UNIVERSITY OF BIRMINGHAM

NHS
Health Education England

Evaluation Report

Applicant preferencing of prospective training programmes in the National Pre-registration Pharmacist Recruitment Scheme for England and Wales

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Executive Summary

Background

In 2015, Health Education England (HEE) launched a Pharmacy Education Reform programme to improve the quality of pre-registration pharmacist training. A key project within this was the development of a National Pre-registration Pharmacist Recruitment Scheme for England that was extended to Wales. The scheme was introduced in 2017; mandated for all HEE funded posts and optional for community pharmacy places funded by NHS England. In year one, the majority (2161 of approximately 2800) of pre-registration pharmacist training places were advertised via this route. The 2017 recruitment scheme achieved an overall training place fill-rate of 75%, with approximately 60% of all pre-registration pharmacist posts across England and Wales filled (including 100% of hospital pre-registration pharmacist places).

HEE undertook a short-term outcome evaluation exploring the immediate impact of the new recruitment scheme, particularly the reliability, validity, fairness and acceptability of the selection methods used as part of the recruitment process. Findings highlighted that fill-rates could have been affected by how applicants preferenced prospective training placements.

This evaluation undertaken collaboratively between HEE and the University of Birmingham explores applicant preferencing behaviour through the analysis of applicant preferencing data from the 2017/18 recruitment cycle, and identifies factors that influenced preferencing of prospective training placements by the applicants through survey and focus groups. A Survey invitation was sent to all Schools of Pharmacy in England and Wales in May 2018 asking all students who were eligible for application to the recruitment cycle 2017/18 to participate. Students who expressed an interest were invited to participate in a focus group.

Key Findings

Pattern of applicant preferencing of pre-registration training programmes

Preferencing data from all applicants (n=2694) of the 2017 HEE recruitment cycle was analysed. A large majority (n=2325, 86%) of applicants preferenced pre-registration programmes across both NHS Acute Hospital and Community Pharmacy sectors. However, a total of 283 (11%) and 86 (3%) applicants preferenced pre-registration programmes in either NHS Acute Hospital or Community Pharmacy sectors respectively only.

A total of 2182 (83.9%) applicants ranked NHS Acute Hospital pre-registration programmes as their first ranked preference. A total of 16.1% (418) applicants ranked community pharmacy programmes as their first choice.

A total of 80.6% and 19.4% of the total top 10 ranked preferences (n=25,252) related to pre-registration programmes within NHS Acute Hospital and Community Pharmacy sector respectively. Similarly, a total of 75.7% and 24.3%of the total top 30 ranked preferences (n=65,151) related to pre-registration programmes within NHS Acute Hospital and Community Pharmacy sectors respectively.

Analysis of the number of applicants selecting at least one pre-registration programme in a given HEE local area and geographical sector (county) was undertaken. HEE London was the most popular HEE local area with approximately 4 in 5 applicants preferencing at least one programme from within the area. Only just over half (n=1514, 56.2%) of all applicants preferred a pre-registration programme in Wales. HEE Thames Valley followed by HEE Wessex had the biggest ratio in terms of applicant to number of available places. Analysis of the preferencing data across the geographical sector (counties) suggested that programmes within North Central London, South London and North West London areas were preferred by most applicants. Data pattern shows applicants often preferenced employers in the same HEE region as their Schools of Pharmacy.

Significant variations in the preferencing pattern across gender groups, ethnic categories and applicants from different Schools of Pharmacy were identified.

Results: survey of students on factors associated with applicant preferencing decisions

A total of 307 responses were received giving a response rate of approximately 11%.

The majority of the respondents (66.2%) reported preferencing between 1 and 100 pre-registration programmes. When asked ‘overall, how satisfied were you with the preferencing process?’, approximately a third (31.8%) of the applicants expressed dissatisfaction. Higher satisfaction with the preferencing process was significantly associated with respondents’ choice of ‘community pharmacy- large chain multiple’ as the highest ranked preference, receipt of an offer through HEE and the hierarchy of the ranked choices for which offer was received. Respondent age, gender, ethnicity and number of training programmes preferenced were not associated with global satisfaction.

Long-term career aspirations for working in a particular sector was the factor rated most highly by the respondents in their preferencing decision, followed by proximity to the respondent’s permanent home or where they would like to live long-term. Information made available by the employer about their organisation and training programme was also important for many applicants.

Respondents were generally satisfied with the length of the time they had available for preferencing decisions although approximately 1 in 6 perceived the decision making time not being adequate.

A high majority of the respondents (n=181, 72.9%) were either satisfied or highly satisfied with the offer of the training programmes they received through the HEE. The most common reason for declining the offer related to having a training place outside the national recruitment scheme.

Results: qualitative data on factors associated with applicant preferencing decisions

Qualitative data on factors associated with preferencing decisions were obtained through open-ended comments from the questionnaire and two qualitative focus groups with student participants and analysed. Data collection tools were designed based on the literature, expert panel discussion and theoretical domains framework (TDF). TDF is a theoretical framework of determinants of behaviour which combines 33 theories of behaviours into 14 domains. The domains can be used to explain the factors that are associated with a particular behaviour and these include knowledge, skills, environmental context and resources, capabilities, belief about consequences and social influences

A total of nine potential factors (TDF domains) were identified as being key to participant preferencing decisions. These included knowledge about the training programmes and prospective employers, opportunity for skills development (skills), perceived environmental context and resources of the potential employers, perceived identification of and aspiration towards a career path, optimism/pessimism about the prospect of obtaining a training programme offer, belief about consequences of preferencing decisions, social influences from family and peers, decision process and applicant motivation and goals.

Participants alluded to the importance of the information from employers in informing their preferencing decisions and described reading the information sources carefully before making a selection. While participants did speak highly of information from some of the employers, in particular from NHS acute hospital trusts, they felt that others lacked key information they were looking for.

Size of the employing organisation was a key factor in preferencing a community pharmacy pre-registration programme with most participants preferring large chain multiple pharmacies over independent community pharmacies. Such preference was mainly down to the perception that the training programmes offered by the large chain multiple pharmacies would be ‘better in quality’ compared to the independent pharmacies.

The way preferencing was done was perceived to have an important impact on the outcomes. Selecting NHS Acute Hospital only pre-registration programmes were deemed to put the applicants at a disadvantage given the competitive nature of these programmes.

Greater number and range of post training opportunities after pre-registration training were perceived to be important factors in their preference of bigger cities and urban areas over rural areas.

Participants were generally positive in their feedback on the preferencing tool available through the Oriel system. Most demonstrated an understanding of how the preferencing system worked and spoke highly of how the listing of the employers and filtering system were laid out.

Recommendations

This evaluation has demonstrated a high affinity of pharmacy students to undertake pre-registration training in NHS Acute hospitals. A large majority of the top ranked programmes were based in hospitals. Long-term career aspiration was considered highly important for applicants in preferencing of training programmes. Further in-depth investigation into the reasons for such high preferences for hospital pre-registration training programmes amongst applicants can shed additional light into applicant behaviour.

This evaluation has also shown that urban areas, particularly training programmes in London received a high number of applicants preferencing at least one programme. In the qualitative investigation, participants described their desire to live in an urban environment and such preference was also linked to perceived greater post-training career opportunities by the applicants in those areas. Recruitment in remote and rural areas may benefit from widening awareness regarding the job opportunities available for pharmacists.

Widening the timeframe of the preferencing process, improved methods of employer listing, and greater transparency in the geographical location of the training places can improve applicant satisfaction with the preferencing process.

Employer information was key to how applicants decide on preferencing an employer. Feedback from the applicants suggested that while hospital pre-registration programmes often contained detailed levels of information, such depth seemed to be missing from many community pharmacy employers. Community pharmacy employers should look into ways of enhancing the quality of the information available about their programmes on the recruitment system. Employer views on provision of information and recruitment should also be further investigated in depth.

A study of trainee experiences of pre-registration programmes in various sectors will provide useful data on applicant perceptions around the quality of the training being linked to the size and resources of the employing organisation, particularly in the community pharmacy sector.

It will also be useful to repeat the evaluation of preferencing behaviour in the next year's cycle to address ongoing needs. Long-term evaluations will enable consideration of how career aspirations of pharmacy students change over time given the greater clinical roles and diversification of pharmacy workforce in relation to recent policy initiatives.

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1. Introduction

1.1. Background and Context

Health Education England (HEE) aims to support the delivery of 'excellent healthcare and health improvement to the patients and public of England by ensuring that the workforce of today and tomorrow has the right numbers, skills, values and behaviours, at the right time and in the right place'.[1] Currently there are approximately 2800 preregistration pharmacists trained each year in England and Wales. In 2015 HEE launched a Pharmacy Education Reform programme to improve the quality of pre-registration pharmacist training.[2] A key project within this was the development of a Pre-registration Pharmacist Recruitment Scheme for England and Wales. The scheme was introduced in 2017; mandated for all HEE funded posts and optional for community pharmacy places funded by NHS England. In year one, the majority (2161 of approximately 2800) of pre-registration pharmacist posts were advertised via this route.

The development of a centralised system of recruitment has been a major project within HEE. It utilises the Oriel platform and methodologies which are already well established for medicine, dentistry and healthcare science. However, the number and diversity of pre-registration pharmacist training places across the NHS and private sector meant that a new preferencing system needed to be developed to enable sufficient flexibility in how applicants select their preferred programmes. Equally, this also represents a new practice from the perspective of diverse stakeholders including the employers, students, academic tutors, and support services at the universities. Findings from a short-term outcome evaluation,[3] exploring the immediate impact of the new recruitment scheme, highlighted a number of outcomes that could be attributed to how applicants preferenced prospective training placements, for example low number of preferences, low fill-rates in the community pharmacy sector and appointable applicants left without a pre-registration programme offer at the end of the recruitment process. Key recommendations from this report included undertaking further analysis of applicant preferencing patterns i.e. by locality, and exploration into applicant behaviour through the recruitment process, for example student participation, preferencing behaviour and subsequent decisions about training place offers.[3]

This evaluation was undertaken through collaboration between HEE and the University of Birmingham. The study aims to identify influencing factors with regards to applicant preferencing of prospective training placements and make recommendations as to possible interventions to motivate behaviour change amongst both students and employers for better acceptability, engagement and outcomes when participating in the national recruitment scheme.

1.2. Overview of relevant literature

A literature search was undertaken to explore factors that are important for applicants in preferencing their employers as reported in the published peer reviewed literature. Medline, EBSCO Educational Databases and Google Scholar were searched with no date limit. Keywords such as 'pre-registration training', 'residency', 'fellowship',' selection', 'choice', 'preferencing' and 'factors' were searched in various combinations. The search demonstrated a dearth of research and evaluations exploring factors that are important for pharmacy students in their selection of a particular pre-registration pharmacy training programme. Hence literature from other disciplines including systematic review of international literature was also considered.

Greater affinity of students towards hospital training programmes is a phenomenon reported in literature from other healthcare professional disciplines. As shown by a systematic review of international literature, student attraction towards secondary care settings for a training place may negatively impact on the recruitment and retention in primary care and particularly in the rural settings.[4] Those students who opt to choose hospital pharmacy positions placed more emphasis on the importance of patient and multi-disciplinary working, opportunities for career progression, further education and professional development. Other motivators for secondary care training opportunities include perceived higher professional status, research opportunities and academic environment.[4,5] whereas those opting for primary care including community pharmacy often regard financial rewards, spectrum of patients and diseases encountered in community as the motivators.[4,5] National health systems and health care models of a country can also impact upon training and career choices of healthcare professional students.[4]

Perception about how far a training programme meets applicants' personal career goals is an important factor in how students preference training programmes.[6,7] Therefore, having a career goal at the stage of making a pre-registration training application is important from student perspectives.[5] Particularly, the lack of an adequate number of training programmes that allow pharmacy pre-registration trainees to work in multiple sectors may mean that those students not having a career goal at that stage may often find the preferencing process more challenging.[5] Stability of decisions,[8] is an area warranting further studies as there is a dearth of literature to investigate how far pharmacy graduates retain their sector relevant to their pre-registration training programmes in their career.

Perceived quality of the training programme was shown to be an important factor in applicants' preferencing decisions in an international multi-centre study.[9] Factors such as salary and amount of annual leave were found to be comparatively less important. Disregard of salary as an influencing factor may be down to subtle differences in the salaries across training programmes.[9] However, in countries where such pre-registration training programmes do not constitute a pre-requisite for professional registration, the comparatively low salary of the

trainees against early career positions are known to dissuade students from up taking such training positions.[7] Salaries can however, influence long term career aspiration.[5]

Recruitment and retention in rural and remote places is a known issue as reported in the literature. The most notable barriers to the uptake of such training programmes relate to social isolation and lack of family support.[10,11] However, prior experience of rural placements can affect student perception and attitudes towards rural life.[10,11] Hence government and professional bodies may actively promote rural placements for undergraduate students.[11] Students who come from a rural background were more likely to work in rural areas than urban after graduation.[11]

Literature demonstrates the use of a variety of sources of information by students to preference a particular training programme or provider. Applicants gain both personal and professional aspirations from practice placements during their undergraduate course, career advisors at the University and through employer led information sessions.[5] Lack of adequate information about the training programme, application and preferencing process has been cited as a key barrier to the application and recruitment process.[7] It is hence essential that those providing the advice need to be well informed of the options available to the students and the processes relating to application/recruitment.

Apprehension about the competitive nature of the recruitment, lack of information and support has also been shown to dissuade students in the application process. Prior opportunities to interact with training providers can minimise these barriers.[7]

There is a lack of literature that aims to investigate the factors that determine the likelihood of an applicant receiving an offer for a competitive training programme. However, a higher number of applications selected by the applicants, female gender and better performances in pharmacy schools were shown to positively influence offer outcomes.[12]

Understanding the importance of the factors associated with preferencing and decision outcomes is important from diverse stakeholder perspectives. The factors that are deemed important by the applicants as identified in the reviewed literature and eventually from the findings of this evaluation can feed into how employers, university tutors and career advisors promote and support students in their uptake of the pre-registration pharmacy training programmes in future recruitment cycles.

1.3. Evaluation Objectives

In the context of the 2017 HEE pre-registration pharmacist recruitment scheme, this evaluation aimed to explore applicant preferencing behaviours and the impact of preferencing behaviour on the outcomes.

This evaluation will address the following questions in the context of the 2017 HEE pre-registration pharmacist recruitment system:

1. What does the data tell us about the preferencing behaviour of applicants in the 2017/18 recruitment cycle?
2. What are applicant views and experiences on the preferencing process?
3. What perceived factors influenced applicant preferencing behaviours?
4. How do applicants perceive their training programmes offer outcome in the context of their preferencing decisions?
5. What factors influenced applicant acceptance or declination of offers?

2. Methods

2.1. Evaluation Design

A mixed-method approach was utilised and undertaken in three phases:

a) Analysis of preferencing behaviour data of all applicants (n=2694) of the HEE pre-registration recruitment scheme in 2017 was undertaken.

b) A web-based survey of all students undertaking Master of Pharmacy Year 4/Overseas Pharmacist Assessment Programme (OSPAP) and whom were eligible to apply for a 2017 HEE pre-registration pharmacist recruitment scheme was undertaken. The survey was undertaken between March and May 2018 utilising a whole population sampling method. This included any students that chose not to apply through the national recruitment scheme. The survey explored student views and experiences of the preferencing process, their behaviour and associated factors in their decision making, exploring evaluation questions 1-5. The questionnaire consisted of a mix of closed and open-ended questions including the use of Likert type agree/ disagree statements.

c) The final phase of the evaluation involved a qualitative study, exploring questions 2-5 in more depth. These included qualitative focus groups with applicants who applied and participated in the HEE pre-registration pharmacist recruitment scheme 2017.

