Supporting research and development in the National Health Service

Report of a meeting of the 1942 Club, January 1995

In April 1994, a Taskforce under Professor Anthony Culyer's chairmanship reported its recommendations for funding research and development in the NHS. It was therefore appropriate for the 1942 Club [1] whose membership consists of academic clinicians and scientists working on medical problems, to invite not only Professor Culyer to discuss the report, but also Professor Michael Peckham, director of research and development at the Department of Health, who will be expected to implement the recommendations, and Mr John Cooper, chief executive of the Hammersmith Hospital NHS Trust representing NHS managers. Their presentations are published below.

At an eariler meeting, the 1942 Club had heard from Mr John James [2], a member of the Taskforce and chief executive of a London district health authority, that in return for assured funding of research and development by the NHS, the selection of research priorities would have to take into account the needs of the NHS, and that the quality of such research would need to be better than could be purchased from elsewhere. This produced a brisk flurry of 'Letters to the Editor' [3].

References

1 Booth CC. Friends and influences: the history of the 1942 Club. *J R Coll Physicians Lond* 1993;**27**:187–91.

2 James JH. Purchasing research in the NHS. *J R Coll Physicians Lond* 1994;**28**:390–1.

3 Letters to the Editor. In response. . . purhcasing research from or for the NHS? *J R Coll Physicians Lond* 1994;**28**:494–7.

The recommendations

The April 1994 Report of the Research and Development Task Force *Supporting research and development in the National Health Service* [1] was quite deliberately long on principle and short on detail. This was not merely due to the pressure of time, though four and a bit working months was a desperately short time for us to tackle such a complex problem, but also because it was something for which we consciously strove, partly because we felt that there was a real need to set out the basics of a new *framework* for supporting research and development (R&D) in the National Health Service (NHS) (both the R&D of the NHS's own programme and the service support provided by the NHS for the R&D of others) and partly because we realised that the final details of the arrangements eventually to be adopted would depend upon a lot of specific work in the office of the director of R&D at the Department of Health (DoH), Professor Peckham, and upon much further consultation. After a hesitant start for a few months after the delivery of our Report on 30 April 1994, the backing that it has received both from the Secretary of State and the research community, has been sufficiently enthusiastic that it seems entirely proper to look ahead at some of the key issues that need urgent resolution, in the reasonable confidence that the framework—at least for discussion—has now been set. I cannot cover all the issues but hope to address at least some of those that are likely to lie close to your hearts.

Let me begin by taking you back to our terms of reference. While taking into account the NHS reforms and the functions and manpower review; and building on existing work, the Task Force is asked to:

- take stock of the current situation with regard to the conduct and support of R&D in the NHS, to establish the nature and extent of any problems, and in that light to consider whether it is appropriate to make recommendations; and, if it is:
- to review the ways in which the NHS currently funds its own R&D and supports that funded by others;
- to review the ways in which the NHS mechanisms for funding and supporting R&D promote and/or hinder the aims of the NHS R&D strategy and other Government policies relating to R&D in the NHS;
- to advise on alternative funding and support mechanisms for R&D, including any necessary transitional measures, recognising that any new system will have to operate within available resources; and to report to Ministers by 30 April 1994.

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Our review and the conclusions from it are now well known and I do not propose to go through them in detail. It is important, however, to recognise that we were not charged with the task of considering the support of medical and health services research in its entirety, let alone that of the fundamental sciences, whether natural science or social science, on which all else depends, whose interface between the more applied sciences of medicine and health services research is absolutely essential, and whose various sources of support are highly complementary. Some distinguished colleagues were disappointed that we had so little to say on this subject. My immediate response is to say that one needs to go one step at a time and there was always the risk that in attempting to tackle further complex and potentially controversial issues we might fail to satisfactorily address the important brief we were actually given.

Basic with (not versus) applied science

That the fruitful interplay between basic science and the more applied sciences is crucial can scarcely be emphasised enough. Few major innovations in health care do not have their roots in core disciplines such as physics, biochemistry or economics. Sir Colin Dollery summarised it concisely in the phrase 'science can change the rules of the game, development may improve the standard of play by existing rules'. I think by 'development' he means mission-oriented research and any that operates within a received scientific paradigm, which is not, of course, the concept of 'service development' commonly understood in, say, trusts, which is characterised by the non-generalisability of its conclusions. Basic science, whether it be in physics or economics, is rarely targeted at any specific use. It is speculative and inventive, addressing questions generated by the imagination of the scientist in the search for greater generality, consistency and the solution of puzzles that may be absolutely fundamental. That kind of work is less common among clinical academics, who are more concerned with solving clinical problems using the paradigms, theories and experimental methods developed within the parent disciplines and adapting them appropriately to the problems in hand. They are trained in both the clinical investigative skills and the laboratory methods required to address such problems, and they usually need access to patients though they often begin experimentation with animals or isolated tissues. *Mutatis mutandis*, similar patterns can be observed in some at least of the social sciences which provide much of the core of health services research, with, for example, axiomatic structures of both behavioural theory and normative methods being developed by basic scientists, then applied and developed over many years in empirical work (mainly statistical, such as econometric), and then developed for specific purposes in health services research. Health services research sometimes involves the application of only medical science (as in clinical trials), sometimes the application of only social science (as in estimating demand for health care) and sometimes it involves both types of science (as in many cost-effectiveness studies of medical procedures). I am not implying any meritocratic ranking to the activities of colleagues working in these various fields; the fruits of science, beyond the sheer intellectual delight of puzzle solving and the invention of explanations for phenomena (which is reward only to those engaged in it) inevitably depend upon a quite extended team of people having different skills and motivating passions. Moreover, that team is international, particularly, though not exclusively, at the more general levels at which science may be conducted.

