

PRELIMINARY REPORT

**CAPACITY DEVELOPMENT FOR HEALTH
RESEARCH IN PAKISTAN:
EVALUATING A DECADE OF EFFORT**

By

**Provincial Health Services Academy
Peshawar, Pakistan**

October 9, 2000

.....
A collaborative project of COHRED, Geneva and PHSA, Pakistan

Preliminary Report

Capacity development for health research in Pakistan: evaluating a decade of efforts

By

**Provincial Health Services Academy
Peshawar, Pakistan**

Tasleem Akhter, MBBS MRCP
Director

Adnan A. Hyder, MD MPH PhD
Adjunct Faculty

Ali Asghar
Evaluation officer

Uma Irfan, PhD
Project Consultant

Financed by

Council on Health Research for Development (COHRED)
Geneva
&
Provincial Health Services Academy (PHSA)
Peshawar, Pakistan

Dated

October 10, 2000

Please note: this is a preliminary report of an on-going research project – the results and impressions presented here are liable to change.

INTRODUCTION

In 1990, the Commission on Health Research for Development¹ reported that only about 5% of the global health research funds were being used for research on health problems of 95% of the world's population - residing in developing countries. This stark inequity in the use of resources for health research was further confirmed by the WHO "Ad Hoc Committee for Health Investments Relating to Future Intervention Options"² in 1996. One of the central reasons for this situation are the poorly organized health research systems in many developing countries. Scientists from most developing countries report the lack of a research culture, the under-valuing of research and the lack of a conducive and supportive environment for research. As a result, research capacity has failed to develop and the research output from these countries remains low.

Research in Pakistan has remained a low priority area in all fields. This is well indicated by the official number of total scientific and technical manpower in all sectors of 14,576 personnel, of whom 1,843 have a Ph.D, in a country of over a 136 million population. In the field of health, the number of research scientists is reported to be 966 with a total of just 42 Ph.D's of whom over 50% are located at one private sector university^{3,4}. Although there is no comparative data, it is feared and in terms of health research capacity, Pakistan may be at the lower end of a list of ranking even within developing countries.

The neglect of health research in the country is at odds with the efforts of planners and decision-makers early in the history of Pakistan. The Medical Research Fund was established as early as 1954 on the recommendation of the Medical Reforms Commission. While the Pakistan Medical Research Council was created in 1962 on the recommendation of the Medical Reforms Committee to promote, organize and coordinate health research and link it to the socio-economic development plans of the country. There is also no dearth of medical academic institutions in the country with over 20 medical colleges, three post-graduate medical institutes, the National Institute of Health, two Institutes of Public Health, two Health Services Academies and two medical universities. The lack of research capacity in the face of such infrastructure is intriguing and needs national exploration.

Since the mid-eighties attempts have been made to address the human resource issue in the field of Science and Technology. The main strategy developed to combat this problem was to train professionals at reputable institutions in developed countries to establish a pool of well qualified scientists and researchers who would impart similar levels of training to colleagues within the country. They have also been expected to provide leadership in health research and development. Two major government funded programmes were launched in the mid-eighties, one under the Ministry of Science and Technology and the other under the Ministry of Education to fund training for higher qualifications such as a Ph.D.. At the beginning of the nineties, a major donor-funded programme, the Family Health Projects (parts 1 and 2), was launched with the objective of Health Human Resource Development. A number of

candidates within public health service were sent abroad to acquire Masters in Public Health, Epidemiology and Statistics, and Health Planning and Management training. Currently, several new programmes are being explored by the Ministry of Science and Technology to expand the S&T manpower pool of the country.

In view of these historical development, important questions arise in the context of capacity development for health research in Pakistan are:

- Are the numbers of scientists and health professionals trained over the recent past, significant in view of the needs and population of Pakistan?
- Has the content of training been relevant to the health research needs of the country?
- Have those who have been trained, been utilized in accordance with their qualifications and are their current postings compatible with their training?
- What are the constraints faced by those trained in contributing optimally to health research in the country?
- What proactive measures are needed for developing an enabling research environment in Pakistan?

These questions need urgent answers so that national and global efforts currently being under taken for capacity development for research, can be more effectively and rationally focussed and applied to the Pakistani context. This study is an attempt towards helping understand the Pakistani context.

