

Nurse Review of Research Councils: Call for Evidence

Response Form

Please state whether you are responding as an individual, or on behalf of an organisation:

Organisation

Please write here your name/ the name of your organisation and contact details. This would help us to contact you if we have further questions.

Medical Schools Council
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Please provide evidence and views in relation to the following themes:

1. Strategic decision-making

How should the Research Councils take account of wider national interests including regional balance and the local and national economic impact of applied research?

Members of the Medical Schools Council (MSC) work primarily with the MRC. However, with the evolving recognition of the importance of Team Science, synergies with BBSRC and EPSRC are increasingly important. Medical Schools have long recognised the importance of collaboration and funders of medical research work well together: it is a joined up landscape across MRC, the medical research charities and importantly NIHR. The NHS R&D budget is still less than 1% of the total NHS budget – but the added value to UK discovery medicine and applied clinical research that directly impacts on human health and economic growth is impressive (see The Health of the Nation <http://www.medschools.ac.uk/Publications/Pages/Health-of-the-Nation-The-impact-of-UK-medical-schools-'research.aspx>). It is that leverage of other funding from MRC investment – be it Genomics England or industry partnerships (eg MRC -7 pharma partner compound sharing initiative) that adds huge value in the sector.

Indeed based on any metric, each pound invested UK research has an extremely strong world position with respect to the quantity and more importantly the quality of the research it performs. This is in no small part thanks to the efficient support and direction provided by the UK's research

councils. Whatever change lies ahead must surely be one of evolution not revolution.

UK research spending as a percentage of Gross Domestic Product compares poorly to its competitors – 1.7% in 2012, compared to 2.8% in the US and an average of 2.4% across the OECD.

Through the dual support system, the research councils ensure that the Haldane principle *ie* the concept that decisions on what research is funded should be made by researchers, not politicians, is respected and placed at the heart of the research ecosystem. Research councils make decisions on what to fund first and foremost on the basis of excellence, as judged by rigorous expert peer review of applications and this must continue.

RC funding appears increasingly to be concentrated in the largest research intensive universities. For example, in 2013/14, 32% of the total Research Grants and Contracts Income awarded by the Research Councils was awarded to five HEIs, all located in London/Oxford/Cambridge. The recent REF results show that the very best research is more geographically dispersed than RC funding. We would wish to see research funding more closely tracking research excellence irrespective of where it is geographically based.

The impact of strategic decisions (eg Crick) on opportunities for managed and response mode activity does not seem to be fully resolved and the impact of this on the overall amount of funding available is a major issue.

Is the balance between investigator-led and strategically-focused funding appropriate, and do the right mechanisms exist for making strategic choices?

The Research Councils provide a useful and effective steer toward wider strategic goals that individual academics, departments or institutions may not aim for independently. The position of the RCs as the nexus of a research web can work to connect different and sometimes far-flung research questions and goals together in their role as the overall ‘big-picture’ agenda setters.

Strategically-focused programmes can therefore be attractive, but they risk being driven by shorter-term objectives than typically apply to fundamental research. The balance between responsive and managed modes has fluctuated over time, and between Councils. It is not generally clear how strategic choices are made, whether between Government and the Councils, within the Councils, or between the Councils and their respective communities and hence there is a danger of a lack of trust in such decisions. On balance MSC believes that major strategic initiatives where ring-fenced funding is created around a specific subject should be avoided. Strategic choices should not be solely decided/prioritised by Government bodies.

Within each Research Council is the balance of funding well-judged between support of individual investigators, support of teams and support of equipment and infrastructure?

There are issues around major grants – in the case of MRC and BBSRC, this is particularly emphasised in programme grants and LoLas. The ability to bid for these awards is biased towards those with a grant track record with that specific funder, rather than the most appropriate people doing the best science. There is a “family” mentality which creates barriers to new individuals and ideas in programme grant funding. Rules around eligibility can mean that individuals with a funding track record can be pushed to lead bids instead of those who might be more suited given their track record in the field. Review mechanisms should always put a broader track record and the strength of the science first, rather than the individual’s relationship with the funder.

