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Stewart, PM, Bryan, S, Dukes, P et al. (3 more authors) (2012) What happens to clinical training fellows? A retrospective study of the 20 years outcome of a Medical Research Council UK cohort. *BMJ Open*, 2 (4). ARTN e001792. ISSN 2044-6055

<https://doi.org/10.1136/bmjopen-2012-001792>

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What happens to clinical training fellows? A retrospective study of the 20 years outcome of a Medical Research Council UK cohort

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To cite: Stewart PM, Bryan S, Dukes P, *et al.* What happens to clinical training fellows? A retrospective study of the 20 years outcome of a Medical Research Council UK cohort. *BMJ Open* 2012;**2**: e001792. doi:10.1136/bmjopen-2012-001792

► Prepublication history and additional material for this paper are available online. To view these files please visit the journal online (<http://dx.doi.org/10.1136/bmjopen-2012-001792>).

Received 10 July 2012
Accepted 12 July 2012

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ABSTRACT

Objectives: The Clinical Research Training Fellowship (CRTF) allows up to 3 years support for clinically qualified candidates to undertake specialised or further research training in biomedical sciences. CRTFs are perceived as a crucial step in the career development and progression of Clinical Academics but there are no published data to support this notion. We conducted an electronic survey of a large cohort of Medical Research Council (MRC) CRTFs followed for up to 20 years.

Design: Retrospective analysis of CRTF outcome data held with the MRC, UK.

Participants: Two cohorts comprising 40 CRTFs awarded by the MRC in the year 1991 and 299 MRC CRTFs who were awarded a fellowship between 1993 and 2003.

Results: The MRC CRTF scheme built capacity in clinical academia across the UK with 40% of CRTFs progressing to a University professorship. Importantly, the CRTF scheme is also providing NHS consultants who remain research active.

Conclusions: This is the first analysis of outcome of CRTFs in the UK and provides robust evidence of the importance of this capacity building mode of funding to underpin research excellence at the University–NHS interface.

INTRODUCTION

The Clinical Research Training Fellowship (CRTF) allows up to 3 years support for a clinically qualified candidate to undertake a specialised or further research training in biomedical sciences with the aim of attaining a higher degree such as a PhD or in some cases an MD. In the UK alone over 350 such posts exist in any given year, funded by a variety of organisations including the Medical Research Council (MRC), the Wellcome Trust, British Heart Foundation, Cancer Research UK, Arthritis Research UK

ARTICLE SUMMARY

Article focus

- Retrospective analysis of the progression of Clinical Research Training Fellows (CRTFs).

Key messages

- CRTFs are a crucial step in the career development and progression of Clinical Academics.
- CRTFs in the UK underpin research excellence at the University–NHS interface.

Strengths and limitations of this study

- High response rate.
- Limited historic data held for previous fellows.

and National Institute of Health Research and devolved administrations.¹ The perception has been that these form a crucial step in the career development and progression of Clinical Academics, supporting a dedicated period of postgraduate research training. Although ongoing clinical training is encouraged during the CRTF it is capped at 10–20% of total activity and in the UK is recognised as part of the Modernising Medical Careers pathway (<http://www.mmc.nhs.uk>).

The investment in this scheme from the government through the MRC and from the charity sector is significant, yet there are no long-term data on outcomes of the added value that this funding provides. Because a relatively low proportion of these fellowships convert to postdoctoral research training programmes (the Clinician Scientist scheme), the overall quality of candidates and value of the scheme has been called into question.

The MRC scheme has been in operation for over 30 years and today oversees approximately 50–55 new awards/year across all disciplines of Medicine. Many individual CRTFs are cofunded by the MRC and a charity or

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other partner (some 21 organisations in 2011), extending the reach of the scheme. We have performed an analysis of outcome of a large cohort of MRC CRTFs.

METHODS

This study had two components. The first involved 40 clinical training fellowships that were awarded by the MRC in the year 1991. The current employment of these individuals was ascertained by one researcher (PHM, who held one of the CRTFs awarded in 1991) utilising information in the public domain, specifically the Medical Directory, the Medical Register, Pubmed, Doctors.net, professional societies and Google. In all cases it was possible to identify the individuals unambiguously. The second outcome involved 299 CRTFs who were awarded a fellowship between 1993 and 2003. The internet was the main tool for identifying current contact details/email addresses through search engines, institutional, publication and professional websites.

