Five keys to improving research costing in low- and middle-income countries

2012

ESSENCE Good practice document series

ESSENCE on Health Research

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About ESSENCE and this good practice document

ESSENCE on Health Research[1] is an initiative of funding agencies to improve the coordination and harmonization of research capacity investments. ESSENCE members embrace the principles of donor harmonization and country alignment expressed in the 2005 Paris Declaration on Aid Effectiveness and in the 2008 Accra Agenda for Action. According to these principles, donors strive to align and harmonize their activities and procedures with the priorities of countries in which they work.

To achieve this goal, ESSENCE members agreed to jointly develop and produce good practice documents that would incorporate current knowledge and best practices on health research and development issues. The first good practice document, called 'Planning, Monitoring and Evaluation Framework for Capacity Strengthening in Health Research' was published in 2011[2]. This second document in the series arose from a funders' seminar, arranged by the Association of Commonwealth Universities at the 2010 conference of the International Network of Research Management Societies in Cape Town, South Africa. At this event, research costing was highlighted as a major challenge for institutions in low- to medium-income countries (LMICs) that are seeking to develop and maintain sustainable research environments. The suggestion was made to review the practices of funders and recipients related to the definition and funding of direct and indirect costs. The aim of this document is to translate all this knowledge into a set of good practices that can help policy-makers, commissioners of evaluations, evaluators, university and government researchers and other actors in overlapping domains of health research and development strengthen their efforts. Although the ESSENCE group is currently health focused, we hope that this document has wider reach and can be used across all research fields.

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ESSENCE steering committee

Swedish International Development Cooperation Agency (Sida); Wellcome Trust; US National Institutions of Health/Fogarty International Center (NIH/FIC); Canada's International Development Research Centre (IDRC); UNICEF/UNDP/World Bank/WHO Special Programme for Research and Training in Tropical Diseases (TDR).

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1. For more information on ESSENCE and its members, please visit **http://www.who.int/tdr/partnerships/essence/en/**
2. This document is available at **http://www.who.int/tdr/publications/essence-framework-2016/en/**
3. Since 2005, Research Africa, part of Research Research Ltd operating as Research, has contributed to enhancing Africa's scientific capacity and countering its brain drain by, among other initiatives, enabling African researchers to access and assess international funding opportunities related to research and development. Find out more about Research Africa at **www.researchresearch.com/africa**.

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Introduction

Research institutions in low- and middle-income countries (LMICs) are critical to the pursuit of country-led research agendas. It is essential that these institutions both develop and maintain their research environments to sustain high-quality research. Access to adequate funding is clearly essential. While access to funds is a huge challenge for research institutions all over the world, it is even more critical in LMICs where governments are often not in a position to prioritize and fund research. Certainly, much of the financing for health research that takes place in LMICs is derived from foreign sources.[1] There are a multiplicity of sources of funding within sustained research environments such as governments, councils, funders and philanthropists. In the current global context, in which **competition for a finite pool of research funding is constantly increasing**, improving access to funding is ever more relevant for LMICs and for the donors that wish to support them.

It is widely accepted that for most research projects, **full costs include both direct and indirect costs**. It is thus clear that the ability of institutions to accurately determine and recover costs, and then to strategically reinvest these recovered costs, depends greatly on the availability of **supportive institutional structures** with the **relevant strategic and operational competencies**. It is also well known that **health-related research brings with it a high level of complexity in terms of line items that require funding** (from ethics committees to using, building or equipping of clinic facilities, from patient care to statistical-analysis software, etc).

One of the **strategies that institutions in more affluent countries use** to help them secure sufficient funding **is to ensure that they accurately identify and understand the full costs of their research** activities. This means that they can assess the degree to which their costs are met by the funds they raise. **Without this information, institutions are at risk** of underestimating the costs of research, running research projects at a loss and not being able to sustain their research environments.[2]

In most research projects the **direct costs are seldom at issue**. **Indirect costs present far more difficulties** in terms of how they are defined, whether they qualify for funding and how they are calculated. Some of the reasons behind this are that

- Indirect costs are often not calculated accurately or consistently by research institutions
- **Funders have diverse policies and practices** related to reimbursement of indirect costs
- The **coordination of external research grants is underdeveloped** within research institutions, which creates multiple inefficiencies and may contribute to avoidable losses
- Dialogue between funders and institutions is inadequate

From a survey carried out by ESSENCE members, which was responded to mainly by organisations based in sub-Saharan African countries, **rates set by research institutions in LMICs range from 8 to 35%, and average out at 15%**. Irrespective of how these rates are determined, they are far lower than those set by institutions in other parts of the world. For example, in the **US, the national average is 51%** of salaries and wages, **in Sweden it is 50% and above** of the direct costs; and **in the UK, the rate is 60%** of salaries and wages. It is interesting to note, however, that among funders that work in LMICs and which participated in the ESSENCE survey, the **indirect-cost rates that they routinely cover varied between just 8 and 13%**.

How the five keys evolved

Discussion at the INORMS (International Network of Research Management Societies) conference in 2010 highlighted many of the challenges related to research costing. ESSENCE realized that its objectives put it in an ideal position to facilitate a dialogue between international funders and health research institutes in LMICs. Thus ESSENCE

initiated a study to examine the research-costing practices of both funders and funding recipients, and to open a channel for these organizations to engage with one another while focusing particularly on the issue of indirect costs.

While acknowledging that the role of governments in supporting sustainable health research is crucial, the study focused on research-costing practices in donor organizations and research institutions in LMICs. Both funders and funding recipients were surveyed.[3] Data obtained from the surveys was supplemented by follow-up discussions with respondents and other relevant individuals by e-mail, telephone and in face-to-face conversations. In addition, a number of case studies were developed and sent to respondents to identify and confirm good practices.

From this process, the major barriers to effective costing were identified and the five keys were developed to help unlock those barriers. Although the vast majority of responses (94%) came from institutions located in sub-Saharan Africa, it is hoped that the keys are transferable to other regions that face similar issues, and feedback in this regard is encouraged.

The study led to the publication of two documents that are linked but have different purposes. The first is *Research Costing Practices: Bridging the Gap in the Funding of Health Research in Low- and Middle-Income Countries,* which provides further background information about the ESSENCE study, and contains additional case studies and examples. It is available online from http://www.who.int/tdr/partnerships/essence/en. The second document is the one you are reading now. It is designed as a concise and practical resource for research institutions, research managers, and donor organizations. We hope you find the document useful and look forward to receiving your feedback on the issues discussed. In support of dialogue and shared learning, a forum for shared learning is being created in the form of a repository of case studies and learning experiences – please refer to the last page of this document if you have feedback, case studies or other information to share on the issues discussed here.

Using the keys

The keys are described in more detail on the pages that follow. Their purpose is to offer research institutions and funders some pointers and guidance on the generic processes involved in calculating, managing and recovering research costs.

However, far from wishing to impose a specific process on any organization, the aim is to set out what are currently accepted as principles of good practice in the hope that this creates opportunities for organizations to open a dialogue on these issues, to learn from each other's experiences and to begin to bridge the gaps that exist between them. Alongside the description of each key are brief case studies reflecting some of the experiences of organizations that are grappling with these issues in practice.

1 See COHRED Health Research Web. Financing and Partnership (https://www.healthresearchweb.org/en/finance_for_research_for_health).

2 It is notable that, in countries where institutions have implemented full-costing models (or are in the process of doing so), an additional driver has always been present. In Europe, for example, the European Commission, through the FP7 programme, was one of the key drivers motivating institutions across Europe to move towards full-costing. (See European Commission Directorate-General for Research (2009) *Diversified Funding Streams for University-Based Research: Impact of External Project-Based Research Funding on Financial Management in Universities*. Luxembourg: Office for Official Publications of the European Communities. http://ec.europa.eu/invest-in-research/pdf/download_en/external_funding_final_report.pdf; and T Estermann and E Bennetot Pruvot (2011) *Financially Sustainable Universities II – European Universities Diversifying Income Streams*. Brussels: European University Association) Available at: http://www.eua.be/Libraries/publications-homepage-list/financially_Sustainable_Universities_II_-_European_universities_diversifying_income_streams.pdf?sfvrsn=2

3 Copies of the survey questionnaires are available at http://www.magnetmail.net/forms/display_form.cfm?uid=AGHF&fid=28427&rtype=nonmm and http://www.surveymonkey.com/s.aspx?sm=2RUAIqAkTNIR9_2blipblsJw_3d_3d. A total of 15 funding organizations responded, and 128 responses were received from individuals based at 96 institutions in 47 countries. Of these, 54% of respondents were based at universities 35% at research institutes. The remaining 11% of responses came from government departments, national ethics committees and professional associations.