Funding allocation should be unbiased, quality controlled and not overly-influenced by political fashions, but some of the current funding mechanisms make this challenging. Although largely based around individuals rather than teams, the Wellcome Trust funding refresh has delivered a funding continuum which emphasises the best research with complete flexibility around the resources needed, which are tailored for the project type and judged accordingly.

Opportunities for smaller, focused grants to support innovative ideas from both early career and more senior investigators are in short supply (often deemed ‘risky’), but these have a clear role in allowing individuals and disciplines to move forward rapidly and flexibly, rather than slow surges around a small number of historic leaders.

However, the MRC Molecular Pathology Review is one example of where a strategic direction set by Government can be delivered on behalf of multiple stakeholders by RCUK through open competition accessed by peer review. The Farr Institute of Health Informatics Research, which support the safe use of patient and research data for medical research across four UK-wide nodes, is another example.

It has become increasingly difficult to attract funding for equipment and infrastructure. The UKRPIF scheme, which receives many Government plaudits, is at a scale that is inappropriate for all but the largest schemes, and requires very substantial partnership which is not available to most institutions. The vast majority of equipment requirements are in the tens of thousands of pounds up to the low millions of pounds. This area is now poorly served. The increasing administration of larger capital programmes devoid of resource through RCUK raises concerns about longer term sustainability.

The role of academics at all levels in RC consultancy, as panel, council and board members, should

be maintained. It would be valuable to gain more insight from early-career researchers and returning academics, to improve their career prospects and to gain a more diverse advisory structure.

Continued support for basic scientific research and translational biomedical research is the backbone of the UK knowledge economy and higher education sector. Support for more applied work frequently comes from the charitable and industrial sectors, and this interaction should be encouraged, possibly through better cross-council working with Innovate UK. As demonstrated in REF2014 across panels A1-5, it is vitally important that the MRC-BBSRC-EPSRC interface continues to support “Discovery Medicine” as the pipeline for our outstanding track record in delivering research impact.

The big challenges facing society, the economy, the environment and health tend to cross traditional academic disciplines. There is therefore room for more cross-research council initiatives as we address team and multidisciplinary science in areas such as medical humanities, medical engineering, Big Data.

2. Collaborations and partnerships

How can the RCs catalyse collaboration between institutions?

Within many of the councils, where individual investigator grants were once the norm most grants are now collaborations, both academic–academic and academic–industry.

All of the research councils engage with their respective communities through clearly defined and transparent committees, and ultimately their councils. Perhaps the various councils could more closely mimic each other’s structures, which might make inter-council collaborations and initiatives easier to promote and approve. For example, one issue that could be a potential deterrent to being a partner rather than lead institution on a collaborative application is the manner in which Research Councils record data, whereby the predominance is placed on the lead HEI. This does not always result in the appointment of the most suitable PI/Institution.

With respect to interdisciplinary research, RCUK already has the Cross-Council Funding Agreement for handling responsive mode proposals that fall in the gap between the remit of different councils. They also have crossover themes such as Synthetic Biology or Global Food Security. We also

welcome the move to increase Arts–Science collaborations. A greater degree of standardisation of structures across the councils would give confidence that proposals which ‘fall between the cracks’, would be handled effectively and be reviewed by the most appropriate funder. However this is not to negate the importance of retaining separate research councils. Each funder has forged a very important and close relationship with its community; fundamentally we support the distinctiveness of the different councils whilst recognising the need to improve the efficiency of the bureaucratic process.

Improved access to informal discussion with RCUK officers, especially at more senior levels, and potentially more RCUK visits to multidisciplinary and single discipline centres, would be very helpful. This sort of interaction seems quite rare at present, and would be helpful in terms of aligning the ‘state-of-the-art’ in core and interdisciplinary fields with current and future funding priorities and strategic initiatives.

How should the work of the research councils integrate most effectively with the work of agencies funding innovation, such as Innovate UK, and with the work funded by Departmental research and development budgets?

