

The UK Academic Foundation Programmes: are the objectives being met?

R Ologunde¹, G Sismey², T Kelley³



Background Since the Academic Foundation Programme was established in the UK in 2005 a number of trainees have participated in this programme; however, there are few published national data on the experiences of these academic trainees. We aimed to assess the perceived value and challenges of training on the AFP.

Methods In March 2017, an anonymous electronic questionnaire was distributed to all Academic Foundation Programme trainees in the UK, via their local foundation school administrators.

Results: Fifty-six respondents completed the survey from 9 out of the 15 Academic Units of Application. Of these, 82% were undertaking a research based Academic Foundation Programme; however, 41% reported not having access to any training on research methods and governance. Sixty-six percent reported they were aware of the aims and expected outcomes of the Academic Foundation Programme, but the self-reported achievement of academic compendium outcomes was relatively low. Sixty-three percent rated the quality of their experience on the Academic Foundation Programme as excellent or good and 75% reported that they intended to continue in academia. Most trainees (64%) reported that the completion of a postgraduate qualification as part of their Academic Foundation Programme would improve the programme.

Conclusion The Academic Foundation Programme plays a valuable role in trainees' development and preparing them for a career in academia. However, the objectives of the programme are currently not being uniformly achieved. Furthermore, trainees feel there remains room for improvement in the design of the Programme.

Keywords: academic medicine, Foundation Programme, training

Declaration of interests: No conflict of interests declared

Introduction

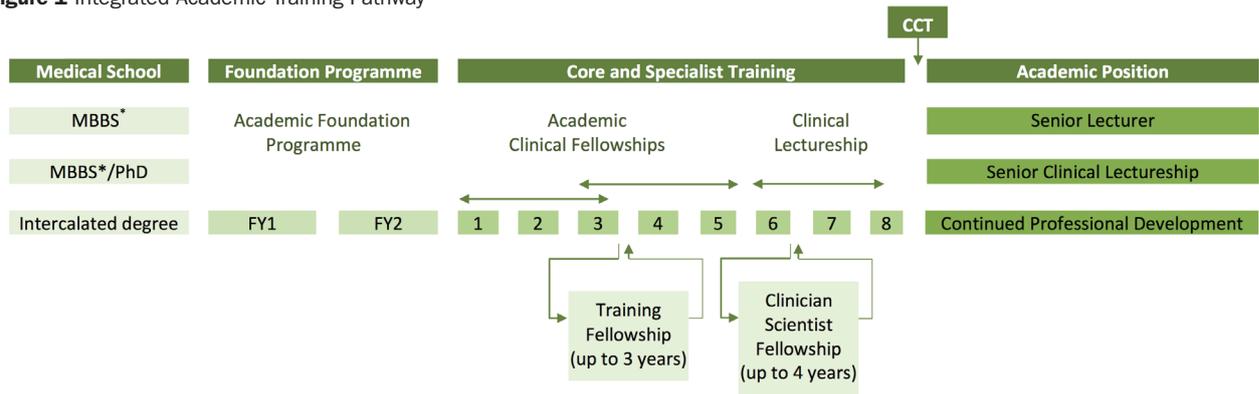
The health of local populations depends in part upon the considerable contribution clinical academics make to research and teaching as well as their clinical practice. Clinical academics play a significant role in advancing medical knowledge and in national and international medical affairs.¹ A decline in interest in academia and research among UK medical students and graduates was first highlighted in 1973,² and has been observed more recently in other countries.^{3–6} Those individuals who, in the past, did decide to pursue a combined academic and clinical career did not have a structured training pathway, and there were no provisions for balancing the competing commitments of both careers. This led to the realisation that academic medicine needed reviving,⁷ culminating in the Savill⁸ and Walport⁹ reports which highlighted the need to increase the recruitment and training

of academic clinicians in the UK. These reports led to the creation of the National Institute for Health Research (NIHR) in 2006, and of the Scottish Clinical Research Excellence Development Scheme in 2009.¹⁰ Shortly after the creation of the NIHR, the UK Academic Foundation Programme (AFP) was created. This programme is a 2-year formal postgraduate training programme that offers newly qualified doctors an opportunity to explore academia as a career by developing skills in research, education or leadership/management alongside clinical training. This programme was piloted in 2005, with academic foundation year 2 (FY2) posts being fully introduced in August 2006. These were joined by academic foundation year 1 (FY1) posts and academic clinical fellowships (ACF) in August 2007.