The Five Keys

In an attempt to assist research institutions and funders to begin to address these issues, both within their organizations and in dialogue with each other, the following five keys to research costing were developed.

Key 1: Defining and categorizing direct and indirect costs

Definitions and categories of costs form the basis of research costing but they vary within and between research institutions and funders. This key provides what seem to be fairly widely accepted definitions and practices, while accompanying case studies reveal some of the factors that can influence the categorization process.

Key 2: Determining indirect-cost rates

Many institutions in LMICs base their indirect cost rates on estimates, or simply use the rates set by funders, instead of calculating accurate costs and negotiating appropriate rates with donors. Pointers and approaches for determining indirect-cost rates are presented as part of this key.

Key 3: Institutional management of external research grants

Research management systems and human resources are less established in LMICs than in more affluent countries. This key highlights the role of grants management in institutions, and provides pointers for establishing relevant structures and systems.

Key 4: Developing relevant skills and competencies

Both strategic and operational management are crucial if institutions are to develop and sustain competitive research environments that are capable of responding to the ever-increasing complexity of the world of research. This key focuses on the functions that institutions have to carry out in order to manage research grants efficiently and on the related research management skills that they have to master.

Key 5: Bridging the gaps between funders and research institutions

On the one hand, policies and practices among funders, or in some cases even within funding organisations, differ vastly when it comes to funding indirect research costs. On the other hand, the needs of research institutions based in LMICs are quite specific and they could benefit significantly if they were more successful in recovering the indirect costs related to research projects. Key 5 highlights some institutional demands and concerns as well as some of the challenges faced by funders when awarding funding to institutions in LMICs. The case studies reflect the diversity of experiences related to the issue.

The next steps

The five keys have the potential to play a strong catalytic role in:

- stimulating awareness of the importance of accurately accounting for indirect costs;
- steering research institutions and funders towards more accurate costings;
- improving management and accountability systems;
- The ability of institutions to determine research costs more accurately has much do with technicalities of accounting, but **capacity building must focus on developing** both the **strategic skills** (an understanding of the dimension of real indirect costs and the value of recovering these costs) **and the operational tools** for grants management. A lack of engagement with the issue is likely to affect funders' perceptions of research institutions.

For **funders**, the **need to harmonize their policies and practices on the reimbursement of indirect rates** remains relevant, and this applies to the grant-application process in general, where the standardization of templates, reporting procedures and financial requirements could substantially decrease the demand on institutional administrators. Furthermore, without commitment from funders to supporting indirect costs that are suitably calculated and justified, accurate research costing will be a costly, time-consuming and ultimately pointless exercise for research institutions.

Ultimately the focus remains on enhancing the coordination and impact of research. There is a need for ongoing dialogue between institutions and funders to clarify issues relating to research costing and to work towards a common understanding of ways to unlock the barriers involved. We hope that the issue will also feature frequently on the agendas of meetings within and between funding agencies and research institutions.

KEY 1 Defining and categorizing direct and indirect costs

This guide addresses the issue of indirect costs, as distinct from direct costs, in particular and seeks to assist the reader in defining, understanding and preparing these costs for the maximum benefit of the institution and project. It should however be borne in mind that the financial management of and the budgeting for research projects are dealt with differently by different funders and even within the range of projects and programmes supported by funders. Terms such as variable and fixed costs, capital expenses and capital investment are further areas for attention by the research programme and project planners.

The starting point is for organizations to identify and reach consensus on the broad categorization of direct and indirect costs. On the one hand, this will enable research institutions to cost their research activities more accurately, while on the other hand it will assist funders to harmonize their practices and efforts.

Definitions

The following definitions seem to be the most widely accepted and workable ones, and provide a useful starting point for discussion within and between research organizations and funders.

Direct costs are expenditure items that can be identified with a specific project or activity.

indirect costs, **overheads** or **facility and administration costs** are terms that tend to be used interchangeably. They refer to costs that are related to several objectives or projects, and which cannot be readily identified as being incurred solely as a result of a single project or particular activity.

Full-economic costing (also referred to simply as full costing) is accounting methodology used to identify and calculate the total costs (direct and indirect) incurred in undertaking a project or activity.

An **indirect-cost rate** is the percentage of an institution's indirect costs in relation to its direct costs. The indirect cost rate is often applied in organizations as a method of charging individual projects/programmes for their share of the organization's total indirect costs.

Examples of direct costs	
Personnel costs	Salaries for researchers, technicians, health visitors, doctors, nurses, graduate and undergraduate students. The salary figure can be determined by using the current salary rate, but multi-year projects should allow a percentage for salary increases (e.g. 3% per year).
Fringe benefits	May include compensation for occupational injuries or illnesses, unemployment insurance, retirement, life, dental, and health insurance as well as tuition reimbursement. For grants, these benefits are usually estimated as an average percentage of salaries and wages. Institutional rates used to calculate fringe benefits may change annually. Multi-year projects will need to make allowance for bonuses and inflationary increases (e.g. 1% per year).
Equipment	The cost of purchasing equipment that is needed to conduct a project. This may include upgrades to existing equipment, computers and printers as well as project-related software.
Material and supplies	All supplies needed for a specific project (e.g. reagents, electronic components, consumables).
Travel	For patient transportation and consultant travel (this can include transport costs, conference-registration fees, accommodation costs, per diems, etc.).

Examples of direct costs	
Communications	Telecommunications and postage expenses related to the project.
Subcontractor and consultants	Costs for services outsourced to external organizations or consultants.
Facilities	New facilities acquired for a specific project, such as a new field clinic, a new laboratory, etc.
Alterations and renovations	When space has to be altered or renovated for a specific project/ activity.
Other costs	Printing and other publication costs, Intellectual-property protection. Patient-care costs, including clinical trials insurance, clinical monitoring. Animals and animal-care expenses. Activity costs (such as laboratory costs and fees, participant incentives, data management and Statistical analysis, dispensing fees, hospital fees). Reference materials, including books, subscriptions to research publications. Training or professional development. Donor-required audits.

Examples of indirect costs	
Buildings and equipment	Depreciation, maintenance and operation of buildings and major equipment. Running costs for building space can include items such as heating, cooling, electricity, water, cleaning, landscaping and insurance.
Administration	This many include procurement services, general-ledger accounting, grants accounting, financial management, internal audits, research management, support services, intellectual property management, information and communication services, legal services, human resources services, library services, student registration services and secretarial support.
Other	Auditing fees, security services, liability insurance, quality assurance, marketing and branding.

Once costs have been categorized as being of the same type and occurring in similar circumstances, they should be allocated in the same way consistently. It is also useful to note that some donors are willing to fund certain indirect costs but exclude others.

Recommended resources

Office of Research Administration, Stanford University (n.d.) *ABCs of Federal Cost Principles* (includes an online video workshop and various published resources). http://ora.stanford.edu/how2/ncura/ncura0311.html

Office of Sponsored Programmes, Virginia Tech (n.d.) Understanding Direct & Indirect Costs. http://osp.vt.edu/resources/rates.html

Categorizing direct and indirect costs

The examples from a health research institute, a university, and a funder, highlight similarities and variations in the way that different organizations define and categorize costs.

Health research institute

The Joint Clinical Research Centre, Uganda (JCRC) is a not-for-profit organisation initiated jointly by Uganda's Ministry of Health, the Ministry of Defence and Makerere University Medical School. Its mandate is to conduct quality medical research and training, and to provide excellent medical/clinical services with a focus on HIV/AIDS, TB and malaria.

