

# Review of UK Health Research

## Response from the Health Economics Research Group, Brunel University

### Introduction and summary

We welcome the opportunity to provide evidence-based comments. For many years the Health Economics Research Group (HERG) at Brunel University has developed and applied methods for assessing the impact or payback from health research.<sup>1-10</sup> This, in turn, has built on an even longer stream of research at Brunel analysing the fluctuating boundaries between the responsibilities of the MRC and the DH R&D Division. Kogan & Henkel's original study of the implementation of Rothschild reforms in 1970s<sup>11</sup> has recently been updated.<sup>12</sup>

Key findings from previous analyses focus on the organisational requirements, and levels of success, in developing a health research system covering a wide spectrum of research from basic science through to research that directly meets the needs of health ministers.<sup>12</sup> The latter end of the spectrum requires the development of appropriate support mechanisms to enable research to be commissioned and used to meet the needs of the health-care system.<sup>12</sup> An early attempt to build such mechanisms collapsed<sup>11</sup> but the problem of meeting the research needs of the health-care system remained and the DH/NHS R&D Strategy eventually established in 1991 has been evolving and making more impact than sometimes acknowledged.<sup>4,5,12</sup> Some key difficulties have not been resolved, but the needs-led end of the spectrum requires an expansion of appropriately resourced activities<sup>12</sup> rather than merger with the MRC. The research council has been highly successful, but in its range of the spectrum where the requirements are somewhat different.

**Q1: What are the strengths and weaknesses of the MRC and NHS R&D programmes at present? How do each of these support the research and training needs of the NHS, social care, industry and academia? Does more need to be done?**

The MRC has enormous scientific strengths founded on a well-developed system of peer-review to ensure the high quality of the science it funds. The NHS R&D programme is an important and innovative attempt to tailor a research programme to meet the needs of the health system within which it operates. Both programmes are recognised as making world-class contributions.<sup>13</sup> Furthermore, a division of labour along these lines has been seen to be the best way of making progress in a diverse,

or multi-modal, system where there are various types of science and various types of needs.<sup>12</sup> Similar points can be made about the distinct contribution each programme makes to research training, with the DH/NHS programmes having been able in various ways<sup>3</sup> to broaden the type of well-regarded training traditionally provided by the MRC.

The DH/NHS programme has also played a major role in developing systematic reviews - an important way in which research findings are drawn together to inform policy and practice in the NHS. This included funding the Cochrane Centre and contributing to the Cochrane Collaboration. A further strength and contribution of the NHS R&D Programme was its regional dimension<sup>4,12</sup> and, whilst this has now been lost, the issue of encouraging a positive attitude towards research widely throughout the NHS was identified in the consultative document as a key element of the new NHS R&D strategy, *Best Research for Best Health*.<sup>14</sup>

A weakness common to many health research systems is the under-utilisation of the research it produces. Nevertheless, and contrary to what is sometimes asserted,<sup>13</sup> there is evidence that the NHS/DH research programmes have had some impact on a wide range of policies and practice in the UK.<sup>1,4,5,12,15</sup> This is discussed at greater length under Question 5 below but more should be done, as set out in Question 2, to assist the needs-led DH/NHS programme fulfil its role.<sup>12</sup>

**Q2: What do you believe are the key scientific and organisational challenges facing health research, and underpinning training, in the UK over the next decade? How might the UK Government best help address those challenges? What do you believe should be the Government's objectives for health research, and why?**

The Government's objectives for health research should include the production of scientific knowledge, improved health status and equity, and economic well-being. Scientific and organisational issues are to some extent inevitably intertwined as it is partly the nature of different types of science that determines how they are best organised.<sup>11</sup> The DH/NHS research has a particular responsibility in relation to improving the health system and health status of the population. Major organisational challenges for the NHS/DH R&D system include:

- fostering an agenda-setting capacity that more fully meets the future needs of potential users *and* engages leading researchers in issues that are of scientific interest and feasibility;<sup>5,11</sup>