However, the fruitful interaction between the constantly developing 'science base' and its application along a continuum at the other end of which lies the practical implementation and use of procedures, is not linear. It is much better seen as a loop, and I conjecture the more of a loop it is made to be, the greater and more valuable the eventual fruits. While the ideas, concepts, theories and so on that are 'applied' clearly in some sense have to precede the application, it does not follow that the organisation and support of research should follow in a compartmentalised or linear fashion. Applied science must apply, test, or develop the ideas and theories of basic science. The invention of valid ways of doing this testing and application, whether laboratory-based in environmentally controlled experiments, or statistically-based and using the variation observed in nature and society, is a part of the imaginative excitement that draws many fine scientists into points along the continuum that are not 'basic'. It therefore follows that applied scientists have much to learn from basic scientists and that, given the dynamic nature of scientific development, means must be found for frequent briefings and intellectual interaction, lest the more applied run down their intellectual capital which they learned as graduate students and become incompetent in comprehending, interpreting and applying the work of researchers in more basic science.

Applied with (not versus) basic science

But a flow goes the other way too. While serendipity and curiosity have driven much research that has revolutionised medicine and health care, the needs of health policy, which are, of course, broader than those of NHS policy, ought also to inform the research agenda in the basic sciences, or at least that science which is one step nearer the applied end of the spectrum than the most abstract. At one level, that means that we need better ways of identifying the needs of

health policy and of the NHS for R&D. Professor Peckham has made revolutionary strides here in the past few years but much work still remains to be done, especially in enlisting purchasers' commitment to these processes. At another, it means that basic scientists must listen to the applied researchers to find out what holds them back from making even more effective contributions. In my own field, a good example of this sort of interaction has been the development of outcome measures, which is now quite a thriving industry involving applied researchers as well as engaging the interest of theorists in various social sciences. An area where we urgently need work if the fruits of science are more effectively to be brought to the advantage of ordinary people, concerns the question of how to change the behaviour of practising doctors and other medical professionals in ways that are consistent with what good theory and good empirical research have shown to be effective. (My examples from sciences that are neither natural nor medical are deliberately chosen to illustrate the generality of what I am claiming.)

Conferring and funding

Two issues arise. One is largely for institutions, especially universities, which must find ways of ensuring that the dialogue in the scientific loop is developed and nurtured. The ways in which we organise research, the geography of our universities, and the managerial leads given by deans, pro-vice-chancellors and the like are all crucial here. I do not think that, in general, our various quality control systems, or external scrutiny methods, or internal forward planning mechanisms typically pay much attention to these issues. They tend to be left to serendipity.

The second is the question of who should pay for what. In the Task Force we were concerned only with the NHS's own R&D and its support for particular forms of applied research by others. This must include the hospital infrastructure that underpins the whole research endeavour, or at least part of it, partly because some of it depends on satisfactory patient flows of the right kind and partly because research activity is not easily, or sensibly, unpicked into parcels each with its own separate support structure. Much of the structure is shared. Moreover, there is also a sharing with the teaching function, especially postgraduate teaching. Most researchers see the training of the next generation of researchers as one of their principal tasks. Moreover, they find that teaching, even at quite elementary levels, is one of the sources of inspiration for good research ideas.

This has important implications. One is the undesirability of creating walls between researchers within institutions. Another is the undesirability of creating walls between teachers and researchers (quite apart from the personal tensions and jealousies that such policies, pressed too far, would generate). Another relates to funding. Before elaborating, let me digress with some comments on the special increment for training and research (SIFTR).

