



STRENGTHENING HEALTH- ECONOMICS CAPABILITY IN **AFRICA**

STRENGTHENING HEALTH- ECONOMICS CAPABILITY IN AFRICA

SUMMARY AND OUTCOMES OF A REGIONAL
CONSULTATION OF EXPERTS AND POLICY-MAKERS

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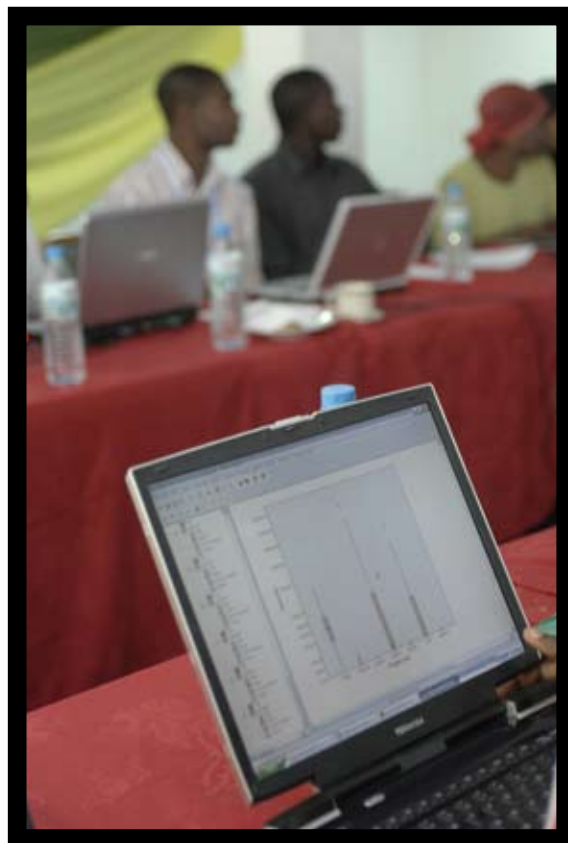
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INTRODUCTION

This report provides an overview of health-economics capacity and capacity-strengthening initiatives in Africa, and outlines a strategy for promoting further health-economics capacity in the region. It is the result of a process initiated by the research capability strengthening (RCS) area of the UNICEF/UNDP/World Bank/WHO Special Programme for Research and Training in Tropical Diseases (TDR). Following discussions with TDR, the Swedish International Development Cooperation Agency (Sida) lent support to this initiative.

Initially the report was drafted as a paper providing background information and ideas on health-economics capacity within the sub-Saharan African (SSA) region. It was intended to stimulate discussion at the consultative workshop held in April 2006 to consider ways of promoting health-economics capacity within the region (*see Appendix A and B for workshop agenda and list of participants*). The background paper was revised to capture additional issues discussed at the workshop. It was also circulated widely among health economists working in Africa – their inputs ensure that it reflects the widest possible range of views.



>> COST AND EFFECTIVENESS OF FIXED-DOSE COMBINATIONS FOR TB TREATMENT.



THE ACUTE NEED FOR HEALTH-ECONOMICS CAPACITY IN AFRICA

The lack of financial and other resources to provide efficient and equitable health services is a key challenge confronting many health systems in Africa. Government resources are particularly limited: the health-sector share of total government expenditure is below 10 % in about 60 % of SSA countries. This is despite the Abuja 2001 commitment by African heads of state that 15% of government funds would be devoted to the health sector. There is heavy reliance on donor funding, this provides over 25 % of total health-care funding in about 35 % of countries.

Given the global focus on poverty reduction, out-of-pocket payments' status as one of the single largest sources of financing is possibly the greatest concern. These exceed 25 % of total health-care expenditure in more than 75 % of SSA countries. More than half of all health-care expenditure is funded through out-of-pocket payments in 40 % of SSA countries.¹ There is growing recognition that out-of-pocket payments place a considerable burden on households, restrict access to health services among poorer people and threaten the livelihoods of vulnerable households that seek and bear the costs of health care. This has contributed to increased interest in health insurance mechanisms, as evidenced by the 2005

World Health Assembly resolution on sustainable health financing, universal coverage and social health insurance. There is mounting international pressure for African countries to move towards insurance funding for health services. Given the history of inappropriate health policies imposed on African countries, sometimes with serious adverse consequences (e.g. user-fee policies of the 1980s and 1990s), it is essential that there is local capacity to evaluate critically the health-care financing alternatives appropriate within each country context. Health economics is a core discipline for such evaluations.

Health economics is also of considerable importance in promoting the efficient and equitable use of the scarce resources available for health care. For example, economic analyses promote:

- ▶ technical efficiency in health-service provision: maximizing the number of services that can be provided with the least amount of inputs (staff, drugs, money etc.) without compromising quality of care;
- ▶ efficient allocation by setting service priorities and identifying the most cost-effective interventions for addressing major health problems;
- ▶ equitable allocation of government and donor funds and other health-care resources between areas and groups according to relative need for health services.

¹ All data drawn from McIntyre D, Gilson L, Mutyam-bizi V (2005). *Promoting equitable health care financing in the African context: current challenges and future prospects*. Harare, Zimbabwe, Regional Network on Equity in Health in Southern Africa (EQUINET).

There are more examples of the potential application of health-economics analyses within African health systems but already this discussion has presented a convincing argument for health-economics capacity within African countries. This requires capacity to undertake applied health-

economics analyses of health policy and planning challenges. There is also a critical need for capacity to develop conceptual and methodological approaches to health-economics analysis that are relevant to the African context.



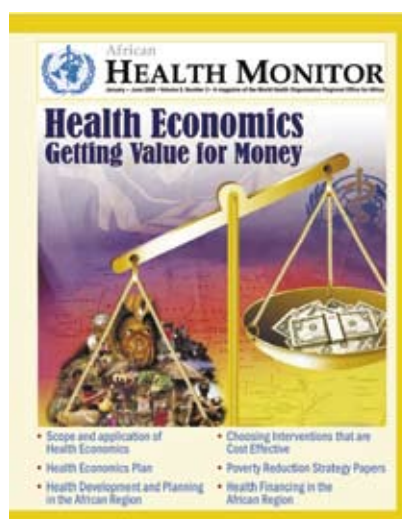
IS THERE A DEMAND FOR HEALTH-ECONOMICS CAPACITY IN AFRICA?

The clear need for health-economics capacity has not necessarily been translated into demand for health-economics analyses. This is illustrated by the extremely limited funding directed towards health-economics research and capacity-strengthening initiatives. Also, national ministries of health usually do not seek health-economics inputs to inform health-policy development. Currently, international organizations generate most of the demand for health-economics research within African countries. For example, research funders may suggest the inclusion of an economic evaluation component in specific projects; and various external organizations have initiated and funded much of the work on national health accounts (NHA).

Policy-makers and health managers appear to have limited understanding of the range of potential contributions that health economics offers to policy development, implementation and evaluation; and to service planning and management. Health economists may have contributed to this lack of understanding, through a heavy focus on economic evaluation (cost-effectiveness, cost-benefit and similar techniques) at the expense of other forms of analyses (e.g. of health-system equity). Limited engagement between researchers and ministry of health (MoH) officials misses an opportunity to promote the discipline. Even when these officials understand the potential, demand may be muted if there are too few skilled health economists available to undertake the required analyses. Sometimes officials do not have sufficient trust in the researchers, their institutions or the quality and objectivity of their research. To some extent, this is part of the broader issue concerning the extent to which MoH officials and policy-makers wish to base their

policies on evidence. However, some challenges around researcher-MoH interactions are specific to health economics (and other social sciences) – for example, if there is a bio-medical dominance in decision-making in the MoH. Another problem is that researchers often are judged to have limited understanding of policy processes. Even high-quality technical work may be useless if it fails to address key policy concerns or is presented in a way that is neither appealing nor acceptable to policy-makers.

