The Academy of Medical Sciences

Response to the House of Commons
Science and Technology Committee inquiry
into science and international development

Summary

1. The Academy of Medical Sciences welcomes the opportunity to respond to the House of Commons Science and Technology Committee inquiry into science and international development. The Academy is an independent body that represents the spectrum of medical science and seeks to improve health through the application of research. Our elected Fellows include some of the world's foremost experts in global health who have contributed to this response and would be happy to provide oral evidence to this inquiry. The Academy's response focuses on medical science, although some of the issues raised may be relevant to other disciplines.

2. Medical science can make an important contribution to international development and medical research capacity building in developing countries can help achieve this goal. The Academy commends the Government's continued support for international development, as well as the Department for International Development's (DfID's) commitment to science and efforts to build medical research capacity. Opportunities to further strengthen medical research capacity building include:
    - Putting sustainable and equitable academic partnerships at the heart of efforts to build medical research capacity.
    - Supporting a balance between strengthening individual capacity, strengthening institutional capacity and strengthening the capacity of national research systems.
    - Strengthening monitoring and evaluation capacity, and supporting methodological improvements in this field.
    - Providing additional resources to ensure that both the capacity building and the research components of DfID's initiatives are sufficiently funded.
    - Using the UK's role on major global health decision making bodies to advocate for medical research capacity building internationally.
    - Helping researchers from developing countries to apply their skills at home through mechanisms such as 'return home grants', establishing endowments at academic institutions in the developing world and helping academic institutions provide better career development and administrative support for researchers.
    - Reintroducing DfID's competitive grants programme and ensuring that criteria for decision making about funding for medical research and capacity building is clearer.

3. The Royal College of Physicians, Academy of Medical Sciences, Wellcome Trust, Universities UK and the Bill and Melinda Gates Foundation recently held a major international meeting on global health partnerships and capacity building. We would be happy to share the report of this meeting with the committee, which we expect to be published in the early 2012.

Introduction

4. Medical science has an important role in alleviating extreme poverty. Research indicates that every £1.00 invested in public or charitable research into cardiovascular diseases in the UK between 1975 and 1992 produced a stream of health and economic benefits equivalent to earning £0.39 per year in perpetuity.[1] While we are not aware of a similar study for medical research in developing countries there is reason to believe that medical research, health and wealth are closely linked. For example, it has been estimated that malaria has slowed growth in Africa by 1.3% per year since 1965 and medical advances have helped reduce malaria deaths globally by 20%.[2,3] We therefore commend the UK Government's continued support for international development and the priority that has been given to research and health in achieving this goal.

5. The Academy strongly supports long-term, sustainable efforts to build medical research capacity in developing countries and believes this should be a priority for the DfID. Building medical research capacity contributes to international development; a strong research base can help developing countries in a number of ways, including:
    - Strengthening their role in global medical research and reducing the need for future development assistance.
    - Tackling local health challenges such as neglected diseases that might not otherwise be addressed by researchers from elsewhere.
    - Developing health solutions that are more relevant to the local context such as how drugs previously tested elsewhere work in local populations.
    - Strengthening local health service delivery, education and policymaking by generating and providing access to cutting edge and locally relevant evidence.
    - Encouraging local researchers to stay and work in their home country rather than move abroad thereby reducing 'brain drain'.
    - Stimulating local life science industries and the local economy.
    - Building up science as a component of a country's overall culture.

6. Medical research capacity building in developing countries benefits the UK as it increases opportunities for international collaboration. To help realise this opportunity, UK universities should take a longer-term, more global view of science by engaging students early with these issues.

7. The Academy welcomes DfID's strong commitment to science and its efforts to support medical research capacity building. These include:

[1] Health Economics Research Group at Brunel University, Office of Health Economics and RAND Europe (2008). *Medical research: what's it worth?* http://www.acmedsci.ac.uk/index.php?pid=99&puid=137
[2] Gates, B (2011). *Innovation with impact: financing 21st century development.* http://www.thegatesnotes.com/Topics/Development/G20-Report-Innovation-with-Impact
[3] Lawson S and Gilman DB (2009). *Health buys wealth*. http://www2.goldmansachs.com/our-thinking/health-and-education/health-wealth.pdf

- DfID-Wellcome Trust Health Research Capacity Strengthening Initiatives in Kenya and Malawi[4,5]
- Research Programme Consortia that include a capacity building component
- Commonwealth Shared Scholarships[6]

8. Medical research is inextricably linked to education and health service delivery so capacity building in these three areas should be coordinated. Much would be gained from an increased focus on higher education that has previously received limited attention.