SIFTR

Although there was a common view that the R of SIFTR might have amounted to about 25% of the total, other voices could be heard suggesting that the T was 25% (this might have been the angle of one seeking to maximise the amount of ring-fenced research money). It also seems to have been implied by some that, because the real rise in SIFT was only about 2%, at the time R was added to it 2% was the appropriate share of R (such might be the angle of one seeking to retain as much as possible within his or her institution). Not surprisingly, the DoH, in seeking to advise ministers on the appropriate division of SIFTR into its T and R components conducted some multivariate econometric analysis. Its results were not very helpful. In my view, exercises such as these are fundamentally misdirected, and a range of 'guesstimates' of R between 2% and 75% is only to be expected. Let us take an analogy. Consider a sheep farmer producing sheep meat and wool. Some variation in the quality and quantity of meat and wool might be possible in the short term by, say, varying the diet of the animals but, short of selective breeding, or mixing breeds in one's stock, meat and wool are produced in pretty fixed proportions and, to all intents and purposes, jointly. It makes no sense to ask 'is the fodder the cost of the wool or the cost of the meat?' By variation in feeding one might be able to estimate the marginal cost (in fodder) of more or better meat, or more or better wool. But that is *marginal* cost and not the same as apportioning the *total* cost between the meat and the wool. Much the same is true of teaching and research, and also of the different types of research alluded to before. The proportions may not be strictly fixed, but in centres of research excellence and postgraduate education they are variable only within fairly strict limits. Hence, it is not sensible to seek to separate the *total* costs of teaching and research, nor of types of research, where so much is complementary and mutually reinforcing. So what *should* one do? The sheep market can give us some clues. The approximate fixity of the proportions of meat and wool produced, and the impossibility of separating the total cost of rearing sheep into the costs of wool and the costs of meat, do not prevent each commanding its own price. The prices are determined by the interaction of the costs of rearing sheep and the demand for the various sheep products (plus, of course, much meddling in the form of the Common Agricultural Policy). In our case, what we have needed to resolve our puzzle is a revelation of the demand for teaching and research. This is not so much a matter for markets to determine as for the public sector funders, who are our principal demanders in the sense

that they determine what R and what T shall be purchased (with various degrees of precision in the identification of the 'product' being purchased). And this, of course, is what happened in the case of SIFTR. In the end, a public judgment by the accountable minister had to determine what the split between T and R should be.

Under the new arrangement proposed by the Task Force, we need to develop this approach further. Policy towards our major centres of training and research needs to recognise both the mutual complementarity of the activity and that much of the infrastructure supports *both*. Within the R&D field, the same applies *a fortiori*.

The NHS's R&D strategy is chiefly focused on health services research. The new funding stream will add to this the R of SIFTR and the special research funding of the London postgraduate teaching hospitals. In the allocation of the latter, it will be essential to recognise the complementarity between T and R and the infrastructure support of both. It will also be necessary to recognise that the research infrastructure also supports a wide variety of R&D activity, most of it in fact the NHS's own programme.

In emphasising the different sorts of criteria that will need to be borne in mind in allocating infrastructure support (what we called 'facilities support') and the NHS service costs of research on the one hand, and support for projects and programmes on the other, I am not suggesting that the NHS R&D strategy has been short-term, and narrowly utilitarian. The R&D strategy is far from *exclusively* short-term and immediately utilitarian: for example, it has long supported fundamental research in outcome assessment; it is funding a set of projects on methodological topics; it has recently set up the Manchester-based research centre in primary care with a long-term contract. The usual way in which R&D has been commissioned has been by inviting tenders for somewhat generally defined topic areas which afford researchers an opportunity for developing or piggy-backing their own research priorities on to those of the strategy. Regions have often supported the imaginative establishment of new research centres and specific academic posts with general briefs that satisfy the most jealous guardians of the principle of academic freedom. So let us not dismiss the R&D strategy of the NHS for what it is not.

Special centres

It is also clear that some scientific concentrations, combining aspects along the scientific spectrum from basic to applied, benefit from being very large indeed. They have usually been developed with the combined support of the Funding Council, the NHS, the MRC and one or more major charities such as the Wellcome, and in such cases this collaboration is essential and highly beneficial, provided the internal management plays its role appropriately. Obvious examples of such centres are the John Radcliffe at Oxford, the Hammersmith and University College London, in London, Addenbrooke's in Cambridge, and in Edinburgh the Royal Infirmary and Western General. They should not, of course, be supported simply because they are there, regardless of the outcome of on-going scrutiny; nor should the emergence of other centres be prevented simply to protect those that are established but unable to compete in open competition. Moreover, a very large scale is not always either necessary or desirable. One of the emphases of the Task Force's report was that in the future support should focus more on individuals and teams and not be solely institutional, the latter being justified only when many individuals and teams worth supporting were all members of the same institution or a set of collaborating institutions. But some of these centres, including those mentioned, have been less successful at developing the multidisciplinary health services research arm that would fully complement their clinical and basic natural science strength. Indeed, I doubt whether some have tried very hard. Further, some of these institutions have made no serious attempts to extend their research significantly into the community or train cadres of researchers of the first rank capable of doing it. (I am not suggesting that every institution, or indeed any single one, ought to invest across the whole spectrum; I am merely observing how few in London have invested in non-clinical health services research).