JCRC includes as indirect costs (or overheads) all costs that are not directly related to a single project, but are necessary for the successful implementation of all its projects. These include costs related to the overall administration of projects that may not immediately or directly benefit a specific project, but which are essential for the smooth running of the organization as a whole. Included in this category of costs are payroll management, the appointment and supervision of project staff, monthly bills for the use of telephones, electricity, water, internet, office rental, compound maintenance, transport, fuel, taxes, courier services, stationary, security, sanitary facilities, equipment rentals/services, clerical work and any other such costs. The JCRC has calculated its indirect-cost rate to be 31% (based on indirect costs divided by direct salaries and wages).

University

The University of Botswana defines indirect costs as the central faculty, school, centre, or institute costs that the university incurs to support research, and that are not attributable to specific research projects. These include:

- Operating costs (such as the heating, cooling, cleaning, maintenance and landscaping of buildings);
- Faculty and departmental services (such as machine and electrical workshops, secretarial and office assistance, shared equipment, etc.);
- Academic services (such as the library and ICT support);
- Administrative services (such as procurement, accounting and human resources, as well as the university administration itself, which includes the offices of the vice and deputy-vice chancellors, deans, heads of schools and other administrative staff);
- Research-administration and support, such as the Office of Research Management and Graduate Studies and the Office of International Education and Partnerships

The university set its institutional overhead rate at a minimum of 35%.

Funder

The International Development Research Center, Canada (IDRC) supports applied research in developing countries that is focused on reducing poverty and creating equitable access to resources and services. It aims to promote growth and development by funding research.

IDRC identifies indirect costs as administrative costs that are not directly related to a research project, but have decided that they will cover only the following aspects of those costs:

- Salaries and benefits for personnel who support and administer the project, such as secretaries, clerks, accountants, etc.;
- Stationery and other office supplies;
- Telecommunications (unless the project itself warranted a specific budget line item for that purpose);
- Computer equipment used for the administration or accounting of the grant disbursements.

Any other overheads are not eligible for funding through IDRC grants. However, research institutions that have a policy of recovering indirect costs through the application of a levy as a percentage of total costs can apply this, provided that the IDRC or its auditors are satisfied that the levy is fair and reasonable, and that the rate is 13% or less of the total grant (excluding equipment and the allowable indirect-cost items listed above).

KEY 2 Determining indirect-cost rates

Pointers

- **There is no "one size fits all" approach** to determining the indirect costs related to research, nor is there a model that works for all situations. The specifics of each institution have to be considered, and the aim should be to determine costs as accurately as possible.
- Ideally, indirect-cost expenditure should always be traceable to the financial statements of the institution with its various cost centers, and **the determination of costs should be based on audited statements**.
- Research institutions in the US, Europe (including the UK) and Australia that have implemented full-costing models have found that **coordinating the development of costing approaches and methodologies** (with government and in collaboration with research associations and networks at national or regional level, for example) **yields faster results, is more cost effective, provides opportunities for benchmarking, and has greater influence**, than if institutions attempt to derive cost rates in isolation.
- When a methodology has been agreed upon, adequate accounting systems are a key requirement for accurately calculating and applying indirect-cost rates; where possible, the methodology selected should be one that can be supported by existing institutional accounting and information systems. In practice, **the accounting methods used by research institutions can also impact on the way in which indirect-cost rates are implemented**. On the one hand, where accounting systems allow for the use of the so-called analytical methodology, research institutions should be able to carry out detailed cost allocations down to the level of, for example, each department, cost centre or individual staff member. On the other hand, where accounting systems allow institutions to determine indirect costs at entity level only, **a general institutional rate** has to be set.
- **Indirect-cost rates should be redetermined periodically** to ensure that the institution's costing remains as accurate as possible.
- **Rates for off-site research should be calculated separately** as levels of administrative support tend to be different for research projects conducted on-site and off-site (that is, at facilities not owned or leased by the institution). In general, off-site rates are between 20 and 30% lower than the on-site rate.

Approaches to determining indirect rates

Indirect costs tend to be expressed as a percentage of the direct costs in one of four ways; that is, as a proportion of: total direct costs; modified total direct costs (MTDC), that is, a specified set of costs; remuneration costs only; and separating facility costs from indirect costs.

Using total direct costs

- Divide the indirect costs by total direct costs to determine the indirect costs rate
- Apply the indirect cost rate to total direct costs in a research project

Using modified total direct costs as the basis of direct costs

- Determine the indirect costs;
- Determine the total direct costs;
- Determine the specific costs that should be taken into account (often this means the total direct costs excluding capital expenditure for equipment, charges for patient care, rental costs for off-site facilities, scholarships and fellowships, plus a portion of subcontracts over a certain value);
- Set the indirect-cost rate by dividing the indirect-cost pool by the agreed set of direct costs.

Using remuneration only as the basis of direct costs

- Determine total salaries and wages of all staff whether working directly or indirectly on the project (also consider whether to include or exclude fringe benefits);

- Determine the indirect costs;
- Determine the remuneration-distribution base (by subtracting the remuneration included in the indirect costs from total remuneration costs);
- Set the indirect-cost rate by dividing the indirect costs by the remuneration-distribution base, and apply this to salaries and wages in a research project.

Separating facility costs from indirect costs

In some situations, institutions prefer facility costs (such as the maintenance of buildings, the purchase of library books, and the cost of municipal services such as light and water) to be excluded from the indirect cost rate. In this situation, facility costs can be separated out from other indirect costs. Then a cost per square metre for the use of the facilities should be determined. This option is particularly useful when clinical trials are performed completely off-site because they allow the facility costs to be excluded. In clinical trials that use both institutional and off-site facilities, the indirect-cost rate can be applied to the appropriate base and the facility costs can be allocated separately.

Once it has been calculated, the indirect-cost rate is used to distribute indirect costs across research programmes and projects. In many cases, institutions identify a cost driver to allocate indirect costs to the different projects and activities. Cost drivers can be based on personnel as a percentage of personnel costs, a fixed hourly rate, or an amount per square metre of space occupied.

Recommended resources

H Flood and R Phelps (2003) *Understanding Indirect Costs: These May Be Hard to Figure and Even Harder to Recover but They Should Never Be Overlooked*. Grantsmanship Center, Los Angeles, CA. https://www.tgci.com/sites/default/files/pdf/Understanding%20Indirect%20Costs_1.pdf

Euresearch Zurich (n.d.) *Cost Model: Simplified Method*. https://www.euresearch.ch/en

Harvard University (2008) *Figure It Out: How to Calculate Indirect Costs*. http://www.fas.harvard.edu/~research/training/documents/FIO%20documents/FIGURE%20IT%20OUT%20How%20to%20Calculate%20Indirect%20Costs.pdf

Case studies on developing a full-cost model

South Africa is so far the only country in Africa that has used legislation to encourage research institutions to move towards full costing. The Intellectual Property Rights from Publicly Financed Research and Development Act, (No. 51 of 2008) came into effect in August 2010. Its primary goal is to ensure that intellectual property generated through the use of public funds is used to benefit the people of South Africa. The Act applies only to projects and research contracts that are fully or partially state funded (in other words, the Act does not apply when funders cover the full cost of the research). In terms of the Act, the National Intellectual Property Management Office (NIPMO) was established, and has called on all publicly funded higher education institutions to develop their own full-costing policies as a step towards developing a nationally accepted full-costing model.

In addition, it has been agreed that HESA (Higher Education South Africa) should coordinate the efforts of research institutions to comply with the Act. HESA appointed a task team that, through consulting all the higher-education institutions in the country, plans to propose two or three costing models to NIPMO early in 2012. NIPMO will consider these models and, through a process of input and amendment, put forward a national model for calculating full costs. The University of the Free State developed one of the models that was proposed to NIPMO, and Stellenbosch University has implemented a full-cost model. Lessons learned at these two universities are are presented in the case studies that follow.

Stellenbosch University, South Africa

The management of Stellenbosch University approached the development of its full-costing model in three phases, focusing first on development, then on implementation, and finally on management. The lessons learnt during each of the phases are summarized below.

Development lessons

- A collaborative approach is vital in developing a costing policy; it is crucial to consult different divisions and to include their feedback where possible.
- The involvement and support of senior management is essential and communication at various levels is critical to establish shared principles and buy-in to the process.
- The policy must be flexible enough to make provision for different research environments within the university.
- It is not always possible for contracts to be awarded on a full cost-recovery basis; the policy therefore has to be flexible enough allow for this and set out procedures to be followed in this situation.
- The policy should stipulate how the indirect costs that are recovered will be distributed – for example, a portion could be allocated to the faculty where the research is being conducted, another portion could be allocated to the central research fund and a further portion allocated to the university's main budget.