OBJECTIVES

This study which is being co-funded by the Council on Health Research for Development (COHRED), Geneva and Provincial Health Services Academy, Pakistan is aimed at evaluating the inputs, processes and outcomes of capacity development efforts in the past in Pakistan. It has the following objectives:

1. To undertake a comprehensive review of health research manpower development programmes in the public sector of Pakistan in the period 1985-1995.
2. To assess the relevance of training received as regards the technical and leadership needs in the field of health research in Pakistan.
3. To evaluate the contribution made by the trained scientists in terms of establishment, development or improvement of research infrastructure, capacity development, research initiatives and publications.
4. To define the current health research manpower needs of Pakistan and identify potential models of capacity development that will be most appropriate for the country.

METHODS

The study is using a range of methods to achieve its objectives and has both quantitative and qualitative research components. The reason for selecting the specified time period of 1985-1995 for the study is that it gives a finite period of time to the trainees to contribute to research in the country after completing their courses. Training abroad has been taken as an indicator for quality of training with the assumption that the training for higher qualification in the universities of the developed world have research training as a significant component.

Sample Size

The sample for this study comprises individuals and institutions. At the start of the study a list of such institutions was made and the plan was to contact individuals through them. However, as the study proceeds increasingly personal contacts in the ministries and institutions, and dissemination of the study by word of mouth is also helping to identify individuals who are relevant to this study.

Specific Methodologies

The following are the formal methods used for collecting information

1. **Survey of Programmes:** A comprehensive, retrospective survey of the records of major capacity building programmes undertaken in the period 1985 – 1995. These include programmes in the public sector undertaken by the following:

- Ministry of Science and Technology
- Ministry of Health
- Ministry of Education
- WHO Pakistan Office
- Pakistan Medical Research Council

Data is being collected on the size of the programmes, both in terms of financial inputs and numbers trained. The fields/subjects of training, the training institutions selected in the developed world, and data on individual participants' funded including demographic (age, sex, profession); training-specific (subject, location, duration, degree); and affiliation/identification (public sector, private, organization) variables is being tabulated. Also being recorded is the information on the numbers who return home and take up jobs within country.

2. **Survey of Participants:** Researchers who participated in the capacity development programs – those identified in the survey and otherwise (through personal communication) - are being requested to fill in a detailed questionnaire. In the analysis of data this sample will be divided into two groups: those that returned to the country by 1995 and are working in Pakistan, and those who remained or returned abroad after completion of training. The objective of this part of the study is to evaluate the individual experiences and impressions on issues including:

- personal perceptions of the utility of the training
- pre- and post-training differences in contribution to health research
- factors that hinder return to country
- weaknesses of the training system in terms of relevance to national needs
- feasibility of applying skills learned in the West to Pakistan.

The questionnaire is being distributed both in person and by mail.

3. **In-depth Interviews:** A group will be selected from among those who fill the questionnaires for carrying out in-depth interviews. Ideally such interviews would be needed for those within the country and those abroad. However owing to the limitation of funds interviews of participants who are not in Pakistan may not be possible. These interviews are being planned and a structured “interview guide” is being developed to explore issues listed above (under #2).
4. **Focus Group discussions:** Two focus groups discussions, one in Islamabad (federal level) and the other at Peshawar (provincial level) with the different stakeholders in health research will be arranged to discuss the implications of the findings of the study and develop solutions for the problems reported. The discussions of 90 minutes duration are being planned and will use a structured “focus group discussion guide”. They will be recorded and transcribed for analysis using standard qualitative research methods.

Data Analysis

As indicated in the sections above, the nature of the analysis will vary by the specific methods used. In general, the data from the surveys will be entered into Microsoft Excel® and analysed in accordance with the study objectives. Input, process and output variables will be estimated at an absolute level as well as per capita basis.

The qualitative data from the in-depth interviews and focus group discussions will be analyzed using thematic analysis. The use of Nudist® and Atlas-Ti® is being considered for this study.

Ethical Clearance

This study has been reviewed and approved by the review processes of the Provincial Health Services Academy, Peshawar. All personal identification will be removed as soon as data is received at PHSA. As a result, none of the data, quantitative or qualitative, can be traced to any individual source. This study has less than minimal risk to any human subject and offers no direct or immediate incentive or benefit.