The R&D forum

I conclude that *partnership* in supporting research (and teaching) is essential and should be furthered for major centres with many specialist disciplines, operating along substantial lengths of the spectrum from basic to applied. This is not to say that the separation of the R from SIFTR was ill-advised. On the contrary, the need for greater clarity and more careful targeting was a recurring theme in the evidence the Task Force received. There are four major interested parties with stakes in this matter. On the research sponsoring side they are the NHS R&D directorate (DRD), the Higher Education Funding Council for England (HEFCE), the research councils, especially the MRC, and the major charities. On the other side is the research and training community, especially the universities. What we seem to have lacked in the past is a formal mechanism for debating these various issues (who should be supporting what, on what scale, by what criteria and in what kind of partnership?) and agreeing on a broad policy between them. The Forum, which was the first recommendation of the Task Force, would be just such a body (a kind of comprehensive research liaison group), perhaps with a working party supplemented where necessary with members representing other interests, to consider the matter. I hope Professor Peckham will make this an early item for the Forum,

whose terms of reference were announced just before Christmas 1994 and whose members are in the process of being selected:

- To advise the Director of R&D, and through the DRD the Secretary of State for Health, on:
  - a current national and international strategic issues relating to R&D of importance to the NHS
  - b advances in science and technology which may have an impact on health
  - c technology transfer, covering links between basic science, applied research and health services
  - d the development of coordinated systems for information derived from and about research
  - e the capacity, and ways to increase the capacity, for undertaking R&D, including health services research, needed by the NHS
  - f any other matter relating to R&D remitted to the Forum by the DRD.
- With a view to setting a strategic framework for the Central Research and Development Committee (CRDC), to advise the DRD, and through the DRD the NHS Executive Board, on:
  - a the overall pattern of funding for R&D, and the plans and priorities of individual research funding agencies
  - b the need for NHS support for externally sponsored R&D within the NHS
  - c progress on the establishment and operation of new systems for funding and supporting R&D in the NHS.

Facilities support

The Task Force recommended that future financial support from the 'single funding stream' should take three forms and, in addition, that the R&D Information Strategy, with its emphasis on dissemination of research results and the promotion of their uptake, be supported and that research capacity be further investigated and supported. The three forms of financial support were the direct and indirect costs of research projects and programmes, the 'excess' service costs of approved peer-reviewed non-commercial research, and support for research facilities in trusts and other NHS research providers.

Facilities support is intended to cover the costs of maintaining or creating particular research facilities and staff to enable R&D projects to take place which cannot reasonably be attributed to a specific project or programme. We envisaged that some programmes would themselves entail facilities support which would be embodied in the contract for such programmes, and this meant that the future system had to guard against the possibility of double counting in the form of supporting any particular activity twice over. I have already emphasised that facilities funding for NHS R&D needs to be considered alongside the other R&D and teaching activity of major centres.

One of the issues that has cropped up in subsequent discussions, and about which the Task Force itself made no recommendations, is the issue of facilities in the form of capital, especially funding for buildings. (I am not here referring to the specific needs for capital that result from the major restructuring of London institutions.) Some, if not all, of the major centres for excellence (which need not be large) face severe constraints in their capacity to take on additional research activity, particularly through a lack of suitable space to accommodate the researchers and their associated other space needs. Several important issues need to be resolved in this connection. One is whether Treasury rules would permit the use of what I understand to be recurrent money for capital purposes; another is the question of the ownership of any such estate created in this way (especially when it is not a part of trust property), and another is the question of whether the conventions about investment appraisal procedures ought to be (or, indeed, could be) followed in the same way in such cases, supposing that the other two problems were resolved. It is also unlikely that satisfactory answers to these issues are to be found simply by relying on the market: for example, by channelling recurrent support only to institutions that have spare capacity and therefore lower marginal costs of supplying research, because these institutions may not be the best places for that research to take place. Good research, and good cost-effective research, is not necessarily the cheapest research. This problem may become acute for health services research that does not depend upon a specifically NHS base and which would be unsuitably located on trust property. This may particularly apply to research based in universities or in fundholding general practices. It is not clear whether the answer lies in developing some supplementary capital funding sources within the NHS for such support, or for extending loan arrangements or rental agreements. Again, this seems an issue pre-eminently suited to a preliminary discussion at the new Forum. The issue of marginal capital costs of research is not solely one that concerns the NHS's own R&D programme but also the programmes of the medical charities and the research councils.

