Why do medical trainees take time out of their specialty training programmes?

Postgraduate medical trainees may take time out of programme for personal or professional reasons which can delay completion of training. This survey of out of programme trainees in England explores a phenomenon that impacts significantly upon medical careers and workforce planning.

Introduction

Modernising Medical Careers was introduced by the Department of Health (2003) in order to remodel, streamline and shorten specialty training programmes. In any given year, however, a substantial number of postgraduate medical trainees take time out of programme for a variety of reasons which can lengthen training and delay them achieving Certificate of Completion of Training. All trainees have the option to apply for out of programme activity (UK Health Departments' UK Scrutiny Group, 2010), of which there are four categories as summarized in *Table 1*.

This study aimed to gather information on the number of out of programme trainees in England and the categories and nature of out of programme activity they were taking, as well as exploring their motivations for going out of programme.

Methodology

Data on the population of core and specialty medical trainees holding a deanery training number or national training number were obtained from Health Education England. *Table 2* shows how the total trainee population in England breaks down by local education and training board – the bodies which now host the former postgraduate deanery functions –and how the proportion of trainees who are out of programme breaks down by category of out of programme activity. The number of trainees out of programme represents approximately 7% of all core and specialty medical trainees in England.

The research team developed a self-completion questionnaire informed by a literature review of the out of programme phenomenon. The online survey tool comprised a series of multiple choice questions and free-text qualitative items. Questions were aimed at gathering data on demographics, out of programme activity and motivation for taking time out of programme. In order to ensure internal reliability and inter-observer consistency, the questionnaire was piloted on a small set of respondents who were comparable to members of the population which would be surveyed for the study. For face validity, respondents were also asked to comment separately on the form and content of the instrument. The questionnaire was subsequently modified to take account of respondent feedback before being finalized for distribution to the study population.

The questionnaire was disseminated electronically to all out of programme trainees in English deaneries. Deanery business managers were contacted and asked to forward an email invitation, participant information sheet and an embedded link to the online survey to all out of programme trainees within their jurisdiction. Permission to conduct the survey was obtained from NHS North West Research Governance Committee and the national Conference of Postgraduate Medical Deans.

Statistical analysis was conducted, using both Microsoft Excel and SPSS 18.0 (PASW), in order to identify frequencies, mean, standard deviation and confidence intervals. Multivariate analysis was applied to identify any relationship between variables. Post hoc power analyses for chi-squared tests were conducted using the GPower database, assuming a small effect size ($\omega = 0.1$) and an alpha level of $P<0.05$.

Free-text comments on motivation for going out of programme were analysed for recurring discourses and themes, using a framework thematic analysis. The research team acted as co-analysts, and a coding framework was devised as a result of their deliberations. This construction of codes

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Table 1. Category of out of programme activity

Activity	Definition
Out of programme research	A period of research or an appropriate higher degree for trainees wishing to explore a career in academic medicine
Out of programme training	A period of clinical training prospectively approved by the General Medical Council, which is not a part of the training programme
Out of programme experience	To gain clinical experience which is not a requirement of the training programme curriculum, but which may enhance clinical experience, e.g. voluntary service overseas (not approved as training by the General Medical Council)
Out of programme career break	To take a planned career break from the training programme to pursue other interests, e.g. domestic responsibilities, working in industry

was done by the co-analysts working independently, and deliberating together on interpretations until agreement was reached.

Results

A total of 1523 trainees responded to the survey, a response rate of 54%.

The breakdown of out of programme activity in *Figure 1* reveals that over half of all responding trainees were out of programme in order to pursue research. The number of out of programme trainees electing to undertake training or gain experience were fairly equal, with the smallest proportion of respondents taking a career break. The breakdown of out of programme activity among survey respondents closely mirrors the breakdown of activity in England's total out of programme trainee population data held by Health Education England.

The dataset comprised 790 male (51.9%) and 733 female (48.1%) respondents. The distribution of out of programme activity by gender and age is given in *Figures 2* and *3* respectively.

The distribution of out of programme respondents by specialty is given in *Table 3*. Only specialties with 10 or more respondents are recorded here. The specialties with the highest number of out of

Figure 1. Respondents' out of programme activity.

