the necessary policies and procedures. Research provides the evidence-base for policy and practice. Advocacy skills are required as part of research capability. One senior researcher's viewpoint was that there was a responsibility to publish findings both scientifically and in the media as well as in 'fact sheets' or user-friendly format for politicians and officials, but not to take the matter further than that. It was found necessary to know the words and language used by policy makers as research can be used as a tool for advocacy. Where interim or acting personnel in health services are involved, it was found that this does not bode well for the research, as temporary staff are reluctant to authorize research or implement changes.

Understanding research capacity and research capacity development

Exploring these concepts indicated a broad understanding, where most senior researchers and health professionals stated that research capacity goes beyond training, and in one instance reference was made specifically to the fact that capacity development includes analytical ability and reflection resulting in appropriate changes to practice in general.

In contrast, some health professionals believed that they should participate in research because it is *“very fascinating”* and anyone could *“expect to grow and grow academically”*. A view, which was expressed by two senior researchers, from different projects, was that not everyone had the aptitude or desire to be a researcher (at any level). It was said that there is no connection seen between research findings and practice. Recognising those with potential and interest could avoid a lot of time, energy and money being wasted and could ensure they got the best exposure to expert mentorship, training and a rich learning environment. This calls for career path development during supervision and mentorship. In this way the dedication for a life long career, *“with the best researchers in the world”*, could be encouraged for non-traditional researchers who want to work at a level beyond data collection.

Section 3: International Health Research Capacity Building Initiatives - Literature Review

Background

This section provides a description of leading initiatives in national research capacity building that exist internationally and seeks to identify key successes of these initiatives and recommend best practices for South Africa.

The specific objectives were:

- To provide an integrated analysis of the international initiatives regarding the following:
 - (i) Conditions under which their capacity development programmes are successful
 - (ii) Financial base of capacity development; financial and organisational sustainability of capacity development programmes
 - (iii) Career directions of staff who have been in such programmes
 - (iv) Any other factors which play a critical role in organisational capacity to ensure capacity development, particularly among the historically-disadvantaged groups.
- To identify research capacity building initiatives that provide useful lessons in a South African context.

Methods

A literature search was conducted in January 2002, using an electronic index OVID (Medline) and the swetsnetnavigator.nl database for publications that mentioned research combined with capability, capacity, manpower, strengthening, productivity, and essential national health research. The Social Citation Index was also used to search literature on developing research capacity in other health-related disciplines. Further search strategies included leading websites in the field of health and research, such as www.afronets.org; www.healthnet.org; www.who.int and www.cohred.ch. The identified publications were accessed and reviewed and this section discusses the findings.

3.1 Leading international initiatives on research capacity building

The international community and the WHO in particular, have played a leading role in research capacity development initiatives. The following initiatives are reviewed: The Joint Health Systems Research Project (JHSRP); International Network for Clinical Epidemiologists (INCLLEN); Tropical Disease Research Programme (TDR); Applied Diarrhoeal Disease Research Programme (ADDRP); Institute for Tropical Medicine- the Philippines experience; Project 2000 (UK Central Council for Nursing, Midwifery and Research); and the Commission on Health Research and Development (COHRED) - Kenya experience.

JHSRP was established by the WHO and the Royal Tropical Institute of Amsterdam in 1986. The Netherlands' Minister for Development Co-operation initially funded it. Its overall objective was to promote health systems in the Southern African region through appropriate organisation and effective operation of comprehensive primary healthcare activities by integrating health systems research (Varkevisser *et al.* 2001).

INCLLEN was established in 1980 to improve the management and planning of health resources in developing countries and to increase the quantitative skills and capabilities of clinical teachers. TDR and ADDRIP are programmes committed to interdisciplinary research, linking social and health scientists (Rosenfield 1992). However, there are variations in the institutional base for different countries. For example, in one country the project could be based in a Social Science department, while in another country it could be in Medical Science departments.

The Institute for Tropical Medicine in the Philippines mainly focused on institutional linkages as a basis for building research capacity in the context of international health (Lansang & Olveda 1994). Its research focus is on major infectious diseases in the country.

Finally, UKCC was developed in 1986 and the COHRED-Kenya initiative (COHRED, 2001) aimed at developing research capacity of nursing departments and re-orienting health research for national development, respectively. It is crucial to note that even though the research focus of these initiatives varied the underlying goal of supporting research institutions or strengthening research capacities were met.