Service costs

One of the issues that led to the establishment of the Task Force was a perceived threat to clinical trials, especially multicentre trials and trials in highly specialised units with difficulties in recruiting patients in sufficient numbers, and to major centres dependent on tertiary referrals, in the form of a reluctance in the new NHS among purchasers to buy services inflated by research costs and by trusts to accept service contracts that make no allowance for research costs. A necessary if not sufficient condition for resolving this issue is to identify both the research and the service costs and to ensure that these are built into service and research contracts in ways acceptable to the institutions on whom the costs would fall, and which are seen as fair and acceptable to service purchasers and research sponsors. Until appropriate conventions for the costings have been developed, regional directors are being urged to smooth the passage of such research by reminding institutions that the R of SIFTR is intended partly for this purpose and, where necessary, by using regional funding to support, for example, service costs in research into general practice. A set of conventions will need to be developed to cover the various ways of sharing the patient costs between service purchasers and research sponsors. It is unlikely that a simple and standard formula will do the job. There is, after all, a major difference between a research project in which an entirely new procedure is being investigated, where the entire exercise might be considered to be 'research', and one where there is a relatively minor additional cost in the form of extra patient investigations and only marginally longer spells of hospital inpatient stay. Any such future conventions are likely to be highly dependent on the brokering role of regional directors of R&D (RDRDs) and the depth of their relationships and the mutual trust they have established with their local research communities and health care commissioners. This is an area where the subtle managerial skills of RDRDs will most be needed. Moreover, in some areas it will not be enough for R&D merely to respond to the patterns of referrals that might emerge in the market for medical care: for some groups the research needs for patients may require a planned concentration of such referrals and active intervention to secure it.

Quality assessment and assurance

We regard peer review as the main plank of quality assessment and assurance. However, we recognise that this is not only a costly exercise, especially of the time of researchers themselves, but also that some of the 'Cinderella' areas of research in community care might be vulnerable to the early application of a fully rigorous system of peer review. In time, however, we expect that this field would be treated no differently from any other.

There are notable lacunae in the present scope of peer review which are less defensible. In our view *all* R&D which uses NHS resources (including patients) should be subject to peer review, including 'implicit' research funded out of trust funds, or the smaller charities, or industry. Moreover, we do not necessarily see peer review as having to be focused solely on *projects;* there is much to be said (though we did not say it!) for concentrating, where appropriate, on *individuals,* whose track record or promise suggests that giving them a relatively free hand would be a productive way of spending some of the NHS's R&D funds (not to mention the research councils').

Some alarm has been expressed at our proposals for an HEFCE or Thompson Review type of quality assessment that included researchers not currently eligible for inclusion in the research assessment exercise (RAE), to back up the facilities support element of our proposed financial package. My own view is that, without the cooperation of the HEFCE, any such independent exercise would be far too costly. However, preliminary discussions between the NHS Executive and the Funding Council give cause for hope. The simplest and least bureaucratically costly thing would certainly be for the HEFCE to agree to extend the range of its enquiry by creating appropriate new units of assessment or extending existing ones, especially into applied topics, and to consult the R&D Directorate in the composition of the panels. It seems intolerable to subject universities to a research assessment exercise (RAE) in 1996, 1997 and 2000, so I do not expect anything much to be possible before 2000. Until the outcome of that exercise (assuming it to be extended as I have suggested) 'facilities' support will have to make do with such external quality judgments as are available, unless arrangements can be made for a minor exercise in 1997 that focuses only on those research active staff not included in the 1996 exercise.

Cinderella subjects

The Task Force drew attention to the importance of R&D in community settings for health care and in developing research strengths in the main disciplines likely to be involved. Some of our recommendations were directed to the opening up of the funding stream to make it more accessible for these purposes and to support service costs of such research. Without this, we can hope for little in the way of any transformation of the culture of the NHS towards awareness of relevant research outcomes and the implementation of practice informed by them, especially given the increasing role of general practitioners as purchasers. Culture change is needed not only for medical practitioners but also for the nursing profession and the other allied professions. The community is increasingly the setting for health care, and it is therefore a matter for concern that of the 29 nursing units assessed in the last RAE, none scored 5 (the highest), only three scored 4 and two 3; and that of the 34 units of assessment in other studies allied to medicine, there were only two 5, five 4 and one 3. My own feeling is that we shall have to target a few of the best existing centres in order to develop both the necessary training and the community research partnerships. This might well be an early matter for the newly constituted Central R&D Committee to consider. We were told that there are technico-legal difficulties in offering facilities support to fundholders. At the very least I would hope to see some major support of a programmatic sort for work in this field and a workable way of supporting any service costs of such research.

Contracts and bureaucracy

Whatever arrangements are adopted in future, they should minimise the costs of bureaucracy and management both for the NHS and the research community. While it seems inevitable that some of our proposals, such as the new costing arrangements for R&D with service cost implications, will create further expenses on both sides, it was our judgment that they would be worth it provided that they are kept at the minimum necessary, especially if the alternative were for good research never to get off the ground or to wither once it had. One must not allow the perfect to become the enemy of the merely good—especially if the 'perfect' is ultimately self-destructive.

It is important not to infer that the increased use of 'contracts' for R&D necessarily implies rigidity or short-termism. The Task Force saw no reason why contracts should not be as flexible and embody as much individual discretion for researchers, as the circumstances and common sense demand. Moreover, we saw no reason why 'contracts' should be perceived as inherently short term. They could be (as indeed some have) awarded for long periods, ten years or more (the latter, for example, in cases where senior posts are being supported). Nor does a contract have to be made artificially specific. The advantage we saw in an intelligently interpreted system of contracting was its explicitness about what was going to be done (even making a research 'fishing expedition' explicitly just that), how success or failure would be judged, and what the work ought to cost. None of us in the research community ought to have the right to use public money in a casual manner and for implicit purposes with no attempt to assess the value of that activity.

