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## **Barriers and Facilitators to Primary Care Research: Views of GP Trainees and Trainers**

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**Abstract (249 words)**

**Background:**

Primary care plays an important role in the conception and delivery of transformational research but GP engagement lacks, prompting calls for the promotion of academic opportunities in primary care.

**Aim:**

To identify potential barriers and facilitators amongst GP trainees and trainers in primary care research to inform support given by Local Clinical Research Networks (LCRNs).

**Design and Setting:**

A cross sectional online survey was developed and distributed by the CRN to GP trainees and trainers in the North East and North West.

**Method:**

The survey covered areas including demographics, career intentions, current and potential engagement with research as well as their general understanding of research in primary care, that included barriers and facilitators to primary care research.

**Results:**

Trainees had low intentionality to pursue research and half of trainees did not engage with any research activity. Despite 1 in 5 trainees reporting intentions to include research in their career, only 1% would undertake a solely academic career. Medical school region is the only strongly associated factor with academic career intention. Just under 30% of trainers reported engagement in research, but far fewer (8.6%) were interested in contributing to research, and only 10% felt prepared to mentor in research.

**Conclusion:**

Among trainees, there is limited engagement in, and intentionality to pursue research and this is crucially reflected by responses from trainers. This study identifies the need for LCRN's to assist with training in research mentoring and skills, funding opportunities and to develop resources to promote research in primary care.

### **How this Fits in**

In March 2021 the NIHR CRN approved a National Primary Care Strategy designed to develop, promote, and facilitate high quality research in the Primary Care setting that is integral to delivering health and care, for the population's benefit. A fundamental element of this strategy is workforce development. The initial work streams of the strategy include evaluation of the support required and pilots to provide learning and research opportunities for staff in the Primary care sector (Theme D: Strategic Development of the Primary Care Workforce). The findings from this survey highlight the challenges in workforce engagement and establishes a baseline for intervention.

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## Introduction

General Practice provides more than 300 million patient consultations each year (1). Primary care can play a significant role in the delivery of transformational clinical research, most recently evidenced by the PRINCIPLE public health study, a platform trial designed to evaluate treatments to improve recovery and reduce hospitalisation from COVID.

The UK is a leader for primary care research in volume and citation rates of papers produced when compared to international colleagues (2) and research in general practice is an established discipline. However, prior to COVID-19 the number of General Practices in England engaged in clinical research was in decline. The National Institute for Health Research Clinical Research Network (NIHR CRN) consists of 15 Local CRNs (LCRN) which coordinate and support the delivery of research, providing local resources and training. The Cumbria and North East Primary Care Strategy recommends building capacity and capability for research through exposing medical students and GP trainees to primary care research and LCRN delivery to develop future research leaders (3). In order to facilitate academic primary care research development and delivery, it is important to understand the intentions and requirements of both future GPs and the trainers who assist in their development and training. The CRN NENC is in the top 5 LCRN's in terms of percentage of GP Practices recruiting to clinical trials but within the region there is variation in Primary care research activity. This variation, and declining patient recruitment figures, is compounded by a lack of academic opportunities for GPs, a rapidly changing landscape of primary care provision, increasing workload, transfer of work from secondary care and inadequate research funding. As a result, the NIHR CRN has recently launched a new Primary care research strategy (4). The Royal College of General Practitioners has called for increased academic activity by developing research capability in general practice including the pursuit of research *about* general practice on consultation patterns or the approach to management and treatment of complex needs (5).

Medical Schools Council and Health Education England (HEE) recommended an increase in the availability and promotion of academic opportunities for medical students and GP trainees (6), however, medical students describe General Practice as neither academically challenging nor a prestigious specialty (7), have limited awareness of academic primary care (8), and perceive a lack of mentorship a barrier. This is also reported by family practice students in the United States (9).

