

Musculoskeletal research in the UK

I write as Chairman of R&D of a specialist NHS Trust treating musculoskeletal disorders with a substantial basic and clinical research portfolio. I understand that this enquiry is considering how existing biomedical research may be enhanced. This submission gives an example of an area of research that has not benefited particularly well in bidding contests for resources. I submit that any reorganisation should enhance the prospects of important research areas outside the headline areas biomedical research.

Musculoskeletal (MS) conditions adversely affect quality of life but generally not life expectancy. Success in other areas of research endeavour have extended quantity of life but not always quality. MS conditions are the cause of 30% of primary care consultations and a major contributor to elective surgical waiting lists. Trauma is a major reason for emergency admission to hospital and a leading cause of death on young people. They include arthritis of all joints, back pain, insufficiency fractures (osteoporosis), and a wide variety of children's conditions such as cerebral palsy, developmental dysplasia of the hip and congenital deformities and scoliosis. The DoH has just published the Musculoskeletal Services Framework (12th July, 2006, Gateway ref. 6857) confirming the impact of MS disorders. This document includes references to evidence based practice but not to the research needed to develop this evidence.

We were encouraged by the report of The Academy of Medical Sciences "Strengthening Clinical Research" (2003) when they indicated that a "Musculoskeletal" Research Network was one of 7 deemed desirable.

Unfortunately the recent shortlist of Research Centres omits any with a specialist interest in MS disorders. Our bid was deemed "too small" while other shortlisted centres appear smaller than ours. The Nuffield Orthopaedic Centre and Oxford University were the only musculoskeletal centres to feature on the bibliometric analysis run by NHS R&D (with 20% of UK cited output 1995-2000).

Musculoskeletal clinical and basic research has been overshadowed and pushed down the priority list by cancer, cardiovascular disease etc where mortality is the major factor in decision making. This means that knowledge of cell biology of musculoskeletal tissues lags far behind heavily researched areas. Clinical research is difficult because outcome measures are softer (addressing pain, quality of life issues etc). Decision makers from other areas of medicine seem uncomfortable with these limitations of research methodology.

The preliminary material from NHS R&D did not specify research priorities, and it might have helped if it had done so.

There are many reasons why musculo-skeletal sciences should be promoted in the clinical research hierarchy. Some are “bottom up”:

- 1) We know that about 30% of primary care consultations relate to musculoskeletal complaints.
- 2) Orthopaedic waiting lists have remained intractable to reform, as demand continues to outstrip resources. The evidence-base for some interventions remain weak.
- 3) Our knowledge of the cell biology of connective and structural tissues lags some way behind that of ‘priority’ tissues (eg neural, cardiac, renal). We believe the methodologies developed to study these tissues could be applied to musculoskeletal tissues. We see extraordinary opportunities if this science were developed.
- 4) Areas of bioscience that are unfamiliar to biomedicine, such as engineering and materials, are crucially important to this area in which the UK has considerable expertise.
- 5) Less than 1% of UK research funding can be related to this area, and continued down-listing adversely affects research in this area.
- 6) Biomedical research has undoubtedly contributed to extending our life expectancy. The conditions we are interested in affect the quality of life of the survivors, such as osteoporosis, back pain, or osteoarthritis. We have

interventions for all these conditions, but research is essential for improving results and developing new approaches.

- 7) Musculoskeletal research applications are perceived as weak compared with those from priority fields

I believe these current NHS initiatives present a major threat to musculoskeletal research, in spite of reassurance to the contrary. The promise of project grants in the years to come will destroy an already weakened research base. I believe we have an opportunity to make a relatively modest investment can help this situation. The more this decision is put off, the poorer the quality of the research applications received and the less likely are projects to be funded – a feedback loop towards the death of this science and the interest in clinicians in clinical research.

An agenda to change this would include:

- 1) A decision that musculoskeletal problems are a clinical priority (as they nearly have been in the past).
- 2) Development of a musculoskeletal research network.
- 3) A project to fund doctoral and post-doctoral basic scientists to bring modern cell biological techniques to connective tissues (especially bone, articular cartilage, intervertebral disc, ligaments, tendons).
- 4) A funding stream of grants for these young scientist to apply for.
- 5) Support for a “musculoskeletal Biobank” with high quality clinical validation from patients with musculoskeletal disorders.
- 6) Reconsideration of the decision by NHS R&D not to shortlist a musculoskeletal Trust or group of trusts as a specialist centre to do this. We do not believe project grants will achieve this. ARC (Arthritis and Rheumatism Campaign) needs to be involved with this initiative.
- 7) The current NHS R&D reorganisation has removed infrastructure support for clinical research. Other NHS reforms have removed patients having primary elective surgery from our practice – these were also important contributors to our clinical research programmes - leaving only the most complex behind.

We have applied to become a specialist research centre, but our research active body is deemed “too small” for shortlisting by NHS R&D. The shortlist contains no Trust that is offering a major interest in musculo-skeletal research, nor do we see our selves as small. Does this matter? I believe it does.

Yours sincerely

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