

British Society for Dental Research

BS The British Division of the
International Association
DR for Dental Research



REGISTERED CHARITY No: 264173

BSDR web site: www.bsdr.org.uk

Response to the Review of UK Health Research

1. The British Society for Dental Research (BSDR) welcomes the opportunity to respond to the document produced by Sir David Cooksey's committee reviewing the funding for UK health research

Introduction

2. The BSDR (www.bsdr.org.uk) is the professional association for all oral health research workers in the UK and has nearly 600 members representing all research disciplines associated with oral health from basic science to clinical practice. The organisation is also embedded within all of the UK's clinical dental schools at both an undergraduate and postgraduate level. It is the British Division of the International Association for Dental Research which represents the oral health research community worldwide (www.iadr.org).
3. UK oral health research has been a leading force in this discipline. As an example, the International Association for Dental Research gives a number of Distinguished Scientist Award each year. These are an acknowledgement of the research contribution of individuals at a senior level, recognising research excellence. Over the last 10 years British scientists have been awarded a total of 27 of these awards, more than any other nation in Europe and proportionally more than the USA and Japan when the size of the research community in those countries is taken into account. This tremendous achievement cannot be sustained in the current funding environment, as even our top international scientists are struggling to win grants for their projects/programs through the MRC. The prospects for our younger scientists in the future are bleak unless oral and dental research is positively supported under the new system.
4. It is important that we maintain this position at the forefront of research both for the good of the nation and also to foster the education of new dentists in a research-led environment. The development and transfer of new knowledge and technology into clinical practice is a key aim for all research programmes which can only be achieved if the educators of tomorrow's clinicians have an in depth understanding of contemporary research and development in their field.

5. Oral diseases are the most common diseases of man and bring significant costs to the NHS/private sector and general public. The UK NHS spend on oral health care in 2001-2002 was circa £2420 million (2.4 billion) per annum (some 4.2% of all NHS spending) when patient contributions to the costs of care and care provided under private contract is added to this, we would estimate a total cost to the nation of some £4.3 billion in 2001-2002; since then costs have risen substantially further. Yet research into oral health is under funded compared with other medical disciplines of equivalent cost. The UK Clinical Research Collaboration's (2006) analysis of UK health research funding shows that research into oral and gastro-intestinal diseases is significantly under funded relative to their effect on the population (as measured with Disability Adjusted Life Years) when compared to most other conditions. There is therefore a pressing need for research into the causes and treatment of these conditions. The National Institute for Dental and Craniofacial Research (NIDCR) in the USA spends almost \$400 million per year on oral health research, yet the UK has no equivalent body and dental research takes a significantly lower priority relative to medical and many surgical disciplines. This response is therefore focussed from the perspective of oral and dental research funding.
6. There is increasing awareness of the links between oral health and both quality of life and systemic disease including life-threatening conditions for example the bi-directional relationship with type 2 diabetes. In addition the causes and determinants of oral disease are also common risk factors for other major diseases (diet, tobacco, hygiene, stress, alcohol, accidents, deprivation etc). The difference is that oral diseases are very sensitive to change and very easy to measure. Interventions aimed at addressing the Common Risk Approach will demonstrate benefits in terms of oral health more rapidly than may be demonstrable with other health outcomes. Inter-disciplinary approaches to holistic management of patients have the potential to offer considerable benefits for patient outcomes, but must have an appropriate evidence base to allow them to come to fruition.
7. The BSDR welcomes the proposal to merge the NHS and Research Council funding streams into a single common pool. However, the procedures for funding within this new organisation must be underpinned by equity of access to funding from all aspects of research within health care. This must include medicine and dentistry along with nursing and the other professions allied to both medicine and dentistry. The desire to achieve excellence across the full spectrum of health research is to be commended but appropriate measures must be put in place to ensure that adequate access to funding to achieve this is available to all.
8. Rigorous peer review of all research proposals must continue to be an essential component of the research funding process. Quality should be the principal criterion for judging the quality of research applications. Whilst national priorities are important, they should never influence the allocation of funds at the expense of quality. However, we believe that the current peer-review system has introduced inequality in the system. We are not asking for dentistry to be treated as a special case, we just ask for a fair crack of the whip. Representation of