The objective of this survey was to describe the academic career intentions of GP trainees and to identify the potential barriers and facilitators to primary care research amongst GP trainees and trainers, thus assisting the LCRN in deciding where to focus resources and training to facilitate the

development of future academic GPs, and the offer of NIHR research as an option of care within communities.

## **Methods**

### *Design*

A cross-sectional online survey was developed by NIHR CRN NENC in collaboration with HEE North and Northumbria University.

### *Participants and Recruitment*

Potential participants were identified within the regions of the North East & North Cumbria, the North West who were either undertaking specialty training in primary care or a GP trainer. Invitations to participate were emailed to GP trainees and trainers via the Training Programme Directors in each region of HEE North. This included a brief summary of the project with an electronic link to the questionnaire. Questionnaires were sent to approximately 500 GP trainees and 320 trainers during February-March 2020. An implied consent model was used, which infers that survey completion signals willingness to participate.

### *Survey*

Two versions of the questionnaire (42 item Trainee and 35 item Trainer survey, Appendix 1 and 2) covering comparable questions were sent via email to GP trainees and trainers via HEE North. Due to the lack of validated questionnaires and/or measures in this area, the questionnaires were developed by the authors using a combination of questions adapted from published literature exploring the issues (10,11,12,13). Both versions were piloted with a small sample of each group to establish face validity and to test the timing of questionnaire completion resulting in minor amendments, which included an adjustment to some stem questions, and more detail about the number of sessions for clinical service. The final items covered: demographics, current engagement in research, career intentions, understanding and awareness of GP research and research training, perceptions of barriers and facilitators to research in primary care, and awareness /perceptions of NIHR CRN. Revised questionnaires were circulated as a web link (SmartSurvey) and were accessible for three weeks including one reminder.

### *Analysis*

Data were collected in Excel and analysed in Excel and IBM SPSS Statistics (version 22) in May 2020. Summary analysis was performed to estimate and cross tabulate responses by trainees and trainers. Correlations were excluded because of the nominal nature of many of the data. Chi square tests of independence and estimated Cramer's V examined associations between key items. We report significant relationships where we tested associations related to career intentions, and where the minimum count did not violate assumptions for the test. All other data presented are descriptive.

There were too few text comments to warrant the use of software to manage these data, so summaries on reasons for career intentions, and respondents' understanding of NIHR CRN activities were drawn from the questions that produced text responses. Our approach to the analysis of the qualitative themes was to identify areas which may help interpret or contribute richness to the survey data and acknowledge that this data may not be representative.

### **Results**

A total of 167 GP trainees and 140 GP trainers completed the survey; we present descriptive results in these two groupings. Some participants did not complete all questions, so we report the number for all data presented.

#### *Descriptive Characteristics*

Of the GP trainees (n=167), their ages ranged from 25 to 54 and they were split evenly across training years 1-3, and 13 had previously applied for an academic post. Many reasons for not moving directly from Foundation to Speciality training were given (Figure 1): of the 19 who did not completely Foundation Training, most trained abroad.

#### *Research career intentionality*

**Trainees** generally expressed low intentionality for pursuing a research post either in conjunction with clinical service or on its own with 44% (n=73) of participants stating that they would choose a career in clinical service with some teaching (Q20). Nonetheless, a significant minority (20%) have career intentions which include some research. Less than 1% stated that they would undertake a solely academic career, further confirming that a clear majority are interested in predominantly clinical service (Table 2). When asked to describe their reasons for choosing careers without an academic component it



was evident that while there was an interest in research, trainees' enjoyment and perception of value lay with clinical and teaching work. Supplementary Box 1 offers such explanations as described by participants.

Thirty eight percent of **trainees** reported that they intended to undertake some form of academic career. Associations were explored to see whether this was influenced by whether the trainees had intercalated, what year of training they were currently in and where they had trained (Table 3). There was a significant association between medical school region trained and intention to undertake an academic career (research or education)  $\chi^2 (3, n=166) = 35.79, p=.02$  with overseas trainees more likely to favour an academic career.

