

Evaluation of the Clinician Scientist Fellowship scheme

Summary report for the Academy of Medical
Sciences and the Health Foundation

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1. Introduction

Aims of this evaluation

This report summarises findings from the independent evaluation of the Academy of Medical Sciences and the Health Foundation's Clinician Scientist Fellowship (CSF) scheme. The evaluation assessed the impact of the CSF scheme in terms of research, clinical and policy progress as well as awardees' career trajectory and wider contribution to the health and research landscape, including training and mentoring future cohorts of healthcare personnel. The findings develop an evidence base to inform future design and investment to support researchers in the clinical arena transitioning to independence. This analysis builds on the [previous evaluation of the CSF scheme](#) that was carried out in 2012.

Background to the Clinician Scientist Fellowship scheme

The Academy and the Health Foundation have taken a leading role in supporting the development of clinical researchers, launching the CSF scheme in 2002. Alongside funding for salary and consumables, the fellowship also provided training and mentoring to support leadership development, and access to the funding partners' networks. Whilst the scheme supported clinicians working in any medical discipline, it particularly welcomed applications from professionals working in the fields of anaesthesia, paediatrics, pathology, psychiatry, radiology and surgery. The majority of awardees finished their fellowship some years ago, and the last award was expected to be completed by August 2022.

Careers that combine academic research with clinical practice are particularly difficult to develop, since clinical pressures regularly hamper clinicians' ability to do research. A number of other schemes exist in the UK to support Clinician Scientists. This review looks at the niche that the Academy / Health Foundation's scheme has occupied in the past, and what the scope of the scheme might be in the future if future rounds were to be held.

Summary of Clinician Scientist Fellowships Awarded

A total of 26 fellowship awards were made across four rounds. The selection of fellows for each cohort took place in 2002-04 (cohort 1); 2006 (cohort 2); 2008 (cohort 3); and 2013-14 (cohort 4). In total, £13.67 million was awarded to the 26 fellows.

2. Key Findings

The landscape for Clinician Scientists

- The COVID-19 pandemic has exacerbated challenges already being experienced by Clinician Scientists. The pressures of clinical practice, training and access to research funding were making it even more challenging to pursue a career as a Clinical Academic.
- Several schemes support Clinician Scientists in the UK, the largest run by the Medical Research Council, the National Institute for Health and Social Care Research and the Wellcome Trust. These schemes are open to medical and non-medical clinicians¹.

¹ Registered healthcare professionals, including dentists, nurses, midwives, Allied Healthcare Professionals, healthcare scientists, pharmacists, clinical psychologists and veterinarians

- A key bottleneck in developing a Clinical Academic career is post-PhD, when researchers seek to develop their own group – this is the point at which Clinician Scientist Fellowships are of importance.
- The overall number of Clinical Academics (at the level of Professor, Reader, Senior Lecturer, and Lecturer) was similar in 2020 to what it was in 2010². However, the number of Clinical Academics at Reader or Senior Lecturer has fallen by 25% (from 1,418 to 1,062) from 2004 to 2020. In contrast, the numbers of Lecturers and Professors have increased during this period.
- From 2004 to 2020, declines in the numbers of Clinical Academics working in the following specialties have been reported²: Pathology (down 36%); Psychiatry (down 29%); Obstetrics and Gynaecology (down 19%); Paediatrics and Child Health (down 9%). During this period, increases were seen for Radiology (40%) and Surgery (18%), with no overall change in Anaesthetics.

Stakeholder views on the CSF scheme

- Overall, stakeholders felt that the scheme filled a much-needed gap in supporting and developing future Clinical Academic leaders. There was strong agreement that although the scheme is open to all applicants, encouraging applications from the six specialties³ of unmet need was very important for trying to boost their academic footprint, setting out a clear niche for the scheme.
 - In the first round, all ten awards were made to fellows working inside of the six specialties; six out of sixteen awards in subsequent rounds were in these specialties.
 - Notably, awards were made in the fields of Emergency Medicine, Obstetrics and Gynaecology, and Public Health – all of which have been identified as specialties in need of more support.
- Awardees benefited from the support provided through leadership training, mentoring, and networking. They expressed different preferences for these components, suggesting that a bespoke approach to design individual support needs is important.
- Providing 100% of the fellow's salary was viewed as important for protecting their research time and for negotiating power when agreeing clinical specialty, responsibilities, and workload. However, two interviewees with a background in surgery felt that salary could be split 50:50 between the funder and the NHS organisation.

