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Interim (light touch) Review of MRC/DFID Concordat

Final Report

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Disclaimer

The views and ideas expressed herein are those of the author(s) and do not necessarily imply or reflect the opinion of the Institute.

Abbreviations

ARL	African Research Leader
DFID	Department for International Development UK
EDCTP	European Developing Countries Clinical Trial Platform
ESRC	The Economic and Social Research Council
HIV	Human immunodeficiency virus
JIF	Journal Impact Factor
MDG	Millenium Development Goal
MRC	UK Medical Research Council
Nb	Number
NCD	Non-communicable disease
NGO	Non-governmental organisation
NICE	National Institute for Clinical Excellence
SCIH	Swiss Centre for International Health
Swiss TPH	Swiss Tropical and Public Health Institute
UK	United Kingdom
WHO	World Health Organization

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Executive Summary

Background and objectives

The Department for International Development UK (DFID) and the UK Medical Research Council (MCR) have been implementing a joint research Concordat since 1993. The Concordat aims to produce high quality evidence that improves the health of the poorest people living in developing countries. Projects that fall within the Concordat portfolio are supported through two main funding mechanisms: investigator-initiated projects submitted to MRC research boards and those submitted to Concordat-specific strategic initiatives, which have to date included global health clinical trials, the African Leadership Scheme and the European Developing Countries Clinical Trial Platform (EDCTP). From 2008 continuing through 2013, DFID has been and will continue to make an annual contribution of approximately £9 million available to MRC, totalling around £45 million.

The present review assesses the effectiveness and value for money of the DFID/MRC Concordat as a means of supporting the generation of high quality scientific knowledge relevant to the needs of developing countries. More specifically the outputs of research projects funded under the Concordat, including the quality of science, is examined as well as the role of developing country partners, capacity building and the dissemination of products.

Methods

The review relied on four information sources: (1) a review of DFID and MRC background documents, (2) an analysis of data extracted from MRC data management and information systems, especially the “MRC e-Val system”, (3) the conduct and analysis of a web survey with primary investigators funded under the portfolio in the period 2006 – 2011 to which 27 out of 117 contacted persons responded and (4) the conduct of 17 telephone interviews with key informants representing four different stakeholder groups.

Results

Support provided under Concordat to strategic initiatives has been highlighted by interviewers as success due to high quality scientific outputs (global clinical trials), opportunity for career development and retention (African Leadership Scheme) or through matching UK funds to broader initiatives (EDCTP).

Among the portfolio projects funded through MRC boards, there has been a shift over time away from basic research conducted solely/largely in the UK towards implementation research. Indeed in the most recent funding year for which data is available, 83% of projects funded fall under the category of projects solely/largely conducted in a developing country and addressing health needs of developing countries. The establishment of a strategic MRC Global Health Group has helped to gain in-house recognition of this area. Projects funded under the Concordat cover a number of priority health issues of developing societies although gaps are identified by some interviewees in relation to non-communicable diseases and health systems research.

The Concordat’s funding over the period 2006 to 2010 resulted in a total of 1,457 scientific publications. Publications were published in several hundred different peer-reviewed journals, many among them being “high-impact journals”. Further, quality of research and strategic orientation of MRC research units in The Gambia and Uganda were often positively mentioned.

The MRC data project management system indicates that among the 230 registered co-investigators, 15% are located in low income countries while 4% are located in lower-middle income countries and that the majority (76%) are based in upper income countries. At the same time a broad range of collaborations are established by projects funded under the Concordat.

Given the limited financial resources available to the Concordat, capacity development within regular projects remains relatively vague. Comparatively little emphasis is given to organisational and institutional aspects with the focus going primarily to individual aspects such as career development of junior scientists. However there are selected examples where capacity building is undertaken on a wider organisational or even institutional level (MRC units in The Gambia and Uganda, the African Leadership Scheme and EDCTP).

The visibility of the Concordat remains low. The web-based survey and interviews indicated that many primary investigators are unaware of the Concordat. Many investigators were even surprised that one of their projects is or has been funded under the Concordat and often failed to establish a link between the goal of the Concordat and their MRC-funded project.

Most interviewees were not aware of available mechanisms within MRC to support dissemination, especially of the MRC communications support team that can be called upon when needed.

The administration of the Concordat between DFID and MRC has been described by both sides as being uncomplicated, open and constructive.

Research conducted in the UK but specifically funded through MRC has a highly-regarded reputation. However respondents were unable to specifically trace the reputation back to the Concordat. There was overall agreement that the Concordat helps to sustain excellence and also brings substantial recognition to DFID as research-funding body.

Conclusions

Through the Concordat MRC and DFID maintain a very productive and successful research-funding portfolio which impacted several policies to the benefit of people living in developing countries. It builds upon a mutual commitment of both institutions to support high quality research. The relationship between both institutions has been described as very cooperative and trustful. The Concordat serves in many ways as a best practice example for institutional synergy leverage. Seven main conclusions emerge from the present review:

- The Concordat portfolio has produced high quality, internationally-recognised research which has influenced policy and practice to the benefit of people living in developing countries.
- The Concordat mechanism ensures “service out of one hand” thereby leveraging substantial synergies.
- The Portfolio has over recent years shifted away from basic research conducted solely/largely in the UK towards research that focuses on health issues from a developing country perspective and that utilises local resources.
- Albeit the DFID/MRC Concordat agreement emphasises the importance of health service and health systems research, no research activities in this area have yet to be funded. Recent strategic initiatives, supported by both MRC and DFID, offer an opportunity to sharpen the Concordat’s profile in these areas.
- MRC and DFID give relatively little importance to the Concordat's visibility and the effective communication and marketing of DFID's contributions as well as the agency’s interest in funding projects focussing on applied and implementation research.
- Monitoring systems for project management and project outcomes are in place but show potential to be further developed.
- Both the dissemination of research outcomes and capacity building are emphasised in the 2008 – 2013 agreement between DFID and MRC, but remain relatively vaguely defined and monitored.

In the light of the positive conclusions of this review, no need for major modifications in the scope and functioning of the DFID/MRC Concordat emerge. However, the review does provide examples for further optimising selected areas of the Concordat.

1 Introduction

The present review assesses the effectiveness and value for money of the DFID/MRC Concordat as a means of supporting the generation of high quality scientific knowledge relevant to the needs of developing countries.

Indeed, the Department for International Development UK (DFID) and the UK Medical Research Council (MRC) first implemented a joint research Concordat in 1993. Over the period 2003/04 to 2007/2008, DFID provided approximately £20 million to MRC to allow funding of applied research projects with a focus on health and disease in developing countries. The current arrangement covers the period between 2008 and 2013[1] during which DFID will make around £45 million, or around £9 million annually, available to MRC.

The goal of the Concordat is to produce high quality evidence that improves the health of the poorest people in developing countries. In its purpose the Concordat supports biomedical and health research to tackle priority health problems of developing countries. The partnership arrangement points towards[2]:

- Greater focus in capacity development; translational and implementation research; public health research; health services research and health systems research
- Clinical trials of relevance to developing country health issues
- Match funding for European and Developing Countries Clinical Trials Partnership (EDCTP)
- Communicating results and getting research into policy and practice (GRIPP) in partnership with others, including DFID

During the previous Concordat, DFID's funding was only used to finance projects that were administered by MRC boards. MRC boards assess project proposals and award funding based on this assessment. Other projects that were considered of a broader strategic relevance (e.g. clinical trials) were not included in the Concordat funding. DFID decided case by case if they would contribute financially to the conduct of those strategic initiatives.

In a bid to further develop priority areas of interest to DFID, the current Concordat now includes:

- projects submitted to and assessed by the MRC research boards
- projects supported through strategic initiatives developed in close coordination with DFID, including also the EDCTP match funding

The majority of projects within the Concordat are administered through MRC and principal investigator eligibility is restricted to UK research institutions and MRC's own units, including those located in The Gambia and Uganda. The funds contributed to EDCTP from MRC and DFID are managed by EDCTP and eligibility is limited to European and African institutions.

MRC spent in the financial year 2010/2011 a total of approximately £40 million on projects broadly categorized as “Global Health Projects”. DFIDs contribution of approximately £9-£10 million per annum corresponds roughly to 25% of the MRC “Global Health” budget[3]. Under its “Global Health Projects” portfolio MRC supports a wide range of projects of which many can be categorised as basic research.

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[1] Specifically: 12 January 2009 until 31 March 2013.

[2] MRC/DFID: Programme Document – Generation of Knowledge Relevant to the Health of Poor People – DFID/MRC Arrangement 2008-2013

[3] http://www.mrc.ac.uk/Ourresearch/Globalhealth/Whatwedo/index.htm (Access: 19 January 2012)

DFID assumes that under the Concordat, the usual project focus of MRC on promoting mainly biomedical research will broaden and that through DFID's contribution applied and implementation research that is aligned with the Millennium Development Goals (MDGs) will be supported. It is also expected that the high quality scientific evidence produced under the Concordat is taken up by policymakers at WHO or other health-related global, regional and national institutions and NGOs to guide policy and practice to the ultimate benefit of people living in developing countries.

In the following sections, the review examines a number of questions, including if the Concordat mechanism is producing high quality research outcomes relevant to the health needs of developing countries and whether DFID and MRC's health research priorities are being met effectively through the Concordat mechanism.

The review is structured into four sections: Section 2 will outline the evaluators' approach and methodology for this review. The findings will be outlined in section 3. First an overview of the projects funded under the Concordat is given (section 3.1). This is followed by an outline of several outputs of research projects (section 0), including the quality of science. Thereafter the role of developing country partner(s) in projects is outlined (section 0). Section 0 investigates the "Strategic Aspects of the MRC/DFID Concordat" from different angles. The collaboration between DFID and MRC, including administrative aspects, are described in section 0. The findings chapter concludes with section 3.6 "International Perspective on MRC/DFID Portfolio". Conclusions and recommendations of the review are outlined in section 4.

2 Approach and Methodology

In December 2011 and January 2012, the effectiveness and value of money of the Concordat were reviewed through four main sources of information:

1. Review of background documents including the Memorandum of Understanding between DFID and MRC, the programme document between the two institutions, strategic documents and annual reports (a complete list of documents that were consulted can be found in Appendix B.1).
2. Analysis of data extracted from MRC project management and the "MRC e-Val system": The first includes information submitted during the application process. The second source has been routinely used since 2009 for outcome and performance monitoring of projects. Both data sources are self-administered by primary researchers (Further information with regard to this analysis is listed below).
3. Conduct of a web survey with primary investigators funded under the portfolio during the period of 2006 – 2011 (for further information see below).
4. Conduct of telephone interviews with key informants (for further information see below).

Data from the MRC project management and information system, especially the "MRC e-Val system", was first investigated for the plausibility and data consistency of information. After consultation with MRC, various adjustments were made (e.g. elimination of publications before 2006; elimination of projects which have been included several times in the datasets) so that a consistent data set was obtained. Reliability and validity of the data is assessed by a peer-reviewed process and several institutional cross checks and therefore judged to be high although self-administered collected data should always be treated with some caution. In addition, information of the MRC e-Val system is incomplete as not every award holder has completed the MRC e-Val system, though data is available for 72% of Concordat projects (n=156). This response rate is considered good as it must also be seen in the light of a time discrepancy between funded projects that are under investigation since 2006 and the imple-

mentation of the MRC e-Val system in 2009[4]. Analysis of these datasets was done quantitatively using STATA but on sub-samples (e.g. for randomly selected publications) a further in-depth analysis was carried out.

Table 1: MRC data management and information system used for the review

Data-Management System	Variables / Topic areas researched for the review
Project Management	portfolio (e.g. project title, primary investigator, institution), co-investigators
MRC e-Val-System	email contacts, start and end dates, publications, collaborators & partners, dissemination to non-academic audiences, influence on policy & practice, products/interventions

A web questionnaire was designed and sent out to the 137 primary investigators with the request to take five minutes to answer eight questions (Appendix C). The survey took place between the 22 December 2011 and 15 January 2012 with a reminder being sent out on the 9 January 2012. Out of the total number of email sent out, 19 were returned with the indication that the recipient is on leave or the email address was no longer valid. In consequence, 118 primary investigators were eligible for responding to the questionnaire and 27 of them did so. This corresponds to a response rate of 23%. Whilst this response rate must be considered rather low it has been brought to the evaluators' attention that many primary investigators were actually unaware that any of their projects has been funded under the Concordat (see also section 3.4.1). Also the fact that the time period covered various bank holidays might also have posed problems in reaching respondents. Due to the low response rate generalisations on the sole basis of the web survey should be avoided and further analysis (e.g. stratifications or correlations) was deemed inappropriate.

Telephone interviews were conducted by three interviewers in January 2012 with 17 key informants using an interview guide (Appendix D). Names and contact details were indicated to the reviewers by DFID and MRC and the interviews were documented through written notes. A complete list with interview partners can be found in Appendix B.2.

The interviewees can be grouped along four major stakeholder categories, although many respondents take double roles:

- 8 interviews with DFID and MRC representatives
- 5 interviews with MRC board members
- 2 interviews with primary researchers and co-investigators
- 2 interviews with key players in international health research

The evaluators made substantial efforts to establish contact with co-investigators from developing countries who had not been part of a MRC research centre in Uganda or The Gambia. However though several attempts were made it was not possible to schedule interviews as co-investigators did not respond.