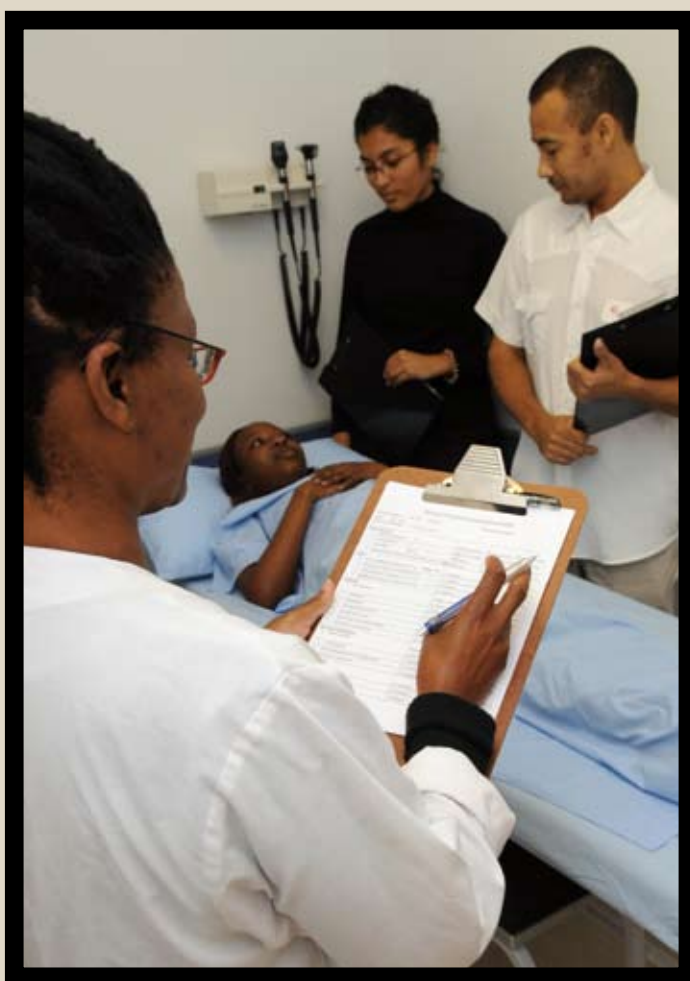
WHO Regional Office for Africa (WHO-AFRO) has played an increasingly important role in raising the profile of, and generating demand for, health economics and (hence) health economists. For example, an issue of the regional bulletin focused exclusively on health-economics issues. In addition, the WHO Regional Office for Africa has prepared



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background documents for discussions on health-care financing at meetings involving Ministers of Health from the region. The Regional Director has also written to health ministers in member countries in the region encouraging them to establish health-economics units within their ministries.

The relatively low demand for health-economics analyses needs to be addressed as part of a strategy for promoting stronger health-economics capability. It is likely that the greater emphasis on evidence-informed decision-making will generate more demand for health-economics analyses.



ATTRACTING RECRUITS TO HEALTH ECONOMICS: KEY ISSUES

Health economists have a range of primary degrees – economics, other social sciences and health sciences. While there was some debate about the importance of holding an economics major within the first degree, there is now some agreement that the key defining features of a health economist are formal postgraduate training or extensive expertise in health economics. Consistent work in this subdiscipline is necessary to develop and maintain skills in a range of health-economics analyses.

A number of factors dissuade economists from pursuing the health-economics subdiscipline. Economists have numerous career options, many of which are relatively highly paid (e.g. in financing institutions). Economists most likely to be attracted to the health sector – e.g. those with an interest in applied or development economics – are thus limited in number. In addition, African economists are seldom exposed to the health-economics

subdiscipline during their undergraduate, or even postgraduate, studies and are not aware of the career opportunities. Those interested in working in the health sector face still more difficulties in obtaining training (e.g. limited bursary funding) as well as difficulties in finding full-time jobs after training is completed.

Similar constraints face aspiring health economists from health science or non-economics social-science backgrounds. For example, few medical graduates are interested in the public-health and health-systems fields (as opposed to clinical work). Social scientists who have neither economics nor health backgrounds probably face the greatest constraints in breaking into health economics.

Essentially, health economics is not highly visible and it is difficult to attract new recruits if they are never exposed to the subdiscipline.





RETAINING HEALTH ECONOMISTS: KEY ISSUES

The lack of secure and adequately remunerated job opportunities are possibly the greatest constraints to retaining trained health economists within Africa. Recent graduates who are not provided with opportunities to use their skills rapidly become disillusioned and either seek work overseas or leave the discipline.

At present, very few organizations have posts for health economists; institutions that do offer these posts often do not develop adequate career pathways. Most available posts are largely soft-funded (e.g. from research grants) and provided on short-term contracts. Many institutions are risk averse and unwilling to establish health economics, policy and other health-systems research groupings on a soft-funded basis. In addition, institutional or bureaucratic constraints within a parent institution may impede the establishment of soft-funded research groups; also soft-funded posts often do not receive the same remuneration package benefits as those that are core funded.

Very few institutions are willing to strengthen capacity by employing recent graduates with limited field experience. In some cases this may be due to an inability to recruit the experienced staff necessary to support them. Many African institutions, particularly universities, will employ only those with a doctorate. This is exacerbated by the supervisory capacity constraints that limit the number of PhD study opportunities. The establishment of soft-funded posts is constrained further by limited local demand for health-economics research and restricted funding opportunities.

Within these institutions there is often limited understanding of the subdiscipline of health economics. Potential opportunities to use the skills of

health economists are missed and there are numerous anecdotal reports of colleagues in health-research organizations developing proposals which would benefit greatly from a health-economics component. Often, these are omitted because of lack of awareness. Greater concern is caused by the all too frequent reports of north-south collaborative projects in which the northern institutions insist on undertaking the health-economics component, either excluding health economists from the southern institutions or restricting their involvement to basic data-collection activities. It should be noted that this is not the whole experience – in some notable exceptions northern institutions have contributed significantly to developing capacity in their southern partners, undertaking truly collaborative research.

Given these constraints, frequently only one or two health economists are employed within individual institutions. This can itself create difficulties retaining staff thus employed. A young health economist working alone may feel isolated and unable to develop further skills without engagement with mentors and peers. A considerable concern is the reluctance of some institutions to collaborate, although individually they may have limited health-economics capacity and may even be in close proximity. Collaboration could provide opportunities for mutual support; to take on large-scale research projects; and to undertake capacity-strengthening initiatives that would not be feasible individually.

It is widely recognized that salary levels are extremely low in health ministries, academic institutions and other research organizations. In many instances, these meagre incomes need to be supplemented, most often by consultancy work. Sometimes, this leaves very little time for large-scale health-economics

research projects or capacity-strengthening activities. If relative priority is given to the more lucrative consultancy activities, an institution may develop a reputation for not delivering timely research contracts. Some consultancy activities are not related to health economics and therefore detract from maintaining and developing these skills.

African health economists are presented with enticing opportunities, particularly in academic institutions in high-income countries or in multi- or bi-lateral organizations. These offer considerably higher remuneration than public-sector institutions within Africa, and many opportunities for

career advancement. It thus requires considerable commitment to remain as a health economist in an African research institution or MoH. Also, key users of research findings fail to recognize the potential contributions of health economics and there is a lack of recognition of African research in the international health-economics community. Although it is changing gradually, little of the research conducted by African health economists is published in peer-reviewed international journals or presented at international conferences.



CAPACITY-STRENGTHENING INITIATIVES: A BRIEF INVENTORY

Overall, there are major challenges for retaining health economists within African institutions.

Previous sections have highlighted some of the challenges facing the development and retention of health-economics capacity within Africa. This section provides an overview of health economists working in Africa, followed by information on training activities and capacity. Finally, other capacity-strengthening initiatives are reviewed briefly.

African health economists: numbers and distribution

It is difficult to obtain an accurate estimate of the number of health economists working in Africa. The only information available was collated as part of an initiative for establishing an African Health Economics Association. At the 2005 International Health Economics Association (iHEA) conference, a meeting of African health economists agreed to invite all their colleagues working in Africa to forward their details for inclusion in a database. Invitations were sent to all who had attended the iHEA meeting, members of the Health Economics and Policy Network (HEPNet – see later information) and alumni of health-economics Masters courses. These individuals were asked to circulate the invitation to other health economists with whom they had contact within their own, or at other, institutions. This data-collection exercise has been repeated several times over the last few months. To date, 80 people have been included on the database but it is not yet comprehensive and efforts will continue.

Table 1 provides an overview of the distribution of health economists working in each country. It appears that the greatest concentration of health economists can be found in South Africa, Nigeria and Uganda; followed by Kenya, the United Republic of Tanzania and Ghana. It is likely that there is under-reporting of health economists working in Zambia. Unfortunately, their countries of origin are not known but a small, yet significant, number are working in African countries other than their country of origin. The database contains details of only five health economists of African origin who are currently working in high-income countries; there is considerable under-representation of this category in the database.

The majority of health economists recorded in the database are working in African academic or publicly funded research organizations (42%). Of the rest, 30% are working in bilateral and multilateral international organizations; 15% in private organizations (mainly private consultancy groups but some NGOs); 9% in ministries of health; and 4% in academic or private consultancy groups based in high-income countries. It is likely that this presents a biased perspective on the distribution of health economists between different types of organizations. For example, academics are more likely to be interested in networking with their peers and belonging to a disciplinary association than those working in private consultancy organizations.

The database also indicates that the most frequently cited areas of expertise of these health economists are economic evaluation and health-care financing.