9. The UK is a major beneficiary of the migration of doctors from developing countries some of whom are researchers. One recent study of the financial cost of doctors emigrating from nine Sub-Saharan African countries estimated that the UK gained $2.7bn from this process while some African countries lost out.[7] Investing in research capacity is therefore not just about aid but also an obligation to repay the debt that the UK owes the countries that originally trained the staff.

Improving UK Government support for scientific capacity building

Ensuring capacity building is sufficiently resourced

10. The Academy welcomes DfID's efforts to include capacity building in their research programmes. However, this additional capacity building function sometimes has to be undertaken using existing resources. Additional resources would help ensure both the capacity building and other aspects of research programmes can both be successfully progressed. Part of the forthcoming increases in DfID funding might be directed toward this endeavour.

11. Scientific excellence should be a major factor when making decisions about medical research capacity building. Experience shows that while government can identify overall strategic priorities for science, scientific experts are best placed to identify particular projects. Currently it is not always clear how DfID decides what to support and it would be helpful if this process was more transparent. We believe DfID should consider re-introducing its successful competitive grants programme that provided significant funding for important initiatives.

Promoting capacity building through international institutions

12. One important opportunity for DfID and the UK Government to promote medical research capacity building is through the UK's membership of major global health decision making bodies such as the World Health Organisation (WHO) and the Special Programme for Research and Training in Tropical Diseases (TDR). As one of the most important advocates for global health and international development the UK is well placed to help shape the policy agenda and ensure research capacity building is an international priority.

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[4] Further details are available from: http://projects.dfid.gov.uk/project.aspx?Project=113982

[5] Further details are available from: http://projects.dfid.gov.uk/project.aspx?Project=114075

[6] Further details are available from: http://cscuk.dfid.gov.uk/apply/shared-scholarships/

[7] Mills EJ *et al*. (2011). *The financial cost of doctors emigrating from sub-Saharan Africa: human capital analysis.* BMJ, **343**, doi: 10.1136/bmj.d7031

Models and mechanisms for supporting research capacity in developing countries

Global health partnerships

13. Sustainable and equitable international partnerships between academic institutions offer an excellent mechanism to build medical research capacity in developing countries. One major advantage of this approach is cost effectiveness because the financial input remains under the direct control of the partners rather than going through external parties that might redirect resources elsewhere. Another benefit is the increased scientific impact achieved through such international collaborations, which increases for each additional international author up to around ten.[8] Partnerships allow UK universities to provide technical support and expertise to developing countries to help build capacity. In the UK, the Wellcome Trust has been a strong supporter of this sort of activity. Examples of successful north-south partnerships involving UK institutions include:
    - The Malawi-Liverpool-Wellcome Trust Clinical Research Programme.[9]
    - The partnerships between the University of Oxford and Sri Lanka.
    - The London School of Hygiene and Tropical Medicine and several Tanzanian institutions.
    - Partnerships involving the University of Oxford, Wellcome Trust and institutions including the Oxford University Clinical Research Unit in Vietnam, Mahidol University in Thailand and the KEnya Medical Research Institute (KEMRI).[10,11,12]

14. Historically many partnerships have been between institutions in the global north and south. Increasingly, however, partnerships are developing between southern institutions. South-south partnerships break the model of the one way transfer of knowledge and technology from north to south and often involve a greater degree of trust through shared experience, geography and language. South-south partnerships between institutions with different levels of resource can help engage countries with fewer partnerships through a 'hub and spokes' model. Examples of south-south partnerships, some of which are at least partly funded from the UK but with southern leadership, include:
    - Wellcome Trust African Institutions Initiative.[13]
    - Initiative to Strengthen Health Research Capacity in Africa (ISHReCA).[14]
    - PRogramme for Improving Mental healthcarE (PRIME)[15]