The survey questionnaire and topic guide for focus groups was developed based on the existing literature, expert panel discussion consisting of key stakeholders in the evaluation steering group, student representatives and research team. Theoretical domains framework (TDF) was used to construct the questions around factors associated with preferencing decisions in both the questionnaire and the focus groups topic guide. TDF is a validated theoretical framework of determinants of behaviour which combines 33 theories of behaviours into 14 domains.[13] The domains can be used to explain the factors that are associated with a particular behaviour and these include knowledge, skills, environmental context and resources, capabilities, belief about consequences and social influences (table 1).[13] TDF has been widely adopted in health care and education research in understanding, changing behaviours and investigating implementation problems.[14]

Table 1: Theoretical domains framework used to design the data collection tool and interpret the results around factors associated with applicant preferencing of pre-registration programmes

[adapted from 13]

TDF Domains
1. Knowledge Knowledge (including knowledge of condition /scientific rationale), Procedural knowledge, Knowledge of task environment
2. Skills Skills, skill development, Competence, Ability, Interpersonal skills, Practice Skill assessment
3. Social/ Professional Role and Identity Professional identity, Professional role, Social identity, Identity, Professional boundaries, Professional confidence Group identity, Leadership, Organisational commitment
4. Beliefs about Capabilities Self-confidence, self-confidence, perceived competence, self-efficacy, perceived behavioural control, beliefs, self-esteem, empowerment, professional confidence
5. Optimism Optimism Pessimism Unrealistic optimism, Identity
6. Beliefs about Consequences Outcome expectancies, beliefs, anticipated regret, consequents
7. Reinforcement Incentives, Rewards (proximal/distal, valued/not valued, probable/improbable), Incentives, Punishment, Consequents, Reinforcement, Contingencies, Sanctions
8. Intentions Stability of intentions, stages of change model, trans. model/stages of change
9. Goals Goals (distal / proximal), goal priority, goal / target setting, goals (autonomous / controlled), action planning, implementation intention
10. Memory, Attention and Decision Processes Memory, attention, decision making, cognitive overload, tiredness
11. Environmental Context and Resources environmental stressors, resources / material resources, barriers and facilitators, organisational culture /climate, person x environment interaction, salient events / critical incidents
12. Social Influences social pressure, social norms, group conformity, social comparisons, group norms, social support, intergroup, conflict, power, group identity, alienation, modelling
13. Emotion anxiety, fear, affect, stress, depression, positive / negative affect, burn-out,
14. Behavioural Regulation Self-monitoring, Breaking habit, Action planning

The ethical approval for undertaking the evaluation was obtained from University of Birmingham research ethics committee (ERN_17-1399).

2.2. Data collection and analysis

2.2.1. Applicant preferencing data

Anonymised data regarding individual applicant preferencing was obtained from the HEE Pharmacy National Recruitment Office. This was in line with Data Protection and GDPR regulations and as set out in the Oriel data privacy policy (https://www.oriel.nhs.uk/Web/Home/InformationPage?Type=PrivacyPolicy). This data included applicant demographic information i.e. ethnicity, gender, school of pharmacy, along with the programmes included within their individual preference (ranked), no preference and unwanted categories.

2.2.2. Survey of 4th Year MPharm students

All Schools of Pharmacy were sent a link to an online questionnaire (appendix 1) in April 2018, along with a letter to students inviting them to participate. Heads of Schools and School pre-registration leads were asked to distribute the letter and online questionnaire link to their eligible students. Completion and submission of the questionnaire was at the students' discretion. Two reminder emails were sent at two and four week intervals to encourage response rates.

Upon closure of the 5-week survey response window, all data were entered into and analysed by an expert statistician (MJP) using Stata software. Descriptive and inferential analysis of the data was undertaken.

2.2.3. Qualitative focus groups

All participants of the online questionnaire were invited to participate in a qualitative focus group discussion. Students expressed their interest in participating by providing their contact details to the researcher via a specific question in the online survey. The researcher subsequently contacted interested students with participant information and available dates.

Focus groups were held online, utilising WebEx, with discussions lasting between 60-90 minutes. A semi-structured interview method was chosen, supported with a topic guide (appendix 2). Informed consent was obtained prior to the focus groups.

Qualitative data from focus groups and responses from the open-ended questions were analysed using framework technique[15]. Framework method of analysis involves data being categorised into a matrix system based on emergent themes and subthemes. A thematic coding framework was developed based on the research aims and objectives, topic guide, TDF following familiarisation with the data. Any new emergent themes were added during the analysis. Duplicate independent analysis (LMS and VP) of the qualitative data was undertaken.

3. Results

3.1. Analyses of the applicant preferencing database

3.1.1. Overview

Data from all applicants (n= 2694) to the 2017 pre-registration training recruitment scheme was analysed. Of these 1,746 (64.8%) applicants were female and 890 (33.0%) were male. Gender data was missing for 58 applicants. A total of 234 NHS acute hospital programmes (734 places) and 1082 Community Pharmacy programmes (1427 places) were available for preferencing by the applicants.

A large majority (n=2325, 86%) of applicants preferenced pre-registration programmes across both NHS Acute Hospital and Community Pharmacy sector. However, a total of 283 (11%) and 86 (3%) applicants preferenced pre-registration programmes in either NHS Acute Hospital and Community Pharmacy sectors only respectively (tables 2 and 3).

Of the 283 applicants who only selected programmes relevant to NHS Acute Hospital sector, there was a statistical difference in the proportion of applicants making such preferences across the gender groups ($p=0.015$) (table 2). There was also a significant difference in such selection across ethnic groups ($p<0.001$). ‘Mixed white and Asian’ ethnicity had the highest proportion of applicants who only preferenced NHS Acute hospital for a pre-registration programme.

Table 2: Applicants preferring NHS acute hospital as their only preference

	n	%	Lower 95% CI	Upper 95% CI
Gender				
Female	203	11.6	10.2	13.2
Male	76	8.5	6.8	10.6
Missing	4	6.9	1.9	16.7
Ethnicity				
White – British	121	22.2	18.8	25.9
White – Irish	4	18.2	5.2	40.3
Any other white background	9	10.6	5.0	19.2
Mixed White and black Caribbean	0	0.0	0.0	0.46
Mixed White and black African	0	0.0	0.0	0.41
Mixed White and Asian	6	28.6	11.3	52.2
Any other mixed background	2	12.5	1.6	38.3
Asian or Asian British – Indian	45	10.1	7.5	13.3
Asian or Asian British - Pakistani	22	6.5	4.1	9.7
Asian or Asian British – Bangladeshi	7	6.7	2.7	13.4
Any other Asian background	12	5.3	2.8	9.1
Black or Black British – Caribbean	1	7.7	0.2	36.0
Black or Black British – African	21	6.5	4.0	9.7
Any other black background	0	0.0	0.0	0.26
Chinese	15	6.1	3.5	9.9
Any other ethnic group	11	7.2	3.7	12.6
Not stated	3	4.3	0.9	12.0
Missing	4	6.2	1.7	15.0

There was a significant difference in the proportion of applicants preferencing only NHS acute hospitals as their preferred sector across pharmacy schools ($p<0.001$) (appendix 3). A range of 2-33% applicants from across the Schools of Pharmacy preferenced NHS Acute hospitals only.

Of the 86 applicants who only preferenced community pharmacy programmes, most (n=77) applicants preferred programmes across more than one type of community pharmacy employers including a mix of Community Pharmacy – Large Chain Multiple, Community Pharmacy – Medium/Small Independent Multiple or Community Pharmacy – Independent. There was no difference in the proportion of applicants across gender groups ($p=0.818$) (table 3). There was a significant difference in the proportion of applicants only preferring community across various ethnicity categories ($p<0.001$). Mixed White and Asian ethnic group followed by Mixed White and black Caribbean preferred community only pre-registration programmes more than other ethnic groups (table 3). There was also a significant difference in the proportion of applicants preferencing only the community sector ($p= 0.019$) across pharmacy schools (appendix 4).

Table 3: Number of applicants choosing community pharmacy as their only preference (n=86).

	Number of applicants	% of applicants (within category)	Lower 95% CI	Upper 95% CI
Gender				
Female	54	3.1	2.3	4.0
Male	29	3.3	2.2	4.6
Missing	3	5.2	1.1	14.4
Ethnicity				
White – British	16	2.9	1.7	4.7
White – Irish	1	4.5	0.1	22.8
Any other white background	2	2.4	0.3	8.2
Mixed White and black Caribbean	1	16.7	0.4	64.1
Mixed White and black African	0	0.0	0.0	0.41
Mixed White and Asian	5	23.8	8.2	47.2
Any other mixed background	0	0.0	0.0	0.21
Asian or Asian British – Indian	21	4.7	3.0	7.1
Asian or Asian British – Pakistani	9	2.7	1.2	5.0
Asian or Asian British – Bangladeshi	5	4.8	1.6	10.9
Any other Asian background	7	3.1	1.3	6.3
Black or Black British – Caribbean	0	0.0	0.0	0.25
Black or Black British – African	9	2.8	1.3	5.2
Any other black background	0	0.0	0.0	0.26
Chinese	2	0.8	0.1	2.9
Any other ethnic group	3	2.0	0.4	5.7
Not stated	3	4.3	0.9	12.0
Missing	2	3.1	0.4	10.7

3.1.2. Top ranked preferences

A total of 2182 (83.9%) applicants ranked NHS Acute Hospital as their first choice for a pre-registration place representing 85% (735) of all male applicants and 83.5% (1401) of all female applicants (table 4). The highest proportion opting for hospital sector was ‘Any other Black Background’ (100%) followed by ‘Any other mixed background (93.3%). The lowest proportion was observed for ‘Mixed White and Asian’ background (52.4%).

A total of 16.1% (418) applicants ranked community pharmacy programmes as their first choice representing 15% (130) of all male applicants and 16.5% (276) of all female applicants (table 4). The highest proportion of applicants ranking community pharmacy placement was from ‘Mixed White and Asian’ ethnicity (47.6%). The lowest proportion was observed for ‘Any other black background’ (0.0%).

Table 4: Applicants' (n=2694) first choice: number of applicants by gender and ethnicity who ranked NHS Acute Hospital or Community Pharmacy sector as their first choice

	NHS Acute Hospital programmes as first ranked preference				Community Pharmacy programmes as first ranked preference			
Ethnicity	**Number of applicants**	**%**	**lower 95% CI**	**Upper 95% CI**	**Number of applicants**	**%**	**Lower 95% CI**	**Upper 95% CI**
All	2182	83.9	82.5	85.3	418.0	16.1	14.7	17.5
Female	1401	83.5	81.7	85.3	276.0	16.5	14.7	18.3
Male	735	85.0	82.4	87.3	130.0	15.0	12.7	17.6
Ethnicity								
White – British	483	90.3	87.4	92.7	52	9.7	7.3	12.6
White – Irish	18	85.7	63.7	97.0	3	14.3	3.0	36.3
Any other white background	65	82.3	72.1	90.0	14	17.7	10.0	27.9
Mixed White and black Caribbean	4	66.7	22.3	95.7	2	33.3	4.3	77.7
Mixed White and black African	6	85.7	42.1	99.6	1	14.3	0.4	57.9
Mixed White and Asian	11	52.4	29.8	74.3	10	47.6	25.7	70.2
Any other mixed background	14	93.3	68.1	99.8	1	6.7	0.2	31.9
Asian or Asian British – Indian	344	79.1	75.0	82.8	91	20.9	17.2	25.0
Asian or Asian British – Pakistani	270	82.3	77.7	86.3	58	17.7	13.7	22.3
Asian or Asian British – Bangladeshi	79	78.2	68.9	85.8	22	21.8	14.2	31.1
Any other Asian background	184	83.6	78.1	88.3	36	16.4	11.7	21.9
Black or Black British – Caribbean	11	84.6	54.6	98.1	2	15.4	1.9	45.4
Black or Black British – African	280	87.8	83.7	91.2	39	12.2	8.8	16.3
Any other black background	12	100.0	100.0	100.0	0	0.0	0.0	0.0
Chinese	194	81.9	76.3	86.5	43	18.1	13.5	23.7
Any other ethnic group	126	84.6	77.7	90.0	23	15.4	10.0	22.3
Not stated	56	81.2	69.9	89.6	13	18.8	10.4	30.1

***reflects percent within category for gender and ethnicity data**

3.1.3. The top 10 and top 30 ranked preferences

Top 10 ranks

A total of 25,252 top 10 ranked preferences (or all preferences where applicants ranked less than 10 programmes) from all applicants (n=2694) were analysed. A total of 80.6% and 19.4% of the total top 10 ranked preferences related to pre-registration programmes within NHS Acute Hospital and Community Pharmacy sector respectively. Distribution of the ranked preferences across sectors is shown in table 5.

Top 30 ranks

A total of 65,151 top 30 ranked preferences (or all preferences where applicants ranked less than 30 programmes) from all applicants (n=2694) were analysed. A total of 75.7% and 24.3% of the total top 30 ranked preferences related to pre-registration programmes within NHS Acute Hospital and Community Pharmacy sectors respectively. Distribution of the ranked preferences across sectors is shown in table 6.

Table 5: Distribution of top 10 ranked preferences (number of observations: 25,252) of all applicants (n=2694)*

	NHS Acute Hospital Sector				Community Pharmacy Sector			
	Total number of preferences*	Percentage %	lower 95% CI	Upper 95% CI	Number of applicants	Percentage %	Lower 95% CI	Upper 95% CI
All applicants	20351	80.6	80.1	81.1	4901	19.4	18.9	19.9
Gender								
Female	13129	80.5	79.9	81.1	3179	19.5	18.9	20.1
Male	6808	81.2	80.3	82.0	1579	18.8	18.0	19.7
Ethnicity								
White – British	4523	86.6	85.7	87.5	698	13.4	12.5	14.3
White – Irish	169	85.4	79.6	90.0	29	14.6	10.0	20.4
Any other white background	643	81.9	79.0	84.5	142	18.1	15.5	21.0
Mixed White and black Caribbean	40	74.1	60.3	85.0	14	25.9	15.0	39.7
Mixed White and black African	57	81.4	70.3	89.7	13	18.6	10.3	29.7
Mixed White and Asian	116	57.4	50.3	64.3	86	42.6	35.7	49.7
Any other mixed background	130	87.8	81.5	92.6	18	12.2	7.4	18.5
Asian or Asian British – Indian	3123	75.3	74.0	76.6	1024	24.7	23.4	26.0
Asian or Asian British - Pakistani	2351	75.1	73.5	76.6	781	24.9	23.4	26.5
Asian or Asian British - Bangladeshi	738	73.9	71.0	76.6	261	26.1	23.4	29.0
Any other Asian background	1776	82.8	81.1	84.4	369	17.2	15.6	18.9
Black or Black British - Caribbean	93	71.5	63.0	79.1	37	28.5	20.9	37.0
Black or Black British – African	2653	85.2	83.9	86.4	462	14.8	13.6	16.1
Any other black background	83	80.6	71.6	87.7	20	19.4	12.3	28.4
Chinese	1942	82.8	81.2	84.3	403	17.2	15.7	18.8
Any other ethnic group	1163	79.5	77.4	81.6	299	20.5	18.4	22.6
Not stated	521	75.5	72.1	78.7	169	24.5	21.3	27.9

***Some applicant preferenced less than 10 programmes**

Table 6: Distribution of sectors in applicants' (n=2694) top 30 ranked preferences (number of observations: 68,151)*

	NHS Acute Hospital				Community Pharmacy			
	Total number of preferences*	Percentage %	lower 95% CI	Upper 95% CI	Total number of preferences*	Percentage %	Lower 95% CI	Upper 95% CI
All	51620	75.7	75.4	76.1	16531	24.3	23.9	24.6
Gender								
Female	33212	75.1	74.7	75.5	11026	24.9	24.5	25.3
Male	17385	77.3	76.8	77.9	5104	22.7	22.1	23.2
Ethnicity								
White – British	11544	80.6	79.9	81.2	2781	19.4	18.8	20.1
White – Irish	446	86.3	83.0	89.1	71	13.7	10.9	17.0
Any other white background	1638	76.0	74.1	77.8	518	24.0	22.2	25.9
Mixed White and black Caribbean	94	62.3	54.0	70.0	57	37.7	30.0	46.0
Mixed White and black African	121	64.7	57.4	71.5	66	35.3	28.5	42.6
Mixed White and Asian	295	57.5	53.1	61.8	218	42.5	38.2	46.9
Any other mixed background	322	85.2	81.2	88.6	56	14.8	11.4	18.8
Asian or Asian British – Indian	7543	69.4	68.5	70.2	3331	30.6	29.8	31.5
Asian or Asian British – Pakistani	5187	65.6	64.5	66.6	2726	34.4	33.4	35.5
Asian or Asian British - Bangladeshi	1735	65.8	63.9	67.6	902	34.2	32.4	36.1
Any other Asian background	4775	80.9	79.9	81.9	1129	19.1	18.1	20.1
Black or Black British - Caribbean	264	70.0	65.1	74.6	113	30.0	25.4	34.9
Black or Black British – African	7023	81.0	80.2	81.8	1648	19.0	18.2	19.8
Any other black background	175	69.7	63.6	75.3	76	30.3	24.7	36.4
Chinese	5621	84.4	83.5	85.2	1041	15.6	14.8	16.5
Any other ethnic group	2946	73.7	72.3	75.1	1049	26.3	24.9	27.7
Not stated	1332	71.4	69.3	73.5	533	28.6	26.5	30.7

*Some applicants preferenced less than 30 programmes

3.1.4. Preferencing of programmes across HEE local areas and geographical sectors (counties)

HEE local areas and Wales

Analysis of the number of applicants selecting at least one pre-registration programme in each HEE Local office area and at a national level for Wales was undertaken. HEE- London was the most popular local office area with approximately 4 in 5 applicants preferencing at least one programme from within the area. This was followed by HEE- East of England (n=1974, 73.3%) (table 7). Only just over half (n=1514, 56.2%) of all applicants preferred a pre-registration programme in Wales (table 7). HEE Thames valley (23.2) followed by HEE Wessex (17.2) had the biggest applicant to number of available places ratio.