dentistry at a high level on whatever Council/overarching body is decided upon would be one way of achieving this. Although high-quality science is paramount, 'orphan' subjects (including oral health research) are poorly represented in the review process and therefore do badly in a purely response-mode, peer-review system. Therefore, there is a need for a research strategy to determine priority areas and so that certain geographical or regional needs may be addressed (e.g. issues of access, equality, low socioeconomic groups etc – mostly affecting N England). At the same time the Haldane principle must be applied with a management structure independent of Ministers and Government in place.

9. Any new pattern of working must have an appropriate and transparent management structure with a national coordinating body which is independent of the DH and the DTI. Our proposed models for this are presented in response to question 10.

Prof AWG Walls
President, BSDR
25th July 2006

Responses to specific questions

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?

10. The strengths of the MRC programmes at present include rigorous and robust peer review at both a national and international level, and a clear focus in terms of areas for research. There is however lack of representation from smaller disciplines/specialties on review panels, with the result that highly rated grant proposals are not funded, because of a panel's narrow focus and perception of some projects being of low strategic importance. For fair and unbiased funding outcomes to be arrived at, it is essential to achieve broader representation on review panels and boards.
11. Recently the introduction of funding streams for the development of career pathways for clinical academics is to be congratulated. However, there are also significant holes in the provision of research funds, for example research into oral health and oral health care is not mentioned at all in the recent NHS document "Best Research for Best Health" nor is it part of the UKCRC.
12. The MRC is characterised by strong peer-review and the need for international quality. NHS funds have been distributed on weakly justified research portfolios with little accountability (with the exception of the Health Technology Appraisal programme from NICE). In addition a large proportion of the reported budget for NHS R&D is used to support infrastructure rather than to commission research.

Professor Christopher Edwards recently stated that as much as 73% of the £750 million NHS R&D budget has been used traditionally to support hospital infrastructures. Within a new single fund, we need a mechanism to ensure quality and accountability, within the NHS – Trusts must be held to account to meet their obligations to provide a supportive infrastructure for translational and clinical research.

13. We welcome the return of responsive-mode research funding at the SHA level in England as a consequence of “Best Research for Best Health”. The funding that used to be available at regional level has been sorely missed as a method for supporting the development of research programmes as well as addressing specific local health needs.
14. One of the strengths of the current combined funding streams for research is the ability for them to be accessed by a very broad group of clinicians, scientists and other research workers. This broad church also needs to remain franchised within any new system of funding.
15. The development of a focussed strategy for oral health research with appropriate funding within this combined funding programme would be of enormous benefit to the UK’s oral health research community and the public at large.

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?

16. There are enormous pressures produced as a consequence of increasing demands by the government in relation to the delivery of health care. This is a particular challenge in small disciplines like those that underpin oral health research where specialist services are strictly limited in their availability and the majority of the providers of care are based within Universities rather than within the NHS. This leads to inevitable tensions between the demands of service on one hand and the need and desire to deliver research outcomes of the highest quality on the other. Inevitably this will have an effect on the morale of the individuals’ concerned and influence the career decisions of young aspiring academics for the future. One solution would be to provide some method to reward trusts where significant quantities of research were being undertaken. This could engender a much needed shift in the culture of the NHS with greater focus on research where appropriate.
17. The vast majority of oral health care is provided in a primary care setting. Appropriate arrangements need to be made to facilitate the research in this primary care setting. It needs to be recognised that dentists working in primary care are leaders of small businesses and must be appropriately reimbursed for their time and the costs of running their practice within research programmes. This may be achievable with appropriate agreements with the PCTs concerned but

central direction from the NHS will be required to ensure that this happens. In addition Dentistry is unusual within the NHS in that patients make a significant contribution towards the cost of their care, it would be inappropriate for patients to pay to take part in a research programme so these costs also need to be reimbursed when funding research programmes in primary care.