The AFP serves as a stepping stone on to the NIHR integrated academic training pathway for doctors and dentists.¹¹ This

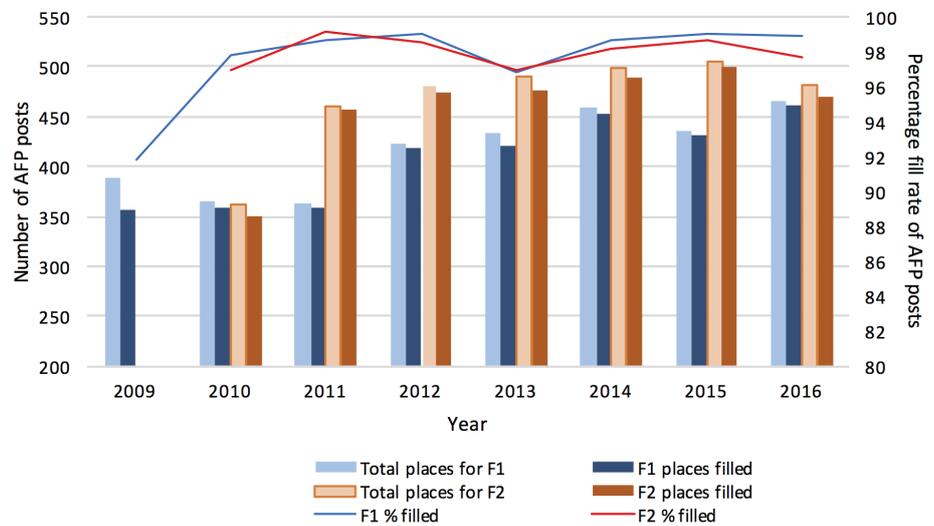
¹Academic Foundation Doctor, Nuffield Department of Orthopaedics Rheumatology and Musculoskeletal Science, University of Oxford, Oxford, UK; ²Medical Student, St Edmund Hall, University of Oxford, Oxford, UK; ³UKFPO Academic Advisor, International Consortium for Health Outcomes Measurement, London, and UK Foundation Programme Office, Birmingham, UK

Figure 1 Integrated Academic Training Pathway



CCT: Certificate of Completion of Training
 Personal fellowships can be undertaken at any point during training.
 * or equivalent medical degree (e.g. MBChB)

Figure 2 Total AFP places available and percentage fill



programme combines academic training with each stage of a clinical career thereby providing a formal structured training pathway for clinical academics (Figure 1). After the successful completion of the AFP or a standalone foundation programme, candidates can apply for an ACF, which typically last 3 years (4 years for general practice) and prepares trainees for application for a higher degree, such as a PhD, or a Clinical Lectureship, which lasts 4 years, for doctors who already have specialty training experience and a higher degree.¹¹ ACF trainees typically spend around 75% of their time on clinical training and 25% on research. Clinical Lectureship trainees typically split their time equally between clinical commitments and research. Currently, there are approximately 500 AFPs (Figure 2),¹² 250 ACFs and 80 Clinical Lectureships advertised each year.¹¹

AFP are run jointly between foundation schools and local universities and can vary considerably depending on location and specialty. The academic component of the AFP can vary from a discrete 4-month block in FY2 to one day a week throughout the duration of clinical attachments (Table 1).

Several studies have looked at factors influencing the decision to pursue a career in academic medicine including gender,¹³ demands of balancing clinical and academic commitments,^{14,15} lack of autonomy,^{16,17} previous academic experience,^{15,18-22} reduced clinical training opportunities,^{4,22} interest in research and medical education^{16,18,21,23-25} and reduced earning potential.^{14,17,18,21,24} The AFP has now been running for over 10 years but to date there has not been a published comprehensive evaluation of trainee experience on this programme. Many national surveys fail to distinguish between academic and clinical posts when evaluating foundation trainee experience. The aim of this study was to evaluate and assess the perceived value and challenges of training on the AFP and its implications for future career aspirations.