- making full use of relevant researchers who are in universities that are not attached to the NHS through a medical school;
- enhancing the capacity for research management including knowledge brokerage functions intended to ensure liaison between researchers and policymakers at various stages in the commissioning, production and utilisation of research;<sup>11,12</sup>
- encouraging the creation of 'receptor' bodies to receive and use the findings where relevant;<sup>5,12</sup>
- encouraging ways of addressing the problem that the incentives within the system for achieving impacts on health and economy have not been as strong the incentives for academic activities.<sup>11,12,16</sup>

There have been various recent debates on such issues. For example, developing the capacity to undertake the collaborative approach to agenda-setting between policymakers and researchers is internationally recognised as being crucial for the success of any system of health services research.<sup>17</sup> Furthermore, the role of long-term centres in contributing to collaborative agenda-setting is increasingly recognised.<sup>5</sup> Researchers can play an important role in disseminating findings<sup>9</sup> but this currently involves time that often is not funded or rewarded. While incentives to make an impact on health appear for first time in the guidelines for the next RAE, the weight that will be given to them is not clear and a further challenge is that these incentives might again be lost in any move to a metrics system.

Many of the above issues, however, are not new and were identified as being key organisational challenges in the 1970s and 1980s.<sup>11</sup> The new structures developed in the Department of Health and Social Security (DHSS) through the Rothschild reforms of the 1970s did not have immediate success in meeting all the challenges, and the response adopted twenty-five years ago in 1981 was to transfer some research funds from the DHSS back to the MRC. This, however, did not resolve the problems of lack of responsiveness to customer needs and led to the classic statement by the House of Lords select committee in the late 1980s about how the needs of the NHS were not being met through the current arrangements of the health research system.<sup>12,18</sup> This in turn led to the creation of the NHS R&D Programme, perhaps the first comprehensive attempt in any country to develop a national R&D infrastructure for health care.<sup>19,20</sup> Progress has been made in various ways since then.<sup>12</sup>

Further progress should be made towards addressing some of these issues under the new National Institute for Health Research.<sup>14</sup> This progress could possibly be threatened if some of the current DH/NHS R&D responsibilities were moved to the MRC. For example, the concept of the customer for research has expanded over the years to include a broad range of stakeholders including not just policymakers but also practitioners and the public,<sup>21</sup> and the NHS R&D programme has responded to this through the creation of bodies such as INVOLVE.<sup>12,22</sup> Such bodies are potentially likely to make a greater impact in this field than the consultative bodies established by the MRC.<sup>23</sup>

In terms of the challenges facing training in health research there are issues that are relevant across the health R&D programmes. These include the salary levels for PhD scholarships in fields such as health economics. There is also a need to promote training of non-clinical researchers in public health. The assessment of the payback from the NHS R&D has demonstrated that relevant research training can be provided in various ways<sup>3</sup> and important contributions to the development of research staff can be made by long-term research centres.

Perhaps the key overall issue is the need to take a broad enough perspective so that the organisational challenges described above can be viewed across the entire health research system of the nation. This involves devising a system which recognises that there are different research functions that are best conducted by different bodies, but which also allows some overall view of the field so that issues do not fall between the various programmes. The funds for health research in the UK are now to be ring-fenced. This provides a unique opportunity to embed a culture of positive change into the organisation of the health research system by proposing structures that will allow proper resourcing for the activities (for example, agenda-setting, knowledge brokerage and research management) without which the research system will never achieve its full potential. Whilst the DH/NHS R&D programmes can not fully be held accountable for the extent to which the DH and NHS utilise the research produced, the more that an innovative approach is adopted, and these organisational issues are addressed, the greater the prospects for enhanced research utilisation.

**Q3: What should be the Government's priorities for health research? Is there anything it should stop doing or funding? What is it not doing or funding that it should do, and, in the absence of further sources of support, what can it lower in order to release the necessary funds?**

One area that should receive a higher priority is the contribution that social science research can make. There could be further funding for methodological developments in fields such as health economics and the wider agenda of the social determinants of health. This is particularly important in the context of public health and would contribute to providing a stronger base between the design of public health programmes and their effectiveness.