Table 1. Geographical distribution of health economists

Country	No.
Angola	1
Burkina Faso	1
Cameroon	3
Congo (WHO Regional Office for Africa)	3
Gambia	1
Ghana	5
Kenya	7
Liberia	1
Malawi	2
Niger	1
Nigeria	10
South Africa	19
Uganda	10
United Republic of Tanzania	6
Zambia	3
Zimbabwe	2
African-origin working in high-income country	5

Training activities and capacity

A. MASTERS-LEVEL HEALTH-ECONOMICS COURSES AND MODULES

A growing number of academic institutions in Africa offer some form of postgraduate health-economics training, usually as a module within a Masters programme (generally either public health or economics). A survey of African institutions produced the following information – this is not comprehensive, but does illustrate the modules on offer (*contact details for each institution are noted in Appendix C*).

- ▶ School of Economics, University of Nairobi, Kenya: offers health-economics module as part of MA Economics (elective module in 12-module course). Also offers module in economic evaluation. About 30 MA students have elected to undertake dissertation research on health-economics topics in the past 10 years.
- ▶ Department of Community Health, University of Nairobi, Kenya: offers health-economics module to Bachelor of Medicine (MBChB) and Master of Public Health (MPH) students. Masters module covers: demand analysis, programme planning, health-care financing and economic evaluation.
- ▶ Department of Health Sciences, Uganda Martyrs University: offers health-economics module as part of MSc in Health Service Management. Intends to develop a full Masters programme (*see Appendix C*).
- ▶ Makerere University Institute of Public Health (MUIPH), Uganda: offers elective module in health economics as part of MPH programme. Includes one or more sessions on health economics as part of the public-health modules offered to undergraduate and Master of Medicine (MMed) students (*see Appendix C*). The Faculty of Economics and Management (FEMA) at Makerere University also offers a module in health economics within the part-time economics MSc.

- University of Ibadan, Nigeria: offers health-economics module as part of the economics MSc. Module attended by economists and by health-sciences students (*see Appendix C*).
- Department of Health Administration and Management, University of Nigeria Enugu Campus: offers health-economics module for both undergraduate and Masters students. Module covers: applications of macro- and micro-economics in the health sector; economic evaluation and health-care financing. Intends to start a Postgraduate Diploma in Health Management, Economics and Policy (HMEP) in the near future, followed by an MSc in HMEP and, eventually, a PhD programme.
- University of Nigeria Nsukka: offers health-economics module as part of a Masters programme. This covers: introduction to health economics, health-care financing, health-sector reforms and the demand and supply of health care.
- Department of Community Medicine, University of Zimbabwe and the clinical epidemiology Resource and Training Centre (Harare) offer a “semester subject” in Clinical Economics as part of the MMed in Clinical Epidemiology. Module focuses on economic evaluation and aspects of health policy. Intend to increase the health-economics component in the Masters programme.
- Department of Economics, University of Zambia (DoE-UNZA): offers elective health-economics module as part of MSc in Economics. Module includes: nature of the health-care market, health-care financing and economic evaluation.
- Centre for Health Policy (CHP), University of the Witwatersrand: offers elective modules on health-policy analysis and health economics as part of the Masters in Public Health. Also supervises some students undertaking dissertations for the Masters in Health Economics.

- Department of Economics, University of the Free State, South Africa: offers elective module in health economics as part of the Masters in Economics.

Research institutions, such as the Kenya Medical Research Institute (KEMRI) and Navrongo Health Research Centre, also make important contributions to Masters-level health-economics training. In particular, by providing supervisory support to Masters students undertaking health-economics dissertation research in their field stations (*contact details for each programme are noted in Appendix C*).

►► MPH STUDENTS AT THE UNIVERSITY OF THE WITWATERSRAND.



B. MASTERS DEGREES IN HEALTH ECONOMICS

The survey identified only two complete post-graduate health-economics programmes currently offered by African institutions.

- CESAG (Centre Africain d'Etudes Supérieures en Gestion), Dakar, Senegal: offers a Diplôme d'Etudes Supérieures Spécialisées Economie de la Santé (equivalent to a Masters in health economics). Includes modules on micro-economics; macroeconomics; demography; statistics; econometrics; health economics; behaviour of producers and consumers; and strategic planning.
- Health Economics Unit (HEU), University of Cape Town, South Africa: offers a Masters in Health Economics. Includes modules on: health policy and planning; theory and application of economic evaluation in health

care; quantitative methods in health economics; microeconomics for the health sector; macroeconomics, health and health-care financing; research methods; two electives; dissertation on a health-economics topic.

An indication of outputs was obtained from information from the two African health-economics Masters programmes and from a major health-economics Masters programme (that trains a significant number of African students) in a high-income country – the University of York in the United Kingdom. The CESAG programme is attended by about 25 to 30 students annually; most are from Senegal although there is a growing number of students from other Francophone west-African countries. The information for the HEU and York programmes is summarized in Table 2, according to country of origin. The distribution of Masters graduates across countries is similar to the distribution of health economists within countries.

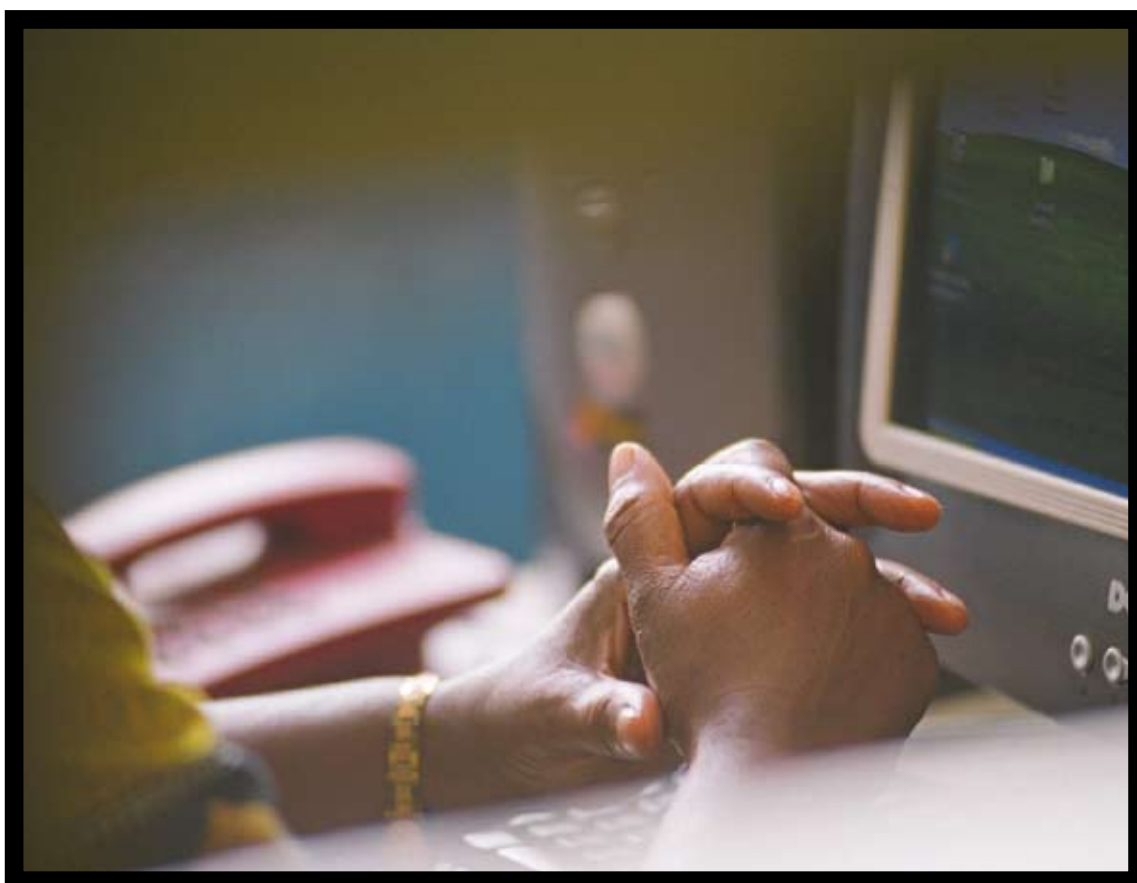


Table 2: Distribution of Masters graduates in health economics		
Country	HEU* (1996-2005)	York (1994-2005)
Angola	1	
Eritrea	1	
Ghana	6	2
Kenya	5	2
Lesotho	1	1
Malawi	1	
Mozambique	1	1
Nigeria	6	2
South Africa	12	2
Uganda	16	3
United Republic of Tanzania	4	2
Zambia	12	
Zimbabwe	5	
High-income countries	7	
TOTAL	78	15

* Health Economics Unit, University of Cape Town

The majority of students are drawn from Uganda, South Africa, Nigeria, Ghana and Kenya. The key difference between the distributions in Tables 1 and 2 is the relatively large number of Zambians who have received Masters-level training but are not reflected in the database of health economists. It is unclear whether this is because health economists working in Zambia are under-reported in the database or because many Zambians with health-economics training are not working within the country.