Methods

In March 2017, an anonymous survey was administered, via an online survey engine (BOS™), to all AFP trainees in the UK, via their local foundation school administrators. All trainees were invited to independently complete the survey.

AUoA	Structure of academic time	Trainees n = 56 (%)
East Anglia: Cambridge	F2: 4 months	0 (0%)
East Anglia: Norfolk and Norwich	F2: 4 months	0 (0%)
East Midlands	Mixture of day release and 4 month research block across F1 and F2.	7 (13%)
North West of England	Varies on hospital placement (F1: 5 week block, F2: 4 month block or day release)	18 (32%)
Northern	F1 or F2: 4 months	1 (2%)
Northern Ireland	F2: 4 months	0 (0%)
Oxford	F1: day release (one day a week). F2: mixed, some 4 month block, others split.	8 (14%)
Scotland	East: 4-month block F2, South: no dedicated time, West: no dedicated time, North: no dedicated time	13 (23%)
Severn	F2: day release or academic block (duration unknown)	3 (5%)
South West	F2: 4 months (with day release during a further 2x 4 month placements)	2 (4%)
Thames	F2: 4 months	2 (4%)
Wales	F2: 4 months	2 (4%)
Wessex	F2: 4 months	0 (0%)
West Midlands	F2: 4 months	0 (0%)
Yorkshire and Humber	F2: 4 months	0 (0%)

Table 1 Academic Unit of Application of trainees

The survey recorded participant demographics and collected detailed feedback on multiple domains of the AFP including trainee experience, awareness of aims and expected outcomes, clinical exposure, concerns surrounding the use of dedicated academic time, quality of experience of the AFP, usefulness of the AFP, improvements that could be made to the programme and future career destinations. The survey was conducted towards the end of the 2-year AFP and after the confirmation of jobs for medical and surgical specialty recruitment. This was to provide an accurate reflection of the AFP as a whole, and to attempt to capture accurate data on trainee career destinations after the AFP.

All trainees who participated in the study gave consent to do so. Data were anonymised and spreadsheet tools were used to generate descriptive statistics using Microsoft Excel. This study was granted ethics approval by the University of Oxford Central University Research Ethics Committee (R49797/RE001).

Results

Fifty-six respondents across the UK completed the survey; 52% were female. The median age was 26 (range 24–41). Twenty (36%) were FY1 and the remaining 36 (64%) were FY2. Prior to starting on the AFP, the majority (91%) had completed a research degree, of which a BSc (39%) was the most common. Most respondents were undertaking a research-based AFP (82%), with 7% on a medical education

theme and 5% on a mixed theme. No respondents reported being on a management and leadership theme.

Academic training and support

Surprisingly a considerable number of respondents (41%) reported not having access to training on research methods and governance. Of those who did, only 38% had completed the training. Half of all respondents reported not having a dedicated research bursary to cover expenses such as lab consumables and subsidised conference attendance, with 11% of trainees applying for external funding. A minority (27%) of respondents did have access to a research bursary but funding varied drastically between regions (Figure 3). Eighteen percent reported having access to a funded postgraduate certificate or diploma in education, research skills or management and leadership as part of their AFP.

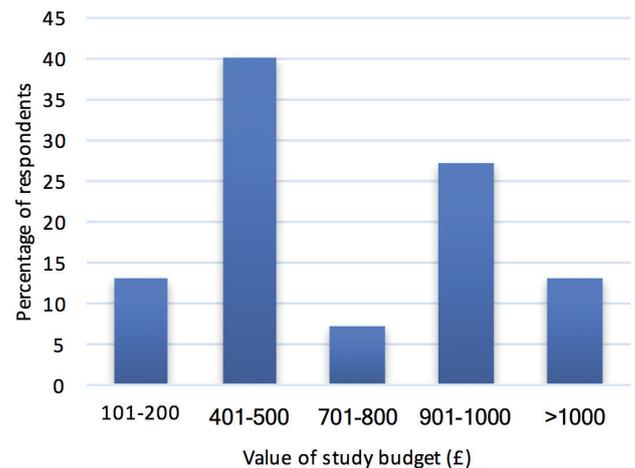
Only 34% of respondents met with their academic supervisors on at least a monthly basis. Fifty-seven percent rated the quality of academic supervision during their AFP as excellent or good. 52% rated the quality of academic career advice received as excellent or good compared to 63% of respondents rating the quality of clinical career advice received as such.