Table 7: Distribution of preferencing of programmes across HEE local areas by all applicants (n=2694)

HEE local areas	Number of available programmes / places (a)	Number of applicants (b)	Proportion	Lower 95% CI	Upper 95% CI	Ratio: b/a
HEE – London	283/521	2171	80.6	79.0	2171	4.2
HEE - East of England	141/228	1974	73.3	71.6	1974	8.7
HEE - West Midlands	96/204	1939	72.0	70.2	73.7	9.5
HEE - North West	112/181	1905	70.7	69.0	72.4	10.5
HEE - Kent, Surrey and Sussex	146/197	1881	69.8	68.0	71.6	9.5
HEE - East Midlands	80/146	1844	68.4	66.7	70.2	12.6
HEE - Thames Valley	47/78	1808	67.1	65.3	68.9	23.2
HEE - Yorkshire and the Humber	112/164	1725	64.0	62.2	65.8	10.5
HEE - South West	105/150	1705	63.3	61.4	65.1	11.4
HEE – Wessex	51/93	1595	59.2	57.3	61.1	17.2
HEE - North East	59/98	1523	56.5	54.6	58.4	15.5
Wales	68/101	1514	56.2	54.3	58.1	15.0

Analysis of the distribution of ethnicity data and applicant preferencing across HEE local areas and Wales was also conducted. Appendix 5 shows the data on the top and bottom three categories in terms of the popularity of the area across applicant ethnicity characteristics. Results show that applicants of Chinese ethnicity were the least selective in their preferencing, followed by applicants of White-Irish ethnicity.

Distribution of geographical preferencing trends across the gender categories are shown in appendix 6. The largest difference in the proportion (11.8%) across male and female applicants was observed with HEE North East where 63.9% (n=569) of males preferred a programme in the area compared to 52.1% (n=910) of female applicants. The smallest difference was observed for HEE London where such difference in proportion of applicants across the gender groups was only

1.2% (appendix 6). Across all HEE local areas and Wales, a higher proportion of male applicants (% within gender category) selected a programme from each area.

Geographical preferencing by applicants across Schools of Pharmacies is presented in appendix 7. Data pattern shows applicants often preferenced employers in the same HEE region as their schools of pharmacy.

Geographical sectors (counties)

Geographical sectors (counties) were defined and confirmed by HEE and Welsh pharmacy recruitment staff. Analysis of the preferencing data at a geographical sector (county) level suggested that programmes within North Central London, South London and North West London sectors were most frequently preferred.

Table 8: Number of applicants selecting at least one programme within a given sector (total n=2694)

Geographical county sectors	Number of available programmes/places	Number of applicants	% of applicants	Lower 95% CI	Upper 95% CI
Bedfordshire	13/18	1,603	59.5	57.6	61.4
Berkshire	22/30	1,590	59.0	57.1	60.9
Blaenau Gwent	1/1	799	29.7	27.9	31.4
Bridgend	5/7	1,243	46.1	44.2	48.0
Bristol	17/29	1,606	59.6	57.7	61.5
Buckinghamshire	13/25	1,645	61.1	59.2	62.9
Caerphilly	2/2	827	30.7	29.0	32.5
Cambridgeshire	16/26	1,671	62.0	60.2	63.9
Cardiff	11/18	1,430	53.1	51.2	55.0
Carmarthenshire	6/8	1,201	44.6	42.7	46.5
Ceredigion	2/2	1,159	43.0	41.1	44.9
Cheshire	21/28	1,598	59.3	57.4	61.2
Cleveland	6/12	1,335	49.6	47.6	51.5
Conwy	1/1	792	29.4	27.7	31.2
Cornwall	14/16	1,322	49.1	47.2	51.0
County Durham	20/24	1,406	52.2	50.3	54.1
Coventry	1/1	867	32.2	30.4	34.0
Denbighshire	3/5	1,171	43.5	41.6	45.4
Derbyshire	15/34	1,627	60.4	58.5	62.2
Devon	29/46	1,402	52.0	50.1	53.9
Dorset	18/24	1,418	52.6	50.7	54.5
East London	35/56	1,977	73.4	71.7	75.0
Essex	48/68	1,706	63.3	61.5	65.1
Flintshire	1/2	793	29.4	27.7	31.2
Gloucestershire	11/16	1,506	55.9	54.0	57.8
Greater Manchester	18/46	1,824	67.7	65.9	69.5
Gwynedd	2/4	1,110	41.2	39.3	43.1

Geographical county sectors	Number of available programmes/places	Number of applicants	% of applicants	Lower 95% CI	Upper 95% CI
Hampshire	27/62	1,568	58.2	56.3	60.1
Herefordshire	8/9	1,382	51.3	49.4	53.2
Hertfordshire	28/45	1,697	63.0	61.1	64.8
Humber Coast and Vale	35/45	1,474	54.7	52.8	56.6
Isle of Wight	6/7	1,170	43.4	41.5	45.3
Kent	40/53	1,624	60.3	58.4	62.1
Lancashire	36/57	1,660	61.6	59.8	63.5
Leicestershire	14/25	1,683	62.5	60.6	64.3
Lincolnshire	16/25	1,447	53.7	51.8	55.6
Merseyside	34/47	1,639	60.8	59.0	62.7
Merthyr Tydfil	2/4	1,161	43.1	41.2	45.0
Monmouthshire	1/2	1,166	43.3	41.4	45.2
Neath Port Talbot	5/5	1,178	43.7	41.8	45.6
Newport	5/8	1,282	47.6	45.7	49.5
Norfolk	26/55	1,439	53.4	51.5	55.3
North Central London	54/112	2,112	78.4	76.8	79.9
North Cumbria	6/8	1,302	48.3	46.4	50.2
North West London	103/188	2,077	77.1	75.5	78.7
Northamptonshire	20/39	1,562	58.0	56.1	59.9
Northumberland	9/10	881	32.7	30.9	34.5
Nottinghamshire	20/39	1,696	63.0	61.1	64.8
Oxfordshire	12/23	1,676	62.2	60.4	64.0
Pembrokeshire	3/3	1,179	43.8	41.9	45.7
Rhondda Cynon Taff	5/8	1,212	45.0	43.1	46.9
Shropshire	15/21	1,439	53.4	51.5	55.3
Somerset	21/25	1,496	55.5	53.6	57.4
South Cumbria	3/3	848	31.5	29.7	33.3
South London	91/165	2,090	77.6	76.0	79.1
South Yorkshire	20/34	1,606	59.6	57.7	61.5
Staffordshire	20/33	1,576	58.5	56.6	60.4
Suffolk	10/14	1,421	52.7	50.8	54.6
Surrey	68/86	1,770	65.7	63.9	67.5
Sussex	38/58	1,601	59.4	57.5	61.3
Swansea	6/12	1,249	46.4	44.5	48.3
Torfaen	2/2	803	29.8	28.1	31.6
Tyne and Wear	18/44	1,438	53.4	51.5	55.3
Vale of Glamorgan	2/2	834	31.0	29.2	32.7
Warwickshire	17/31	1,603	59.5	57.6	61.4
West Midlands	26/77	1,848	68.6	66.8	70.3
West Yorkshire	57/85	1,666	61.8	60.0	63.7
Wiltshire	13/18	1,429	53.0	51.1	54.9
Worcestershire	9/32	1,487	55.2	53.3	57.1
Wrexham	3/5	1,196	44.4	42.5	46.3

3.2. Survey of 4th Year MPharm Students

A total of 307 responses were received from a total population of approximately 2800 students, giving a response rate of 11%. Of these 295 (96.1%) were applicants to the HEE pre-registration pharmacist recruitment scheme in 2017 with the remaining 12 (3.9%) being non-applicants. A total of 133 applicants (45.1%) also indicated that they had applied for a pre-registration training place outside of the national recruitment scheme of which 103 (34.9%) did so prior to their HEE application and 30 (10.2%) during the national recruitment scheme.

3.2.1. Number of programmes preferenced

The majority of the respondents (66.2%) reported preferencing between 1 and 100 programmes with a further 22.7% preferencing between 101-300 programmes (table 9).

Table 9: Number of training programmes preferenced

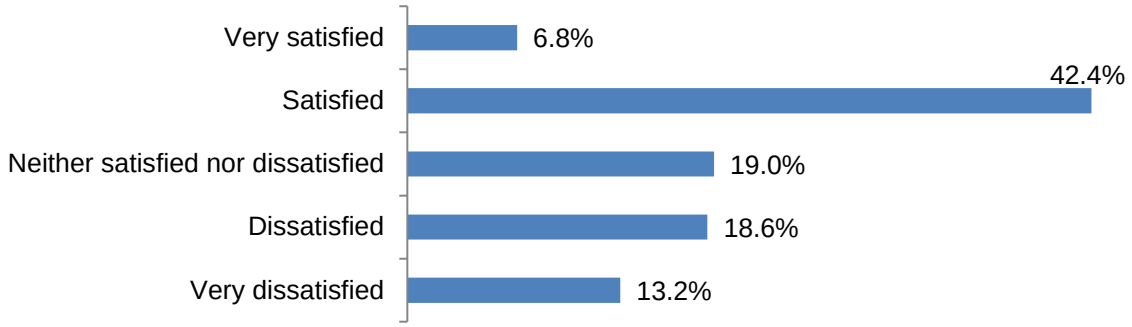
Number of programmes preferenced	n (%)
1-100	198 (66.2%)
101 – 300	68 (22.7%)
301 – 500	12 (4%)
501 – 700	5 (1.7%)
701 – 900	4 (1.3%)
901 – 1100	5 (1.7%)
1101- 1300	5 (1.7%)
No specific preference	2 (0.7%)
Sector preferenced	
NHS Acute Hospital	284 (37.4%)
Community Pharmacy – Large Chain Multiple	178 (23.4%)
Community Pharmacy –Medium/Small Independent Multiple	105 (13.8%)
Community Pharmacy –Independent	81 (10.7%)
Cross-sector programme (both NHS and Community Pharmacy)	112 (14.7%)
Sectors in top 10 preferences	
NHS Acute Hospital	274 (71.5%)
Community Pharmacy – Large Chain Multiple	50 (13.1%)
Community Pharmacy –Medium/Small Independent Multiple	16 (4.2%)
Community Pharmacy –Independent	14 (3.7%)
Cross-sector programme (both NHS and Community Pharmacy)	29 (7.6%)

Approximately 270 (87.9%) of the respondents agreed or strongly agreed that their University encouraged them to apply through the national recruitment scheme indicating strong engagement from the stakeholders with the scheme.

3.2.2. Global satisfaction with the preferencing process

When asked ‘overall, how satisfied were you with the preferencing process?’, approximately half (49.2%) of the respondents expressed satisfaction with the preferencing process with about one in five expressing neither satisfaction nor dissatisfaction with the process (figure 1).

Figure 1: Global satisfaction with the preferencing process



Higher satisfaction with the preferencing process was significantly associated with respondents’ choice of ‘community pharmacy- large chain multiple’ as the highest ranked preference, having received an offer through HEE and the hierarchy of the ranked choices for which offer was received (table 10).

Table 10: Association between global satisfaction with the preferencing process with- preferencing behaviour and outcome

Questions	Response options	Overall, how satisfied were you with the preferencing process?						P values
		Very Dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Very Satisfied	Total	
Did 'Community Pharmacy – Medium/Small Independent Multiple' feature in your programme preferences?	No	21 (11)	31 (16)	30 (16)	93 (49)	15 (8)	190 (100)	p= 0.002
	Yes	18 (17)	24 (23)	26 (25)	32 (30)	5 (5)	105 (100)	
	Total	39 (13)	55 (19)	56 (19)	125 (42)	20 (7)	295 (100)	
Did 'Community Pharmacy – Large Chain Multiple' feature in your highest ranked programme preferences i.e. your 'top ten'?	No	26 (11)	44 (18)	48 (20)	110 (45)	17 (7)	245 (100)	p = 0.013
	Yes	13 (26)	11 (22)	8 (16)	15 (30)	3 (6)	50 (100)	
	Total	39 (13)	55 (19)	56 (19)	125 (42)	20 (7)	295 (100)	
Did you receive a training place offer through Oriel?	No	10 (32)	9 (29)	3 (10)	8 (26)	1 (3)	31 (100)	p = 0.003
	Yes - through clearing	3 (19)	3 (19)	4 (25)	6 (38)	0 (0)	16 (100)	
	Yes - in the first round	26 (10)	43 (17)	49 (20)	111 (45)	19 (8)	248 (100)	
	Total	39 (13)	55 (19)	56 (19)	125 (42)	20 (7)	295 (100)	
Which of your preferenced training places were you offered?	20th + ranked choice	12 (18)	15 (23	17 (26)	20 (31)	1(2)	65(100)	p= 0.001
	10th to 20th ranked choice	3 (12)	5 (19)	3 (12)	15 (58)	0 (0)	26(100)	
	4th to 10th ranked choice	4(11)	7(19)	7(19)	14(38)	5(14)	37(100)	
	1st to 3rd ranked choice	7(6)	16(13)	22 (18)	62 (52)	13 (11)	120 (100)	
	Total	26 (10)	43 (17)	49 (20)	111 (45)	19 (8)	248 (100)	

Respondent age, gender, ethnicity and number of training programmes preferenced were not associated with global satisfaction.

3.2.3. Factors influencing preferencing decisions

Respondents were asked about the factors influencing their preferencing of training programmes and to rate the importance of 11 different factors in a scale of 0 (no influence at all) to 5 (a lot of influence). Long-term career aspirations for working in a particular sector was the factor rated most highly by the respondents, followed by proximity to respondents' permanent home or where they would like to live long-term (table 11). Information made available by the employer about their organisation and training programme was also important for many with over 57% of the respondents rating this factor 4 or 5 out of 5.

Respondent age, gender or ethnicity were not associated with how they rated the importance of all but three of the listed factors. Ranking of the importance of tier 2 sponsorship availability was significantly associated with ethnicity. Over 43% (n=16) of the respondents of 'any other' ethnicity rated the importance of this factor 5 out of 5 compared to only 3% (n=4) of the respondents of any white ethnicity ($p<0.001$). Similarly, respondents aged 25 or over rated the importance of the long term career aspirations more highly than those less than 25 years with 68% (n=13) vs 64% (n=163) respectively rating the importance of the factor 5 out of 5 respectively ($p=0.041$). Male respondents ranked the importance of salary higher than female respondents with 26% (n=15) of males ranking its importance 5 out of 5 compared to 16% (n=36) female respondents ($p= 0.017$).