With the support of TDR, two Masters-level programmes (University of Ghana and The Institute of African Studies, University of Nairobi, Kenya) were initiated recently to develop skills in applying social-science techniques to research on tropical diseases. Both programmes include a health-economics component.

C. DOCTORAL-LEVEL TRAINING IN HEALTH ECONOMICS IN AFRICA

Doctoral-level training in health economics remains limited in Africa. The African Economic Research

Consortium (AERC) offers an elective module in health economics as part of its taught programme. The vast majority of African institutions that responded to the survey indicated that they did not have any health-economics PhD students. Those that do, provide dissertation research doctoral training. The University of Nairobi has had one health-economics doctoral graduate and currently has one registered health-economics doctoral student. MUIPH currently has two PhD students undertaking research on health-economics topics (one undertaking a cost-effectiveness analysis, the other analysing equity of access to the minimum health-care package). About five PhDs have graduated from the University of Ibadan over the past twenty years. The CHP at the University of the Witwatersrand also has some health-economics PhD students. Table 3 provides a summary of health-economics doctoral graduates and of students currently registered in institutions with larger health-economics PhD programmes, according to country of origin (2 PhD health economists from Kenya graduated from the University of York but are not reflected in the table).

Table 3. Doctoral graduates and (currently registered students)

Country	HEU (1996-2005)	LSHTM* (1995-2005)
Benin		1
Cameroon	(1)	1
Eritrea	1	
Ethiopia		1
Gambia		(1)
Ghana	1 (1)	2
Kenya	1	1
Nigeria	1 (1)	1
South Africa	1 (2)	2 (3)
Uganda	(1)	(2)
United Republic of Tanzania		1
Zambia	1	(1)
High-income countries	1 (1)	
TOTAL	7 (7)	10 (7)

* London School of Hygiene and Tropical Medicine

D. POSTGRADUATE DIPLOMA IN HEALTH ECONOMICS

Although no postgraduate diploma in health-economics programme currently exists in Africa, the HEU at the University of Cape Town has offered a distance-learning postgraduate diploma programme since the beginning of 2007. As indicated, the University of Nigeria Enugu Campus intends to start a Postgraduate Diploma in Health Management, Economics and Policy (HMEP).

E. CONTINUING EDUCATION COURSES FOR PROFESSIONALS AND POLICY-MAKERS

A number of short courses that focus, exclusively or partly, on health-economics issues are offered in a wide range of African countries. Most of these courses are targeted at health managers or policy-makers, exposing them to basic health-economics concepts and techniques. They play an important role in creating greater awareness of the potential contribution of health economics and may engender greater demand for health-economics research among these groups.

These training programmes clearly contribute to the development of health-economics capacity in African countries. However, there appear to be challenges for retaining this capacity – it is known that a number of African health economists that have participated in these programmes have not remained in the region.

F. OTHER CAPACITY-STRENGTHENING INITIATIVES: GRANTS, NETWORKS AND BILATERAL ARRANGEMENTS

Grants

A number of other initiatives contribute (in various ways) to strengthening health-economics capacity within the African region. Some research-funding opportunities explicitly include a capability-strengthening component – most notably the grants offered and administered by TDR. For example, the re-entry grants that fund research by those completing postgraduate programmes to enable them to utilize and develop skills gained from their training. These grants provide three years of funding and serve as important potential mechanisms for launching young health economists' careers;

they are not restricted to graduates whose training was funded by TDR. The MIM/TDR capability-strengthening grants provide quite substantial funding for research projects related to malaria (including those focusing on health economics or other social sciences) that contain postgraduate training and other capability strengthening opportunities.

Networks

Regional networks contribute in various ways to health-economics capability strengthening. For example, the Partnership for Social Sciences in Malaria Control (PSSMC) has developed a resource centre in Ghana that assists interested groups and individuals to locate material on social science and malaria research. It has also contributed to short-course training programmes and facilitates networking between those interested in social science and malaria research.

Another relevant regional network has been in existence for over six years. HEPNet's main purpose is to contribute to capacity strengthening and retention in order to support health-policy devel-

opment. It involves ministries of health, research institutes and academic institutions in contributing collaboratively to health-sector development in five countries: South Africa, Uganda, the United Republic of Tanzania, Zambia and Zimbabwe, and is currently expanding into other countries. HEPNet has undertaken a range of activities, particularly developing capacity for health-economics training and certain research skills – e.g. writing and quantitative analysis skills (*see Appendix D for a more detailed overview of the organization and its activities*).

Bilateral engagement

Sida funds bilateral engagement between specific health-economics institutions – another critical capability development initiative. For example, the Swedish Institute for Health Economics (IHE) in Lund has been funded to provide ongoing support and collaborative inputs to the DoE-UNZA for over a decade. Bursaries have been provided for postgraduate health-economics training for UNZA and Zambian MoH staff; staff exchanges between IHE and UNZA; and collaborative

➤➤ PROFESSOR DI MCINTYRE, UNIVERSITY OF CAPE TOWN.



research between IHE, UNZA and the MoH. For the past few years Sida has also supported a similar (but more limited) bilateral collaboration between the HEU at the University of Cape Town and the Karolinska Institute in Stockholm. A new bilateral initiative is planned between Ugandan and Swedish institutions.

Policy forums

The African Health Economics Advisory Committee (AHEAC), established by the WHO Regional Office for Africa, is another recent initiative that could contribute to capacity strengthening and retention. The primary purpose of this committee is to advise the WHO Regional Director for Africa

on key issues relating to health economics. The establishment of this committee has demonstrated a commitment to place health economics on the policy agenda. In turn, this will be important in generating demand for health economics among policy-makers, and strengthening capacity in the discipline.

This range of initiatives is vital for expanding the opportunities to undertake health-economics research – ensuring funding and promoting demand from policy-makers; providing the ongoing skills development, collegial engagement and institutional capacity development that are critical for capacity retention.

>> EXECUTIVE BOARD ROOM, WHO, GENEVA.



CONSOLIDATING AND EXPANDING CURRENT CAPACITY: NEEDS AND RESPONSE

This section is based entirely on discussions at the consultative workshop. It focuses on the demand for health-economics; training needs; strategies to strengthen training capacity and retention; and institutional capacity development issues.

How can demand for health economics and health economists be promoted?

Workshop participants identified three key areas for stimulating demand for health economics and health economists: sensitizing governments and others to the discipline of health economics; developing tools to respond to demands from sensitized stakeholders; and developing skills and systems to use these tools appropriately. WHO (particularly the Regional Office for Africa) and other international organizations are seen as key players in stimulating demand. Specific issues raised during discussions are shown below.

SENSITIZING GOVERNMENTS AND OTHERS TO HEALTH ECONOMICS

- It was recognized that there is a current global focus on, and interest in, strengthening health-systems research. Health economics is a component of this so it may be useful to raise awareness of its potential contribution as an integral part of high-level advocacy around health-systems research.
- WHO Regional Office for Africa plays a key role in raising the profile of health economics through its engagements with the New Partnership for Africa's Development (NEPAD) and regional economic bodies (e.g. the Southern African Development Community – SADC).
- WHO Regional Office for Africa and the WHO country offices need to engage with ministers and ministries of health (and finance) to sensitize them to health-economics issues and the importance of institutionalizing health economics within ministries. The ministries could be encouraged to develop policies/strategies on health-economics capacity and to review their staffing and job specifications to enable the incorporation of health economists. Ministries could also be encouraged to demonstrate institutional commitment to health-economics capacity development, for example by funding staff attendance on postgraduate health-economics training programmes, guaranteeing a secure post on their return and an identified career pathway. One strategy could be to offer an externally funded MoH internship for recent health-economics graduates for one or two years; these interns could promote health economics and demonstrate its usefulness.
- It is important to identify the key policy challenges and issues facing health (and finance) ministries and to frame health-economics sensitization within that context. For example, NHA have been important in alerting ministries



to the value of health economics as a vehicle for enabling assessment of health-sector financing and spending patterns and areas for policy intervention. Advocacy of the Abuja target to devote 15% of government spending to the health sector could be another means of sensitizing policy-makers (NEPAD is planning a workshop around this target). WHO made a specific request for the NHA database to separate donor and government funding in order to monitor progress towards the Abuja target. Health-care financing options are another area of current policy concern that provide a useful entry point, although it would be important to link them explicitly to the Millennium Development Goals.