Experience of the AFP

Sixty-three percent of respondents rated the quality of their experience on the AFP as excellent or good but 16% reported

Table 2 Suggestions to improve the AFP

Suggestions to improve AFP	Trainees n = 56 (%)
Completion of a Postgraduate Certificate/Diploma	36 (64%)
Dedicated research bursary	20 (36%)
Improved academic supervision	20 (36%)
Induction booklet specifically for academic trainees	7 (13%)
Regular presentation slots at grand rounds or equivalent	6 (11%)
Tutorials on research skills	31 (55%)
Yearly regional conference for local trainees to present research and audit	11 (20%)

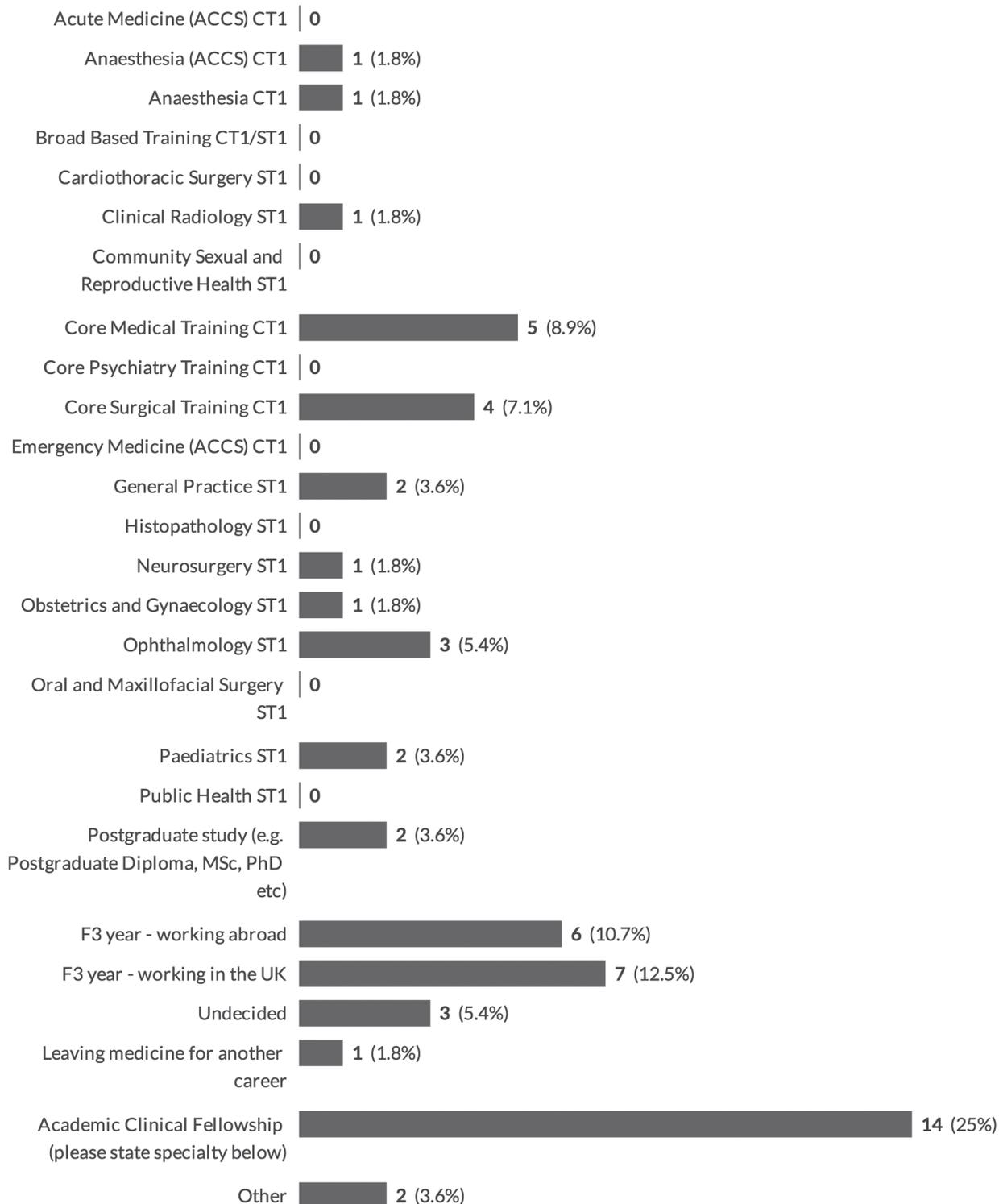
Figure 3 Research study budget**Table 3** Self-reported achievement of UK Foundation Programme academic compendium objectives