Table 11: Respondent ranking of the factors influencing preferencing decisions

Factors	5 (a lot of influence)	4	3	2	1	0 (no influence at all)
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
Proximity to my University/School of Pharmacy	19 (6.5%)	21 (7.1%)	42 (14.3%)	33 (11.2%)	22 (7.5%)	157 (53.4%)
Proximity to my permanent home or by where I would like to live long-term	179 (60.7%)	45 (15.3%)	26 (8.8%)	7 (2.4%)	4 (1.4%)	34 (11.5%)
Existing relationship/s with the employer/s	34 (11.5%)	24 (8.1%)	31 (10.5%)	21 (7.1%)	20 (6.8%)	165 (55.9%)
Long-term career aspirations for working in a particular sector	187 (63.4%)	52 (17.6%)	30 (10.2%)	6 (2%)	5 (1.7%)	15 (5.1%)
Size of the employing organisation	62 (21.1%)	63 (21.4%)	71 (24.1%)	37 (12.6%)	15 (5.1%)	46 (15.6%)
Salary	56 (19%)	66 (22.4%)	61 (20.7%)	33 (11.2%)	23 (7.8%)	55 (18.7%)
Information made available by the employer about their organisation and training programme	81 (27.5%)	89 (30.2%)	58 (19.7%)	31 (10.5%)	14 (4.7%)	22 (7.5%)
Perceived ease of gaining a training place	39 (13.2%)	40 (13.6%)	60 (20.3%)	43 (14.6%)	40 (13.6%)	73 (24.7%)
Tier 2 sponsorship availability	30(10.2%)	0 (0%)	11 (3.7%)	2 (0.7%)	10 (3.4%)	242 (82%)
Peer opinion	12 (4.1%)	36 (12.2%)	46 (15.6%)	42 (14.3%)	28 (9.5%)	130 (44.2%)
Family opinion	29 (9.8%)	50 (16.9%)	60 (20.3%)	52 (17.6%)	21 (7.1%)	83 (28.1%)

Top three factors rated highly by the respondents appear in grey

3.2.4. Reflections on the preferencing decisions and outcomes

Respondents were asked to reflect on their preferencing decisions. The majority agreed or strongly agreed that they had made enough selections in their preferencing decisions and that they were satisfied with their overall approach to the preferencing. However, the majority did not feel that they were confident in receiving an offer (table 12). The majority were in disagreement that preferencing differently would have improved their satisfaction with the offer (table 12).

Table 12: Participant reflections on their preferencing decisions

Statements	Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree	N/A
Looking back, I feel that I made enough selections in the preferencing process	32 (10.9%)	32 (10.9%)	22 (7.5%)	109 (37.1%)	99 (33.7%)	
I was confident I would receive a training place offer from my final preferences	38 (12.9%)	66 (22.4%)	58 (19.7%)	85 (28.8%)	48 (16.3%)	
Looking back, I feel satisfied with my overall approach to preferencing	40 (13.6%)	46 (15.6%)	44 (14.9%)	103 (34.9%)	62 (21%)	
Based on how I feel I performed in the selection process, my overall performance ranking was expected	51 (17.3%)	73 (24.7%)	65 (22%)	82 (27.8%)	20 (6.8%)	4 (1.4%)
Based on how I feel I performed in the selection process, my training place offer outcome was expected	54 (18.3%)	73 (24.7%)	63 (21.4%)	77 (26.1%)	20 (6.8%)	8 (2.7%)
I believe if I had preferenced differently, I would have been more satisfied with my offer outcome	73 (24.7%)	85 (28.8%)	51 (17.3%)	43 (14.6%)	25 (8.5%)	18 (6.1%)
If I went through the preferencing process again, I would preference differently	64 (21.7%)	74 (25.1%)	35 (11.9%)	67 (22.7%)	47 (15.9%)	8 (2.7%)

3.2.5. Satisfaction with information on preferencing process

Participants indicated a high satisfaction with the provision of information about preferencing at presentations and events run by the Universities. Similarly, a majority of the applicants (65.8%) agreed or strongly agreed with the quality of information provided in the applicant handbook (table 13). Respondents were generally satisfied with the length of the time they had available for preferencing decisions although approximately 1 in 6 perceived the decision making time as inadequate. Further areas of improvement which the participants identified related to the listing of the training programmes and support available through HEE online portal on preferencing decisions.

Table 13: Respondent views on information provision

Statements	Strongly disagree	Disagree	Neither	Agree	Strongly agree	Not applicable
I was provided with enough information about preferencing at presentation/events run by my university and/or careers dept.	**10** (3.3%)	**1** (0.3%)	**26** (8.5%)	**90** (29.3%)	**180** (58.6%)	-
I was provided with enough information about preferencing in the Oriel/Health Education England applicant handbook	**18** (6.1%)	**45** (15.3%)	**34** (11.5%)	**128** (43.4%)	**66** (22.4%)	**4** (1.4%)
I was provided with enough information about preferencing on the Oriel/Health Education England application form	**16** (5.4%)	**54** (18.3%)	**54** (18.3%)	**129** (43.7%)	**38** (12.9%)	**4** (1.4%)
I understood the information available to me about the preferencing process	**16** (5.4%)	**38** (12.9%)	**27** (9.2%)	**145** (49.2%)	**64** (21.7%)	**5** (1.7%)
I had enough time to consider my preferences before the deadline	**23** (7.8%)	**30** (10.2%)	**16** (5.4%)	**125** (42.4%)	**92** (31.2%)	**9** (3.1%)
The training place options were listed clearly for preferencing (selection)	**26** (8.8%)	**65** (22%)	**34** (11.5%)	**107** (36.3%)	**55** (18.6%)	**8** (2.7%)
It was easy to make a final decision over my preferencing choices	**49** (16.6%)	**110** (37.3%)	**45** (15.3%)	**69** (23.4%)	**19** (6.4%)	**3** (1%)
I was able to quickly address concerns and/or questions about preferencing using the FAQ link available on the Oriel web page	**46** (15.6%)	**51** (17.3%)	**68** (23.1%)	**49** (16.6%)	**14** (4.7%)	**67** (22.7%)
I was able to quickly address concerns and/or questions about preferencing online support portal	**44** (14.9%)	**43** (14.6%)	**72** (24.4%)	**35** (11.9%)	**16** (5.4%)	**85** (28.8%)

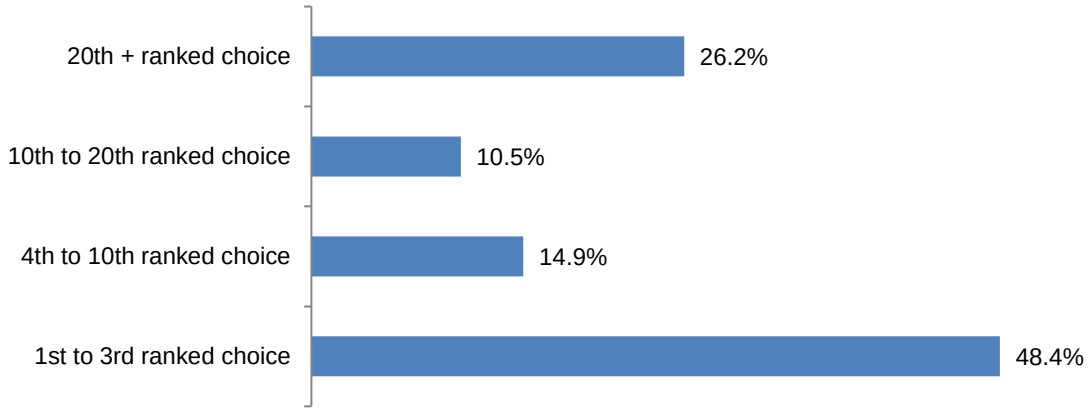
3.2.6. Receiving a training place offer

A total of 264 (89.5%) respondents indicated that they received a training place offer from the national recruitment scheme including 248 (84.1%) in the first round of offer. Of these 233 (93.9%) respondents accepted an offer with or without an opt-in for automatic upgrades with 15 (6%) declining or letting their offers expire. Of those opting for automatic upgrades, a total of 13 (13.7%) obtained an upgraded offer.

Respondent's receipt of the offer of a training programme was not significantly associated with the number of training programmes they preferenced, respondent age or ethnicity. However, gender was associated with respondents' receipt of an offer with female respondents (n=199, 88%) more likely to have received an offer in the first round than the male applicants (n=44, 76%) (p = 0.761).

Approximately half (n=120, 48.4%) of the respondents indicated receiving their 1st to 3rd ranked preferences. The hierarchy of the received offer was not associated with gender, ethnicity, age or the number of programmes preferenced during the application process (figure 2).

Figure 2: Nature of the training programmes offered to the respondents



The most common reason for declining the offer related to having a training place outside the national recruitment scheme (table 14).

Table 14: Reasons for declining an offer

Reason for declining an offer	n (%)
Not satisfied with the training place offer	3 (21.4%)
Received another training place offer, outside Oriel	5 (35.7%)
Decided to pursue alternative pre-registration training places outside ORIEL	4 (28.6%)
Received negative information or feedback about the training place	0
Change in personal circumstances	0
Other	2 (14.3%)

One participant mentioned through open ended comments that many students decided to sign contracts with employers outside of the national recruitment scheme over the 'summer' period while waiting for their decision.

A high majority of the respondents (n=181, 72.9%) were either satisfied or highly satisfied with the offer of the training programmes they received through HEE. However, satisfaction was low amongst respondents who received training programmes through clearing with 56.3% (n=9) respondents expressing they were dissatisfied or very dissatisfied.

3.3. Insights from qualitative data

Over 200 respondents provided open-ended comments in the questionnaire. Forty-five students expressed an interest in participating in focus groups and, of these, 11 confirmed their attendance across three focus group dates. The total number of students interviewed in the focus group setting was four, across the two sessions. Data from the focus groups were analysed alongside the open-ended comments from the questionnaire around preferencing behaviour, factors associated with preferencing decisions, participant reflections preferencing decisions in the context of the outcomes and feedback on the preferencing tool available through the application system. Results of the thematic analysis are presented below.

3.3.1. Factors associated with preferencing decisions

Analysis of the data based on the TDF allowed exploration of key factors associated with applicants' preferencing decisions. A total of nine TDF factors were identified and these are described below with illustrative quotes.

a. Knowledge about the training programmes and prospective employers

Participants alluded to the importance of the information from employers in informing their preferencing decisions. Participants described reading the information sources carefully before making a selection. While participants did speak highly of information from some of the employers, in particular from NHS acute hospital trusts, they felt that other employers lacked key information they were looking for. Many felt that the information uploaded was often very generic and with information specific to the particular programme or employer often sparse.

'The information actually on the preferencing programme for a lot of the large multiples was very generic and very similar, in fact I think it was actually the same for most of them…'

'With the hospitals, they (information) were a lot more different, like one hospital trust would offer something, the other one would offer something else whereas with the community, especially the big chains they were all just copy, like they all sound the same…'

Some participants mentioned exact geographical location for many programmes was not clear from the information on the Oriel system. Such lack of clarity impacted on their preferencing decisions. Some participants suggested the introduction of a search function which would allow proximity searching based on GPS mapping.

*'The specific location of branch on multiples would have been useful. As if you are applying for *** (a community pharmacy chain) in [one geographical area] this could cover quite a few branches. And had the exact location been available my preferences would likely have been very different, as I would be able to be more specific.'*

Participants also suggested further information on working pattern, availability of accommodation and detailed breakdown of pay rates would enable informed decisions.

'More information about each training place offered for example providing a sample timetable for the year so that candidates can understand better about how the year at that place would be.' '

b. Environmental context and resources

Size of the employing organisation was a key factor in preferencing a community pharmacy pre-registration programme with most participants preferring large chain multiple pharmacies over independent community pharmacies. Such preference was mainly down to the perception that the quality of the training programmes offered by the large chain multiple pharmacies would be better compared to the independent pharmacies.

'I did preference the large chain over the independents cause I think when it comes to the quality of the teaching you get it, because you know the large chains have a structured programme, unless you've, like you've had a chance to say go for a week, or a few day in an independent, it's quite difficult to know how, like, how good the quality of teaching you'd get would be.'

Participants also mentioned that their perception of the locality of the employer was also important in informing preferencing decisions, particularly when selecting a community pharmacy pre-registration programme given the greater interaction with the local community in that environment.

'In community you're working in a branch, so you do have to think about location'

A few participants mentioned that they were reluctant to undertake pre-registration training in remote and rural locations, mostly alluding to their preference for living in an urban environment.

'I really just didn't want to based there or in Scot(land), or like just further afield that were really like, say, on the coast or remote, I knew were remote areas, because obviously I was, I'm going to be living there for a year if I go and, as much as I may enjoy the pre-reg, I'd still want some kind of life outside of that wherever I stay'

Greater number and range of post training opportunities after their training were perceived to be an important factor in their preference of bigger cities and urban areas.

I just went for like big cities where I just thought, you know, there's going to be something there for me.

Some participants preferred to stay at their parental home when undertaking their pre-registration programme so as to save on living and accommodation costs.

'I think, it's quite easy to just go home and just be comfortable, …you need to take into account all the other factors of like living, living costs, are you going to rent, things like that, rather than just the actual place itself, which I think is a big reason why so many people go back home for their pre-reg places and I think it's also why I possibly got the place I got, considering the rank I'd got'

However, some were willing to sacrifice their choices of where they preferred to live in order to obtain a highly ranked pre-registration programme.

c. Skills- Opportunity for skills development

Perceived opportunity for skills development was an important factor informing preferencing decisions as highlighted by many participants. One of the key information points that they often sought was the way the employers described how they plan to support trainee skills development.

'…the main things was like the practical experience that I could get from them.'

d. Belief about consequences

Having a 'wise' approach to preferencing of pre-registration programmes was imperative for participants and preferencing decisions was linked to the quality of the offer outcomes. Selecting the 'best' employer would enable them to be a well-trained pharmacist and 'the best' pharmacist as a consequence.

'I can become the best pharmacist that I can become as a result of that (selecting the best employer).'

e. Social influences

The importance of family and peer opinion in informing preferencing decisions was highlighted. Participants mentioned seeking advice from the past trainees of their preferred employers.

*'I think for me it's because I know a lot of people who have been through like ***(a large multiple) pre-regs or ***(a large multiple)'s pre-regs and they've all spoke quite highly of them so I think I trusted them a bit more than like an independent that I'd never really heard of.'*

Some participants described that the need to speak to their acquaintances were often down to lack of information made available by the employers on the training programmes.

'It was more to do with word of mouth and having spoken to other pharmacists who'd done their pre-regs there or other pre-reg students that I got to know a bit more about their, like their, the pre-reg placements that they offered...'

f. Memory attention and decision process

Participants described various ways by which they helped themselves organising and preferencing from the list of hundreds of programmes. One participant mentioned making their own spreadsheet and weighing the 'pros and cons' of the programmes against factors that were important to the participant.

'I kind of had like a table I'd mocked up myself in word with specific columns like wages, distance from home, things like that so, I went through each position one by one and kind of wrote down those key facts so then later when it came to your preferencing process opening up it was quite quick to just drag and drop into the columns that I wanted in the order that I wanted'.

The way preferencing was done was perceived to have a 'big' impact on the outcomes. Selecting 'NHS Acute Hospital' only pre-registration programmes were deemed to disadvantage applicants given the competitive nature of these programmes.

'I know other people approached the programme where they said they only wanted hospital so they didn't even say they don't mind going to community, they excluded all of the community places and, for them, it didn't work out as well so, they didn't get a pre-reg through that at all. Meaning them, they had to apply outside of Oriel because they had discounted themselves from having a place through Oriel, with a community pharmacy-Q?'

Some participants described the diverse nature of the advice that they had received about how many preferences was adequate and these ranged from 20 to 70, despite no such guidance being issued by HEE.

'We were told to preference at least 70 at uni so, it's quite difficult to think of 70 places that you could actually see yourself working, maybe for a year'

A few described that applicants often tended to 'over preference' to be on the safe side.

'They went to a large amount of effort to really rank everything because they were scared if they didn't do as well as they hoped they wouldn't get a place'.

Some participants explained that more time was needed for preferencing decisions and that the preferencing be kept open after the selection centre.

'Once you have preferenced, I think there should be the option to edit them after saving. This should have no need to be fully submitted months before the assessment process'

g. Social, professional role and identity

Participants mentioned bringing in experiences of working in a particular sector and they could see training themselves in the same area. Many had aspired to become either a 'hospital' or a 'community' pharmacist and the pre-registration training was stepping stone to fulfil their aims.