- Short courses or workshops (generally offered by training institutions) that provide a general introduction to health-economics concepts and tools play a critical role in sensitizing policy-makers and health managers to the discipline.
- It would also be useful to identify policy champions for health-economics – a minister of health, director of health services or another highly placed official. However, it is important to select sensitization workshop participants for their interest in (and support for) health economics, rather than their positions.

DEVELOPING TOOLS TO RESPOND TO DEMANDS

- Academic institutions can play a key role in developing cutting-edge conceptual and methodological approaches, appropriate to the African context, for health-economics analyses. A major constraint is the complete lack of funding for conceptual research activities.
- WHO could take a lead in coordinating the development of applied tools by drawing in partners. Academic and other research institutions should consult with future users to develop

methodological and other tools. These must be flexible to allow for adjustment to meet the needs of different contexts.

- A central repository for health-economics tools is required; WHO Regional Office for Africa should collaborate with WHO in key roles. It was suggested that a web page could be devoted to health-economics tools (developed with WHO support and directly downloadable) and links to other relevant web sites.

DEVELOPING SKILLS AND SYSTEMS TO USE TOOLS

- Workshops or short courses should be held to develop skills. This could include a WHO Regional Office for Africa workshop to sensitize senior MoH staff to health-economics tools and country-level workshops for other MoH officials.
- Information systems need to be developed – for example, findings from initial NHA rounds could be used to advocate the establishment of information systems that compile these routinely. Health ministries could make recommendations to central statistical offices (e.g. to include key health-related questions in routine household surveys) and finance ministries. As some of the routine household surveys relevant to the health sector are developed and coordinated at global level (e.g. living standards measurement surveys; demographic and health surveys) organizations such as WHO, the Global Forum for Health Research and the Alliance for Health Policy and Systems Research (AHPSR) should be involved in such advocacy.

Multilateral organizations such as WHO were seen to have key roles in stimulating demand for health economics, but health economists in academic and other research institutions will be critical in meeting demand (e.g. through large-scale research and



➤➤ MASTERS IN HEALTH ECONOMICS STUDENTS, UNIVERSITY OF CAPE TOWN.

technical-support activities), particularly at regional levels. Health economists within health ministries will focus primarily on meeting country-level needs and demands, in collaboration with those in academic and research institutions.

It was also noted that an increase in the supply of health economists is necessary to stimulate demand for health economics. Demand will increase as more policy-relevant research is undertaken and disseminated. However, this demand will decline if it is not met with a comparable increase in the supply of health economists.

Finally, there is a need to manage demand. For example, there is already a demand for health economists within the private sector (e.g. pharmaceutical companies) and from multilateral and other international organizations. If most of the trained health economists are absorbed by these organizations, training institutions and the public-health sector likely will have insufficient numbers to sustain training of future health economists or to meet important policy-related health-economics research needs. Therefore, particular attention should be given to stimulating public-sector demand for health economists and providing job opportunities and career pathways in these institutions. There should also be more emphasis on instilling a commitment to social responsibility during training.

Identifying and meeting health-economics training needs

The discussion focused on identifying the key needs of health-economics training; current constraints on increasing training activities; and strategies for overcoming these constraints and meeting training needs. As TDR is particularly interested in supporting postgraduate programmes, much of the discussion around strategies for expanding training activities focused on these. However, it should be remembered that health-economics training interconnects with health-economics research and policy support. Research and policy-support activities can feed into the training programmes necessary to train more health economists to undertake the necessary research and other health-economics activities (e.g. research findings can provide the basis for case studies and other training materials; policy-support activities inform curriculum development to ensure that graduates are able to undertake policy-relevant work).

TRAINING NEEDS

- Economics undergraduate courses should contain some exposure to health economics. This would sensitize young economists to the possibility of applying their skills within the health sector, and thereby recruit them to the subdiscipline.
- Short courses, targeted at health (and finance) ministry officials, are important for raising awareness and developing a basic understanding of health economics.
- One or more health-economics modules in Masters programmes can play an important role in raising awareness and also develop basic skills in applying key health-economics tools.
- Postgraduate diplomas in health economics (particularly distance learning) can provide a solid basis for those wanting to specialize in health economics, who can then proceed to Masters degrees through dissertations. In addition, PhD candidates who have not attended a dedicated health-economics Masters programme can audit one or more modules for “re-tooling” in areas relevant to their research.
- There is a need for dedicated Masters programmes and PhD training for those who wish to work full-time in health economics. Such training should be limited to a few institutions that have an explicit regional training focus.
- Greater capacity within training and research institutions is required in order to provide health-economics training to others. It is assumed that all those working in health economics within these institutions will have received some Masters-level health-economics training. The provision of short-course training would develop specific competencies among these staff members, e.g. detailed economic evaluation, quantitative techniques for health-economics analysis etc. The development of specific competencies can also be accomplished through auditing one or more modules in a distance-learning postgraduate diploma. PhD programmes are critical for enabling staff to develop detailed research skills and specialist knowledge to be able to teach confidently in their area of specialization. Finally, it is important to develop the general teaching skills of such staff (e.g. curriculum development, developing learning objectives, case-study development, interactive teaching processes, learner-assessment techniques, etc.)
- Health economists working within health ministries primarily would require training within a health-economics Masters programme. PhD-level training would not be essential but might be appropriate if doctoral research is used as an opportunity to address a key policy issue.
- Finally, postdoctoral programmes would enable health economists to develop further skills for independent research and detailed expertise. Work in areas outside their doctoral research would equip them to undertake high-quality research on a broader range of health-economics issues.

KEY CONSTRAINTS ON EXPANDING HEALTH-ECONOMICS TRAINING

- Issues related to the design and implementation of training programmes including inadequate skills in curriculum design, teaching and assessment methods as well as a lack of training materials, quality control and external examination capacity.
- Insufficient health economists (Masters and PhD graduates) working within academic institutions at present.
- A range of institutional constraints include lack of space, limited library resources and bureaucratic obstacles (e.g. delays in registering new courses).
- Inadequate funding. Some African universities are able to use vacant posts to employ more health economists to provide additional health-economics training, but many require core salary support. As a minimum, funds are required to pay external lecturers (e.g. health economists working in the MoH). Financial resources are also needed to develop appropriate infrastructures (e.g. purchase of computers and key texts, establishing reliable Internet connections, etc) and to cover the costs of dissertation research for Masters and doctoral candidates.
- Demand and supply constraints operate to some extent. There may be insufficient well-motivated and appropriate candidates interested in health economics (although most institutions reported more applicants than places) and some recent graduates have been unable to find suitable jobs.

STRATEGIES FOR OVERCOMING CONSTRAINTS AND MEETING NEEDS

- The first step is to establish the critical mass necessary to introduce or expand health-economics training activities. Exploration of the possibility of greater cross-faculty and cross-university collaboration is a key strategy (e.g. students could choose from two modules in health econom-

ics from their own department or university or two different modules from a collaborating department or university. Each of these modules would offer full credits). Country-level networks of health economists should be used to draw in teaching expertise from those working in non-university research institutions, health ministries or the WHO country offices. In addition, non-university research institutions can play an important role in supervising Masters and PhD dissertation research.

- Training opportunities for faculty members. PhD training would develop a critical mass of skilled health economists within an institution but there is also a need to develop training skills (interactive training, learner evaluation, dissertation supervision, etc.). Faculty members might also need to expand their knowledge of health-economics issues, e.g. by participating in postgraduate diploma programmes.
- Northern institutions and global networks or resources can provide valuable input, particularly during the initial stages of developing new postgraduate training. Post-doctoral fellows or senior academics on sabbatical may be willing to work in an African country to assist during the programme-development phase; there could also be staff-exchange programmes (north-south and south-south). There is considerable potential for collaboration with international academic institutions for PhD training (e.g. two PhD students are currently registered with MUIPH, co-supervision is provided by the Karolinska Institute as part of a bilateral collaboration initiative). This is even more feasible when staff are based full-time within an African institution (e.g. LSHTM has seconded two staff members – one at KEMRI, one at the University of the Witwatersrand – on a full-time basis to supervise African health economists undertaking PhD studies work in African institutions).
- It is important to phase in the expansion of health-economics training. For example, a university that currently offers a health-economics

module as part of a generalist Masters programme can add one or more specialist health-economics modules each year (as capacity allows) until a dedicated programme has been achieved.