Career Progression and Achievements

- CSF awardees were much more likely to progress in a career as a Clinical Academic than unsuccessful applicants. 50% of awardees now held a Professorial role compared with 40% of unsuccessful applicants. Furthermore, 42% of awardees now held a different senior academic role, such as Associate Professor, Reader or Senior Lecturer, compared with 26% of unsuccessful applicants. Only 4% of awardees held no academic role, compared with 28% of unsuccessful applicants.
- Fellows have taken on a wide range of leadership roles, at local, national and international levels, illustrating how their influence has developed over time.

² Figures from the Medical Schools Council

³ Anaesthesia, paediatrics, pathology, psychiatry, radiology and surgery

Research: outputs, outcomes and impact

- All awardees responding to the survey felt that they were able to meet their research objectives, grow their research programmes and teams.
- Outputs, outcomes and impacts were identified across a wide range of areas, particularly success in securing funding, authored publications, presentations at conferences, and career progression. Awardees felt that the scheme had made a strong contribution to these outcomes.
- CSF awardees secured follow-on grant funding totalling £263 million across all four cohorts, 40% (£106 million) as Principal Investigator (PI) and 58% (£151 million) as Co-Investigator. This means that for every £ awarded to fellows at the start of their fellowship, over £19 has been secured in follow on funding (£7.78 by CSF awardees as PI on new grants).
- 55% of follow-on funding was secured from public sources in the UK, (e.g. NIHR, MRC), 24% from charity, 11% from public sources outside the UK (e.g. European Commission, NIH) and 6% from industry.
- Fellows from cohort 2 secured the most funding as PI, totalling £48.6 million, with fellows from cohort 1 securing £26 million as PI. Cohort 2 also produced the highest average number of citable publications per awardee.
- There was no clear, observable difference for normalised citation impact (NCI) between awardees and unsuccessful applicants. Both groups had, on average, an NCI which did not exceed 1.
- Although not significantly, the NCI of the awardees was seen to increase, on average, for publications produced in the 5 years after the fellowship, when compared to the publications produced in the 5 years preceding it. This suggested that the fellowship had a positive effect on their publication record.

Research translation: clinical impacts, commercial engagement, policy and clinical practice

- CSF awardees delivered a wide range of outcomes and impact through translating their research into new interventions, commercial activities, policy and clinical practice.
- Numerous examples of translation to clinical impact were identified, such as new procedures to significantly reduce the risk of death following traumatic brain injury, and a novel magnetic technique for sentinel lymph node biopsy and lesion localisation in surgery for breast cancer.
- Several awardees have engaged with industry, translating their work to commercial products. Highlights include founding two companies, i) Nightstar Therapeutics Inc., to expand retinal gene therapy towards worldwide approval for patients with retinal diseases, and ii) Kynos Therapeutics Ltd., to commercialise a programme of inhibitors in the immunometabolic space (inflammation and metabolism).
- Many examples are described where awardees influenced policy and clinical practice, such as reducing the ability of the Tobacco Industry to influence public health policy, and informing guidelines on the management of physical health in people living with mental disorders.
- Numerous examples were provided of fellows growing and developing their teams, such as training PhD and MD students, being active mentors and using national roles to support the Clinical Academic community.

3. Recommendations for a future scheme

Below is a list of recommendations for future support for researchers in the clinical arena transitioning to independence.

Scheme design

- A future scheme should consider targeting specialties of unmet need, since this provides valuable support to the Clinical Academic community and sets out an important niche for the scheme. The specialties of greatest unmet need are likely to have changed since the scheme was launched, and therefore further review of these is required ahead of a future round.
- A future scheme should also consider being open to non-medical clinicians, such as Allied Health Professionals, nurses and midwives, as well as medical doctors.