Implementation lessons

- Implementation is time consuming (especially at first) and requires as much effort and focus as the development phase.
- A generic template is not sufficient for all environments (clinical-trial budgets differ radically from history-research budgets). Thus the policy and the administrative tools that support it have to be adaptable and responsive to different scenarios.

Management lessons

- Researchers fear that full costing is too expensive and that they 'will price themselves out of the market'.
- It is important to educate researchers and clients about the need for full costing and about any relevant legislation.
- Close collaboration and technology transfer between the departments of finance and research development is essential; when questions arise, these different departments must be able to provide coordinated and coherent responses.
- Research environments differ vastly from one another, and there is no "one size fits all" solution.

University of the Free State, South Africa

The university proposed the following process for calculating an indirect-cost rate. The general principles and assumptions of the model include:

- The audited consolidated income statement of the university forms the consolidated comprehensive income statement;
- Overheads are assumed to be the personnel costs and the operating expenses of certain service departments;
- Information about these overheads can be obtained from the university's information-management system;
- The indirect-cost rate is based on historic cost recovery data collated over a three-year period, that is, the rate is adjusted annually based on the average costs of the previous three years.

The table below shows the basic steps that they propose should be involved in calculating an indirect-cost rate.

	Year 1	Year 2	Year 3
(A) calculation of proportion of expenses that is specifically funded			
Specifically funded activities (restricted): Total expenses [1]			
Council-funded activities (unrestricted): Total expenses (excluding residences) [2]			
Total A			
Proportion of expenses specifically funded (research and contracts) [3]			
(B) Calculation of council-funded indirect costs directly attributable to research			
Indirect costs directly related to research			
Personnel costs			
Other operating expenses			
Total B [4]			
Institutional indirect costs			
Personnel costs			
Other operating expenses			
Total C [5]			
Institutional indirect costs (proportion attributable to research) [6]			
Indirect cost attributable to research			
Indirect costs directly related to research [7]			
Institutional indirect costs (proportion allocated to research activities) [8]			
Total D			
(C) calculation of indirect cost recovery rate			
Indirect cost attributable to research [9]			
Specifically funded activities (restricted): Total expenses			
Indirect cost recovery rate [10]	%	%	%
Average over the last 3 years			
Adjustment for inefficiencies in the formula [11]			
Final indirect cost recovery rate			%

Notes

1 From the consolidated comprehensive income statement, in the column for non-council funded expenditure.
2 From the consolidated comprehensive income statement in the column for council-funded expenses, excluding the residences.
3 Specifically funded activities (restricted): total expenses / Total A.
4 Includes personnel and operating expenses of the departments of research commercialization and research development.
5 The personnel and operating expenses of the following departments/units: budgeting, finance, health and wellness, health sciences administration, human resources, ICT services, internal auditing, internationalisation, library and information services, logistical services, maintenance, physical resources, protection services, provisioning, strategic communication, student academic services, management (executive level), marketing.
6 Proportion of expenses specifically funded (research and contracts) x Total C.
7 Same as Total B.
8 Same as Note 6.
9 Same as Total D.
10 Indirect costs attributable to research / specifically funded activities (restricted): total expenses.
11 An adjustment of up to 5% up or down is acceptable.

KEY 3 Institutional management of research grants

Pointers

- **Establishing clear criteria for choosing which grant opportunities to pursue** can assist institutions in strategic decision-making. Such criteria can also help to ensure that: projects align with an institution's strategic direction; the preparation of high-quality submissions can be efficiently streamlined, that project costs can be adequately recovered; the required institutional capacity (including office space, clinic space, staff etc.) is available; and that projects applied for have the potential to benefit the institution as a whole.
- Effective grant management and coordination provides **a portal through which researchers can access information, support and services. It also offers funders a contact point** within institutions and vice versa.
- Institutional management and coordination of research grants involves the development and implementation of policies, guidelines, standard operating procedures and supportive tools (such as budget templates, FAQs and institutional workshops) relevant to the development of grant applications and the administration of grant awards.
- When an institution implements research costing for the first time, **institutional accounting systems may need to be adapted** where necessary to ensure accurate bookkeeping, and **researchers need to be given the relevant tools and training** to ensure that the system runs smoothly.

Establishing a grant management function or structure

- Depending on the size of a research institution, grant management is often achieved through the establishment of a specific structure or a function within an existing structure, such as a research office or officer, and/or a grants management office or officer.
- Establishing a grants management structure, or appointing someone to carry out this function, requires commitment and buy-in from both strategic and operational managers at all levels from the early stages.
- Achieving additional buy-in will take time and ongoing effort from the person appointed or structure adopted. It will also depend on continual demonstrations of the value that they add to the organization – in fact, the efficient recovery of indirect costs is an essential part of funding and developing the grants coordination function itself.
- It is vital that the function fits into the institutional framework, and has clearly defined roles – generally separate from but closely linked to other institutional structures such as finance, procurement and human resources.
- Management commitment and support is essential when implementing a full-costing approach for the first time (especially in institutions where a grants management system already exists); raising awareness of the benefits of accurate research costing and developing a common understanding of how costs will be recovered and redistributed is a crucial part of this.
- Grant management in general, and research-cost recovery in particular, requires some kind of database – this enables efficient tracking of the type and number of projects, what they cost, what income they will generate the percentage of indirect costs that will be recovered, and how these will be redistributed within the institution.
- Funders can influence the establishment of grants coordination structures and functions through, for example, requiring

that all grant applications be signed off and submitted through the designated authority of the institution.

- The grants management function or office should review and approve all project proposals before submission to a funder. This ensures more accurate budgets and stronger institutional commitment to the project; it also facilitates the maintenance of institutional database(s) that, in turn, support the monitoring of projects and their budgets.

Setting up guidelines, policies, and procedures for grants management

- Institutional policies and guidelines must be written, documented and approved at institutional level. They should be updated as institutions grow and the external environment produces changes.
- Policies should be reviewed to ensure internal harmonization with other institutional policies (such as those related to financial, travel, procurement, human resources, research ethics, etc.) as well as harmonization with national policies and research priorities.
- Policies and guidelines should facilitate collaboration and clear communication between different structures or functions involved in different aspects of applying for or monitoring the spending of research grants.
- Guidelines typically outline the roles and responsibilities of institutional stakeholders, procedures for proposal development, clearance, approval and sign-off. They should set out the necessary steps involved in setting up, managing and closing out a grant. In relation to project budgets, guidelines should spell out categories for direct and indirect costs, how to apply institution's standard indirect-cost rate, as well as any procedures for the waiving of this rate.
- Those institutions that report a degree of success in negotiating indirect costs with funders, ascribe this to their institutions having proper auditing systems and a good understanding of their own finance structures and costs, as well as a measure of persistence in the negotiation process and the ability to prove to funders that their rates were reasonable.

Recovering and distributing indirect costs recovered

- Transparency regarding the internal disbursement of recovered costs is one of the most important parts of promoting the benefits of research costing and gaining support for the recovery of indirect costs. To facilitate this, institutions require mechanisms to calculate recovered costs plus a clear policy on how recovered funds will be distributed. Once researchers see how they, and their direct research environments, stand to benefit from recovered indirect costs, they quickly develop an awareness of the costs of research and of the shared services that support their institution's research programmes.
- Where funders do not allow for the reimbursement of indirect costs, some funding recipients have successfully recovered some of their indirect costs by categorizing those that are linked to a particular project as direct costs.
- Generally, recovered costs are distributed between the institution's central administration departments, the environment where the research is being conducted and, in some instances, they are used to incentivize researchers and support the development of further research. In other words, recovered costs are applied to:

  - Cover administration costs and/or acquire, repair or renovate buildings or equipment used for research;
  - Provide research departments/units with discretionary funds for their own research projects or to enhance their research capacity (including taking on additional postgraduate students or setting up mentorship initiatives for existing staff);

- Incentivize researchers to develop further research projects and to apply for additional external funding;
- Some funders have policies to recover the administrative costs associated with funding partnerships (particularly in cases where parliamentary funding is not available to cover these costs). In this situation, the recovered costs tend to be used for:
  - Grant and financial administration support (including institutional risk assessments, contracting and legal advice on project agreements, procurement costs, external fund management, accounts payable, audits, international banking fees, etc);
  - Information management (license fees to enable researchers to access literature databases, bibliographic reference services, and digital libraries; record keeping and document retention; ICT support);
  - Knowledge dissemination (through public events, publishing, etc.);
  - Project oversight (partnership development and maintenance; project planning, monitoring and evaluation; financial reporting and human resources management).

