Pharmacy learner engagement Full report

PHARMACY LEARNER ENGAGEMENT:

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Authors:

Dr Elizabeth Seston

Professor Ellen Schafheutle

Dr Sarah Willis

Dr Jennifer Silverthorne

Centre for Pharmacy Workforce Studies

Division of Pharmacy and Optometry

School of Health Sciences

Faculty of Biology, Medicine and Health

The University of Manchester

Oxford Road

Manchester

M13 9PL

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1. Introduction

1.1 A changing pharmacy landscape

The landscape of pharmacy practice in England is changing rapidly. A number of recent NHS and government publications have proposed changes to the way in which pharmacists and pharmacy technicians operate including the five-year forward view,[1] and the Carter Report.[2] The recent publication of the NHS 10 year plan outlined proposals to expand the numbers of clinical pharmacists.[3] Clinical pharmacists will be attached to primary care networks of GP surgeries and greater use will also be made of community pharmacist skills. Within the hospital pharmacy setting, Hospital Pharmacy Transformation plans are changing the traditional model of pharmacy departments, and prioritising medicines optimisation.[4] Many of these changes encourage pharmacists in particular to spend time on clinical functions, thus also impacting on pharmacy technician roles and responsibilities.

These events are also taking place against a backdrop of reforms to pharmacy education. In order for pharmacists and pharmacy technicians to be equipped with the knowledge, skills and behaviours to provide such patient-centred care it is essential to ensure that the education and training these groups of professionals receive is fit for purpose. This includes undergraduate (MPharm), pre-registration training and additional training once professionals are in practice. Health Education England (HEE) undertook a programme of work that culminated in the Advancing Pharmacy Education and Training (APET) review.[5] The APET review examined the current model of education and training for the pharmacy workforce to establish what training structures and funding models will best support a pharmacy workforce able to meet future patient need. This current piece of work, on learner engagement, will be used to inform ongoing work carried out by HEE and health system partners to work through the recommendations from the APET review.

1.2 Previous research on learner views

1.2.1 Pharmacists: Undergraduate education (MPharm)

A sample of University of Manchester graduates from 2014 and 2015 were surveyed to explore their perceptions of how their education prepared them to meet GPhC performance standards (Parmar *et al.*, 2019, personal communication). The survey compared the outcomes for the group who graduated pre curriculum change (2014) to those who graduated after changes were made in line with the GPhC standards for pharmacy education and training. For domain 1 (personal effectiveness), most graduates (2014, 69.5%; 2015, 84.1%) felt prepared for meeting aspects in this domain. For domain 2 (interpersonal skills) most graduates in both cohorts felt prepared for meeting aspects of this domain (2014; 77.7%, 2015; 90.8%). For domain 3 (relating to medicines and health) most graduates in both of the study cohorts felt prepared to meet aspects of this domain (2014; 64.5%, 2015; 83.4%). For each domain of practice, the mean preparedness score was significantly higher for respondents graduating in 2015 (i.e. post-curriculum reform).

1.2.2   Pharmacists: Pre-registration training and post-qualification experiences

There is evidence to suggest that pre-registration pharmacists who trained in the community sector are less satisfied than trainees from other sectors[6] and were less likely to pass their final assessment.[7] There is also evidence to show clear differences in trainees' learning and development opportunities between training settings and differences between levels of support provided and assessment mechanisms used. The authors argued that this variability raises concerns about robustness and equity.[8;9]   Newly-qualified pharmacists report feeling challenged by full responsibility and accountability they experience upon qualification and that they lacked formal mechanisms that provide support at this time.[9]

The findings from a study of newly-qualified pharmacists working in the community sector found that they were immediately held accountable and often worked in isolation from their peers. As a result, newly-qualified pharmacists felt isolated, unsupported and stressed. [10]

1.2.3   Pharmacy technician training

A survey of 632 pharmacy technicians, of whom 75.9% respondents had trained in community,[11;12] found that pre-registration hospital pharmacy technicians worked in larger teams, were better supported, had more study time and were more likely to complete training within 2 years compared with their community pharmacy peers. [11] Most pre-registration hospital pharmacy technicians had up to 4 hours per week protected study time compared with 2 hours or no study time for pre-registration community pharmacy technicians. There were statistically significant differences between sectors in the providers used for both knowledge and competency qualifications, with community-based pharmacy technicians more likely to have used a distance provider for both their knowledge and competency qualifications. Hospital pharmacy technicians were more likely to have had used a Further Education (FE) college for their knowledge component. Those using a distance provider were more likely to be highly satisfied than those who used an FE college; there were no significant differences in satisfaction with the provider for the competence qualification.[11]

For trainee community pharmacy technicians study time was largely ad-hoc or opportunistic, and they reported often doing training in their own time.[11] Pre-registration hospital pharmacy technicians were significantly more satisfied with facilities at their training site, the support they received from their employer and colleagues, and had better work-life balance. Pre-registration community pharmacy technicians felt isolated (like their pharmacist peers) and often lacked peer support, as they didn't always work with other pharmacy technicians. In the community setting, pharmacists were often the main source of support for pre-registration pharmacy technicians. The authors suggested that there was a lack of clarity about community pharmacy technician role. As pre-registration hospital pharmacy technicians worked alongside other trainees, including specialist pharmacy technicians, there was often someone available who could assess their competence. [11;12;13]

2   Methods

2.1   Aims and objectives

This research aimed to review the current model of pharmacy workforce education and training and establish views on preparedness for future roles.

The objectives of this research were:

•To establish learner views on pre- and post-registration pharmacy workforce education and training, in order to critically understand the range of perspectives on the strengths and weaknesses of the learning currently available, and its role in supporting and developing professional practice.

•To determine how prepared pharmacy professionals feel regarding future roles.

In analysing the data collected by this research, the research team have differentiated between pharmacists who joined the register in the 12 months prior to April 2019 (when the research took place) (called 'newly-qualified pharmacists and pharmacy technicians') and those who had been on the register for 12 months or more, e.g. registered pre-March 2019, (called 'post registration pharmacist and pharmacy technicians').

Pharmacists and pharmacy technicians who did not hold a UK or OSPAP qualification and entered the register via the EEA or any other route were only included in the post-registration group, as it has been assumed that these professionals completed under-graduate and/or pre-registration training outside the UK.

2.2   Questionnaire design and content

2.2.1   Newly-qualified pharmacist and pharmacy technician survey

There were two surveys created for the newly-qualified pharmacists and pharmacy technicians. For the newly-qualified pharmacist and pharmacy technician surveys, we used our existing experience to design questions to find out what participants felt about undergraduate education (where relevant) and pre-registration training. The pharmacy technician survey was also based on a questionnaire used in research on the views and experiences of pharmacy technicians in 2017 by Schafheutle *et al.* [11;12]

2.2.2   Post-registration pharmacist and pharmacy technician survey

There were two surveys created for the post-registration pharmacists and pharmacy technicians. The post-registration surveys sought information on 'learning events'[a] that participants had started or completed within the previous 12 months. Participants were asked to provide information on up to four learning events and did not have to have fully completed the event to answer the questions.

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[a] No formal definition of a 'learning event' was provided in the survey. Respondents were asked to consider any relevant learning they had undertaken in the previous 12 months and were advised that these could include online packages, training workshops or full courses or programmes.

As can be seen in Table 1, participants were asked to provide details of the name, duration, provider and answer a numbers of questions about the event, including who funded it, the reason for undertaking the learning, the types of feedback and support available, and when the participant found time to complete the event. Participants were asked a series of statements regarding the learning events they had undertaken regarding the relevance of the content to the current or future roles, the delivery of the learning, the support received from the learning provider, the support offered by their employer and how easily they were able to access the learning. This was measured on a 5-point agreement scale (1=strongly disagree, 5=strongly agree). The results were recoded to indicate the percentage of participants agreeing or strongly agreeing with the statements.

Participants were asked to record their views on ten domains of future practice, recording their answer in terms of how prepared they felt to perform a role, or if they were already performing the role. Some of the domains were specific to each participant group (e.g. independent prescribing), but there were some common domains, including working across settings and providing education to other healthcare professionals. Both groups were asked about preparedness to undertake physical examinations and advanced consultation skills, although the definition of these domains varied for each group.

2.3   Ethical approval

The study received University of Manchester Research Ethics Committee approval under a Proportionate Review (Ref: 2019-5798-9628). As part of the approval, participants were provided with a detailed Participant Information Sheet in the survey link and were asked to give consent to their responses being used for the purposes of research at the start of each survey. The data were anonymous, i.e. no names or email addresses were collected, although personal information, such as ethnicity, was collected. Data were stored securely according to the relevant University of Manchester Data Management Plan (Ref: 36848).

2.4   Survey distribution

The four surveys were designed and uploaded on the online platform SelectSurvey. A link to the surveys was distributed to a sample of 50% of pharmacists (14,994) and all pharmacy technicians who were registered (11,570) with the Centre for Postgraduate Pharmacy Education (CPPE). The link was also distributed via social media on relevant Twitter accounts and Facebook special interest groups in order to try and boost the response.

The most recent data from the GPhC annual report indicated that, in 2018, there were 55,258 registered pharmacists and 23,367 registered pharmacy technicians on the GPhC register,[14] so our targeted populations represented just over a quarter (27%) of all registered pharmacists and ~50% of all registered pharmacy technicians.

Table 1: Content of learner engagement surveys by respondent type

	Newly-qualified pharmacists	Newly-qualified pharmacy technicians	Post-registration pharmacists and technicians	European pharmacists and pharmacy technicians
Characteristics Age, gender, ethnicity, years on the register	✓	✓	✓	✓
Work characteristics Sector of current and previous practice, HEE region, type of setting, community pharmacy job role, AfC band, management responsibilities, hours of work	✓	✓	✓	✓
Qualifications held BPharm, MPharm, NVQ level 3, etc.	✓	✓	✓	✓
Learning event Name, duration, provider, whether learning completed, reason for completing, funder, when completed, support provider, feedback, views on learning	✗	✗	✓	✓
Attitudes to under-graduate learning Content, delivery, support, feedback, preparedness for pre-registration and overall satisfaction	✓	✗	✗	✗
Attitudes to pre-registration training Assessment, support, feedback, tutor, preparedness for practice and overall satisfaction	✓	✓	✗	✗
Impactful learning during career Participants asked to identify one piece of learning that they feel has had the most impact on their career to date	✓	✓	✓	✓

2.5   Data handling and analysis

Data were downloaded from the SelectSurvey platform via Excel and then uploaded into SPSS v.22 (IBM). Data were cleaned and re-coded where necessary and basic descriptive analysis completed (frequencies, measures of central tendency). The data captured by the learning event questions were combined together, so that the learning event became the unit of analysis, rather than the pharmacist or pharmacy technician. Where there were instances of non-response from participants, notes on missing data have been highlighted.

Percentages are reported for categorical variables (e.g. gender, sector), mean values (standard deviation) for normally distributed data and median (inter-quartile ranges) for skewed data. Inferential statistics (Chi-square, Independent Samples T-tests, etc.) have been used to compare variables across different subgroups, where relevant, with a significance level set at 5%, meaning that we can be confident that any significant result has not occurred by chance alone.

2.6   Stakeholder event

In order to sense-check findings from our survey, and to further discuss the needs of learners, we ran a one-day stakeholder event at the University of Manchester in April 2019. The event was publicised to stakeholders through social media and existing professional networks.

2.6.1   Outline of the event

The stakeholder event consisted of a presentation by the research team outlining preliminary findings from the online survey of pharmacy learners. Following this an interactive session was undertaken, using Ketso, a hands-on toolkit for creative engagement.[15]

2.6.2   Ketso: a tool for creative engagement

Ketso is a useful tool for facilitating discussions such as those that took place in the stakeholder event. Ketso promotes productive collaboration in group meetings, training and for community engagement. It provides a creative platform where everyone can be heard equally, making group interaction time-efficient and highly effective.[15]

The Ketso toolkit includes a table-top felt workspace and a variety of different colour coded leaf-shaped cards that participants use to individually record their ideas/comments in relation to a set of topics onto 'branches' (pre-labelled or new). This allows Ketso users and researchers to organise and thematically group ideas or thoughts together.

2.6.2.1   Process

Participants were split into three groups (referred to 'green', 'red' and 'yellow') by the facilitator before the stakeholder event began in order to ensure a broad range of sectors and experience within each group.

Each group was given a large piece of adhesive felt as their workspace that had five pre-determined 'branches' or 'themes' on it, derived from an awareness of the literature surrounding pharmacy learning, that were used to categorise ideas based on topic areas discussed:

1. Human resource;
2. Physical resource;
3. Financial resource;
4. Training packages; and
5. Infrastructure and governance

(Participants were also provided with additional unlabelled branches to use for any new and emerging themes that they identified as they sought to arrange their ideas/comments.)

The Ketso session covered three topic areas. See Table 2 for details. This was guided by a facilitator (Dr Jennifer Silverthorne) where participants were asked to develop ideas/comments and write them on a corresponding colour-coded leaf-shaped card; colour-codes were applied to each of the three topics as follows.

Table 2: Ketso topic areas

Topic	Colour-code
What is working ? What currently works well in pharmacy education and training?	Brown
Future possibilities /new ideas Future possibilities/new idea(s) for education and training	Green
Challenges/problems Challenges facing the profession in making changes to education and training	Grey

Participants used the leaf-shaped cards, with ideas/comments scribed onto them, to place onto the branches on the felt workspace. Participants were also asked to share and prioritise ideas/comments and drew a star on branches (themes) or ideas (comments) to convey priority status. The coloured leaves provide a visual record of ideas and action planning.