[4] This discrepancy is not regarded as major as the e-Val system covers projects up to five years after they have been finalised.

3 Findings

3.1 The MRC/DFID Portfolio

In total 216 projects have been funded under the Concordat between 2006 and 2011[5].The portfolio includes projects which have gone through MRC board assessment and projects supported through strategic initiatives.

Research boards commit funding to projects in open competition during their regular meetings. Projects thus supported are included in the Concordat spend portfolio when actual spending has occurred. Concordat strategic initiatives addressing specific global health priorities are launched in close coordination with DFID either prior to or as the initiatives continue, often with a recognised pre-stated joint contribution to any award made (e.g. the African Research Leader (ARL) awards were funded 50:50).

At the end of each year MRC will assess its spend portfolio derived from both types of award and assign projects to the Concordat selected on the basis of agreed criteria between MRC and DFID that differentiate to what degree the research is tailored towards the health needs of developing societies and how much use is made of developing country resources.

The current Concordat spending in the portfolio is increasing more towards the agreed strategic initiatives (i.e. this year approximately 60:40 compared to previously 50:50).

3.1.1 Strategic Initiatives

The strategic initiatives to date have included three main categories:

1. Clinical trials (sometimes also referred to “Global Health trials”)
2. The African Leadership Scheme
3. Projects and programmes funded through EDCTP

As indicated in the paragraph above more than half of the Concordat’s annual budget is used for supporting these initiatives.

Clinical Trials

The Concordat portfolio includes a number of projects that broadly fall into the category of trials of global strategic interest. Due to the relative long-lasting nature of some of the clinical trials, it is being observed that some trials benefit from on-going support over time. Indeed, several trials, including the Development for Anti-Retroviral Therapy in Africa trial (DART), have been awarded funding under the previous Concordat and continued to receive financial support under the present Concordat.

Other selected examples of trials considered as strategic initiatives under the Concordat are:

- A randomised trial of monitoring practice and pulse antiretroviral therapy in African children with HIV infections
- Prevention of maternal morbidity after caesarean section in developing countries: a factorial RCT of surgical methods
- Streamlining tasks and roles to expand treatment and care for HIV

[5] This number of projects funded under the portfolio does not include EDCTP funding.

- Randomised trial of fluid resuscitation strategies in African children with severe febrile illness & impaired perfusion
- Development of Mwanza Intervention Trials Unit as a centre of excellence in HIV/STI prevention research
- Safety of discontinuing Cotrimoxazole Prophylaxis among HIV-1 infected patients on ART, a randomised controlled trial

The high quality of the trials has been described several times in interviews with key informants (also see section 3.2.1 and 3.3.2). Indeed, the DART trial was the largest clinical trial of anti-retroviral therapy for people living with HIV in Africa and is been seen by many as a very successful trial with major public health implications. A main result was that regular laboratory testing to monitor the effects of ART offers only marginal benefit on population level compared to clinical monitoring. Consequently more people with HIV could be treated for the same amount of money spent if laboratory testing was used less frequently.

African Leader Scheme

The MRC/DFID African Leader Scheme was launched in March 2010 and is an award for non-clinical and clinical researchers of exceptional ability. Its aim is to strengthen leadership and capacity across sub-Saharan Africa by attracting and retaining researchers of high ability and thus to make a contribution against "brain drain".

Due to MRC regulations, African leaders must enter into a partnership with a UK-based institution who then applies for the research grant. From the application it must be clear that the research as such is undertaken in sub-Saharan Africa and that the role of the UK institution consists of a mentoring and stewardship role for African research scientists and institutions. The financial benefit to UK research institutions is therefore limited.

In 2011 three African applicants were successful and have been awarded a total of £5m funding over the next five years. Award decisions were made on the basis of scientific rigour and high research profiles but proposals have also been judged on the nature of collaboration, the know-how transfer and capacity building aspect through UK home institutions. In consequence, it is expected that African scientists are using the funding not only to conduct research activities, but also as a platform for strengthening exchanges of excellence between UK and African institutions and to secure funding beyond this scheme.

The success of the African Leader Scheme has been highlighted by many interviewees who see it as a great opportunity for Africans to continue a career in research (also see 3.3.2). The award holders of the 2011 scheme will be visited by MRC representatives in 2012 who will scrutinize their progress. The African Leader Scheme continues in 2012 but targets the 'rising star' African Leader rather than those who have an established record of securing international research funding.

EDCTP

The European and Developing Countries Clinical Trials Partnership (EDCTP) is a joint programme between 18 European and most countries in sub-Saharan Africa to accelerate the development of new or improved drugs, vaccines, microbicides and diagnostics against HIV/AIDS, tuberculosis and malaria, with focus on phase II and III clinical trials in sub-Saharan Africa.

The MRC is the UK representative in EDCTP, acting also on behalf of DFID as one area of spending under the MRC/DFID Concordat concerns EDCTP match funding. In its main focus EDCTP funds large clinical trials and also supports networking and capacity development. EDCTP-funded activities are based on the following components:

- Supporting relevant clinical trials

- Networking and coordination of European national research and development programmes and with their partners in the south
- Networking and coordination with African national disease control programmes
- Strengthening African research capacity in the field clinical trials for priority diseases

Since 2004/2005 the UK has contributed approximately £20 million co-funding to EDCTP. With this contribution 28 clinical trials have received funding.

3.1.2 Projects in the Portfolio - Classification

The nature of projects that should be funded under the Concordat is an area of on-going discussions between MRC and DFID. For the 2008-2013 Concordat, a project classification scheme has been introduced which helps to monitor changes in the portfolio composition. The below classification is used by MRC to separate projects along four categories. Categories 1 to 3 are thereby considered eligible for funding under the Concordat, including basic research conducted in MRC units in The Gambia or Uganda.

1. Research solely/largely conducted in a developing country and addressing health needs of developing countries. This includes research conducted by the MRC units in The Gambia and Uganda (e.g. the MRC International Nutrition Unit based in The Gambia), as well as research grants awarded to UK host institutions where the majority of the work is undertaken in developing countries. Within this category MRC also categorises basic research which is conducted in African MRC units and highly relevant to the local health needs.
2. Research using data/samples from developing countries and addressing developing countries' health issues, but which is largely conducted in the UK, but excluding basic research.
3. Research directly relevant to developing countries (i.e. specifically focusing on addressing developing countries' health issues), but conducted solely in the UK, and not utilising data/samples from developing countries or not being basic research.
4. Research conducted solely/largely in the UK that is related to health/disease problems found in developing countries with no direct link to them (e.g. UK laboratory-based molecular research on malaria, or HIV research specifically addressing UK/non-developing countries issues).

The classification of the portfolio for 2010/2011 using these categories is undertaken by MRC staff on data extracted from their project management system. It being noted that some projects in category 4 may fall into MRC's own broader global health portfolio and are not allocated to the MRC/DFID Concordat.

In the frame of the present review, titles and abstracts of all projects funded since 2006 were coded along the four categorise listed above[6]. The results of this coding exercise are outlined in Table 2

[6] The coder reliability has been assessed through the comparison with DFID coding. In case of deviations and where MRC categorization was available this was given advantage. It should be noted that the evaluators only had limited information (title and abstract) to judge. Categorizations should therefore be regarded as indications rather than definite results. Evaluators also tried to categorise projects along basic / applied / translational / implementation research categories. However due to limited information this was not possible in a reliable way. A detailed list of project titles and classifications can be found in Appendix B.3.

Table 2: Trends in the Concordat project Portfolio by funding category

Funding category*	2006 – 2010 (n=201)	2010/2011 (n=84)
Research solely/largely conducted in a DC, addressing health needs of developing countries (category 1, n=130)	62%	83%
Research using data/samples from developing countries, addressing DC health issues (category 2, n=16)	5%	10%
Research directly relevant to developing countries but conducted solely in the UK (category 3, n=33)	15%	7%
Research conducted solely/largely in the UK with no main focus on DC (category 4, n=37)	18%	-

Source: MRC Project Management Database

* Projects that are not included in the 2010/2011 portfolio were categorised by the review team. Further, on the basis of information readily available at the MRC project management basis, it was not possible to conclude which projects have been funded in which year and over which period. Whilst it is likely that projects are in their majority funded throughout every year, it may be that in some instances projects are only over a short period financed with Concordat funding (also see section 3.2.4).

Prior to 2008 basic research projects (i.e. category 4) had been included in the DFID/MRC Concordat. In the new Concordat 2008-2013 these were then excluded.

Under the 2010/2011 portfolio 84 projects have received funding through the Concordat with the vast majority of projects solely/largely conducted in a developing country and addressing health needs of developing countries (category 1).

Table 2 shows, that the Portfolio has over recent years shifted away from purely basic research conducted solely/largely in the UK towards research that focuses on health issues from a developing country perspective and that utilises local resources. This result is shown clearly in the data although some delay in the adjustments to the portfolio must be anticipated as changes in the spend portfolio lag behind changes in MRC project commitment (also see section 0).

Indeed, it is being observed that over the years there is a trend of moving from what has previously – particularly under the previous Concordat – been more basic research to more implementation research and that currently more than four-fifths (83%) of projects are funded under category 1. This category includes all research undertaken in MRC research centres abroad and therefore may also include basic research that is highly relevant to local health needs. What is not within the core interest of DFID are projects conducted solely/largely in the UK with no main focus on developing countries (category 4). All of these 37 projects have already received funding in the previous Concordat where the four-part categorisation had not yet been in place. In fact many of those projects were terminated before 2008[7].

We take note that the majority of projects since 2006 are in line with the agreed criteria between MRC and DFID. It has been mentioned from various sides that the specification of criteria was necessary and that this has surely led to a shift enabling a more targeted funding of Concordat projects.

[7] Projects terminated: 32% in 2006 or before; 5% in 2007; 19% in 2008; 19% in 2009; 19% in 2010/2011. Two projects have terminated already in 2005, but data on the extension of these two projects might not have been updated appropriately as they are still included in the 2006 – 2011 Concordat portfolio.

In addition the portfolio does not – or only in very limited ways – include research on health systems or public health research. It has been mentioned by interviewees that MRC and DFID have together with other funding bodies (e.g. Wellcome Trust, the Economic and Social Research Council (ESRC)) initiated a series of meetings to elaborate how health systems research should be supported and taken forward within UK research funding (please also see section 3.2.2).

Regarding the institutional affiliation of the 216 projects funded under the Concordat, 55% have been conducted in MRC-run centres, including MRC research units in Uganda and The Gambia. The other 98 projects have been awarded to 27 different institutions and organisations within the UK (see Table 3).

Table 3: Institutional affiliation of projects funded under the Concordat

	Nb. of projects	%
MRC Units	118	55%
Other research institutions	98	45%
Total	216	100%

Source: Project Management Database

In total more than 140[8] principal investigators have been registered under the Concordat from 2006 to 2011. Several principal investigators have been awarded funding for more than one project, some up to six projects. The range of investigators represents the variety of projects that are supported and should also be seen as a factor that strengthens the scientific quality of the portfolio.

3.2 Outcomes of the MRC/DFID Portfolio

3.2.1 Scientific Quality

The high scientific quality of MRC projects was mentioned and described throughout the interviews with key informants. A key indicator for the quality of science is the number of (peer-reviewed) publications. Researchers have been asked to record publications in MRC e-Val that, in their view, resulted wholly, or in part, from MRC support.

Overall 1,645 publications have been registered for the Concordat in the MRC e-Val database. However, 60 publications were excluded by the reviewers as they were published before 2006 and were not eligible for analysis in this review under the parameters agreed. Another 35 publications have not been assigned a specific year, but were kept in the dataset.

In total 1,585 publications remain in the dataset published across the 119 projects that were funded under the Concordat. The median was six publications per project with 303 publications of a single project being the maximum. In 2006 and 2007 more than 200 publications were published. Since 2008 the portfolio has resulted annually in more than 300 publications.

In total 1,457 different publication titles have been entered into the MRC e-Val database. Duplicated publications entries in e-Val are valid as publications may arise through project collaborations between primary researchers who have been awarded with different Concordat-funded projects. The majority of titles have been entered only once (92%; n=1,342), 7% of publications (n=104) have been entered twice, nine publications have been entered three time and two publications were entered four times.

[8] Five project numbers did not have any primary researcher assigned to them and this information was also difficult to trace. It is assumed that different primary researchers led them.

Publications have been published in 423 different journals including some of the most prestigious and influential journals in medicine and public/global health (see Table 4). Indeed, the Thomson Reuter journal impact factor (JIF) gives an indication of the average number of citations of articles published within scientific journals. Outstanding from the top ten list of journals, where researchers funded under the Concordat published, are the 28 publications in the Lancet. Publications in other high-impact journals have also been identified (e.g. New England Journal of Medicine; JIF: 53,486) although with a fewer number of publications.