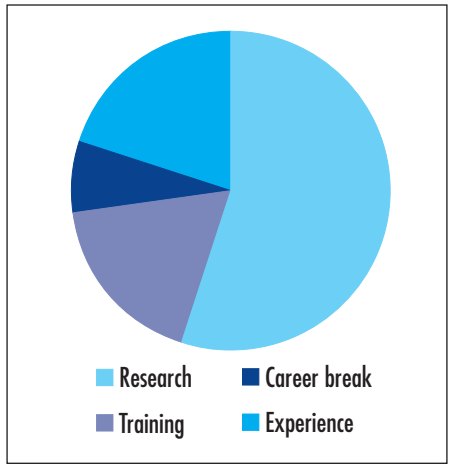


Figure 2. Distribution of out of programme respondents' activity by gender.

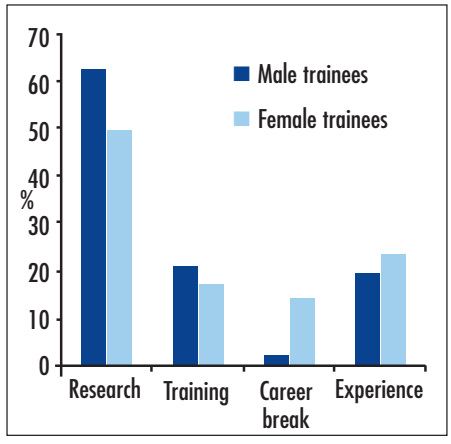


Figure 3. Distribution of out of programme activity by age of respondents.

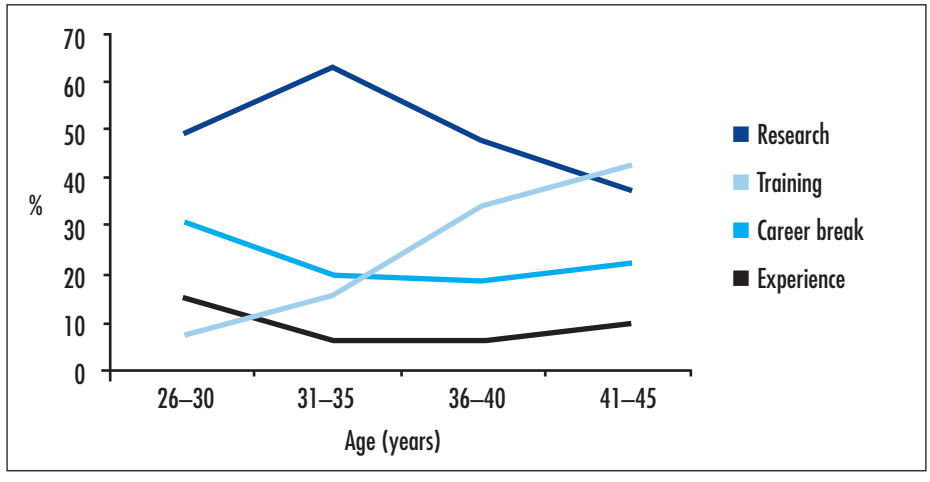


Table 2. Breakdown of number of out of programme trainees in England by out of programme activity and local education and training board

Local education and training board	Total NTN/ DRN trainee	NTN – academic research	NTN/DRN research	NTN/DRN experience	NTN/DRN training	NTN/DRN career break	Total NTN/ DRN out of programme	Total % out of programme
Wessex	1764	17	54	19	23	14	127	7.2
Thames Valley	1564	22	76	32	15	14	159	10.2
London	10151	22	621	232	149	120	1144	11.3
Kent, Surrey, Sussex	1910	0	6	3	7	4	20	1.0
East of England	3277	20	91	18	44	17	190	5.8
East Midlands	2758	14	82	29	26	20	171	6.2
West Midlands	3701	15	111	16	34	16	192	5.2
North West	5300	7	172	48	47	20	294	5.5
North East	2180	7	82	7	12	13	121	5.6
South West	2960	12	73	40	42	17	184	6.2
Yorkshire and Humber	4157	16	100	58	46	13	233	5.6
England	39722	152	1468	502	445	268	2835	7.1

DRN = deanery reference number; NTN = national training number

programme survey respondents, and the highest number of out of programme trainees nationally, were paediatrics and anaesthetics. The specialties with the highest percentage of out of programme trainees nationally, however, were infectious diseases, cardiology and medical oncology. The specialty with the lowest percentage of out of programme trainees nationally (less than 1%) was general practice. Specialties vary considerably in size, so the number and percentage of respondents by known specialty trainee population are also given.