The ideas/thoughts were then entered into a excel spreadsheet created by Dr Joanne Tippet, the founder of Ketso.[15] The spreadsheet allowed the participants ideas/comments to be categorised and grouped in various ways.

3   Findings

3.1   Survey responses

In total, 531 respondents completed the online questionnaire. The majority of respondents were post-registration pharmacists and pharmacy technicians. The response per participant group is shown below in Table 3. Due to the low number of responses from the newly-qualified pharmacists and pharmacy technicians it has not been possible to report findings from these groups of professionals separately.

In addition, because non-UK/OSPAP-trained pharmacists and pharmacy technicians completed the same set of questions on learning events as the post-registration professionals, their responses have been combined with those of the relevant professional group. Thus, for the purposes of the rest of this section, findings relate to the response of 252 post-registration pharmacists and 266 post-registration pharmacy technicians, giving an overall sample size of 518.

Table 3: Responses by registrant type

Registrant type	Number of responses (N)
Post-registration pharmacist	252
Post-registration pharmacy technician	266
Newly-qualified pharmacists	9
Newly-qualified pharmacy technician	5

3.2   Characteristics of respondents

Characteristics of respondents, including age, gender, ethnic origin and number of years on the register are shown in Table 4. Pharmacist and pharmacy technician respondents were broadly similar when comparing demographics. The mean age of respondents from both groups was 43 years. Pharmacist respondents had, on average, been on the GPhC register for longer, but this difference was not statistically significant. Pharmacy technicians were more likely to record their ethnicity as white than pharmacist respondents and this difference was statistically significant ($\chi2$=27.947, p<0.01). One in four of both pharmacist and pharmacy technician respondents reported that their registered address was in the North West Health Education England region. See Table 4 for details.

Table 4: Characteristics of participants

	Pharmacists (N=252)	Pharmacy technicians (N=266)
Age (mean, standard deviation)	43.2 (11.61)	43.1 (10.74)
Years on the register (median, inter-quartile range)	18.0 (10.0-30.0)	15.0 (8.2-28.0)
% (N)		
Female	71.3 (176)	90.7 (224)
Ethnicity		
Asian	15.2 (37)	5.0 (12)
Black	2.0 (5)	0.4 (1)
Chinese	2.5 (6)	0.0 (0)
Mixed	2.5 (6)	0.8 (2)
Other ethnicity	1.6 (4)	0.4 (1)
White	75.7 (181)	93.2 (221)
HEE region		
London	11.7 (29)	8.1 (20)
Midlands and East	20.2 (50)	22.6 (56)
North	48.4 (120)	44.0 (109)
South	19.8 (49)	25.4 (63)

3.2.1 Route to registration and qualifications

The majority of respondents entered the register after completing UK-based qualifications. A small proportion of the pharmacists had entered with European pharmacy qualification (2.8%) or the OSPAP/pre-registration route (2.0%). A handful of pharmacy technicians had entered the register with a European or other pharmacy technician qualification. See Table 5 for details.

Table 5: Route to qualification

% (N)	Pharmacists (N=252*)	Pharmacy technicians (N=266)
UK pharmacy degree & pre-reg training	95.2 (239)	N/A
European pharmacy qualification	2.8 (7)	N/A
OSPAP & pre-reg training	2.0 (5)	N/A
UK pharmacy technician qualification	N/A	98.0 (244)
European pharmacy technician qualification	N/A	1.6 (4)
Other pharmacy technician qualification	N/A	0.4 (1)

*1 missing value

In terms of qualifications, the majority of pharmacists (95.2%) in the sample, as expected, held a BPharm or MPharm qualification from a UK university. Almost half (47.6%) also held a clinical pharmacy postgraduate diploma qualification. A third of the sample held an independent or supplementary prescribing qualification. The proportion of respondents holding an independent prescribing qualification appears to be considerably higher than the number on the GPhC register.[16] A large proportion of both pharmacists and pharmacy technicians (70.6% and 49.6% respectively) had undertaken CPPE learning programmes. In terms of technician qualifications, the majority of pharmacy technicians (96.2%) held a BTEC or NVQ level 3. Half of the pharmacy technician sample (51.1%) held an accuracy checking qualification. See Table 6 for details.

Table 6: Qualifications held by respondents

% (N)	Pharmacists (N=252*)	Pharmacy technicians (N=266)
BPharm from UK University	50.6 (127)	N/A
MPharm from UK University	44.6 (112)	N/A
Pharmacist qualification from an overseas University	4.0 (10)	N/A
OSPAP qualification (MSc or PG diploma)	3.2 (8)	N/A
Clinical pharmacy postgraduate diploma	47.6 (120)	N/A
Community pharmacy/Primary Care Clinical diploma	6.7 (17)	N/A
Independent or supplementary prescribing	34.5 (87)	N/A
Taught Masters qualification (e.g. MRes, MPhil)	10.7 (27)	1.9 (5)
Research qualification (e.g. PhD)	6.3 (16)	0.4 (1)
CPPE learning programmes	70.6 (178)	49.6 (132)
CPPE Declaration of competence (DoC) training	29.8 (75)	3.4 (9)
University CPD modules	1.6 (4)	-
PhiF / HEE funded pathway: Urgent care	1.6 (4)	-
PhiF / HEE funded pathway: Care homes	1.9 (5)	0.0 (0)
PhiF / HEE funded pathway: GP practice training	4.8 (12)	-
PhiF / HEE leadership training: Mary Seacole	3.2 (8)	0.8 (2)
Grandparenting qualification[b]	-	23.3 (62)
BTEC level 3	-	48.1 (128)
NVQ level 3	-	48.1 (128)
Overseas technician qualification	-	2.3 (6)
Accuracy checking qualification	-	51.1 (136)

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[b] Grandparenting: The mandatory pharmacy technician register is a relatively new phenomenon. Pharmacy technicians have only been required to register with the GPhC since 2011. At the time of mandatory regulation and for a period after, some pharmacy technicians were admitted with qualifications other than those now accepted.

| Clinical services diploma | - | 4.1 (11) |

*1 missing value

3.2.2 Work-related characteristics

The majority of respondents (82.5%, n=410) worked in one sector only, although pharmacy technicians were significantly more likely to work in one sector only than pharmacists (87.8% vs. 77.4%, $\chi 2$=8.554, p<0.05). See Table 7 for details.

Table 7: Sector of practice

% (N)	Pharmacists (N=252*)	Pharmacy technicians (N=266*)	All respondents (N=518*)
Community	23.8 (60)	13.1 (32)	18.5 (92)
Hospital	33.7 (85)	53.1 (130)	43.3 (215)
GP/Primary Care organisation	10.3 (26)	11.8 (29)	11.1 (55)
Other sector	9.5 (24)	9.8 (24)	9.7 (48)
Works in multiple sectors	22.6 (57)	12.2 (30)	17.5 (87)

*some missing values

The proportion of respondents currently working in, and who previously worked in, each of the sectors is shown in Table 8. Please note, percentages add up to more than 100% as more than one answer was possible. Pharmacists in our sample were significantly more likely to work in the community sector than pharmacy technicians (31.7% vs. 15.5%, $\chi 2$=17.201, p<0.01). Pharmacy technicians in the sample were more likely to be currently working in the hospital sector (55.1% vs. 42.8%, $\chi 2$=7.386, p<0.05). Pharmacists were also significantly more likely to be working in a GP practice than pharmacy technicians, which is not unexpected given the nature of professional roles within GP practices (14.0% vs. 6.0%, $\chi 2$=8.536, p<0.01). There were no other statistically significant differences between the two groups of professionals.

Table 8: Detailed sector of practice information

% (N)	Pharmacists (N=252)		Pharmacy technicians (N=266)	
	Currently working in	Previously worked in	Currently working in	Previously worked in
Works in community sector	31.7 (80)	48.2 (124)	15.5 (38)	42.7 (114)
Works in hospital sector	42.8 (110)	35.0 (90)	55.1 (147)	33.7 (90)
Works in GP practice	14.0 (36)	10.9 (28)	6.0 (16)	10.1 (27)
Works in Care home	4.3 (11)	6.2 (16)	3.7 (10)	5.6 (15)
Works for PCO	10.1 (30)	11.7 (30)	12.4 (33)	4.9 (13)
Works in secure environment	0.8 (2)	3.9 (10)	1.1 (3)	4.9 (13)
Works in research	12.8 (33)	8.2 (21)	9.4 (25)	2.2 (6)
Works in industry	1.2 (3)	5.4 (14)	0.4 (1)	3.0 (8)
Works in other sector*	7.8 (20)	5.8 (15)	4.9 (13)	2.6 (7)

*Other sector responses included: Pharmacy regulator, central government, Care Quality Commission, ambulance service, out of hours centre, hospice, and military.

In addition to recording the sector of their practice, respondents were also asked to record the setting in which they worked. The results are shown in Table 9. Community pharmacists were significantly more likely than their pharmacy technician peers to work in an independent pharmacy (40.0% vs. 10.5, $\chi2$=9.787, p<0.01) or a small-chain pharmacy (22.5% vs. 2.6 ($\chi2$=4.973, p<0.05). There were no statistically significant differences in work setting between hospital pharmacists and hospital pharmacy technicians.

Table 9: Work setting

	Pharmacists	Pharmacy technicians
Community pharmacy sector	**N=80**	**N=38**
Independent pharmacy	40.0 (32)	10.5 (4)
Small chain pharmacy (2-4 stores)	22.5 (18)	2.6 (1)
Small-sized multiple pharmacy (5-25 stores)	18.8 (15)	13.2 (5)
Medium-size multiple pharmacy (26-100 stores)	17.5 (14)	5.3 (2)
Large multiple pharmacy (≥100 stores)	51.3 (41)	60.5 (23)
Supermarket pharmacy	21.3 (17)	7.9 (3)
Hospital pharmacy sector	**N=110**	**N=147**
NHS Teaching hospital	39 (43)	34.7 (54)
NHS District general hospital	31.8 (35)	34.0 (50)
Specialist NHS hospital (e.g. oncology, mental health	18.1 (20)	19.0 (28)
Private hospital	9.0 (10)	3.4 (5)

For pharmacists and pharmacy technicians working in the NHS, Agenda for Change band was recorded and this information is shown in Table 10. Pharmacists who reported working in the community pharmacy sector were asked to record their main job role and the results are also shown in Table 10.

The majority of pharmacists (70.8%) and pharmacy technicians (79.4%) in the sample worked full time (30 hours a week or more).[c] The difference between pharmacists and pharmacy technicians was not statistically significant.

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[c] OECD defines part-time employment as "people in employment who usually work less than 30 hours per week in their main job." (OECD, 2019, Part-time employment rate (indicator). doi: 10.1787/f2ad596c-en (Accessed on 14 May 2019).

Table 10: Agenda for Change band and community pharmacy job role

% (N)	Pharmacists	Pharmacy technicians
Agenda for Change Band	**N=110***	**N=147***
Band 4	n/a	9.9 (14)
Band 5	n/a	46.8 (66)
Band 6	3.0 (3)	27.7 (39)
Band 7	19.0 (19)	12.8 (18)
Band 8a	46.0 (46)	2.1 (3)
Band 8b	19.0 (19)	0.7 (1)
Band 8c or above	13.0 (13)	0.0 (0)
Community pharmacy job role	**(N=80)***	**N/A**
Manager	24.3 (18)	N/A
Pharmacy owner	5.4 (4)	N/A
Locum	36.5 (27)	N/A
Relief	9.5 (7)	N/A
Second	12.2 (9)	N/A
Superintendent	6.8 (5)	N/A
Other job role	5.4 (4)	N/A

*10 missing values; ** 6 missing values

Participants were also asked whether or not they had management responsibilities in their role. More than half of pharmacists (58.5%, n=145) and just over a third (37.4%, n=91) of pharmacy technicians had management responsibilities. One in five pharmacists (20.5%) reported that they were responsible for six or more staff, compared with 15.7% of pharmacy technician respondents. Pharmacists were significantly more likely than pharmacy technicians to have management responsibilities in their role ($\chi 2$=20.889, p<0.01).

3.2.3 Characteristics of respondents by years on the register

In order to explore whether numbers of years on the register was associated with any difference in findings, the respondents were split into the following two groups, according to how long they had been registered: 10 years or less versus more than 10 years. The characteristics of these two respondent groups are shown in Table 11. The mean age and years of qualification, are as would be expected, lower in the more recently qualified groups for both pharmacists and pharmacy technicians.

More recently-qualified pharmacists and pharmacy technicians were more likely to be male ($\chi 2$=4.440, p<-0.05 and $\chi 2$=4.932, p<0.05 respectively) than those who had been registered for ten years or more. Recently-qualified pharmacists were significantly less likely to record their ethnicity as white ($\chi 2$=9.771, p<0.01). There were no significant differences in ethnicity for the pharmacy technicians based on years on the register.

There were no statistically significant differences between the years of qualification groups in terms of sector of practice, and the numbers were too small to explore whether there were any statistically significant differences between the groups on the basis of route of registration, qualifications held, practice setting, Agenda for Change band or community job role.