Table 4: Number of publications produced under Concordat by Top Ten Journals

	Journal	Journal Impact Factor (JFK) 2010	Nb. of publications
1	AIDS	6.348	71
2	PloS one	4.411	50
3	Journal of immunology	5.745	47
4	Tropical Medicine and International Health	2.841	45
5	Journal of Virology	5.189	38
6	Sexually Transmitted Infections	3.029	33
7	Lancet	33.633	28
8	Malaria Journal	3.489	28
9	The Journal of infectious diseases	6.288	28
10	European journal of immunology	4.942	27

Source: MRC e-Val database, excluding publications which have been included more than once; Journal Impact Factor: Thomson Reuters "Journal Citation Reports": http://admin-apps.webofknowledge.com/JCR/JCR?PointOfEntry=Home&SID=Q2AEL7NI75kp9l3f8lh

Beyond this output of high quality publications many key informants also stressed that publications are often just the consequence of high quality projects. Informants emphasised that Concordat projects undergo quality and scientific rigour assessments like any other projects funded by MRC. It was outlined that high competition and independent and stringent board assessments ensure that only high quality proposals are awarded MRC funding.

The quality of research, as well as the strategic orientation, has often been mentioned in relation to the MRC research units in The Gambia and Uganda where interviewees registered substantial changes for the better. The MRC unit in The Gambia set out its new strategy in January 2012 where its profile is further sharpened. The way the units are run and the scientific excellence that comes out from the units has often been emphasised. MRC units in The Gambia and Uganda serve now as international reference centres with stringent research standards. The units are subject to rigorous research assessment, which ensures that quality standards are observed. Interviewees also recognised the high quality of EDCTP-funded clinical trials.

All interviewees concluded that – in the areas covered – the Concordat produces research results that are good value for money. Reasons given for high value for money of research projects funded under the Concordat were:

- The Concordat ensures "service out of one hand" as one institution administers the funding. This means that all research goes through one institutional review so that selection can be focussed on the best quality.
- The Concordat assures MRC's profile, with regard to health priorities in developing countries and DFID's contribution, broadens the spectrum of research that is sup-

ported by MRC and includes a more comprehensive range of aspects that otherwise are unlikely to fall under MRC's priorities.

- Transaction costs of the current administrative set-up are – especially in the perspective of DFID – low.
- DFID does not have the necessary in-house capacities to administer a portfolio relating to research activities addressing health priorities of developing countries.

Repeatedly interviewees considered funding that was provided to the following initiatives of particular good value for money:

- The African Leader Scheme
- MRC units in The Gambia and Uganda
- Clinical trials (e.g. vaccine trials)

Of course the relationship between research funding and the return on investment is complex, time consuming and difficult to measure. Usually an extended time gap needs to be expected until the results influence policy and practice and materialise through changes at service implementation level (see section 3.4.3). Nevertheless, the Concordat is described by many interviewees as a "win-win situation" and as an excellent example on how funding bodies can collaborate. DFID benefits from MRC's research management and MRC benefits from DFID's financial contribution. Through its longstanding nature, the collaboration has a proven record in its administration but also in its research output. This collaborational knowledge assembled through almost two decades is an advantage which must be judged as good value for money.

3.2.2 Relevance to the health of developing societies

Respondents stated that the Concordat portfolio generally is in line with priority health issues of developing countries. Through a shift away from basic biomedical research (see section 3.1), projects have become closer to questions relating to improved implementing of health services.

The majority of respondents concluded that there was a good coverage of priority health issues for developing societies although – due to limited resources – there are some gaps. One interviewee pointed out that the portfolio reflects rather the strength of British researchers than being based on priority issues from developing societies. On the contrary another respondent indicated that the portfolio and MRC research more broadly matches the priority health issues as it tends to be driven by need and research areas are picked up "on the ground". It has also been acknowledged that health priorities are constantly shifting and that relevant geographical differences do exist.

Interviewees pointed out that MRC is well positioned to address infectious diseases, particularly HIV and malaria and that much of its global health research is targeted towards Africa. MRC monitors the board portfolios on a regular basis, identifies gaps and subsequently addresses them. Recently this was the case for neglected tropical diseases where a highlight notice has been issued by MRC to the research community to trigger more proposals covering this area. The need for more neglected tropical disease research was supported by interviewees. Other areas where interviewees saw the need for more attention and funding – either from DFID or MRC or both – were:

- Non-communicable diseases (NCD)
- Health systems research
- Capacity building
- Inclusion of people affected by poverty in middle income countries

Several actions to address those gaps have already been initiated. MRC has been supportive in including NCDs in their global health portfolio. However NCDs are not in the core interest of DFID and therefore not included in the Concordat portfolio. DFIDs objective "is to produce high quality evidence that improves the health of the poorest people in developing countries"[9]. Whilst NCDs are becoming more apparent in developing countries, it is often not the poorest who are facing these issues. Many interviewees though highlighted the importance of ensuring the coverage of such type of research and also extending research to lower middle-income countries were the societal gap is widening. Certain aspects are also a major problem of the poor (e.g. smoking or indoor smoke from burning biomass).

To expand health systems and health service research has been a clear stated target of this Concordat. Interviewees highlighted the importance of health systems and service delivery research and have also acknowledged that there are efforts under way to support health systems research under the Concordat. At the same time the MRC project management database indicates that projects focussed on health systems research have not been funded. Though it should be noted that some recent funding decisions (e.g. the "Bachman trial" or the "STRETCH trial") are not included in the projects reviewed as funds have thus far been committed but not yet executed.

Some interviewees stated that MRC boards could not adequately address this research area with the same scientific rigour as is done with biomedical research. Hence a dedicated/tailored panel would need to be convened and more social scientists would need to be involved.

Although health systems research as well as health service delivery research have specifically been mentioned in the agreement between DFID and MRC, progress has not been as fast as anticipated. Given the challenges outlined above various recent initiatives involving MRC, DFID and other funding bodies (i.e. Wellcome Trust or Social and Economic Research Council (ESRC)) have been launched to combine efforts to strengthen health systems research as well as health service delivery research. On the basis of its importance for developing societies, this research area should get increased attention under the Concordat and funding should be made available for specific projects in the near future.

3.2.3 Products from the Concordat

Fourteen products/inventions have been registered for the time period 2007 – 2010 in the MRC e-Val system for the Concordat, specifically six therapeutic interventions regarding drugs, four therapeutic interventions regarding vaccines, two preventive interventions regarding physical/biological risk modification and one preventive interventions toward nutrition and chemoprevention plus a support tool for medical interventions. Seven of those products were in early clinical assessment, five in initial development, one in refinement and one under large scale adoption. Three products have actually been registered under one project.

Examples of such products are:

- More rapidly fungicidal amphotericin B-based antifungal regimen
- Test for FIV neutralizing antibodies
- Therapeutic immunomodulation in HIV-1 infection

Overall the information on products is condensed so it is difficult to judge the novelty and relevance of products on a wider scope. Interviewees also mentioned several "products" from projects mainly relating to vaccine developments (e.g. pneumococcal or HIB vaccine).

[9] Programme Document: Generation of New Knowledge Relevant to the Health of Poor People – DFID/MRC Arrangement 2008-2013.

3.2.4 Project Management and Monitoring

Under the current Concordat there are no specific benchmarks agreed on between DFID and MRC for achievement, no specific requirements regarding how Concordat success is to be measured and no specified logframe. The MRC e-Val is therefore the main system of MRC to assess project results and output also for Concordat-funded projects.

Indeed, in 2009 MRC introduced the e-Val-system[10] as an internal performance monitoring and evaluation tool. As an internal system of MRC it offers the opportunity to capture research findings at different stages of projects.

MRC asks primary investigators on an annual basis to update project information data in the e-Val system at least for five years after the finalisation of a project. As the e-Val system has just been introduced in 2009 and most awards run over several years, it must be expected that currently the whole range of outputs is not yet captured within the MRC e-Val system.

MRC e-Val is the main monitoring instrument for a significant proportion of awards. At the end of a project, principal investigators provide MRC with a final report, which also covers aspects such as compliance with policies and regulations such as open access publication. If MRC is about to renew an award, MRC requires the principal investigator to submit an interim report of past progress. Further funding is based on an assessment of this in combination with the future proposals.

For specific strategic schemes including clinical trials (and ARL) there are more intense monitoring/reporting activities. For example definitive (late phase) clinical trials have an annual reporting scheme in addition to MRC e-Val. Early phase clinical trials are operated on a "milestone approach", meaning progress and results are reported with every milestone reached.

Outcome monitoring of the projects is seen as an area for improvement by many key informants. Whilst many recognised that the MRC e-Val system is operational and has achieved quite high response rates, it was seen that MRC e-Val holds further potential to encourage the use of research findings (e.g. through a thorough follow up on the information that is entered and how this could be further disseminated (also see section 3.4.3)). And although MRC e-Val is primarily an internal system, it could be extended for the Concordat projects to include some specific variables (e.g. outcomes of importance to developing countries).

Another critical aspect concerns the interface between the project management system and MRC e-Val. Information stored in one database is not necessarily reflected in the other database leading to potential data inconsistencies. Whilst co-investigator information is captured in the project management system shortly after funds have been awarded, MRC e-Val collects information on collaborators, without specifying what exactly a collaborator is. Consequently data is incomparable. Further, neither system captures information on co-investigators' roles compared to what had originally been proposed or their contribution in research outputs beyond publications. Another relevant aspect concerns the start and ending dates of projects which are not congruent between both systems.

The review team recognises that there are possibly several issues with data confidentiality that need to be taken into account when connecting both systems but also acknowledges the importance for the Concordat to monitor the role of co-investigators from developing countries more closely. More generally, the evaluators see the need to align the two systems to avoid differences in the data.

In short, monitoring systems at MRC level are in place. However, they do not allow monitoring the contributions of co-investigators and collaborators beyond publications. This is only done for strategic awards. Research outcomes (on short- or long-term) are captured but

[10] The e-Val survey covers the following topical areas: Publications, Collaborations and partnerships, Further funding, Next destination and recruitment , Dissemination of research findings to non-academic audiences, Influence on policy and practice, Research materials, Intellectual property and licensing, Products or intervention, Spin outs, Awards and recognition, Other outputs and knowledge

might need targeting towards more implementation aspects of the Concordat (see section 3.4.3). To improve this DFID might have to consider earmarking certain amounts towards outcome monitoring.

3.3 Partnerships with developing country partner(s)

3.3.1 Involvement of partners from developing countries

MRC collects information on principal investigators and proposed co-investigators at the time of application submission through the project management database. Co-investigators are recognised as team members who bring a substantial intellectual expertise or skills input to the specific project and are listed in the project proposal. Information on collaborators is collected retrospectively through the MRC e-Val system and refers to partners which contributed in various ways to the project or project results[11].

Co-investigators

In total 230 co-investigators have been identified within the portfolio[12] whose addresses were registered in 27 countries.[13] 31% of projects (67 out of 216) actually had a co-investigator. Of the co-investigators 15% have been based in a lower income country (see Table 5)[14].

The number of co-investigators per project ranged from 19 to only one co-investigator (see Table 6, though the majority of researchers were working only for a single project.

Table 5: Location of co-investigators of the Concordat

Location*	Nb. of co-investigators	%
Lower income Countries	35	15
Lower-middle income countries	9	4
Upper-middle income countries	10	4
Upper income countries	175	76

Source: Project Management Database; one co-investigator not assigned to a country and is therefore not included

* Classification according to: http://data.worldbank.org/about/country-classifications/country-and-lending-groups (access: 17 January 2012)

Table 6: Number of co-investigators per project under the Concordat

Nb of co-investigators/project	Nb. of projects	%
1 co-investigator	15	22%
2 co-investigator	16	24%
3 co-investigator	10	15%
More than 4	26	39%

Source: Project Management Database

[11] E-Val specifies: "Tell us about any new or existing collaboration that has resulted in new outputs and/or impacts from 01.01.2006 onwards; bi-lateral or multi-lateral partnerships; agreement to participate in a network, consortium, multi-centre study or other".

[12] Information on co-investigators was only available for G-Projects but not for U-Projects, leading to a likely underestimation of co-investigators.

[13] One observation was not attributed to a country.

[14] The co-investigator database does ask for the registered address rather than the nationality.

Within the MRC funding mechanism, awards are administered via the principal investigator's UK institution that is then responsible for financial and technical arrangements with co-investigators. The role and funding allocated to co-investigators is considered during the scientific review process although there is no standardised set of criteria that needs to be taken into account. The monitoring systems in place at MRC level do not collect further information regarding the co-investigators, particularly no further information regarding the share of the total funding allocated/earmarked to co-investigators nor information on their contribution in terms of content beyond publications.

Collaborations

At the time of the review, a total of 410 collaborations have been entered in the MRC e-Val system for 94 projects, 43% of the overall Concordat portfolio. This percentage must be seen in the light of the MRC e-Val completion rate of 72% of Concordat projects (see also section 2). Further, the definition of what constitutes a collaboration is relatively vague and thus different persons may have a different understanding on what constitutes a collaboration[15]. Of the 410 collaborations listed under the Concordat's portfolio, 80% (n=328) were still active at the time when data was gathered through the MRC e-Val system in 2010.