Table 4 shows respondents' current year of training. Where respondents indicated that they were between years of training, the last year completed was recorded. The data reveal that the majority of respondents (63%) had elected to go out of programme in the latter stages of training (ST5/SpR5 or later).

Table 3. The profile of respondents by specialty

	Out of programme survey respondents		Out of programme trainees (DRN/NTN) by specialty in England §		Trainees (DRN/NTN) by specialty in England §
Specialty*	*n*	%†	*n*	%‡	
General practice	23	19.09	83	0.84	9772
Paediatrics	184	66.18	278	7.97	3487
Anaesthetics (higher)	126	52.50	240	9.58	2505
Obstetrics and gynaecology	111	57.81	192	10.14	1892
General surgery (higher)	85	44.04	193	17.24	1119
Radiology	21	55.26	38	3.45	1101
Trauma and orthopaedics	66	62.04	94	10.35	908
Cardiology	80	40.81	196	29.87	656
Respiratory	89	53.61	166	25.65	647
General adult psychiatry	20	68.96	29	4.73	613
Geriatrics	36	63.15	57	9.57	595
Ophthalmology	25	50.00	50	8.72	573
Gastroenterology	79	56.83	139	24.38	570
Emergency medicine	29	56.86	51	9.88	516
Diabetes and endocrinology	39	47.56	82	19.71	416
Renal medicine	50	54.94	91	26.0	350
Neurology	33	38.37	86	26.62	323
Ear, nose and throat	23	67.64	34	12.27	277
Urology	13	81.25	16	6.06	264
Plastic surgery	24	58.53	41	15.76	260
Rheumatology	40	100.00	40	15.62	256
Medical oncology	33	52.38	63	29.03	217
Palliative medicine	14	100.00	14	6.45	217
Medical microbiology	13	44.82	29	13.67	212
Genitourinary medicine	12	60.00	20	13.07	153
Infectious diseases	17	45.94	37	31.35	118

DRN = deanery reference number; NTN = national training number. * Only specialties with survey responses from >10 out of programme trainees are included in this breakdown; † % of survey respondents by total out of programme in specialty; ‡ % of out of programme trainees by total specialty population; § = Health Education England data

Out of programme (research)

A total of 859 respondents (53% of total out of programme (research) population) indicated that they were currently engaged in out of programme research. The association between gender and engagement in this group was highly significant ($\chi 2$ [1, N = 1523] = 26.128, $P<0.001$), with the data showing that, compared to chance expectations, males were over-represented. For the sample as a whole, 794 respondents indicated that their research topic was in their own medical speciality. A total of 138 respondents had secured a National Institute for Health Research (NIHR) academic clinical fellowship, and 20 respondents had secured a NIHR clinical lectureship. Of the 701 respondents who were not pursuing their research on either of these

Table 4. Respondents' current year of training

Year of training		*n*	% of sample
Core trainees	CT1	7	0.5
	CT2	17	1.1
	CT3	6	0.4
Run-through and/or higher trainees	ST1	11	0.7
	ST2	40	2.6
	ST3	117	7.7
	ST4	186	12.2
	ST5	291	19.1
	ST6	242	15.9
	ST7	101	6.6
	ST8	9	0.6
Pre-Modernising Medical Careers trainees	SpR1	0	0
	SpR2	3	0.2
	SpR3	52	3.4
	SpR4	104	6.8
	SpR5	122	8
	SpR6	116	7.6
	SpR7+	81	5.3
	Other	18	1.2

bases, 40 had made an unsuccessful application for a NIHR fellowship or lectureship. With regard to qualifications being pursued, 555 respondents either were pursuing or intending to pursue an MPhil or PhD, and 236 were pursuing or intending to pursue an MD, while 311 intended to eventually apply for an academic university post.