Academic compendium objectives	Trainees n = 56 (%)
Work together in a multidisciplinary group to collaborate on a specific research/education/leadership project.	23 (8.5%)
Identify a specific research question and develop an appropriate study protocol	34 (12.5%)
Write and/or submit an application for funding	9 (3.3%)
Write and/or submit an application for ethical approval	14 (5.2%)
Conduct a study/experiment (e.g. lab-based study, a study that uses patients/human volunteers or a population-based study)	24 (8.9%)
Write up a study/experiment for publication in a peer-reviewed journal	34 (12.5%)
Present a study/experiment results at a local, national or international meeting	39 (14.4%)
Develop a new module/course in the undergraduate or postgraduate medical curriculum	2 (0.7%)
Adapt a teaching style to different learner needs and to different learning environments	12 (4.4%)
Participate in the selection process to medical degree programmes	5 (1.8%)
Develop and use an assessment programme to test knowledge, skills and attitudes	5 (1.8%)
Develop and/or complete a piece of medical education research	6 (2.2%)
Identify an opportunity for improvement in the health and social care or education environment in which you work	13 (4.8%)
Produce a plan for improving an aspect of the healthcare or education environment in which you work	8 (3%)
Work with a team to implement an improvement project in the healthcare or education environment in which you work	12 (4.4%)
Evaluate the effectiveness of a project and develop recommendations for the future to further improve patient care	9 (3.3%)
Present and/or disseminate learning from a quality improvement project	22 (8.1%)

it as poor or very poor. Free-text comments suggested that the main reasons for people rating their experience as poor was a lack of protected research time and little awareness about the requirements of AFP doctors among clinical colleagues. Sixty-six percent reported that their experience on the AFP would be useful in their future careers; among the reasons

stated for this were that academic skills are becoming increasingly important in medicine and the opportunity to show a dedication to research to improve higher degree applications. Sixty-four percent reported that the completion of a postgraduate qualification as part of their AFP would improve their programme (Table 2).