#### *Research engagement*

Engagement in research activity was also low, with nearly half of **Trainees** not engaging in any research, and only 18% either interested in contributing to, or conducting, research (Q16/Q18) (Table 4). This lack of interest had implications for their recruitment of patients to research (1.6% trainees reported that they recruited patients). **Trainers'** perceptions and awareness of their senior colleagues' involvement in academic work largely mirrors their own involvement (Q13), with education and training (teaching) being a significant element compared to research, and 1 in 5 being perceived as not engaged at all. Nearly 30% of trainers reported that they do engage in research in some form but less than 10% of trainers are actually interested in any part of the research process.

#### *Factors influencing the pursuit of research careers*

We explored possible factors in training that might help understand these low levels of interest, engagement, and career intentionality.

For GP **trainees**, funded time for research was the most important factor influencing their exploration of research opportunities (Q40); for trainers, role modelling was most important (Q33) (Table 5). Only 10% of **trainers** felt prepared to be a research mentor, with 63.5% stating they are unprepared or very unprepared. Although role modelling is key to encouraging academic careers, few feel equipped to mentor trainees in research.

We asked **trainers** whether they had heard of the National Institute for Health Research (NIHR) Clinical Research Network (CRN) (Q31), 35% were not aware of the CRN (6.4% were unsure). When trainers were asked about their understanding of the activities of the CRN, responses varied in depth and

breadth of understanding among those who were able to articulate the CRNs role (Supplementary Box 1).

#### *Research Understanding among interested trainees*

Finally, of those **trainees** who highly ranked an interest in research (Q17), most had a poor understanding of what research in primary care entails, or an awareness of opportunities to take part in research (Q34) (see Table 6). Those *interested* in the recruitment of patients were not aware of what research entailed, or any opportunities (although only 2 of the 5 wanted to know about opportunities). Of those interested in *contributing* to research, half reported they were aware of what research entails, and two thirds would like to hear more about research opportunities. Of those interested in *carrying out* research, only 1 in 4 were aware of what primary care research entailed, and most wanted to hear more about opportunities.

This highlights that even though some show an interest, very few understand what research entails, suggesting that, although communicating opportunities about research is desired, converting this into viable research activity will require significant awareness raising and education.

## **Discussion**

### *Summary*

The purpose of this service evaluation was to describe the academic career intentions of GP trainees, identify barriers and facilitators to engagement in primary care research, and assess ways in which the NIHR CRN can support trainers and trainees to engage. Participants represented a 37% response rate: although their participation in this research may be an indicator of their general research interest, this response rate is higher than the rates of interest and engagement in research that this paper reports. Few participants have intentions to pursue research as part of their career choice, particularly when compared to teaching. This is reflected by the low levels of engagement with research activity, and potentially explained by a limited understanding in what primary care research entails and the availability of individuals prepared to be role models in research. Nonetheless, a significant minority (20%) have career intentions which include some research, highlighting those participants as a potential group to focus research engagement. Two observations are of note: the low engagement in research among trainers (and trainees' awareness of their trainers' lack of engagement), possibly contributing to trainees' access to further *understanding* about the research process; and low levels of interest among

trainers in research delivery, possibly contributing to trainees' limited *appreciation* of taking part in research in primary care. Taken together, these findings about low levels of trainer engagement and interest may signal something about the value of research to trainees. The support and information offered by the CRN is also poorly understood or accessed. Limited understanding of what research entails, and trainers not acting as role models, are therefore identified as barriers to trainees' pursuit of research careers. Funding (of time and qualifications), and being more informed about what research entails during their training, are evident facilitators.

### *Strengths and Limitations*

We gathered views from GP trainees across all years of training and captured the views of GP trainers, providing a useful comparison to help characterise a part of the training environment relating to research engagement. The evaluation was regional, so it is unclear whether the participant experiences are nationally representative or whether the levels of CRN or institutional support for primary care research vary geographically. The sample contained a proportionately high number of overseas medical graduates and their experiences of academia may differ. If they had more or less exposure to research during their medical training this could impact how they viewed research. However, some of the principles obtained from this survey could assist other LCRNs when informing their own evaluations for their population, and the methodology and insight gained from this pilot study will help to inform a planned national survey of GP trainees and trainers in the future.