RESULTS

In the study period being reported (1985-1995) a number of programmes and projects pertaining to capacity building in the field of Science and Technology, both government of Pakistan and donor funded, were implemented. In the field of health, selected candidates both from the public and private sectors were funded for PhD and Masters degrees in different subjects. The following are the major programmes which were undertaken:

1. The Ministry of Science and Technology's Programme of the "Development of scientific and technical manpower in high technology fields"
2. Family Health Project-I & II of the Government of Pakistan funded by IDA and the World Bank
3. PhD Training Programme of the Ministry of Education.

The *Ministry of Science and Technology's (MoST) Programme* was the largest covering all sectors. The Programme was implemented in three phases during the period 1985-94. The total allocation of the programme was Rs 2,451.24 million (US\$?) and the total target was 1,600 personnel. The programme has been able to fund a total of 1,102 people at a total cost of Rs 1,529.093 ?million (US\$??). Of these 1,102 people, 802 have completed their courses and acquired their qualifications. 205 are still enrolled and the remaining 95 are listed as "absconded" in the records of the Ministry. In the health sector a total of 116 were funded through this program with the majority in basic medical sciences.. Three persons were sent from Pakistan Medical Research Council. Some details of the training are given in Table 1.

The Programme undertaken by the *Ministry of Education* was called "Central Overseas Training (COT)". This was not of the scale of the MoST programme with about a 100 people being funded including some candidates from the health field. Details are still being collected from this program.

The World Bank and IDA funded *Family Health Project (FHP)* was launched in 1992 with the specific objective of health human resource development and health infrastructure strengthening. A number of in-service (public sector) candidates were funded for Masters in Public Health, Health Planning and Management, and Epidemiology and Statistics. In the study period candidates were sent for training abroad from the NWFP and the province of Sindh. The details of the candidates sent from the NWFP are given in Table 2. Information from Sindh is awaited.

The *WHO Pakistan Office* funded a few MS and Ph.D training in the UK during the period under report. Most of the candidates were from the National Institute of Health (NIH), Islamabad. Detailed information is being collected.

The list of the ministries, institutions and organisations to which questionnaires have been sent is attached as annex 1. Response from 6 institutions has been received. Information from individual institutions shows that none have undertaken any project or programme on capacity building under their own budget. Any long duration training in these institutions has been under the vertical programmes of the Ministries of Science and Technology and Health. The PMRC has not sent a single scientist (its own or otherwise) abroad for training. In fact it's regular budget does not have any

provision for training. The same is true of the NIH and the other public sector institutions.

Preliminary results of Survey of Participants:

To pretest the individual questionnaires, they were distributed to 16 persons in Peshawar who had received training abroad (mostly been under the Family Health Project). Twelve have returned the completed questionnaire and modifications to the questionnaire is being done. For illustrative purposes, the following preliminary analysis is being shared in this report based on the information provided by these 12 respondents.

The mean age of the respondents was 43 years ranging from 37 to 50 years, with 11 (92%) male and 1 (8%) female in the sample. The pre-training qualifications of the respondents include 11 MBBS (MD) doctors and 1 M.Phil researcher. The length of their service in the public sector ranged from 3 to 18 years. No formal selection criteria were followed, and the majority were selected on the basis of their personal contact. No evaluation of these candidates on their return has been done to-date.

The training were undertaken in the UK and USA. The qualifications acquired include MA in Health Management; MPH, MS in Health and Tropical Medicine; and Ph.D. The duration of study ranged from 1 to 4 years.

The number of research posts versus non-research posts held by the respondents in the *pre-training* period were 5 (41.7%) and 7 (58.3%), compared to 8 (66.7%) and 4 (33.3%) in the *post-training* period respectively. This indicates that in this small sample the foreign training has enabled these health officials to take up posts in the government health sector that includes a research component in their job designation. However, the number of research papers produced by these trainees are minimal, such that there has been only one publication in an international peer reviewed journal, and about 3 other papers in national journals. The number of research grants won by these respondents have also been very modest with only one international grant, and 6 national grants.

The factors related to the success or failure in conducting health research in Pakistan during their post-training period as described by these respondents are given in Table 3. The respondents have highlighted the problems and impediments to successful conduct of health research in Pakistan, the main factors being lack of institutional support, poor infrastructure, unclear career paths, and lack of incentives.