Financial base

In the Philippines different types of research and training grants were made available for research development. The most productive grants were found to be those awarded on a long-term basis as these allowed more efficient and stable management of research and sustained growth of research staff.

Donor dependency is an issue that posed problems for some initiatives. It became important for individual countries to raise funds for their local research activities. Most projects only provided funds to raise and maintain motivation for research activities. For example, the JHSRP at the end of phase 2 had a problem raising funds for the 3rd phase. This led to multi-donor funding that helped reduce dependency, but increased financial administration, since each donor had its own funding requirements.

Monitoring and evaluation

It is important to bear in mind that the outcome of monitoring and evaluation efforts may take up to 20 years to show. It is also essential to focus on the motivation for such evaluation exercises. For instance, is it to monitor the capacity development process, or the programme management process, or is it donor driven? (WHO 2000; Health Policy Plan 2000)

Mixed sets of qualitative and quantitative measurements and outputs have been used to assess capacity building initiatives. The following outcome and process indicators have also been used:

- *Critical mass:* The number of researchers trained in a particular programme, the number of courses offered and whether research findings were implemented or not.
- *Completed research projects:* Both JHSRP and INCLLEN looked at the number of studies that resulted from the training courses and whether these were completed considering all steps in the research process. INCLLEN further incorporated social science variables and methods in studies conducted by its clinical epidemiologists.

- *Utilisation of research results:* The studies were reviewed on the basis of their applicability, for example ensuring that researchers have the authority to implement a good deal of the results in their daily activities in district health management teams and national programmes. There were language barriers for most of the researchers based in India and the South East Asian countries.

More importantly was a rigorous on-going evaluation on relevance and implementation of research results. This was coupled with systems and process thinking in all phases of capacity building, utilising the programmes' objectives. At another level, more in line with ENHR, the broader question asked was whether the approach of a programme, such as INCLLEN's collaborative research approach, produced more effective and efficient ways for a society to reduce its burden of illness or not.

Finally, the idea of the Research Assessment Exercise (RAE) practised throughout the UK to assess the quality of research conducted in higher institutions and utilisation of such information to decide on future allocation of research funds, was used to assess the progress of the nursing departments in meeting their research capacity development needs.

3.2 Key factors necessary for the success of research capacity building initiatives

Most of these initiatives recruited people that were already in research. Alternatively, the targeted people needed to have core functions and experience that partly involved either conducting or utilising of research (Cooke 2000). Simply offering training was insufficient when trained individuals were not directly involved with research. For instance, the JHSRP targeted academic researchers from medical schools, who would then receive technical support, training and research grants. Health workers, health staff at NGOs and nursing tutors were targeted by some of these initiatives. At inception, INCLLEN comprised of about 20% senior scientists, who were recruited from local universities.

The strengths of these initiatives are summarised as follows: Firstly, the importance of pursuing further qualifications, particularly higher degrees, was found to be an investment in developing research capacity. This led to development of researchers who think independently. Further evidence pointed to academic PhD staff members, who were found to be more productive as were departments with doctoral research programmes. This was an additional advantage of enhancing research productivity (Cooke 2000; Lansang & Olveda 1994).

Secondly, collaborative efforts with other research programmes helped to build or reinforce a culture of writing, extending statistical support, and in creating research and clinical databases. Mentoring by senior researchers was a significant factor in promoting scholarly productivity. In addition to this, collaboration between experienced and inexperienced people strengthened the research experience and confidence of new researchers.

Thirdly, local priorities proved of even greater importance to the health-development needs of the countries involved. Horton (2000) stated that the focus should be on information needs of these countries. All the reviewed initiatives attended to the health problems of the respective countries, which promoted the implementation of the research results.

Fourthly, there were no shortcuts in the development of research skills. This implied the importance of aspiring researchers being involved in a research field that interests them and in which they can have influence.

Lastly, there was an entrenched value in recruiting self-motivated individuals in the area of research. Other factors included persistence, initiative and concern for advancement. However, factors associated with such motivation are complex and existing evidence is both contradictory and inconclusive in this area. However, pursuing academic qualifications and research skills can be suggested as a starting point.