### *Comparisons with Existing Literature*

Early training experiences can have a significant influence on GP career intentions so a strategic approach to comprehensive careers (including non-clinical elements) has been called for (14). We reveal how role modelling should be central to both academic career crafting and existing research and organisational cultures in GP practices, which may currently be discouraging professionals in primary care from research careers (15).

Symonds et al (2019) highlight both the challenges of role model availability, and the benefits of embedding non-GP research expertise into GP practices to build research capacity (16). The Healthcare Improvement Studies Institute (THIS) (17) have beckoned an extension to the academic fellowship model by advocating the appointment of expanding academic expertise in GP practices. This supports our findings to look to the mentorship and training to generate a pro-research culture in primary care as a priority, alongside investment in promoting academic careers.

Some trainees have cited a lack of academic role models as a barrier to choosing general practice as a speciality (18). Our findings further signify that low levels of role modelling may exacerbate the recruitment challenges facing primary care, by discouraging potentially research-active trainees. Conversely, those specialities which are highly prized by trainees (e.g. surgery) contain strong, inspirational role models. If increases in research capacity in general practice are to be realised, a focus on increasing role modelling capacity is needed (19) and educators should adapt their remit beyond the doctor as teacher role.

#### *Implications for Research*

Clearly those who express an interest in research should be encouraged and supported. Investment in education to improve research understanding and skills should be a priority. In addition to embarking on initiatives required to develop a new generation of research-active GPs from the existing trainee population, it might be prudent to consider how research-active medical professionals and academics (20) can be utilised to boost research activity in primary care in the short term. Research in general practice may have the additional benefit of attracting research-interested medical students and foundation year trainees.

Further research should examine in more detail what the nature of trainees' understanding about research and patient recruitment is and determine more qualitative expressions of trainers' being ill-equipped to act as role models. These expanded answers (beyond our deduced and sometimes binary response categories) would offer policymakers more material for shaping the support required. Given our findings indicate the low likelihood of patient recruitment to trials in primary care, it would be important to next understand how perceptions of research may have changed in primary care during 2020-2021, now that the need to improve evidence about the efficacy of care, services, and new drugs and vaccines is more pronounced than ever.

#### **Conclusion**

Primary care research can bring transformation to clinical research by presenting the opportunity for participation more widely across the region, including to many currently underserved groups within our communities. Current evidence from across General Practice suggests that primary care research is under resourced and the current model for research delivery and funding has failed to achieve its full potential. In the context of the recently published and nationally operationalised NIHR Primary care research strategy (4) which includes a theme of 'Strategic Development of Primary Care Workforce', the findings from the survey presented here has stimulated regional and national discussion about approaches to engage trainees and trainers with academic career opportunities including academic

career promotion, awareness raising of existing NIHR CRN infrastructure and identification, and showcasing research role models within the specialty. The survey results are also expected to inform regional pilots with national roll-out to enhance GP engagement through incentivisation and innovative delivery models, all with the purpose of more effectively integrating high quality research as an option of care across primary care settings.

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### **Ethical Approval**

This project was managed as a service evaluation from North East and North Cumbria Clinical Research Network. As data analysis was conducted by Northumbria University, this aspect was approved by Northumbria University (ref 20824) on 27 November 2019.

## Competing Interests

None.