Table 11: Respondent characteristics by respondent type and years of qualification

	Pharmacists		Pharmacy technicians	
	Registered ≤10 years (N=176)*	Registered >10 years (N=69)	Registered ≤10 years (N=168)*	Registered >10 years (N=76)
Age (mean, standard deviation)	30.7 (3.98)	48.6 (9.45)	35.0 (9.71)	47.2 (8.79)
Years qualified (median, inter-quartile range)	6.3 (2.69)	25.9 (9.57)	6.0 (2.80)	24.3 (10.24)
% (N)				
Female	61.2 (41)	75.9 (132)	83.8 (62)	93.8 (152)
White ethnicity	60.6 (40)	81.2 (138)	88.9 (64)	95.5 (150)

*some missing values

3.2.4   Representativeness of the sample

Comparing our participants to data from the 2013 registrant workforce survey,[17] indicates that female pharmacists are over-represented in the sample (71.3% compared to 60.4% on the register), while female pharmacy technicians are slightly under-represented (90.7% compared to 92.0% on the register). Compared with data from the 2013 workforce survey, non-white pharmacists appear to be under-represented in our sample (24.3% vs 41%), while the pharmacy technician respondents are broadly representative (6.8% vs. 10.0%).

3.3   Learning events

This section reports findings on the number of learning events reported by participant, in addition to providing details on the provider and duration of the learning event, reasons for undertaking learning, source of funding, methods of learning, support and feedback provided and when pharmacy professionals completed the learning. Participants' agreement with a set of statements about the relevance and applicability of the learning to current and future roles and support and access to learning is also reported.

Subgroup analyses are reported where sample size permits on the basis of participant characteristics, including registrant type, sector of practice and years of practice.

3.3.1   Number of learning events reported

Of the individuals who completed the survey, 330 (63.7%) provided information on at least one learning event that they had undertaken in the previous 12 months. In total, information was provided on 466 learning events (242 pharmacist learning events and 224 pharmacy technician learning events). The majority of the respondents reported one learning event (72.6%, N=122 and 75.9%, N=123 for the pharmacist and pharmacy technician respondents, respectively). See Table 12 for details. There were no significant differences in the number of learning events by years of registration (≤10 years vs. >10 years).

Table 12: Number of learning events by registrant type

% (N)	Pharmacists (N=168)	Pharmacy technicians (N=162)
One learning event	72.6 (122)	75.9 (123)
Two learning events	14.9 (25)	12.3 (20)
Three learning events	8.3 (14)	7.4 (12)
Four learning events	4.2 (7)	4.2 (7)

3.3.2   Provider and duration of learning events

The majority of learning events had been completed at the time of the survey (79.3% and 81.0% for the pharmacists and pharmacy technicians, respectively). In both of the respondent groups, approximately half of the learning events lasted seven hours or less (e.g. one day). See Table 13 for details.

CPPE was the most common provider of learning for both pharmacist and pharmacy technicians. Pharmacy technicians were significantly more likely to have undertaken learning provided by an NHS employer than their pharmacist counterparts (28.9% vs. 13.2%, $\chi2$=13.867, p<0.05). See Table 13 for details. Other providers mentioned included Buttercups, Diabetes UK, Future Learn, Ministry of Defence, NHS improvement, NICE, NIHR, Northwest Skill Development network, NPA, Parkinson's Disease UK, pharmaceutical companies, Patient Safety Academy, Pharmaceutical Services Negotiating Committee (PSNC), Red Whale, Royal Pharmaceutical Society (RPS), Skillsoft and UK Clinical Pharmacy Association (UKCPA).

Pharmacists who had been registered for 10 year or less were more likely to be undertaking learning with a higher education provider than those who had been on the register for more than 10 years (34.8% vs. 13.6%). Less experienced pharmacists were less likely than more experienced ones to be undertaking the learning they described in learning event one with CPPE (28.3% vs. 44.9%, $\chi2$=10.125, p<005). There were no significant differences in learning provider according to years of registration for pharmacy technicians.

CPPE provided almost half (48.0%) of the learning events lasting up to 7 hours. HEIs accounted for 29.5% of learning events lasting one to 11 months and 59.1% for learning events lasting 12 months or more. Pharmacists who had been registered for 10 years or less were significantly more likely to describe a learning event lasting 12 months or more (24.4% vs. 7.7%) and less likely than those with more than 10 years of experience to describe a learning event lasting up to seven hours (24.4% vs. 7.7%, $\chi2$=11.942, p<0.05). There were no significant differences in duration of learning event by years of registration for pharmacy technicians.

Table 13: Duration and provider of learning events

%	Pharmacist learning events (N=242)*	Pharmacy tech learning events (N=224)*
Duration of learning event		
up to 7 hrs	53.6 (128)	50.5 (110)
1-5 days	16.3 (39)	14.2 (31)
2-4 weeks	0.8 (2)	6.4 (14)
1-11 months	18.4 (44)	17.4 (38)
12 months or more	10.9 (26)	11.5 (25)
Provider of training		
NHS employer	13.2(32)	28.9 (64)
HEI	17.8 (43)	17.4 (39)
CPPE	41.3 (100)	33.0 (74)
Community pharmacy employer	1.7 (4)	2.3 (5)
other provider	26.9 (62)	25.0 (56)

*Some missing values

3.3.3 Reasons for undertaking learning and funding source

The most commonly cited reasons for undertaking the learning were career development and personal interest, with similar proportions of both groups citing these as a reason. See Table 14 for details. Over a quarter of participants in each group had completed the learning event because their employer mandated it. Around one in five of the participants in each group were undertaking the learning for revalidation purposes. This figure was higher for the pharmacy technician group. There were no statistically significant differences in reasons for undertaking learning between the two groups of participants.

Pharmacists who had been on the register for 10 years or less were significantly more likely to give career development as a reason for learning than pharmacists who been on the register for more than 10 years (49.3% vs. 29.5%, $\chi2$=7.626, p<0.01). There were no other statistically significant differences in reasons for undertaking learning for the pharmacists or pharmacy technicians.

In terms of funding, in almost half of cases (49.6% and 47.4% for the pharmacists and pharmacy technicians respectively) the learning event was free-of-charge. Approximately a third of participants (32.1% for pharmacists and 39.7% for pharmacy technicians) had been funded to do the learning by their employer. HEE funded 18.8% of pharmacist learning and a lesser percentage (12.1%) of the pharmacy technician learning. One in 10 pharmacists funded their own learning; this figure was lower in the pharmacy technician group (3.9%). Other sources of funding included CCG, government, Local Pharmaceutical Committee, pharmaceutical company, Pharmacy Integration Fund, Royal Pharmaceutical Society and South West Medicines Information Team. See Table 14 for details. There were no statistically significant differences in sources of funding between the two groups of participants or according to years on the register (≤10 years vs. >10 years).

Table 14: Reasons for undertaking learning and funding source

% (N)	Pharmacist learning events (N=242)	Pharmacy tech learning events (N=224)
*Reason for undertaking the learning**		
Personal interest	49.2 (119)	47.8 (111)
Career development	50.8 (123)	47.0 (109)
Employer mandated	26.9 (65)	29.7 (69)
Revalidation	17.4 (42)	23.3 (54)
Other	17.8 (43)	13.8 (32)
*Who funded the learning?**		
Self-funded	9.8 (22)	3.9 (9)
Employer	32.1 (72)	39.7 (92)
HEE	18.8 (42)	12.1 (28)
Free-of-charge	49.6 (111)	47.4 (110)
Other	15.6 (35)	7.3 (17)

*Responses add up to more than 100% as more than one answer possible.

In order to explore reasons for participating by sector, we used learning event one as our variable of interest and cross-tabulated responses by sector of practice for those who worked solely in either community or hospital. Three-quarters of participants in both groups provided information on one learning event only. As the numbers were small, pharmacist and pharmacy technician responses were combined. Hospital pharmacy professionals were significantly more likely than community pharmacy professionals to be undertaking the learning for career development (39.1% vs.15.2%, $\chi 2$=15.788, p<0.01). See Table 15 for details

Community pharmacy professionals were significantly more likely to be doing the learning for revalidation purposes (19.6% vs. 9.8%, $\chi 2$=4.729, p<0.05). There were no statistically significant differences between community and hospital pharmacy professionals in the proportion undertaking the learning for 'personal interest', because it was 'employer mandated' or for 'other' reasons.

Table 15: Reasons for undertaking learning event 1 by sector of practice

% (N)	Community sector (N=92)	Hospital sector (N=215)
Personal interest	23.9 (22)	33.0 (71)
Career development	15.2 (14)	39.1 (84)
Employer mandated	25.0 (23)	18.6 (40)
Revalidation	19.6 (18)	9.8 (21)
Other	5.4 (5)	5.1 (11)

In order to explore sources of funding by sector, we used learning event one as our variable of interest and cross-tabulated responses by sector of practice for those who worked solely in either community or hospital. The only statistically significant difference in terms of the source of funding for learning between the two sectors was in the proportion of respondents whose employer funded the learning. Hospital pharmacy professionals were significantly more likely to report that their employer had funded their learning than community pharmacy professionals (27.4% vs. 9.8%, $\chi2$=10.650, p<0.01).

3.3.4   Methods of learning and support provided

The methods of learning reported are shown in Table 16. Face-to-face learning and online-learning were the most commonly cited methods of learning delivery used, with similar proportions of pharmacists and pharmacy technicians reporting using face-to-face methods. Pharmacists were significantly more likely to have undertaken learning that involved role-play as a method than pharmacy technicians ($\chi2$=5.032, p<0.01). There were no other statistically significant differences between the pharmacists and pharmacy technicians in relation to learning methods There were no statistically significant differences in methods of learning used by years of registration (≤10 years v. >10 years) for either pharmacists or pharmacy technicians.

In order to explore methods of learning by sector, we used learning event one as our variable of interest and cross-tabulated responses by sector of practice for those who worked solely in either community or hospital. Hospital pharmacy professionals were significantly more likely to use face-to-face learning methods (46.5% vs. 27.1%, $\chi2$=15.882, p<0.01) and collaborative learning (22.3% vs. 3.3%, $\chi2$=15.557, p<0.01) than their community peers. Community pharmacy professionals were significantly more likely to have used online learning than their hospital peers (48.9% vs. 26.5%, $\chi2$=13.581, p<0.01). There were no other statistically significant differences in learning methods used by sector of practice.

The most commonly cited source of support for learning was the course leader, who was cited by half of pharmacists and of pharmacy technicians. Peer support was the second most commonly cited source of support. There were no statistically significant differences between pharmacists and pharmacy technicians in terms of the types of support they received. See Table 16 for further details.

Pharmacists who had been registered 10 years or less were significantly more likely to have a named tutor than those who had been on the register for more than 10 years (21.7% vs. 10.2%, $\chi2$=4.692, p<0.05). There were no other significant differences in the support provided according to years of registration for pharmacists and pharmacy technicians.

In order to explore the type of support received by sector, we used learning event one as our variable of interest and cross-tabulated responses by sector of practice for those who worked solely in either community or hospital. Hospital pharmacy professionals were significantly more likely to have received the support of the course leader or facilitator than their community pharmacy peers (32.1% vs. 13.0 %, $\chi2$=11.077, p<0.01). Community pharmacy professionals were significantly more likely than their hospital peers to report receiving no support (17.4% vs. 5.6%, $\chi2$=9.464, p<0.01).

Table 16: Methods of learning and support provided

% (N)	Pharmacist learning events (N=242)	Pharmacy tech learning events (N=224)
Methods of learning		
Face-to-face learning	64.0 (155)	63.4 (147)
Collaborative learning	29.8 (72)	29.8 (65)
Online	55.0 (133)	47.0 (109)
Role play	20.2 (49)	12.1 (28)
Distance learning	16.1 (39)	15.1 (35)
Webinar	9.5 (23)	6.5 (15)
Other learning style	10.7 (26)	5.2 (12)
Support		
Named tutor	19.8 (48)	25.4 (59)
Course leader	50.0 (121)	44.8 (104)
Online forum	20.2 (49)	21.6 (50)
Peer support	33.1 (80)	37.1 (86)
No support	20.2 (49)	15.5 (36)
Other support	10.7 (26)	3.4 (8)

*Responses add up to more than 100% as more than one answer possible

3.3.5 Feedback on learning and when the learning took place

Over a third of the pharmacist respondents and 41% of the pharmacy technician respondents had not received any feedback on their learning. The most commonly cited sources of feedback were written and verbal feedback. There were no statistically significant differences between the pharmacists and pharmacy technicians in terms of feedback. See Table 17 for details. There were no statistically significant differences in feedback received according to years of registration (≤10 years v. >10 years) for either pharmacists or pharmacy technicians.

In order to explore the type of feedback by sector, we used learning event one as our variable of interest and cross-tabulated responses by sector of practice for those who worked solely in either community or hospital. There were no statistically significant differences in the types of feedback received by sector of practice.

In terms of when respondents completed the learning, the highest proportion of participants in both groups reported completing the learning in their own time (57.4% and 40.1% for pharmacists and pharmacy technicians respectively). Pharmacists were significantly more likely to have completed the learning in their own time ($\chi2$=4.402, p=0.036). Pharmacists were also significantly more likely to have taken annual leave to complete the learning than their pharmacy technician counterparts ($\chi2$=11.605, p=0.001). Twenty-three percent of the pharmacy technicians and 18% of the pharmacists reported that the learning was part of their role; this difference was not significant. There were no other significant differences between the groups. There were no significant differences in when the learning

was completed by years of registration (≤10 years v. >10 years) for either pharmacists or pharmacy technicians.