Table 7: Location of collaborators of projects funded under the Concordat

Country of collaborator	No. of collaborator	Percentage
Europe	218	53%
Africa	69	17%
North America	42	10%
Asia	37	9%
Global	23	6%
South America	8	2%
Australia/ Oceania	7	2%
n/a	6	1%

Source: MRC e-Val system

The number of collaborators per project varied between one collaborator for the majority of projects (n=36) up to 51 collaborators on a single project. The London School of Hygiene and Tropical Medicine was listed most often as an institution where collaborators were based (n=15), followed by the MRC National Institute for Medical Research (n=10) and the World Health Organization (n=10). Regarding their geographical distribution most collaborators are located in Europe, with 159 thereof in the UK (see Table 7).

Primary investigators had also been asked to detail in the MRC e-Val system whether the collaborator contributed financially to the project. The majority (72%) of collaborators did not make any financial contributions. A variety of non-financial contributions from collaborators have been listed ranging from technical, administrative and logistical support, to contributions to publications or capacity building and joint studentships to fieldwork management and provision of data. Many primary researchers acknowledged in MRC e-Val that the project would not have been feasible without the collaborators' contributions.

Results from the web-based survey conducted in the frame of this review indicated similar responses: 70% of those who responded reported that they involved developing country partner(s) in their research activity. 57% of primary researchers who involved developing

[15] See Footnote Nb. 9. E-Val gives some guidance to define what kind of collaborations should be entered. However on the basis of the complexity and the different perceptions a variety of aspects is likely to be included here.

country partners described that they also supported developing country partners financially ranging from 5% to 70% of the overall grant amount awarded by MRC. According to the respondents, the financial contributions were used in different ways, most frequently for capacity building and training measures, followed by human resource costs related to clinical trials, equipment and personal costs but also service delivery and data gathering.

Key informants emphasised in phone interviews that the involvement of local partners is crucial in understanding their health issues and encouraged early involvement. Involvement of local partners has also been described as being somewhat variable, while interviewees outlined that involvement for clinical trials has been very good. Conversely involvement of local collaborators in projects categorised as more basic research has been much lower. The role of collaborators has positively evolved particularly in Uganda and The Gambia where MRC maintains good infrastructure through its centres. The MRC Units themselves are good examples of a transition process that strongly increased the responsibilities of local staff. The units are currently directed by Africans and many head of programme or project coordinator positions are now filled with local staff.

To strengthen developing country partners' positions, some interviewees suggested that the involvement and the role of developing country partners should be assessed already within the proposal process and be monitored more closely (see also section 3.2.4). As indicated above, the role and funding allocated to co-investigators and collaborators is considered during the MRC scientific review process in the people and environment section.

This analysis shows that there is substantial involvement from developing country partners from around the world. However to a large extent cooperations are still rooted in Europe and developed countries, particularly the UK. Consequently continued attention should be paid to the involvement of partners from developing countries. Their involvement helps to set priorities from a developing country perspective but also increases in-country ownership and uptake of results. In addition more information is needed, for example through the MRC e-Val system, regarding their role; their contributions and their acknowledgment within the projects.

3.3.2 Capacity building

In the DFID Research Strategy capacity development is defined as “enhancing the abilities of individuals, organisations and systems to undertake and disseminate high quality research efficiently and effectively”[16]. Further differentiations are made between individual capacity building, which is targeted towards enabling individuals (e.g. via training or scholarships), organisational capacity development of research departments in universities, and institutional capacity building, which aims to address the underlying structures (e.g. incentive structure or regulatory context).

Capacity building has been a clear target stated in the MRC/DFID Programme Document and several positive achievements have been brought to the evaluators’ attention. These efforts and mandate of the Concordat are principally visible through:

- **MRC units in The Gambia and Uganda:** For the past few years the units in The Gambia and Uganda have been led by African directors. Furthermore, a substantial shift from UK to African senior scientists can be observed. MRC considers the units in The Gambia and Uganda as national entities related to research network in the two respective countries, although core funding comes from the UK and to a substantial part from the Concordat. Capacity building in these units has been a sustained effort which is now showing success. MRC and their two units contribute to individual capacity building through supporting junior scientists within regional network activities, their Master or Ph.D. studies and through scientific career opportunities for senior researchers.

[16] DFID (2010): Guidance Note on Capacity Building. Pg. 2

- **The African Leader Scheme:** The African Leader Scheme has been mentioned frequently by interviewees as an encouraging example of capacity-building measures conducted through the Concordat. So to overcome barriers for an academic career in Africa, the African Leader Scheme offers five years of support to selected senior researchers. The scheme allows outstanding researchers to conduct research, establish a research group and to foster their networks for future funding. MRC and other funding agencies anticipate that the scheme promotes the independence of the researchers and strengthens their physical infrastructure, the organisation per se and partnerships between the north and south.
- **EDCTP**: EDCTP's core activity is to support clinical trials but linked to this are specific work packages which cover networking and capacity development. EDCTP sees the possibility of sustained capacity strengthening through site infrastructure upgrades, short-term training, Master and Ph.D. studentships and post-doctoral fellowships. Through networking and coordination of African national programmes, in-country links are also secured. EDCTP aims to ensure that the developed capacity is optimally utilised to conduct clinical trials in a sustainable way[17]. More critically, one respondent pointed out that EDCTP efforts for capacity building are out of balance and that too much weight is given to this aspect.

In practice the capacity building responsibility is delegated to primary investigators without imposing direct formal funding requirements. At the research proposal stage, capacity building is an aspect that should also be outlined in the proposal but there are no criteria at hand on which basis to judge proposed capacity building activities. It has been emphasised that for certain types of projects (e.g. multi-centre clinical trials) capacity building is easier as various institutions are involved directly in the research. Knowledge and technical transfer then often happens through UK scientists who are based locally.

Researchers have criticised that it is very difficult in the UK to obtain research funding for capacity building if it is not within EDCTP projects. MRC encourages capacity building within research projects but does not support capacity building with (large) financial contributions. The main reason given for this is that MRC's prime mandate does not focus on capacity building but on research funding.

An issue raised by interviewees relates to the funding balance between the different types of capacity building. Generally there are more opportunities for individual capacity building although its sustainability was often questioned because of the potential for "brain drain". Funding for organisational capacity building is rare although considered key for a long-term institutional impact. Informants emphasised that researchers need functional infrastructures, institutions and mechanisms to retain people and reward quality research in order to build long-term capacities.

As a more general obstacle, the lack of post-doctorate career perspectives in Africa has been identified by quite a few interviewees. The lack of job security for mid- and top-level scientists puts research centres and universities in danger of losing excellent staff. Often these researchers sign contracts with competitive employers in- but also outside the country. One interviewee suggested that buffer funds could be used to cover the time between projects to ensure job stability for African researchers. MRC currently seeks to address these issues with the African Leader Scheme but it was suggested that this program would need extension. Ideas ranged from scattering support along the career path to supporting university departments or research institutions directly instead of supporting individuals.

Summarizing the above, capacity development is encouraged by MRC. Whilst most capacity development focuses on individual aspects, there are a few examples (e.g. MRC units in The Gambia and Uganda, the African Leadership Scheme and EDCTP) where capacity building is undertaken on a wider organisational or even institutional level. Capacity building within

[17] Source: http://www.edctp.org/The_Organisation.724.0.html (access: 27 January 2012)

regular projects remains vague with comparatively little emphasis given to organisational and institutional aspects. This is understandable given the prime mandate of MRC and limited financial resources available for capacity development as well as respective roles which would allocate larger organisational and capacity investments as the task of DFID or another funding body. Nevertheless capacity building, especially those relating to organisational and institutional aspects, may be considered to be taken up in future through a more standardised/explicit approach.

3.4 Strategic Aspects of the MRC/DFID Concordat

3.4.1 Visibility of the MRC/DFID Concordat

Overall the visibility of the Concordat is rather low. In fact the web-based survey and interviews indicated that many primary investigators are unaware of the Concordat. Many investigators were even surprised that one of their projects is or has been funded under the Concordat. Primary investigators could often not establish a link between the goal of the Concordat and their MRC-funded project. This low visibility is deemed critical by the evaluators although it might not have been the primary intention of the Concordat.

First researchers' awareness of the Concordat and its purpose is essential to stimulate research proposals that are targeted under the Concordat. If researchers actually think that MRC's primary focus is to fund biomedical research, this might lead to a bias in research proposals received or the weighting of different aspects within proposals. Second, researchers' awareness of Concordat funding might also guide their way and their perceptions on how to disseminate research findings and the relative importance of promoting results to influence policy and practice. Lastly, it is a valid request that DFID's contribution as a research-funding body becomes more apparent and marketed, for instance through information to primary researchers and acknowledgement of the Concordat or DFID in publications.

Beyond the role of primary researchers, many key interviewees have also been unaware of the Concordat or at least unaware of the spectrum of the Concordat portfolio. In fact, during its interactions the review team has been asked several times to provide more detailed information on the Concordat. Other interviewees admitted that – after being asked if they were willing to be interviewed – finding information on the Concordat was rather difficult, particularly when attempting this through the Internet. This visibility problem existed across all four groups of interviewees with the exception of key DFID and MRC persons. Interviewees highlighted the importance and also their interest in knowing more about the Concordat and DFID's specific interests.

In addition neither DFID's nor MRC's Annual Report 2010 acknowledge the Concordat as such, although MRC does acknowledge DFID's role in specific initiatives and clinical trials that are administered under the Concordat.

More attention should be paid to the visibility of the Concordat and the effective communication and marketing of DFID's contribution. The interest of both institutions to fund projects towards more applied and implementation research concerning the priority health issues of developing countries should be marketed thereby bringing good publicity to both institutions.

3.4.2 The role of Global Health Group and the Concordat within MRC

The Global Health Group has helped and continues to help to increase in-house recognition and support the broadening of MRC's portfolio of problems pertaining to developing countries. Its group members represent a wide range of interests and competencies. DFID is also represented in the group along with at least three members from developing countries. Interviewees considered the work of the Global Health Group as very good, although a greater interconnection of boards and groups would be welcomed. The Global Health Group is fur-

ther represented on the Strategic Board of MRC where it takes the opportunity to influence the broader strategic framework of MRC.

MRC's strategic framework 2009-2014 aims to accelerate progress in international health research by – among others – supporting global health research that addresses the inequalities in health which arise particularly in developing countries. It is further stated that in the future MRC aims to help governments improve the ability of their health systems to deliver effective interventions and care, ensure that the outputs of research can influence policy and practice and determine how health systems can best cope with the already overwhelming burden of infections and the additional burden of non-communicable diseases that are yet to come. MRC also declares clearly that it aims to address problems in health inequality[18]. MRC's current strategic framework is clearly committing to global health and addresses in many ways DFID's interests.

Within MRC, DFID's contribution to the Concordat supports the relative importance of global health. Interviewees agreed that if there would be more financial contributions from DFID, more projects would be funded that are in DFID's interest. However, although DFID's financial support to the Global Health budget is substantial, its overall contribution to MRCs research grant budget (approx. £249 million[19]) is comparatively small. Some hypothesised that if DFID were to stop or reduce its contribution, MRC would concentrate more on its core mandate in supporting biomedical basic research and possibly phase out engagement in developing countries.

Interviewees highlighted that communication and regular exchange was seen as the best way for DFID to see its interests and strategic priorities represented. Currently most communication goes through management, but board members emphasised that they would welcome a closer interconnection between the boards and DFID to gain a better understanding of DFID's research priorities. In fact many said that they are actually unaware of DFID's priority criteria. More transparency would therefore be helpful.

Overall DFID's contribution is valued and MRC boards are trying to take DFID's research interests – to their best knowledge – into account, although this is not the sole determining factor.

3.4.3 Dissemination of Results

The dissemination of research results to non-academic audiences is another aspect that is covered through the MRC e-Val system. In fact researchers entered more than 268 occasions of dissemination activities. These activities were distributed across 78 projects.

Table 8 shows the different dissemination and communication choices researchers take for different stakeholder groups. In more than 50% of occasions researchers disseminated research results via face to face interaction and presentations or via formal working groups and expert panels.

Primary investigators targeted their dissemination approach to different (stakeholder) groups. Health professionals have been most often been targeted via talks or presentations and the media through press releases. Participants in research, as well as policymakers and parliamentarians, were mostly informed through working groups or expert panels.

To assess mechanisms of dissemination interviewees had been asked several questions. There was a general agreement that the dissemination of research results is foremost and primarily regarded as the responsibility of researchers. There was also a general agreement that for researchers publications remain the most important and most often used mode for dissemination. A few interviewees assumed that for many researchers dissemination stops

[18] MRC: Strategic Framework 2009-2014; Goal 3.

[19] Medical Research Council, Annual Report and Account 2009/10, pg. 83

here. Whether research findings are then taken forward depends on intermediate bodies – policymakers or others – although from MRC there is an implicit expectation that researchers connect with policymakers directly. Many respondents described that researchers are often not communication professionals, their messages are often too detailed and specialised, they lack the time to maintain continued relations with policymakers and are not always well informed about political agendas and stakeholder groups.