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**Table 1. Characteristics of trainee participants**

Characteristic	n	%
<b>Age, years</b>		
Mean 32.6 [range 25-54, SD 5.7]	167	100
<b>Qualifications</b>		
BSc	20	12
PGCert	10	6
PGDip	8	4.8
MSc	22	13.2
PhD	2	1.2
Member of a medical college	6	3.6
<b>Year of training</b>		
ST1	57	34.3
ST2	58	34.9
ST3	48	28.9
Other	3	1.8
<b>Applied for an academic post previously</b>		
Yes	13	7.8
No	153	92.2
<b>Medical school region</b>		
North East and North Cumbria	25	15.1
North West	34	20.5
Other*	44	26.5
Overseas	63	38

\*Includes London, East Midlands, East of England, West Midlands, Wessex, Yorkshire and Humber, Scotland and Wales.

**Table 2. Trainee career choice intention within General Practice (n=166)**

Career choice	n	Response rate(%)
Clinical service post only	11	6.6
Clinical service post with some teaching	73	44
Clinical service post with some research	9	5.4
Clinical service post with some teaching and research	26	15.7
Solely clinical academic research post	1	0.6

Change speciality	9	5.4
Undecided	33	19.9
May leave medicine	4	2.4

**Table 3. Trainee intention to undertake form of academic career (research or education)/associations with intercalation, year of training and Medical school region.**

Survey item	Response category	n/total	%	Trainee intention academic career (univariate analysis)
(Q7) Intercalated?	Yes	23/164	12	ns
	No	141/164	86	
(Q13) Year of training	ST1	57/166	34	ns
	ST2	58/166	35	
	ST3	48/166	29	
	Other	3/166	1.8	
(Q11) Medical school region*	North	10/25	40	$\chi^2 (3, n=166) = 35.79, P= .02$
	East and Cumbria			
	North West	12/34	35	
	Rest UK	10/44	23	
	Overseas	31/63	49	

\*Significant

NB Because of small sample size and to avoid violation of minimum cell size chi square test of associations, the five variables in Q25 were merged to two:

Intention to undertake an academic career

No intention to undertake an academic career

**Table 4. Trainee and trainer research engagement**

	Trainee self-reports of engaging in.... (n=150)		Trainee awareness of trainers' engagement (n=152)		Trainer self-reports of engaging in....		Trainer self-report of interest in...	
	N	%	N	%	N	%	N	%
Education and training	67	35.6%	117	52.7	136	51.9	122	87.8
Recruitment of patients to research	3	1.6	16	7.2	41	15.6	6	4.3
Contributing to research	17	9	31	14	31	11.8	2	1.4
Designing and carrying out research	8	4.3	13	5.9	6	2.3	4	2.9
No research	93	49.5	45	20.3	48	18.3	5	3.6
<b>TOTAL</b>	<b>188</b>	<b>100</b>	<b>222</b>	<b>100</b>	<b>262</b>	<b>100</b>	<b>139</b>	<b>100</b>



NB Can tick more than one response

**Table 5. Factors influencing research careers**

		Funded research Courses	Funded research quals	Funded time for research	Role modelling	Mentor scheme	Attend conferences	More info during training
Trainee	n (%)	94 (15.8)	93 (15.6)	106 (17.8)	81 (13.6)	85 (14.3)	53 (8.9)	83 (13.9)
Trainer	n (%)	41 (10.8)	65 (17.1)	52 (13.6)	94 (24.7)	49 (12.9)	53 (13.9)	29 (7.1)

NB Can tick more than one response

Role modelling received the most votes for Trainers (25%)

Funded time for research received the most votes for Trainees (18%)

**Table 6. Trainee Interest and understanding of research (n = 164)**

Interest in research (the number of times the item was ranked first) (Q17):	n (%)	Understanding of research (Q34)	n (%)
Recruitment of patients	5 (3)	Aware of what research in primary care entails	0
		Aware of opportunities to take part in research	0
		Would like to hear about research opportunities	2 (1)
Contributing to research	18 (11)	Aware of what research in primary care entails	6 (4)
		Aware of opportunities to take part in research	3 (2)
		Would like to hear about research opportunities	12 (7)
Carrying out research	12 (7)	Aware of what research in primary care entails	3 (2)
		Aware of opportunities to take part in research	2 (1)
		Would like to hear about research opportunities	11 (7)