- When approval is obtained to run research projects at a loss (and not recover all costs), other benefits (such as the potential for a project to, for example, involve many postgraduate students, access state-of-the-art equipment or additional research expertise via institutional partnerships, etc.) should be clear. In this situation, an institutional process should be in place to approve the project while ensuring that institutional sustainability is not jeopardized.

Recommended resources

Aboud MM (2010) *Research-Administration Capacity-Building in an Established Institution*. Paper presented at the conference of the Association of Research Administrators in Africa, Kampala, Uganda. http://araafrica.org/about/meeting-reports/araa-2nd-annual-meeting-report/

Brough R and T Kakaire (2010) *Developing an Office of Research Administration in a New Institution: Grants Management Experience at the I*nfectious Diseases Institute (IDI). Paper presented at the conference of the Association of Research Administrators in Africa, Kampala, Uganda. http://araafrica.org/about/meeting-reports/araa-2nd-annual-meeting-report/

Case studies on implementing research grants management

The following case studies illustrate how a funding programme assisted a research institution to set up internal structures and mechanisms to raise awareness and improve the recovery of indirect costs, and how one university manages the distribution of recovered indirect costs within its own structures.

The University of Botswana

One of the key features of the distribution of recovered overheads at the University of Botswana is to reward researchers and encourage them to develop and submit further grant proposals. The university's Special Projects Office recovers the overheads on grants and contracts within a month of funds being deposited into the university's bank account, and recovered overheads are distributed as follows:

- 45% to the main research account of the researcher(s) involved in the grant or contract; this can be used for any research-related activity, such as conference attendance, the purchase of computer hardware or software, hiring research assistants, conducting additional studies, etc.
- 25% to the university; this is used for internally funded research.
- 20% to the school/institute/centre involved in the grant or contract; this is used for the purchase of research-related consumables, hiring of staff, small equipment, teaching aids, etc.
- 10% to the university's research and development office; this is used for statistical-, database-, and ethics-support services and for other discretionary research-related activities, including expenses associated with proposal identification, preparation and submission.

Malawi's College of Medicine and Netherlands Organisation for Scientific Research

The Netherlands Organisation for Scientific Research (known as NWO) is an independent public agency that is mandated, among other things, to allocate research funds. A foundation set up by NWO, known as WOTRO, supports research in aid of sustainable development in developing countries, and one of its objectives is the strengthening of research capacity. To this end, WOTRO set up NACCAP (Netherlands–African Partnership for Capacity Development and Clinical Interventions on Poverty related Diseases), funded by the Ministry of Foreign Affairs (DGIS). NACCAP's main goals are to combine scientific research with sustained investment in the development of research capacity in Africa, and to contribute to the European and Developing Countries' Clinical Trials Partnership (EDCTP).

NACCAP has been set up so that 80% of its funds are spent in Africa on activities carried out by African citizens. One of its cost categories is capacity development. This allows funds to be allocated to support and enhance managerial and administrative capacity.[1]

The College of Medicine (COM) was established in 1991 within the University of Malawi (UNIMA). COM is both teaching and research orientated, and runs two kinds of research structures that each have slightly different administrative systems. The first are units that are large and well resourced enough to run their own administrative systems. The second are smaller (or newer) units that depend on COM's own central systems and procedures. COM also subscribes to UNIMA's research and consultancy policies, but applies these by developing college-specific policies suited to its own particular requirements and context.

Having experienced an increase in research activity over the years, COM realised that its support systems for the development of new research proposals and the management of existing grants were inadequate. They therefore applied for a grant from NACCAP. Through this grant, and in partnership with the Emma Children's Hospital in Amsterdam and the Liverpool School of Tropical Medicine, COM was able to establish its Research Support Centre (RSC), which now coordinates and supports all of COM's research programmes.

Buy-in from management and staff was, and remains, critical for the success of the RSC. However, it took time and continuous effort to obtain this buy-in. Buy-in from COM management resulted in the RSC being mandated to manage all COM research grants. Managing research centrally requires a change in mind-set for those not used to such an approach. Even though it happened slowly, buy-in from the researchers has been facilitated by the value added by the RSC – the RSC provides a portal through which researchers can access specific services and support. The RSC now has a well-established structure and a team of experienced staff. Staff members include a director, a scientific operations manager, clinical research associates, a trial coordinator, a data manager, a website/information coordinator, a grant administrator, a data officer, and an administrative assistant.

When the RSC took over the coordination of all of COM's research activities, it became necessary to develop a governance framework for its operations. The RSC facilitated the development of a research policy, which set out its mandate and operational scope. Similarly, the RSC established research grants management procedures that streamlined grant administration into well-defined pre- and post-award processes. Included in this was the creation of a database of all grants and funds coming into COM.

The database allowed the RSC to calculate how much money was due to them from these administration fees, and found that they had been receiving only a very small percentage of what was due. The RSC aims to be self-funding, and their grant applications usually stipulate that 10% of the total grant budget will go to UNIMA for administration and overhead costs. To address the reasons for the shortfall, the RSC introduced a research administration fee distribution policy, and set up a research-overheads account to receive monies due. To manage the recovery of overheads, the database is linked to the Institutional Review Board. Projects are not submitted to the IRB if overhead fees are due to COM. COM's research policy allows for the overhead fee to be waived in exceptional circumstances (such as for student projects) but approval for this has to be obtained from management.

A policy for the distribution of recovered costs has also been developed. To support COM's objective of creating an enabling environment for research within its own context, recovered costs are primarily used to support: an ethics-review committee, the RSC, COM's IT and library facilities, a publications committee, the postgraduate office (that is, student research projects) and COM's annual research conference. In addition, since staff retention is a real challenge, some funds are allocated to support a staff-retention scheme whereby staff returning from studies abroad receive a salary supplement and participate in a mentorship programme. Furthermore, the COM department that hosts a particular research programme receives a proportionally larger portion of the recovered funds, which they can use to support further research and to encourage researchers to apply for additional grants.

1 NACCAP have published a booklet that highlights the successes and lessons learnt through this programme; the booklet is available at http://www.nwo.nl/en/about-nwo/media/publications/wotro/naccap-2004-2011-lessons-learned.html

KEY 4 Developing relevant skills and competencies

Pointers

- The credibility of, and institutional support for, research managers and administrators is highly dependent on their competence, that is, their ability to create enabling environments for researchers. This involves reducing the administrative burdens on researchers as much as possible, and enhancing the scope and reach of an institution's research work.
- Research managers and administrators have the potential to develop an exceptionally wide overview of an institution's activities and initiatives, but this can only be useful to an institution if these staff members are well respected by a wide range of role players.
- A number of funders and professional organizations throughout the world offer opportunities to grant managers and administrators to join networks, arrange staff exchanges or set up mentorships to widen their knowledge and experience. To name just a few of these organizations in Africa, such opportunities are offered by: The Southern African Research and Innovation Management Association (http://www.sarima.co.za), The West African Research and Innovation Management Association (http://www.warima.org/en/), The Central African Research and Innovation Management Association (http://www.carima-net.org/en/), The Eastern Africa Research and Innovation Management Association (http://www.earima.org/en/), The Association of Research Administrators in Africa (http://araafrica.org/) and the Consortium for Advanced Research Training in Africa (http://www.aphrc.org/insidepage/?articleid=417). Similar organizations exist in all other regions of the world.
- A competency framework for all research management staff (both strategic and operational) enables employees to match their existing skills against the requirements listed in the framework. The gaps that are revealed allow staff to seek targeted training interventions and to plot clear career paths for themselves. The responsibilities and skills mentioned in the next two sections could form elements of such a competency framework.

