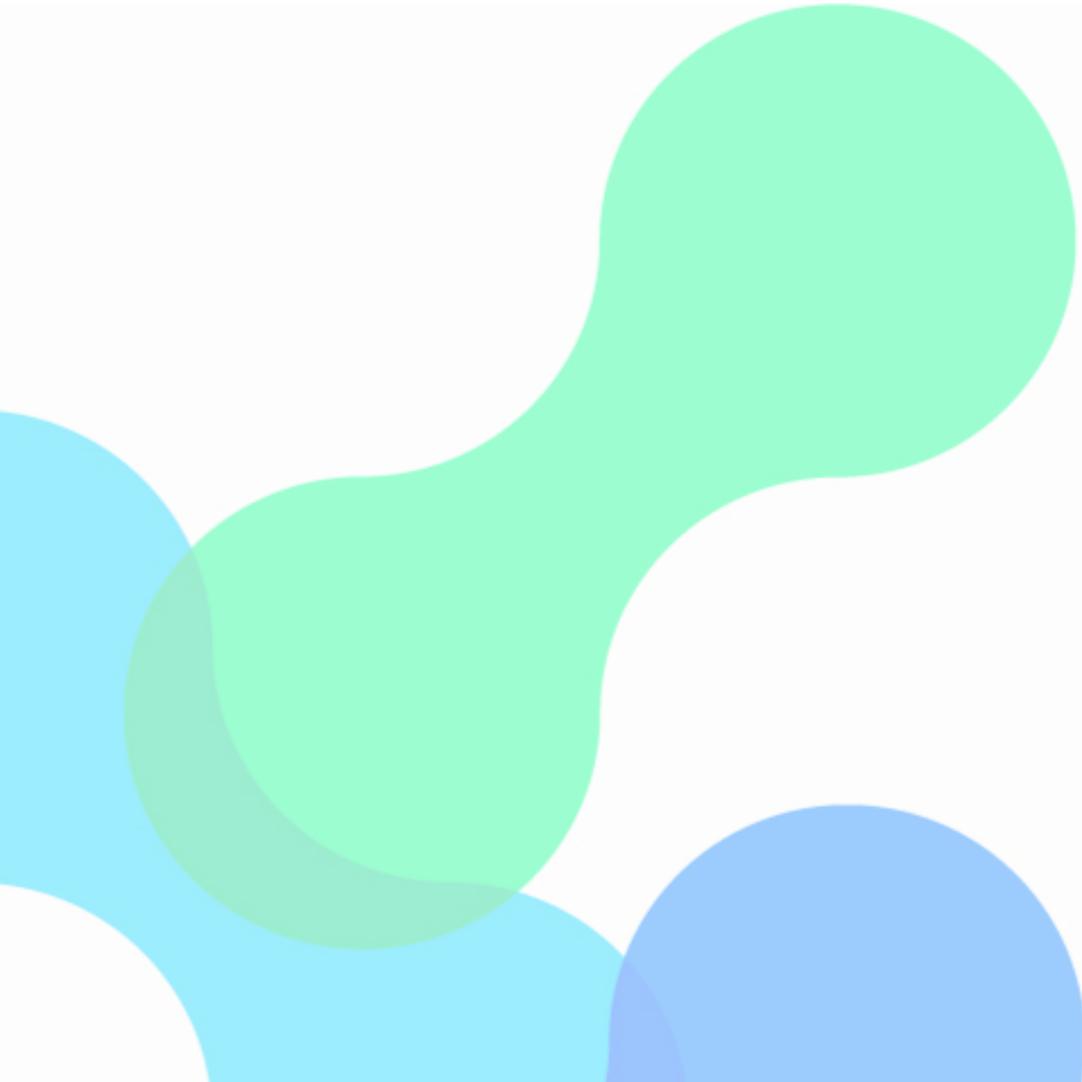


Where have all the research applicants gone?

13 September 2023



Introduction

Medical research is critical to respond to ever escalating demand (for example in our area of MSK health) and make the most of exciting new technologies.