18. The development of dedicated career pathways for clinical academic staff should help with some of these dilemmas, providing adequate opportunities are available for studentships within the Walport framework in ALL disciplines of health care and research. It must be recognised that there is as much a need for clinical academic staff in the less glamorous as well as the more glamorous aspects of health care. Key to this availability is a review process for applications that uses the expertise of individuals with knowledge and understanding of the disciplines concerned. At present there are NO clinical academics with an interest in oral health on MRC review panels. There are a small number who are members of EPSRC panels in the field of materials science.
19. The Walport process does not address the problems of recruitment of basic scientists into the discipline. Oral health research benefits as much from basic science input as any other medical discipline; however the low levels of funding for research in the oral health arena that are currently available make oral health research unattractive to aspiring non-clinical academics. As a consequence recruitment is a significant issue
20. Another organisational challenge regarding health research is the bureaucracy associated with research on patients and NHS organisations. These are particularly acute in oral health research as many of the conditions are relatively rare, requiring a multi-centre approach to investigation. This adds further to the bureaucracy particularly in relation to ethical approval for research programmes. The whole process consumes time for both industry (where commercial sponsorship is involved) and for the researchers. In addition, adjacent NHS bodies do not trust/recognise each others' procedures.
21. Finally, the RAE in its current format is divisive and does not encourage the formation of groups between schools to form a critical mass for research. This is to the detriment of science as a whole and oral health research specifically as the numbers of research workers are small but they are also spread geographically around the country in dental schools. This geographical spread is vital to the dental education process taking place in a research intensive atmosphere but does need to be overcome to allow the formation of research groupings with adequate critical mass.
22. Furthermore the RAE drives research workers to prioritise their activity into areas where publication can be assured in quality journals. The current review of the RAE methodology driving it further down a line of metrics will exacerbate this trend. This will be a disincentive to undertaking research that could deliver highly relevant and clinically important outcomes but where publication in high impact

journals would either not be assured or possibly would not be appropriate in terms of disseminating important clinical findings to practitioners. As an example many of the publications derived from the NHS primary dental care R&D programme funded in the late 1990s have been published in the British Dental Journal which is widely read by primary care dentists but has an SIF of 0.65.

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?

23. Health research should be aimed at improving the health and wellbeing of the UK's population. It should be designed to extend the health span of individuals rather than necessarily extending their lifespan, although it must be recognised that the 2 are inextricably linked.
24. Adequate access to funding for investigator-led research is paramount in fostering the development of new ideas. Obviously this needs to be balanced by priorities-led research where calls for funding should be made to address specific questions for the health benefit of the population.
25. One specific suggestion relates to the substantial data resources being housed in the UK data archive in Essex. However, there are no clearly identifiable funds for secondary analyses of these data. The initial reports tend to be descriptive in nature rather than analytical but it is clear from work in the US that analytical appraisal of some data sets can reveal links that are not apparent in a baldly descriptive approach. Such analyses are relatively inexpensive (the data collection is expensive rather than subsequent data analysis) and some limited funding on a competitive basis for secondary analysis of data would be very valuable.
26. There is a need to remove duplication across the sector for example:
 - Encourage closer working between the 'Skills for Health' programme and Universities to eliminate overlap between the two.
 - Ensure that there is no duplication of developing and funding clinical trials by the NICE HTA programme and MRC
 - Improve clinical research networks to limit duplication, improve patient access for trials and streamline bureaucracy.
 - Encourage collaboration - particularly for disorders (e.g. oral cancer) by establishing funded national consortia of excellence.
 - Develop a more strategic approach to funding research, so that research spending is related to the impact of diseases on the health and wellbeing of the population and the cost to the economy.

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?