- Regional networks (such as HEPNet) could play an important role in supporting the expansion of health-economics training. For example, it could offer training of trainers (TOT) workshops, facilitate the sharing of training materials and staff exchanges, offer short courses to upgrade skills in certain areas and provide a mechanism for drawing on international human resources (e.g. as HEPNet's primary funder, Sida could facilitate support via Swedish academic institutions).
- Considerable advocacy with bilateral and multilateral organizations will be required to secure the financial resources necessary to initiate and sustain these training activities. Bilateral organizations already committed to health-economics capacity development could play a particularly important role by stimulating interest among other bilateral and multilateral organizations to fund the training of health economists within African institutions and support the development of local institutional capacity. In addition, there should be advocacy to encourage governments and NEPAD to fund the training of health economists. Governments that pay for training may have greater ownership of the products/graduates.
- It is necessary to find a mechanism for coordinating these capacity-strengthening initiatives.

Stimulating north-south and south-south collaborations

The strategies discussed above will also assist the development of health-economics research capacity (e.g. postgraduate training with dissertation research components). Opportunities for research collaboration should be strengthened, particularly

collaboration within the African region. This could be facilitated by more seed funding for developing collaborative research proposals. Networks such as HEPNet could play an important role in stimulating collaborative research.

As indicated earlier, there is also a need to upgrade information systems (e.g. improve the health component of national household surveys and routine health-information systems) given that African health economists' ability to undertake research is constrained by the continual need to collect primary data. Finally, workshops to strengthen capacity in research dissemination are critical. These should cover skills in writing for international peer-reviewed journals and for presenting research findings in ways that are accessible and appealing to policy-makers.

Retaining capacity within the African region

The availability of job opportunities on graduation is a key issue in retaining health economists within the region. One possibility is to offer postgraduate opportunities primarily to those working within academic or research institutions or a health ministry. However, these institutions would need to guarantee re-employment on graduation. Institutions may wish to consider some form of bond to ensure that sponsored staff members return after graduation. This should be combined with an institutional commitment to provide mentorship and support and appropriate career pathways. External funders of postgraduate training could request a detailed reintegration plan from the training institution near the end of a course to inform their consideration of how to retain the graduate.

There is undoubtedly a need to provide more employment opportunities within African institutions. Within health ministries, job opportunities are linked with the earlier discussion on sensitizing officials to the discipline and promoting the creation of posts for health economists. In universities and research organiza-

tions, it may be necessary to explore the possibility of soft-funding health economists' posts on a long-term basis. This has been shown to be possible within the region but does require a strong sense of institutional commitment and for all staff in the institution to contribute to raising funds. It would be helpful to have some core funding (possibly from external sources) for senior staff who bear the greatest load in capacity-building and fund-raising activities. However, pressure should be applied at the highest levels within universities and research institutions to reallocate posts to health economics (e.g. from biomedical areas). This requires the profile of health economics within institutions to be raised substantially. Funders could help to exert this pressure, for example by seed funding some posts if the university or research organization agrees to take over funding after a certain time. Many academic institutions offer posts (institutionally- or soft-funded) to PhD graduates only, a practice that should be challenged. Institutions should be willing to contribute to capacity strengthening and not just reap the benefits of capacity development. More emphasis should be placed on employing Masters graduates, providing them with opportunities to develop skills and undertake PhDs while contributing to the teaching and research activities of an institution.

Retention packages for health economists working in health ministries, universities or research organizations should include the strategies listed below.

- ▶ Some degree of job security – even if a post is soft-funded, explore the possibility of providing an open-ended (rather than very short-term) contract.
- ▶ Access to the full range of remuneration benefits (pensions, etc.) – even for soft-funded posts, institutions may allow contract staff to receive remuneration benefits identical to those of staff funded directly by the institution (if full remuneration package is soft-funded).
- ▶ Acceptable salaries – there are limited opportunities for securing higher core salaries but pressure could be applied within the context of current regional discussions on retention strategies for health workers. Many health economists working in academic and other public institutions undertake consultancy work to supplement their core incomes. This is understandable but it must be recognized that too much time spent on consultancies impacts adversely on training and other institutional activities. Each institution needs to develop a strategy for combining institutional commitments and consultancy activities, e.g. strict limits on time spent on consultancies; income-share with the institution, etc.
- ▶ Clear career pathways – staff need a sense of their career-development prospects.
- ▶ Mentoring for young staff – a supportive environment is key for retaining recent graduates within an institution, particularly opportunities for guidance and input from more senior staff.
- ▶ Opportunities for senior health economists – e.g. for international engagement; or growth through paid leave (e.g. sabbatical) for conceptual development.
- ▶ Opportunities and support for publishing research.
- ▶ Strong and supportive institutions – large-scale long-term (minimum five years) core support would allow investment in capacity strengthening (rather than fund-raising).
- ▶ Research grants – particularly re-entry grants for recent graduates and funding to enable them to undertake further analysis and write up publications (often not covered adequately in research grants). Also, funding for conceptual and methodological work, not just empirical research.
- ▶ Strong countrywide networks of health economists – to provide a community for returning graduates. Increased collaboration between institutions within individual countries would provide a greater critical mass for mutual support.

- Involvement of regional networks such as HEPNet and/or an African health economics association – could be important in building a professional community which will also contribute to retention of health economists within Africa.
- North-south collaborations – could provide opportunities for using the health-economics skills of recent graduates in research projects, and developing further skills. Bilateral funders could be instrumental in promoting such collaborations.

It was recommended that a survey of African health economists be undertaken to identify other issues that could strengthen retention within the region. This could be combined with a proposed survey of African health economists to assess their experience, and identify the constraints, of publishing in peer-reviewed international journals.

Developing institutional capacity for health-economics training and research in Africa

While it is easier to develop the capacity of individuals, it was agreed that a concerted effort is required to build strong African institutions within which health economists can work. A number of intangible elements contribute to developing and sustaining institutional capacity: inspirational leadership; critical mass within a particular discipline; staff with strong commitment to the institution and developing the capacity of others (rather than an exclusively individualistic perspective); a collegial and supportive environment. Skilled human resources are critical to institutional capacity (particularly at senior level – to provide leadership and contribute to capacity strengthening) but it

is also necessary to invest in infrastructure (e.g. working space, reliable Internet access, etc.).

Funding (particularly long-term – five-year minimum) is required to develop institutional capacity. The need for both financial and general commitment to institutional *maintenance* must also be recognized, as each organization has fragilities. It is particularly important to ensure that institutions do not hinge on one person; a group of senior staff should share leadership and other responsibilities. An alliance of funders to support different parts of the institutional capacity development package is a possibility that should be explored. It should be recognized that it is difficult to stimulate funders' interest in resources to support institutional-capacity development as often the outcomes are not easily measurable. Institutions that receive support also require mechanisms for encouraging greater accountability to funders.

It is important to create networking opportunities for well-established and developing institutions within the region. Ideas can be exchanged on dealing with bureaucratic authorities; balancing core- and soft-funding; and developing collegial interactions and a supportive environment etc. It is also important for African institutions to draw on their northern collaborative partners to support institutional capacity development. In reality, northern institutions need the African institutions which therefore are in a potentially strong position to leverage benefits. An increased profile for health economics is critical to the development and maintenance of strong institutions. It is worthy of support as a prestigious discipline that contributes to important health-policy issues.

Some specific strategies and activities recommended to advance this initiative are detailed below.

THE WAY FORWARD

DEVELOPING TRAINING CAPACITY AND POST-GRADUATE TRAINING PROGRAMMES

- ▶ A meeting between CESAG and HEU would enable detailed discussion of the two existing health-economics Masters programmes (to compare curricula, share training materials and ideas on appropriate quality-control measures, etc.)
- ▶ Increase output from the current health-economics Masters programmes. Current primary constraint is insufficient bursaries.
- ▶ Provide support for more institutions to initiate health-economics Masters programmes.
- ▶ Provide support to implement a distance-learning postgraduate diploma and/or Masters programme as soon as possible.
- ▶ Support the development of a health-economics PhD programme at one or more African academic institutions. This should probably take the form of a “3 +1” programme, whereby there is “frontloading” of research skills and specific health-economics skills development (e.g. through auditing Masters’ modules) and opportunities to assess a candidate’s ability to undertake PhD-level research. Supervisory skills could be developed more widely within the region by encouraging co-supervision by a health economist in the candidate’s country of origin and/or a regional health economist with specialist expertise in a particular aspect of health economics related to the PhD research.
- ▶ Establish regional initiatives to facilitate the development of more health-economics training activities. These should include wider exchange of training materials (in both English and

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French); networking to develop curricula and training materials; supporting TOT workshops to develop training skills; and facilitating regional peer review and accreditation and quality assurance of training programmes.

- Regional networks could be instrumental. HEPNet is requested to consider its potential role and the possibility of expanding to include other African countries with substantive involvement in health-economics capacity-strengthening activities (e.g. Ghana, Kenya, Nigeria, Senegal).
- In order to ensure that these recommendations are taken forward, training institutions and research organizations within each country should hold detailed discussions about their five-year plans for postgraduate health-economics training. Concrete proposals and business plans should be developed. It may be possible to secure limited seed funding for this.