We are one of the most significant funders of orthopaedic and MSK research in the UK. Since 2004 we have invested almost £12m on projects that expand knowledge, improve patient outcomes and pioneer new forms of diagnosis and treatment.

Our most recent research round saw a 57% decrease in applications for grants and fellowships compared to 2021. Our experience appears to be shared by other MSK research charities.

‘Concerns are growing about the state of clinical research in the NHS and problems in the future pipeline for the workforce, with the number of consultant clinical academics set to decline in the coming years without urgent action to reverse this trend.’¹

So what is happening? We spoke to charities, we reviewed the data and most importantly we spoke to recent recipients of our funding to better understand their personal experiences.

¹ The future of clinical research in the NHS is under threat, House of Lords Science and Technology Committee has written to the Minister of State for Health and Social Care with the findings of its short inquiry into clinical academics in the NHS. 26 January 2023

A system under pressure is leading to competing priorities and a squeeze on research capacity.

Under pressure!

*'Current severe pressures within the health service, because of post-pandemic backlogs and staff shortages, are making it increasingly difficult to secure time within the working week to focus on research priorities, both for NHS and University-funded clinicians. This makes clinical academic roles particularly challenging, with competing demands for service delivery and research outputs becoming increasingly impossible to meet.'*²

'There is a general feeling of discontent amongst doctors with the contracts, strikes etc. Many are not happy with the current work situation, and therefore are more focused on just progressing and reaching the end of training and less likely to consider taking time out to do research and extending the time they are working at that level.' – **Trauma & Orthopaedics Registrar.**

'Rising waiting lists mean that all 'free time' that would be potentially for research is being squeezed into extra clinical activity.' – **Consultant Spine Surgeon**

'I couldn't sustain the clinical demands with the requirements for me to progress as an academic researcher. I found the uncertainty of future grant funding too difficult to manage alongside a demanding clinical caseload.' - **Dr Lianne Wood, PhD, Senior Research Fellow, Medical School, University of Exeter**

'Supporting professional activities (SPA) time is squeezed such that any non-clinical time is full of mandatory requirements (training, audit, appraisal etc) and research falls out of the bottom.'
– **Consultant Spine Surgeon**

² NIHR (National Institute for Health and Care Research) – Written evidence to Primary Care Evidence Unit.

Competing priorities

*'The life of a clinical academic is enjoyable but there are additional pressures meeting the academic and "service delivery" aspects of the job. One crucial requirement for a clinical academic is ring fenced time for their academic and clinical work. However, there is increasing pressure on clinical academics to fulfil additional service requirements.'*³

'The responsibilities for Allied Health Professionals within the NHS are extensive, and superiors fail to allocate dedicated time for research endeavours. For example, I know of a candidate secured NIHR backing for research training and pursuing research ambitions. However, they were instructed to manage their routine clinics and engage in research during overtime.' - **Professor Nachiappan Chockalingam, Professor of Clinical Biomechanics, Staffordshire University School of Health, Science and Wellbeing.**

For surgeons, an added complication is that they often struggle to develop the technical skills required for surgery whilst pursuing a research career.

Time pressures

'Most consultants I know with a significant research commitment give a lot of their free time to this. And I wonder if post-covid, and just with a general shift amongst many medics and the general population to be more focused on work-life balance, fewer people are prepared to consider research careers.' – **Trauma & Orthopaedics Registrar**

Loss of Research Physician Associates (PAs)

'Research is not part of mandatory core activity in the same way that audit is. To increase clinical activity, research PAs are no longer part of job plans in most trusts and research time is only supported by grant money. Thus, a chicken and egg scenario exists where there is limited or no time to get the grant to then support the research time.' - **Consultant Spine Surgeon**

³ Professor Stuart Taylor, Professor of Medical Imaging, University College London

Is medical research becoming less attractive as a career option?