3.3 Limitations of research capacity building initiatives

Two main factors could be attributed to failure of capacity development initiatives. Firstly, the failure to produce sustainable results in development cooperation. Secondly, the failure to strengthen the state and its institutions after implementing structural adjustment policies as the role played by the state in building capacity was significantly reduced as the results of radical downsizing of the public sector (WHO 2000).

Other internal factors present proved to be limiting in the process of research capacity building. These included lack of career paths for social scientists within health structures, low salaries for local researchers, limited local financial resources for research, lack of awareness and appreciation of the potential for public health research among some policy makers, lack of clear health research policies and brain drain of trained researchers to the "greenest pastures". Lack of publishing opportunities, peer group support, pool of tutors and mentors were hindering factors.

Looking at INCLIN as an example, this initiative developed a social science component in its training. Health social science concepts were incorporated into the physician-training curriculum, which entailed epidemiology, biostatistics and clinical economics. Each of the 26-epidemiology units at medical schools in the developing countries (specifically, in Asia, Latin America and Africa) created a position for a qualified social scientist. The long-term goal was to strengthen interdisciplinary partnerships because it was increasingly recognised that health problems require interdisciplinary solutions. However, there were inherent difficulties, which revolved around attracting social scientists to a new career path. The hierarchical structure of the medical institutions discouraged the research interns as this could compromise their status. The training involved acquiring a Masters degree, while some interns might have preferred obtaining a PhD. In addition, on returning to their home countries, they had to take positions that had little decision-making power regarding the research agenda and budget.

3.4 Discussion

Despite the highlighted problems that persist in the field of research capacity development, there are positive lessons that could be drawn upon to enhance the process. The key success factors, highlighted above, form the basis of the recent broad international consensus on best practice (WHO 2001). South Africa is viewed as a pocket of relative prosperity that might reveal what can be achieved by developing countries in the future.

Since the mid-1990s, there has been a wide recognition that South Africa needed new types of research. The whole science system, including health research, had to undergo a process of revision and restructuring. In general, transformation of the research agenda required a redefinition of goals and priorities to address the new research needs of the country. By taking a clear stand in ensuring that ENHR was high on the research agenda, the national Department of Health was indirectly committing itself to promoting health and development needs of the country (Aspinall 1997, Edwards-Miller 1997). Therefore, research capacity building, which forms a cornerstone of the ENHR agenda, also requires full support from the government.

The reviewed literature demonstrates that research capacity building is a very fragile developmental goal requiring an acknowledgement of its complexity. An example is the structural constraints and cultural impediments among both donors and recipients. A sustained research programme is viewed as one that requires funding opportunities and a network of colleagues, a career path, a set of personal and financial incentives and a commitment by the state to support or at least tolerate research as a legitimate and valued endeavour. The vision of the Commission on Health Research and Development, which places national research capacity building and its continued reorientation at the centre of the ENHR strategy, emphasises the need to build on what exists, to utilise and strengthen existing capacities. It is thus an internal process that can be enhanced or accelerated by outside assistance, such as donors (WHO, 2000).

Trans-disciplinary research as pioneered by the social science component of INCLIN's initiative can provide a more comprehensive approach towards understanding and reducing public health problems. It can encourage researchers from different backgrounds to transcend separate conceptual, theoretical and methodological frameworks to develop a shared approach towards research. Thus, trans-disciplinary research has a potential of going beyond maintaining existing collaborations between social and health scientists. There are limited incentives for researchers who venture into trans-disciplinary research hence the need for using the concept of ENHR in the health field to increase local support for such approaches. This is implied by the purpose of the ENHR strategy in bringing about changes in health and development.

Section 4: Key findings and Recommendations for South Africa

This section starts by outlining key findings of this explorative review of health capacity building initiatives. These are followed by strategic questions that can be used to prompt further exploration and planning of health research capacity development.