'I know a lot of people had done placements at hospitals, which are, normally quite difficult to get but then, with the introduction of the Oriel system they didn't have the like 'in' or edge to get a place there by knowing people. I was quite lucky [with the place I got, considering] I hadn't done any [work experience]'

h. Motivation and goals

Participants demonstrated high motivation in securing the employers they ranked highly and some were willing to sacrifice their geographical preference if it meant obtaining an offer from a highly ranked employer.

'Even though it wasn't anywhere near where I lived it was just because I thought, this has been recommended as a really good teaching programme that I might as well go out there and try my best to get that programme…'

I had gone for the ones near home for the community [programmes in my preferences], because I knew I wanted hospital more than community, I made the choice that if I got community I'd want one near home. Purely because I think I was more willing to make a sacrifice on where I was living for a hospital place rather than a community place.

i. Emotions: Optimism/Pessimism

While many participants were positive about their prospect of securing a pre-registration programme, national competition meant that others were less hopeful of securing their highly ranked programmes.

'…to get a London, like university hospital, you'd probably have to have ranked in like say the top 200 at least'

Some participants mentioned that having information available on the popularity of each programme during the preferencing process would allow them to preference accordingly.

'There should be more information about the likelihood of obtaining a place based on how many you preference. More information made available in an easy format to allow you to compare trusts'.

3.3.2. Perceptions on the offer outcomes

Participants expressed a range of emotions in describing their reactions to the offer outcomes. These included outcomes better than expected, as expected or worse than expected. The focus group participants were mostly highly satisfied with their offer outcomes.

'I didn't expect to get the, the offer that I did get which was quite higher up in my [preferences]'
'the way they had said, like, preference so many I was surprised to get something so high but, I was happy but I was, it was a surprise as well'
'I didn't feel I did that well on the interview assessment day so I was surprised'

Some participants mentioned that the performance outcomes in the selection centre exams did not match those at the University.

'Students who did NOTHING throughout the 4 years and got great placements, while students who spent their whole summer gaining experience received no offer.'

3.3.3. Accepting or declining an offer

Participants described weighing up their offer in the context of the perceived quality of training programme and the prospects after the training when weighing up to accept or decline their offer.

'I'm quite excited by the fact it's going to be something new and, I know it's a place where I will be like pushed to work hard and achieve more than I may have if I'd chosen somewhere, say at a community pharmacy where I was just, I knew pretty much what I was going to get and I'm also, it's also the fact that I know it's quite a reputable place and then I think it's the job prospects after that'

Participants mentioned the use of upgrade functions in enhancing their offer. However, some were apprehensive that opting for upgrades would mean losing the 'control' of their current offers.

'For me to go into upgrade it was like letting go of control of the position I was given and I didn't want to give up that control, which is why I didn't go into upgrade'

3.3.4. Reflecting back

Participants described how they would approach the preferencing next time if they had the opportunity to do so. Some mentioned that they would rank more of the hospital pre-registration programmes in their top choices given the realisation of the competitive nature of these programmes. However, others felt content about how they had preferenced.

‘My top four or five, were hospitals but, then I thought, if I didn't get those hospitals I'd rather get a community placement near home but, thinking back on it now, I would rather have just gone for hospitals over community in general.’

3.3.5. Applicant views on the preferencing tool

Participants were generally positive about the preferencing tool. Most demonstrated an understanding of how the preferencing system worked and spoke highly of how the listing of the employers and filtering system were laid out.

‘I thought it was really well done in the sense of, it had literally every single place on it and the timeframe you were given allows you to like literally consider all the places’.

‘I think the filtering system was actually really good and useful cause otherwise, if you're just scrolling and scrolling through all these different places it gets quite confusing and you can easily miss something that you may have wanted to preference.’

The participants of the focus groups, however, raised some technical issues. Some participants mentioned that they found ranking far down the order a bit tasking.

‘I noticed when I dragged the boxes across they sometimes jumped about and that was obviously quite confusing cause it might drag something that I wanted to be at number 30 to say like number 5 or something.’

Some participants highlighted the need for more training session on the preferencing process.

4. Discussion

This is the first large scale evaluation of applicant preferencing behaviour and perceived factors influencing such behaviour amongst applicants of pre-registration pharmacist programmes in the UK.

The results of this evaluation has shown that applicants to the 2017 recruitment scheme showed a high affinity towards hospital pre-registration programmes. The workforce census of the General Pharmaceutical Council suggests approximately 71% and 21% of UK registered pharmacists work in the community and hospital sectors respectively.[16] However, a vast majority of the applicants (over 80%) to the pre-registration recruitment scheme preferred training programmes in a hospital sector. Over 75% of all pre-registration programmes in England and Wales were made available through the national recruitment scheme including all hospital pre-registration programmes. Therefore, even considering the number of community pharmacy pre-registration programmes available outside the national recruitment scheme, the data of this evaluation shows that hospital pre-registration programmes were highly oversubscribed.

The results of the survey suggest that long-term career aspiration was an important factor in students' preference of a pre-registration programme. This suggests that the vast majority of the applicants aspired to become a hospital pharmacist. While pharmacy students often assume higher earning potential in a community pharmacy environment; literature review suggested that factors such as opportunities for career progression, opportunity to interact with patients, further education and professional development are perceived to be better available in a hospital oriented career than in a community pharmacy environment (section 1.2). Long-term evaluations should describe how career aspirations of pharmacy students change over time given the greater clinical roles and diversification of pharmacy workforce in relation to recent policy initiatives.

There was a strong geographical variation in the preferencing of pre-registration programmes. Data suggests that pre-registration training programmes in London and other urban areas were highly subscribed with less number of applicants preferencing training programmes in areas such as the North East of England and Wales. Earlier evaluation[3] data on fill rates showed that HEE London was amongst the areas experiencing highest fill rates, whereas, the southern areas experienced the lowest fill rates. Results of the qualitative data analysis provided reasons for such variations with applicants' desire to live in an urban environment as one of the key factors associated with such preferencing decisions. Social isolation and lack of family support are amongst key barriers to uptake of the rural training programmes as per the reviewed literature. In addition, higher prospects of further career opportunities in urban areas were identified by the study participants. It has been shown that rural placements during undergraduate degrees can change such perceptions (section 1.2).

This evaluation has shown that applicant preferencing of training programmes is not significantly different across gender groups. However statistically significant differences were observed across ethnic characteristics and schools of pharmacy in their preferencing patterns. Further research needs to be conducted to explain such differences in preferencing patterns.

Results of the survey have shown that approximately half of the applicants were satisfied or highly satisfied with another 1 in 5 expressing neither satisfaction nor dissatisfaction with the preferencing process. Study participants alluded to various factors associated with their global satisfaction or dissatisfaction with the preferencing process and these were often linked to participant views of the national recruitment scheme rather than the preferencing process itself. Reasons for satisfaction included convenience of the opportunity to submit applications to multiple employers. Dissatisfaction was linked to lack of opportunity to locally negotiate training programmes. The timing of the evaluation however, could have played a part in participants' satisfaction or dissatisfaction with the preferencing process as the survey was conducted after the offer outcomes were released. Inferential analysis supports this notion as those who preferenced community pharmacy programmes in their higher ranked preferences, and those who obtained an offer from their higher ranked preferences were more likely to express higher satisfaction. Qualitative data suggests that given the number of training programmes available, preferencing decisions were found to be tasking and suggestions were made about extending the preferencing timelines and improved technical tool to support geographical preferencing. These changes are likely to positively influence greater satisfaction with the preferencing process.

The majority of the respondents of the survey were satisfied with their preferencing decisions. However approximately a third expressed that on reflection, their preferencing was not appropriate in the context of the outcomes received. A similar proportion would have preferenced differently if another opportunity was available. Under-estimation of the competitive nature of the hospital pharmacy programmes and not preferencing adequate number of programmes were amongst key reasons identified by the participants. It will be useful for future recruitment cycles to build on this feedback as part of the training for University staff and students.

The qualitative data from the evaluation enabled the further identification and explanation of factors associated with preferencing decisions and associated reasons for perceived importance. Information uploaded by the employers was found to be key in enabling the applicants to make a decision. There is a scope to harmonise and improve the level of information that is published by employers in the recruitment scheme to allow students to make an informed decision. Other factors that were found to be key to informing applicant preferencing behaviour included perceived opportunity for skills development, level of resources

to support training, knowledge about local community (relevant for community pharmacy training programmes) and views of past trainees of their preferred employer.

Applicants mentioned that Schools of Pharmacy strongly encouraged students to apply through the national recruitment scheme indicating high engagement from stakeholders. Applicants provided positive feedback on the information they received from the applicant handbook. However, participants identified that improvements in the online support portal could help them with preferencing decisions.

Only a very small number of applicants who declined an offer through the recruitment scheme participated in the evaluation survey and focus groups. Key reasons for declining an offer included receiving another training place outside the national recruitment scheme and not being satisfied with the training place offer.

Strengths and limitations

This is the first large scale evaluation of applicant behaviour in relation to employer preferencing for a pharmacist pre-registration training programme in the UK. A complete dataset from the applicant preferencing of programmes for the 2017/18 recruitment cycle was available.

The survey and the qualitative focus groups allowed in-depth investigation of the factors associated with applicant preferencing decisions. The questionnaire and topic guide was developed based on existing literature, use of theory and expert panel validation. Use of TDF allowed a systematic data collection and interpretation in relation to factors associated with preferencing decisions. Due to the sensitivity of the timelines, it was not possible to undertake a pilot study. However, participant responses on the survey and focus groups suggested that the data collection tool was clear and measured the intended outcomes.

The responses to the survey and focus groups were low. It is highly likely that this can be explained by the survey and focus groups being conducted during MPharm final year exam period. There may have been differences in the level of engagement with the evaluation from different Schools of Pharmacy as the response rate varied across Schools. Nevertheless, this evaluation represents responses from over 300 respondents and a vast majority of respondents provided qualitative data that was supplementary to the focus group data thereby providing in-depth evaluation of factors associated with preferencing decisions.

5. Conclusion and Recommendations

This evaluation has demonstrated a high preference of pharmacy students to undertake pre-registration training in NHS Acute hospitals. Long-term career aspiration was considered very important to applicants and affected how they preferenced training programmes. A further in-depth investigation into the reasons for such high preferences for hospital pre-registration training programmes may shed additional light into applicant behaviour. Longitudinal studies may explain how career aspirations of pharmacy students change over time given the greater clinical roles and diversification of pharmacy workforce in relation to recent policy initiatives.

This evaluation has also shown that applicants preferred training programmes in urban areas. Applicants often preferenced employers in the same HEE region as their Schools of Pharmacy. Training programmes in London received a high number of applicants preferencing at least one programme. In the qualitative investigation, applicants described their desire to live in an urban environment and such preference was linked to a perceived wider availability of post-training career opportunities. Recruitment in remote and rural areas may benefit from widening awareness of the job opportunities available for pharmacists. There is also scope to undertake future evaluation of the impact of promoting rural placements during undergraduate training, an approach often described in the literature as a way to improve recruitment and retention post degree qualification in such areas.

While approximately half of the applicants were satisfied with the preferencing process, there is scope to improve global satisfaction amongst them. While some of these may be linked to a lack of desirable offer outcomes given the timing of the evaluation and as observed in the inferential analysis, participant feedback on improving the preferencing process should be considered. These include widening the timeframe of the preferencing process, improved methods of employer listing and more geographical detail of where training sites are located.

Programme information was key to how applicants decide on preferencing an employer. Feedback from the applicants suggested that while hospital pre-registration programmes often contained detailed level of information, this depth seemed to be missing from community pharmacy employer programme descriptions. Employer views on provision of information and recruitment should be explored further.

It will also be of benefit to explore trainee experiences of pre-registration programmes in various sectors. This will determine the validity of applicant perceptions that the quality of the training is linked to the size and resources of the employing organisation, particularly in the community pharmacy sector.

It will also be useful to repeat the evaluation of preferencing behaviour in 2018/19 to assess how planned changes to the Recruitment Scheme such as an extended window for preferencing and the enhanced preferencing feature whereby applicants can add, delete or reorder preferences have impacted.

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Appendices

Appendix 1: Survey questionnaire version 2 dated 23.03.18

Pre-registration Training Place Preferencing and Training Place Offers through ORIEL: MPharm student views and experiences

Dear student,
You are being invited to take part in a survey being conducted by Health Education England in collaboration with the University of Birmingham. Please read this information sheet before taking part in the survey. Please feel free to discuss any questions presented in the questionnaire with your peers or University staff before you answer them.

What is the purpose of the survey?
This survey aims to understand students' views and experiences of the ORIEL National pre-registration pharmacist recruitment scheme. During the application process, you were asked to preference ('select') the employers you were interested in undertaking pre-registration training with. In particular, we are keen to understand what factors influenced your preferencing decisions and what impact you perceive the preferencing process had over the offer outcomes. This study is part of a larger, long-term evaluation strategy exploring stakeholder acceptability and long-term impact of the National recruitment scheme on education, training and placement quality.

Why have I been chosen?
This invitation has been sent to all 4th Year MPharm students across the Schools of Pharmacy in England and Wales who were eligible to apply for a training place in the ORIEL National Pre-registration Pharmacist Recruitment Scheme in 2017.

Do I have to take part?
No. Participation in this survey is voluntary.

What will happen to me if I take part?
If you decide to take part, you should complete and submit the survey. This should take between 10-15 minutes to complete. As your survey responses will be anonymous, it will not be possible for you to withdraw participation after completion and return of the completed questionnaire.

What are the possible benefits of taking part?
While the research will be of no direct benefit to you, the findings will help us to understand students' experiences and views in relation to the ORIEL preferencing process and outcomes. Results may inform future recruitment process and policy and will enable appropriate advice and training to be offered by Health Education England and the Universities, to suit future applicants' needs.

Will my contribution to this study be kept confidential?
The survey responses will be completely anonymous. You will not be identified in any way in the reports. You will be requested to provide your contact details within the survey only if you would like to express willingness to participate in a further study or if you wish to receive a copy of the study report. Your contact information will not be used for any other purpose and will be removed from the survey data prior to review and analysis, so that your survey responses remain anonymous.

What will happen to the results of the research study?
We can send you a short report of the findings on request. The full findings of the study will be presented locally, at national and international conferences, and submitted for publication in a peer-reviewed journal. If you are interested in receiving the study report, you will have the opportunity to provide your contact details in the relevant section of the survey.

Who is organising and funding the research?
This evaluation study is being funded and conducted as part of the Health Education England Pre-Registration Pharmacist Recruitment Evaluation Strategy.

Who has reviewed the study?
The study has been reviewed by an expert reviewer and approved by the ethical review panel at the University of Birmingham. The study has also been reviewed by the Pre-Registration Pharmacist Recruitment Evaluation Steering Group at Health Education England.

What next?
If you decide to take part in the research, please complete and submit the questionnaire.
The second phase of the study involves focus groups or telephone interviews, facilitated by our researcher/s. Within the survey, you will be given the opportunity to express your individual interest to participate in this second phase.

Thank-you
On behalf of the evaluation team, thank you for your time and consideration in reading this information sheet. If you have further questions about this study, please contact:

Laura McEwen-Smith
laura.mcewen-smith@hee.nhs.uk
07500765608

SURVEY QUESTIONS

1. Please confirm you consent to taking part in this survey [*tick box – logic applied to limit progression into survey unless box is ticked*]

2. Did you apply to take part in the ORIEL pre-registration pharmacist recruitment process in 2017?

Yes

No

If you answered 'No' to the above, please proceed straight to Section C

3. Please indicate your agreement with the following statement:

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
My university actively encouraged application for pre-registration training through Oriel	○	○	○	○	○

Section A: About your preferencing of prospective employers

Narrative: Preferencing refers to the process during the application process, whereby you selected the employers you were interested in undertaking your pre-registration training with.