The online survey comprised 15 questions that aimed to obtain information on the CRTFs current professional role, the proportion of current time spent on clinical and research activity, research interests and clinical specialty, involvement in leadership, administrative and teaching duties, outcome of CRTF, further funding secured and a personal assessment as to the overall impact of the CRTF on their career (see supplementary information for survey details).

RESULTS

The current positions of the 1991 cohort are summarised in figure 1. Typically these individuals (who are now approximately 50 years of age) undertook a PhD followed by completion of specialised training. The cohort includes current Professors of Medicine and medical disciplines across many UK-based Universities and beyond. Eight (20%) have been elected as Fellows

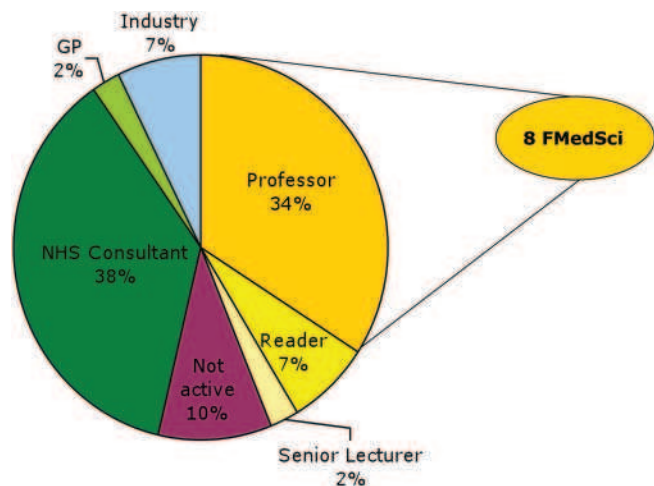


Figure 1 The current status of the 1991 Clinical Research Training Fellowship cohort (n=40).

of the Academy of Medical Sciences in recognition of their outstanding contributions to medical science.

Of the 299 individuals in the second cohort, in 31 cases email addresses either bounced back or did not match the CRTF individual to which they were assigned. Through this approach 191 individuals responded to a simple questionnaire, giving a 71% response rate. The responses were submitted anonymously, so no information was obtained about non-responders. However, in 299 CRTF email addresses, only 18 (6%) were *not* academic or NHS related, so it is reasonable to assume that a large proportion of the non responders were still engaged in University and/or NHS/research and clinical activity.

Of the 191 responding CRTFs, over 90% were currently based within a University or University Teaching Hospital (figure 2). Forty-six (24%) were Professors, 16 Readers (8%) and 53 (28%) Senior Clinical Lecturers (28%). Fifty-one (27%) were NHS Consultants and the remainder still in career grades (Clinical Fellows and Clinical Lecturers). About 1% of the cohort was industry based. Not surprisingly, this profile differed across year of intake to the CRTF; when the first intake—the class of 1993—was specifically analysed 38% were Professors, 4% Readers and 37% NHS consultants, in keeping with the analysis of the 1991 cohort. It is highly likely therefore that 1991 and 1993 are representative years in analysing the long-term outcome of CRTFs.

Of the 51 self-declared ‘NHS consultants’, 41 (80%) described themselves as being research active, spending a median of 25% of their time on research. Conversely 88% of University only contracted staff were clinically active, spending a median of 50% of their time on clinical work. Engagement in research did differ between CRTFs holding academic or NHS positions; the former were predominantly leading research activity (95%) as well as contributing to that of others, while NHS staff were more likely to contribute to activity of others (52%) rather than lead themselves (12%). A total of 58% of all ex-CRTFs were also involved in activities underpinning research administration such as commissioning, research panels, funding allocation and/or research regulation. Finally 98% of the cohorts were involved in education, with an equal split in participation (all in excess of 85%) in the supervision of students, lecturing and clinical teaching.

The top 10 commonest medical disciplines of the CRTFs were gastroenterology (21), neurology (18), nephrology (14), diabetes and endocrinology (12), thoracic medicine (11), mental illness (10), cardiology (9) rheumatology (9), infectious diseases (7) and haematology, paediatrics and general surgery (each 5). The predominant research area engaged by the CRTFs was self-reported to be biomedical/experimental in 43% of cases, clinical trials in 27%, applied health research in 10% and pharmaceutical industry research in 5%.

