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Is Academic Radiology in the UK Dead? A Personal View

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The decline of candidates for academic training, the resultant lack of published studies and dearth of dedicated funding sources have led academic radiology in the UK to be described as "almost dead". Though many espouse the view that radiological research is thriving, albeit in a small number of academic centres, in this article I present my personal estimation that radiological research in the UK is in a parlous weakened state and will survive only if there is a coordinated effort to increase the national capacity for academic radiology.

In 2002, I became Chairman of the research subcommittee of the Royal College of Radiologists (RCR) and undertook a small-scale fact-finding exercise to understand the status of research activity within the UK radiological community. I examined the following metrics of research activity: principal investigator status on research grants, the level of personal ad hominem funding for career development for those in the specialty and the level of representation in the leading peer reviewed journals.

Study Shows Weakened State of Academic Research

The findings were lamentable, to say the least. Only three academic radiology departments have direct support from the Higher Education Funding Council (HEFC), a reduction from 12 in 1997. In 2004 there were only 37 radiologists in England with an academic component to their job plans, a decrease of 30% on 2003. Enquiries to the Medical Research Council (MRC), Engineering and Physical Sciences Research Council (EPSRC) and the Wellcome Trust revealed only one clinical research fellowship awarded to a radiologist and only four radiologists with principal investigator status on research grants from any of these three funding bodies in the previous three years.

The leading peer-reviewed journal (Radiology), reveals that during 2006 a mere 4% of publications had authors from a UK institute. A quick comparison with other European member states shows that we publish significantly more in this journal than Portugal, Denmark, Spain, Belgium or Italy, and are on a par with Switzerland and France, but lag significantly behind the Netherlands (168% of the UK output) and Germany (275% of the UK output). Finally, in the US, the NIH has formed the 'National Institute of Biomedical Imaging and Bioengineering' (NIBIB) who, with a budget of approx. 300million Dollar, aim: "To promote fundamental discoveries, design and development, and translation and assessment of technological capabilities in biomedical imaging and bioengineering".

The NIBIB was formed largely in response to the Academy of Radiology Research, an independent body representing a broad range of member societies with an interest in promoting imaging research. There can be little doubt that this model has been enormously successful and is sufficiently generic to bear repetition in the UK.

Although this small-scale survey is extraordinarily unscientific, it paints a relatively worrying picture of a poorly developed academic radiology community with negligible international standing and little track record of developing independent academic practitioners or obtaining direct grant funding.

Formation of UK Clinical Research Collaboration

In 2004, John Reid, then Secretary of State for Health, called for an expansion of UK clinical research including clinical trials and an extensive and sustained increase in the research workforce. This led to the formation of the UK clinical research collaboration (UKCRC), a partnership between government, the voluntary sector, patients and industry to oversee clinical research in the UK. The UKCRC has overseen the establishment of a new infrastructure for clinical research based on national and local research networks. Networks are already operational in cancer, mental health, stroke, diabetes, dementia and children's research. A more extensive range of networks were established in Wales despite being focused primarily on specific disease states. In addition, we have seen the development of a dedicated career path for medically and dentally-qualified academic staff.

Based on the recommendations of reports produced by the Academy of Medical Sciences and by Mark Walport as part of the Research for Patient Benefit Working Party, these networks provide a flexible career path for the prospective academic clinician. These posts aim to produce research-capable clinicians with higher degrees and extensive research experience from a training course integrated into clinical training. An outline of the training path is shown in Figure 1 (see below).

Numbers of Trainees on the Rise

The development of a dedicated academic career path is of considerable importance for the future of UK academic radiology. No matter what changes are made in the research infrastructure, expansion of academic training is without doubt the most important. The UKCRC has identified a national shortage of expertise in six specific specialties, including radiology. Despite this, only a small number of academic training posts have been funded in the first two rounds of applications for academic clinical fellowships. Nonetheless, this represents a quantum increase in the number of radiology trainees entering academic training.

In parallel with these developments, the RCR has sought to support academic training by negotiating joint clinical research fellowships with the MRC and CRUK. These fellowships allow members and fellows of the RCR to apply for prestigious jointly-funded fellowships which are run in parallel, and to the same standards, as the primary clinical fellowships supported by these organisations. There have been significant leaps in attracting successful applicants to these posts with currently five joint clinical fellowships filled by diagnostic radiologists. Although this is a small number, it represents not just a massive increase on previous performance, but evidence of a significant sea change in the attitude of junior radiologists to the academic career path.

Further Pressure Needed to Improve Outcome

Despite these improvements, there remain challenges with the academic career path in radiology. Although the training scheme is flexible, the majority of trainees undertaking the first three years of an academic clinical fellowship are likely to require additional time to obtain a higher research degree. In most cases, they will need to compete for a clinical fellowship against trainees from other specialties for funding to take three or four years away from clinical medicine. At the present time, there is an easily identified shortage of such fellowships and it is possible that the aspirations of many of these would-be academics will fall at this hurdle. For those who succeed, there are now a small number of clinical lectureships from which the trainee can apply for consultant grade academic posts.

Conclusion

Some improvements have undoubtedly been seen. However, there must be another major change in the research landscape if academic radiology in the UK is to be rejuvenated. The number of radiologists who are successful in acquiring principal investigator status on research projects or programmes from the major funding bodies is undesirably small. As the number of adequately trained academic clinical radiologists increases, this should resolve. In the 1980s, UK radiology as a specialty lost its leading role in cardiac radiology. There is a significant danger that we are in the same situation with radiological research. There can be no doubt that without continued effort and coordination, the field of academic radiology in the UK may be eroded into non-existence, which would have a severe impact on the overall future of the profession itself.

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