4. In the following table, please rate your agreement or disagreement with the statements about **preferencing:**

Mark your answers by placing a tick ✓in the circle on each line corresponding to your agreement rating

	Strongly disagree	Disagree	Neither	Agree	Strongly agree
During the application process, I was provided with enough information about preferencing:					
a) Presentation/event run by your university and/or careers dept.	○	○	○	○	○
b) In the ORIEL/Health Education England applicant handbook	○	○	○	○	○
c) On the ORIEL/Health Education England application form	○	○	○	○	○
I understood the information available to me about the preferencing process	○	○	○	○	○
I had enough time to consider my preferences before the deadline	○	○	○	○	○
The training place options were listed clearly for my selection	○	○	○	○	○
It was easy to make a final decision over my preferencing choices	○	○	○	○	○
I was able to quickly address concerns and/or questions about preferencing using the FAQ link available on the ORIEL web page	○	○	○	○	○
I was able to quickly address concerns and/or questions about preferencing online support portal	○	○	○	○	○

5. Overall, how satisfied were you with the preferencing process, when completing your application?

Very dissatisfied	**Dissatisfied**	**Neither satisfied nor dissatisfied**	**Satisfied**	**Very satisfied**
○	○	○	○	○

6. How many training place options did you preference?

____ [free text – limited to numbers only]

7. Which sectors of pharmacy featured in your programme preferences? (*Select all that apply)*

NHS Acute Hospital
Community Pharmacy – Large Chain Multiple
Community Pharmacy – Medium/Small Independent Multiple
Community Pharmacy – Independent
Cross-sector

8. Which sectors of pharmacy featured in your highest ranked (i.e. your 'top ten') programme preferences? (*Select all that apply)*

NHS Acute Hospital

Community Pharmacy – Large Chain Multiple

Community Pharmacy – Medium/Small Independent Multiple

Community Pharmacy – Independent

Cross-sector

9. Using a scale of 5 = a lot of influence and 0 = no influence at all, please indicate to what extent the following factors influenced your preferencing decisions:

	5	4	3	**2**	1	0
Proximity to my University/School of Pharmacy	○	○	○	○	○	○
Proximity to my permanent home or by where I would like to live long-term	○	○	○	○	○	○
Existing relationship/s with the employer/s	○	○	○	○	○	○
Long-term career aspirations for working in a particular sector	○	○	○	○	○	○
Size of the employing organisation	○	○	○	○	○	○
Salary	○	○	○	○	○	○
Information made available by the employer about their organisation and training programme	○	○	○	○	○	○
Perceived ease of gaining a training place	○	○	○	○	○	○
Tier 2 sponsorship availability	○	○	○	○	○	○
Peer opinion	○	○	○	○	○	○
Family opinion	○	○	○	○	○	○

10. Please indicate your agreement with the following statements with regards to your approach to preferencing:

	Strongly disagree	Disagree	Neither agree or disagree	**Agree**	Strongly agree
Looking back, I feel that I made enough selections in the preferencing process	○	○	○	○	○
I was confident I would receive a training place offer from my preference list	○	○	○	○	○
Looking back, I feel satisfied with my overall approach to preferencing	○	○	○	○	○

Section B: Training place offers

11. Did you receive a training place offer through Oriel?

Yes

No

If you answered 'no' to the above, please proceed to Question 16

12. Which of your preferenced training places were you offered?

1st – 3rd choice
4th – 10th choice
10th – 20th choice
20th + choice

13. Did you accept your **first** offer?

Yes – accepted
Yes – accepted, with opt-in to automatic upgrades
No

14. If you answered no to the above, please indicate why

Offer declined
Offer expired

15. If you opted in to automatic upgrades, did you receive an upgraded offer?

Yes – offer accepted
Yes – offer declined
Yes – offer expired
No
Not applicable

16. If your training place offer was declined or expired, please indicate why:

Not satisfied with the training place offer
Received another training place offer, outside Oriel
Decided to pursue alternative pre-registration training places outside ORIEL
Received negative information or feedback about the training place
Change in personal circumstances
Other [free text]

17. Please indicate how satisfied you were with the training place offer you received through Oriel?

Very dissatisfied	**Dissatisfied**	**Neither satisfied nor dissatisfied**	**Satisfied**	**Very satisfied**
○	○	○	○	○

If you were dissatisfied or very dissatisfied with your offer, please tell us more about why [optional free text]:

18. Were you entered into the clearing process?

Yes
No
Not applicable

If you answered no or not applicable, please proceed to Question 22

19. Did you receive a training place offer through clearing?

Yes

No

If you answered no, please proceed to Question 22

20. Please indicate how satisfied you were with the training place offered to you through clearing?

Very dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Very satisfied
○	○	○	○	○

If you were dissatisfied or very dissatisfied with your offer, please tell us more about why [optional free text]:

21. Did you accept the training place offered through clearing?

Yes – accepted

No

22. If you answered no to the above, please indicate why

Offer declined

Offer expired

23. If this offer was declined or expired, please indicate why:

Not satisfied with the training place offer

Received another training place offer, outside ORIEL National recruitment process

Decided to pursue alternative pre-registration training places outside ORIEL

Received negative information or feedback about training place

Change in personal circumstances

Other [include field for free text]

24. In the following table, please rate your agreement or disagreement with the statements about the selection process outcomes.

Mark your answers by placing a tick ✓in the circle on each line corresponding to your agreement rating

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Not applicable
The overall performance ranking I received was expected, based on how I feel I performed in the selection process	○	○	○	○	○	○
My initial outcome in terms of a training place offer was expected, based on how I feel I performed in the selection process	○	○	○	○	○	○
I believe if I had preferenced differently, I would have been more satisfied with my offer outcome	○	○	○	○	○	○
If I went through the preferencing process again, I would preference differently	○	○	○	○	○	○

25. Did you change your mind after accepting a training place offer?

Yes, before the employer received my information
Yes, after the employer received my information
No / not applicable

26. If yes, please indicate why: (*Select all that apply)*

Not satisfied with the training place offer
Received another training place offer, outside ORIEL
Decided to pursue alternative pre-registration training places outside ORIEL
Received negative information or feedback about training place
Change in personal circumstances
Other [include field for free text]

27. Did you also apply for pre-registration training place outside of the ORIEL recruitment scheme?

Yes, prior to my ORIEL application
Yes, during the ORIEL recruitment process
No

28. Did you obtain a training place offer from an employer outside of the ORIEL recruitment scheme?

Yes, accepted
Yes, declined
No
Not applicable

29. Do you have any suggestions about how we could improve the recruitment scheme for future applicants? [optional free text]

30. Our researchers would like to discuss your views and experiences in more depth and will be holding a number of focus groups to support this. **If you are interested in taking part in one of these focus groups, please provide us with your contact information below**. Please note: this information will be removed prior to survey data review and analysis so your responses remain completely anonymous. For more information on how we store and use your contact information please refer to the participant information sheet.

Name:
Email:
Telephone (mobile):

Section C: Non-participation in the ORIEL recruitment scheme

31. If you chose not to apply for a pre-registration training place through the ORIEL recruitment scheme, please indicate why (*select any that apply*):

I had already received an unconditional offer for pre-registration training place outside ORIEL
My preferred employer was not registered with the ORIEL scheme
I am seeking pre-registration training outside of England and Wales
I was/am unable to meet visa requirements for the pre-registration year
I am taking a gap-year before undertaking pre-registration
I do not wish to pursue a career as a pharmacist/looking at alternative career options
Any other reason (please state)

32. Please indicate which sector you are seeking to train in (select any that apply):

Hospital Pharmacy
Community Pharmacy – Large Chain Multiple
Community Pharmacy – Medium/Small Independent Multiple
Community Pharmacy – Independent
Industry
Other (please state)

33. Have you been successful in gaining a training place?

Yes
No, currently awaiting outcome of applications/interviews
No, applications/interviews unsuccessful
No

34. Our researchers would like to discuss your views and experiences in more depth. **If you are interested in taking part in a short telephone interview, please provide us with your contact information below**. Please note: this information will be removed prior to survey data review and analysis so your responses remain completely anonymous. For more information on how we store and use your contact information please refer to the participant information sheet.

Name:
Email:
Telephone:

Section D: About you

35. Gender: What is your gender?

Male
Female
I do not wish to disclose my gender

36. Age: What is your age?

____ [free text – limited to numbers only]

37. Ethnic Origin: Please specify your ethnicity:

White – British
White – Irish
Any other white background
Mixed White and black Caribbean
Mixed White and black African
Mixed White and Asian
Any other mixed background
Asian or Asian British – Indian
Asian or Asian British – Pakistani
Asian or Asian British – Bangladeshi
Any other Asian background
Black or Black British – Caribbean

Black or Black British – African
Any other black background
Chinese
Any other ethnic group
I do not wish to disclose my ethnicity

38. Which School of Pharmacy do you attend?

Aston University
Cardiff University
De Montfort University
Keele University
King's College, University of London
Kingston University London
Liverpool John Moores University
Medway School of Pharmacy, Universities of Greenwich and Kent
Newcastle University
University College London
University of Bath
University of Birmingham
University of Brighton
University of Central Lancashire
University of East Anglia
University of Hertfordshire
University of Huddersfield
University of Lincoln
University of Manchester
University of Nottingham
University of Portsmouth
University of Reading
University of Sunderland
University of Wolverhampton
University of Bradford
Other - please specify Free text option here

Appendix 2: Focus group topic guide version 1 dated 27.02.18

Pre-registration Training Place Preferencing and Training Place Offers through ORIEL: MPharm student views and experiences

TOPIC GUIDE

Hello, welcome. Thank you very much for taking the time out of your day to participate in this study. The overall goal is to hear your thoughts about [*give brief description of the study*]. In particular, we are interested in your views about [*give the aims of the focus group as they relate to the study*].
As far as the focus group sessions are concerned, there are a few 'ground rules':

- I might move you along in conversation. Since we have limited time, I'll ask that questions or comments off the topic be answered after the focus group session
- I'd like to hear everyone speak so I might ask people who have not spoken up to comment
- Please respect each other's opinions. There is no right or wrong answer to the questions I will ask. We want to hear what each of you think and it is okay to have different opinions.
- We would like to stress that we want to keep the sessions confidential so we ask that you not use names or anything directly identifying when you talk about your personal experiences. We also ask that you not discuss other participants' responses outside of the discussion. However, because this is in a group setting, the other individuals participating will know your responses to the questions and we cannot guarantee that they will not discuss your responses outside of the focus group.
- Just a reminder that we will be audio recording the interviews so that we don't miss anything important and so that we can go back and revisit the information if we need to. If at any point, you want us to turn off the recorder, please let us know.

Do you have any questions for us at this stage? Okay, thank you.
Again, your participation here today is totally voluntary. So, if you are okay with moving forward, we would like to get your consent [*verbal consent obtained and recorded*].

QUESTIONS TO BE ASKED IN THE FOCUS GROUP SESSION

If required, suggested prompting points in italics

Part 1: About you

1. Demographic information captured through participant poll (not verbalised).

Part 2: Your preferencing choices

Remind participants what the 'preferencing process' involved and give explanation about any related terminology that you will be using for the next few questions i.e. clearing.

2. What did you think of the programme preferencing process?
    a. *What did you think of the way the programme options were listed for your selection on the application form?*
    b. *What did you think of the information provided to you about the programmes by employers?*
    c. *Which factors attracted you to a programme?*

3. Tell me about how you approach the programme preferencing process
    a. *How did you go about selecting your preferences, in the window of time available to you?*
    b. *What was most important to you when identifying your positive programme preferences?*
    c. *What or whose advice was most important to you in your decision making?*

4. Thinking about the ratio of different sector programmes within your preferencing choices: did one sector (or sub-sector) feature more heavily than other/s?
    a. *What are your reasons for this?*

5. If you were to go through the preferencing process again, would you approach it differently?
    a. *Why?*
    b. *How?*
    c. *What advice would you give future applicants?*

6. Did any of you enter the clearing process?
    a. *How did you feel about the sector restriction?*
    b. *Did you approach clearing differently in terms of your preferencing?*

Part 3: Your pre-registration training place offer

Remind participants how the offers process worked (based on ranking) and give explanation about any related terminology that you will be using for the next few questions.

7. What did you think of your overall performance ranking after selection?
    a. *Was it better or worse than you expected? Why?*
    b. *What do you understand about how your ranking affected the training place offer you received?*

8. How do you feel about the training place offer you have received as a result of participating in the Oriel scheme?

9. Did any of you withdraw your acceptance of a training place offer after initially accepting?
    a. *Was this before or after the offers process had closed?*
    b. *What were your reasons for withdrawing?*

10. Did any of you also apply for pre-registration training place outside of the ORIEL recruitment scheme? Why? Where?

11. Is there anything else you would like to add with regards to your experiences with preferencing or training place offers?

We've come to the end of our questions. Thank you very much for your participation today. We really appreciate the opportunity to hear your views and experiences [*remind participants how to request short report and close*].

Appendix 3: Preferencing of NHS acute hospitals only pre-registration programmes by applicants across Schools of Pharmacy

University	Total applicants	Applicants preferencing hospital only programmes		Lower 95% CI	Upper 95% CI
		%	n		
Aston University	119	0.08	9	0.04	0.14
Cardiff University	86	0.24	21	0.16	0.35
De Montfort University	118	0.08	9	0.04	0.14
Durham University	48	0.21	10	0.10	0.35
Keele University	74	0.14	10	0.07	0.23
King's College, University of London	116	0.09	11	0.05	0.16
Kingston University London	131	0.08	10	0.04	0.14
Liverpool John Moores University	105	0.10	10	0.05	0.17
Medway School of Pharmacy, Universities of Greenwich and Kent	91	0.15	14	0.09	0.24
Queen's University Belfast	19	0.00	0	0.00	0.00
Robert Gordon University	34	0.09	3	0.02	0.24
University College London	155	0.05	8	0.02	0.10
University of Bath	122	0.23	28	0.16	0.31
University of Birmingham	54	0.17	9	0.08	0.29
University of Brighton	115	0.06	7	0.02	0.12
University of Central Lancashire	116	0.04	5	0.01	0.10
University of East Anglia	71	0.07	5	0.02	0.16
University of Hertfordshire	123	0.06	7	0.02	0.11
University of Huddersfield	57	0.11	6	0.04	0.22
University of Lincoln	35	0.11	4	0.03	0.27
University of Manchester	131	0.10	13	0.05	0.16
University of Nottingham	203	0.14	29	0.10	0.20
University of Portsmouth	77	0.14	11	0.07	0.24
University of Reading	93	0.19	18	0.12	0.29
University of Strathclyde	27	0.22	6	0.09	0.42
University of Sunderland	113	0.04	5	0.01	0.10
University of Ulster	3	0.33	1	0.01	0.91
University of Wolverhampton	71	0.08	6	0.03	0.17
University of Bradford	44	0.02	1	0.00	0.12
Other	143	0.05	7	0.02	0.10

Appendix 4: Preferencing of community only pre-registration programmes by applicants across Schools of Pharmacy

University	Total number of applicants	Applicants preferencing community only programmes		lower 95% CI	Upper 95% CI
		%	n		
Aston University	119	0.07	8	0.03	0.13
Cardiff University	86	0.03	3	0.01	0.10
De Montfort University	118	0.08	10	0.04	0.15
Durham University	48	0.02	1	0.00	0.11
Keele University	74	0.03	2	0.00	0.09
King's College, University of London	116	0.01	1	0.00	0.05
Kingston University London	131	0.06	8	0.03	0.12
Liverpool John Moores University	105	0.03	3	0.01	0.08
Medway School of Pharmacy, Universities of Greenwich and Kent	91	0.07	6	0.02	0.14
Queen's University Belfast	19	0.00	0	0.00	0.00
Robert Gordon University	34	0.03	1	0.00	0.15
University College London	155	0.02	3	0.00	0.06
University of Bath	122	0.03	4	0.01	0.08
University of Birmingham	54	0.04	2	0.00	0.13
University of Brighton	115	0.03	4	0.01	0.09
University of Central Lancashire	116	0.04	5	0.01	0.10
University of East Anglia	71	0.01	1	0.00	0.08
University of Hertfordshire	123	0.00	0	0.00	0.00
University of Huddersfield	57	0.00	0	0.00	0.00
University of Lincoln	35	0.06	2	0.01	0.19
University of Manchester	131	0.05	6	0.02	0.10
University of Nottingham	203	0.01	3	0.00	0.04
University of Portsmouth	77	0.00	0	0.00	0.00
University of Reading	93	0.01	1	0.00	0.06
University of Strathclyde	27	0.00	0	0.00	0.00
University of Sunderland	113	0.01	1	0.00	0.05
University of Ulster	3	0.00	0	0.00	0.00
University of Wolverhampton	71	0.06	4	0.02	0.14
University of Bradford	44	0.05	2	0.01	0.15
Other	143	0.03	5	0.01	0.08

Appendix 5: Distribution of preferences across HEE local areas by ethnicity 12.