27. Developments in healthcare are underpinned by research into fundamental mechanisms of disease. There is and will be a need for ongoing research into basic biological mechanisms as well as programmes designed to translate this knowledge into clinical practice. At any one time there needs to be a balance between investigator-led, responsive and translational research. Inevitably the balance between these aspects of research will vary from time to time as critical breakthroughs in basic science knowledge will lead to a series of linked translational studies. Thus there will need to be a regular programme for review of the balance within a funding stream.
28. Care will be required to ensure a balance between cutting edge research that may lead to solutions to complex disease at some stage in the future and programmes that will identify solutions for more readily identifiable clinical problems where the research innovation may not be so high but the clinical need is great
29. Appropriate allowance needs to be made for the variations in costs of oral health care research, particularly when undertaken in primary care.

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?

30. The best example of the use of publicly funded research in oral health to influence health policy is the investigation of the benefits of community water fluoridation schemes and the subsequent policy changes to facilitate the delivery of fluoridated water across the country. Perhaps the most significant lesson to be learned from this experience is the time that it has taken from the initial descriptive epidemiology in the 1950s and 60s to legislation specifically to enact water fluoridation in 2005. Similar impacts could be achieved for other oral diseases, by implementing national policies, which draw on the robust research base around certain areas, e.g. risk factor impact and management.
31. The recently produced report from the Academy of Medical Sciences “*Medical Research: Assessing the Benefits to Society*” has given clear guidance to the methodologies that are available to assess the benefits of the outcomes of research

to society. The principle of appropriate evaluation of this impact should be embedded within research developed by or for this new joint funding pathway. (<http://www.acmedsci.ac.uk/images/publication/Medicalr.pdf>).

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?

32. Research linkage between basic and applied research is essential when taking new knowledge from the laboratory into the clinic. At present this linkage is driven by individual curiosity and persistence which is supported to an extent by grant programmes that are aimed at crossing this divide. Having said that funding initiatives that cross the boundaries of the current research councils are more difficult to prepare and submit than something which is more clearly focussed. A more transparent process for funding such translational research would be of benefit.

Q7 How can the Government encourage translation, entrepreneurship and innovation in health research to improve public services in the UK?

33. Linked to the point above improved access to funding to support translation of basic knowledge into clinical applications and practice would facilitate this goal. Academics are not by and large “entrepreneurs” and frequently lack the skill/knowledge to translate or spin out developments into the market place. More support through publicly funded “venture capital agents/business angels” and the development of business/academic partnerships would help to encourage better translation of research. Currently, industry plays the major role in this aspect, but can, by the nature of the industry, focus too narrowly on synergies and the broader market opportunities may be lost in this way. The DTI could and should play a more proactive role in assisting with technology development and transfer into clinical practice.

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 public 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?

34. There needs to be an appropriate strategy to guide health research in the UK which encompasses all aspects of healthcare provision. Without a strategy it is not possible to guide the provision of appropriate infrastructure.

35. The provision of infrastructure that would be suitable would likely then depend on the technology required. Where a piece of infrastructure is substantial and expensive then it makes sense for the Government to support the development of a limited number of specific resources to meet a purpose. Access to these resources must be open to the wider research world rather than just focussed on the host institution.
36. Through its programmes NICE (and the Cochrane collaboration) are in a position to help to identify areas where there is a need for specific and focussed research into a theme or topic. Part of the UK's health research budget should be dedicated in a series of specific targeted research calls to address the areas identified by these bodies.
37. Industrial partners in research are increasingly aware of the costs of undertaking research. The recent implementation of Full Economic Costing in the UK has the potential to make UK-based research even less financially competitive. Would it be possible to give companies some form of tax incentive if they undertook research in the UK rather than abroad? This increase in expense for research undertaken by Universities must also be recognised by an appropriate uplift in budgets not only for overt research funders like the MRC but also within programmes such as those run by the Health Service Information Centre (<http://www.ic.nhs.uk/>) where academic staff are often part of research teams who deliver the information that is used to plan health care.
38. It must be recognised that clinical research, particularly during the development of new products / materials / devices requires an appropriate clinical trials environment. The costs of development and maintenance of such environments is substantial and should form part of a national research strategy. Similarly there may be costs involved in establishing an appropriate research infrastructure in dental primary care, not least in terms of ICT.

