

RAE Unit of Assessment 4 - Clinical Dentistry

Overview Report

1. The panel assessed research in basic and applied dental sciences and other sciences relevant to clinical dentistry. Submissions were received from fourteen UK dental schools. The work submitted was broadly based, and the Panel adopted an inclusive approach throughout the assessment process.
2. Membership of the Panel was set accordingly, and membership expanded from ten members in 1996 to sixteen for the 2001 exercise. This expansion included the appointment of two consumers of research (from the NHS and from industry) to the Panel. The range of members' expertise enabled the Panel fully to assess all of the work submitted. Careful consideration was given to the need for external advice (either from other RAE panels or specialist advisers), but the Panel did not identify any areas of work in which this became necessary. The Panel did however consult a group of four non-UK based experts regarding its setting and application of the benchmark standard of international excellence.
3. The Panel's criteria and working methods were set out in detail in the funding councils' publication RAE 5/99, and these were rigorously observed. The Panel examined in detail virtually all (greater than 99%) of the 1,894 publications and other research outputs submitted. Each item was examined by at least two members of the Panel working independently, and assessed against the scale set out in its published criteria. Where members' assessment differed significantly, outputs were referred to a third member of the Panel by the Chair but this was necessary in only fifty-eight cases (or 3% of the outputs examined). Outputs were allocated to members by the Chair in accordance with their particular areas of expertise (and taking full account of any declared interests in the institutions under consideration). This allocation meant that the output submitted by each school was examined in detail by at least ten members of the Panel, account having been taken of any conflicts of interest.
4. Based on this rigorous assessment of publications, together with the other evidence set out in submissions, the Panel judged that a substantial majority of the work submitted by all fourteen schools demonstrated quality that equated to attainable standards of national excellence. Seven of the fourteen schools were awarded ratings of 5 or 5*, demonstrating international excellence, and this assessment was endorsed by the Panel's four non-UK advisers. Each of these seven schools were notable in the number of research groups that were considered to be at the forefront of international research in their field.
5. Each of the fourteen schools has distinct areas of international expertise, and all are making a valuable contribution to research in clinical dentistry. Much of their work is directly relevant to clinical practice or the needs of other users. However, the submissions also contained a significant element of basic research. Both the quality of this work, and its broad relevance and applicability, were evident from the range of work published in leading scientific journals outside clinical dentistry. This was particularly noticeable in fields relevant to the craniofacial area such as genetics, microbiology, oncology and materials science. In addition to these areas of basic research, the Panel identified work of particular strength in the biosciences, neuroscience, mucosal

immunology and clinical testing (including randomised control trials). High quality research was also evident in dental materials, epidemiology, hard tissues and radiology.

6. Research student numbers have increased significantly over the assessment period (from 304 in 1996 to 332 in 2000). The Panel regarded this growth, together with figures for PhDs awarded (333 over the assessment period), as a further indicator of vitality and the strength of the research environment within dental schools in the UK.
7. Overall the dental schools had also achieved a significant increase in external research funding, which rose by 35% between 1996/97 and 1999/2000. Income from the research councils, UK charities, and government bodies increased by 49% over the same period. From the evidence presented in submissions, schools are clearly operating in an increasingly competitive funding environment. That a number have achieved significant increases in funding since 1996 is another indicator of the international competitiveness of much UK dental research. Such pressures have also encouraged some schools to develop particularly innovative or entrepreneurial approaches, and these were commended by the Panel. Overall, however, schools face considerable difficulties in securing research funding for oral health priorities unless these are linked to national health priorities, and in maintaining an appropriate balance between clinical and basic research.
8. Evidence regarding the structure and research environment within institutions suggests that the RAE has had a markedly beneficial effect on the management and organisation of research. Activity across the unit of assessment is more focused than in 1996, and there is evidence of significant investment in the research infrastructure. Systems for supporting and developing less experienced researchers are generally sound. The Panel noted that fewer staff were returned as research active by schools in 2001 compared with the previous exercise (a total of 447 category A and A* staff, against 538 in 1996). Schools have clearly been much more selective than in previous exercises, and have given careful consideration to the way in which they presented their research to the Panel. However, the Panel also noted the contribution made to research by other staff excluded from the submissions, and that in many of the schools the research culture extended beyond those formally returned as research active.
9. Many schools have established sustained and productive links with other HE institutions, government and external agencies, and with the commercial sector. As with publications, there were numerous examples in the submissions of collaboration with leading centres outside clinical dentistry leading to a broadening of the field. The extent and level of collaboration with researchers outside the UK appeared to have increased significantly since 1996. Such activity is commendable, and a further indicator of the quality and vitality of work within the unit of assessment. However, submissions presented relatively limited evidence of research collaboration between UK dental schools. Opportunities for such collaboration clearly exist. Indeed, given the limited size of research teams in a number of specialist areas, further collaboration appears essential if UK dental research is to realise its full potential.
10. The submissions presented impressive evidence of esteem, both within the UK and internationally. Thirteen researchers across a broad range of dental sciences received distinguished scientist awards from the IADR during the assessment period (the highest number of awards received by researchers in any country outside the USA), together with numerous other awards from international bodies. The level of editorial activity –

including the significant number of researchers contributing to leading journals outside clinical dentistry – provided further evidence of esteem, as did the success of schools in attracting competitive research funding. Five centres had held studentships from OST research councils during the period.

11. Overall, the Panel noted the increasing demands on the staff of UK dental schools through their contribution to and their administration of undergraduate and postgraduate teaching, and to clinical services. Schools also faced increasing cost pressures and growing competition for funds. The submissions nevertheless demonstrated that all of the fourteen schools are making a significant contribution to research, and provided an encouraging demonstration of their commitment to research and of broad based quality across the unit of assessment. The current balance between clinical and basic research is commendable, but it was hoped that further developments in basic research would not be at the expense of clinical research. If schools are able to deliver the future plans set out in their submissions, there is potential for significant further development.
12. The non-UK advisers were unanimous in concurring with the view of the Panel that the overall quality of UK dental research was of a high standard with many aspects being of international standing.