	Ethnicity	Total number of applicants of this ethnicity	Number of applicants	% applicants within ethnic category	Lower 95% CI	Upper 95% CI
	HEE - East Midlands					
Top three categories	Chinese	245	231	94.3	90.6	96.8
	White - Irish	22	19	86.4	65.1	97.1
	Missing	65	52	80.0	68.2	88.9
Bottom three categories	Asian or Asian British – Pakistani	152	91	59.9	51.6	67.7
	Black or Black British - Caribbean	104	48	46.2	36.3	56.2
	Asian or Asian British - Bangladeshi	13	6.0	46.2	19.2	74.9
	HEE - East of England					
Top three categories	Chinese	245	232	94.7	91.1	97.1
	Any other mixed background	16	14	87.5	61.7	98.4
	White - Irish	22	19	86.4	65.1	97.1
Bottom three categories	Asian or Asian British - Bangladeshi	545	368	67.5	63.4	71.4
	Asian or Asian British - Indian	6	4	66.7	22.3	95.7
	Asian or Asian British - Pakistani	336	188	56.0	50.5	61.3
	HEE - Kent, Surrey and Sussex					
Top three categories	Chinese	245	227	92.7	88.6	95.6
	Any other mixed background	16	14	87.5	61.7	98.4
	White - Irish	22	19	86.4	65.1	97.1
Bottom three categories	Asian or Asian British - Pakistani	104	58	55.8	45.7	65.5
	Asian or Asian British - Bangladeshi	336	179	53.3	47.8	58.7
	Mixed White and black Caribbean	6	2	33.3	4.3	77.7
	HEE - London					
Top three categories	Chinese	245	235	95.9	92.6	98.0
	Any other mixed background	16	15	93.8	69.8	99.8
	Black or Black British - Caribbean	325	300	92.3	88.9	95.0
Bottom three categories	Mixed White and black African	7	5	71.4	29.0	96.3
	White - British	545	374	68.6	64.5	72.5
	Asian or Asian British - Pakistani	336	219	65.2	59.8	70.3
	HEE - North East					
Top three categories	Chinese	245	220	89.8	85.3	93.3
	White - Irish	22	18	81.8	59.7	94.8
	Mixed White and Asian	65	47	72.3	59.8	82.7
Bottom three categories	Black or Black British - Caribbean	104	43	41.3	31.8	51.4
	Asian or Asian British - Indian	444	180	40.5	35.9	45.3
	Mixed White and black Caribbean	13	5	38.5	13.9	68.4

	Ethnicity	Total number of applicants of this ethnicity	Number of applicants	% applicants within ethnic category	Lower 95% CI	Upper 95% CI
	HEE - North West					
Top three categories	Chinese	245	238	97.1	94.2	98.8
	White - Irish	22	20	90.9	70.8	98.9
	Mixed White and black African	21	18	85.7	63.7	97.0
Bottom three categories	Asian or Asian British - Bangladeshi	104	54	51.9	41.9	61.8
	Mixed White and black Caribbean	6	3	50.0	11.8	88.2
	Black or Black British - Caribbean	13	6.0	46.2	19.2	74.9
	HEE - South West					
Top three categories	Chinese	245	230	93.9	90.1	96.5
	White - Irish	22	19	86.4	65.1	97.1
	Any other mixed background	65	49	75.4	63.1	85.2
Bottom three categories	Asian or Asian British - Pakistani	6	3	50.0	11.8	88.2
	Asian or Asian British - Bangladeshi	336	160	47.6	42.2	53.1
	Black or Black British - Caribbean	104	43	41.3	31.8	51.4
	HEE - Thames Valley					
Top three categories	Chinese	245	233	95.1	91.6	97.4
	White - Irish	22	19	86.4	65.1	97.1
	Missing	16	13	81.3	54.4	96.0
Bottom three categories	Asian or Asian British - Bangladeshi	336	183	54.5	49.0	59.9
	Black or Black British - Caribbean	104	53	51.0	41.0	60.9
	Mixed White and black Caribbean	13	6	46.2	19.2	74.9
	HEE - Wessex					
Top three categories	Chinese	245	222	90.6	86.2	94.0
	White - Irish	22	19	86.4	65.1	97.1
	Missing	16	12	75.0	47.6	92.7
Bottom three categories	Asian or Asian British - Bangladeshi	104	43	41.3	31.8	51.4
	Black or Black British - Caribbean	13	5	38.5	13.9	68.4
	Mixed White and black Caribbean	6	1	16.7	0.4	64.1
	HEE - West Midlands					
Top three categories	Chinese	245	233	95.1	91.6	97.4
	White - Irish	22	19	86.4	65.1	97.1
	Missing	65	54	83.1	71.7	91.2
Bottom three categories	Any other ethnic group	13	8	61.5	31.6	86.1
	Black or Black British - Caribbean	152	92	60.5	52.3	68.4
	Asian or Asian British - Bangladeshi	104	57	54.8	44.7	64.6

	Ethnicity	Total number of applicants of this ethnicity	Number of applicants	% applicants within ethnic category	Lower 95% CI	Upper 95% CI
	HEE - Yorkshire and the Humber					
Top three categories	Chinese	245	232	94.7	91.1	97.1
	White - Irish	22	19	86.4	65.1	97.1
	Missing	65	50	76.9	64.8	86.5
Bottom three categories	Asian or Asian British - Indian	444	213	48.0	43.2	52.7
	Asian or Asian British - Bangladeshi	104	40	38.5	29.1	48.5
	Black or Black British - Caribbean	13	5	38.5	13.9	68.4
	Wales					
Top three categories	Chinese	22	20	90.9	70.8	98.9
	White - Irish	245	215	87.8	83.0	91.6
	Mixed White and black African	65	47	72.3	59.8	82.7
Bottom three categories	Asian or Asian British - Indian	13	5	38.5	13.9	68.4
	Asian or Asian British - Bangladeshi	104	38	36.5	27.3	46.6
	Mixed White and black Caribbean	6	2	33.3	4.3	77.7

Appendix 6: Distribution of preferences across HEE local areas by sex

HEE local areas	Gender groups	Number of applicants making a preference	Proportion of applicants within gender category	lower 95% CI	Upper 95% CI	Difference in proportion (Males minus females)
HEE - East Midlands	Female	1153	66.0	63.8	68.3	6.2
	Male	643	72.2	69.2	75.2	
	Missing	48	82.8	70.6	91.4	
HEE - East of England	Female	1258	72.1	69.9	74.1	2.9
	Male	667	74.9	72.0	77.8	
	Missing	49	84.5	72.6	92.7	
HEE - Kent, Surrey and Sussex	Female	1193	68.3	66.1	70.5	3.4
	Male	638	71.7	68.6	74.6	
	Missing	50	86.2	74.6	93.9	
HEE - London	Female	1397	80.0	78.1	81.9	1.2
	Male	723	81.2	78.5	83.8	
	Missing	51	87.9	76.7	95.0	
HEE - North East	Female	910	52.1	49.7	54.5	11.8
	Male	569	63.9	60.7	67.1	
	Missing	44	75.9	62.8	86.1	
HEE - North West	Female	1174	67.2	65.0	69.4	9.3
	Male	681	76.5	73.6	79.3	
	Missing	50	86.2	74.6	93.9	
HEE - South West	Female	1053	60.3	58.0	62.6	7.9
	Male	607	68.2	65.0	71.3	
	Missing	45	77.6	64.7	87.5	
HEE - Thames Valley	Female	1148	65.8	63.5	68.0	3.2
	Male	614	69.0	65.8	72.0	
	Missing	46	79.3	66.6	88.8	
HEE - Wessex	Female	990	56.7	54.3	59.0	6.2
	Male	560	62.9	59.7	66.1	
	Missing	45	77.6	64.7	87.5	
HEE - West Midlands	Female	1226	70.2	68.0	72.4	4.5
	Male	665	74.7	71.7	77.5	
	Missing	48	82.8	70.6	91.4	
HEE - Yorkshire and the Humber	Female	1063	60.9	58.5	63.2	8.1
	Male	614	69.0	65.8	72.0	
	Missing	48	82.8	70.6	91.4	
Wales	Female	917	52.5	50.1	54.9	9.5
	Male	552	62.0	58.7	65.2	
	Missing	45	77.6	64.7	87.5	

Appendix 7: Distribution of preferences across HEE local areas by Schools of Pharmacy

Pharmacy School and total number of all applicants	HEE Local Areas	Applicants to the HEE area*		lower 95% CI	Upper 95% CI
		Proportion	n		
Aston University (n=119)	HEE - East Midlands	75.6	90	66.9	83.0
	HEE - East of England	71.4	85	62.4	79.3
	HEE - Kent, Surrey and Sussex	63.9	76	54.6	72.5
	HEE - London	73.1	87	64.2	80.8
	HEE - North East	56.3	67	46.9	65.4
	HEE - North West	68.1	81	58.9	76.3
	HEE - South West	67.2	80	58.0	75.6
	HEE - Thames Valley	68.1	81	58.9	76.3
	HEE - Wessex	58.8	70	49.4	67.8
	HEE - West Midlands	89.1	106	82.0	94.1
	HEE - Yorkshire and the Humber	63.9	76	54.6	72.5
	Wales	55.5	66	46.1	64.6
Cardiff University (n=86)	HEE - East Midlands	60.5	52	49.3	70.8
	HEE - East of England	64.0	55	52.9	74.0
	HEE - Kent, Surrey and Sussex	65.1	56	54.1	75.1
	HEE - London	70.9	61	60.1	80.2
	HEE - North East	48.8	42	37.9	59.9
	HEE - North West	64.0	55	52.9	74.0
	HEE - South West	86.0	74	76.9	92.6
	HEE - Thames Valley	70.9	61	60.1	80.2
	HEE - Wessex	61.6	53	50.5	71.9
	HEE - West Midlands	72.1	62	61.4	81.2
	HEE - Yorkshire and the Humber	54.7	47	43.5	65.4
	Wales	93.0	80	85.4	97.4
De Montfort University (n=118)	HEE - East Midlands	88.1	104	80.9	93.4
	HEE - East of England	69.5	82	60.3	77.6
	HEE - Kent, Surrey and Sussex	54.2	64	44.8	63.4
	HEE - London	69.5	82	60.3	77.6
	HEE - North East	47.5	56	38.2	56.9
	HEE - North West	62.7	74	53.3	71.4
	HEE - South West	54.2	64	44.8	63.4
	HEE - Thames Valley	61.0	72	51.6	69.9
	HEE - Wessex	50.0	59	40.7	59.3
	HEE - West Midlands	84.7	100	77.0	90.7
	HEE - Yorkshire and the Humber	60.2	71	50.7	69.1
	Wales	50.8	60	41.5	60.2
Durham University (n=48)	HEE - East Midlands	68.8	33	53.7	81.3
	HEE - East of England	68.8	33	53.7	81.3
	HEE - Kent, Surrey and Sussex	66.7	32	51.6	79.6

Pharmacy School and total number of all applicants	HEE Local Areas	Applicants to the HEE area*		lower 95% CI	Upper 95% CI
		Proportion	n		
	HEE - London	83.3	40	69.8	92.5
	HEE - North East	87.5	42	74.8	95.3
	HEE - North West	68.8	33	53.7	81.3
	HEE - South West	56.3	27	41.2	70.5
	HEE - Thames Valley	62.5	30	47.4	76.0
	HEE - Wessex	50.0	24	35.2	64.8
	HEE - West Midlands	64.6	31	49.5	77.8
	HEE - Yorkshire and the Humber	70.8	34	55.9	83.0
	Wales	45.8	22	31.4	60.8
Keele University (n=74)	HEE - East Midlands	79.7	59	68.8	88.2
	HEE - East of England	68.9	51	57.1	79.2
	HEE - Kent, Surrey and Sussex	63.5	47	51.5	74.4
	HEE - London	77.0	57	65.8	86.0
	HEE - North East	59.5	44	47.4	70.7
	HEE - North West	87.8	65	78.2	94.3
	HEE - South West	67.6	50	55.7	78.0
	HEE - Thames Valley	67.6	50	55.7	78.0
	HEE - Wessex	58.1	43	46.1	69.5
	HEE - West Midlands	94.6	70	86.7	98.5
	HEE - Yorkshire and the Humber	67.6	50	55.7	78.0
	Wales	62.2	46	50.1	73.2
King's College, University of London (n=116)	HEE - East Midlands	49.1	57	39.7	58.6
	HEE - East of England	75.0	87	66.1	82.6
	HEE - Kent, Surrey and Sussex	75.0	87	66.1	82.6
	HEE - London	98.3	114	93.9	99.8
	HEE - North East	31.0	36	22.8	40.3
	HEE - North West	50.0	58	40.6	59.4
	HEE - South West	42.2	49	33.1	51.8
	HEE - Thames Valley	55.2	64	45.7	64.4
	HEE - Wessex	42.2	49	33.1	51.8
	HEE - West Midlands	52.6	61	43.1	61.9
	HEE - Yorkshire and the Humber	39.7	46	30.7	49.2
	Wales	30.2	35	22.0	39.4
	HEE - East Midlands	43.5	57	34.9	52.4
Kingston University London (n=131)	HEE - East of England	64.1	84	55.3	72.3
	HEE - Kent, Surrey and Sussex	77.1	101	68.9	84.0
	HEE - London	99.2	130	95.8	100.0
	HEE - North East	32.8	43	24.9	41.6
	HEE - North West	38.2	50	29.8	47.1
	HEE - South West	39.7	52	31.3	48.6
	HEE - Thames Valley	51.9	68	43.0	60.7
	HEE - Wessex	42.0	55	33.4	50.9
	HEE - West Midlands	44.3	58	35.6	53.2

Pharmacy School and total number of all applicants	HEE Local Areas	Applicants to the HEE area*		lower 95% CI	Upper 95% CI
		Proportion	n		
	HEE - Yorkshire and the Humber	38.9	51	30.5	47.8
	Wales	33.6	44	25.6	42.4
Liverpool John Moores University (n=105)	HEE - East Midlands	51.4	54	41.5	61.3
	HEE - East of England	44.8	47	35.0	54.8
	HEE - Kent, Surrey and Sussex	39.0	41	29.7	49.1
	HEE - London	50.5	53	40.5	60.4
	HEE - North East	43.8	46	34.1	53.8
	HEE - North West	95.2	100	89.2	98.4
	HEE - South West	46.7	49	36.9	56.7
	HEE - Thames Valley	41.0	43	31.5	51.0
	HEE - Wessex	38.1	40	28.8	48.1
	HEE - West Midlands	57.1	60	47.1	66.8
	HEE - Yorkshire and the Humber	61.0	64	50.9	70.3
	Wales	50.5	53	40.5	60.4
Medway School of Pharmacy, Universities of Greenwich and Kent (n=91)	HEE - East Midlands	39.6	36	29.5	50.4
	HEE - East of England	76.9	70	66.9	85.1
	HEE - Kent, Surrey and Sussex	73.6	67	63.3	82.3
	HEE - London	95.6	87	89.1	98.8
	HEE - North East	25.3	23	16.7	35.5
	HEE - North West	33.0	30	23.5	43.6
	HEE - South West	39.6	36	29.5	50.4
	HEE - Thames Valley	48.4	44	37.7	59.1
	HEE - Wessex	36.3	33	26.4	47.0
	HEE - West Midlands	38.5	35	28.4	49.2
	HEE - Yorkshire and the Humber	31.9	29	22.5	42.5
	Wales	25.3	23	16.7	35.5
Queen's University Belfast (n=19)	HEE - East Midlands	100.0	19	82.4	100.0
	HEE - East of England	94.7	18	74.0	99.9
	HEE - Kent, Surrey and Sussex	94.7	18	74.0	99.9
	HEE - London	94.7	18	74.0	99.9
	HEE - North East	94.7	18	74.0	99.9
	HEE - North West	94.7	18	74.0	99.9
	HEE - South West	94.7	18	74.0	99.9
	HEE - Thames Valley	94.7	18	74.0	99.9
	HEE - Wessex	94.7	18	74.0	99.9
	HEE - West Midlands	100.0	19	82.4	100.0
	HEE - Yorkshire and the Humber	94.7	18	74.0	99.9
	Wales	89.5	17	66.9	98.7
Robert Gordon University (n=34)	HEE - East Midlands	88.2	30	72.5	96.7
	HEE - East of England	91.2	31	76.3	98.1
	HEE - Kent, Surrey and Sussex	91.2	31	76.3	98.1
	HEE - London	91.2	31	76.3	98.1
	HEE - North East	100.0	34	89.7	100.0