Table 17: Feedback received during learning and information on when learning took place

% (N)	Pharmacist learning events (N=242)	Pharmacy tech learning events (N=224)
Feedback		
Verbal feedback	26.0 (63)	25.0 (58)
Written feedback	32.6 (79)	23.7 (55)
Peer feedback	19.8 (48)	12.9 (30)
No feedback	35.1 (85)	41.4 (96)
Other feedback[†]	9.1 (22)	6.5 (15)
When learning was completed		
Own time (outside of work)	57.4 (139)	40.1 (93)
Protected time	22.7 (55)	26.7 (62)
Quiet time during work	14.5 (35)	19.4 (45)
Annual leave	13.2 (32)	2.2 (5)
Learning was part of role	15.7 (38)	22.8 (53)
Other time for completion	7.9 (19)	3.4 (8)

*Responses add up to more than 100% as more than one answer possible
[†]Other feedback included: exam, online assessment, online comment

In order to explore whether there were any differences in when professionals from the community and hospital sectors completed the learning, we used the first learning event reported (learning event one) as our variable of interest and cross-tabulated responses by sector of practice for those who worked solely in either community or hospital. NB: Three-quarters of participants reported only one learning event. As the numbers were small, pharmacist and pharmacy technician responses were combined. See Table 18 for details.

Community pharmacy professionals were significantly more likely to have completed the learning in their own time (42.4% vs. 23.3%, $\chi 2$=10.550, p<0.01). Hospital pharmacy professionals were significantly more likely than their community peers to both have had protected time in which to complete the learning (16.7% vs. 2.2%, $\chi 2$=11.304, P<0.01), have completed the learning during quiet times at work (14.4% vs.5.4%, $\chi 2$=4.193, p<0.04) and for the learning or training to have been part of their job role (15.8% vs. 2.2%, $\chi 2$=10.300, p<0.01). There were no other statistically significant differences between the groups in terms of when the learning was completed.

Table 18: When learning event was completed by sector of practice

% (N)	Community sector (N=92)	Hospital sector (N=215)
Own time	42.4 (39)	23.3 (50)
Protected time	2.2 (2)	16.7 (36)
Quiet time during work	5.4 (5)	14.4 (31)
Annual leave	2.2 (2)	5.6 (12)
Part of role	2.2 (2)	15.8 (34)
Other time for completion	0.0 (0)	2.3 (5)

NB: responses add up to more than 100% as more than one response possible

3.3.6 Views on learning events

The results shown in Table 19 below indicated high levels of agreement with the seven statements regarding learning event one. The statements recording the highest levels of agreement for both groups of participants related to the relevance of the learning to current and future roles and the ease of accessing the learning. The majority of participants agreed that the learning had been delivered in a way that was stimulating and also valued the support they had received from the learning provider. Fewer pharmacists than pharmacy technicians agreed that they valued the support they had received from their employer. A large proportion of participants in both groups had been able to apply the skills in their current role. There were no statistically significant differences between the groups in regard to these statements.

Table 19: Views on learning events

Statement agreeing or strongly agreeing %(N)	Pharmacists (N=242)*	Pharmacy technicians (N=224)*
The content of this learning is directly relevant to my current role as a pharmacist/pharmacy technician	86.9 (192)	86.5 (154)
The content of this learning is likely to be relevant for roles I plan to take on in the future	87.3 (193)	82.6 (147)
The content of the learning was delivered in ways that I found stimulating	77.8 (172)	83.1 (148)
I valued the support I received from the learning provider	71.0 (157)	73.8 (124)
I felt supported by my employer in completing this learning	60.5 (118)	66.7 (110)
I found it easy to access this learning	88.6 (194)	90.6 (164)
I have been able to apply the skills or knowledge I gained from undertaking this learning in my current role(s)	85.8 (188)	78.8 (134)

*Some missing values

In terms of differences between pharmacists and pharmacy technicians in relation to how long they had been qualified, pharmacists who had been on the register for more than 10 years were more likely than those who had been on the register for 10 year or less to agree that the content of the learning was directly relevant to their current role (91.3% vs. 76.2%, $\chi2$=4.806, p<0.05) and that the learning was delivered in a way that they found stimulating (90.2% vs. 59.5%, $\chi2$=16.414, p<0.01). There were no other statistically significant differences for the other statements for pharmacists and there were no significant differences for any of the statements for pharmacy technicians.

3.3.6.1 Views on learning events by sector of practice

These statements on learning event one were also analysed by sector of practice, comparing those who worked solely in community pharmacy with those working in the hospital sector. These broadly mirrored the findings for professional group, with the exception of the statement 'I felt supported by my employer in completing this learning.' There was a significant difference in the proportion of community pharmacists or pharmacy technicians who reported feeling supported by their employer. Only 39% of community pharmacists and pharmacy technicians agreed or strongly agreed with this statement, compared with 68% of hospital pharmacists and pharmacy technicians. This difference was statistically significant ($\chi2$=9.823, p<0.01). See Table 20 for details.

Table 20: Views on learning events by sector of practice

Statement (% (N) agreeing or strongly agreeing)	Community sector (N=92)*	Hospital sector (N=121)*
The content of this learning is directly relevant to my current role as a pharmacist/pharmacy technician	87.8 (43)	82.6 (100)
The content of this learning is likely to be relevant for roles I plan to take on in the future	75.0 (36)	83.1 (98)
The content of the learning was delivered in ways that I found stimulating	77.6 (38)	80.8 (97)
I valued the support I received from the learning provider	68.3 (28)	73.9 (85)
I felt supported by my employer in completing this learning	39.1 (18)	67.5 (77)
I found it easy to access this learning	93.9 (46)	84.0 (100)
I have been able to apply the skills or knowledge I gained from undertaking this learning in my current role(s)	78.7 (37)	76.7 (89)

*some missing values

3.4 Preparedness for domains of future practice

In this section, participants' preparedness for domains of future practice, as measured by nine statements, are reported. As future roles vary by professional group, the findings for pharmacists and pharmacy technicians are reported separately.

3.4.1 Domains of future practice: Pharmacists

The results for the pharmacists are shown in Table 21. More than a third of pharmacists who responded reported that they were already providing education to other healthcare professionals (36.4%) and performing medicines optimisation (34.6%). Twenty-four percent were already performing the role of an independent prescriber. In terms of the domains in which pharmacists felt least prepared, 73% felt completely unprepared to collect samples for laboratory analysis and 46% felt unprepared to undertake diagnostic examinations. Forty percent of respondents felt completely unprepared for independent prescribing.

There were no statistically significant differences between pharmacists according to years of registration (≤10 years vs. >10 years) in terms of the proportion of respondents who were either fully prepared for, or already performing, the role.

Table 21: Domains of future practice: Pharmacists

Domain - % (N)	Completely unprepared	A little unprepared	Somewhat prepared	Fully prepared	I am already performing this role
Physical observations (e.g. measuring temperature, blood pressure)	14.3 (18)	19.8 (25)	41.3 (52)	14.3 (18)	10.3 (13)
Diagnostic examinations (e.g. examining a patient's eyes or ears; listening to a patient's chest using a stethoscope)	46.2 (61)	25.8 (34)	22.0 (29)	4.5 (6)	1.5 (2)
Collecting samples for laboratory analysis (e.g. taking a blood sample or throat swab)	73.1 (95)	14.6 (19)	6.9 (9)	3.8 (5)	1.5 (2)
Interpretation of investigation findings (e.g. blood test results)	12.9 (17)	13.6 (18)	34.1 (45)	17.4 (23)	22.0 (29)
Advanced consultation skills (e.g. gaining consent for examination or treatment; explaining test results)	20.8 (27)	19.2 (25)	23.8 (31)	17.7 (23)	18.5 (24)
Independent prescribing	39.4 (52)	10.6 (14)	17.4 (23)	8.3 (11)	24.2 (32)
Working across care settings (e.g. primary, secondary, intermediate care)	19.8 (26)	19.8 (26)	26.7 (35)	16.8 (22)	16.8 (22)
Medicines optimisation (full clinical medication review)	10.0 (13)	12.3 (16)	21.5 (28)	21.5 (28)	34.6 (45)
Providing education / training to other healthcare professionals	9.8 (13)	9.1 (12)	24.2 (32)	20.5 (27)	36.4 (48)

3.4.1.1 Domains of future practice by sector of practice: Pharmacists

The data were also analysed by sector of practice, for those who worked in one sector only in either community or hospital and who completed the domain questions (N=25 and N=47 respectively). The proportions of pharmacists from each sector who were fully prepared or already performing the role are shown in Table 22. Note, the size of the sample for this was small, so it was not possible to perform statistical analysis to determine if any of the differences were statistically significant. Caution should therefore be taken in interpreting these results.

Community pharmacists were most likely to be already providing advanced consultation skills and felt most prepared for conducting physical observations and collecting samples. Hospital pharmacists were most likely to be performing medicines optimisation and providing education to other healthcare professionals. Thirty-nine percent of the hospital pharmacists were also undertaking independent prescribing and interpreting investigation findings. Hospital pharmacists were most likely to report being fully prepared to perform medicines optimisation and working across settings. See Table 22 for details.

Table 22: Domains of future practice for pharmacists: by sector of practice

Domain - % (N)	Fully prepared		Already performing role	
	CP	HP	CP	HP
Physical observations (e.g. measuring temperature, blood pressure)	24.0 (6)	11.6 (5)	16.0 (4)	2.3 (1)
Diagnostic examinations (e.g. examining a patient's eyes or ears; listening to a patient's chest using a stethoscope)	8.0 (2)	6.5 (3)	0.0 (0)	0.0 (0)
Collecting samples for laboratory analysis (e.g. taking a blood sample or throat swab)	12.5 (3)	2.2 (1)	0.0 (0)	0.0 (0)
Interpretation of investigation findings (e.g. blood test results)	8.0 (2)	10.9 (5)	0.0 (0)	39.1 (18)
Advanced consultation skills (e.g. gaining consent for examination or treatment; explaining test results)	12.0 (3)	18.2 (8)	16.0 (4)	22.7 (10)
Independent prescribing	8.0 (2)	10.9 (5)	4.0 (1)	39.1 (18)
Working across care settings (e.g. primary, secondary, intermediate care)	8.0 (2)	24.4 (11)	0.0 (0)	11.1 (5)
Medicines optimisation (full clinical medication review)	8.0 (2)	29.5 (13)	4.0 (1)	50.0 (22)
Providing education / training to other healthcare professionals	12.0 (3)	19.6 (9)	4.0 (1)	52.2 (24)

Note: CP=community pharmacist, HP=hospital pharmacist

3.4.1.2 Domains of future practice by independent prescribing status: Pharmacists

The data were also analysed by independent prescribing status, for those who reported holding a non-medical prescribing qualification (N=51) compared with those without (N=81). For some of the statements the size of the sample was not large enough to determine if any of the differences were statistically significant. Caution should therefore be taken in interpreting these results.

Pharmacists with an independent prescribing qualification were most likely to be already performing medicines optimisation, and providing education to other healthcare professionals. They were most likely to feel fully prepared to work across settings, to provide advanced consultation skills and to interpret investigation findings. Pharmacists with an independent prescribing qualification were significantly more likely than non-prescribers to already be performing Independent prescribing ($\chi2$=89.066, p<0.01), interpretation of investigation results ($\chi2$=23.181, p<0.01)), working across sectors ($\chi2$=23.126, p<0.01), medicines optimisation ($\chi2$=36.057, 0<0.01) and providing education and training ($\chi2$=30.208). Those with an independent prescribing qualification were more likely to be fully prepared for independent prescribing and working across sectors. There were no other statistically significant differences. See Table 23 for details.

Table 23: Domains of future practice for pharmacists: by independent prescribing status

Domain - % (N)	Fully prepared		Already performing role	
	IP	Non-IP	IP	Non-IP
Physical observations (e.g. measuring temperature, blood pressure)	14.6 (7)	14.1 (11)	20.8 (10)	3.8 (3)
Diagnostic examinations (e.g. examining a patient's eyes or ears; listening to a patient's chest using a stethoscope)	7.8 (4)	2.5 (2)	3.9 (2)	0.0 (0)
Collecting samples for laboratory analysis (e.g. taking a blood sample or throat swab)	0.0 (0)	6.3 (5)	2.0 (1)	1.3 (1)
Interpretation of investigation findings (e.g. blood test results)	21.6 (11)	14.8 (12)	39.2 (20)	11.1 (9)
Advanced consultation skills (e.g. gaining consent for examination or treatment; explaining test results)	22.0 (11)	15.0 (12)	36.0 (18)	7.5 (6)
Independent prescribing	17.6 (9)	2.5 (2)	58.8 (30)	2.5 (2)**
Working across care settings (e.g. primary, secondary, intermediate care)	29.4 (15)	8.8 (7)	25.5 (13)	11.3 (9)
Medicines optimisation (full clinical medication review)	17.6 (9)	24.1 (19)	62.7 (32)	16.5 (13)
Providing education / training to other healthcare professionals	19.6 (10)	21.0 (17)	58.8 (30)	22.2 (18)

IP=independent prescriber, Non-IP=non-independent prescriber
**without a non-prescribing qualification, these pharmacists would not be able to work as an independent prescriber. We would therefore assume that these two individuals have failed to tick the box indicating that they had an independent prescribing qualification

3.4.2 Domains of future practice: Pharmacy technicians

The results for the pharmacy technicians are shown in Table 24. More than half (54.2%) of the pharmacy technicians who responded reported that they were already performing accuracy checking. Forty percent of pharmacy technicians were already performing medication history taking and documentation and a similar proportion were providing education to other healthcare professionals. See Table 24 for further details. In terms of the domains in which pharmacy technicians felt least prepared, 45% felt completely unprepared to perform physical examinations and 41% felt unprepared to administer medicines.