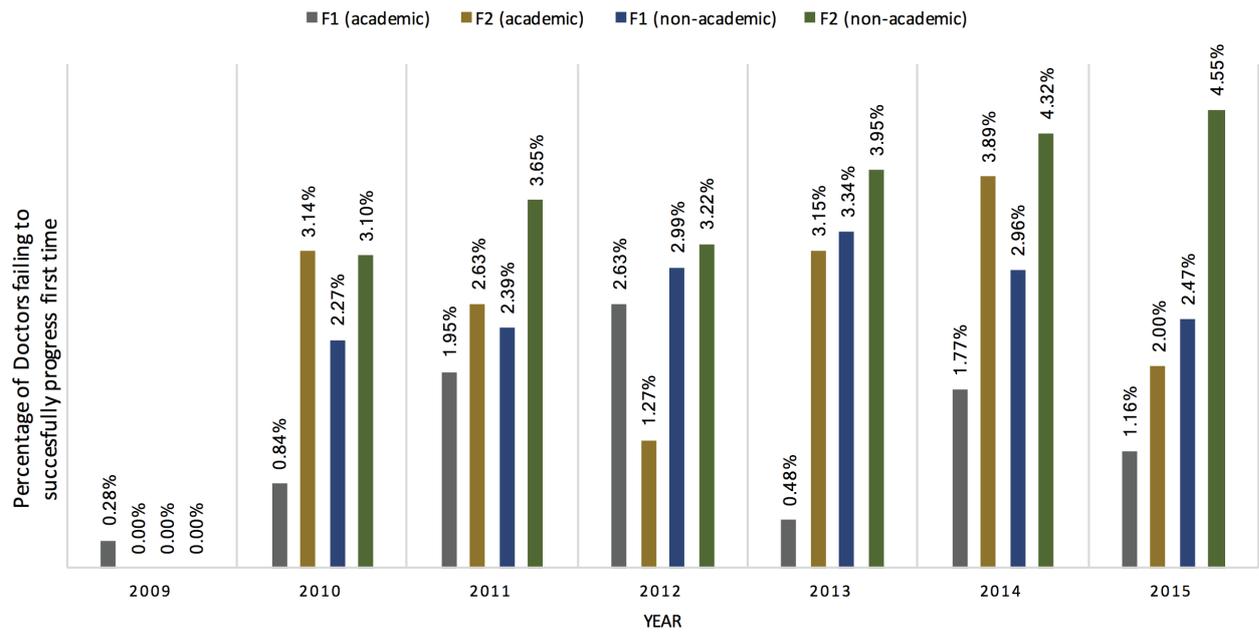
Figure 4 Trainees' future career destinations



Reassuringly, 86% did not report having concerns about the reduced clinical exposure their AFP affords them in comparison to their foundation programme colleagues. However, 54% did report missing protected academic time due to clinical commitments. Remarkably, 34% reported feeling as though perceptions existed among their clinical colleagues that academic trainees were having ‘days off’ when they are undertaking research.

Outcomes of the AFP

In total, 66% reported they were aware of the aims and expected outcomes of the AF. Seventy-five percent reported they intended to continue in academia in the future, but 63% said their experience on the AFP had made no impact on their career intentions. Reported future career intentions are shown in Figure 4. The UK Foundation Programme publishes an academic compendium²⁶ listing objectives that trainees should aim to achieve during their AFP and details

Figure 5 Comparison of academic and non-academic foundation doctors not completing the programme

from respondents who self-reported achievement of these objectives are shown in Table 3.

Discussion

This study presents the first comprehensive evaluation of trainee experience of the UK AFP. Despite the low response rate, respondents came from 9 out of the 15 Academic Units of Applications, with an approximately equal number of males and females; thus our study is based on a demographically and geographically representative sample.

The majority of respondents in this study reported their experience of the AFP as good or excellent. This, coupled with the consistently high fill rate of jobs and applications, suggests general opinion on the AFP is positive. Of our respondents, three quarters wanted to continue to a career in academia; this is consistent with previous research of interest in academia among early years trainees.^{4,27-29}

A quarter of respondents had secured clinical academic fellowships following the AFP; interestingly however, 63% suggested that the AFP had no influence on their career decision, highlighting that other factors that the survey did not capture are playing a role. Greenberg et al. have reported that factors such as participation in research and mentorship, which the AFP provides, play key roles in leading medical students into an academic career, but also considerations such as the amount of debt accumulated prior to medical school and professional aspects of academia play important roles.²⁷

Despite 66% of respondents being aware of the objectives and aims of the AFP, the self-reported achievement of academic compendium outcomes was relatively low. This