A key area that should also receive further attention is the whole field of providing the organisational support for needs-led research as set out in Question 2 above. This should properly be seen as a vital element in a successful health research system and not as wasteful bureaucracy.<sup>12,24</sup>

**Q4: How should decisions be taken on the balance between the long-term economic and social benefits of a high quality biomedical research base; and the needs for research to improve healthcare and other public services? What is the appropriate balance between public funding for investigator-led and priorities led research? How do we balance funding for basic science, translational science and applied science? Is this something that should vary over time? What mechanisms should be used to make judgements about this balance?**

Whilst it is important to recognise the diverse types of research, it is unproductive to concentrate exclusively on investigator-led and priorities-led research as the only options. There are other approaches, for example the collaborative approach mentioned under Question 2 involves potential users and researchers exchanging perspectives and can be highly productive.<sup>17</sup> It often works best when long-term interactive relations are established through the funding of research centres so that the scientists know the problems facing policymakers and the policymakers develop a realistic view about the role that research can play.<sup>5</sup> In this context it is useful to consider the role of domain research which can be interdisciplinary and cover basic and applied research.<sup>25</sup> Its key feature is that it is policy-orientated research that aims to advance both knowledge and human betterment.

**Q5: In your experience, how have the results of publicly-funded health research in the UK been used, both in the development of new treatments and to influence/change wider policy and healthcare practices? What lessons can usefully be learned to improve the uptake of advances in science and medicine?**

The stream of research conducted at HERG on the payback or benefits from health research uses a multi-dimensional categorisation of benefits to show the impact of health research. The categories include informing a wide range of health policies and

generating health gain.<sup>1,8</sup> We have identified many examples of the impact of publicly funded health research in the various categories.<sup>1-5,12</sup>

We have recently participated in an assessment of the impact of the NHS R&D funded Health Technology Assessment (HTA) programme and whilst this report is not yet published there is now clear evidence of the considerable impact of the HTA Programme. In addition to the impact that the Technology Assessment Reports (TARs) have on all the Guidance issued by the National Institute for Health and Clinical Excellence (NICE), other policymaking bodies have described the importance of the HTA Programme for their work, including the National Screening Committee.<sup>26</sup> And citations in the policy documents of national policymaking bodies, and of national professional bodies, provide examples of how other specific HTA studies have made an impact on the treatments available in the NHS.

In terms of how the impact has been achieved, and lessons about how to improve uptake of advances in science and medicine, many of the examples identified illustrate aspects of the points highlighted in Question 2 about ensuring that the agenda for needs-led research is carefully developed and that appropriate institutional arrangements are made for the creation of receptor bodies to receive and use research findings when relevant.<sup>5,12,24</sup> In general, multi-faceted approaches towards encouraging the uptake of health research findings are important<sup>5,27</sup> These include various forms of interaction between researchers and potential users.<sup>28</sup> Other mechanisms promoted by the DH/NHS R&D programmes have also been important, including the role of systematic reviews in making sound evidence from clinical trials more accessible to potential users. The NHS R&D programme provided global leadership in funding the Implementation Methods Programme – a highly innovative programme of research on how to increase the utilisation of research.<sup>29</sup> Whilst this programme had mixed success,<sup>6</sup> it helped pave the way for approaches that examine research implementation issues at an organisational and systems level.

**Q6: How might better links be forged between ‘basic’, translational and applied researchers, working across the whole field of health research, from the laboratory bench to the front line of the NHS? How might better links be forged across disciplines, e.g. with engineers, physicists, and social scientists?**

In fostering links the current emphasis on networks, such as the UK Clinical Research Collaboration and the Health Service Research Network, could play an increasingly important role.<sup>12</sup>

Some examples, including a detailed study of the impacts of research conducted some years ago by Professor, now Sir, George Alberti and colleagues,<sup>10</sup> illustrate the considerable contribution that can be made by research leaders whose work covers a broad spectrum of research. How far this finding is generalisable is one of the issues being explored in a current international project on the impact of cardiovascular research conducted about 15 years ago.