Pharmacy technicians who had been on the register for more than 10 years were significantly more likely than those on the register for 10 years or less to be either already providing education or training to other healthcare professionals or feel fully prepared to do so (66.3 % vs. 42.5%, $\chi2$=5.736, p<0.05). There were no other statistically significant differences in preparedness for future practice according to years of registration.

Table 24 Domains of future practice: Pharmacy technicians

Domain - % (N)	Completely unprepared	A little unprepared	Somewhat prepared	Fully prepared	I am already performing this role
Accuracy checking	12.0 (17)	8.4 (8)	11.3 (16)	16.9 (24)	54.2 (77)
Dispensary management	10.1 (14)	9.4 (13)	28.3 (39)	29.0 (40)	23.2 (32)
Advanced consultation skills (e.g. providing advice to patients on prescribed medicines or healthy living)	5.7 (8)	7.1 (10)	40.4 (57)	16.3 (23)	30.5 (43)
Medication history taking and documentation (e.g. medicines reconciliation)	10.6 (15)	8.5 (12)	20.6 (29)	20.6 (29)	39.7 (56)
Physical observations (e.g. measuring temperature, blood pressure)	45.0 (63)	16.4 (23)	21.4 (30)	10.0 (14)	7.1 (10)
Administration of medicines to patients	41.4 (58)	10.0 (14)	26.4 (37)	16.4 (23)	5.7 (8)
Working across care settings (e.g. primary, secondary, intermediate care)	17.1 (24)	18.6 (26)	26.4 (37)	25.7 (36)	12.1 (17)
Providing education / training to other healthcare professionals	3.5 (5)	9.9 (14)	27.5 (39)	20.4 (29)	38.7 (55)
Conducting quality improvement audits	4.9 (7)	7.7 (11)	31.0 (44)	23.9 (34)	32.4 (46)

3.4.2.1   Domains of future practice by sector of practice: Pharmacy technicians

As with the pharmacist data, the data for pharmacy technicians were also analysed by sector of practice, for those who worked solely in either community or hospital. The proportions of pharmacy technicians from each sector who were fully prepared or already performing the role are shown in Table 25. Again the sample sizes were small, so it was not possible to perform statistical analysis to determine if any of the differences were statistically significant. Caution should therefore be taken in interpreting these results.

Community pharmacy technicians were most likely to be already performing accuracy checking and advanced consultation skills. One in four community pharmacy technicians were already performing dispensary management and physical observations. Close to three-quarters of hospital pharmacy technicians were performing accuracy checking and more than half were already performing medication history taking and documentation. A third of hospital pharmacy technicians were performing advanced consultation skills.

Community pharmacy technicians felt most prepared to perform dispensary management, to provide education to other healthcare professionals and performing clinical audits. Hospital pharmacy technicians felt most prepared to perform dispensary management, to work across sectors and to perform clinical audits. See Table 25 for details.

Table 25: Domains of future practice for pharmacy technicians; by sector of practice

Domain - % (N)	Fully prepared		Already performing role	
	CPT	HPT	CPT	HPT
Accuracy checking	20.0 (3)	8.3 (6)	53.3 (8)	72.2 (52)
Dispensary management	33.3 (5)	22.2 (16)	40.0 (6)	26.4 (19)
Advanced consultation skills (e.g. providing advice to patients on prescribed medicines or healthy living)	13.3 (2)	12.5 (9)	46.7 (7)	37.5 (27)
Medication history taking and documentation (e.g. medicines reconciliation)	20.0 (3)	12.5 (9)	20.0 (3)	54.2 (39)
Physical observations (e.g. measuring temperature, blood pressure)	20.0 (3)	11.3 (8)	40.0 (6)	1.4 (1)
Administration of medicines to patients	6.7 (1)	11.4 (8)	20.0 (3)	4.3 (3)
Working across care settings (e.g. primary, secondary, intermediate care)	28.6 (4)	21.1 (15)	7.1 (1)	4.2 (3)
Providing education / training to other healthcare professionals	33.3 (5)	16.7 (12)	20.0 (3)	36.1 (26)
Conducting quality improvement audits	33.3 (5)	20.8 (15)	6.7 (1)	36.1 (26)

Note: CPT=community pharmacy technician, HPT=hospital pharmacy technician

3.5   Impactful training

Participants were given the opportunity to provide a free-text response responding to the following question "In the period since you first registered as a pharmacy professional, what single training course or learning experience has had the most significant influence on your career to date?"

3.5.1   Pharmacists' experiences of impactful training

Two key pieces of learning/training that were repeatedly mentioned by respondents were the Postgraduate Clinical Diploma and the non-medical (independent) prescribing. Below are some examples of comments made by pharmacist participants.

3.5.1.1   Clinical diploma

Respondents, predominantly those working in the hospital sector, described how the diploma had provided them with a comprehensive clinical training, providing them with "a foundation for building on future learning" and being important for career progression within the hospital sector. Below is a selection of the comments made regarding clinical diplomas:

> *"Clinical diploma; all pharmacists regardless of sector should receive funding to complete the diploma, it provides such comprehensive clinical pharmacy training applicable to all sectors in some way"*

> *"Clinical Pharmacy diploma (completed 2011) - impacted how I approach each patient. Taught me skills to see the patient as a whole, not simply a list of problems."*

> *"Postgraduate clinical diploma as this covered a number of clinical specialties. It was also quite intense working full time at the same time and allowed me to develop additional skills such as prioritisation and time management, over and above what had been required at undergraduate* level."

> *"Postgrad diploma in clinical pharmacy. Increased clinical knowledge and skills for use in hospital role. Foundation for building on with future learning. Necessary for career progression within hospital pharmacy environment."*

> *"Post graduate diploma in clinical pharmacy. It provided the bread and butter clinical pharmacy skills and knowledge needed to provide safe, effective clinical pharmacy services for hospital patients. It provided the building blocks from which I adapted my skills to incorporate medicines management work in primary care (CCG)."*

> *"*[The] *Diploma. I think there is way too much focus on pharmacists doing all these new fancy roles but really we need to do what no one else can, review medicines. There are other people more qualified to listen to chests, interpret clear x-rays, do obs*[ervations] *and take blood. We need to focus on drugs."*

3.5.1.2   Non-medical (independent) prescribing course

Respondents described how the non-medical prescribing qualification had provided them with additional career options and allowed them to play a more clinical role within multi-disciplinary teams. Below is a selection of the comments on the non-medical prescribing course:

> *"The Independent prescribing qualification has opened up new career pathways in pharmacy for me. Without it, I wouldn't be working in GP practice now."*

> *"Non-medical prescribing. Having a medic mentor gave me the skills and confidence to consult with patients, come up with a treatment plan and safety net accordingly."*

> *"Independent Prescribing. The ability to finally sign the prescription confirms patients trust in my ability to do perform a role I have in actual fact been doing for many years."*

> *"Independent prescribing - optimises my role as a clinical pharmacist allows me to play a much more clinical role within the multidisciplinary team."*

> *"Independent prescribing. I can review patients and escalate or de-escalate their medication according to their condition. It means I don't have to waste time waiting for a Dr to get back to me and action (or not to action) my advice. With these skills I can know assess the patient and decide what medication or management is appropriate (before I did not know enough about how to assess a patient in order to determine what was not appropriate).In my opinion, the independent prescribing course should be part of the post-grad diploma."*

3.5.1.3   Leadership and management training

A number of respondents also noted how leadership and management training, including the Mary Seacole programme, had enhanced their career development. Below are a selection of comments:

> *"Project Management course. Started me off on my career in healthcare public affairs, which enabled me to demonstrate my skills and competencies in deliver of complex programmes of work across the sector, which in turn supported me to attain my current position."*

> *"CPPE leadership school training. It has made me think about my whole career as a pharmacist in a different light and enabled me develop the network and confidence to take on new opportunities."*

> *"Mary Seacole programme. Good introduction to quality improvement methodology, and leadership. Able to apply in my workplace through service development and also able to test out different leadership skills."*

> *"Mary Seacole- one year Open University course- I learnt a lot about myself and how to manage my leadership skills better."*

3.5.1.4 Other impactful training

Several respondents mentioned how impactful they had found vaccination training:

> *"Vaccination training. We go from never laying hands on a patient to sticking a needle into them. There is nothing in between. I was concerned when we were first told we had to do it (no choice) but I really enjoy it as patients choose to come to us as they usually don't like the experience they have had at the GP being treated like cattle and told when they have to come ie Saturday morning and they love popping to see us and getting more information about their vaccination."*

> *"Flu training. Most important service to improve status of community pharmacists as professional healthcare providers in eyes of customers."*

> *"Become accredited to give flu jabs has had the most impact because it was outside of my comfort zone but enabled me to give a completely different kind of service from what I had done before."*

Other respondents described other impactful training they had completed.

> *"Completing a Master's degree 10 years after my pharmacy degree made me rethink my career options, and led to my leaving my hospital job and move sector."*

> *"I completed a WCPPE training course about how to teach other healthcare professionals, and this has really helped me to confidently plan and deliver teaching session."*

Some pharmacists described how it was difficult to identify one piece of training or learning that had a significant impact.

> *"I would say all have been of benefit. All have influenced me. I enjoy the clinical side of hospital pharmacy so enjoy learning about clinical changes. I try to encourage learning to juniors. How learning has changed- easier but so much out there."*

> *"That's impossible to answer because my career has had three distinct parts: clinical, prescribing and teaching. DipClinPharm in some ways was most influential because it gave me a Master's level approach to thinking and learning that I have continued to use for formal study and informal learning since. Prescribing (supplementary and then independent conversion) caused the most significant change to my career from what I initially trained to do and helped to realise a long-held aspiration. However, my current role in education has been impacted most by the educational qualifications I'm undertaking at present."*

> *"There is not one single course that I would single out as having had the most significant influence as there are pockets of wisdom from most of the educational activities that I have been involved with that I have reflected on and used to improve my practice."*

Some participants felt that experiential learning, e.g. observing other pharmacists and health professionals had impacted on their career more than specific training or learning courses. One respondent also described the experience of talking to an expert patient had made them reconsider their dealings with all patients:

> *"In fairness I think observing other pharmacists and gaining experience have been more significant than any courses."*

> *"A patient coming to speak to us about how they live with cystic fibrosis. The patient was very knowledgeable (as most CF patients) and gave us a good idea of their perspective and how we could support them better/what information they need/are interested to know and what is not for example...It made me rethink how I talk to patients in general too."*

3.5.2 Pharmacy technicians' experiences of impactful training

Accuracy checking training was identified as a major influence on the career according to some of the pharmacy technicians in the sample.

3.5.2.1 Accuracy checking training

Respondents described how accuracy checking training it allowed them to take on further responsibilities, expanding their role and "opening the door" to career changes. Below is a selection of the comments on accuracy checking training:

> *"Accuracy Checking - It allowed me to take more responsibility within the dispensary and opened doors to further career changes."*

> *"It expanded my role and helped all the previous and current pharmacies (whether it was community or hospital) that I have worked in."*

> *"Completing the accuracy checking course has enabled me to view pharmacy in a very different way and I now am able to administer medication following the same way I would check a prescription and use my further knowledge to advise patient's regarding medication."*

3.5.2.2 Professional diplomas

Professional diplomas were also mentioned by some of the pharmacy technician respondents as having an impact on their career. Such diploma courses allowed the pharmacy technicians to enhance their clinical knowledge and expand their role. Below is a selection of comments on diplomas:

> *"BTEC level 4 Clinical Pharmacy: therapeutics section and sections on blood tests was especially helpful to my role in GP practice where I deal with secondary care letters and discharges, updating medications whilst checking blood tests are up to date, being able to look up test results associated with interactions or contra-indications to pass to the pharmacist for advice. The course has also helped me in my care home role for the same reasons."*

"BTEC Professional Diploma - Clinical Pharmacy Technicians Derby University 2010. This course really enhanced my clinical knowledge and project management skills. I utilised my knowledge whilst undertaking medicines reconciliation in secondary care, obtaining patients drugs history and interpreting clinical results …I have used skills I obtained in the final module - Specialist Pharmacy Practice when creating training packages for Pharmacy Technicians and other Health Care professionals both within Secondary Care and more recently Primary Care. Having moved across into Primary care 6 years ago into a GP Practice based Medicines Management Technician role the clinical knowledge I gained supports me with the daily work I carry out. These roles include carrying out level 1 and 2 medication reviews, working in Care Homes, and when answering queries from other healthcare professionals."

3.5.2.3   Management / leadership training

Some pharmacy technician respondents reported that management or leadership training had been valuable for their role, also enabling career progression. Below are a selection of comments made about management / leadership training:

"CPPE Leadership School provided me with valuable insight into my own behaviours (Myers Briggs) and allowed me [to] understand why i approach tasks in situations in a certain way and why others do things differently. Learnt new ways of working which make me more effective and appreciate team working. Gave me a 'light bulb' moment in terms of what makes me tick and that has had a massive impact on my professional practice day to day."

"Medicines Management Diploma - London School of Pharmacy. Developed my clinical skills and confidence in utilising these in a ward based medicines management role. Led me to involvement in service developments in ward based pharmacy services; including attending consultant ward rounds and transcribing TTOs."

"Diploma in Management from the University of Nottingham as it gave me a good broad understanding of management issues, topics and skills with which to use for my role."

"Diploma in Pharmacy Management - enabled me to perform well in a team leading role and subsequently a senior manager role."

"The one course I have done most recently (2-3 years ago) was the practice supervisor course which was very beneficial to me when training staff."

"Medicine management course opened up a range of positions and gave patient contact."