Out of programme (training)

A total of 295 respondents (66% of total out of programme (training) population) indicated that they were currently engaged in out of programme training. The association between gender and engagement in these respondents was significant ($\chi 2$ [1, N = 1523] = 4.428, $P<0.05$). Compared to chance expectations, males were over-represented. The association between out of programme training and age group was highly significant ($\chi 2$ [1, N = 1511] = 84.972, $P<0.001$), with respondents in both age group 3 (36–40 years) and 4 (41–45 years) over-represented. With regard to the specific training being pursued, only two categories of activity were reported by more than ten respondents: fellowship posts (196 respondents) and secondment to another training scheme (37 respondents).

Out of programme (career break)

A total of 124 respondents (46% of total out of programme (career break) population) indicated that they were currently engaged in an out of programme career break. The association between gender and out of programme (career break) was highly significant ($\chi 2$ [1, N = 1523] = 65.994, $P<0.001$), with the data showing that, compared to chance expectations, females were over-represented. The association between career break and age group was also highly significant ($\chi 2$ [1, N = 1511] = 17.651, $P<0.001$), with respondents in age group 1 (26–30 years) over-represented. The most common reason reported for taking out of programme (career break) was to care for dependents (77 respondents). However, 74 of these respondents were female, 65 of whom had child dependents. Besides caring for a dependent, the only other reason for taking a career break reported by more than ten respondents was to pursue and/or develop other interests outside medicine.

Out of programme (experience)

A total of 327 respondents (65% of total out of programme (experience) population) indicated that they were currently pursuing out of programme (experience) of some sort, either clinical or non-clinical. The association between engagement in out of programme experience and age group was significant ($\chi 2$ [1, N = 1511] = 12.899, $P<0.01$), with respondents in age group 1 (26–30 years) over-represented among those engaged in such experiences. *Figure 4* summarizes the seven categories of out of programme experience being pursued by ten or more respondents. A total of 79 respondents reported that they had tried unsuccessfully to have the experience in question count towards their training.

Discussion

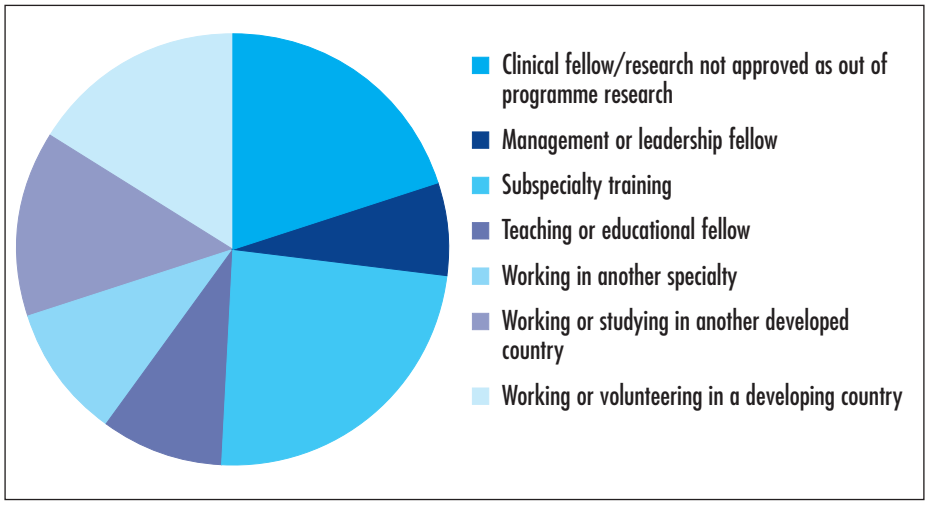
A review of the literature reveals evidence of perceptions within the medical profession that specialty training programmes may not always provide trainees with adequate opportunities to make them fully confident independent practitioners by the time they complete the prescribed period of training (Tsouroufli and Payne, 2008). The European Working Time Directive and the shorter, more structured training pathways introduced as a consequence of Modernising Medical Careers are perceived by some clinicians as having impacted upon the ability of trainees, particularly in the craft specialties, to obtain all the experience required to make them optimal practitioners by the end of the given training period (Dhanda et al, 2011).

