

24 November 2006

Review of UK health research funding

National Perinatal Epidemiology Unit Response to the Cooksey Consultation

Review questions

1. *What are the strengths and weakness 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?*

One of the major strengths of the MRC is that it is internationally regarded as a funder of research which is of international relevance and quality. When considering restructuring the institutional arrangements for the new single fund for health research, we believe that this is one important aspect of the MRC's programme which must be safeguarded. The rigorous and exhaustive process of peer review and scrutiny by boards with specific expertise ensures that all MRC funded work is of the highest possible quality and relevance both in the UK and internationally. This is not to say that NHS R&D funded research is not of high quality, however, its relevance is often limited to the UK and as such it is the MRC which is regarded more highly internationally.

The potential weaknesses of the MRC system is that there remains, in some areas, particularly with respect to Training Fellowships, a bias towards basic science research. Although this is clearly within the remit of the MRC, much of this basic science research has limited, if any, impact on the provision of patient care. There is a balance to be struck between funding for basic science research and funding for more clinically applied research and in areas such as Training Fellowships we believe the balance is currently more in favour of basic science than clinical research and this could usefully be addressed.

It is difficult to judge how the NHS R&D funding supports the research and training needs of the NHS, social care, industry and academia, as it is currently in a state of flux. However, the major change in the provision of funding for universities is the introduction of full economic costing. The current NHS R&D funding streams appear to be aiming to bypass having to pay full economic costing by encouraging awards to be held by NHS institutions. This process, although limiting costs, will not ensure the highest quality of research is undertaken. Although there are experienced researchers

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within the NHS, the majority are in universities and if clinical research is to be conducted to the highest standard, which will be judged to be so internationally, then the NHS R&D funding needs to engage with universities more directly, even though this will mean that their research programmes need to pay the full economic costs of the research.

2. *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 major key organisational problems facing the conduct of clinical research, particularly randomised controlled trials to evaluate the effectiveness of established and new interventions, is the increasing bureaucracy associated with the conduct of these studies. Although the National Institute of Health Research has committed itself to reducing this bureaucracy, it is unlikely that the mechanisms that they are currently considering will be sufficient. The legislation enacting the EU Clinical Trials Directive and the interpretation of this in a piecemeal fashion by NHS Trusts throughout the UK has put up major obstacles to the conduct of timely and affordable research. The cost of clinical trials has escalated enormously, simply to deal with this increasing bureaucracy, without any evidence that this improves the quality of the conduct of this research by academic institutions. Indeed, we would argue that this increasing bureaucracy, by diverting resources away from the conduct of the trials, is likely to lead to increasingly smaller trials, which are therefore unlikely to provide clear answers to the questions being addressed. This will have the perverse effect of weakening the evidence base for contemporary clinical practice, while dramatically increasing the costs of producing this weaker evidence base.

In addition, a further (unanticipated) side effect of the EU Clinical Trials Directive is that it has become almost impossible to conduct European-wide randomised controlled trials, which address important questions, and which are relevant to all of the member states. The EU Clinical Trials Directive has been interpreted differently in different countries in Europe and the bureaucratic and legislative processes mean that European collaboration is even more difficult than it was prior to the introduction of this legislation. We are currently conducting a large MRC-funded randomised controlled trial of the use of intravenous immunoglobulin in neonates with severe life-threatening infection. Our initial plan was to recruit most of Europe into this very large trial but this has been severely affected by the EU Clinical Trials Directive, resulting in substantial delays, increased costs, and in some instances a complete inability to conduct the trial in a particular country. We are now collaborating extensively with Argentina in order to ensure that we can recruit adequate numbers of infants. The finding that we can collaborate more effectively and more efficiently with Argentina than with any country in Europe demonstrates the very substantial barriers being erected to prevent health research from being undertaken.