Declaring implicit research in trusts

One of the quantitatively most difficult issues, which the Task Force did not attempt to resolve, was the size of support for research that service providers fund on their own account, partly out of special trustee accounts, or out of patient care contracts partly with the agreement of purchasers, and partly only implicitly so. We had no hard evidence on the size of this last component, which we called 'implicit' research, but were advised that it was a very large sum. It includes R&D sessions in consultants' and other staff contracts. It also includes much work by clinical scientists in trusts. In the internal market for patient care, this funding is plainly at risk, for it seems extremely unlikely that it could all become embodied in explicit contracts for R&D made with any trust's purchasers, even if more did. We were told that such research is often an important preliminary to more substantive and explicit research, but much of it may also be substantive (though it must be said that a lot of it is not peer-reviewed, even when it entails higher patient care costs—in which case we argued that it should be subject to peer-review). It seemed to us important that these funds be protected for R&D and we proposed that they be progressively declared by trusts and added to the single funding stream. The word 'progressive' needs underlining and made more clear than we made it in the Report.

In one sense, 'progressive' means that we did not expect trusts to be able to identify and therefore declare all such implicit research with great accuracy and at a moment's notice. One approach would phase declaration over time, so the recurrent stream from this source would build up in a cumulative fashion. But, if trusts are to have any incentive at all to declare all the costs of implicit research, they must clearly be reassured that declaration will not be immediately followed by 'confiscation'—which is how it might appear in a system that removed a sure current resource and substituted in its place the uncertain prospect of getting it (or more, or less) back by competition for a share of the consolidated stream of funds. Such funds as are declared by trusts should therefore be regarded as at their disposal long enough to make it worth their while declaring them. There is the risk of creating a classic prisoner's dilemma, in which trusts *collectively* might concede the long-term benefit of identifying and protecting this money, and acknowledge the Task Force's arguments in favour of allocating it more effectively, yet *individually* see such a disadvantage to doing so that they all end up in the worst of all possible worlds, in which increasing competition in the patient care market causes this element of R&D funding to shrivel up altogether. The risk with this gradualist progression is that, despite incentives, many may still not declare, or not declare much, so the yield would be small and the overall resource eventually be seen to be too small.

An alternative, to which I incline, is to prepare early guidance and ask trusts to make the best estimate they can of their current annual spend on implicit research, allocating it as best they can to our three categories: project and programme direct and indirect costs, service support costs, and facilities or infrastructure. Such declared funding would still need to be protected for a reasonable period for those declaring it, but this approach would have the advantage of getting this element immediately and roughly comprehensively into the new single funding system. Subsequent periods would then be opportunities for further refinements and more accurate allocation across the three types of support, rather than a progressive build-up of the total contribution of this element to the total funding stream.

Special treatment for London?

London undoubtedly contains some of our finest research institutions and largest concentrations of expertise across the spectrum and along many relevant branches of science, though it has by no means a monopoly on excellence. Nevertheless, the greatest concentration of excellence is in London: it has taken decades to build and could be destroyed in months. One can make criticisms and see weaknesses. Most of the best health services research is not done in London at all: there are many 4 and 5 rated clinical units of assessment outside London. Moreover, London is costly. That is true not only for service provision but also for teaching and research. Nonetheless, such excellence is worth preserving and it is my belief that the various forms of support for R&D which the Task Force proposed should be sufficient to ensure the future of the best institutions, departments and units that are there, as well as any that might develop, provided that R&D costs and expected outcomes can be explicitly evaluated, and provided that the allocation of facilities support gives due recognition to the demonstrable and demonstrated needs of nationally important centres. However, neither the market for patient care nor the evolving market for R&D will be sufficient to produce sensible results if left to operate without some further controls and central direction. These issues arise particularly for those groups which depend on tertiary referrals, and for other centres of specialist excellence. Arguments can be made on both sides for keeping some centres of expertise in the capital or for developing them further in major research concentrations in other parts of the country. But what would be intolerable and have disastrous effects on morale would be for such responses to market pressures and individual initiatives to take place in dribs and drabs which debilitate extant teams of researchers and slow down the ability of others to develop the necessary critical masses. That way lies mediocrity and second-rateness and the destruction of some of our best institutional reputations.