4.1 Key findings

Training

- The South African initiatives reviewed in this report show that training initiatives for health research occur through formal post-graduate education, hands-on practice through internship programmes and informally through involving health professionals in research. The target audience is junior staff members who acquire research skills in proposal writing, data collection, analysis and report writing. These are core skills outlined as key to capacity development. Health professionals (with no experience in research) found themselves to be mainly involved in data collection.
- It would seem that little effort is put into involvement of health professionals in data analysis, report writing and dissemination. This limits their exposure to the research process and prevents the gaining of skills in broader areas of research. Involvement of health professionals in research remains a challenge as the health system continues to change. The current approaches to capacity building seem to be inconsistent with the overall principles and strategies outlined by the Health Research Policy for South Africa, such as increasing the range of research activities and culture of evidence decision-making.
- Although the research focus among the initiatives seems to be health systems research, little effort is directed towards developing areas such as environmental health and health economics. Training still occurs within the traditional research and academic institutions. The goal to extend research activities beyond academia remains a challenge.
- With an exception of two initiatives, 13 initiatives had programmes of less than two years duration. Training and development was supported by funding primarily earmarked for research projects. Long-term commitment to developing a critical mass in particular among historically disadvantaged groups as well as transformation of institutions into non-racial and non-sexist organisations will not be achievable if the majority of capacity building initiatives in South Africa have similar experiences and procedures to the cases presented in this report.
- There is a need to establish health research as an attractive career path. Health research training programmes that focus on producing independent researchers who contribute to new knowledge and innovation are needed.
- The capacity building plan and its management should be consultative. Senior staff and recipients of such a plan should be accountable to ensure that outputs are realised. Engaging participants in general functions of the institution can be useful to build leadership, management and priority setting skills as additional skills which are equally important to the core research skills. This was outlined in the South African Health

Research Policy as one of the main principles underpinning capacity development in South Africa.

Leadership

- It is evident from the South African initiatives that the research conducted is mostly driven by national or local health priorities. This is in line with the principles of the health research policy. This is one of the critical factors to successful CBIs.
- The literature on research capacity building supports that development and maintenance of capacity building efforts depend on collaboration between policy-makers, researchers, service providers and communities in developing a research agenda. The South African initiatives reviewed in this report show a lack of this collaborative effort, especially when it comes to health service providers and communities. Although efforts towards establishing partnerships between researchers and policy-makers are increasing and relationships are strengthening, more effort is needed for these partnerships to be extended to districts and communities. The ENHR committee needs to develop guidelines to establish collective efforts at different levels.
- Since 1994, transformation of research institutions into non-racial and non-sexist organisations is underway. Recruitment of designated groups as outlined in the Employment Equity Act has been the driving strategy. However, there are barriers that seem to undermine this transformation process. The most crucial is that there are few black senior researchers to recruit. Additionally, funding is limited to support initiatives by institutions that attempt to “grow their own timber”, attract and retain black senior research staff.

Supervision, Empowerment and Rewards

- International and national donors demand regular contact with principal investigators. This can bring about tension as principal investigators are drawn between spending time within their institutions mentoring trainees, while also being required to raise funds and meet the demands of funders to ensure survival of their institutions. These demands on supervisors can compromise both the quantity and quality of supervision. Thus, trainees may not meet all their training objectives and could get discouraged in pursuing research as a career path. In addition, supervisors can also be discouraged in investing their time in developing the junior staff.
- The need to have greater involvement in the research process (including report writing and dissemination) was both expressed by trainees and health professionals. Allowing this contribution can increase confidence, networking, and learning of how research findings can be transformed into policy and practice.
- An environment with opportunities and resources can contribute towards fair appraisals of research trainees. Opportunities should be created for research trainees to demonstrate their capabilities e.g. in writing of research reports, in presenting findings at national and international conferences. Although some units had formal appraisal procedures, none of these was linked to rewards and recognition. Financial and non-financial incentives should be integrated into the training plan.

Funding and institutional survival

- Funding seems to be directed to institutions and provinces that are well resourced. This imbalance of funding within the country can contribute to underdevelopment of health research in resource poor areas. It is essential to define the role and position of international and national funding agencies towards capacity building. The extent to which the funds given for research can be used for capacity building needs to be explored. There seems to be insufficient funding for health research, in particular health systems research. Funding obtained nationally is mainly from national and provincial departments of health. To ensure survival, collaboration between research institutions usually occurs, unfortunately, not as means of transferring skills amongst junior staff but as means to conserve, increase and sustain funding.
- The work environment and available resources impact on staff motivation and efficiency. It is necessary that research institutions acquire adequate equipment to match the advancement of research in the country. Discrepancy in resource allocation between research institutions results in skewed development that affects the overall national efforts towards capacity building.
- International and national funding agencies offer short-term training in the form of seminars or workshops, but appear to show less commitment in funding long-term health research capacity building initiatives. Utilising skills and resources, which can be accessed through partnerships, is key to sustainability of these initiatives.