**Q8: How can UK health research funding be most effectively used to provide the appropriate infrastructure for basic, translational and applied research, whether funded by the UK sector or other sectors? How can UK health research funding be most effectively used to support the work of NICE, facilitate innovation and collaboration with industry, and address market failures in the application of healthcare?**

As noted in Question 2, there is a crucial need for infrastructural support for the conduct of the needs-led activities that contribute to success of programmes such as HTA, and for knowledge management and brokerage functions. In terms of support for the work of NICE, the current arrangements seem to ensure that the HTA Programme makes considerably greater impact than some equivalent programmes in other countries.<sup>5</sup> The developing role of networks, especially the UK Clinical Research Collaboration, could also be important in facilitating collaboration with industry and fits with recent models of how research systems are increasingly being organised.<sup>12</sup>

**Q9: What lessons should the UK learn from other countries in making the proposed changes to the institutional arrangements for the funding of health research?**

There are positive lessons from the Canadian Health Services Research Foundation (CHSRF).<sup>24</sup> It shows the benefits of devoting considerable resources to activities that the evidence suggests are part of a successful research system, but which traditional thinking about the role of 'bureaucracy' tends to see as wasteful. For example, money needs to be spent on items such as knowledge brokerage. There are also lessons from USA: the work of NIH is undoubtedly impressive in terms of quantity, range and quality, but Americans<sup>30</sup> and others ask why is it that the nation that produces such an impressive percentage of global health research has a life-expectancy rate, and arguably a health-care system, that are somewhat down the international rankings? Obviously a key factor is the political system and the way that determines a health-care system often linked to private insurance and ability to pay. But the fact that the health research system has no national unified health-care system to which it can relate could also be a major factor: some parts of the US

health-care system make much better use of research findings than others. The NHS R&D programme is designed to meet the needs of the entire NHS. A useful lesson is that it might be unwise to remove current DH/NHS R&D responsibilities and give them to an organisation not specifically designed to meet the needs of the health-care system.

**Q10: In implementing the single fund for health research, to what extent should the MRC and DH/NHS R&D be merged or brought together? And to whom should the single, ring-fenced fund be accountable? Please provide reasons and any supporting evidence for your response.**

The study of the implementation of Rothschild reforms in 1970s<sup>11</sup> showed that the boundary between the MRC and the health department's R&D Division shifted 3 times within 10 years; it was not easy to get right, and continued to be a problem.<sup>12</sup>

The key point to emerge from much of the above analysis related to previous questions is that there would be a threat to the link between NHS/DH research and its customers if it was merged into a traditional research council operating according to the Haldane principle. The obverse is that it is unlikely that NHS/DH could take over all the functions of a research council. Given this, the key question is: where should the boundary be set between two programmes both of which require their own mechanisms and substantial funding?

## **References**

1. Buxton M, Hanney S. How can payback from health services research be assessed? *Journal of Health Services Research & Policy* 1996; **1**: 35-43.
2. Buxton MJ, Hanney S. Evaluating the NHS R&D programme: will the programme give value for money? *Journal of the Royal Society of Medicine* 1998; **91**(suppl 35):2-6.
3. Buxton M, Hanney S, Packwood T, Roberts S, Youll P. Assessing the Benefits from North Thames Research & Development, *HERG Research Report No 25*. Uxbridge: HERG, Brunel University, 1999.
4. Buxton M, Hanney S, Packwood T, Roberts S, Youll P. Assessing benefits from Department of Health and National Health Service Research & Development. *Public Money & Management* 2000; **20**: 29-34.
5. Hanney S, Gonzalez-Block M, Buxton M, Kogan M. The utilisation of health research in policy-making: Concepts, examples and methods of assessment. *Health Research Policy and Systems* 2003; **1**: 2 <http://www.health-policy-systems.com/content/1/1/2>
6. Hanney S, Soper B, Buxton M. Evaluation of the NHS R&D Implementation Methods Programme. *HERG Research Report No 29*. Uxbridge: HERG, Brunel University, 2000.
7. Buxton M, Hanney S, Jones T. Estimating the economic value to societies of the impact of health research: a critical review. *Bulletin of the World Health Organization* 2004; **82**: 733-739.
8. Hanney S, Grant J, Wooding S, Buxton M. Proposed methods for reviewing the outcomes of health research: the impact of funding by the UK's Arthritis Research Campaign. *Health Research Policy and Systems* 2004; **2**:4. <http://www.health-policy-systems.com/content/pdf/1478-4505-2-4.pdf>
9. Wooding S, Hanney S, Buxton M, Grant J. Payback arising from research funding: evaluation of the Arthritis Research Campaign. *Rheumatology* 2005; **44**:1145-1156.
10. Hanney S, Home P, Frame I, Grant J, Green P, Buxton M. Identifying the impact of diabetes research. *Diabetic Medicine* 2006; **23**: 176-184.