If anyone *really* believes that major concentrations of excellence of the sort found, for example, in the Hammersmith and University College London, are at present on sites that are too costly, then the implied need for change will have to be discrete rather than marginal, and will need to be planned with great care to preserve teams, networks, extant programmes, and individuals' careers, and be supported with appropriate capital funding. Any such change would, of course, be hugely costly and disruptive. On the other hand, if one does *not* believe this to be the case, then it may be necessary to devise a quasi-permanent system of supplementary support from the collaborating partners which enables the research activity to continue where it is so long as the quality assessments warrant it. There is no case for general institutional subsidies whose ultimate destination and effects are untraceable and cannot be accounted for. Properly handled, facilities support is there to meet this need, and could do so in a more sensitive and carefully targeted fashion than the R of SIFTR or the current temporary arrangements for the London postgraduate teaching institutions. After all, cost-effectiveness in R&D is justified by the same ends as cost-effectiveness in inpatient care—the more efficiently R&D resources are husbanded, the more R&D work they can do—the more the outcome from our limited R&D resources. And, as mentioned earlier, research that is merely cheap is not necessarily good nor cost-effective. There is no reason why facilities support, or indeed either of the other two forms of support, should not recognise that some centres are inherently costlier than others.

The best groups have nothing to fear from a purposeful attempt to address these issues. They need to be considered against a background of policy towards concentration of specialist centres, their needs for particular sizes of flows of patients, the academic quality of the institutions (and its within-institution variance), and the relative costs and quality claims that can be mounted by competitors. This is not something for the R&D programme of the NHS to solve on its own: it also particularly involves the Funding Council, the research councils, and the large research charities. It also involves health service purchasers whose willingness to pay their share needs to be assured.

Can purchasers be persuaded?

It has been said that the Task Force's strategy of developing the single funding stream as a levy on purchasers (including fundholding general practitioners) is highly risky, given their extremely uneven commitments to (and experience of) R&D, for which there was much evidence from our consultation. I have to agree with the riskiness of it, but take the view that the risk is there anyway. It would only be window-dressing to fund R&D support by, say, top-slicing the budget centrally. Purchasers, collectively and individually, will be perfectly well aware that R&D funding comes at the opportunity cost of current health care purchases, whatever the mechanisms (as, indeed, current health care is purchased at the opportunity cost of R&D). We were anxious to strengthen the voice of purchasers in the priority setting process, both centrally and at regional levels, so as to ensure that the priorities of the NHS R&D programme reflect the needs of the NHS, partly because their collaboration is essential (for example in ensuring that adequate numbers of suitable patients are available for research of various kinds and with the funding support of many different funders) and partly because they must be involved in the strategy for promoting evidence-based health care (which should be more than just an information strategy). The levy symbolises the seriousness with which the voice of purchasers is to be taken and is also a signal to central R&D managers and to the research community in general that the task of creating a widespread research-oriented culture in the NHS has to command a high priority. If we fail in this task over the next few years, the consequences could be very grave for the future of R&D in the NHS and would

have been so whatever the precise form in which the funding stream was presented. We hope to have given it a sharp focus and to have concentrated minds. This endeavour will probably need systematic orchestration by the new Central RDC and Professor Peckham's R&D directorate.

Envoi

It has been extremely gratifying that the work of the Task Force seems in general to have received so uncompromising a welcome and that it should command the interest and commitment of the Secretary of State herself. We are plainly into serious business. The stakes are high but the future augurs well. I am much impressed with the strong support for the research community that emanates from Professor Peckham's division and with its strong commitment to networking and consultation. The Task Force was concerned to ensure that the transition be as smooth as possible and I detect a commitment to this too. However, its successful implementation will also require the support and collaboration of the research community.

Much of the environment in which we operate today is not particularly friendly to the research community. Decision makers need to be convinced that there is a pay-off to R&D and that we have our research houses in good order. The Task Force's framework should enable us to offer these assurances but, in the end, it is the research community which has to provide the proof of the pudding and to supply Professor Peckham with plausible—and empirical—arguments. Mere assertion will not do. It will be especially important for us to convince purchasers too, and to enlist their support and commitment in a world where the levy will be seen to be in direct competition with current health care funding.

I hope you will not bring to this a frame of mind that hearkens back to some past, and probably mythical, halcyon era. There is no point in wishing the problems away or regretting the history that makes the proposed changes necessary. There is no point in comparing today with things a decade or two ago. But there is every point in comparing what you imagine the research world would have been like in five years' time, had we merely gone on as we are, with what it can be like post-Task Force. My own opinion is that disaster lay ahead, not only because of the effects of the internal market for patient care on research but also because there was so much that was opaque, creaking, unfair and inappropriate in the accretion of history. I am by nature an optimist who tries to ensure that his own institution sees every potential threat as a real opportunity. But for us all to realise these opportunities in the sort of world envisaged by my Task Force colleagues and myself requires us all to promote a dramatic culture change, to get the national framework right, and to ensure that our own institutions are poised to take full advantage of it.

Reference

1 A report to the Minister for Health by a Research and Development Task Force chaired by Professor Anthony Culyer. *Supporting research and development in the NHS*. London: HMSO, 1994.

The implementation

Three years ago at a meeting of the 1942 Club I outlined proposals for a research and development strategy and programme for the National Health Service (NHS): The development of this initiative since 1991, together with the new arrangements for supporting research and development (R&D) in the health service, presents a unique chance to create a strong base for research and an effective interface between the NHS and science. It is important now to take full advantage of these opportunities.