Employment and working conditions

- The remuneration of staff employed as research interns or research assistants seems to be low compared to private and government sectors. This contributes to high staff turnover, which might be a deterrent for new researchers planning a long-term professional commitment in research. The choice of employment will therefore largely be informed by financial and non-financial rewards to meet these responsibilities. Remuneration and benefits must fit in within the market range for qualification and experience.
- Most institutions do not follow recruitment procedures as outlined in the labour relations and employment equity acts. The common practice has been that the recruitment occurs through networks rather than formal recruitment code of good practice. The issue of cost of advertising and bureaucratic systems within which some of the initiatives operate were mentioned as barriers to fair recruitment procedures and equity in recruitment. This was most cited by directors managing internships and initiatives where health professionals are employed.
- Limited funding which results in low salaries, impacts on job satisfaction and decreases motivation for good performance, which in turn limits overall career development. Furthermore, it threatens the survival of the initiatives, strategies to build critical mass and the organisational structure supporting these. It is therefore crucial that funding be dedicated to building capacity to ensure that good practice is recognised and rewarded.

- Careful investigation of the benefits of professional recruitment and selection of junior researchers or health professionals for particular research projects needs to be explored. It can be beneficial to identify persons with the interest and potential to establish research careers particularly in underrepresented fields.

4.2 Recommendations

Research

- Careful auditing and analyses of existing capacity initiatives should be conducted. In this way, quantifiable gaps will be identified. Action programmes will be formulated in line with key strategies set by the health research policy for the country.
- South Africa needs to establish 'best practice' guidelines that are context specific for research development of both non-traditional and traditional researchers.
- Studies measuring the impact of research capacity building on performance at individual level, institutional and policy-making levels are needed.

For example:

1. Studies into how policy formulation at national level has been informed by research findings.
 2. An audit of research projects conducted and how these projects match national research priorities.
- Monitoring of financial flows should continue as a means to measure the type of research projects being funded, classification of funding sources, and measuring expenditure.
 - Develop a database on health research capacity

Human Resources

- The brain drain and funding are threats to sustainability of efforts towards building a critical mass of researchers in the country. This requires that the ENHR committee work with research institutions towards developing a career-scientist system for health researchers, a coherent agenda for health research policy and a bigger investment in health research from the national health budget.
- Systematic targeted efforts towards involving, recruiting and providing training to interested black individuals and women in health research need to be explored. This will improve equity and gender balance in health research.

Promotion of best practice

- The ENHR committee may consider a form of recognition and reward for health researchers and institutions that have a long history of commitment towards building health research capacity in the country. This will initiate and strengthen commitment by other health institutions to capacity development.
- Promotion of leadership and management skills need to be integrated as core research skills.
- All aspects of research, including, dissemination, facilitating the use of research findings, priority setting and advocacy should be promoted.

Partnerships

- Fund-raising for capacity building in health research is necessary in order to pilot initiatives involving health professionals in research and those that build capacity amongst black individuals and women researchers in particular.
- In view of the benefits underlying collaboration, genuine partnerships and linkages can be sought with established local and international organisations like INCLEN and COHRED. These in turn collaborate with various health organisations, such as the International Health Policy Programme (IHPP), UNICEF, WHO, US Agency for International Development, Population Council, Field Epidemiology Training Programme of Centres for Disease Prevention and International Epidemiology Association. This will assist in building local ownership and thus increase sustainability of development and improve donor coordination. Moreover, this will enhance sharing of information about the processes and developing global thinking in the field of public health and ENHR.

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Appendix A. Interview guide (Section 1 & 2)

Before we start: Can you tell me about yourself:

- Position in this dept/ unit
- Number of years in this position
- Areas of research
- Academic background

Before we begin talking about your efforts to involve health professionals in research:

Can you explain to me how you would describe the health research capacity building dimension of your research project?

Now, we are going to discuss the start-up process and implementation of your initiative.

Can you describe your initiative?

Probe:

- When was it started, by whom, why was it necessary?
- What influenced the decision to start the initiative?
- What is the primary purpose of the initiative?
- What are the main objectives? How are these objectives fulfilled? Please outline the process.
- What are outputs and outcomes of this initiative?
- Currently, how many of your staff is directly involved in it? What are their positions, academic background and publication profiles?
- What is the duration of this initiative?
- Can you briefly tell me what is covered during the period?