11. Kogan M, Henkel M. *Government and Research: The Rothschild Experiment in a Government Department*. London: Heinemann, 1983.
12. Kogan M, Henkel M, Hanney S. *Government and Research: Thirty Years of Evolution*. 2 ed. Dordrecht: Springer, 2006.
13. Horton R. Health research in the UK: the price of success. *Lancet* 2006; **368**: 93-97.
14. Department of Health. *Best research for best health: a new national health research strategy. The NHS contribution to health research in England: a consultation*. London: Research and Development Directorate, Department of Health, 2005.
15. National Coordinating Centre for Health Technology Assessment. *NHS Health Technology Assessment Programme: Annual Report 2005*. Southampton: NCCHTA, 2006.
16. Dash P. *Increasing the Impact of Health Services Research on Health Services Improvement*. London: The Health Foundation and the Nuffield Trust, 2003.
17. Denis J-L, Lomas J. Convergent evolution: the academic and policy roots of collaborative research. *Journal of Health Services Research & Policy* 2003; **8**(S2):1-6.
18. House of Lords Select Committee on Science and Technology. Priorities in medical research. HL Paper 54-1, 1988.
19. Peckham M. Research and development for the National Health Service. *Lancet* 1991; **338**: 367-71.
20. Black N. National strategy for research and development: Lessons from England. *Annual Review of Public Health* 1997; **18**: 485-505.
21. Harrison A, New B. *Public Interest, Private Decisions: Health-related Research in the UK*. London: King's Fund, 2002.
22. INVOLVE. About INVOLVE [http://www.invo.org.uk/About\\_Us.asp](http://www.invo.org.uk/About_Us.asp) (accessed 26 July 2006).
23. Milewa T, Buxton M, Hanney S. Lay involvement in the public funding of medical research: expertise and counter-expertise in empirical and analytical perspective. *Critical Public Health*, forthcoming.
24. Lomas J. Using 'linkage and exchange' to move research into policy at a Canadian Foundation. *Health Affairs* 2000; **19**: 236-240.
25. Trist E. Types of output mix of research organisations and their complementarity. In Cherns A B. *et al.*, *Social Science and Government: Policies and Problems*. London: Tavistock Publications, 1972.
26. National Screening Committee. Commissioning and responding to research. [http://www.nsc.nhs.uk/uk\\_nsc/uk\\_nsc\\_ind.htm](http://www.nsc.nhs.uk/uk_nsc/uk_nsc_ind.htm) (accessed June 29, 2006).
27. Haines A, Kuruvilla S, Borchert, M. Bridging the implementation gap between knowledge and action for health. *Bulletin of the World Health Organization* 2004; **82**: 724-32.
28. Innvær S, Vist G, Trommald M, Oxman, A. Health policy-makers' perceptions of their use of evidence: a systematic review. *Journal of Health Services Research & Policy* 2002; **7**: 239-44.
29. Department of Health. *Methods to Promote the Implementation of Research findings in the NHS*. Leeds: Department of Health, 1995
30. Lenfant C. Clinical research to clinical practice – Lost in translation. *New England Journal of Medicine* 2003; **349**: 868-874.

**Submitted by Dr Steve Hanney on behalf of HERG, July 2006**

For further details or clarification please contact:

Dr Steve Hanney

Senior Research Fellow

Health Economics Research Group

Brunel University

Uxbridge, UB8 3PH

Email: [stephen.hanney@brunel.ac.uk](mailto:stephen.hanney@brunel.ac.uk)

Tel: 01895 265444