In terms of integrating with agencies such as Innovate UK, networks where academics and industrialists can meet and obtain funding for joint projects should be maintained and developed. The BBSRC-Industry club was an excellent example. Catalysing collaboration between institutions will happen through mechanisms that encourage and support individuals to work together. Collaboration *via* diktat is not successful, and those schemes that seem to require it as an end in itself are in danger of being a poor use of public funds. There has been demonstrable benefit in the Research Councils working with other funders to support interdisciplinary opportunities, such as the Valuing Nature Programme which involves ESRC, NERC, AHRC plus organisations such as DEFRA, DECC and the FSA.

However, we recognise that many great innovations in science that have found hugely beneficial applications happen over long timescales. This is the critically important argument for maintaining curiosity-driven, frontiers research, accepting that there can be a decades-long interval between discovery and impact. Accordingly, major RCUK investments should ideally be in end-user driven environments, where the research disciplines and stakeholders such as clinicians can freely mix regularly and continue to shape each other’s research.

It should be noted that publishing models are very different between the disciplines, and this can negatively affect outputs and career progression for researchers wishing to be multidisciplinary,

particularly through exercises such as the REF. Although there may be future opportunities through bibliometrics to address this point, currently we need to see further thought put into incentivisation at an institutional and national level around inter-disciplinarity, which we hope RCUK would make significant contributions to driving. An example for such a problem is bioinformatics which is largely seen as a “support” science but which will be absolutely crucial for future research using “big data”. However, no conventional career path exists for researchers choosing this discipline.

Should the funding of Research Councils be directed almost exclusively to the university sector, with organisations such as the Meteorological Office, the Health and Safety Laboratories and the National Physical Laboratory out of scope?

Funding for organisations outside the direct university sector should be maintained, and these should be eligible to lead grants. This provides a critical support mechanism for the careers of staff scientists and researchers in these organisations, who could otherwise end up pigeonholed as support staff in national laboratory facilities, unable to move back to the university sector without a track record of independent funding. The fluidity between research organisations and universities is good for both, ensuring a balance of skills in the university sector as well as a rotation of skills, interests and expertise in central facilities. These organisations should be expected to sign up to the Athena SWAN/ECU charters.

Do Research Councils adequately support interdisciplinary research?

In Medicine/ Biomedicine, we believe that the MRC has positioned itself well to maximise collaborative funding with other key stakeholders – particularly the NIHR-Department of Health and Medical Research Charities such as Wellcome Trust, Arthritis Research, CRUK and BHF. This ability to leverage funding across multi-partner organisations has undoubtedly increased the “power” of MRC spend through a period of “flat cash” spending reviews. Furthermore as exemplified in the REF 2014 exercise (see UoA 1-5), the join up of effort across the full spectrum of translational medicine has delivered an outstanding result in terms of the UK punching well above its weight on research outputs with impressive reach and significance of its research impact.

3. Balance of funding portfolio

Are the divisions of scientific subject areas between the Research Councils appropriate?

MSC believes that the current structure of the Research Councils is fully appropriate, given the breadth and comparative focus of their research priorities. There needs to be a balance between curiosity driven and directed research, between the number of small single-investigator grants vs the number of larger and longer grants, between the investment in fellowships vs ongoing programmes. Overall, we stress the importance of response-mode funding, blue-skies research and support for postgraduate research.

Merging across individual or multiple Research Councils would be hugely counterproductive – examples of such bodies are the Deutsche Forschungsgemeinschaft (DFG) in Germany – as this would create bureaucratic monsters with huge inefficiency in application and award processes. It would not allow for clarity of vision and collaboration. It would be a time-consuming distraction and would not lead to better decision-making.

However, we do believe that there is a need for more transparency in screening and sending bids to different Research Councils at application stage, as well as the establishment of formal mechanisms to apply to two (or more) Research Councils at one time. This is about clarity of process rather than clarity of remit. There are also additional possibilities in increasing the efficiency of application and review processes by using smart IT and joint application platforms.

The fraction of the UK science budget that funds discovery science has probably now dropped to a level where the available budget is not sufficient to maintain a viable funded volume. Fortunately European funding, primarily through the European Research Council (ERC), has compensated for this shortfall, especially for the established researchers. Any substantial cut to ERC funding will markedly affect the support available to underpin the science base.