Competition from industry offering higher paying roles

'Academic salaries are not very lucrative and there is strong inclination towards industry with current researchers.' - **Professor Deepak Kalaskar, Professor of Bioengineering in the Department of Ortho and MSK Science, University College London**

Delay in career development (and salary) for those pursuing PhD, compared to peers who progress directly to consultant posts

*'The Government should urgently address inequalities in total remuneration that disincentivise clinical academia as a career path. It should work with universities, Governmental and non-Governmental research funders, and NHS trusts, to ensure that clinical academics are not financially disadvantaged by pursuing research compared to what they could earn as full-time clinicians.'*⁴

'Funding is not always enough. I recently encouraged a junior clinician to take a career break to apply for a fellowship, but they wanted to match the salary of their current NHS post.' – **Professor Deepak Kalaskar, Professor of Bioengineering in the Department of Ortho and MSK Science, University College London**

Lack of career security and funding

Fewer academic appointments are available and independent research routes are usually short-term 2-3 years, at a career stage where most people need job and financial security.⁵

A [study by The Royal Society](#) found that only 3.5% of students who complete a PhD secure a permanent research position at a university. Of those lucky few, only 12% (or 0.45% of the total) make it to professor level.

'Professionals particularly earlier in their careers are concerned about their financial situation (large student loans combined with static salaries and benefits) and are therefore less willing to take on the risks associated with a break in their career for research.' – **Mr Dan Cadoux-Hudson, Trauma and Orthopaedic Registrar, University Hospitals Southampton**

⁴ <https://committees.parliament.uk/committee/193/science-and-technology-committee-lords/news/175630/the-future-of-clinical-research-in-the-nhs-is-under-threat/>

⁵ <https://committees.parliament.uk/writtenevidence/114668/pdf/>

'Many academics have said that when considering a higher degree, they are looking for funding that will see them through the length of their university placement. A serious consideration in their applications is the security that the funding will cover them through the duration of their programme.' – **Dr Justin Green, orthopaedic surgeon and ORUK & BHS Research Fellow**

people are looking to take time out of training to complete a higher research degree. It is a big commitment to make without having secured funding for 2-3 years and risk not being able to get further funding to complete the degree.' – **Trauma & Orthopaedics Registrar**

'When I consider a project, it is usually something that requires at least a couple of years work. I don't have a couple of years of free time myself and I don't have a workforce of free hands that I can direct towards it, so I need to somehow include dedicated staff as part of the project. This is the situation for most academics. With staff costs the budget goes up enormously. The cheapest version is probably to ask for funding for a PhD student but even that will lead to a substantial budget above £100,000 before any of the non-staff cost of the budget. If that is the case, I need too much money to be eligible to many funding schemes, so I cannot apply.' - **Dr Ulrich Hansen, Senior Lecturer in Orthopaedic Biomechanics, Imperial College London**

Insecurity compounded by challenges within the university sector

Financial pressures on universities have meant a reduction in funding for both university-employed and NHS employed academics and limited the number of tenured academic posts available.⁶

'In some universities, teaching takes precedence [over research] as it generates the revenue necessary to sustain the institution. The central challenge seems to lie within the institutions themselves. Numerous organisations, even those established with a strong research focus, are hesitant to fund certain research expenses and overheads. Only in cases where there is evident leadership that comprehends the significance of supporting research applications - ones that don't encompass staff salaries or operational costs - do we witness a different approach. This is becoming rare.' - **Professor Deepak Kalaskar, Professor of Bioengineering in the Department of Ortho and MSK Science, University College London**

⁶ <https://committees.parliament.uk/writtenevidence/114667/pdf/>

Importance of research for consultants' career development has been downgraded

'Research is not as required to progress in a career to consultant level in the same way that it was.' - **Consultant Spine Surgeon**

'The emphasis of post graduate medical training has moved away from research in recent years, particularly with regard to the new surgical curriculum which has reduced the research and publication requirements for surgical trainees.' – **Mr Dan Cadoux-Hudson, Trauma & Orthopaedic Registrar**

Poor research culture

A Wellcome Trust Report⁷ in 2020 highlighted a number of issues:

- 'Poor research culture is leading to unhealthy competition, bullying and harassment, and mental health issues'
- 'a disconnect between researchers' perception of their management skills and their abilities in practice' i.e. few researchers responsible for managing people have received training.
- 'The system favours quantity over quality, and creativity is often stifled.'