Table 8: Method of choice for dissemination by stakeholder group

	Stakeholder group						
Method of communication	Health professionals	Media	Research participants & patients	Policy-makers / parliamentarians	Public/other audiences	Schools	Total
Via talk or presentation	47%	4%	20%	34%	39%	35%	35%
Via formal working group or expert panel or similar	36%	4%	28%	43%	9%	-	21%
Via a press release, press conference or response to media enquiry	4%	83%	8%	-	19%	-	16%
In a magazine, newsletter or online publication	7%	8%	8%	14%	21%	6%	13%
Though participation in an activity, workshop or similar	7%	-	24%	9%	9%	53%	12%
Through participation in an open day or visit at my research institute	-	-	12%	-	3%	6%	3%
Total	**100% (n=73)**	**100% (n=24)**	**100% (n=25)**	**100% (n=35)**	**100% (n=94)**	**100% (n=17)**	**100% (n=268)**

Source: MRC e-Val system

Most interviewees were not aware of mechanisms within MRC to support dissemination although it was acknowledged that this has come more into focus. Hence researchers were unaware that there is a MRC communications support team that can be called upon when needed[20]. Similarly MRC's best practice examples (e.g. the Alexander Fleming award) are largely unknown. Informants were not aware whether or not DFID actively disseminates research findings from the Concordat.

It was concluded that dissemination and communication is actually handled in a sub-optimal way within the Concordat and that there is room for improvement. One suggestion was to involve intermediate bodies (e.g. charities with a specific mandate for dissemination and knowledge management).

[20] The team provides support for targeting communication materials. However capacities are limited and often this is only done for a few major research outcomes.

3.4.4 Influence on Policy and Practice

The relationship between research, policy and practice is complex and often not straightforward. In many instances, there is a substantial time lag between the generation of research findings and their uptake in health service or in a health systems context.

Although several obstacles had been mentioned regarding the dissemination, most respondents explained that there have been remarkable achievements in policy and practice. Many researchers saw quite an impact of research outcomes although they felt uncomfortable to link this to the Concordat alone. Impacts on policy were seen in the area of intervention research (e.g. vaccines, paediatric WHO treatment guidelines). The DART and ARROW trials have particularly often been cited, but also other trials (e.g. FEAST) were mentioned. EDCTP trial results have also been seen to influence changes in health.

A total of 112 policy influences have been entered into the MRC e-Val system[21]. In their geographical extent where this policy or practice was implemented, international/multiple countries (n=44) was most often indicated, followed by the UK (n=40) and Africa (n=18). It must be noted, that policy influence implemented in the UK are to some extent irrelevant to the health of developing societies (e.g. influence on National Institute of Clinical Excellence (NICE) guidelines). Policy influences with measurable endpoints (e.g. changed national strategy documents such as treatment policies) are relatively rare. The evaluators though tried to validate a few of these indications and found limited evidence as it is often not clear whether the citation was referenced to the project or a publication or the primary investigator. Other influences through memberships or participations are even more difficult to measure.

Various success factors have been identified: Early partnerships were seen as being essential. One respondent said that the leverage of research results was good in The Gambia unit where private sector connections and charities are involved. He saw that this involvement optimised the leverage of findings. EDCTP confirmed that a stronger involvement of the private sector gives great opportunities to leverage research findings although in the past market uptake was rather slow.

Table 9: Policy influence over the years

	2006	2007	2008	2009	2010
Influenced training of practitioners or researchers	6	3	2	3	1
Citation in clinical guidelines	3	1	1	2	-
Citation in clinical review	-	-	1	-	-
Citation in other policy documents	-	1	2	2	1
Citation in systematic reviews	-	-	-	1	1
Membership of a guideline committee	1	3	5	5	1
Participation in a national consultation	2		1	4	1
Participation in an advisory committee	8	7	11	16	11
Gave evidence to government review	1	-	2	1	1
Total	**21**	**15**	**25**	**34**	**17**

Source: MRC e-Val system

[21] Please note: Activities may have happened over several years so they have been counted several times. Also one project outcome might have influenced several policies.

MRC also organises exchanges with policymakers. It stands in close contact with other agencies and institutions that might be particularly interested in research findings but there are many more opportunities to convey research outcomes which are not systematically used. Although intermediate bodies are closely following the research outcomes, there are no formal and direct mechanisms to carry research findings forward.

There are positive examples that show that there is influence on policy and (clinical) practice through the Concordat. Nevertheless respondents saw the need and potential to handle this area better and to map research findings more closely to stakeholder groups. A way forward could be a more thorough dissemination outline at proposal stage, although researchers would probably have to get external expertise for outlining this. In fact many researchers would welcome this expertise for dissemination but do not have the financial possibilities. MRC-funded researchers or MRC representatives are often board members or sit on panels and have excellent opportunities to influence policy and practice. Hence a more structured approach needs to be established to improve the effectiveness of such opportunities and/or to monitor this closer. Options need to be considered on how to improve dissemination but also how to monitor uptake of research findings. This should be done together with DFID.

3.5 Collaboration between DFID and MRC

The administration of the Concordat between DFID and MRC has been described by both sides as being uncomplicated, open and constructive. Regular, quarterly meetings between MRC and DFID officers are held. Here strategic priorities are openly discussed and developments in the current portfolio are decided. It has been explained that the relationship between both institutions is trustful. DFID feels that MRC is highly cooperative in providing information (e.g. to parliamentary requests) and representing DFID's interests externally (e.g. representation of DFID's interest in negotiations with EDCTP). MRC has also shown flexibility in adapting to DFID interests and extending their primarily basic research-orientated approach to include more applied research and has developed a set of criteria to ensure that projects undertaken with Concordat funding are addressing priority health issues and/or are undertaken in developing countries (see also 3.1). Currently DFID has a member on the strategic MRC Global Health Group and therefore also takes the opportunity to represent DFID interests in a major body of MRC. It has been emphasised that this is an excellent arrangement as DFID can actively participate and communicate their interests.

The current Concordat is steered by a Memorandum of Understanding between the two parties entitled “Generation of New Knowledge Relevant to the Health of Poor People – DFID/MRC Arrangement 2008 – 2013” outlining conditions for funding, budget and payment schedule, accounting and reporting standards.

A minor administrative difference between MRC and DFID was reported. MRC Boards operate through commitment budgets which are agreed upon each year on ‘likely’ demand and fund availability. Boards agree to support a research proposal and commit full funding to it. A lag period then follows until the research actually starts and spend is incurred. MRC then reports to DFID, who account on ‘actual spend’ on projects. This can lead to a lag between the priority agreement and research spend in any area.

Currently all DFID funding goes directly to the funding of research activities whilst MRC manages the portfolio and bears a majority of the administrative costs. It has been mentioned that this arrangement is feasible but if DFID were to increase its contribution to MRC funding than a discussion should take place regarding a new allocation pattern taking administrative efforts into account. This was also acknowledged from DFID.

The Memorandum of Understanding details that MRC has to submit “annual written reports in April each year of its activities and progress against the Project logframe (including a report of activities and progress of EDCTP)”. To the evaluators knowledge information concerning the Concordat portfolio and spending are submitted to DFID at least on a yearly basis and DFID can suggest adjustments to the inclusion of certain projects. The reporting cur-

rently fulfils the expected information DFID requests. On the basis of documentation that is available, the evaluators cannot track reporting against a logframe.

Overall both parties emphasised the perceived benefit and quality of the Concordat to the research community but also for the interests of both institutions. The administrative handling appears to be straightforward. On top of that the Concordat provides good value for money:

- The administrative efforts stay within the regular board assessments and therefore – up to date – no additional efforts are required.

Researchers receive "service out of one hand" as one institution administers funding for different types of research and different target groups integrating different aspects (e.g. research outcomes and capacity building) thereby leveraging synergies that might not be as developed if funding were to come from different funding agencies.

3.6 International Perspective on MRC/DFID Portfolio

The reputation of UK institutions is valued highly as are the projects funded through MRC as well as under the Concordat. This assessment was supported by international key informants and who felt that the British history of long involvement with developing countries is the reason for a strong commitment and high excellence in development research.

Global health research supported in the UK was compared most often to research in the US. Most respondents agreed that there were remarkable UK achievements in research quantity and quality that is conducted under the lead of UK institutions particularly when taking into account the different research budgets. For instance it has been stressed that obtaining large grants for clinical trials in the UK is more difficult than in the US.

Moreover it was described that the UK improved its visibility within the research community and with policymakers although recognition in-country is in the experience of some still low. This was also regarded as a major difference between the US and the UK, as the US was generally perceived to be more outgoing about their contribution in their efforts to actively market results and influence local policies. Another respondent hypothesised that if the UK was visible on the ground they have a very good reputation for valuing the integration of local participants.

UK researchers contribute substantially to improving the scientific base of global/international health, either be it through clinical trials or EDCTP match funding. Particularly UK's commitment and the role in EDCTP funding were highly valued. The African-led MRC research units in Uganda and The Gambia have brought considerable attention and they have been referenced several times as "best practice". The units are locally well managed with high research output and with improved in-country networks to universities and policymakers.

Another observation that has also been mentioned several times in positive but also in a more critical light is that the UK is very good in supporting British research institutions and researchers.

Research conducted in the UK but specifically funded through MRC has a high reputation. Respondents felt unable to distinguish specifically the reputation that might be traced back to the Concordat. However there was overall agreement that the Concordat helps to sustain the excellence and brings substantial recognition to DFID as a research-funding body.

4 Conclusions and Recommendations

Through a review of background documents, the analysis of data extracted from MRC management and information system, especially the MRC e-Val system, a web-based survey among investigators funded under the Concordat and telephone interviews with key informants representing different stakeholder groups, this review aimed at assessing the effectiveness and value for money of the DFID/MRC Concordat as a means of supporting the generation of high quality scientific knowledge relevant to the health needs of developing countries. Projects considered in this analysis are only those that have been live (incurred spend) between 2006 and 2011 and does not cover more recently awarded (not as yet live) projects.

Seven main conclusions emerge from the present review:

- The Concordat portfolio has produced high quality and internationally recognised research which has influenced policy and practice to the benefit of people living in developing countries. Projects funded under Concordat since 2006 resulted in 1,457 publications, many of them in high-impact journals.
- The Concordat mechanism ensures “service out of one hand”: one institution administers funding for different types of research, different target groups and integrating different aspects (e.g. research outcomes and capacity building) thereby leveraging synergies that might not be as developed if funding was distributed by two different funding agencies.
- The portfolio has over recent years shifted away from basic research conducted solely/largely in the UK towards research that focuses on health issues from a developing country perspective and that utilises local resources and has taken a more comprehensive view integrating strategic initiatives (e.g. clinical trials or the African Leadership Scheme) as well as project-specific funding under one scheme. 83% of the Concordat portfolio 2010/11 supports projects conduced largely in a developing country and addressing health needs of developing countries.
- Albeit the DFID/MRC Concordat agreement emphasises the importance of health service and health systems research, yet no research activities in this area had started within the spending period to date. Recent strategic initiatives, supported by both MRC and DFID, offer an opportunity for increasing the focus of the Concordat’s portfolio on health service delivery research as well as health systems research.
- The organisations give relatively little attention to the Concordats visibility and the effective communication and marketing of DFID's contribution as well as their interest in funding projects towards applied and implementation research.
- Monitoring systems are in place. MRC e-Val captures research outcomes whilst the project management database covers information on administrative aspects. Neither of the two databases allows for monitoring the financial allocations to and contributions of co-investigators to specific research outcomes beyond publications. The interconnection of both databases is not well developed.
- Both the dissemination of research outcomes and capacity building are emphasised in the 2008 – 2013 agreement between DFID and MRC, but remain relatively vaguely defined and monitored as standardised criteria are not available.

The Concordat maintains a very productive and successful research funding portfolio which has impacted several policies to the benefit of people living in developing countries. It builds upon a mutual commitment of both institutions to support high quality research. The relationship between both institutions has been described as very cooperative and trustful. The Concordat serves in many ways as a best practice example for institutional synergy leverage.

In the light of the positive conclusions of this review, no need for major modifications in the scope and functioning of the DFID/MRC Concordat emerge. The review however reveals that DFID and MRC may consider the following aspects for further optimising the Concordat:

Administrative coordination

- Review project selection criteria of projects funded under the Concordat on a regular basis (e.g. every five years) and if necessary sharpen the Concordats' profile further through clear priority setting.
- Improve the Concordat Agreement between MRC and DFID by detailing expected targets, their measurement and the source of information more explicitly and enforce a jointly agreed upon logframe to regularly monitor progress against benchmarks.
- Keep administrative costs for coordination between DFID and MRC low. In case the Concordat budget is increased, a part of the DFD funds may be needed for covering administrative costs of MRC or for covering specific areas of interest to DFID (dissemination of research findings to policy and practice).

Visibility of the Concordat

- Increase visibility among researchers of the Concordat by acknowledging DFID's contribution and the project's inclusion in the Concordat portfolio. Encourage researchers to acknowledge DFID and the Concordat's financial support in publications.
- Proactively communicate the goal and objectives, as well as priority areas of the Concordat, to MRC boards and groups. Facilitate exchange between MRC boards and DFID.
- Promote information on the Concordat, its priority areas and the partnership between MRC and DFID within the research community. Increase public relations of the Concordat (e.g. Internet presence and presentation in annual reports).