SECURING FUNDING

- The activities listed above require considerable new funding, particularly to ensure core funding for soft-funded staff involved in training programmes; cover institutional overheads; and develop ICT and library resources in training institutions initiating or expanding these postgraduate training activities.
- It is not feasible for a single funder to provide support for the development of all postgraduate training programmes and institutional capacity. For this reason, this report will be circulated to

a wide range of organizations for their consideration and input. The key issues discussed here have been, and will continue to be, raised at various forums, including:

- HEPNet;
- AHPSR;
- TDR, Global Forum for Health Research and the Council on Health Research for Development (COHRED) joint meeting on research, February 2007;
- Meetings of key bilateral agencies.

Finally, it was recommended that a follow-up meeting should discuss proposals for the further development of health-economics capacity strengthening within the African region.

APPENDIX A

AGENDA FOR CONSULTATIVE WORKSHOP ON HEALTH-ECONOMICS CAPABILITY STRENGTHENING IN AFRICA CAPE TOWN, 24-26 APRIL 2006

MONDAY 24 APRIL 2006

9:00 – 10:30	Welcome Introductions Purpose of workshop Brief presentations (10-15 minutes per participant) on health-economics capacity and training activities within their institutions and countries
10:30 – 11:00	Tea
11:00 – 12:30	Brief presentations (continued)
12:30 – 13:30	Lunch
13:30 – 15:00	Facilitated discussion – Issues relating to the demand for health economics
15:00 – 15:30	Tea
15:30 – 17:00	Facilitated discussion – How to assess and monitor health-economics capacity within Africa

TUESDAY 25 APRIL 2006

9:00 – 10:30	Facilitated discussion – Health-economics training needs, constraints and strategies
10:30 – 11:00	Tea
11:00 – 12:30	Facilitated discussion – Health-economics training needs, constraints and strategies (continued)
12:30 – 13:30	Lunch
13:30 – 15:00	Facilitated discussion – Health-economics training needs, constraints and strategies (continued)
15:00 – 15:30	Tea
15:30 – 17:00	Facilitated discussion – Health-economics research-capacity development issues

WEDNESDAY 26 APRIL 2006	
9:00 – 10:30	Facilitated discussion – Health-economics capacity-retention strategies
10:30 – 11:00	Tea
11:00 – 12:30	Facilitated discussion – Health-economics institutional-capacity development strategies
12:30 – 13:30	Lunch
13:30 – 15:00	Facilitated discussion – Integrating the health-economics capacity-strengthening strategies
15:00 – 15:30	Tea
15:30 – 17:00	The way forward

APPENDIX B

LIST OF PARTICIPANTS AT CONSULTATIVE MEETING ON HEALTH-ECONOMICS CAPACITY, 24-26 APRIL 2006

Name	Institution	e-mail address
Dr Patricia Akweongo	Navrongo Health Research Centre, Ghana	akweongo@yahoo.com
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Professor Daniel Reidpath	Brunel University, England (providing support to the establishment of TDR-funded Masters in Social Science for Health programmes in Ghana and Kenya)	daniel.reidpath@brunel.ac.uk

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Mr Steven Wayling	WHO/TDR, Geneva	waylings@who.int

APPENDIX C

DETAILS OF MASTERS TRAINING

**Faculty of Health Sciences, Uganda Martyrs University
(health@umu.ac.ug)**

Masters-level training programme provided as a module within the Masters of Science in Health Service Management degree. Institution plans to start a full health-economics Masters programme.

Module lasts for 3 weeks (100 hours – interactive time with students).

Topics:

01. Economics: definition and introduction
02. Health economics and health planning
03. Mechanisms of demand and supply
04. Market economy: can the provision of health services be regulated by market laws?
05. Disease and economics: the cases of trypanosomiasis, malaria and hiv/aids
06. Role of the state in the provision of health services
07. Role of the private not-for-profit sector in the provision of health services
08. Role of the private for-profit sector in the provision of health services
09. Techniques of economic evaluation: cost-effectiveness and cost-benefit analysis
11. Financing health services: current health spending in developing countries
12. Financing of health services: community financing, health saving accounts, external aid
13. Financing health services: tax-based funding, user fees
14. Financing health services: social and private insurance
15. Objectives and strategies for health financing in Uganda
18. Economic development, economic stability, poverty and health
19. Structural adjustment policies
20. Ethics and philosophy of health economics
21. NHA
22. Efficiency in health care
23. Costing health-care provision etc.

Student profile

On average, trains 15 to 20 students every year. Applications for the programme vary from 20 to 30 per year.

Institute of Public Health, Makerere University, Uganda
(<http://www.iph.ac.ug/>)

MODULE IN MPH:

- brief introduction to economics (micro and macro) covers concepts such as market theory, demand and supply, market failure in health, scarcity, choice, opportunity cost, inflation;
 - economic evaluation (cost-benefit and cost-effectiveness analyses);
 - health financing options.
-

Department of Economics, University of Ibadan, Nigeria
(<http://www.ui.edu.ng>)

MODULE IN MSc (ECONOMICS):

- definition and scope of health economics and its significance
- health and economic development
- microeconomic applications in health
- determinants of health and the human-capital model
- cost of health services and health-care financing
- NHA
- health-policy reforms
- government and health
- economic evaluation of health-care interventions
- statistical tools for health economics.

Department of Economics, University of the Free State, South Africa (<http://www.ufs.ac.za/faculties/>)

LEARNING OBJECTIVES OF HEALTH-ECONOMICS MODULE:

- understand what health economics is and how health economics informs health policy;
- explain the role of burden-of-disease statistics in informing health policy and health economics;
- appraise the links between health and development with a view to understanding health and development policy;
- appraise policy questions related to the demand for health and health care;
- appraise policy questions related to the supply of health care;
- evaluate the policy implications of market failures in markets for health and health care;
- describe the health-care financing system in South Africa;
- evaluate and compare different sources of health-care financing in terms of criteria for a good health-care financing system;
- assess different provider-payment systems in terms of their implications for the goals of health-care policy;
- assess health-care policy in the context of the characteristics of health-care markets in developed and developing countries;
- explain how economic evaluation can be employed to evaluate health-care programmes and inform health-care policy;
- appraise the links between social capital and health and health-care delivery with a view to enhancing health care.

HEU, University of Cape Town (<http://www.heu.uct.ac.za/>)

MASTERS IN HEALTH ECONOMICS

The programme is offered on a full-time basis and comprises two semesters of coursework with a further six months for completion of a dissertation, although it is also possible to take the course on a part-time basis. The first semester runs from early February until the end of June, the second semester starts in mid-July and ends in November. All students are required to complete a minimum of eight modules: six core modules and two electives. The dissertation is started once the coursework has been completed successfully.

Overview of core modules

HEALTH POLICY AND PLANNING

Aims to provide students with an understanding of the key objectives of health-care systems; main tenets of planning; key issues in monitoring and evaluating the impact of health-sector reforms; and equity in health care. It also aims to enable students to develop analytical skills for assessing policy development and implementation; strategic management of stakeholders; option appraisal; and programming and budgeting, with special emphasis on human resources and pharmaceuticals.

Topics include:

- introduction to health systems;
- introduction to health policy and planning;
- stakeholder analysis;
- global influences on domestic health policy;
- equity in health care;
- planning human resources;
- regulation of the pharmaceutical market;
- resource allocation;
- approaches to budgeting;
- public-sector capacity and implementation;
- monitoring and evaluation/research to policy.

Theory and application of economic evaluation in health care

Aims to enable students to understand and apply current methods to economic evaluation in health care. The main objectives are to gain insights into the economic theory underlying economic evaluation in health care; develop skills in designing and conducting cost-effectiveness, cost-utility and cost-benefit analyses; and to use these skills to inform policy-formulation and implementation processes. At the end of this module, students should also have an understanding of the importance of modelling in economic evaluation.

The module enables students to develop skills by combining taught sessions with practical case studies of the application of economic evaluation to developing-country interventions. Methodological and practical issues surrounding each evaluation technique (e.g. annuitization, discounting, sensitivity analysis) are explored critically.

Topics include:

- welfare economics and economic evaluation;
- economic framework for economic-evaluation techniques;
- critical review of economic-evaluation techniques;
- costing in economic evaluation;
- discounting and annuitization;
- outcome measurement and valuation;
- valuing health-care benefits in monetary terms;
- cost-effectiveness, cost-utility and cost-benefit analyses;
- ethical issues in economic evaluation;
- uncertainty in economic evaluation;
- modelling in economic evaluation;
- pharmacoeconomics.