Medical specialties historically may have placed differing levels of emphasis on the value of out of programme activity, with some more than others formally encouraging a period of research or sub-specialty training. National data suggest that infectious diseases, cardiology and medical oncology are the specialties with the highest percentage of out of programme trainees while general practice has the lowest, suggesting markedly varying degrees of cultural acceptance or expectation of out of programme activity within different specialties. The shorter training period in general practice is probably the dominant reason why so few of its trainees take time out of programme. Other factors such as gender ratio in particular specialties may also influence the prevalence and type of out of programme activity found.

Any imperative to undertake out of programme activity has probably shifted over time as evolving sub-specialties, Royal college curricular, medical workforce projections and other variables have impacted upon trainees' career plans. Trainees' knowledge of the consultant job market in their specialty and/or region may also influence career choices. A trainee who knows, for example, that a local consultant is planning to retire in a few years may take a period out of programme in order to tactically delay the award of his/her Certificate of Completion of Training, thereby finishing training at just the right time to apply for an imminent vacant post.

Geography is also likely to have been influential, given the relative autonomy of

Figure 4. Breakdown of out of programme experience.



postgraduate deaneries in interpreting out of programme regulations. Of particular note is the difference in out of programme occurrence between London and the rest of the country. This may be an issue of research opportunity or it may be influenced by cultural or restrictive practice in some regions. Such inconsistency in a national training programme is an interesting finding which would benefit from further investigation.

All of these factors may influence out of programme occurrence to a greater or lesser extent. The constant is that the majority of out of programme trainees delay their Certificate of Completion of Training in order to pursue what they perceive to be career-enhancing activities in order to make themselves more effective professionals and/or attractive to appointing committees. The range of out of programme activities reported by respondents reveals that the acquisition or honing of competencies may relate to a variety of clinical and non-clinical roles.

As the qualitative data on motivation (*Table 5*) indicate, exposure to sub- or inter-specialty training, research techniques or experience of leadership and management responsibilities, for example, may be a trainee's primary goal in going out of programme. Altruism can play a significant part, particularly with out of programme experience opportunities to contribute to the health-care systems of developing countries and charitable organizations. The desire for a better work/life balance, particularly for those trainees with responsibility for dependents, makes an out of programme career break desirable.

The results of the survey suggest that full-time research is by far the most common reason for going out of programme, with the majority of trainees conducting clinical research in their own specialty and working towards a PhD. Modernising Medical Careers formally introduced combined academic and clinical training (NIHR academic clinical fellowship and clinical lectureship) programmes for those trainees interested in pursuing a clinical academic career (Academy of Medical Sciences, 2005; Department of Health, 2007). There is limited published information on the current number of trainees in England conducting research outside the NIHR programmes. However, this survey suggests that a considerable number of trainees continue to take out of programme (research) for a PhD/MD who hold neither an academic clinical fellowship nor a clinical lectureship.

Overall, trainees in the 31–35 year age category were most prevalent, suggesting that out of programme activity predominantly occurs in the latter years of a trainee's specialty programme. Findings relating to gender indicate that male trainees are over-represented in out of programme research and training, while female trainees are over-represented in the out of programme career break category. The authors intend to explore these findings further using the qualitative data collected on respondents' motivation to go out of programme, which will be reported in greater detail separately.

With regard to duration of out of programme activity (*Table 6*), each medical curriculum has a minimum training length but trainees often take longer than the minimum resulting in a delay in training. Type of out of programme activity inevitably influences its duration. PhDs, for example, equating to 3–4 years, probably extend training most significantly and this may partly explain the greater prevalence of out of programme research among this