Relevance to developing countries

- Position the Concordat to include evolving topics (e.g. non-communicable diseases) and how to proceed with research areas that did not yet get sufficient attention, especially health service delivery and health systems research.
- Explore how to encourage submissions of proposals which are targeted towards priority areas and which are of more implementation, down-stream nature.

Involvement of developing country partners / monitoring

- Evaluate the role of co-investigators and collaborators and their contributions during the project beyond publications. Define DFID and MRC's expectation on the integration and role of partners especially from developing countries.
- Adjust MRC e-Val to include a few specific variables on aspects DFID is interested in (e.g. measure research output targeted towards global health aspects). Increase the monitoring of information that is collected through MRC e-Val.

Dissemination of research findings / capacity building / monitoring

- Provide support (internal or external) for the dissemination of research results towards policy and practice. Establish standard procedures to investigate whether projects funded under the Concordat can be carried forward towards practice.
- Increase information exchange on research findings to support combined institutional efforts for dissemination and policy influence.
- Define expectations and position the Concordat towards how capacity enhancement can be supported financially and how dissemination of research results can be encouraged.

Establish a set of measurable core values to assess the scope and success of capacity building as well as the impact of research findings on policies.

Appendix A: Terms of Reference

The objective of the 2011 review of the MRC/DFID Concordat is to assess the effectiveness and value for money of the Concordat as a means of supporting the generation of high quality scientific knowledge relevant to the needs of developing countries.

Based on the terms of reference the review addresses the following questions

1. Is the concordat mechanism producing high quality research outcomes relevant to the health needs of developing countries? In assessing this issue the following should be taken into account:
   - quality of science
   - relevance to the health of developing societies
   - how the countries themselves are involved
   - research capacity building
   - country level demand for research and usage of results
   - the balance of risk
2. Are DFID and MRC's health research priorities being met effectively through the Concordat mechanism?
3. How does DFID funding influence the strategic decision making and priority setting of the MRC Global Health group and MRC more widely? If DFID decided to increase (or decrease) funding through the Concordat mechanism in the future, what likely positive and negative impact would that have on MRC, its funding priorities, and MRC's own funding for research relevant to developing societies?
4. Are research findings funded through the Concordat taken forward by other to develop into actions/policies/products relevant to the health of developing societies? Are the mechanisms currently in place – for monitoring and evaluation, dissemination and uptake of these research findings – effective in developing societies and internationally? Are there steps that need to be taken to improve outcomes?
5. Taking into account the changing burden of disease in developing societies, is the balance of research right in terms if diseases/ conditions supported by the Concordat funding? Could this be improved and if so how?
6. Do DFID and MRC have a productive, effective and co-operative relationship? Are there ways in which it could be improved?
7. Although not a direct objective of the Concordat, does the joint working between DFID and MRC help to maintain the UK's reputation and international leadership in producing high quality research of relevance to developing societies? How?
8. Does the MRC provide efficient organization/management/administration arrangements to use the resources provided by DFID? Could resources be used better, or for additional or alternative research, and/or capacity building activities? Is the level of funding for administration costs appropriate?

Appendix B: Documentation

Appendix B.1: Documents provided by DFID and MRC

DFID/MRC	Memorandum of Understanding 2008 - 2013
	Programme Document "Generation of New Knowledge Relevant to the Health of Poor People – DFID/MRC Arrangement 2008 – 2013"
DFID	DFID Annual Report 2011, vol 1
	DFID Annual Report 2011 vol 2
	Operational Plan 2011-2015
	Business Plan 2011-2015
	DFID in 2009–10
	Guidance Note on Capacity Building
MRC	MRC Annual Report 2010
	MRC Strategic Plan 2009-2014
	MRC Delivery Plan 2011/12 to 2014/15
	MRC e-Val Question Set Issue 7.1
	Impact of MRC Research
	Outputs, outcomes and impact of MRC RESEARCH; Analysis of MRC e-Val Data 2010
	MRC Global Health Group report on strategic priorities for late phase clinical trials in HIV interventions

Appendix B.2: List of key informants[22]

DFID and MRC representatives concerned with strategic, technical, administrative and financial management of Concordat
Dr Sue Kinn, Research Team Leader, Department for International Development UK
Malcolm McNeil, Senior Health Adviser, Department for International Development UK
Jim Keery, Deputy Programme Manager, Department for International Development UK
Chris Whitty, Chief Scientific Advisor/ Director Research & Evidence Division, Department for International Development UK
Dr Mark Palmer, Head of International Strategy, Medical Research Council UK
Dr Morven Roberts, Programme Manager for Global Health & Trials Infection and Immunity Board, Medical Research Council UK
Professor Pontiano Kaleebu, Director MRC/UVRI Uganda Unit on AIDS Research, Medical Research Council UK
Professor Diana Gibb, MRC Clinical Trials Unit (London), Medical Research Council UK
Board members of the MRC Global Health Group
Professor Sir Andy Haines, Chair of MRC Global Health Group (outgoing), London School of Hygiene and Tropical Medicine
Professor David Lalloo, MRC Infection and Immunity Board member; Global Health Group member, Clinical Research Group, Liverpool School of Tropical Medicine
Professor Stephen Holgate, Chair MRC Population and Systems Medicine Board, School of Medicine, University of Southampton
Professor Richard Hayes, MRC Infection and Immunity Board member, Professor of Epidemiology and International Health, London School of Hygiene and Tropical Medicine
Professor Graham Hart, Chair of MRC/DfID African Research Leadership panel; University College London
Collaborators/partner organisations in developing countries
Professor Kathryn Maitland, primary investigator “FEAST trial”, Imperial College London
Professor Heiner Grosskurth, previous Director of the Medical Research Council (MRC) / Uganda Virus Research Institute (UVRI) on AIDS, London School Hygiene and Tropical Medicine
Decision makers, key players in international health research and representatives from other European Research Councils and Development Agencies
Prof Hannah Akuffo, Chair of EDCTP General Assembly, EDCTP
Professor Charles Mgone, Executive Director, EDCTP

[22] It should be noted, that several key informants have been in the position of double-roles, e.g. primary researcher but also board member.

Appendix B.3: MRC/DFID portfolio 2006-2011

Project title	Cat.
e-Valuating different indices for monitoring temporal & spatial changes in malaria transmission & disease in the Gambia	1
Longitudinal and family studies of nutrition and health in rural Gambia - the Kaneba Cohort	1
Rapid e-Valuation of Biomarkers in Tuberculosis	1
Role of T-Regulatory Cells in Immune Reconstitution Inflammatory Syndrome	1
Social Science Programme / Social impact of the HIV epidemic	1
International Neonatal Immunotherapy Study (INIS)	1
Basic Science Programme / Research on ART resistance	1
Trial assessing impact of vaccination with a pneumococcal conjugate vaccine on nasopharyngeal carriage of pneumococci	1
Effects of antibodies on transcription levels of P. falciparum Rh and EBA erythrocyte invasion ligands	1
The urban obesity-diabetes syndrome in developing countries	1
Streamlining Tasks and Roles to Expand Treatment and Care for HIV	1
HIV/AIDS and well-being of children in sub-Saharan Africa: A cross-national comparative analysis	1
TRIM5a and HIV-2 infection: p26 genetic variability that may influence disease progression	1
Social Science Programme / Direct and indirect impact of HIV and AIDS on older people in Uganda	1
Social Science Programme / HIV Status Disclosure and Sexual Behaviour Study Project	1
HIV Care Research Programme / Entebbe Clinical Cohort Project	1
HIV Care Research Programme / Follow up of slow disease progressors and of individuals on long term ART	1
A randomised trial of monitoring practice and treatment interruptions in the management of antiret-roviral therapy in HIV	1
Clinical Research Studies in the UK and PNG	1
Molecular profiling consortium: biomarker identification and interaction analysis of EPI vaccines	1
Comparison of T lymphocyte kinetics in HIV-1 and HIV-2 infections	1
Prevention of maternal morbidity after caesarean section in developing countries: a factorial RCT of surgical methods	1
Neutralizing antibody responses in HIV-2	1
Prospective case-control study of systemic host molecular pathway responses in Gambian infants to pneumococcal pneumonia	1
Early life programming of chronic inflammation in young Gambian adults	1
Screening-homes to prevent malaria	1
Nutritional Modulation of Immunity and Infectious Diseases	1
Development of a multi-organ dysfunction scoring system to assess severity of illness in children with severe malaria	1
Optimizing antifungal therapy for HIV-associated cryptococcal meningitis in Africa	1
Can Indoor Residual Spraying provide additional protection against clinical malaria over current best practice?	1
Maternal nutrition fetal and childhood growth and programming of cardiovascular disease and type 2 diabetes	1
Effect of herpes suppressive therapy on HIV genital shedding among high risk women in Tanzania	1
A randomised trial of monitoring practice and pulse antiretroviral therapy in African children with HIV infection	1

Project title	Cat.
STI Research Programme / Studies on Human Papilloma Virus infection and Cancer of the Cervix in Uganda	1
Defining seroprevalence and correlates of protection for Neisseria meningitidis group A in the African meningitis belt	1
Nutrition and Bone Health Research: Diet bone health and osteoporosis	1
Understanding Health Promotion Prevention and the Treatment of Diabetes and Cardiovascular Disease in Kerala India	1
Combating Micronutrient Deficiencies in Poor Populations	1
Safety of discontinuing Cotrimoxazole Prophylaxis among HIV-1 infected patients on ART. A randomised controlled trial	1
The role of Regulatory T cells in the pathogenesis of HIV-2 infection	1
Hepatitis B virus (HBV) and Hepatitis C virus (HCV) Co-infection in HIV infected Gambians	1
Are simple and complex measures of access to the health system associated with under-5 mortality? A case-control study	1
Observational HIV Studies Programme in Rural Uganda / Clinical Cohort Project	1
Primary prevention of invasive cryptococcal disease using fluconazole prophylaxis in HIV infected Ugandans	1
Mwanza Intervention Trials Facility	1
Malaria specific memory B cells in malaria exposed individuals - Quantifying & Monitoring the kinetics & development	1
Basic Science Programme / Research aimed at designing an effective HIV vaccine	1
The Causes and Consequences of Residual Immune Activation in HIV-infected Children on ART in Resource-Limited Settings	1
China Cancer Trials (B13 B14)	1
Early-life programming of human immunity - studies in Bangladesh Finland & Pakistan	1
Maternal morbidity after caesarean section in developing countries: long term follow-up of a large factorial trial	1
KIR and HLA class I genetic variations in severe malaria caused by Plasmodium falciparum	1
Novel interventions in HIV-1 infection	1
Double blind placebo-controlled randomized trial of isoniazid for reversion of positive IFNg ELISPOT in TB case contacts	1
Epidemiological and statistical research on health problems of developing countries: MRC Tropical Epidemiology Group	1
Nutritional Genetics and Environmental Factors in Disease	1
Malnutrition and tropical gastroenteropathy in children in developing countries	1
Triple Therapy Trial	1
An investigation into the effects of Plasmodium falciparum infection on cellular responses to Epstein Barr Virus	1
Characterisation of T cells and antibody responses to Malaria cross - sectional survey comparing two areas	1
HIV Prevention Research Programme / Microbicide Effectiveness Trial	1
Intravaginal practices in Tanzania and Uganda: Relationships with the vaginal microenvironment HIV and other STIs	1
Sexual Health and Families Programme	1
A study of four markers of immune activation and disease progression: a comparison between HIV-1 and HIV-2 infection	1
Social Science Programme / Structural Drivers of the HIV epidemic	1

Project title	Cat.
Social Science Programme / Longitudinal study of Transition to First Sex in Rural South Western Uganda	1
HIV Care Research Programme / DART Trial	1
Observational HIV Studies Programme in Rural Uganda / General Population Cohort	1
HIV Care Research Programme / ARROW trial	1
Tuberculosis Treatment Trials	1
Transmissibility of Mycobacterium africanum compared with the 'Cameroon' strain of M tuberculosis	1
HIV/AIDS and Mental Health Project	1
Early-life programming of human immunity - Gambian studies	1
Investigating mechanisms of protective immunity against malaria	1
Carrying female adult filarial worms does not affect the isotype profiles of anti-malarial antibodies	1
e-Valuating the potential role of oral activated charcoal as an adjunct treatment for severe bacterial infections/malaria	1
Basic Science Programme / HIV dual infection studies	1
Malaria Parasite Prevalence at Three Potential Study Sites	1
Investigating the potential role of regulatory T cells in protection from severe malaria	1
Observational HIV Studies Programme in Rural Uganda / Paediatric Project	1
Tuberculosis Pharmacogenetics	1
Long term vaccine efficacy of hepatitis B vaccination of Keneba - Manduar residents	1
The Gambia Hepatitis Intervention Study	1
The role of Nef in chronic immune activation and the pathogenesis on HIV-1 and HIV-2 infections	1
Epidemiology of HIV-Related Immune Reconstitution Inflammatory Syndrome in sub-Saharan Africa	1
Aetiology of severe Pneumonia in Gambian children	1
Host determinants of malaria immunity and pathogenesis	1
Importance of parasitaemia in determining the longevity of antibody responses to Plasmodium falciparum antigens	1
Risk factors for severe pneumonia in Gambian children	1
Basic Science Programme / Rural Clinical Cohort Cellular Immunology Study Project	1
Oxygen in under-5 pneumonia: a participatory health needs assessment in preparation for an intervention trial	1
Efficacy of zinc as an adjunct therapy in the management of severe pneumonia among Gambian children	1
Regulatory T cells and BCG immunogenicity in early life	1
Molecular methods for anti-malarial drug resistance surveillance: evolution of CQ/pyrimethamine-sulphadoxine resistance	1
HIV Prevention Research Programme / Microbicide Effectiveness Trial	1
Social Science Programme / Living with anti-retroviral therapy: People®s adaptive coping and adjustment to living with HIV as a chronic condition	1
The influence of cytomegalovirus infection on the immune response to the measles vaccine	1
Efficacy of combination malaria vaccines in human volunteers	1
A strategy to immunize young infants against measles: phase I trials	1