"NVQ Assessors award - being able to help in the training of new technicians at ATO's. Being able to pass on knowledge that will be helpful."

3.5.2.4　Experience and mentorship

For some of the technician participants, the learning event that had the most impact was not an event per se, but rather the practical experience of working with experienced pharmacy professionals or working across sectors.

> *"My initial training as a pharmacy technician working with a brilliant pharmacist who had a deep passion for pharmacy was my greatest influence to continue in my career. I felt back then I could make a difference and really help people."*

> *"The learning experience that has had the most significant influence would be transitioning from community pharmacy into the primary care sector, this has provided me with a vast amount of knowledge of how the NHS works and patient care."*

3.6　Stakeholder event

Twenty-three stakeholders attended the stakeholder event. They included representatives from hospital pharmacy (including pharmacy technicians), higher education, community pharmacy (including representatives from large multiples) and CPPE.

As part of the Ketso process, as described in the Methods (section 2.6), the participants at the stakeholder event recorded a total of 188 ideas or comments about different aspects of pharmacy education. After the workshop the placement and content of the ideas/comments recorded by the participants were noted and photographed. Some of the photographs captured during the event are shown below. Figure 1 illustrates the number of ideas/comments, categorised by the different topic questions (leaf type) posed to participants during the workshop. The most comments (N=78) were recorded against the challenges facing the profession in making changes to education and training. Participants recorded 60 comments or ideas against the question 'What is working in pharmacy education and training?' Participants recorded 50 comments regarding future possibilities for pharmacy education and training.

Figure 1: Number of ideas/comments by leaf type
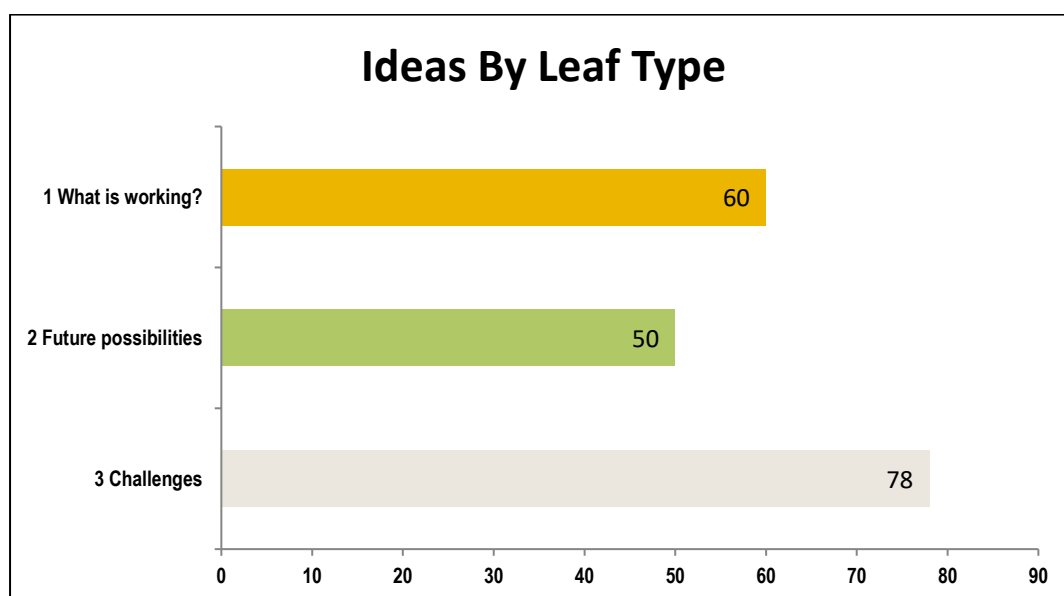
Figures shows the spread of ideas/comments by each of the three groups in terms of which of the leave types each group had used.

Figure 2: Number of ideas/comments by group
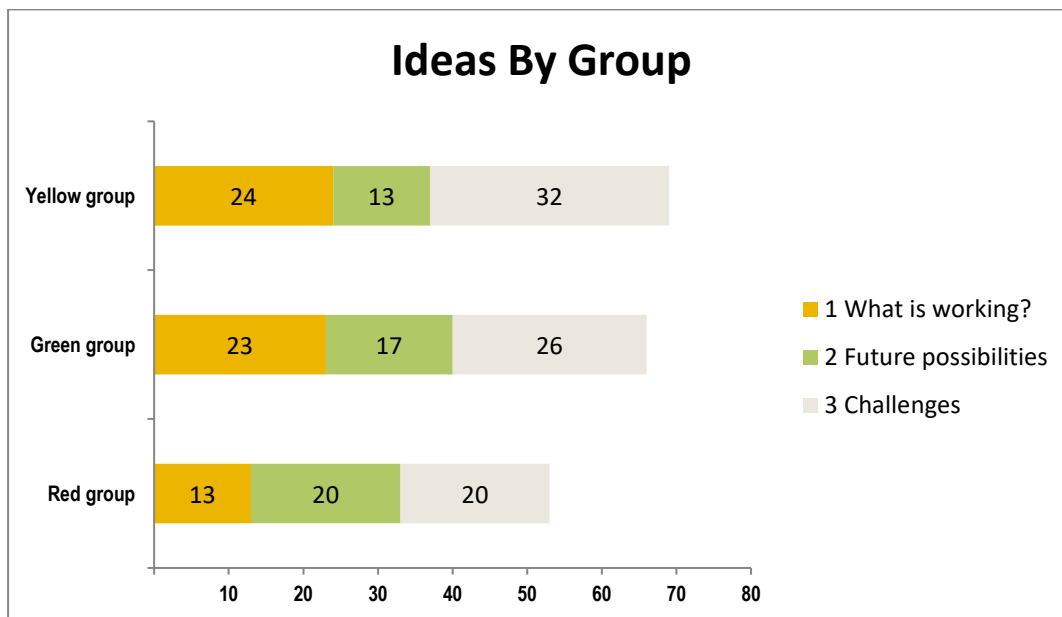
Figure 3,
Figure 4 and Figure 5 are photographs showing the Ketso felt workspaces for each of the three groups.

Figure 3: Ketso felt for Yellow group

Figure 4: Ketso felt for Green group

Figure 5: Ketso felt for Red group

The branches that generated the most leaves (ideas/comments) were financial resource and training packages. Only one participant-generated theme was added, which was 'students and workforce' and this branch generated only a small number of ideas from one of the groups. See Figure 6 for details.

Figure 6: Ideas by branch
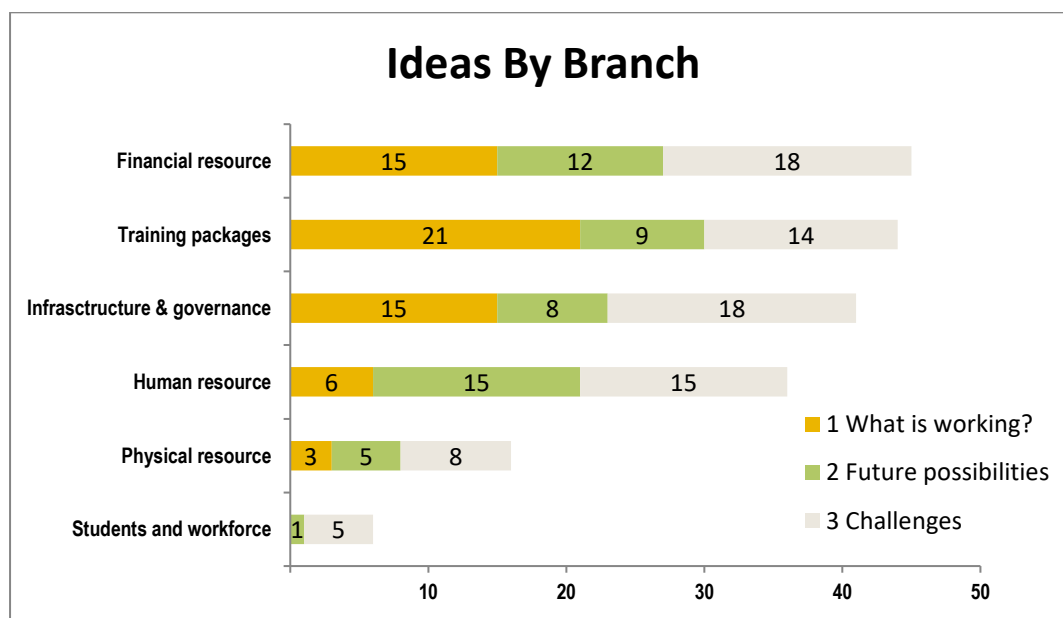
See the appendix for tables A to C that provide details of comments made under each leaf for each of the branches. As the Students and workforce branch was only used by one of the three groups and only generated a small number of ideas/comments, we have taken a decision to exclude this data from the tables.

3.6.1.1 Priority ideas

Participants drew a star on branches (themes) or ideas (comments) to convey priority status to particular ideas and branches of ideas. High priory ideas for each of the branches/themes are displayed in Table 26.

In terms of *training packages*, participants accorded priority to CPPE, indicating that this was working well and also felt that NHS policy that supported new roles for the profession (e.g. long-term plan) was helpful. In terms of future possibilities or ideas, participants assigned priority to foundation training for all, wider development of pharmacy (e.g. patient-facing roles) and the creation of a high level qualification for pharmacy technicians above level 4. No priority challenges were identified.

In terms of *financial resource*, no priority items were assigned to ideas about what was working. Future possibilities identified as possible priorities including the notion of one central employer, employing all pharmacy professionals, the new or revised community pharmacy contract and the need for a training needs analysis. Inequality of funding was regarding as a priority challenge for financial resource.

In terms of *human resource*, no priority items were identified in terms of what was currently working. Priority ideas for the future including the development of leadership and consultation skills and

protected time for development. Priority challenges were with regard to staffing issues (e.g. no time for training) and changes to culture (e.g. "that's not my job").

In terms of *infrastructure and governance*, participants identified links with higher education and further education providers and networks as currently working well. The apprenticeship structure was identified as working well. Priority ideas for the future were the pharmacist apprenticeship, promotion the profession and providing a pharmacy technician career framework. A priority challenges was the lack of GPhC oversight of pre-registration technician programme providers.

The only item identified as a priority under *physical resource* was the future possibility of a transferrable workforce.

Table 26: High priority ideas by branch

	Financial resource	Training packages	Human resource	Infrastructure and governance	Physical resource
What is working?	• No priority items	• CPPE • NHS policy supporting roles for the profession (e.g. long-term plan)	• No priority items	• Links with higher education / further education providers • Networks • Apprenticeship structure, e.g. 20% off the job	• No priority items
Future possibilities/new ideas	• One central employer!!! • New or revised community pharmacy contract • Training needs analysis	• Foundation training for all • Wider development of pharmacy, e.g. patient-facing roles, assessments • Creation of high level qualification for pharmacy technicians above level 4	• Develop leadership skills • Develop consultation skills • Protected time for development	• Pharmacist apprenticeship • Promoting the profession • Technician career framework	• Transferrable workforce
Challenges	• Inequality of funding	• No priority items	• Staffing issues – no time for training • Culture –"that's not my job"	• No GPhC oversight of pre-reg technician programme providers	• No priority items

4   Discussion

4.1   Overview

The overall aim of the study was to explore the views of pharmacy professionals regarding their experiences of learning and to explore perceptions of preparedness for future roles in an evolving pharmacy profession. This was achieved through surveying a large number of pharmacy professionals and conducting an event with stakeholders to sense-check our findings and capture views on pharmacy education and training.

4.2   Strengths and limitations

Four separate surveys were distributed online to newly qualified pharmacists, newly qualified pharmacy technicians, and pharmacists and pharmacy technicians who had been qualified for one year or more. Due to a disappointing response from the newly-qualified pharmacists and pharmacy technicians, it was not possible to report findings from this group of pharmacy professionals. The findings in this discussion therefore relate to pharmacy professionals who had been registered for more than one year. While the sample of post-registration pharmacy professionals was large enough to perform some simple subgroup analyses, the numbers were too small to permit statistical tests of significance by pharmacy sector for some of the variables and this should be recognised as a possible limitation.

The original plan for survey distribution had been to ask GPhC to distribute a link to the survey to pharmacy technician and pharmacist registrants. Unfortunately GPhC was unable to assist with this request due to a large number of concurrent surveys and concerns that registrants could experience research fatigue. Therefore a decision was taken to ask CPPE to dsitribute the survey. Although the majority of pharmacists and pharmacy technicians are registered with CPPE, it is possible that registrants may be more likely to complete a survey which is distributed via their regulator.

In terms of the representativeness of the sample when related to the most recently available data for pharmacy professionals on the GPhC register,[17] there was some evidence to suggest that certain groups of pharmacy professionals were under-represented, including non-white pharmacists and female pharmacists. The pharmacy technician groups were broadly representative. This could however be an artefact of the age of our sample, as younger pharmacists in particular tend to be from more diverse backgrounds than older pharmacists. The proportion of pharmacists with an independent prescribing qualification (~35%) is also considerably higher than on the register as a whole; the most recent data available (February 2018) indicated that around 11% of GPhC registrants were independent prescribers, although not all were currently practising.[16]

4.3   Learning events and use of training providers

Five hundred and eighteen respondents (252 pharmacists and 266 pharmacy technicians) reported on 464 learning events in total and provided information on different aspects of their learning. Respondents also provided their views on the relevance, delivery and applicability of the learning to their practice.