Awardee support, eligibility and selection

- The provision of support to cover 100% of the fellow's salary should be maintained, although there may be instances where a reduced contribution could be provided.
- Differing views were expressed on whether the scheme should provide funding for research support, such as a Research Assistant. A future scheme should consider the strategic priorities of funding as many Clinician Scientists as possible, whilst possibly seeking matched funding from the host institution.
- The supportive components of leadership training, mentoring and networking should be retained. There should be greater facilitation for peer support – within and between cohorts – and the inclusion of coaching should also be considered.
- Further areas of support could cover engagement with other sectors, such as industry and policy.
- Applicants should be asked to describe their training needs, and a bespoke development plan with appropriate budget and delivery partners would be prepared.
- A high degree of flexibility should be retained in the future with respect to the timing for applicants' completion of clinical training (CCT). It was also recommended that, for a hybrid scheme with industry, it would be important for awardees to have already completed training.
- When selecting awardees, equal emphasis should be placed on scientific quality and leadership, carried out by a balanced committee of people with expertise across pre-clinical, translational and clinical research.
- A future scheme should adopt best practices to promote diversity in fellowship awards. Features could include: a diverse Selection Panel; using the Academy's regional networks to promote opportunities and support applicants in specific areas; limiting the number of applications from each institution.

Institutional support

- Host institutions should be asked to provide a stronger commitment to fellows once the award has ended, whilst noting the legal considerations around open recruitment to future roles.

- More evidence of the host institution’s supportive environment should be sought, for fellows’ career development, and in matched funding towards research support roles, such as providing a PhD student or research assistant.

Industry engagement

- There appears to be growing interest from Clinical Academics to engage with industry (e.g. pharmaceutical, biotechnology, MedTech and digital health), and importance for them to do so. Future fellows would benefit from support to better understand how best to do this.
- Developing entrepreneurial awareness and skills would also be of interest, as this would stimulate clinical innovation and help accelerate the translation of research towards new clinical applications.
- A new Clinical Innovators Scheme could support Clinical Academics to develop experience from industry through support for networking, access to a mentor in industry, placements or hybrid fellowships with industry.

Funding partners

- Engaging appropriate funding partners would be vital to the success of a future scheme. Whilst the Health Foundation’s strategy and interests have evolved since the launch of the scheme, its continued focus on supporting innovation and improvement in health and care services provides an alignment opportunity for future work.
- Clinician Scientists make important contributions to healthcare, the UK Life Sciences sector and to the country’s economy. Therefore, future support from the government through the Department for Business, Energy & Industrial Strategy (BEIS), or through UK Research and Innovation (UKRI), would align well with the overall goals and impact of the scheme.

4. Selected quotes

Outcomes and impacts from the CSF scheme

“The scheme enabled me to concentrate on the research and not rely on short term small grants. I was able to plan a larger cohort study, present at meetings and publish results. I was able to network at the meetings and both learn from others and disseminate the knowledge I had learnt too. It provided security for me to concentrate on the work and also long-term security as the Uni had underwritten to maintain my employment at the end of the grant.”

Awardee, Survey respondent

“The scheme gave me a platform to set myself up as an independent researcher, with the guaranteed research time making a huge difference. The scheme also contributed to my development as a leader and to my academic credibility. This led to leadership positions such as my role as Director of the UK Organ Donation and Transplantation Research Network. I was also elected President of the British Transplantation Society - being the first female in this role was a massive honour for me.”

Prof Lorna Marson, Cohort 1

“The scheme really kick-started my academic consultant career. It enables you to protect time for academic activity that you can undertake in parallel with clinical service delivery. In terms of academia, it's a very prestigious grant to have, and it was an honour to receive it. Having a

Clinician Scientist Fellowship from the Academy is a really good stepping stone, helping you on to the next stage of your career. The scheme's support - and that of the university and the hospital - enabled me to acquire enough academic growth to progress to the next stage - a NIHR Research Professorship."

Prof Peter Hutchinson, Cohort 1

"If you try to quantify these impacts from my research, the scheme will have, indirectly, led to grant funding of around \$30 million in grants and \$1.6 billion in commercial funding, as well as hundreds of patients in clinical trials, due to the work that I have done in Oxford."

Prof Robert MacLaren, Cohort 2

"The scheme allowed me to transition from a junior academic to obtaining a faculty job as a senior academic. There is this pinch point for Clinician Scientists in making this transition, which is really difficult, and most rely on a fellowship."

Prof Stephen Till, Cohort 2

"The Clinical Scientist Fellowship was the springboard for my Senior Clinical Fellowship from the MRC."