Project title	Cat.
Erythrocyte invasion and merozoite ligand gene expression in severe and mild Plasmodium falciparum malaria	1
Social Science Programme / Gender and treatment seeking in Uganda	1
Intravaginal practices in Tanzania and Uganda: Relationships with the vaginal microenvironment HIV and other STIs	1
Two Dose E-Z Measles Vaccine Trial: Boosting Of Immune Responses In Bissau	1
Neutralizing antibody responses in HIV-2: role in disease progression and protection from subsequent HIV-1 coinfection.	1
Basic Science Programme / Molecular epidemiology of HIV infection	1
TB or not TB: Randomised controlled trial of tuberculosis treatment before anti-retroviral therapy in HIV patients	1
Interaction between live and killed vaccines: effect of DTP combined vaccine on T cell memory after measles vaccination	1
Social Science Programme / Community Attitudes to ART Study Project	1
Vaccine effectiveness of routine infant hepatitis B vaccination/hepatitis B vaccine impact under immunisation programme	1
Social Science Programme / AIDS and Identity in Uganda: The Needs of Individuals who Unexpectedly Tested HIV-Negative	1
CAIO HIV Sero-Survey 2006	1
The emergence and impact of HIV resistance-associated mutations under the public health approach to ART	1
Development of Mwanza Intervention Trials Unit as a centre of excellence in HIV/STI prevention research	1
Two Dose E-Z Measles Vaccine Trial: Boosting of Immune Responses	1
Randomised trial of fluid resuscitation strategies in African children with severe febrile illness & impaired perfusion	1
A randomised controlled trial of volume expansion with albumin or normal saline in children with severe malaria	1
Maternal nutrition fetal and childhood growth and programming of cardiovascular disease and diabetes in South Asians	1
Characterisation of mycobacterial immunity during progression to AIDS and reversal on ART	1
Calcium and bone health studies in The Gambia	1
e-Valuation of HIV-2-specific CD8+ T-lymphocyte phenotype and function in patients in West Africa	1
Social Science Programme / Social and economic aspects of HIV care and support	1
HIV Care Research Programme / Primary Prevention of Invasive Cryptococcal Disease (CRYPTOPRO Trial)	1
Translational Centre for Genomics and Global Health	1
STI Research Programme / □Good Health for Women□ Project	1
Social Science Programme / Social context of sexual partnerships among women at high risk in Kampala Uganda	1
HIV2 Specific CD4+ T Cells: Why are they preserved? A functional and phenotypic description	1
Differential gene expression of leukocyte subpopulations in severe and mild malaria	1
Pre-conceptual multiple micronutrient supplementation and placental function in rural Gambian women. An RCT	1
Basic Science Programme / DART Immunology Substudy Project	1
Primary prevention of invasive cryptococcal disease using fluconazole prophylaxis in HIV infected Ugandans	1
HIV control in a new era: Exploring the potential impact of alternative intervention strategies in Uganda	2

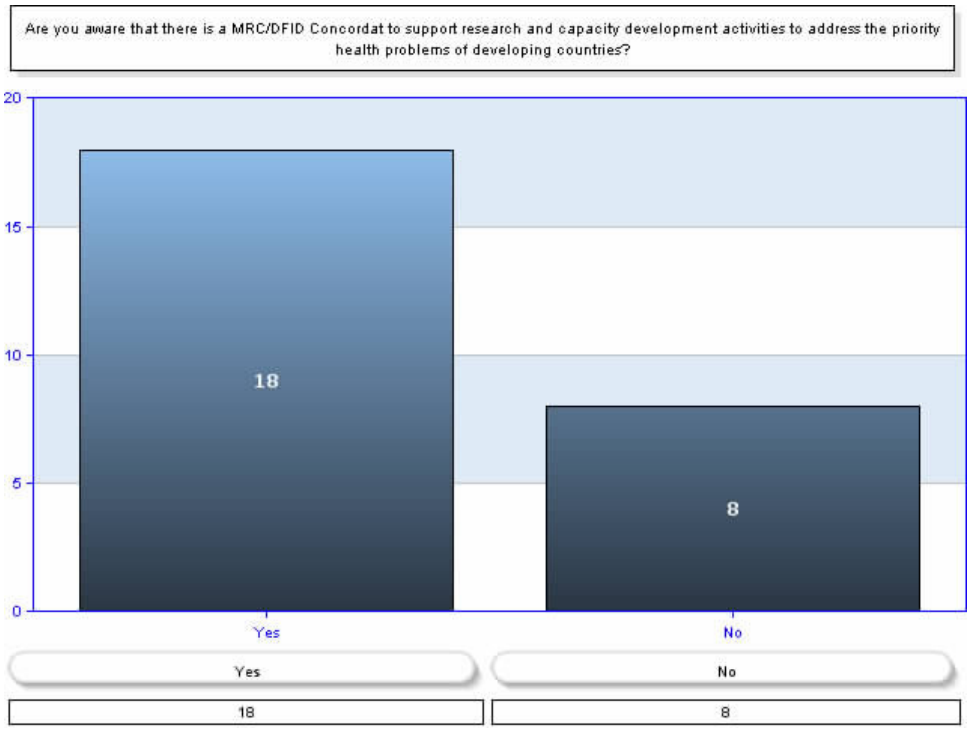
Project title	Cat.
Nutrient-gene interactions influencing disease	2
KSHV infection and immunity	2
Investigating the effectiveness of strategies to promote access to HIV services and antiretroviral therapy in Tanzania.	2
HIV prevention in Tanzania: the role of types of sexual partnerships early sexual histories and community factors	2
The cellular immune response to HIV-1 HIV-2 influenza and Dengue virus infection	2
Impact of hepatitis B co-infection in patients starting antiretroviral therapy	2
Epidemiological and statistical research on health problems of developing countries: MRC Tropical Epidemiology Group	2
Monitoring and modelling prognosis in the era of HAART (Extension to Strategic Grant G0100221)	2
Host determinants of malarial pathogenesis [Professorship award]	2
The Impact of T Cell Immunity on HIV-1 Diversity	2
HIV humoral immunity and early steps in infection	2
The role of non-immune vaccine responses in protection conferred by live attenuated SIV	2
Genomic analysis of malaria resistance	2
Understanding how a complex intervention works: designing large-scale vaccination programs	2
e-Valuation of Interventions and Diagnostics of Neglected Tropical Diseases in sub-Saharan Africa	2
Analysing the roles of peptidases in Leishmania infectivity and pathogenicity	3
Biomarkers to predict severity in dengue infection	3
Development of a vaccine against HIV and AIDS	3
Trypanocidal drugs targeting PFK and PYK	3
Antiparasitic pyrrolopyrimidines	3
Combination chemotherapy of Human African trypanosomiasis: the potential of drug synergism and the blood-brain barrier	3
An analysis of ICAM-1 adhesion in P.falciparum malaria	3
Transport of Organic Cations in Plasmodium falciparum	3
Molecular approaches to the control of insect vector borne diseases	3
The malaria plastid organelle: a potential drug target	3
Methodological development in whole-economy modelling: P. falciparum malaria control in Africa	3
The generation and analysis of function of novel antibodies for the treatment of malaria	3
The molecular basis and biological cost of fluoroquinolone resistance in Salmonella enterica serovar Paratyphi A.	3
Malaria parasite proteins and erythrocyte invasion	3
Vectored Blood Stage Malaria Vaccine	3
Application of gene transformation technologies to the functional analysis of immunomodulation in Plasmodium	3
A study of the human antibody response in Dengue haemorrhagic fever	3
Molecular mechanisms regulating gamete formation in malaria parasites	3
Identification of genes influencing artemisinin and chloroquine resistance by Linkage Group Selection	3

Project title	Cat.
T-cell inducing vaccines and pre-erythrocytic immunity in relapsing malaria	3
Functional studies of the KSHV vIRF-2 protein	3
Malaria Adenoviral Vaccine	3
Molecular cytogenetics for the identification of all life stages of all members of the Simulium damnosum complex	3
Development of therapeutic vaccination strategies for the treatment of HIV-1 infection	3
Structure function analysis of the Dengue virus capsid protein.	3
Clinical and Immunological e-Valuation of T cell- and Antibody-Inducing Viral Vector Vaccines against Blood-Stage Malar	3
Post-genomic analysis of cysteine protease function in Leishmania parasites	3
Immunopathology and the regulation of immune responses during Leishmania donovani infection	3
Proteases in host cell invasion by the malaria parasite	3
Incidence prevalence and outcome of extensive virologic failure in over 60 000 patients with HIV (PLATO II)	3
The immune response to malaria: regulation and protective immunity	3
Characterising the immune response to antigen 85A of non-tuberculous mycobacteria in Cape Town and Oxford.	3
Gene Expression Profiling for the Elucidation of New Correlates of Protective Immunity Against Plasmodium falciparum	3
Structural studies of HIV glycoproteins: correlates with their functional biochemical and immunogenic properties	4
The role of vaccine persistence in protection conferred by live attenuated SIV	4
Use of Transporters to Selectively Deliver Agents to Trypanosomes	4
Variation of HIV genes and their encoded proteins: molecular epidemiological investigations	4
Development of a generic conditional-lethal transgene for development studies of the immune system	4
HIV-Host Interactions	4
Molecular characterisation of an HIV virological synapse	4
Correlates of protection against Mycobacterium tuberculosis infection	4
The uses and outcomes of treatment of HIV infection in the UK	4
Role of ESCRT-I and ESCRT-II in HIV-I budding	4
CCR5 and CXCR4 tropism and CD4 kinetics in HIV-1 infection	4
The effects of host immune responses on a parastitic nematode	4
The structure and role of antigenic glycolipids in the Mycobacterium tuberculosis complex	4
Molecular genetics of mycobacteria	4
Modulation of immune responses by aGalCer analogues through differential activation of CD1d-restricted NKT cells	4
Biochemical characterisation of pivotal enzymes involved in mycobacterial mycolic acid biosynthesis	4
Molecular pathogenicity of mycobacteria	4
Dendritic cell activation and function during Th2 induction by Schistosoma mansoni	4
CDK inhibitors as drugs for trypanosomatid parasitic protozoa	4
The molecular characterisation of the mode of action of the anti-TB agent isoxyl	4

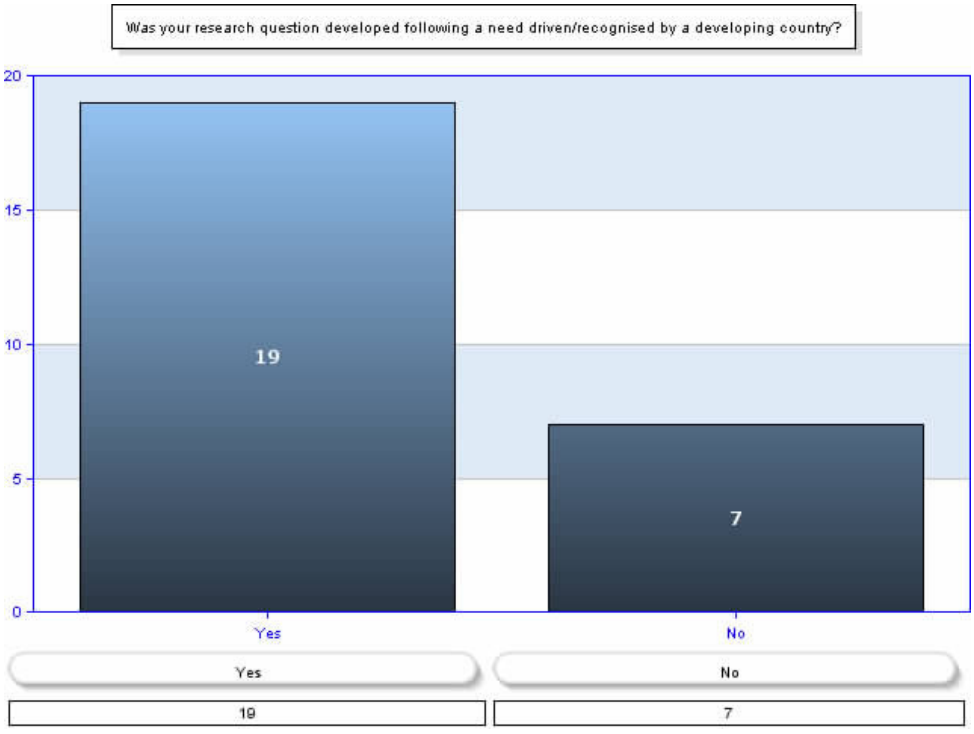
Project title	Cat.
Induction of CTL immunoresponses to HIV-1 by peptide-edited microsomes	4
Support for UK clinical centres enrolling in PENTA trials	4
Structural and functional studies in lentivirus RNA encapsidation	4
Immune regulation in respiratory virus infections	4
Molecular Biology of Human Papillomavirus Infection	4
The molecular genetics of mammalian retroviruses and their interaction with their hosts	4
Molecular genetics and biochemistry of parasites	4
The role of interleukin1 family in immunity and resistance to intestinal nematode infection	4
Immunology of filariasis: pathways to immunity and tolerance	4
What Constitutes a Protective CTL Response in HIV-1 Infection?	4
Molecular biology of cellular interactions in mycobacterial infection	4
Studies on the Life Cycle of the Human Papillomavirus	4
Cellular and Molecular Mechanisms involved in the induction of Protective Immunity against Mycobacteria	4
Rational design of a lentiviral vaccine	4
Interactions between HIV-1 and iron	4
Information structure for human genome research on childhood diseases of the developing world	4
Novel Methodologies to Address Key Pathogenetic and Clinical Issues in Primary HIV-1 Infection	4