15. While partnerships offer considerable benefits, like most efforts to build research capacity they require substantial long-term resources over many years. DfID should ensure that

[8] The Royal Society (2011). *Knowledge, networks and nations*. http://royalsociety.org/policy/reports/knowledge-networks-nations/
[9] Further details are available from: http://www.mlw.medcol.mw/
[10] Further details are available from: http://www.tm.mahidol.ac.th/en/wellcome/index.html
[11] Further details are available from: http://www.wellcome.ac.uk/Funding/International/Major-Overseas-Programmes/Vietnam/index.htm
[12] Further details are available from: http://www.kemri-wellcome.org/
[13] Further details are available from: http://www.wellcome.ac.uk/Funding/International/WTX055734.htm
[14] Further details are available from: http://ishreca.tropika.net/
[15] Further details are available from: http://www.health.uct.ac.za/research/groupings/prime/about

partnerships receive sustained core funding with appropriate safeguards to halt support for those partnerships that are not working.

16. Various individuals and organisations have developed principles to help guide the establishment and development of equitable global health partnerships.[16,17,18,19,20] Common messages include the need for:
    - Clearly defined focus, roles, responsibilities and objectives that have been established through consultation.
    - Shared decision making, mutual trust and respect
    - Local ownership with progressive independence of the partners from the developing country
    - Monitoring and evaluation
    - Staff training and development
    - Support of national and regional health priorities and socially relevant research
    - Application of research findings to policy and practice

17. We welcome DfID's support for partnerships as a tool to build medical research capacity in Africa and would encourage DfID to support partnerships in India and South East Asia. Sustainable and equitable academic partnerships should be at the heart of DfID's efforts to build medical research capacity and particular attention should be given to supporting south-south partnerships. This echoes the messages of the influential WHO report '*Genomics and World Health*'.[21]

Comprehensive capacity building

18. Many previous efforts to build medical research capacity in developing countries have focused on individuals. However, without strong institutions and strong national research systems individuals will not flourish. For instance, skilled researchers will find it difficult to be successful without support such as IT, finance, buildings, administration, suitable national funding systems, equipment and appropriate regulation. Examples of initiatives that involve institutional and national capacity building include:
    - Malaria Capacity Development Consortium[22]
    - Consortium for National Health Research in Kenya[23]
    - European and Developing Countries Clinical Trials Partnership (EDTCP)[24]

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[16] KPFE (1998). *Guidelines for Research in Partnership with Developing Countries.* http://www.int.uzh.ch/northsouth/KFPEGuidelines.pdf
[17] Netherlands Development Assistance Research Council (2001). *North-South Research Partnerships: Issues and Challenges Trivandrum Expert Meeting Report, 1999*. The Hague, The Nethlerlands.
[18] Costello A and Zumla A (2000). *Moving to Research Partnerships in Developing Countries*. BMJ, **321,** 827-829.
[19] COHRED (2004). *Principles of good partnership for strengthening public health capacity in Africa.* http://www.cohred.org/wp-content/uploads/2011/05/783.pdf
[20] *Canadian Coalition for Global Health Research (2007). Building Respectful and Collaborative Partnerships for Global Health Research: Learning Resource*. www.ccghr.ca
[21] World Health Organisation (2002). *Genomics and World Health.* http://whqlibdoc.who.int/hq/2002/a74580.pdf
[22] Further details of the Malaria Capacity Development Consortium can be found at: http://www.mcdconsortium.org/
[23] Further details are available from: http://cnhrkenya.org/
[24] Further details are available from: http://www.edctp.org/

19. When building medical research capacity DfID should seek to support a balance of strengthening individual capacity, institutional capacity and the capacity of national research systems. Specific opportunities include:
    - Training future research leaders from developing countries in governance, management and leadership earlier in their careers.
    - Establishing research support centres that help with matters such as budget review, administration, grant writing and ethics.
    - Creating champions for capacity building and global health partnerships at senior positions within academic institutions.
    - Supporting core costs for emerging research centres in developing countries through untied grants for expenses such as IT systems, financial management and grants management.