Since 1992 a regional and central infrastructure for NHS research and development has been established with a growing portfolio of research. Its emphasis lies in the systematic analysis of practical problems facing the health service and the mobilisation of existing research information through the Cochrane Centre and the Centre for Reviews and Dissemination in York. Through the Standing Group on Health Technology attention has been focused on the evaluation of new and existing methods of health care. A stronger relationship between the NHS and the science base has been sought through the concordat with the Medical Research Council, agreements with the new research councils (Biotechnology and Biological Sciences Research Council, Engineering and Physical Sciences Research Council, Economic and Social Research Council), interaction with the charities and through a number of initiatives with industry.

The NHS is making substantial investments across a wide range of R&D functions. They include the support of the Medical Research Council (MRC) and other clinical research within the NHS, research focused on NHS problems, the NHS interface with science and technology, the synthesis and analysis of existing research knowledge, the practical application of research outputs and the support of an NHS technology scanning function. The purpose is to create a continuously updated knowledge base for strategic and clinical decisions.

As this programme evolves it is essential not to lose sight of the unifying purpose which is to use R&D to obtain the best quality of care achievable with available resources. The desired outcome will find expression in the improved health of the population, as well as in wealth creation and other economic benefits to the UK.

MICHAEL PECKHAM, MD, FRCP, *Director of Research and Development, Department of Health*

The scope of NHS R&D

The commitments and scope of NHS R&D are summarised in Table 1. Details of the various initiatives associated with each of the components of the programme are given elsewhere [1–9].

Table 1. Research and development in the National Health Service: commitments and scope

- Funding applied health research directed at NHS problems
- Analysis and synthesis of research findings
- Transmission of research information to clinicians and other users
- Measures designed to promote the uptake and practical application of research findings
- Provision of support within the NHS for research funded by the MRC and charities
- Provision of appropriate training in applied health research and the support of trained personnel
- Provision of an efficient NHS testbed for research funded by industry
- Mechanisms for relating the NHS to science and technology including a scanning function to provide awareness of imminent and likely future developments
- Assisting new developments arising from science and technology
- Systematically evaluating the costs and benefits of health care interventions
- Mechanisms for intellectual property
- Mechanisms for supporting NHS R&D
- Assessing returns on investments in R&D

Background to the NHS Research Taskforce (Culyer) report [10]

The first step towards new arrangements for supporting research in the NHS was taken at a meeting between the NHS Management Executive, the regional general managers and the regional directors of Research and Development on 8 October 1993. The agenda was devoted to one topic, 'the service market and research and development: achieving synergy'. The purpose of the meeting was to devise a way to support R&D in the reorganised NHS to assist the health service to fulfil its purpose. To be effective, purchaser-provider contracts depend upon research information as obtained for example, from the Concorde trial of AZT in asymptomatic HIV positive people, which had recently shown the potentially important impact of research on clinical practice [11]. At the same time, because clinical trials may incur increased service costs, purchasers and providers may be discouraged from adding their support. Consequently, unless new arrangements could be devised, the assessment of health care interventions and other research could experience difficulties. Following discussion of the issues involved, it was proposed that a system should be devised for separating research funding from the costs of patient care. A paper entitled 'Achieving synergy between the NHS patient care market and R&D' proposed the formation of an NHS Research Taskforce; this was announced by the Minister of Health in November 1993.

The *status quo* was not an option since the arrangements for supporting clinical research were not functioning satisfactorily. As a comment in *The Lancet* put it, 'The fragmentation of research funds was not created by the market nor was the duplication that this can lead to. Long before the market the support that hospitals received for the increased service costs arising from research was unpredictable and haphazard and meant that some high quality projects failed whereas some poor quality programmes were supported' [12]. Over the past two years, through the efforts of the regional directors of R&D, funds have been made available to support MRC clinical trials within the NHS on a one by one basis. But such arrangements were clearly not sustainable in the longer term.

The environment for research is changing and these changes are not confined to the UK. The new environment is being shaped by several factors. Prominent among them are changes in health services and the spectacular advances in science and technology. In the UK, as in other countries, there is increasing emphasis on the non-healthcare determinants of health including socio-economic factors, transport, environment and lifestyle; there are perceptible changes in public interest and understanding of health issues; there are also new ethical and medico-legal considerations and new challenges for education and training. To these factors should be added a general emphasis on selectivity in the use of funds and on the returns on investments in research.

Recently, there have been indications of a degree of malaise in the performance of UK clinical research. The *Science watch* report of March 1991 [13], for example, documented UK clinical research publications between 1981 and 1990 and noted that the citation impact had fallen by almost 9%. This decline has been in evidence since the beginning of the 1980s and there has been a concomitant increase in uncited articles.

Implementation of the taskforce recommendations

R&D budgets are, at present, allocated through different mechanisms and with varying criteria (Table 2). In