Appendix C: Results from the web-survey

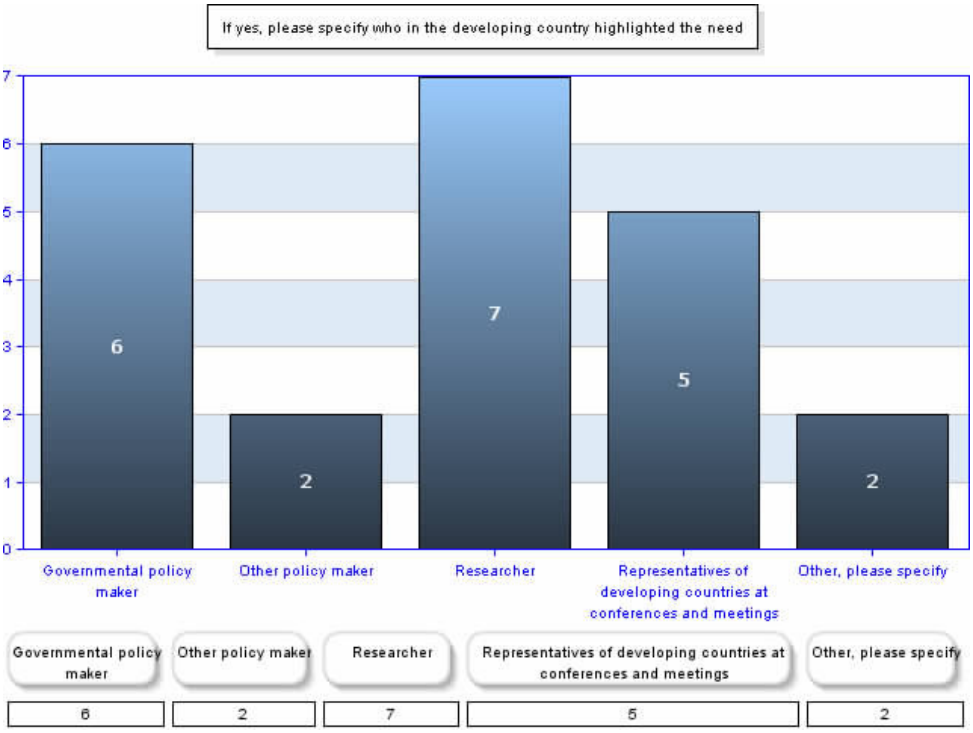
Question 1:



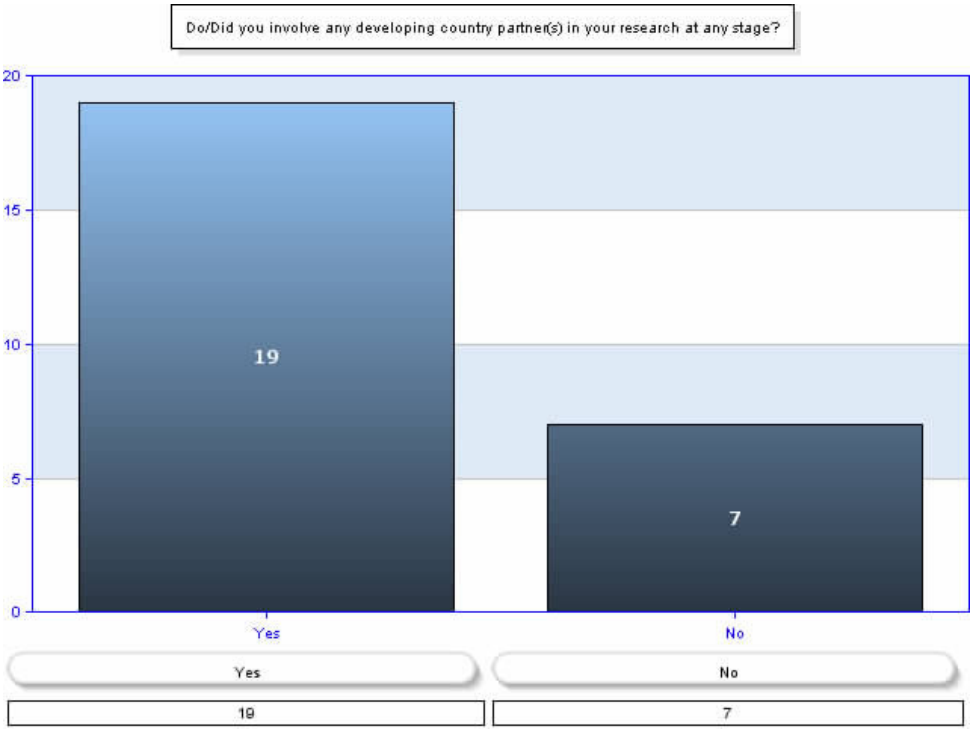
Question 2:



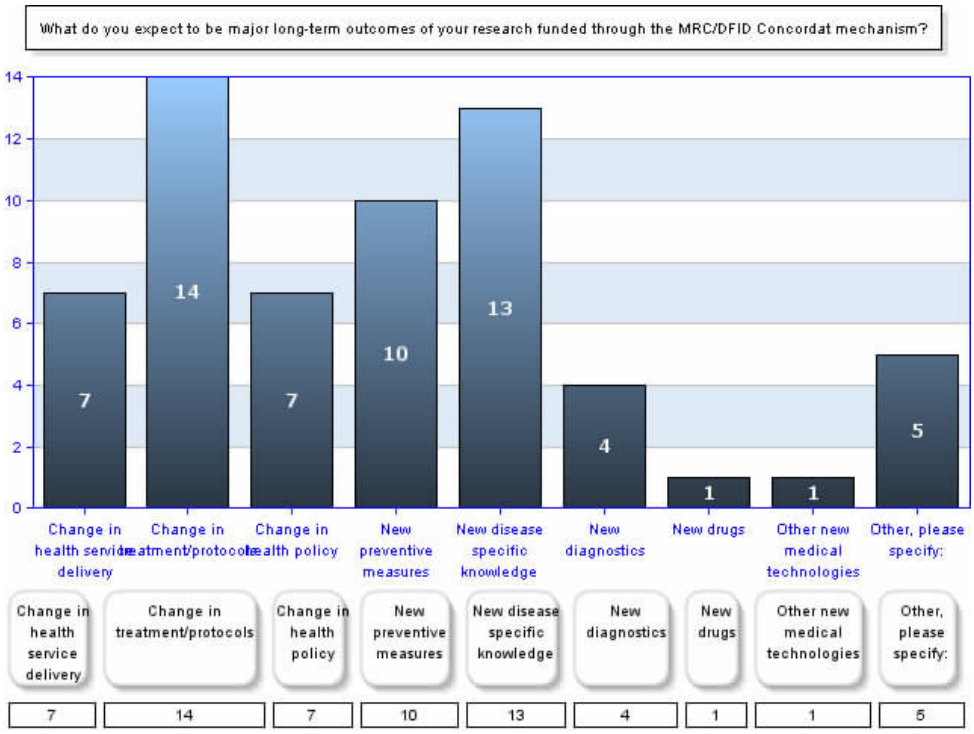
Question 3:



Question 4



Question 8


What do you expect to be major long-term outcomes of your research funded through the MRC/DFID Concordat mechanism?
14
12
10
8
6
4
2
0
7
14
7
10
13
4
1
1
5
Change in health service delivery
Change in treatment/protocols
Change in health policy
New preventive measures
New disease specific knowledge
New diagnostics
New drugs
Other new medical technologies
Other, please specify:
Change in health service delivery
Change in treatment/protocols
Change in health policy
New preventive measures
New disease specific knowledge
New diagnostics
New drugs
Other new medical technologies
Other, please specify:
7
14
7
10
13
4
1
1
5

Appendix D: Interview Guidance

Descriptives

A. Name of the interviewee: ___

B. E-mail: __

C. Organisation: _

D. Role: _

E. Interview Group *(interviewees can belong to more than one group – please tick all relevant boxes)*:

☐ MRC/DFID

☐ Primary Researcher

☐ Co-investigator from developing country

☐ Board member

☐ Other

Current Portfolio / Future Portfolio

1. Are you aware of the **MRC/DFID Concordat**? How well do you know the MRC/DFID Portfolio?

   Please explain your answer: _____

2. How do you judge the **quality of science** (e.g. scientific relevance of research outputs/publications) produced under the MRC/DFID Concordat in the last few years compared to other funding bodies? Are there mechanisms in place to monitor and evaluate the quality of science produced under the Concordat?

   Please explain your answer: _____

3. Do the individual projects or the overall MRC/DFID Portfolio represent good **value for money** given the quality of research?

   Please explain your answer: _____

4. From a developing country perspective: do the individual projects respectively the overall MRC/DFID Concordat portfolio **cover the priority health issues of developing societies?**

Please explain your answer: _____

5. What **adjustments in funding priorities** are needed when taking the **changing burden of disease and/or health systems** in developing countries into account? What disease / conditions should have more emphasis (e.g. chronic vs. infectious diseases)? What of the Concordat funding should be improved?

   Please explain your answer: _____

6. Are there mechanisms in individual project and/or DFID and/or MRC to ensure the further **use of research findings** from the Concordat? Are you aware of any **actions/policies/products** relevant to the health of developing societies that were influenced by an individual project or the MRC/DFID Concordat Portfolio?

   Please explain your answer: _____

7. How do you see the role **and involvement of co-investigators /collaborators from developing countries** in individual projects and/or the MRC/DFID portfolio overall? In which stages, what kind of projects (e.g. clinical trials, diseases, health systems research) and what role are they involved? How can their involvement and role be improved? What are (potential) obstacles?

   Please explain your answer: _____

8. What improved mechanism could be used for recruiting, training and retaining high quality research staff, for more effective **individual and institutional capacity building** in developing countries?

   Please explain your answer: _____

9. Have you seen an **outcome** of previous individual research projects or the overall MRC/DFID Concordat portfolio **on the health in the country/countries** you are working for/with?

   Please explain your answer: _____

International Perspective

10. How would you describe the **UK reputation** regarding high quality research of relevance to developing societies? Have there been any changes over the last year(s)? Can you attribute the reputation partly to the MRC/DFID Concordat?

Please explain your answer: _____

11. How and to what extent are **research findings** funded through the Concordat **taken forward by international decision makers/international research institutions** to develop into products relevant to the health of developing societies?

Please explain your answer: _____

The following questions only need to addressed by interviewees from DFID, MRC and Board Members

Strategy

12. DFID/MRC/Board Members: Has there been a **shift in the nature** of proposals accepted in the past few years? How do you see priorities given for **disease-specific and health systems research**?

Please explain your answer: _____

13. DFID/MRC: What are the **main interactions** between DFID and MRC? How would you describe the relationship? Are there ways to improve this?

Please explain your answer: _____

14. DFID/MRC: Are there enough **explicit discussions/exchange about DFIDs priorities** with MRC? Are there any mechanisms in place for communication between MRC and DFID?

Please explain your answer: _____

15. MRC: Are mechanisms currently in place for monitoring and evaluation, dissemination and uptake of **research findings** – effectively in developing societies and internationally? How could this monitoring be improved?

Please explain your answer: _____

16. MRC: How are projects **progress, quality, costs and the timeframe** monitored? How could this be improved?

    Please explain your answer: _____

17. MRC/Board Members: How does DFID funding **influence the strategic decision making and priority setting of the MRC Global Health Group and MRC** more widely? How has the DFID funding changed MRC priorities and framework?

    Please explain your answer: _____

18. MRC/Board Members: Suppose there was no funding of DFID and in consequence no Concordat what would be the likely **impact on MRC funding priorities and research to developing societies**? What would be the impact if there was more funding?

    Please explain your answer: _____

Thank you very much for your time.