Pharmacy School and total number of all applicants	HEE Local Areas	Applicants to the HEE area*		lower 95% CI	Upper 95% CI
		Proportion	n		
	HEE - North West	94.1	32	80.3	99.3
	HEE - South West	91.2	31	76.3	98.1
	HEE - Thames Valley	88.2	30	72.5	96.7
	HEE - Wessex	88.2	30	72.5	96.7
	HEE - West Midlands	94.1	32	80.3	99.3
	HEE - Yorkshire and the Humber	97.1	33	84.7	99.9
	Wales	91.2	31	76.3	98.1
University College London	HEE - East Midlands	56.1	87	47.9	64.1
	HEE - East of England	85.2	132	78.6	90.4
	HEE - Kent, Surrey and Sussex	76.8	119	69.3	83.2
	HEE - London	98.1	152	94.4	99.6
	HEE - North East	49.7	77	41.6	57.8
	HEE - North West	58.1	90	49.9	65.9
	HEE - South West	57.4	89	49.2	65.3
	HEE - Thames Valley	70.3	109	62.5	77.4
	HEE - Wessex	56.1	87	47.9	64.1
	HEE - West Midlands	60.6	94	52.5	68.4
	HEE - Yorkshire and the Humber	54.2	84	46.0	62.2
	Wales	52.9	82	44.7	61.0
University of Bath (n=122)	HEE - East Midlands	72.1	88	63.3	79.9
	HEE - East of England	79.5	97	71.3	86.3
	HEE - Kent, Surrey and Sussex	77.0	94	68.6	84.2
	HEE - London	81.1	99	73.1	87.7
	HEE - North East	59.8	73	50.6	68.6
	HEE - North West	68.0	83	59.0	76.2
	HEE - South West	94.3	115	88.5	97.7
	HEE - Thames Valley	82.8	101	74.9	89.0
	HEE - Wessex	83.6	102	75.8	89.7
	HEE - West Midlands	82.0	100	74.0	88.3
	HEE - Yorkshire and the Humber	66.4	81	57.3	74.7
	Wales	77.0	94	68.6	84.2
University of Birmingham (n=54)	HEE - East Midlands	77.8	42	64.4	88.0
	HEE - East of England	68.5	37	54.4	80.5
	HEE - Kent, Surrey and Sussex	59.3	32	45.0	72.4
	HEE - London	74.1	40	60.3	85.0
	HEE - North East	40.7	22	27.6	55.0
	HEE - North West	72.2	39	58.4	83.5
	HEE - South West	70.4	38	56.4	82.0
	HEE - Thames Valley	61.1	33	46.9	74.1
	HEE - Wessex	48.1	26	34.3	62.2
	HEE - West Midlands	98.1	53	90.1	100.0
	HEE - Yorkshire and the Humber	63.0	34	48.7	75.7
	Wales	38.9	21	25.9	53.1

Pharmacy School and total number of all applicants	HEE Local Areas	Applicants to the HEE area*		lower 95% CI	Upper 95% CI
		Proportion	n		
University of Bradford (n=44)	HEE - East Midlands	61.4	27	45.5	75.6
	HEE - East of England	59.1	26	43.2	73.7
	HEE - Kent, Surrey and Sussex	56.8	25	41.0	71.7
	HEE - London	61.4	27	45.5	75.6
	HEE - North East	54.5	24	38.8	69.6
	HEE - North West	81.8	36	67.3	91.8
	HEE - South West	54.5	24	38.8	69.6
	HEE - Thames Valley	54.5	24	38.8	69.6
	HEE - Wessex	52.3	23	36.7	67.5
	HEE - West Midlands	61.4	27	45.5	75.6
	HEE - Yorkshire and the Humber	93.2	41	81.3	98.6
	Wales	56.8	25	41.0	71.7
University of Brighton (n=115)	HEE - East Midlands	60.0	69	50.4	69.0
	HEE - East of England	77.4	89	68.7	84.7
	HEE - Kent, Surrey and Sussex	94.8	109	89.0	98.1
	HEE - London	96.5	111	91.3	99.0
	HEE - North East	48.7	56	39.3	58.2
	HEE - North West	59.1	68	49.6	68.2
	HEE - South West	58.3	67	48.7	67.4
	HEE - Thames Valley	68.7	79	59.4	77.0
	HEE - Wessex	61.7	71	52.2	70.6
	HEE - West Midlands	66.1	76	56.7	74.7
	HEE - Yorkshire and the Humber	50.4	58	41.0	59.9
	Wales	51.3	59	41.8	60.7
University of Central Lancashire (n=116)	HEE - East Midlands	50.9	59	41.4	60.3
	HEE - East of England	46.6	54	37.2	56.0
	HEE - Kent, Surrey and Sussex	40.5	47	31.5	50.0
	HEE - London	49.1	57	39.7	58.6
	HEE - North East	43.1	50	33.9	52.6
	HEE - North West	91.4	106	84.7	95.8
	HEE - South West	40.5	47	31.5	50.0
	HEE - Thames Valley	40.5	47	31.5	50.0
	HEE - Wessex	38.8	45	29.9	48.3
	HEE - West Midlands	55.2	64	45.7	64.4
	HEE - Yorkshire and the Humber	63.8	74	54.4	72.5
	Wales	42.2	49	33.1	51.8
University of East Anglia (n=71)	HEE - East Midlands	90.1	64	80.7	95.9
	HEE - East of England	98.6	70	92.4	100.0
	HEE - Kent, Surrey and Sussex	88.7	63	79.0	95.0
	HEE - London	90.1	64	80.7	95.9
	HEE - North East	81.7	58	70.7	89.9
	HEE - North West	87.3	62	77.3	94.0
	HEE - South West	90.1	64	80.7	95.9

Pharmacy School and total number of all applicants	HEE Local Areas	Applicants to the HEE area*		lower 95% CI	Upper 95% CI
		Proportion	n		
	HEE - Thames Valley	87.3	62	77.3	94.0
	HEE - Wessex	90.1	64	80.7	95.9
	HEE - West Midlands	87.3	62	77.3	94.0
	HEE - Yorkshire and the Humber	80.3	57	69.1	88.8
	Wales	74.6	53	62.9	84.2
University of Hertfordshire (n=123)	HEE - East Midlands	61.0	75	51.8	69.6
	HEE - East of England	91.1	112	84.6	95.5
	HEE - Kent, Surrey and Sussex	72.4	89	63.6	80.0
	HEE - London	96.7	119	91.9	99.1
	HEE - North East	43.1	53	34.2	52.3
	HEE - North West	47.2	58	38.1	56.4
	HEE - South West	49.6	61	40.5	58.8
	HEE - Thames Valley	73.2	90	64.4	80.8
	HEE - Wessex	54.5	67	45.2	63.5
	HEE - West Midlands	62.6	77	53.4	71.2
	HEE - Yorkshire and the Humber	46.3	57	37.3	55.6
	Wales	45.5	56	36.5	54.8
University of Huddersfield (n=57)	HEE - East Midlands	73.7	42	60.3	84.5
	HEE - East of England	50.9	29	37.3	64.4
	HEE - Kent, Surrey and Sussex	43.9	25	30.7	57.6
	HEE - London	49.1	28	35.6	62.7
	HEE - North East	59.6	34	45.8	72.4
	HEE - North West	94.7	54	85.4	98.9
	HEE - South West	47.4	27	34.0	61.0
	HEE - Thames Valley	50.9	29	37.3	64.4
	HEE - Wessex	42.1	24	29.1	55.9
	HEE - West Midlands	70.2	40	56.6	81.6
	HEE - Yorkshire and the Humber	94.7	54	85.4	98.9
	Wales	45.6	26	32.4	59.3
University of Lincoln (n=35)	HEE - East Midlands	91.4	32	76.9	98.2
	HEE - East of England	80.0	28	63.1	91.6
	HEE - Kent, Surrey and Sussex	65.7	23	47.8	80.9
	HEE - London	82.9	29	66.4	93.4
	HEE - North East	62.9	22	44.9	78.5
	HEE - North West	74.3	26	56.7	87.5
	HEE - South West	62.9	22	44.9	78.5
	HEE - Thames Valley	71.4	25	53.7	85.4
	HEE - Wessex	54.3	19	36.6	71.2
	HEE - West Midlands	77.1	27	59.9	89.6
	HEE - Yorkshire and the Humber	82.9	29	66.4	93.4
	Wales	54.3	19	36.6	71.2
University of Manchester (n=131)	HEE - East Midlands	64.9	85	56.1	73.0
	HEE - East of England	62.6	82	53.7	70.9

Pharmacy School and total number of all applicants	HEE Local Areas	Applicants to the HEE area*		lower 95% CI	Upper 95% CI
		Proportion	n		
	HEE - Kent, Surrey and Sussex	57.3	75	48.3	65.9
	HEE - London	69.5	91	60.8	77.2
	HEE - North East	57.3	75	48.3	65.9
	HEE - North West	96.9	127	92.4	99.2
	HEE - South West	55.7	73	46.8	64.4
	HEE - Thames Valley	61.1	80	52.2	69.5
	HEE - Wessex	48.1	63	39.3	57.0
	HEE - West Midlands	67.9	89	59.2	75.8
	HEE - Yorkshire and the Humber	74.8	98	66.5	82.0
	Wales	54.2	71	45.3	62.9
University of Nottingham (n=203)	HEE - East Midlands	94.6	192	90.5	97.3
	HEE - East of England	86.7	176	81.2	91.0
	HEE - Kent, Surrey and Sussex	83.7	170	77.9	88.5
	HEE - London	87.7	178	82.4	91.9
	HEE - North East	77.3	157	71.0	82.9
	HEE - North West	88.7	180	83.5	92.7
	HEE - South West	83.7	170	77.9	88.5
	HEE - Thames Valley	85.2	173	79.6	89.8
	HEE - Wessex	78.3	159	72.0	83.8
	HEE - West Midlands	91.1	185	86.3	94.7
	HEE - Yorkshire and the Humber	88.7	180	83.5	92.7
	Wales	75.4	153	68.8	81.1
University of Portsmouth (n=77)	HEE - East Midlands	59.7	46	47.9	70.8
	HEE - East of England	79.2	61	68.5	87.6
	HEE - Kent, Surrey and Sussex	77.9	60	67.0	86.6
	HEE - London	85.7	66	75.9	92.6
	HEE - North East	45.5	35	34.1	57.2
	HEE - North West	54.5	42	42.8	65.9
	HEE - South West	71.4	55	60.0	81.2
	HEE - Thames Valley	75.3	58	64.2	84.4
	HEE - Wessex	88.3	68	79.0	94.5
	HEE - West Midlands	66.2	51	54.6	76.6
	HEE - Yorkshire and the Humber	50.6	39	39.0	62.2
	Wales	54.5	42	42.8	65.9
University of Reading (n=93)	HEE - East Midlands	72.0	67	61.8	80.9
	HEE - East of England	84.9	79	76.0	91.5
	HEE - Kent, Surrey and Sussex	86.0	80	77.3	92.3
	HEE - London	94.6	88	87.9	98.2
	HEE - North East	57.0	53	46.3	67.2
	HEE - North West	68.8	64	58.4	78.0
	HEE - South West	76.3	71	66.4	84.5
	HEE - Thames Valley	94.6	88	87.9	98.2
	HEE - Wessex	74.2	69	64.1	82.7

Pharmacy School and total number of all applicants	HEE Local Areas	Applicants to the HEE area*		lower 95% CI	Upper 95% CI
		Proportion	n		
	HEE - West Midlands	76.3	71	66.4	84.5
	HEE - Yorkshire and the Humber	63.4	59	52.8	73.2
	Wales	60.2	56	49.5	70.2
University of Strathclyde (n=27)	HEE - East Midlands	92.6	25	75.7	99.1
	HEE - East of England	92.6	25	75.7	99.1
	HEE - Kent, Surrey and Sussex	92.6	25	75.7	99.1
	HEE - London	92.6	25	75.7	99.1
	HEE - North East	96.3	26	81.0	99.9
	HEE - North West	100.0	27	87.2	100.0
	HEE - South West	92.6	25	75.7	99.1
	HEE - Thames Valley	92.6	25	75.7	99.1
	HEE - Wessex	88.9	24	70.8	97.6
	HEE - West Midlands	92.6	25	75.7	99.1
	HEE - Yorkshire and the Humber	92.6	25	75.7	99.1
	Wales	92.6	25	75.7	99.1
University of Sunderland (n=113)	HEE - East Midlands	68.1	77	58.7	76.6
	HEE - East of England	61.9	70	52.3	70.9
	HEE - Kent, Surrey and Sussex	60.2	68	50.5	69.3
	HEE - London	61.9	70	52.3	70.9
	HEE - North East	97.3	110	92.4	99.4
	HEE - North West	76.1	86	67.2	83.6
	HEE - South West	63.7	72	54.1	72.6
	HEE - Thames Valley	61.1	69	51.4	70.1
	HEE - Wessex	59.3	67	49.6	68.4
	HEE - West Midlands	67.3	76	57.8	75.8
	HEE - Yorkshire and the Humber	75.2	85	66.2	82.9
	Wales	57.5	65	47.9	66.8
University of Ulster (n=3)	HEE - East Midlands	100.0	3	29.2	100.0
	HEE - East of England	100.0	3	29.2	100.0
	HEE - Kent, Surrey and Sussex	100.0	3	29.2	100.0
	HEE - London	66.7	2	9.4	99.2
	HEE - North East	100.0	3	29.2	100.0
	HEE - North West	100.0	3	29.2	100.0
	HEE - South West	100.0	3	29.2	100.0
	HEE - Thames Valley	100.0	3	29.2	100.0
	HEE - Wessex	100.0	3	29.2	100.0
	HEE - West Midlands	100.0	3	29.2	100.0
	HEE - Yorkshire and the Humber	100.0	3	29.2	100.0
	Wales	100.0	3	29.2	100.0
University of Wolverhampton (n=71)	HEE - East Midlands	78.9	56	67.6	87.7
	HEE - East of England	56.3	40	44.0	68.1
	HEE - Kent, Surrey and Sussex	52.1	37	39.9	64.1
	HEE - London	59.2	42	46.8	70.7

Pharmacy School and total number of all applicants	HEE Local Areas	Applicants to the HEE area*		lower 95% CI	Upper 95% CI
		Proportion	n		
	HEE - North East	49.3	35	37.2	61.4
	HEE - North West	60.6	43	48.3	72.0
	HEE - South West	60.6	43	48.3	72.0
	HEE - Thames Valley	56.3	40	44.0	68.1
	HEE - Wessex	49.3	35	37.2	61.4
	HEE - West Midlands	97.2	69	90.2	99.7
	HEE - Yorkshire and the Humber	52.1	37	39.9	64.1
	Wales	45.1	32	33.2	57.3
Other - please specify (n=143)	HEE - East Midlands	81.8	117	74.5	87.8
	HEE - East of England	84.6	121	77.6	90.1
	HEE - Kent, Surrey and Sussex	81.8	117	74.5	87.8
	HEE - London	86.0	123	79.2	91.2
	HEE - North East	76.2	109	68.4	82.9
	HEE - North West	80.4	115	73.0	86.6
	HEE - South West	76.2	109	68.4	82.9
	HEE - Thames Valley	78.3	112	70.7	84.8
	HEE - Wessex	73.4	105	65.4	80.5
	HEE - West Midlands	81.1	116	73.7	87.2
	HEE - Yorkshire and the Humber	77.6	111	69.9	84.2
	Wales	74.1	106	66.1	81.1

N.B: Given proportion and number relates to applicants selecting at least one training programme from the given HEE local area

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