⁷ <https://wellcome.org/reports/what-researchers-think-about-research-culture>

Are process and system issues compounding the problem?

Process issues

'The bureaucratic and intense processes involved in applying for research grants have become more complex and time-consuming (e.g. paperwork, regulations, grant submission systems, etc.). This can discourage potential applicants, such as early-careers researchers (ECRs) who may not have the resources or experience to navigate these complexities. Also, as academics and researchers, we are often burdened by increasing administrative tasks in academia (e.g. admin internal processes, management, students & recruitment and teaching).' – **Dr Ana Ferreira-Duarte, Senior Lecturer in Bioengineering, Newcastle University**

Difficulties navigating the system

'The pathway and process for applying for fellowships and funding is often complicated and not widely known within medicine. To be successful, it often requires the help and assistance of those familiar with the system. When I approached universities and institutions about undertaking research, I was not given a clear indication as to how I might go about gaining access to funding to support it.' – **Mr Dan Cadoux-Hudson, Trauma & Orthopaedic Registrar**

'I don't think surgical trainees are exposed enough to real research, so they often don't realise that they can lead a project or apply for their own grants. I think the common consensus is that you must find a supervisor and see what project they want you to do. If people aren't really invested in their research, they won't want to pursue grant applications and fellowships. We are frequently offered opportunities to go on research courses and learn about GCP or how to write a lit review, but we don't often get the opportunity to go to laboratories or clinical trial units and see what is involved. This shrouds research in mystery: people don't think it is accessible or struggle to understand how it is clinically applicable.' **Dr Anna Porter, Clinical PhD Student, Newcastle University.**

Lack of support

'There is a lack of pre-doctoral support and mentoring. At the Trust I have been based, we have been fortunate to have Chief AHP mentoring, research support and funded time for pre-doctoral applicants that have good ideas. This has led to pre-doctoral, doctoral and post-doctoral funding within our department, and the continuity of sustained support from not only managers but peers. The message from managers and trust management is key to facilitating health research and enthusiasm'. – **Dr Lianne Wood, PhD, Senior Research Fellow, Medical School, University of Exeter**

'There is a lack of mentorship/guidance and training opportunities that can discourage aspiring researchers (e.g. ECRs, minority groups, etc.) from taking the necessary steps to prepare and submit competitive grant applications.' – **Dr Ana Ferreira-Duarte, Senior Lecturer in Bioengineering, Newcastle University**

Conservative outlook of funding bodies

'There is a tendency to support established researchers and projects with a proven track record, which sometimes leaves little room for innovative and high-risk proposals – e.g., ECRs often propose novel and unconventional ideas and may find it particularly challenging to secure funding in this environment.' - **Dr Ana Ferreira-Duarte, Senior Lecturer in Bioengineering, Newcastle University**

Research reporting and measurement constraints

'One-year fellowships are quite intimidating in terms of expected output. It is hard to setup a project and produce output in that time, so most people need to already be started with a project. My impression when approaching funders was that they were looking for neat, concise projects that would produce results during the 1-year period.' – **Trauma & Orthopaedics Registrar**

'Particularly in certain procedures, such as hip arthroscopy there is a wealth of studies primarily focused on short-term outcomes and survivorship, however this leaves a gap in knowledge regarding the long-term effectiveness of these procedures. For some, this lack of evidence may discourage people from pursuing further studies and fellowships that are focused on long term outcomes.' – **Dr Justin Green, orthopaedic surgeon and ORUK & BHS Research Fellow**

Limited understanding of AI

'The lack of a unified and integrated definition of AI particularly in the health sector could be acting as a barrier to research progress in understanding and implementing AI applications. The emergence of safety concerns associated with AI systems may also be a contributing factor. The risk of unintended and harmful behaviour that may arise from poorly designed AI systems is becoming more prominent in the media and may be off-putting. This issue has raised awareness about the need for rigorous research on AI safety and the development of robust and reliable AI models. Consequently, researchers may have shifted their attention towards other more traditional fellowships.' – **Dr Justin Green, orthopaedic surgeon and ORUK & BHS Research Fellow**