International interchange

20. One effective mechanism to help build research capacity in developing countries is international interchange. This approach can be particularly effective where individual researchers are hosted in an institution, either in the same country or abroad, for several weeks or months to a learn particular technique, which can be implemented on their return home.[25] Where possible reciprocal exchanges should take place to develop more sustainable and productive links and collaborations.

21. The Academy currently administers a travel fellowship scheme between the UK and Middle East in partnership with the Daniel Turnberg Trust Fund.[26] Participants at a recent international workshop between UK and Brazilian scientists organized by the Academy, FAPESP and Science and Innovation Network (SIN) office in Brazil highlighted the potential value of annual residential summer school for early career researchers as a mechanism for interchange and capacity building.

Retaining researchers in developing countries

22. Limited opportunities and support at home means that many researchers from developing countries emigrate in search of better opportunities elsewhere. Often this is to the country in the north where they received education and training. Southern researchers who are trained in the north sometimes gain skills that are less useful when they return home. This too can lead them to emigrate. Retention of post-doctoral students from developing countries is a particular challenge as there are major gaps at this stage in their careers.

23. The UK has a good record of helping researchers from developing countries who trained in here to undertake work in their home country. To further help ensure 'brain drain' does not undermine capacity building DfID and the UK Government should help:
    - Provide researchers from developing countries who spend time training in the global north with 'return home' grants that cover salary and research support for a reasonable period of time upon returning home.

[25] Academy of Medical Sciences (2009). *Response to the DfID inquiry on Eliminating world poverty and securing our common future* http://www.acmedsci.ac.uk/p100puid152.html
[26] Further details of the Academy's scheme can be found at: http://www.acmedsci.ac.uk/p175.html

- Assist academic institutions in developing countries by establishing endowments to support research careers to reduce job insecurity and allow clinical academics in particular ring fenced time for research.
- Assist academic institutions in developing better support for researchers such as mentoring, networking opportunities and training in grant writing, advocacy and ethics.

24. The Academy will shortly be publishing a booklet about its mentoring scheme that we plan to disseminate internationally and may be of use in helping others develop similar schemes to support the careers of researchers in developing countries.

Monitoring and evaluating scientific capacity building

25. Monitoring and evaluation are vital components of efforts to build medical research capacity. Measures for assessing the impact of capacity building should encompass:
    - Individual measures such as the number of people trained to doctorate level; number of post doctoral students and more senior staff holding their own peer-reviewed grants; proportion of research staff based in the partnership country; and proportion of staff lost to the 'brain drain'.
    - Institutional measures such as overall grant income from peer reviewed competitive sources; impact profile of publications; robust procedures to manage research grants and provide supportive career structure for researchers; and evidence that the relevant institutions are playing a leadership role in coordinating international research collaborations.
    - Policy impact of research such as case studies of how the research in the relevant institutions has supported evidence based policy decisions.
    - Intellectual property and innovations that have resulted from the research undertaken as a result of the capacity strengthening activities.

26. At present evidence about medical research capacity building is limited and too often not undertaken. DfID is well placed to help strengthen monitoring and evaluation capacity and support improvements in methodologies in this field.

Coordinating with the private and voluntary sectors

27. We believe that DfID coordinates well with many Non-Governmental Organisations (NGOs), however, there are also opportunities to engage more with industry from developing countries. Many companies from developing countries have considerable resources that might be harnessed to help build medical research capacity for the public good. There are also opportunities to engage southern governments, southern funders and southern philanthropists that have to date only had limited involvement in this area. When engaging industry and others in medical research capacity building it will be important to ensure that no single partner dominates the agenda.

28. SIN have been helpful to our Fellows in their efforts to build capacity, particularly the offices in Singapore and South Africa. The UK Government should consider widening the reach of SIN so that it covers more countries. There are major opportunities for the overseas offices of British governmental organisations in India to engage more with global health partnerships and capacity building, and greater support and attention should be given this goal.

Declaration of interests

Many of the Academy's Fellows including some of those who contributed to this response are involved directly or indirectly with efforts to build medical research capacity in developing countries some of which have been used as examples in this response.

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