Support for Knowledge Exchange (KE) and impact generation from the RCs is welcome. Our experience is that the Impact Acceleration Account (IAA) and the MRC's Proximity to Development are particularly effective because funds are allocated to HEIs rather than directly to grant applicants. Institutions can then bring strategic overview and critical mass to KE and impact generation, and encourage 'due diligence' to planning, implementation and oversight of KE activity. The availability of follow-on funding and access to business/KE support from Catapult Centres or similar is also beneficial.

Is the balance of funding between different Research Councils optimal? / How should Research Councils more effectively balance their investment portfolios?

Overall, the separate RCs play a significant role in delivering and ensuring that science investment

is balanced across disciplines.

The RCs have consistently shown that they are very responsive to government priorities/grand challenges exemplified by their increased funding for dementia and anti-microbial resistance. They also fund research across the whole spectrum of discovery and applied research and are constantly measuring and responding to the spread of their portfolio in this respect.

Under the oversight of OSCHR the MRC in particular, works closely with the NIHR to ensure that its various funding schemes synergise appropriately while remaining distinct. We welcome the recent developments across the MRC on mapping out and supporting non clinical career pathways. Again the join up across other stakeholders such as NIHR and BBSRC is essential to capacity build clinical academia. The alignment of MRC resource with other partners (WT, NIHR, HEI's) is essential to capacity build clinical academia – the bedrock of Medical Schools and clinical research capability. Flexibility and additional investment will be required in this space to fully meet the requirements of the Greenaway (Shape of Training) review.

4. Effective ways of working

How the Research Councils can operate most effectively within the wider science and innovation system, recognising what works well and identifying opportunities for improvements? What strategic leadership should be provided by the Research Councils? How should Research Councils engage with their communities?

The strategic role of the RCs in the wider science and innovation system cannot be overestimated. They are seen as leaders and agenda setters by the community and over the past 5 years have begun to engage much more effectively with their communities – eg annual site visits by MRC Strategy team to top 15 funded HEIs. They collaborate well with other funders and ensure that their investments achieve value for money in terms of health and wealth gain. Whilst RCs do well at understanding and supporting the global and national agenda, their understanding of regional agendas is less strong. Given world class research is often a driver of regional economic growth, RCs should engage with LEPs and SMEs whilst safeguarding the funding of excellent long-term curiosity driven research.

What is your opinion on future operation of the peer review system?

The peer review system is robust and as fair as is possible given its “human” element.

Remuneration of reviewers may have to be considered to encourage a wider pool of reviewers than are currently involved. The RCUK peer review system is world-leading – despite being very elaborate, it is also largely very fair, and UK grants are amongst the most well-constructed in the world. Any attempt for significant overhaul here would be wasteful and counterproductive.

The individual research councils have a track record of working together to deliver on specific projects; indeed there are numerous cross-council themes, each with nominated leads. Expressed as a fraction of their budget, the UKs research councils are probably the most cost-efficient in the world.

5. Any other comments?

RCUK and its constituent research councils have just undergone their triannual review. This extensive review explored many of the dimensions addressed above and therefore one assumes it unlikely the present review will reach dramatically different conclusions. Where differences could emerge are in response to recent changes in the landscape of the UK research community.

One aspect of change is the marked increase in the planned number of new research centres that have been and are being established, and for which capital funding has been identified. However, no detail is yet available on what a forward-looking sustainable business model for these new centres might look like. It is unlikely that that a research-only business model for this new generation of research centres can be sustained from RCUK funding mechanisms, existing costing models and overall budget levels. Indeed, what is frequently missing is the smaller-scale critical investment (550k-£2m) for equipment or retro-fitting, which can often be a hindrance to capacity development as well as training.

An alternative model for the creation of research focus is exemplified by the successful initiative by MRC to embed its Units within HEIs. This has resulted in much more flexible and invigorated MRC scientists: they can now apply for grants from all funders and have much easier routes to collaborate with home universities.

2988 words in response to the Qs

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