General responsibilities of institutional grants management employees

When allocating roles and responsibilities at the institutional level, the relationship between the researchers and the grants management staff as well as that between grants management and other support departments needs careful consideration so that there is no confusion about the allocation of responsibilities; the overall goal of the grants management staff should be to facilitate the administrative aspects of research management and to reduce the researchers' administrative workloads.

These include:

- To develop and update grants management policies and procedures, and to communicate these to researchers and other institutional role players.
- To develop and update processes and systems that support the policies, and to facilitate access to any necessary tools, such as databases and software.
- To ensure policy implementation and compliance.
- To provide in-house training and/or identify skills-training opportunities for researchers and administrative staff.
- To network, build good relationships, and provide excellent service to researchers, administrative departments and funders.
- To undertake or supervise pre-award grants management including:
  - selecting databases for grant searching and making these available to relevant departments or researchers;
  - investigating the requirements of relevant funding opportunities;
  - circulating requests for proposals and following up where necessary;
  - 'translating' funders' rules and requirements for applicants.
- Providing administrative support for the development of proposals and the design of clinical trials, such as:
  - creating and updating standard corporate information for re-use;
  - helping to calculate budgets and cost-recovery rates;

  - checking adequacy of staffing, infrastructure and overall ability to deliver on project targets;
  - managing proposal development, including internal deadlines for stages in proposal development, and ensuring the clarity of roles where there are various research partners or consortium input;
  - facilitating or ensuring the submission of proposals to the ethics and other review committees;
  - checking for the completeness and overall quality of proposals;
  - liaising with the funder and managing the submission process;
  - monitoring funder reviews and the awards process.
- To undertake or supervise post-award grants management, including:
  - negotiating contracts and indirect-costs rates with funders and partners;
  - project start up (supporting financial arrangements);
  - providing administrative oversight of active projects;
  - maintaining research accounts and records;
  - approving major charges to project budgets, and maintaining overall budget control;
  - monitoring financial and programmatic compliance with grant and contract terms for each grant and each funder;
  - managing the quality, timeliness and consistency of financial and programmatic reports to funders;
  - managing project closure, extensions and/or carry-overs, and coordinating grant audits.

Skills and background knowledge required by grants managers

- A general understanding of the institution's business process and priorities
- A good understanding of the research process and an appreciation of what motivates researchers
- The ability to formulate policies and to design and implement effective workflow processes and procedures
- The capacity to monitor and apply institutional and funder regulations
- An ability to coordinate and document institutional approval of proposals
- Awareness and experience of grant seeking techniques and tools
- A thorough understanding of how direct and indirect costs are defined, composed, allocated, and charged
- The ability to assess project budgets, and a mastery of relevant accounting, invoicing and financial-management skills
- Strong organizational, analytical skills and project-management skills
- Good interpersonal and negotiating skills plus an ability to foster an atmosphere which recognizes and respects cultural and individual differences
- The ability to communicate technical, budgetary and programme details
- The ability to multi-task while paying attention to details and deadlines

Recommended resources

Daley RA (2010) Building Bridges on Shifting Sands: The Challenges Facing Research Managers and Administrators in Supporting Researchers. In *Issues in Research Management and Administration,* Vitae Occasional Paper 5, August 2010. https://www.vitae.ac.uk/policy/issues-in-research-management-and-adminstration.pdf/@@download/file/issues%20in%20research%20management%20and%20administration.pdf

Kulanga A (2010) Professional Development. Paper presented at the Association of Research Administrators in Africa conference, Kampala, Uganda. http://araafrica.org/about/meeting-reports/araa-2nd-annual-meeting-report/

Langley D and J Green (2009) Professionalising Research Management. *Research Global* 22: 6–7.

Sienaert M (2008) Developing Professional Research Administrators And Managers: Perspectives From a South African University. *Research Global* 19: 12–13.

A case study on skills development

This case study illustrates how a donor and capacity development programme enhanced skills development.

Impacting Capacity

The Fogarty International Centre (FIC) is part of the US-based National Institutes of Health. FIC supports basic, clinical and applied research and training for American and other researchers in the developing world. Fostering a sustainable research environment in LMICs is one of FIC's key strategic goals for the period 2008 to 2012 (see http://www.fic.nih.gov/About/Pages/Strategic-Plan.aspx). One of its programmes set up to support this goal is the Medical Education Partnership Initiative (MEPI). MEPI is funded by NIH and President's Emergency Plan for AIDS Relief (PEPFAR) and the Office of the US Global AIDS Coordinator, which is jointly administered by the FIC and the HIV/AIDS Bureau of the Health Resources and Services Administration (GHAP/HAB/HRSA). MEPI supports medical education institutions in sub-Saharan Africa to strengthen and build their clinical and research capacity. MEPI's three main objectives are to:

- Improve the quality of clinical education and clinical care;
- Enable medical students who graduate to remain in their home country to practice, serve as faculty, and/or conduct research related to the implementation of the US PEPFAR and other public-health priorities; and
- Enhance the recruitment and retention of qualified academic staff through partnerships and research opportunities.[2]

A coordination centre links sites and partners and leverages shared resources and provides technical expertise. A web-based platform allows all partners to share data and research findings.

MEPI enables participating institutions to strengthen their IT infrastructure to better support distance education and data sharing. It also encourages institutions to establish clinical registries that can inform national research priorities and health-care decision making. Institutions supported by MEPI can use a portion of their funding to support the development of research capacity via training programmes. Training programmes cover issues such as research integrity, ethical reviews, financial management, as well as grant management and administration.

The **International Extramural Associates Research Development Award** (IEARDA) is a programme run primarily by NIH's Eunice Kennedy Shriver National Institute of Child Health and Human Development. The programme aims to train a cadre of academic research administrators in LMICs who can facilitate and/or develop appropriate administrative infrastructure in their home institutions, thus effectively managing grant processes and strengthening their institutions' research capabilities.

Support is provided for a maximum of five years during which IEARDA offers exposure to NIH policies and procedures through a distance-learning and residency program. IEARDA also provides funding to augment or expand existing administrative infrastructure. This funding supports activities such as:

- The purchase of office supplies and equipment;
- The purchase, connection, and maintenance of computer equipment and software;
- Administrative assistance;
- Institutional and/or regional workshops on issues such as grants management, research processes (and design), statistical tools, research ethics,

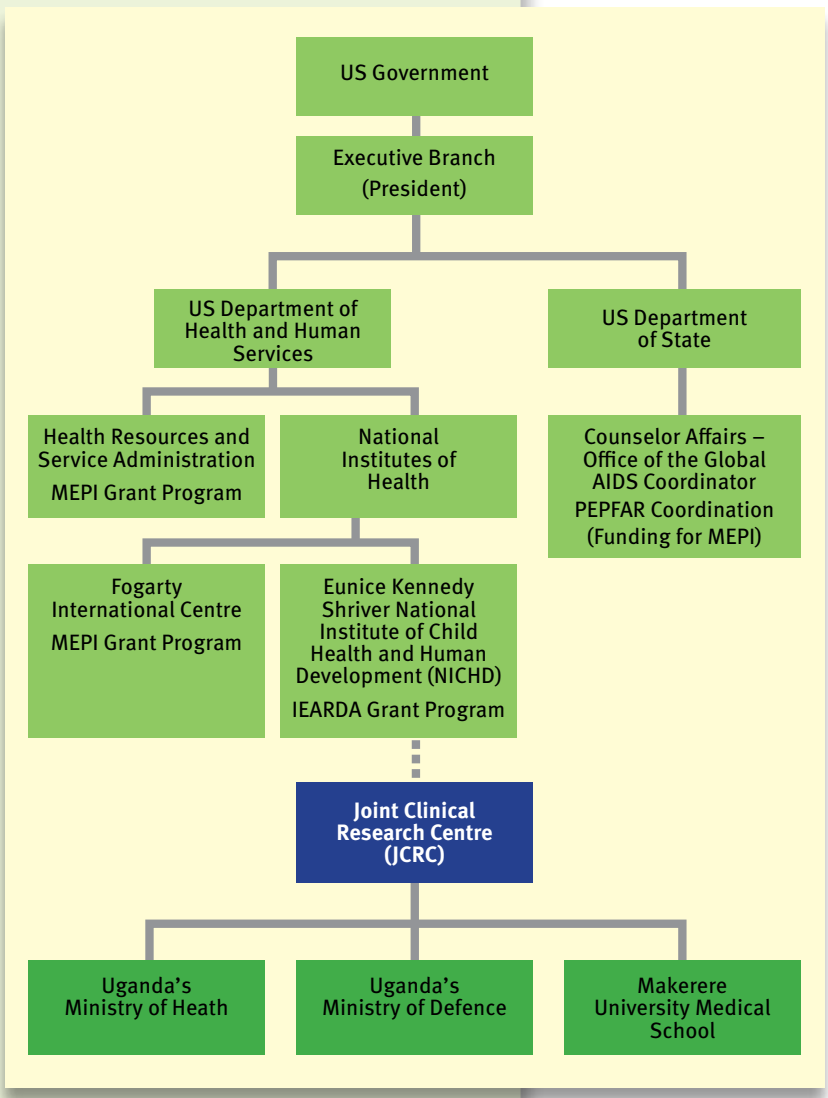
consortium research arrangements, and research management;
- Additional experience in carrying out the functions of the office;
- Membership of a professional organization the functions of which are related to the goals of the program.