may reflect some of the challenges of completing an AFP. Our data suggest a number of possible difficulties, including limited access to training in research methods and governance, and, of those who did have access, non-completion. Without basic understanding and support in these core subjects, achievement of outcomes is likely to be more challenging. Abdulghani et al. evaluated the impact of research methodology training on participants' satisfaction, knowledge skills gain and research practice, and concluded that such training encourages a 'research culture' and is a powerful determinant of research promotion.³⁰ Outcome achievement could be further limited through pragmatic difficulties faced throughout the programme. Fifty-four percent of respondents reported loss of protected research time due to clinical commitments, and a considerable number reported little understanding of the requirements of AFP doctors among clinical colleagues. Similar findings have been reported among senior academic trainees and as such suggests that this is a problem endemic within the culture in which academic trainees work.³¹ Improving awareness of the AFP and the importance of the protected research time would go some way to improving this element, and may improve outcomes. Despite some of the challenges with the programme, respondents felt the quality of supervision was good or excellent, both in clinical and academic advice. Few respondents had concerns about clinical experience and skills following the AFP and the number of academic trainees failing to progress following the programme remains consistently low, indeed lower than in non-academic programmes (Figure 5). Despite this it has been suggested that trainees further on in their academic career perceive that clinical training time may be needed in order to achieve clinical excellence.³²

Only 18% of respondents had access to a funded postgraduate certificate or diploma despite this being deemed as the most

beneficial improvement to the AFP. We suggest that a formal qualification, as well as the research skills gained, would be a beneficial outcome of the AFP.

Limitations

This study has a number of limitations. The low response rate limits the generalisability of our findings, and may have introduced response bias. In order to facilitate analysis, many of the questions included in the survey were closed questions, and may have given rise to reporting bias.

Conclusion

The AFP plays a valuable role in trainees' development and preparing them for a career in academia. It would also appear that trainees find participation in the programme of

great benefit. However, the objectives of the programme are not being uniformly achieved. Furthermore, trainees feel there remains room for improvement in the design of the AFP. In light of our findings, we recommend the development and dissemination of guidelines mapped to specific academic programmes, safeguards to ensure academic time is appropriately protected, and exploration of the feasibility of a formal academic qualification being undertaken during the AFP. ①

Funding

RO was supported by an Oxford University Clinical Academic Graduate School research bursary.

References

- Collins J. *Foundation for Excellence: An Evaluation of the Foundation Programme*. Medical Education England; 2010.
- Wyngaarden JB. The clinical investigator as an endangered species. *Bull N Y Acad Med* 1981; 57: 415–26.
- Barton JR. Academic training schemes reviewed: Implications for the future development of our researchers and educators. *Med Educ* 2008; 42: 164–9.
- Straus SE, Straus C, Tzanetos K. Career choice in academic medicine: Systematic review. *J Gen Int Med* 2006; 21: 1222–9.
- O'Sullivan PA, Niehaus B, Lockspeiser TM et al. Becoming an academic doctor: Perceptions of scholarly careers. *Med Educ* 2009; 43: 335–41.
- Gitlin SD, Yuan Z, Little RJ et al. Factors that influence successful training and faculty career development in hematology/oncology patient-oriented clinical research. *J Cancer Educ* 2005; 20: 72–8.
- ICRAM. ICRAM (the International Campaign to Revitalise Academic Medicine): agenda setting. *BMJ* 2004; 329: 787–9.
- Academy of Medical Sciences. *The Tenured Track Clinician Scientist: a new career pathway to promote recruitment into academic medicine*. London; 2000. <https://acmedsci.ac.uk/file-download/34691-Clinic.pdf> (accessed 6/2/18).
- Walport M. *Medically- and dentally-qualified academic staff: recommendations for training the researchers and educators of the future*. Report of the Academic Careers Sub-committee of Modernising Medical Careers and the UK Clinical Research Collaboration. London; 2005. http://www.ukcrc.org/wp-content/uploads/2014/03/Medically_and_Dentally-qualified_Academic_Staff_Report.pdf (accessed 6/2/18).
- Medical Schools Council. *A survey of staffing levels of medical clinical academics in UK medical schools as at 31st July 2012*. London; 2013.
- National Institute for Health Research. *NIHR Integrated Academic Training Programme for Doctors and Dentists 2016*. <http://www.nihr.ac.uk/funding-and-support/funding-for-training-and-career-development/training-programmes/integrated-academic-training-programme> (accessed 21/11/17).
- UKFPO. *Academic Foundation Programme 2016 Recruitment Process 2016*. <http://www.foundationprogramme.nhs.uk/pages/academic-programmes/how-to-apply> (accessed 21/11/17).
- Reiser LW, Sledge WH, Fenton W et al. Beginning careers in academic psychiatry for women – 'Bermuda triangle'? *Am J Psychiatry* 1993; 150: 1392–7.
- Lee P, Goldacre M. Views of general practitioners in academic posts about careers in academic general practice: A national survey. *Educ Prim Care* 2002; 13: 465–71.
- Ledley FD, Lovejoy Jr FH. Factors influencing the interests, career paths, and research activities of recent graduates from an academic, pediatric residency program. *Pediatrics* 1993; 92: 436–41.