CPPE was the mostly commonly-cited learning provider and accounted for almost half of learning events lasting up to 7 hours. It is interesting to note that in the stakeholder event CPPE was commonly identified as one of the aspects of pharmacy education that was currently working effectively, as were higher education institutions, which provided 17% of the learning discussed in the surveys. There were some differences between the two professional groups in terms of who provided the training; pharmacy technicians were significantly more likely than pharmacists to have undertaken learning that was provided by their employer. This may be due to a significantly higher number of pharmacy technicians in our sample working in the hospital sector, as we know from previous research that pharmacy technicians working in the hospital sectors are more likely to have training provided for them.[11;12]

Pharmacists who had been registered ten years or less were more likely to have undertaken their learning at a higher education institution and more likely to have undertaken learning lasting 12 months or more. This is to be expected as pharmacists at this early stage of their career are likely to be consolidating and expanding their learning and undertaking clinical diplomas. Pharmacists registered for 10 years or more were more likely to have used CPPE as their learning provider and to have done learning for a shorter duration.

4.4   Reasons for training and support in completion of training

The most commonly cited reasons for undertaking the learning were 'personal interest' and 'career development.' Hospital pharmacy professionals were more likely to choose to do learning for career development reasons and community pharmacy professionals more likely to do learning for revalidation purposes. Pharmacy professionals who had been registered for 10 year or less were more likely to report doing learning for career development, which is perhaps to be expected for this group of professionals, who are likely to be building their career at this stage.

Approximately half of all learning was free of charge, which is to be expected, given the significant proportion of respondents who reported that their learning was provided by CPPE Indeed, CPPE provided 60% of learning events that were free-of-charge. Around a third of all respondents had their learning funded by their employer and hospital-based pharmacy professionals were significantly more likely to report this. This finding tallies with previous research with pre-registration trainees and early career pharmacists, suggesting sectoral difference in mechanisms of support, which have led to questions over the equitability and robustness of training.[8;9] One in ten pharmacists funded their own learning; pharmacy technicians were less likely to have funded their own learning.

In terms of the support pharmacy professionals received when doing the learning, there was evidence that professionals who had been registered for ten years or less were more likely to have the support of a named tutor. It is possible that this is linked to the types of education this group of professionals were undertaking, as this group were more likely to be undertaking learning of a longer duration, for example clinical diplomas. It should be noted that community pharmacy professionals were more likely than their hospital peers to report having received no support during their learning. This finding echoes findings from previous research early career pharmacists, which suggests that early career community-based pharmacy professionals lacked support.[10]

Pharmacist respondents were significantly more likely than their pharmacy technician peers to report completing the learning in their own time or having to take annual leave in order to complete the

learning. Again, this could be due to higher numbers of technicians working in the hospital sector, as the findings from the survey indicated that hospital-based pharmacy professionals were more likely to have protected time for their learning or for training to be a part of their role. Unfortunately the sample size was not large enough to permit cross-tabulation of the data by both registrant type (pharmacist vs. pharmacy technician) and sector of practice. It is also unfortunate that the number of pharmacists and pharmacy technicians working in other sectors such as GP practice, primary care, etc., were too small to permit an analysis of how and when these pharmacy professionals undertake their learning. Community pharmacy professionals were significantly more likely to have used online learning than their hospital peers and this may reflect the fact that this group of professionals were more likely to be doing the learning in their own time.

4.5   Training for current and future roles

With regard to pharmacy professionals' views on the learning events undertaken, the statements with the highest level of agreement related to the relevance of training to current and future roles in pharmacy. It was positive to see that the majority of the learning was delivered in ways that the respondents found stimulating, although there was some evidence that pharmacy professionals who had been registered for 10 years or less found the learning of less relevance to their current or future roles. Hospital pharmacy professionals were more likely to report feeling supported by their employer during the learning. Again this is supported by previous research with pre-registration trainee pharmacy professionals.[11;12]

In terms of preparedness for future roles, a third of pharmacist respondents were already providing education to other health professionals and performing medicines optimisation. A quarter of all pharmacists were already prescribing independently. As noted before, the sample contains a disproportionate number of independent prescribers. Those with an independent prescribing qualification were significantly more likely to be fully prepared, or already providing interpretation of test results, working across series, medicines optimisation and independent prescribing. This suggests that independent prescribers are well-prepared for advanced and autonomous practice.

In terms of clinical/ physical examination skills, pharmacists felt least prepared to collect samples and to perform diagnostic examinations. There were no significant differences in preparedness according to years on the register, which might have been expected. Although percentages are reported for the different sectors of practice and the findings suggest there may be differences between those working in community and hospital, the numbers in the sample were too small to perform statistical analysis to determine if these differences were significant. It is worth noting that the pharmacists in our sample, with an average age in their 40s, may not have received any training of clinical/physical examination or diagnostic examinations in their under-graduate or early career training.

A majority of the pharmacy technicians were either already performing or were fully prepared for accuracy checking, which is perhaps not unexpected given accuracy checking training was noted as the most impactful learning by a number of pharmacy technicians in the survey. A significant proportion was also prepared or already performing medicines history taking and providing education and training. Pharmacy technicians felt least prepared to perform physical observations

and to administer medicines to patients. As with the pharmacist respondents, the sample size was too small to determine if differences between community and hospital pharmacy technicians were

significant. It is essential to ensure that pharmacy technicians are adequately prepared for the frontline, patient-facing medicines optimisation activites outlined in the Carter report.[2]

4.6   Impactful trainng

In addition to reporting on the learning events, respondents were given the option of describing a piece of training or learning that they felt had the most impact on their career to date. For the pharmacists, there were two notable pieces of impactful training. These were the clinical diploma(s) and the non-medical prescribing qualification. These qualifications are likely to be key for the development of critical thinking and diagnostic skills, which will be essetial for pharmacists to take on new roles and to become advanced and autonomous practitioners. Leadership and management training, including the Mary Seacole programme, had enhanced their career development in some cases and will no doubt be important in order for pharmacists to work as leaders in multidisciplinary teams and primary care networks, for example.[3] It is also interesting to note that participants at the stakeholder event identified postgraduate diploma courses as an aspect of current pharmacy education provision that was working well. For pharmacy technicians, the most commonly noted impactful learning were accuracy checking and leadership training.

4.7   Stakeholder event

Twenty-three stakeholders attended the stakeholder event, including representatives from hospital pharmacy, higher education, community pharmacy and CPPE. In terms of what was currently working well in pharmacy education and training, stakeholders gave priority to CPPE provision, NHS policy that supports roles for the pharmacy profession (e.g. long-term plan), links with higher education and further education providers, networks and apprenticeship structure.

Future possibilities described as priority ideas for the profession included the notion of one central employer, who would employ all pharmacy professionals, new or revised community pharmacy contract, a training needs analysis, foundation training for all, wider development of pharmacy (e.g. patient-facing roles), the creation of a high level qualification for pharmacy technicians above level 4. Stakeholders also prioritised the development of leadership and consultation skills and protected time for staff development. Other priority ideas included the pharmacist apprenticeship scheme, the development of technician career frameworks and the possibility of a transferrable workforce.

Challenges identified as a priority for the profession included inequality, of funding, staffing issues that meant that individuals found it difficult to find time for training, issue around culture within the profession ("that's not my job") and the lack of GPhC oversight of the pre-registration programme providers.

4.8   Conclusions

The findings from this survey indicate that there are different motivations for learning, in support for learning, and in the perceived impact of learning. The findings from this survey appear to confirm that sector differences in access to learning and support, previously identified in re-registration pharmacists and pharmacy technicians and early career pharmacists, continue into practice.[8-11] It is

clearly important therefore to be aware of cross-sectoral differences when planning learning for pharmacy professionals.

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6   APPENDIX

Table A: What is working by branch?

Financial resource	Training packages	Infrastructure & governance	Human resource	Physical resource
In-house service provision	Leadership and management	Oriel?	NVQ assessors and tutors	IT
Some HEE funding, e.g. integration fund, care home pharmacists	Postgraduate diploma courses	Cross-sector training where available	Health Care Academy trainer linked to HEIs	Universities and colleges
NMP / AP	CPPE	Apprenticeship structure, egg. 20% off the job	Skilled, knowledgeable and experienced staff	
Service business case funding training	PTPT training packages	Links with higher education/further education providers	Skilled workforce	
Levy pot	BTEC level 3	Networks	Tutors / mentors	
Commissioned PGDIP place funded	Pre-reg programme	Partnerships, e.g. local pre-reg study groups	Training managers	
Pharmacy support	RPS Faculty	RPS framework		
Drug tariff staff funding	Foundation training provider programme	Community pharmacy own training		
Self-funding	HEIs	APTUK foundation		
Employer funding	DoC framework	Secure environments group		
Apprenticeship levy	NHS policy supporting roles for profession (e.g. long-term plan)	GPhC guiding NVQ		
	NHS-England funded pathways	Flexible working patterns		
	Care home packages	UKCPA		
	GP pharmacist training			
	Frameworks foundation technician training pre-reg			

Table B Future possibilities/new ideas by branch

Financial resource	Training packages	Infrastructure & governance	Human resource	Physical resource
One central employer!!!	Foundation training for all	Pharmacist apprenticeship	Succession planning	Alternative delivery methods
Wider apprenticeship options for pharmacy	Standardisation (of training packages)	Promoting the profession	More posts available and funded for training techs	Transferrable workforce
"Grandparent" existing experienced pharmacists via a declaration of competence & learning package to NMP status	More integration of training from HEE/FE and workplace provision	Technician career framework	Wider opportunities for pharmacy and portfolio working	Sort out NHS IT digital solutions
MEDIC match funding for pharmacy (HEE)	NVQ2/NVQ3 Pharmacist training plan funded	Structured career pathway for pharmacists	Develop leadership skills	Centralised posting of training appointments
New or revised community pharmacy contract	Wider development of pharmacy, e.g. patient-facing roles, e.g. assessments	School of Pharmacy and Medicines optimisation	Leadership to drive culture change	Training centres, e.g. dispensary
Carter report - changes coming into force	Creation of high level qualification for pharmacy technicians above level 4	United voice for pharmacy	Develop consultation skills	
Patient and service-led	Clinical technician diploma	Deanery structure	Inter-professional learning	
Training need analysis	Cross-sector development of new packages	Use of expert patients	Increasing pharmacists, pharmacy techs	
Appropriate funding stream	Sharing of packages		New pharmacist roles	
Funding for time, course fees and trainer time			Changes to career development	
Positive working with the pharmaceutical industry			Increasing no's clinical academic pharmacists	
Need new pharmacy contract			Better recruitment models	
			Standardisation roles/responsibilities	
			Protected time for development	
			More cross-sector working	

Table C: Challenges by branch

Financial resource	Training packages	Infrastructure & governance	Human resource	Physical resource	Students and workforce
Inequality of funding	Insufficient places on NMP courses	Oriel? Not placing in right location/sector	Under-utilisations of technicians	Room availability for training	Training of legacy workforce
AfC restrictions	Lack of technician diplomas	Awareness of what pharmacy can offer	Staffing issues - no time for training	Training for trainers	Locum workforce
Reduction of pre-reg funding will decrease likelihood of GP pre-reg posts	No foundation training for vast majority of new registrants	Promoting pharmacy careers (ALL)	Training for trainers	Lack of confidence with IT/IT access	Not thought to teach them
Pharmaceutical profession as a priority	Lack of training programmes for post-qualified technicians	Career progression	Osmosis of talent, CP to secondary care	Lack of confidence in our abilities	Cost of undergraduate training
Lack of funding for qualified tech courses	Quality assurance of training	No GPhC oversight of pre-reg technician programme providers	Finding DMP within IP training - payment wanted	Chief Pharmacist for England	Attitude of workforce
Cost of, and , lack of backfill to allow training	Link to distance learning to avoid costs with face-to-face	Pharmacy technicians not members of RPS	Reduction in students applying to pharmacy	Releasing time for education and training	
Employ more pre-reg pharmacy techs	Training programmes for pre-reg technicians don't always promote professionalism - No GPhc input until point of registration	Having a secure job, e.g. pharmacy tech pre-reg	Culture "that's not my job"	Lacking in recognisable leadership	
Competitive business nature of pharmacy (vs. medics)	Keeping in-house packages up-to-date	Professional body (RPS) - compared to BMA or RCN	Skills available for the future needs of the NHS lacking	IT access	
Disparity of funding across areas settings	Non-specific NMP courses	Understanding NHS policy for pharmacy	Chief pharmacist for England		

Financial resource	Training packages	Infrastructure & governance	Human resource	Physical resource	Students and workforce
Confusing funding streams - too many	Pre-reg standards not moved with the times	HEE North SoMoP infrastructure and pace of change	Staffing levels		
Short-term and last minute funding	Accessing training programmes - sometimes only accessible to people in certain sectors	GPhC	Cross-sector communication		
Poor communication from HEE/GPhC/RPS to registrants	Competitive environment stops sharing	Lack of RPS frameworks for technicians	Skills of 'trainers'		
Community pharmacy contract	Out of date packages	Lack of standardised SoPs - means more training needed when move	Loss of goodwill		
Funding DoH	Inconsistent - needs updating	Lack of infrastructure to share packages	Time to train others		
Not enough to 'go round'		Lack of access to patient details	Study time		
Lack of availability to all sectors		Negative attitude from Carter report			
Work-based assessment - time needed		Medicines optimisation (Community contract change)			
		Loss of goodwill			

Figure I: Post-registration pharmacist learner engagement survey

Pharmacists' views on education and training

Health Education England (HEE) have commissioned a research team from the Centre for Pharmacy Workforce Studies in the Division of Pharmacy and Optometry at the University of Manchester to undertake a survey of pharmacists and pharmacy technicians to find out their views on education and training they have undertaken.