Prof Damian Mole, Cohort 3

"The scheme has been immensely helpful for my career. (...) The Fellowship provided the stability to develop as a researcher, whilst still working as a clinician."

Dr Jayati Das-Munshi, Cohort 4

"It's been career-defining to have had one of these fellowships. Working in a specialty that traditionally doesn't have a big academic background, I don't think I would have been able to continue in research without the CSF scheme. The most important aspect is that the scheme gave me the time to be able to do research. It also gave me a lot of credibility, opening a lot of doors both within my university and outside."

Dr Virginia Newcombe, Cohort 4

"It was a great scientific education, providing the first steps along the road of living and breathing science. It opened up a career trajectory that I would not otherwise have had. The fellowship gave me the time and the resources to think about immunology in a way that wouldn't have been possible otherwise."

Dr Luke Devey, Cohort 3

"Without the scheme I'd be in service provision most likely, so changed my career, so hugely grateful."

Awardee, Survey respondent

Most valuable aspects of the scheme

"The CSF scheme was extremely helpful in developing my research, management and leadership skills. I found the career development workshops, CSF cohort meetings, mentoring and personal coaching highly beneficial."

Awardee, survey respondent

"It gave me so much more than just the salary and research funding - the Health Foundation Leadership development programme provided me with a wealth of 'soft' skills and being involved with the AMS has generated other very valuable opportunities for mentoring, networking etc."

Awardee, survey respondent

"It helped me develop my leadership style - having given almost no thought to how I might influence my team and others before my award. I found the leadership aspect of the AMS Fellowship extremely helpful and it provided me with a much enhanced ability to reflect on my behaviour and attitudes - as well as with more practical aspects of team management."

Awardee, survey respondent

“Combining the postdoctoral research funding support, with the additional leadership training programme has, directly and indirectly, led to significant research impact and novel technology development now in commercialisation.”

Awardee, Survey respondent

“It was incredibly valuable to have 5-6 years of protected time for research while maintaining my clinical work. The leadership training through the Health Foundation was really helpful, and we also received coaching, which was very useful. The peer support element from the cohort was also valuable. Through the scheme I was also encouraged to get a mentor, which has helped me immensely. I have received other valuable support through the Academy, such as the media training from the SUSTAIN programme, which gave me skills in communicating science.”

Dr Jayati Das-Munshi, Cohort 4

Funding needs

“I think the key in becoming a Clinical Academic is developing one's own team as soon as possible. Whilst I did attract some additional funding to supervise 2 PhDs during my time as a CSF, my access to post-doctoral researchers was dependent upon my departmental head who did not provide this access. As such, access to post-doctoral scientific support is a key element in producing top quality work thus future funding packages should have funding for a post-doctoral researcher to support the fellow.”

Awardee, survey respondent

“Might be worth building in possibilities for applying for further funds to enable hiring RAs/ post docs. I was able to do this, and it was important development for me and for my research.”

Awardee, survey respondent

Advice for early career clinicians considering a career as a Clinical Academic

“Celebrate your differences and take advantage of them, because sometimes being different can open other doors and opportunities which may be even more exciting.”

Dr Virginia Newcombe, Cohort 4

5. Conclusions

Summary

This evaluation has provided substantial evidence on the impact of the Clinician Scientist Fellowship Scheme, from major contributions to knowledge generation, career progression to senior leadership roles and translation of their work to clinical practice. Despite being a relatively small group of 26 fellows, their impressive achievements span across surgery, ophthalmology, psychiatry, oncology, emergency medicine and many other specialties. Their impact has reached beyond academia to improving healthcare, changing policy and practice, and establishing significant commercial ventures.

This review underlines the vital role that Clinician Scientists play towards improved healthcare and the UK economy. However, career progression as a Clinical Academic is becoming more challenging and funding to establish independence as a researcher has become even more competitive. These factors provide a strong rationale for running future rounds of the CSF scheme – or a variant of it. The insights gathered in this review have been collated to help shape the design of a future scheme.

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This evaluation was conducted by Freshney Consulting and Aleron.

Freshney Consulting's goals are driven by a genuine desire to enable organisations to harness the potential of medical research for the benefit of public health and society. Freshney Consulting works with a range of medical research organisations – particularly funders – to strengthen their approach, achieving more impact for their beneficiaries. In particular, expert advice is provided to research funders on developing research strategy and conducting evaluation.

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