Quantitative methods in health economics

Aims to introduce students to the fundamentals of statistics and quantitative techniques as they apply to health economics. At the end of the course, students should have a good understanding of basic statistics and the essentials of epidemiology/biostatistics. They should also be able to perform specific mathematical, statistical and econometric operations on health data. Different data sets are used throughout the module.

Topics include:

- descriptive statistics;
- introduction to probability theory and probability distributions;
- estimation: standard errors, variance, confidence intervals;
- hypothesis testing;
- introduction to epidemiology;
- indices and concentration curves;
- diagnostic tests;
- standardization;
- regression analysis and modelling;
- discrete choice models;
- distribution equity – concentration curves.

Microeconomics for the health sector

Aims to enable students to apply the theory and principles of microeconomics to health and health care. The main objective is to develop skills in applying the microeconomic tool kit to analyse country situations with a view to informing health-care planning and policy. This includes analysis of the demand, production and cost functions of specific health-care services and the economics of health insurance contracts.

Topics include:

- definition, scope and role of microeconomics in the health sector;
- market for health care and the public sector;
- individual and household demand for health and health care;
- household-level analysis: the medical poverty trap and related issues;
- need, agency theory and supplier-induced demand;
- taxation, health and health care;
- models of the market for medical goods and pharmaceuticals;
- health-care production and cost functions;
- efficiency in health-care provision;
- health insurance contracts and incentive effects;
- sustainable community health financing.

Macroeconomics, health and health-care financing

Introduces students to the influence of macroeconomics and macroeconomic policy on health and health care. Topics include the importance of economic growth and development for health; different approaches to financing health services; and the impact of the public-private mix on health-care financing and delivery. In recognition of the external political influences on domestic health policy, the module also introduces students to the key ideological movements that have proved to be especially influential on developing-country health systems, including structural adjustment programmes, globalization and health-sector reforms. While large portions of the module are theoretical and descriptive, practical tools for evaluating economic and health-sector reforms (such as NHA) and financing and benefit incidence are covered.

Topics include:

- economic growth and health;
- macroeconomic policies and ideologies;
- structural adjustment programmes;
- globalization and health;
- health-sector reform and decentralization;
- public-private mix;
- health-care financing;
- NHA;
- financing and benefit incidence.

Research methods

Aims to provide students with the technical skills required to write research proposals and to undertake research projects requiring quantitative methods. It also aims to enable students to cooperate as a group for protocol development.

Topics include:

- research protocol; ethics;
- literature review – defining the question;
- overview of study design;
- population and sampling; sample size calculation;
- measurement: questionnaires; validity and reliability;
- data management and analysis;
- reporting, presentation and writing up.

APPENDIX D

HEALTH ECONOMICS AND POLICY NETWORK (HEPNet)

(<http://www.hepnet.info/>)

HEPNet was initiated in early 2000 with the broad intention to develop and provide relevant in-depth understanding and technical expertise in health-economics and health-policy analysis in the sub-Saharan African (SSA) region. It was to focus particularly on informing health-sector reforms. HEPNet is unique in the SSA region, focusing specifically on health-economics issues and particularly on supporting health-policy development. It involves health ministries, research institutes and academic institutions in contributing collaboratively to health-sector development within five countries: South Africa, Uganda, the United Republic of Tanzania, Zambia and Zimbabwe. The rationale for this membership was that the feasibility and sustainability of a capacity-building initiative such as this can be promoted by starting small. However, it was envisaged that the network would be expanded to include additional countries over time.

The initial institutional members of HEPNet were the health policy, planning and/or financing unit of the respective ministries of health; HEU at the University of Cape Town and the CHP at the University of the Witwatersrand in South Africa; MUIPH in Uganda; the National Institute for Medical Research (NIMR) and Muhimbili University College of Health Sciences at the University of Dar es Salaam (MUCHS) in the United Republic of Tanzania; DoE-UNZA in Zambia; and the Blair Research Institute and Department of Community Medicine, University of Zimbabwe. HEPNet has been coordinated by HEU and the CHP since it was initiated.

The goal of HEPNet is to contribute to health-sector development in the SSA region. Its objectives are to:

- undertake networking activities between member institutions and with international organizations active within the region;
- strengthen, promote and increase the scope of capacity building in health economics and policy;
- strengthen, promote and increase the scope of health economics and policy research.

These objectives are achieved through the following strategies.

- Information dissemination (including sharing of research findings, policy development and implementation experiences; as well as information on courses, conferences and other relevant events).
- Interaction with international organizations active within the region (including promoting the use of regional expertise for providing technical assistance to ministries of health and other organizations).
- Holding regular meetings, including thematic workshops at which ideas on key policy-development and implementation issues can be shared in a critical way.
- Promoting the use of existing (and developing additional) formal training programmes, particularly at postgraduate level, and relevant short courses in the region.

- Increasing opportunities for in-service training.
- Sharing resources for training, particularly training materials and expertise.
- Supporting research activities that address country-policy priorities (e.g. promoting the development of appropriate research methods, collaborative research projects).

The key activities since HEPNet was founded are summarized below.

Networking activities

- Circulating policy and research reports.
- Setting up an electronic mailing list. This is updated annually to ensure the inclusion of all staff working in the areas of health-economics and health-policy analysis within HEPNet member institutions. The list has been used primarily for circulating information to members (e.g. calls for research proposals, conference information, etc.). On occasion, it has been used for discussion of policy-relevant issues.
- Newsletter: from one to three per year. The newsletter has mainly included a brief update from each country; information on recent research findings; and dissemination of information on upcoming conferences, courses and calls for research proposals etc.
- Meetings: at least two activities per year have provided opportunities for HEPNet members to meet.
- Thematic workshops: these were envisaged as relatively informal meetings focusing on facilitated discussions. They serve as forums at which MoH officials and researchers from HEPNet institutions can share insights on particular policy issues to promote cross-country interaction on experiences of policy development and implementation, including research findings to strengthen these processes. Although these have been limited, they are seen as a priority in future HEPnet activity.
- Consultant database: contains information on HEPNet members and their areas of expertise and interest. Made available to international organizations to promote the use of regional expertise in technical-support activities.

Capacity development through and for training activities

There has been substantial progress in capacity development over the first five years of HEPNet. It is recognized that this will be an ongoing and continuous process due to staff turnover in HEPNet institutions. Two of the most important remaining challenges are to promote the use of this capacity and staff retention. Another key area of concern for future action is that capacity building has been relatively narrowly defined as training of individuals and there is a great need for *institutional* capacity development. Key activities directed towards this objective include those listed below.

- Opportunities for staff from HEPNet institutions to attend postgraduate programmes. In particular, the HEU has given priority to these institutions when allocating the four bursaries it manages for the University of Cape Town Masters programme.
- Given the limited funding for formal training programmes, it has not been possible to use HEPNet resources for postgraduate programmes, particularly at the PhD level, which tend to be quite expensive. Instead, information was compiled and circulated to HEPNet members on sandwich PhD programmes (i.e. research doctorates with time at an academic institution at the beginning and end of the PhD and in-country data collection in the middle) and on funding opportunities for PhD training.
- Two TOT programmes have been conducted: one on generic training skills such as interactive facilitation, formal presentation, curriculum development and case-study preparation skills; one more focused on health economics and policy content.

- All HEPNet members were asked to share case studies. These were compiled with facilitators' notes onto a CD-ROM and distributed to all HEPNet institutions.
- Each country was funded to provide an in-country short course so as to utilize and further develop training skills. Some countries are now running these courses annually by charging cost-recovery fees.

Research-related activities

Research activities were given less overall priority in the first five years of HEPNet. Key activities relating to this objective include the following.

- A number of initiatives relating to skills development for research, including workshops on writing skills, "Research to Policy" and quantitative skills.
- Funding attendance of up to 15 HEPNet members at each International Health Economics Association (iHEA) conference. This is an important mechanism for enabling HEPNet members to present their research findings to international audiences and be exposed to recent international health-economics research developments.
- An emphasis on disseminating information on research-funding opportunities has increased opportunities for HEPNet members.

HEPNet evaluated its activities after the first five years of operation. It agreed to continue the above activities and also resolved to:

- include more institutions within each of the existing HEPNet countries where relevant;
- gradually expand HEPNet to include additional countries (one in 2006, 2007 and 2008 respectively);
- improve networking activities, e.g. by strengthening the newsletter content, enhancing in-country networking and developing a web site;
- give greater priority to thematic workshops;
- support and facilitate institutional capacity strengthening;
- support increased research activities (e.g. providing seed funding to enable a few HEPNet institutions to collaborate on the preparation of a research proposal in order to promote intercountry collaborative research).

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