Table 5. Motivation for going out of programme: qualitative evidence

Theme	Sub-theme	Illustrative data extract
Training opportunities	To fulfil a perceived requirement for training	'This was recommended by our curriculum developers. Within my small specialty, time out of programme is the only way to develop subspecialty knowledge and experience.'
	To secure 'better' training experiences abroad	'Best job I have ever done. I have done the equivalent of 2 years' operating in 6 months. Surgical training in the UK needs a massive overhaul to stop trainees going abroad for this kind of experience.'
	To develop 'softer' skills for CV	'My out of programme experience was the best thing I have ever done; gained more experience in leadership, team working and management than I would ever hope to gain while working in the NHS.'
Academic opportunities	To complement training programme	'My out of programme research has been a fantastic opportunity to develop my career. I have gained skills in research, teaching, project management, budgeting and writing that I could never have gained in my specialty training.'
	To facilitate an academic career	'I have had the opportunity to undertake research at a leading institution, gain a PhD from a top university, gain experience in grant application, run National Institute for Health Research trials and present at international meetings.'
Nurture personal development	To develop non-clinical skills	'I feel more confident after the experience and have developed many skills – working independently, using initiative – that I would have had much less opportunity to build in the UK.'
	To work in developing world	'My out of programme experience has hopefully strengthened a developing health system, developed me personally and professionally and given me renewed motivation for returning to the NHS.'
	To broaden horizons	'Training is extremely restrictive. Doctors are now mass produced and little time is given to development outside of their chosen specialty. I think all doctors should have the opportunity to experience life outside of work and training in the UK, both to acquire new skills and expand their horizons.'
	To restore personal agency	'It is vitally important that we are given the freedom and flexibility to pursue our own interests. I felt like I had been on a conveyor belt since medical school and desperately needed a change of scenery.'
	To obtain 'breathing space'	'I now feel re-energised and enthused about my training. It's shown me another way of working and also highlighted the good things about the NHS.'

population. Continuing research into out of programme activity and underlying motivation may enable the Centre for Workforce Intelligence to make more accurate modelling assumptions, including the modelling of delays and understanding the variability around average training length (Centre for Workforce Intelligence, 2011). It may also enable more effective management of specialty training programmes and lead to a greater understanding of the benefits of out of programme to the future careers of trainees.

There are a number of limitations with this study. The survey generated data on the occurrence of out of programme activity in England which hitherto has not been available in the public domain. In follow-up work, the authors plan to investigate the out of programme phenomenon across the UK as well as internationally. The response rate was acceptable but an increased figure would have produced results with greater generalisability. A small number of respondents (82) identified themselves as pursuing more than one form of out of programme. This over-reporting of current out of programme activity necessitates a degree of caution in the interpretation of results reported.

Table 6. The number (n) and percentage (%) of respondents by duration of out of programme

Duration	*n*	%
Less than 6 months	88	5.8
7–12 months	411	27.0
13–18 months	88	5.8
19–24 months	227	14.9
25–30 months	63	4.1
31–36 months	429	28.2
More than 36 months	217	14.2

Conclusions

The Shape of Training review was conducted with the intention of ensuring that medical training is designed to meet the challenges of the future and equip doctors with the skills and values to deliver high quality services for patients. The resultant report recommends that all doctors should have the opportunity, indeed the expectation, of spending time out of programme (although the term is not used explicitly) in order to gain, for example, structured management or leadership experience for a period up to 12 months (Greenaway et al, 2013).

There is also strong support for defining the clinical academic career route yet further. The implication of the report's recommendations is that going out of programme should become increasingly unnecessary for many trainees if more flexible training pathways are developed.

If postgraduate medical training is reshaped along the lines proposed, it will be vital to ensure that extra-curricular activities benefit not only the individual doctor's personal and professional development but also the evolving NHS and patient care. BJHM

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Conflict of interest: none.

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KEY POINTS

- The majority of out of programme trainees delay their Certificate of Completion of Training in order to pursue what they perceive to be career-enhancing activities in order to make themselves more effective professionals and/or attractive to appointing committees.
- Full-time research is by far the most common reason for going out of programme, with the majority of trainees conducting clinical research in their own specialty and working towards a PhD.
- The range of out of programme activities reported by respondents reveals that the acquisition or honing of competencies may relate to a variety of clinical and non-clinical roles.
- Continuing research into out of programme activity and underlying motivation may enable more accurate medical workforce modelling assumptions, including the modelling of delays and understanding the variability around average training length.
- The implementation of recommendations in the Shape of Training review may have a significant impact on future out of programme activity.