- 16 Wood PS, Altmaier EM, Franken EAJ et al. Factors influencing choice of academic or practice careers in radiology. *Invest Radiol* 1990; 25: 675–7.
- 17 Bergstresser P. Perceptions of the academic environment. *J Am Acad Dermatol* 1991; 25: 1092–6.
- 18 Bilbey J, Fache J, Burhenne H. Are there predictors for future academic radiologists? *Can Assoc Radiol J* 1992; 43: 369–73.
- 19 Abelmann WH, Nave BD, Wilkerson L. Generation of physician-scientists manpower: A follow-up study of the first 294 graduates of the Harvard-MIT program of health sciences and technology. *J Investig Med* 1997; 45: 272–5.
- 20 Fang D, Meyer RE. Effect of two Howard Hughes Medical Institute research training programs for medical students on the likelihood of pursuing research careers. *Acad Med* 2003; 78: 1271–80.
- 21 Doherty MJ, Schneider a T, Tirschwell DL. Will neurology residents with large student loan debts become academicians? *Neurology* 2002; 58: 495–7.
- 22 Lyons OTA, Smith C, Winston JS et al. Impact of UK academic foundation programmes on aspirations to pursue a career in academia. *Med Educ* 2010; 44: 996–1005.
- 23 Sanders AB, Fulginiti J V., Witzke DB. Factors influencing resident career choices in emergency medicine. *Ann Emerg Med* 1992; 21: 47–52.
- 24 Feng L, Ruzal-Shapiro C. Factors that influence radiologists' career choices. *Acad Radiol* 2003; 10: 45–51.
- 25 Goldacre M, Stear S, Richards R et al. Junior doctors' views about careers in academic medicine. *Med Educ* 1999; 33: 318–26.
- 26 Kelley T, Hamel C van, Carney S, editors. *The UK Foundation Programme Academic Compendium*. 2nd ed. London: The UK Foundation Programme; 2013.
- 27 Greenberg RB, Ziegler CH, Borges NJ et al. Medical student interest in academic medical careers: a multi-institutional study. *Perspect Med Educ* 2013; 2: 298–316.
- 28 Lambert TW, Smith F, Goldacre MJ. Doctors currently in jobs with academic content and their future intentions to pursue clinical academic careers: questionnaire surveys. *JRSM Open* 2015; 6(2).
- 29 Smith F, Lambert TW, Goldacre MJ. Demographic characteristics of doctors who intend to follow clinical academic careers: UK national questionnaire surveys. *Postgrad Med J* 2014; 90: 557–64.
- 30 Abdulghani HM, Shaik SA, Khamis N et al. Research methodology workshops evaluation using the Kirkpatrick's model: Translating theory into practice. *Med Teach* 2014; 36(supp): S24–9.
- 31 Blencowe N, Glasbey J, McElnay P, Bhangu A, Gokani V, Harries R. Integrated surgical academic training in the UK: a cross-sectional survey. *Postgr Med J* 2017; 93: 581–6.
- 32 Tong CW, Ahmad T, Brittain EL et al. Challenges facing early career academic cardiologists. *J Am Coll Cardiol* 2014; 63: 2199–208.

Relaxed accommodation in your College

Why not arrive early and stay overnight before a symposium or enjoy a weekend in the heart of Edinburgh's New Town. Following extensive renovation and redecoration, the bedrooms are now available to Fellows, Members and accompanying families, at preferential rates.

To book the rooms, or to find out more, please contact the College via email reception@rcpe.ac.uk or call **+44 (0)131 225 7324**