In total 171 of 191 individuals (90%) obtained a PhD and of these 75% did so within a 3-year period from the

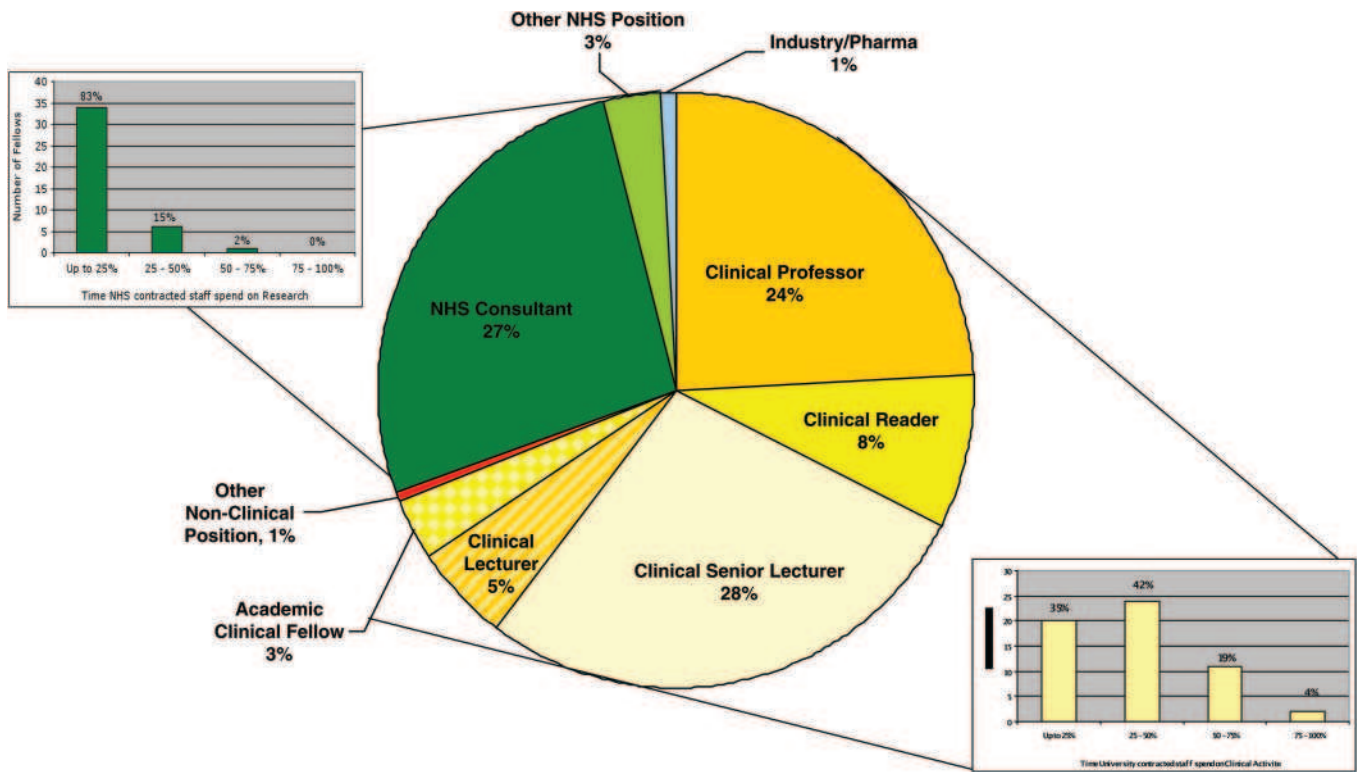


Figure 2 Outcome data of 191 MRC Clinical Research Training Fellowships commencing fellowships between 1993 and 2003.

date of the CRTF award. Twelve individuals obtained an MD degree and two an MSc. 1 subject had a PhD on starting the CRTF. Three participants did not obtain a higher degree and two did not answer.

A total of 63% of fellows told us about future grant funding from a wide range of funders; in 82% of the cases this supported further postdoctoral training with 23 fellows progressing to successful clinician scientist posts at the time of the questionnaire. Only 52% had secured a 3-year project grant and 13% a 5-year programme grant. In a separate analysis, 224 CRTFs at various stages of their award submitted data via MRC e-Val. About 35% report obtaining further funding from 2006/2007 to 2009/2010. The data showed how this cohort is also benefitting from a wide range of funders with approximately 50% coming from NIHR.