3. *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?*

The Government's priorities for health research should, we believe, be twofold. The first is to develop and strengthen the evidence base for clinical practice, so ensuring that the NHS can deliver cost-effective services to increase health and wellbeing of the population. In the short to medium term this means substantially expanding the resources available for the evaluation of health care. Currently, increased resources are being put into the NHS programme for Health Technology Assessment and for the Service Delivery and Organisation programme. This should begin to improve the capacity of the NHS to undertake some of these evaluations, however, we would argue that substantially greater resources should be put into these mechanisms of support. In addition, it is clear that as the population of the UK becomes healthier, our ability to address questions which will further reduce mortality or substantial morbidity mean that our studies must become larger. There need to be funding streams available to support these developments. For example, when contemplating whether to undertake any new national screening programmes, the cost of evaluating these programmes will be substantial. However, compared with the cost of introducing a new national screening programme in the NHS, the costs of undertaking the research are very small by comparison. Many existing funding sources are unable to fund the cost of these large evaluations.

An example from our own recent experience has been the planning of a large randomised controlled trial to evaluate the use of computer assisted decision support during labour for normal term pregnancies, with the aim of decreasing the incidence of birth asphyxia and therefore limiting the development of cerebral palsy. If the technology is effective, not only will it reduce long-term morbidity and its associated costs, it will also reduce the NHS Litigation Authority bills with respect to intrapartum care in obstetrics. Currently settlements for negligent intrapartum care, which are thought to have led to the development of cerebral palsy, range from £3-£5m per case. The cost of undertaking the research necessary to demonstrate whether this technology was effective cost £5m. This cost, compared with the potential benefits if the technology was effective, are small compared with the NHS savings. However, the MRC were unable to fund a project of this size. Although these examples are currently few, they will increase in number and the funding mechanisms which are available in the UK need to be able to be flexible enough to fund these.

The second main priority for health research should be in establishing the necessary research infrastructure. Although there are welcome moves to increase the ability of the NHS to support clinical research, there remains a major problem with the training, career development and funding of clinical researchers within the UK. The very process of prioritising particular areas of health care, such as cancer or cardiovascular disease, means that other areas can become relatively starved of funding. For example, funding for maternity research was very limited for a number of years. The prioritisation of research in maternity, following the National Service Framework for Young People, Children and Maternity, has revealed the dearth of qualified and experienced researchers to undertake much of this work. It is essential that the skill base is maintained across all of the topic areas and that political imperatives to increase funding in specific areas do not mean that the skill base

becomes skewed and inflexible to meet the needs of changing priorities.

4. *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 the balance?*

Questions need to be raised about the value of the large amount of resources being put into basic science research and the longer term payback of this research. Although scientific discoveries in the laboratory are frequently heralded as having a major impact on health and wellbeing, it is uncertain how many of these “discoveries” actually lead to the delivery of improved healthcare. This is not to imply that basic science research is not important, however, as resources are limited, the balance of spending between basic science, translational research, and clinical research needs to be addressed and we would suggest that there needs to be increased attention paid to translational research and clinical research, particularly with respect to the evaluation of interventions.

5. *In your experiences, 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?*

In our experience the results of publicly-funded health research in the UK have been used extensively to improve clinical care and practice. In the maternal and newborn field, the development by NICE of Guidelines for Antenatal Care, Intrapartum Care and Postpartum Care, have relied heavily on the evidence base in the available literature. Much of this research has been developed from the UK, although there are inevitably gaps in the evidence base and topic areas where this evidence could be substantially improved. In many instances the evidence has been gathered from other settings and has had to be extrapolated to the UK, although this has not always been particularly problematic. These national guidelines are a model for healthcare delivery in the UK and are widely regarded in other countries around the world. In the maternal and newborn field, almost all of the evidence base is developed by publicly funded health research, and this is particularly true in the UK. There is almost no industry support for research in this area, particularly in relation to randomised controlled trials of interventions. The anxiety of industry in relation to the potential for long-term adverse effects of drug exposures during pregnancy and in the newborn period are major deterrents to the conduct of clinical research by industry in this topic area. As a consequence, there needs to be further support from public bodies for research in this specific area. This may well occur in other topic areas, but in disease areas such as cardiovascular disease and cancer, there is an extensive industry supporting clinical research, which simply does not exist in other topic areas, such as maternal and newborn care. It is important, therefore, for Government to consider increasing public support for

these relatively under funded areas to ensure equity of research to improve and develop the evidence base for clinical practice.