DISCUSSION

According to one definition, the term *capacity building* refers to enabling indigenous people to carry out development processes successfully, by empowering them through strengthened domestic institutions, provision of domestic markets, and improvement of local government efforts to sustain infrastructures, social institutions, and commercial institutions⁵. According to COHRED, capacity building for research is not just learning research methodologies, but how to increase capacity in a country for the application of Essential National Health Research (ENHR) and for health research leadership⁶. In developing countries not only is the overall capacity for health research low, there is also a major imbalance between the supply and demand side of capacity building⁵. What ever research capacity is being built on the supply side, is not being optimally used because of the lack of capacity of the key consumers of research.

This preliminary information from Pakistan indicates that capacity building efforts in the country have mostly been on developing a 'critical mass of researchers'. The two major programmes undertaken in the study period - the MoST and the FHP - had the very restricted objectives of training specified numbers in specified fields, without parallel planning for the utilization of these trained personnel and the creation of an enabling environment to maximize their contribution to research and development. The data described in this report illustrates the inability of the existing system to place the right people in the right jobs at the right time.

Since data collection is still underway, more information is yet to be analyzed. Current impressions indicate that a significant proportion of those trained in the study period are either out of the country, or working within country on jobs un-related to their training.

A special issue which must be highlighted at this stage of the study is that collecting information in countries like Pakistan, according to preplanned methodologies and strategies is not always possible. This is not to say that plans and methodologies should not be developed, but what is being emphasised is that one must be ready with and prepared to use informal methods not included in the original plan of action for getting at information. In this study the questionnaire to ministries and institutions was sent along with an explanatory letter. However after chasing these on telephone and through a special person employed for the job, the response was poor. One major reason given verbally was that the information is scattered in many paper files and it is not possible to access it. An alternate strategy was then adopted to get the information and several different persons were directly contacted on telephone to get the bits of information included in the questionnaire. This has worked well in getting the data from the MoST and is going to be used with the Ministry of Education and WHO.

It is too early to comment on the relevance of currently undertaken courses in universities of the developed countries for the needs of the developing world, especially in the context of development of the qualities of initiative and leadership among the trainees. It is alright to demand an enabling environment but ground realities are not going to change soon. Therefore, the development of the capacity to work within an uncondusive environment, the capacity to improvise, the capacity to

create something out of the little or nothing that is available, needs to be developed. There is no clear evidence as to how much of the developed world, which has taken the lead in the capacity development process, really understands the issues and needs of the developing countries like Pakistan. There is also not much information regarding the efforts being made by the universities of the developed world in evaluating their courses and revising and modifying these according to the needs of their beneficiary countries.

CONCLUSION

This is a preliminary report on an ongoing project to evaluate efforts at capacity development for health research in the public sector in Pakistan. Some information from a few respondents has been presented to provide a general idea about the nature of work that is being undertaken.

.....

For more information on this study please contact:

Dr. Tasleem Akhter

phsa@brain.net.pk

or

Dr. Adnan A. Hyder

adnanhyder@hotmail.com

Table 1:

Some details of the candidates trained under the Ministry of Science and Technology's Programme of the "Development of Scientific and Technical Manpower in High Technology Fields"