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?

39. The model employed by the USA with an overarching National Institute for Health and a series of theme (for example the National Institute for Aging) or discipline (for example the National Institute for Dental and Craniofacial Research) based sub-groupings is one that we believe should form the basis for supporting health research in the UK.
40. The more recent development of the Canadian Institutes for Health Research has led to significant interactions between basic and applied sciences to the benefit of biomedical research in Canada and beyond as a consequence of the international outreach programme. Again lessons should be learned from its development and structure although any new organisation in the UK should NOT be based within the DH.

41. Neither of these examples has the singular benefit that a combined NHS / Research Council programme in the UK would facilitate of a single research community not only developing the research ideas but also being able to assess their delivery within a National Healthcare system.
42. This model is also being used for the development of a research structure at a European level and is one that appears to be able to deliver specific and targeted research outcomes.

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.

43. Any new model for funding must continue to foster the diversity of research that is currently provided within the combined sectors at present. The MRC has an enviable and International reputation for its work and care must be taken to maintain both the standards it has set and its reputation if at all possible.
44. Any merger of funding streams must be managed by a joint board independent of government, maintaining the Haldane principles. This overarching body should be representative of the whole research community and be led by an independent and highly respected Chair. Representation of dentistry at a high level on whatever Council/overarching body is decided upon would help to address the issue of access to research funds by oral and dental researchers. In some ways it is a shame that the *virtual* National Institute for Health Research (NIHR) was formed as this would have been an appropriate title for such an organisation. This new organisation would have a substantive structure and we would encourage the principle of sub-groupings within this new body which would represent either topic or discipline areas using a model similar to the NIH in the USA
45. There would also be a need for close links with EPSRC, BBSRC and other government departments for example the FSA. There needs to be a readily identifiable mechanism for funding proposals that cross boundaries either between governmental funding organisations or between government sources and charities / industry to allow research teams to bring together a basket of funders to support complex programmes that would otherwise fall outside the remit of any one organisation. It must be remembered that charities provide substantial funds for medical research (£660 million in 2002/3) it would make sense for their to be close collaborative working relationships between the charitable sector and this new body

Q11 To what extent does the success of recent innovations in health research (e.g. Clinical Research Networks) and the proposed structures rely on the new Connecting for Health NHS IT system, and to what extent should it do so?

46. Appropriate use of information from Primary Dental Care would require the new NHS IT system to extend not only to dental hospitals but also into a dental primary care setting

Q12 Given that NHS R&D is currently devolved, but that the work of Research Councils is not, how can these functions work best together to maximise the health and economic benefits to the UK?

47. Funding must be available to support the full economic costs of research in a clinical environment and there must be provision for recognising that the rate of inflation in costs for health care delivery is greater than general inflationary costs.
48. The MRC currently delivers its funding on a national level whereas NHS funds are devolved to the 4 national groupings within the UK. There are likely to be good reasons for differences in research priorities between the nations as patterns of health are different for example between the South of England and Scotland. Any new system needs to be sufficiently flexible to ensure that this responsiveness is maintained. The new organisation should have a UK wide remit for research capacity and development allowing for some of the funding being restricted for use in the devolved nations. The principle that all funding needs to reflect the full economic costs of research MUST be maintained.

Prof AWG Walls
President, BSDR
25th July 2006

Correspondence to:

Prof TF Watson,
Secretary, BSDR

Biomaterials & Conservative Dentistry
King's College London Dental Institute
Floor 17 Guy's Tower
Guy's Hospital
London Bridge
SE1 9RT
020 7188 85388
Email: timothy.f.watson@kcl.ac.uk