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The Medical Director's Office
The John Radcliffe Hospital
Headley Way
Headington
Oxford
0X3 9DU

Tel: 01865 221343
Fax: 01865 (220069)
Email: james.morris@orh.nhs.uk

Review of UK Health Research

The MRC and NHSR&D fund major segments of UK Biomedical research which is large and diverse and becoming steadily more complex as it continues to grow.

The strength of the MRC model has been its consistent focus on supporting research activity and programs, often through the development of research units that are able to develop over an extended period of time to produce high quality scientific results. This has been combined with recognition and support for research training, again over a period of decades. Similar mechanisms have operated in other developed countries that have a successful track record in conducting high quality scientific research. The weakness of a purely programmatic approach is that it can encourage a conservatism that concentrates on producing output to meet the needs of the funding cycle. However it must be recognised that this approach is underpinned by a large amount of infrastructure funding from other sources such as HEFCE.

The NHS in its R&D funding has, with the notable exception of the HTA, SDO and the smaller Methodology programme, taken essentially the opposite approach and attempted to fund research capacity with, particularly in the last decade, very little of the funding used for programme support. In most people's view this approach has been almost uniformly unsuccessful with gross distortions in the distribution of the available funding and a strong suspicion that much is used not to support research, but to underpin deficiencies in the funding for, particularly specialist, clinical services of the institutions (almost all of which hare in London) that receive the overwhelming bulk of the funding support. Significant quantities of funding have also been disbursed in small amounts to a large number of institutions without clear evidence of benefit to research output.

The key organisational challenges facing health care research
A major organizational challenge for health care research will be to maintain the quality of scientific endeavour in the face of what can only be an increasingly fragmented healthcare system as the consequences of payment by results, plurality of providers and patient choice works its way through the UK healthcare system. There is a significant risk that in their focus on short term financial survival the NHS Trust component of the major academic medical centres will concentrate too much on purely clinical provision. More specifically the likelihood

that clinical complexity will be insufficiently funded in the national tariff costs for clinical activity makes it a real possibility that these major institutions will be financially destabilised.

In forwarding the overall NHS research agenda it will be important to rebalance the way in which the NHS Trust component of the academic medical centres is evaluated to reward excellence in the academic as well as the clinical mission. One of the major organisational challenges is therefore to ensure that the regulatory regime under which the NHS Trust and University components of academic medical centres operate encourages strategic and operational cooperation and coordination for mutual benefit in patient care, teaching and research. To a considerable extent this cooperation has been degraded by organisation changes in the past decade and it is important that any new arrangements contain elements that positively encourage this strategic cooperation.

Currently the financial and organisational pressures on NHS Trusts, bear particularly heavily on the Academic Medical Centres as they try and balance the competing pressures of patient care, teaching and research in an environment where a range of pressures overwhelmingly favour a concentration on clinical service issues to the exclusion of academic achievement. To a significant extent this is the result of the different way in which NHS Trusts and their University partners are assessed by their respective public funders (HEFCE and the DoH). For the NHS Trust assessment is to a large extent concentrated on a range of clinical or quasi-clinical targets and financial measures, most importantly the duty to maintain financial balance and for the university the Research Assessment Exercise (RAE). Both have substantial implications for their organisations.

For both organisations the targets are demanding and, because success in meeting the targets is important, require substantial short term organisational focus. This is particularly the case for the NHS Trust as, unlike the RAE, the Trust is assessed every year on progressively more demanding clinical targets which have a very high domestic political profile and provoke correspondingly close ministerial and public scrutiny. The other two elements of the Trusts tripartite mission, teaching and research, do not attract anything like the same level of ministerial attention or public scrutiny.

A second challenge is to develop a way of distributing NHS R&D funding in such a way that it supports NHS research and development. This is not the case at present (vide supra). The overall strategy of the new NHS R&D strategy “Best research for best Health” is a significant step in the right direction in that it moves a larger element of the total funding to a more programmatic basis and the structure of the bids for designation of the major centres as Biomedical Research Centres reinforces this process by focussing the process on the nature of the research themes that are being proposed.

However, the question of infrastructure support in the NHS must not be neglected. In any future funding model for NHS R&D a balance needs to be struck between an infrastructure element and programmatic funding as, in one sense, NHS R&D funding has to perform the functions of both the MRC and HEFCE in supporting both infrastructure and programmatic research within the NHS. Striking the appropriate balance between infrastructure and programmatic support will require the wisdom of Soloman. However, a critical element of any infrastructure support system will have to be that it is both transparent and auditable as financial pressures on NHS Trust clinical budgets are likely to become progressively more severe and unless such funding is protected it will be subject to erosion.

Academic endeavour is par excellence a joint enterprise between the NHS and Academia and translational research is the locus of the migration from the laboratory, which is archetypically a university activity, to the clinic which is an NHS function. With different

funding streams labelled “NHS” and “MRC” an enduring organisational problem will be managing the interface between the NHS Trust and the Academic partner. Any joined funding structure must permit some flexibility of application of funds and if there is a requirement to restrict “NHS” funding to NHS activities it will greatly complicate the process of allocation and retard progress in this area. Some of the complexities that arise are finely illustrated by the current process of applying for funding as a comprehensive biomedical research centre.