Subject	#	Year of completion	Degree	University
Molecular Biology	1	1988	Ph.D	Manchester University
Molecular Biology	2	1989	Ph.D	Manchester , London University
Molecular Biology	1	1990	Ph.D	Bradford University
Molecular Biology	4	1991	Ph.D	University of Sussex, Sheffield, Wales, Liverpool
Molecular Biology	1	1992	Ph.D	University of Cambridge
Molecular Biology	3	1993	Ph.D	University of Sussex, Birmingham, Western Ontario
Molecular Biology	1	1995	Ph.D	University of Massachusetts
Total	13			
Toxicology	1	1988	Ph.D	University of London
Toxicology	1	1994	Ph.D	Western Reserved University
Toxicology	1	1995	Ph.D	University of Cambridge
Total	3			
Microbiology & immunology	1	1995	Ph.D	Tennessee University
Microbiology & immunology	2	1992	Ph.D	University of south Florida, California
Total	3			
Clinical Oncology	1	1989	M.Sc	Bradford University
Clinical Oncology	1	1991	Ph.D	London university
Clinical Oncology	2	1992	Ph.D	University of London, Sheffield
Clinical Oncology	2	1993	Ph.D	University of London
Total	6			
Nuclear Medicine	1	1992	Ph.D	University of London
Nuclear Medicine	3	1991	Ph.D	University of London, Manchester, Texas
Total	4			
Virology	1	1990	Ph.D	University of London
Virology	1	1992	Ph.D	University of Edinburgh
Virology	1	1993	Ph.D	University of Minnesota
Total	3			
Parasitology	1	1989	M.Sc	University of London
Total	1			
Pathology	1	1990	Ph.D	Queen's university at Belfast
Pathology	1	1992	Ph.D	University of London
Pathology	1	1994	Ph.D	Harvard University
Total	3			
Biochemistry	1	1992	Ph.D	University of London
Biochemistry	1	1993	Ph.D	University of London
Total	2			
Biotechnology	1	1989	Ph.D	University of London
Biotechnology	1	1990	Ph.D	University of London
Biotechnology	3	1991	Ph.D	University of London
Total	5			
Subject	#	Year of completion	Degree	University
Cardiology	1	1991	M.Phill	University of London
Cardiology	2	1992	Ph.D	University of London, Birmingham
Total	3			
Medical Engineering	1	1992	Ph.D	University of Edinburgh
Medical Engineering	1	1994	Ph.D	University of Illinois
Total	2			

Immunology	1	1991	M.Sc	University of New York
Dermatology	1	1988	M.Sc	University of London
Medical Microbiology	1	1988	M.Sc	University of London
Biochemical Genetics	1	1990	Ph.D	Manchester University
Pharmacology Nutrition	1	1990	Ph.D	University of California
Microbiology & Parasitology	1	1992	Ph.D	University of Alabama
Biological Sciences	1	1992	Ph.D	University of Southern Methodist
Physiology	1	1992	Ph.D	University of Leeds
Bacterial Molecular Genetics	1	1993	Ph.D	University of London
Macromolecular Sciences	1	1994	Ph.D	university of Strathclyde
Physics	1	1994	Ph.D	University of Cambridge
Clinical Microbiology	1	1991	Ph.D	University of Sheffield

Table 2:

Details of the Candidates sent for Training under the Family Health Project-1 from NWFP

Subject	#	Year of selection & Completion	Degree	University
Public Health (MPH)	1	1993 1994	Master	University of Leeds
Public Health (MPH)	4	1994 1995	Master	University of Leeds(3), London
Public Health (HHRD)	1	1994 1995	Master	University of Manchester
Public Health (H.ED)	1	1994 1995	Diploma	University of Leeds
Public Health (Health Planning)	1	1994 1995	Master	University of Leeds
Public Health (HMIS)	1	1996 1997	Master	University of Manchester
Public Health (MPH)	4	1996 1997	Master	University of Leeds

Table 3: Factors reported by respondents as related to their contribution to health research in Pakistan (n=12).

Reasons for success	Number (%)	Reasons for Failure	Number (%)
Access to funds	2 (16.7)	Lack of funds	5 (41.7)
Infrastructure	--	Lack of infrastructure	6 (50.0)
Incentives provided	--	Lack of incentives	7 (58.3)
Internal Motivation	2 (16.7)	Do not feel like doing research	--
Good supervision or monitoring	1 (8.3)	Poor supervision	5 (41.7)
Career path clear	1 (8.3)	Poor career paths	8 (66.7)
Institutional support	--	No institutional support	9 (75.0)

References:

1. Report of the Commission on Health Research for Development. Health Research : Essential Link to Equity in Development. Geneva: 1990
2. Report of the Ad Hoc Committee on Health Research, Investing in Health Research and Development, WHO September 1996
3. Government of Pakistan. *Basic Data on Science and Technology in Pakistan*. Pakistan Council for Science and Technology, Islamabad, 1999.
4. Government of Pakistan. *Directory A 2 Z, Ph.D. Professionals in Science, Engineering & Technology in Pakistan*. Pakistan Science Foundation, March 1998.
5. Szario RC, Thulstrup EW, Bowers WW, Souvannavong O and Kone I, Mechanisms for Forestry Research Capacity Building (INTERNET)
6. Research Capacity Strengthening for Essential National Health Research (ENHR) COHRED, 1994