A supplement to the IEARDA and MEPI grants will allow a subset of programmes to expand their research administration offices and capacity building training in sub-Saharan Africa.

Uganda's **Joint Clinical Research Centre** (JCRC) is an NGO established jointly by Uganda's Ministry of Health (which mainly assisted with policy formulation), the Ministry of Defense (which provided the infrastructure) and Makerere University Medical School. For JCRC, this programme bolstered the quality of its research by improving the skills of selected staff in various ways. Research staff, and those in the organization's research office, were exposed to grant-writing skills, research-ethics programmes, and the NIH's grants management process.

JCRC's directorate of research and grants is responsible for the coordination and management of grants. Grant applications are sent to the directorate for approval (by the director or deputy-director) before being submitted to funders. The JCRC provides researchers who are writing grant applications with:

- Access to the internet and other resources.
- Assistance in locating and communicating with potential partners, as well as with conducting negotiations.
- Budgetary support, including allocating a staff member or a finance team to facilitate the budgeting process, as well as access to budget templates and audited financial reports, etc.
- Having set up their office and an institutional policy, JCRC can move on to developing research strategies and guidelines for research management.



1 Further information about MEPI is available at http://www.fic.nih.gov/Grants/Search/Pages/Awards-Program-MEPI.aspx#programmatic

KEY 5 Bridging the gaps between funders and research institutions

Pointers

- There is a **need for dialogue between research institutions** and funders to clarify misconceptions and to work towards a common understanding of research costs. Funders and research institutions alike need to be committed to the cause – institutions to understanding, calculating and recovering indirect rates and funders to understanding and accepting the principles involved and the need for institutions to recover indirect costs where these are suitably calculated and justified.
- Funders need to acknowledge variations in the ability of institutions to accurately cost research, and help to enhance these abilities to ensure sound investment in institutions in LMICs; **training programmes** aimed at the development of research capacity (including funded research- and grants management courses) are essential in the quest to sustain research environments in LMICs.
- Moving towards proper costing of research requires **support and incentives**; ideally this should be led by partnerships between relevant government and (national) funding agencies.
- Institutions (facilitated by an appropriate network) could follow the Swedish example[1] and calculate the full costs for a number of projects financed by different funding agencies in order to raise awareness of the indirect costs involved; this would help to give funders a clearer understanding of what it really costs to do health research in LMICs and demonstrate the need for them to fund these costs.
- Funders could make grant application and management easier and more cost effective for research institutions by **standardizing certain processes,** and developing generic templates for application and report requirements.
- Research institutions need to **invest time and energy in building adequate and efficient structures and systems** for research and grant management.

The needs and concerns of research institutions

- Research in LMICs is generally under-funded by governments. Thus, the development and maintenance of research administration infrastructure often depends on funds from other sources, such as the application of indirect-cost rates.
- **The major funding gaps** (in terms of costs covered by grants relative to expenditure) tend to be in the categories of staff remuneration and support for postgraduate students:
  - **Staff costs**: retaining qualified and skilled staff is a major challenge for LMICs and contributes to the general lack of available capacity in these countries among doctors, nurses, lab technicians etc. Expertise often has to be bought at a high price but funders usually cap personnel costs leaving any deficit to be carried by the institution. On average institutions are expected to carry 60% of personnel costs, and since these are the main direct expense in most projects, the burden on institutions is severe.
  - **Postgraduate tuition and research expenses**: while this is seen as critical for future growth, there is little national or institutional support for it and it is seldom covered by grants.
- There is a general **perception that funders are not willing to negotiate indirect-cost rates** due to their own policies. Together with the absence of government or other sources of support, this contributes to a lack of incentive for many institutions in LMICs to invest effort and resources in calculating indirect costs more accurately.
- Some researchers are reluctant to budget for indirect rates because of the competition involved in securing external funding and the **perception that projects with modest budgets have a better chance of being approved**.
- In general, research institutions have limited experience of competing for funding, yet they increasingly need to supplement their core funds with additional grants. Hence, personnel who are familiar with the

skills and mechanisms for attracting and managing funds from a range of sources are becoming indispensable.

- As institutions' research reputations develop and they receive funding from an wide range of donors, it can be increasingly **challenging to keep up with all the standards, templates and reporting requirements** related to grant application and management that are expected by the different funding agencies.
- Increasingly, **institutional co-funding** is a requirement for attracting external funds for research. This, combined with limited or no reimbursement of indirect costs, **places excessive demands on institutional resources**.
- Pre/post grant training by funders is seen as an important source of support for the institution but sending staff to the US or Europe for such training is unaffordable for research organizations. Such **training would be more effective were it to occur in situ, within LMICs**.
- In respect to product development research, funders generally don't cover the cost of the drugs, requiring institutions to seek sponsorship. The process of first **securing sponsorship** and then acquiring the drugs **can delay clinical trials** and impact on agreed timelines.

Challenges faced by donors funding institutions in LMICs

- Weaknesses in financial reporting and project management related to the institutional coordination of grants management and research costing on the part of research institutions.
- Institutional policies on research costs are not applied consistently.
- Some institutions have no standard operating procedures for grant applications or management. While these are not required by funders, well-established standard operating procedures tend to work to the benefit of all parties.
- Funders are often unclear about how recovered indirect costs are used to develop or maintain the necessary infrastructure and support services.
- Research organizations seem to have a limited understanding of how to budget for true research costs.

Recommended resources

European Commission Expert Group (2008) Diversified Funding Streams for University-Based Research: Impact of External Project-Based Research Funding on Financial Management in Universities. http://ec.europa.eu/invest-in-research/pdf/download_en/external_funding_final_report.pdf

1 When the principle of full cost coverage was introduced by the **Swedish government** in 2000, the Association of Swedish Higher Education (SUHF) reached an agreement with several funding bodies, including all government-funded research councils and foundations to accept unspecified indirect costs at a rate of 35% of direct costs. About half of this was meant to cover costs for premises. Funding bodies, however, did not accept this agreement. Universities considered 35% insufficient and several studies undertaken showed that indirect costs (including premises) tend to be above 50% of direct costs. In 2006, SUHF therefore invited funding agencies to appoint auditors and other specialists to join a group of university experts to develop a new common costing model for indirect costs. The model developed is applicable, both in calculating the total costs of a planned research project and in presenting the accounts after completion of the project. The implementation is planned to take place in a coordinated way.

Case studies on relations between funders and research institutions

The following case studies highlight some of the institutional challenges related to research funding in general, and to the reimbursement of indirect costs in particular. The final case summarizes the indirect-cost policies of various funders.

Botswana Harvard Aids Institute

BHP's research and training initiatives focus on the epidemiology, virology, molecular biology, immunology, genetics and clinical treatment, as well as the social and behavioural medicine relevant to the AIDS epidemic in Botswana and southern Africa. Most of their research funding comes from the US government, while some funds come from the European and Developing Countries Clinical Trials Partnership and the Wellcome Trust.