6. *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, eg with engineers, physicists, and social scientists?*

In terms of translational research, ie the uptake of developments in the laboratory to their evaluation at the bedside, the process of evaluating a new drug by the pharmaceutical industry has rarely been replicated in clinical research funded by public bodies. In maternal and newborn care, where there is very little, if any, industry involvement, the logical progression from laboratory findings to large scale clinical research has simply not been supported by existing funding mechanisms. For example, neonatal brain injury due to lack of oxygen presents at birth as neonatal encephalopathy. Many of the surviving children develop with cerebral palsy. Limiting the damage associated with this asphyxia has been a major goal over the last few years. In the laboratory and in a series of animal experiments, there are a range of agents which may protect the brain and limit the damage which is done by this temporary lack of oxygen. However, at present there is no funding mechanism which will allow the logical testing of these agents in relatively small numbers of babies to demonstrate whether any of them are worth testing in large scale randomised controlled trials to demonstrate that they will improve the outcome for this group of babies. This form of translational research has usually been left to the pharmaceutical industry. However, if the pharmaceutical industry are unwilling to support research in these particular areas, either because the topic area is too high risk for them or because the returns for the development of these drugs is too limited, then by necessity, this research needs to be funded by the UK government in one way or another. Establishing clearer mechanisms for this form of translational research would be extremely useful and cost effective.

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

This answer to this question also relates to part of the answer to question 4. If the balance of research is weighted towards the identification of priorities rather than being investigator-led, then there will be very little entrepreneurship and innovation in health care. There needs to be established mechanisms for responsive research, which allow investigators to identify important questions and potential solutions to these questions and these funding sources need to be sufficiently well-resourced to be able to cope with the very large scale research which may be necessary. It cannot be assumed that these questions will always be addressed by the prioritisation of research questions using existing mechanisms.

8. *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?

We are not sure that UK health research funding can be used to support the work of NICE. What it could be used for, however, is to take the research recommendations which are produced by the NICE Guideline development process and prioritise these questions when considering funding for new research. Many of the questions identified by this process are not the most "exciting" questions when viewed by funding bodies such as the MRC. They are often basic straightforward questions about whether simple interventions work or do not work for specific conditions. They have a great impact on the cost of providing health care and the relief of disease associated with specific conditions, but they are not "new or challenging to evaluate". Although the existing HTA process should help to prioritise some of these more basic questions which relate to the provision of health care within the NHS, and the responsive funding stream of HTA will help with this, we would argue that questions which address specifically identified gaps in the evidence base through the work of NICE, should be prioritised more explicitly.

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

10. *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.*

We believe that the MRC and DH/NHS R&D funding streams should not be merged. The questions being addressed by these two different funding streams are different and the processes of reviewing, prioritising and evaluating scientific quality are different. This does not mean that the processes are not fit for purpose. We believe the DH/NHS R&D funding strategies should prioritise research which directly benefits the NHS and patient care, whereas the priority of the MRC can, and should, have a wider international focus, as long as the results are also relevant to healthcare within the UK. In order to maintain and enhance the international reputation of UK medical research, it is essential that the UK maintains an internationally competitive funding source. The MRC is that funding source and the very high scientific quality of all MRC projects is widely acknowledged as being the main reason for its international reputation.

To whom should the single ring fenced be accountable is more problematic. Although public funding comes from the UK taxpayer through Government, we do not believe that Government should have too close a control over this fund. Political priorities and expediencies will not always be in the best interests of the health of the population and manipulation of funding priorities by successive Governments will not create a stable and secure research base within the UK to maintain and develop its international position. We would suggest, therefore, that such a fund is managed by a body which has some distance from Government, and which is seen as having explicit independence from political pressure. We believe

that the model developed for NICE would be a reasonable model to achieve this.

11. *To what extent does the success of recent innovations in health research (eg 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?*

We are not certain that the recent innovations in health research have yet been sufficiently well established to be judged a "success". Although most of us are very optimistic that this change in strategy will be successful, this has yet to be realised in many topic areas of health care. The problem of judging success of these strategies will be offset by the increasing bureaucracy and challenges to the conduct of research, which will increase the cost of doing the work and increase the failure rate of research projects. Although we warmly welcome the development of the research networks and the associated organisational changes, the extent which they will be judged a success will take some time.

12. *Given that the 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?*