A total of 85% of responses indicated that the CRTF had significantly or very significantly affected their competence and achievements as a researcher and 94% that it had significantly or very significantly affected their career.

DISCUSSION

This is the first analysis of outcome of clinical training fellows in the UK and, accepting the pitfalls of any questionnaire-based analysis, provides robust evidence of the value of this capacity building mode of funding. We have identified that this remains a major source of clinical academics across the UK with the majority engaging

in research, education and wider administrative duties, be they holding primarily University or NHS contracts. This University–NHS synergy is exemplified through the cross-fertilisation of clinical and research activity within the cohort, albeit with a different emphasis of research activity (leading in the University sector, participating as an NHS employee). Across universities it appears that the CRTF scheme generates many Clinical Senior Lecturers, Readers and Professors; up to 40% of any year cohort is likely to be awarded a Professorship. Importantly, many of these, exemplified through Fellowship of the Academy of Medical Sciences, are conducting research to the highest level internationally and are likely to be world leaders in their field.

Despite the outstanding response from this survey, there are however some limitations of any survey of this nature. The 1991 cohort is restricted to information on destinations only. The vast majority are likely to have obtained PhD and/or MD higher degrees but this is not confirmed. Of the 191 respondents from the second cohort 46 identified 2004 as the year their CRTF was awarded but this cannot be true because the survey was only dispatched to individuals starting their CRTF between 1993 and 2003; undoubtedly some individuals have responded as the year the degree was conferred rather than the year their CRTF was awarded. Finally we have no data on the MRC CRTF applicants who were not successful at the interview.

We have focused on outcome data from an MRC cohort, but have no reason to believe that these data

cannot be extrapolated to other UK CRTF schemes such as those funded by the Wellcome Trust, British Heart Foundation and other smaller charities such as Arthritis Research UK. Each programme recruits candidates of the highest calibre, through rigorous peer review and interview, with overall application success rates of 10–15%. In recent years, the MRC has administered the CRTF process for a group of 21 smaller, cofunding charities (e.g., Kidney Research UK) where the benchmarking of candidate quality is valued by the partner charity. The newer NIHR scheme has only been in place for 3 years and focuses more on supporting applied health research. Longer-term outcome data are required to evaluate this programme and related Charity funded CRTF schemes.

Outcome data from related programmes internationally is scant, not least because of lack of obvious comparative schemes. Several reports document outcomes from combined MD–PhD programmes showing overall success in tracking of this cohort to a predominantly research-focused career.^{2–4} The US Physician–Scientist Training programmes are perhaps the closest analogy to the MRC CRTF, supported by the NIH since 2002 with the aim of revitalising the clinical researcher pipeline.⁵ It is still early days, but outcome data have already shown increased competitiveness in attracting research funding.⁶

It appears that the MRC CRTF scheme has helped to capacity build a cohort of clinical academics across the UK embedded in research and education, 40% of whom progress to a professorship and 20% of the 1991 cohort have been awarded Fellowship of the Academy of Medical Sciences, which is a widely accepted marker of International research excellence. The recent Elsevier report of the UK research landscape (<http://www.bis.gov.uk/assets/biscore/science/docs/i/11-p123-international-comparative-performance-uk-research-base-2011.pdf>)

places the UK second only to the USA in terms of its and world-leading Biomedical research base. Importantly, within the NHS, the CRTF scheme is providing a manpower ‘research engine’ for the UK to undertake clinical research and engage with pharmaceutical industry at a time when the UK government is looking to Medicine to generate economic growth (<http://www.bis.gov.uk/assets/biscore/innovation/docs/s/11-1429-strategy-for-uk-life-sciences.pdf>).

Contributors PMS is the Chair of the MRC Training Careers Group and a member of MRC Strategy Board. SB, PD and RW are employees of the Medical Research Council (Head Office). PHM is Registrar of the Academy of Medical Sciences. PMS and PHM conceived the idea, oversaw the questionnaire, data collection and wrote the manuscript. HVO and SB compiled the questionnaire and feedback from the participants and PD supervised the MRC datasets and assisted writing the paper.

Competing interests None.

Provenance and peer review Not commissioned; externally peer reviewed.

Data sharing statement No additional data are available.

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