Can you tell me about that dimension of this research that relates to involvement of health professionals in the research process. My questions concern preparation, planning and implementation of initiative?

- Tell me about the planning that went into setting up this initiative? (Probe: What does it take to involve health professionals rather than already trained researchers in such an initiative?)
- What infrastructural measures (space, staff, equipment, funding) are in place to support this initiative? Were these any different from what would have been required if you were working with only academics or students as researchers?
- The initiative--how was it implemented? Which aspects were taken on by your institution or other paid researchers, and which by health professionals? Were these health professionals already working in the research field, or were they hired to work on the research initiative? How did the involvement of health professionals impact on this initiative?
- What steps did you take to a) get health professionals involved b) ensure they had the capacity to do the work?
- What are the strengths and weaknesses of the involvement of health professionals in this research initiative? What do you attribute the strengths to? Weaknesses-what factors have contributed to these and how are they being addressed?
- Looking back, is there anything you would do differently? What would you do differently and why?

Now, we are going to discuss about the management (human, work culture, support and supervision and monitoring and evaluation systems) of your initiative:

Let's begin by talking about the recruitment, payment and retention of participants:

- Tell me more about who these researchers are: did you recruit them or were they already in the site and therefore played the research role? If you recruited them, how and where do you recruit them from? What existing capabilities or experience did you look for? What were your selection criteria and how do you apply these? Please tell me more about the general composition of the health professional researchers in terms of age, gender, race, academic background?
- If they are already within the health service, do you pay them additional money for doing this research? Do you cover any costs pertaining to the research (travel, subsistence, accommodation during research meetings etc.) If you pay them: How are salary scales set up? What is the primary source of funding for salaries? What challenges, if any, have you experienced with setting up of these scales? How have you dealt with these?
- What did these researchers do when this research initiative was finished? Did they get involved in other research efforts? Are they likely to? (OR if the research is still underway: What do you think that the health professionals who are working on this initiative will do when it is over? Will they get involved in other research efforts?)
- What challenges do you face in trying to retain your staff? (Probe: "Did you lose any of those you had trained during the research initiative? If so, why?")

Now, we are going to talk about the environmental culture of your unit and organisation:

- Can you tell me how you would describe the work culture? (Probe: what do you value?) What informs this culture?
- How does the unit-culture and organisational culture affect the development of health professional researchers? (Probe: what makes it conducive or stifling to their development?)
- How have you managed to make your environment conducive?
- What are other unit and institutional capabilities that enhance or add value to the initiative?
- What other contextual factors outside of the unit or organisation affected the strength of the initiative e.g. political, bureaucracy, economics and social factors?

Can we now discuss the support and supervision you provide for the participants in your initiative:

- Did you put in place any supervisory and support systems for the researchers? If so, what were these? How did you monitor this support? What challenges did you face in giving this support? What are your comments on your supervisory and support systems? (Probe: does it work for you?)
- Did you put in place any performance indicators in place for the health professional researchers? If so, what were these? How do you assess these? In your opinion, did they work? Why or why not?
- In general, how did you encourage good performance among your health professional researchers?

Can we now discuss monitoring and evaluation of your initiative:

- Is it within your unit's strategic plan to include non-researchers in the initiative? If so, how often do you revise it? Can I get a copy of it?
- Do you think that your strategy for health research capacity building of health professionals works? Why? What are key successes? (Can you give me examples?)
- How does it fit to the overall vision of your unit/institution/ the country? (If at all?)
- Health research capacity development is a continuous process. How do you see the role of this kind of one-off involvement in a specific research initiative as contributing towards capacity development of health professionals for research?
- In general, what would you say are indicators of success for health research capacity building initiative? How should these be monitored?

Can we discuss about your perception of the impact of your approach of involving health professionals:

- Would you say that your initiative has contributed towards improvement in health equity or policy development or health programmes? Why and why not?
- Do you collaborate or network with other departments or institutions to add value to your initiative? If so, with who? How? What are benefits and drawbacks and what are outcomes of this collaboration?

Before we end the interview I would like to find out about:

- Overall, what do you think are the challenges in health research capacity building of health professionals in your personal capacity (i.e. as a supervisor/director), your unit, your institution and in this country? (Probe: health research capacity gaps) What are root causes for health research capacity constraints?

I thank you for your time and input. We will send you a copy of the report.