3. Priorities in health research

In terms of the key priorities for NHS R&D, at the operational level these should reflect the key clinical challenges to the provision of healthcare in the 21st century notably, Aging and the clinical problems associated with aging e.g. Stroke, dementia; the management and treatment of chronic disease, diabetes, chronic heart failure, chronic lung disease, inflammatory bowel disease, along with the perennial challenges of infection and immunity, cancer, heart disease and disease of the nervous system. Outside the disease and system based clinical problems, the challenges of imaging and molecular diagnostics, the use of intelligent systems and remote monitoring of patients, the integration of genetics into clinical practice and rational health planning based on sound economics are major ongoing challenges.

6.7.8. How can UK Health research funding be most effectively used to encourage “basic” translational and applied research

NHS and University research, locally and nationally may, by some standards, be characterised as piecemeal, with processes and projects set up by individual investigators working to their own agendas and driven, in part, by the availability and source of funding. This apparently haphazard approach has at times generated remarkable connectivity and synergy, for example in clinical research networks to conduct large scale trials or epidemiology studies or research institutes or in collaborations between laboratory and clinical groups. However, these tend to arise in response to individual initiatives rather than systematically, or in a top down way. There is, of course, also the underlying vocational drive allied to rare ability to undertake biomedical research and at the highest level of research “talent” is clearly both the limiting and the driving force.

The implications of this is that an important way of ensuring the most effective use of research funding is to bring together talented individuals from a wide range of scientific (and other relevant e.g health economics, social science) backgrounds and encourage their interaction. Propinquity has a powerful effect in encouraging innovative thinking which is at the root of much scientific progress. This has been and continues to be a successful model and accounts in large measure for the success of research institutes such as the Weatherall Institute in Oxford which bring together a wide range of talented individuals.

There is however a balancing argument for a more systematic approach to research planning and execution within the NHS and Universities. The massive diversity of Biomedical research is due in large measure to the numbers of fields of science and engineering involved, the multiple areas of medicine and the many stages of research and development necessary to take an idea through to healthcare practice. Within this complexity, there is currently no overall unifying planning or strategic process as there would be in any large commercial organisation.

There is a large body of medical research that requires both local and national structures to be scientifically valid and where it is possible to develop a strategic plan. It is desirable that if this research is to be conducted, a more systematic and planned approach should be

strongly supported. All research whether industrial or public sector and regardless of scale requires five generic components to be successful:

1. A process to set clear objectives
2. An intelligent and experienced planning function to achieve these objectives
3. A prioritisation process to determine which plans should be followed
4. A well organised research effector process, designed to comply with all modern requirements to carry out approved projects including the production of QA'd reports with dedicated project managers for every project or process.
5. The provision of adequate funding

The five generic components can be applied nationally, locally, at group level and at project level and require a hierarchical/matrix structure to be created to achieve this. Within the funding bodies, there is a need to decide what sort of research is required. In the NHS this clearly should be research which will improve the quality or efficiency of service delivery. Within Universities, the emphasis for research should be on the progress of science and innovation. Nationally, overall research priorities must be set, locally, contributions to national priorities will be made on the basis of pre-existing or developing strengths.

Standard processes may be efficiently devised and supported centrally and distributed to researchers as "off the shelf" tools or processes, whether within institutions or nationally. This reduces inefficiency and the likelihood of re-inventing wheels. It is also likely to ensure compliance with modern regulatory and quality requirements.

Within any organisation systems of clear accountability, project deliverables and timelines are required. Research is no different and standardised systems and organisations should be put in place so that budget holders are fully aware of project progress from start to finish. Within any organisation, a culture of financial and commercial awareness is also essential. While research requires funding, it also generates opportunities. These opportunities are varied. A culture which is aware of them and positively looking to identify them and exploit them is required. Research organisations should have such an entrepreneurial culture systematically inbuilt and maintained by a management process which is devised for the purpose and properly empowered.

The current process for designation of comprehensive biomedical research centres is a powerful encouragement to the development of an organisational structure that will facilitate this type of focus on research objectives and productivity. Within these centres, systems to define and focus research objectives and provide standard structure to research management will increase productivity and value for money. Clearly NHSR&D and the MRC are required to take the lead as they are currently doing.

7. Encouraging Innovation to improve public services

Current initiatives such as the establishment of the NIII, NHS Innovation Hubs and earlier investment via the DTI (e.g. PSRE) are either too early to judge or have been a mixed success. Problems remain with access to funds to protect new innovations, something which is now being addressed, as well as finding mechanisms to develop innovations that are of benefit to patients but may not be commercial successes. Local experience suggests that when universities and Trusts use of a common Technology Transfer body this allows greater cooperation and does not have to be to the detriment of the NHS.

A pragmatic approach to encouraging the adoption of innovation is to use the power of reimbursement. The translation of the NHS to a system of payment by results has provided a very powerful force to change practice. Experience in other countries that use this payment mechanism is that what gets paid for is what gets done, and conversely. In the medicare

system a most effective way of encouraging change of practice has been for medicare to reimburse for the new treatment protocol (and if possible withdraw payment for alternatives) and to publicise this through the business managers as well as by the professional routes. This has proved to be a rapid and effective way of effecting change.

10. To what extent should the MRC and DH/NHS R&D be merged:
There is a strong argument that the programmatic elements of NHS and MRC funding must be coordinated. Although this would not require them to be merged it might be the most effective way of ensuring the degree of coordination that is required. One of the major advantages of merged funding streams is that it could largely avoid the NHS/University interface issue referred to above – a consummation devoutly to be wished.

The precise accountability is probably less important than that the funding mechanism operate within a clear and consistent framework. The framework should ensure a rational and reasonably stable distribution of funding that reflects both scientific and healthcare needs and, most important, is not subject to the vagaries of short term political pressures.

James Morris
Medical Director

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