BHP recently set up a grants management office, and developed a grant submission policy supported by a grant management manual. Apart from the general challenges faced by research organisations in LMICs already discussed in this document, such as inadequate government support and funding for research, BHP identified the following challenges related to securing research funding and to sustaining their research environment:

- As a young organization, BHP has no discretionary funding; this means that funding agreements have to include a provision for advance funding. Current agreements range from monthly to quarterly advance payments.
- Human-subjects approval – the availability of adequate human resources on the national level to ensure timely review of protocols; ensuring that staff on the National Human Subjects Regulatory/ Ethics Unit and that the members are adequately trained to enable them to carry out their duties efficiently; having systems in place which facilitate easy submission of material for review (standardisation); reducing paperwork through implementation of an electronic submission system. These should also apply to Drug Regulatory Unit (DRU) since it is part of the reviewing process in IND studies.
- A major gap is in the funding of drugs for research and for the long-term storage facilities for data and samples required by clinical trials.
- It is difficult to find staff with experience of managing grants and an understanding the implications that grant funding has on operational processes related to finance and human resources departments, etc.
- The cost of pre/post-grant training is prohibitive if staff have to be sent abroad for training; for example, the NIH and CDC offer excellent training opportunities for grantees but it is too expensive to send employees to the US for this training. Thus development of local or regional training capacity is essential.

To help build staff capacity, BHP participates in a number of regional networks, including:

- Trials of Excellence in Southern Africa (TESA) is a regional network conducting clinical trials linked to HIV, TB and Malaria, and is funded by the European and Developing Countries Clinical Trials Partnership.
- The Botswana-Tanzania-Zambia Capacity Building for HIV Prevention Research Network (TanZamBo) is funded by the International Development Research Centre (IDRC) of Canada.
- The Southern Africa Consortium for Research Excellence (SACORE), a collaboration between 10 institutions in Africa and the UK, is funded by the Wellcome Trust. When BHP first accessed Wellcome Trust grants, they were sponsored to visit a prime recipient of the grant in Malawi to learn about the specific requirements related to managing a Wellcome Trust grant. They continue to have annual meetings to discuss any follow-up, challenges and a way forward. This model has proven useful and could be replicated by other funders.

The College of Medicine, University of Malawi

The policy on indirect costs at the University of Malawi's College of Medicine (COM) is based on an estimate of 10%. Actual indirect costs are not known and the institution carries any shortfalls that might arise. However, COM believes that spending time and money on the calculation would be a waste of resources since, in their experience, funders apply their own policies regardless.

Negotiating with funders for reimbursement of the indirect cost rate has not been satisfying or successful for COM. They estimate that for 98% of grants, funders simply cite their own policies on costs (that is, funders specified which costs are capped at a low percentage or not covered) and refuse to engage with the issue. The remaining 2% of grants are for contract research, and for these, costs can sometimes be negotiated with a higher degree of success.

Nevertheless, between 2007 and 2011, COM won an increasing number of competitive international grants. This can be attributed partly to the increased visibility of research in the college, and partly to the support provided by COM's Research Support Centre, which has motivated academics to become involved in grant writing. COM's successes in winning more grants has led to improvements in the working conditions at the college, and helped to attract several expatriate scientists and medical practitioners to return to Malawi.

The Research Support Centre's current strategy is to try and negotiate for relevant activities and items to be included as direct costs within the main budget.

Some donors' approaches to indirect rates

As noted in an earlier case study, the **International Development Research Center (IDRC), Canada** allows for the inclusion of certain indirect costs in project budgets. The indirect-cost rate can include only: salaries and benefits of personnel who directly support and administer the project (such as secretaries, clerks, accountants, etc); stationery and other office supplies; telecommunication costs (unless the nature of the project has warranted a specific budget line item for that purpose); and computer equipment used for the administration or accounting of the grant disbursements. Institutions with a policy of recovering indirect costs through the application of a percentage can do so provided that the IDRC or its auditors are satisfied that the levy is fair and reasonable and that the rate is 13% or lower of the total grant (excluding equipment and indirect costs).

The US-based **National Institutes of Health (NIH)** allows for a limited indirect rate of 8% of total direct costs less equipment. The 8% is allocated automatically and does not have to be negotiated with the NIH but the funds involved have to be allocated exclusively to support the costs of compliance with NIH requirements. Examples of NIH compliance requirements are: the protection of human subjects (including the required education in the protection of human research participants); animal welfare; invention reporting, etc. Those items that are more usually considered as indirect costs and are relevant to a particular project (such as rent, IT costs, etc.) may be included as direct costs within the project budget.

The **Netherlands Organisation for Scientific Research (NWO)** generally does not cover indirect costs; instead all budget items should be linked to the project as direct costs. However, in their Global Health Policy and Health Systems Programme, overhead costs (office space, basic facilities, overhead and depreciation costs) are allowed at 8% of the total budget only for specific parts of projects that take place in LMICs.

Since 2008, the **European and Developing Countries Clinical Trials Partnership (EDCTP)** has allowed for an indirect costs/overheads rate of 10%. This rate is automatically calculated within their budget template on all eligible costs. Overheads are defined as including freight costs, bench fees, office rental and other internal charges. Prior to 2008, date the overhead rate was 20%. The FAQ section on the EDCTP website explains that the change was made because 'some grantees indicated that 20% of the value of the grant going as overhead was not accommodating to them because there was little benefit from the overheads that were taken over by their institute, which effectively meant the grant was being conducted with 20% less funding. Now the applicant can itemize up to another 10% and only 10% goes as an overhead, ensuring that the grantee will fully benefit from the grant'. It should be noted that computers and laptops were formerly covered within the 20% rate but these are now included as line items in the project budget, as are telephone, fax, internet and courier costs. Grantees can request that a lower overhead rate be applied in exchange for accommodating additional direct costs; right down to 0% if required.

The way forward

Now that you have read this guide, what is the way forward?

- This guide could be useful at various levels. While it is not offered as a blue print for research costing, using the *Five Keys to Research Costing in LMICs* as a guide or a tool in your own institution is important and potentially of great benefit.
- In general this ESSENCE Good Practice Guide sets out what are currently accepted as principles of good practice. Your institution can use this to raise awareness at all levels in the institution of the actual cost of doing research.
- In addition it can be used to facilitate a conversation to reflect on your own institutions understanding and practices. Using the principles and learning from others' experiences can assist you to identify your current institutional weaknesses and gaps.
- The *Five Keys* guide will furthermore provide guidance to developing or improving your institutional management of external research grants, your institutional research costing policy, guidelines and procedures, as well as the institutional skills and competencies that are required.
- Institutional specific factors will predict the approach and the eventual use of recovered indirect costs. Moreover, institutions are at various levels of understanding or developing and implementing research costing approaches – there is no "one size fits all".
- This guide contains elements that are more or less applicable in a range of institutional settings. Institutions will consequently select and use those guiding principles that will allow them to propel from where they are now, to the point where they can more accurately and sustainably cost future research.
- Finally, it can assist your institution to engage with international and national funders on the costing of your research to ensure that it is a true partnership with mutual understanding of needs and requirements. The *Five Keys to Research Costing in LMICs Good Practice Guide* will also assist international and national funders of all types to assess their practices and policies going forward.

A forum for shared learning

ESSENCE is ideally positioned to further the dialogue that started with this study between funders of health research and institutions. ESSENCE's members are committed to harmonizing their own policies and practices as far as possible, and to attempting to better understand the needs of research institutions in LMICs in relation to establishing sustainable research environments.

In this good practice document, case studies are linked mainly to experiences of research institutions in sub-Saharan Africa. The next step is to canvass the views of institutions in other LMICs on whether similar issues are relevant to them and to find out if they have other good practices to share.

To keep the dialogue between funders of health research and institutions in LMICs alive, and more importantly to have a forum for shared learning, ESSENCE has created a repository of case studies and experiences accessible via the ESSENCE website where individuals, institutions, networks or professional bodies can post challenges and share experiences on the issue of research costing. The repository is primarily for use of research institutions, to help them identify common challenges and to learn from their successes and failures. ESSENCE members will also use specific challenges and demands coming from the postings to help inform further harmonization of their own practices in relation to the needs of funding recipients.

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