Please select your current profession:

Pharmacist ☐

Pharmacy technician ☐

When did you first register with the GPhC as a pharmacist?

Before 1st March 2018 ☐

After 1st March 2018 ☐

Thank you for selecting the survey which is aimed pharmacists, who have been registered for longer than 12 months; i.e. you will have registered before March 2018. The survey is anonymous and asks you about your **pharmacy education and training after qualification** as a pharmacist. You will then be asked to think about up to four learning events you have participated in in the last year. Finally, the survey will also seek your views on how prepared you feel to take on new roles.

Further information about the survey can be found in the Participant Information Sheet.[ADD LINK]

If you have any questions about the survey please contact Dr Liz Seston, a member of the research team at the University (liz.seston@manchester.ac.uk; 0161 275 2420 (answerphone)).

The survey will take approximately **15 minutes** to complete. Your contributions will help inform future decisions about future education and training.

Everything you say in this survey will remain confidential. After your responses have been entered onto a secure computer database, the survey data will be securely stored in accordance with data protection regulations and destroyed after five years.

1

CONSENT

Before you complete the survey, please confirm that you consent to participate in the study.

I consent to take part in the survey ☐

I DO NOT consent to take part in the survey ☐

Learners who do not give consent will see the message below:

Thank you for considering taking part in this study. You are not required to do anything more.

About you

1. **How old are you?** *Please write your age in years*

_____

2. **What is your gender?**

| Male | ☐ | Transgender | ☐ | Prefer not to say | ☐ |

| Female | ☐ | Non-binary | ☐ |

3. **How would you describe your ethnicity?** *Please select one option*

English/Welsh/Scottish/Northern Irish/British	☐	Irish	☐	Gypsy or traveller	☐	Any other white	☐
White/Black Caribbean	☐	White/Black African	☐	White/Asian	☐	Other mixed	☐
Indian	☐	Pakistani	☐	Bangladeshi	☐	Other Asian	☐
Black African	☐	Black Caribbean	☐	Black other	☐	Prefer not to say	☐
Chinese	☐	Arab	☐	Any other	☐		

4. **What route did you take to qualify for registration with the GPhC?**

UK pharmacy degree and pre-registration training ☐

European pharmacy degree ☐

Overseas pharmacy degree + OSPAP and pre-registration ☐
training
Other (please describe)_____

5. **Using the map below showing the four geographical Health Education England regions, please tick the box representing the region where your GPhC registered address is located.**

⦿ North (light blue)

○ Midlands and east (purple)

○ London (dark blue)

○ South (orange)

6. Using the dropdown list below, please indicate the county where your GPhC registered address is located.

(DROP DOWN BOX FOR COUNTY)

Avon	Dorset	City of London	Suffolk
Bedfordshire	Essex	Merseyside	Surrey
Berkshire	Gloucestershire	Middlesex	Sussex
Bristol	Greater London	Norfolk	Tyne and Wear
Buckinghamshire	Greater Manchester	Northamptonshire	Warwickshire
Cambridgeshire	Hampshire	Northumberland	West Midlands
Cheshire	Herefordshire	Yorkshire	Wiltshire
Cleveland	Hertfordshire	Nottinghamshire	Worcestershire
Cornwall	Kent	Oxfordshire	Yorkshire
County Durham Cumbria	Lancashire	Shropshire	
Derbyshire	Leicestershire	Somerset	
Devon	Lincolnshire	Staffordshire	

7. In which pharmacy sector(s) have you worked since qualifying as a pharmacist? Tell us what sectors you are working in currently, and those that you have worked in previously as a pharmacist (tick all that apply).

	Currently work in	Previously worked in		Currently work in	Previously worked in
Community pharmacy	☐	☐	Hospital pharmacy (including specialist and private hospitals)	☐	☐
GP practice	☐	☐	Secure environment pharmacy	☐	☐
Care homes	☐	☐	Primary Care organisation (e.g. CCG)	☐	☐
Pharmaceutical Industry	☐	☐	Research, education or training	☐	☐
Other (please describe)	☐	_____			

8. If you currently have a patient-facing role(s), in what type of setting(s) do you currently work? Tick all that apply.

Community setting		Hospital setting	
Independent	☐	NHS Teaching hospital	☐
Small chain (2-4 stores)	☐	NHS District general hospital	☐
Small-sized multiple (5-25 stores)	☐	Specialist NHS hospital (e.g. oncology, mental health)	☐
Medium-sized multiple (26-100 stores)	☐	Private hospital	☐
Large multiple (>100 stores)	☐	Outpatient pharmacy	☐
Supermarket	☐		

4

	Other setting	
	GP practice	☐
	Secure environment	☐
	Care home	☐
	Other (please describe) _____	

9. **If you are employed by the NHS, what is your Agenda for Change band?**

Band 6	☐	Band 8b	☐
Band 7	☐	Band 8c or above	☐
Band 8a	☐		

10. **If you work in community pharmacy, what is your job title?**

Owner	☐	Superintendent	☐
Pharmacy manager	☐	Relief manager	☐
Second pharmacist	☐	Locum	☐
		Other (Please describe)	
		_____	

11. **In your current pharmacy role(s), do you have line-management responsibilities?**

No	☐	Yes (1-2 staff)	☐
Yes (3-5 staff)	☐	Yes (6 or more staff)	☐

12. **Please state the total number of hours you work as a pharmacist, per week, on average.**

5

SECTION B YOUR EDUCATION AND TRAINING

13. **In order to find out about the qualifications you have and the training you have undertaken during your pharmacy career, please tick all relevant qualifications from the list below** (tick all that apply). Please note there is no need to detail all CPPE packages in this section or all mandatory training as part of your job (e.g. GDPR), unless it is has been significant in your career development in pharmacy.

BSc / BPharm (from UK university)	☐	MPharm (from UK university)	☐
Pharmacy degree from a county outside the UK	☐	OSPAP (MSc or postgraduate diploma)	☐
Clinical pharmacy postgraduate diploma	☐	Community / primary care pharmacy postgraduate diploma	☐
Independent and/or supplementary prescribing	☐	Taught Masters qualification e.g. MSc, MBA, MEd	☐
Research qualification (e.g. MRes, MPhil, PhD)	☐	CPPE learning programmes	☐
CPPE DoC training	☐	University CPD module(s)	☐
PhIF / HEE funded pathway: Urgent Care	☐	PhIF/ HEE funded pathway: Care homes	☐
PhIF / HEE Leadership training (Mary Seacole)	☐	PhIF / HEE funded pathway: GP practice training (Phase 1 or 2)	☐
Other (Please describe in the box below)	☐		

Please add detail on any learning not included in the table above

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In this section, we are interested in relevant learning you have undertaken in the **past 12 months ONLY**. Although this learning does not have to have been fully completed, for you to be able to answer questions about it we need you to have completed at least half of the training. We are interested in a maximum of **4 learning events** you have undertaken (in the past 12 months). These could be online packages, training workshops, or full courses or programmes.

Learning event 1

14. **Name of learning event 1**:

    _____

15. **Duration of learning event 1**: DROP DOWN (up to 7 hours/1-5 days/2-4 weeks/1-11 months/1 year or more):

    _____

6

16. Provider of learning event 1:

CPPE ☐   NHS Employer ☐

Community pharmacy employer ☐

Higher education institution ☐   Other (please describe)_____

17. Have you completed the learning?

Yes ☐

No, still studying ☐

18. Please tell us why you undertook this learning (tick all that apply)

Personal interest ☐   Career development/promotion ☐

Employer mandated ☐   CPD to meet revalidation requirements ☐

Other (please describe) ☐   _____

19. Please tell us who sponsored or funded this learning (tick all that apply)

Self-funded ☐   Employer ☐

Health Education England ☐   Other (please describe) ☐

Course was free-of-charge ☐   _____

20. Tell us about how you learnt during learning event 1 (tick all that apply)

Face-to-face learning (e.g. presentations, workshop) ☐   Collaborative learning with peers ☐

Online learning ☐   Role play / simulation ☐

Distance learning booklet(s) ☐   Other (please describe) ☐

Webinar(s) ☐   _____

7

60

Your views on learning event 1

In the following tables, please rate your overall agreement or disagreement with the statements about learning event 1

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

Learning event 1						
	Not applicable	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
21. The content of this learning is directly relevant to my current role as a pharmacist	O	O	O	O	O	O
22. The content of this learning is likely to be relevant for roles I plan to take on in the future	O	O	O	O	O	O
23. The content of the learning was delivered in ways that I found stimulating	O	O	O	O	O	O
24. I valued the support I received from the learning provider	O	O	O	O	O	O
25. I felt supported by my employer in completing this learning	O	O	O	O	O	O
26. I found it easy to access this learning	O	O	O	O	O	O
27. I have been able to apply the skills or knowledge I gained from undertaking this learning in my current role(s)	O	O	O	O	O	O

28. What kind of support was available through the learning provider while completing learning event 1? (Tick all that apply)

Named personal tutor / educational supervisor ☐   Course leader / event facilitator ☐

Online forum / telephone helpline ☐   No support ☐

Peer support ☐   Other (please describe)_____ ☐

29. What kind of feedback did you receive through the learning provider while completing learning event 1? (Tick all that apply)

Verbal feedback on my performance or progress ☐   Peer feedback on my performance ☐

Written feedback on my performance or progress ☐   No feedback ☐

Other (please describe)_____

8

61

30. When did you complete this learning? (Tick all that apply)

In my own time outside of work hours	☐	Using annual leave	☐
Protected study time during work	☐	The learning / training is part of my current role	☐
During quiet periods during work hours	☐	Other (please describe)_____	

31. Please describe how learning event 1 has benefited your professional practice.

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32. Do you have any further comments to add about learning event 1?

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Learning event 2

33. Name of learning event 2:

_____

34. Duration of learning event 2: DROP DOWN (up to 7 hours/1-5 days/2-4 weeks/1-11 months/1 year or more):

_____

35. Provider of learning event 2:

CPPE	☐	NHS Employer	☐
Community pharmacy employer	☐		
Higher education institution	☐	Other (please describe)_____	

9

36. Have you completed the learning?

Yes ☐

No, still studying ☐

37. Please tell us why you undertook this learning. (Tick all that apply)

Personal interest	☐	Career development/promotion	☐
Employer mandated	☐	CPD to meet revalidation requirements	☐
Other (please describe)	☐	_____	

38. Please tell us who sponsored or funded this learning? (Tick all that apply)

Self-funded	☐	Employer	☐
Health Education England	☐	Other (please describe)	☐
Course was free-of-charge	☐	_____	

39. Tell us about how you learnt during learning event 2. (Tick all that apply)

Face-to-face learning (e.g. presentations, workshop)	☐	Collaborative learning with peers	☐
Online learning	☐	Role play / simulation	☐
Distance learning booklet(s)	☐	Other (please describe)	☐
Webinar(s)	☐	_____	

Your views on learning event 2

In the following tables, please rate your overall agreement or disagreement with the statements about learning event 2. *Mark your answers by placing a tick in the circle on each line corresponding to your agreement rating.*

Learning event 2	Not applicable	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
40. The content of this learning is directly relevant to my current role as a pharmacist	O	O	O	O	O	O
41. The content of this learning is likely to be relevant for roles I plan to take on in the future	O	O	O	O	O	O
42. The content of the learning was delivered in ways that I found stimulating	O	O	O	O	O	O
43. I valued the support I received from the learning provider	O	O	O	O	O	O
44. I felt supported by my employer in completing this learning	O	O	O	O	O	O
45. I found it easy to access this learning	O	O	O	O	O	O
46. I have been able to apply the skills or knowledge I gained from undertaking this learning in my current role(s)	O	O	O	O	O	O

47. **What kind of support was available through the learning provider while completing learning event 1?** (Tick all that apply)

Named personal tutor / educational supervisor	☐	Course leader / event facilitator	☐
Online forum / telephone helpline	☐	No support	☐
Peer support	☐	Other (please describe)_____	☐

48. **What kind of feedback did you receive through the learning provider while completing learning event 1?** (Tick all that apply)

Verbal feedback on my performance or progress	☐	Peer feedback on my performance	☐
Written feedback on my performance or progress	☐	No feedback	☐
		Other (please describe)_____	

11

49. When did you complete this learning? (Tick all that apply)

In my own time outside of work hours	☐	Using annual leave	☐
Protected study time during work	☐	The learning / training is part of my current role	☐
During quiet periods during work hours	☐	Other (please describe)_____	

50. Please describe how learning event 2 has benefited your professional practice.

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51. Do you have any further comments to add about learning event 2?

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Learning event 3

52. Name of learning event 3:

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53. Duration of learning event 3: DROP DOWN (up to 7 hours/1-5 days/2-4 weeks/1-11 months/1 year or more):

_____

54. Provider of learning event 3:

CPPE	☐	NHS Employer	☐
Community pharmacy employer	☐		
Higher education institution	☐	Other (please describe)_____	

12

55. Have you completed the learning?

Yes ☐

No, still studying ☐

56. Please tell us why you undertook this learning (tick all that apply)

Personal interest ☐　　　　Career development/promotion ☐

Employer mandated ☐　　　　CPD to meet revalidation requirements ☐

Other (please describe) ☐　　　_____

57. Please tell us who sponsored or funded this learning (tick all that apply)

Self-funded ☐　　　　Employer ☐

Health Education England ☐　　　　Other (please describe) ☐

Course was free-of-charge ☐　　　_____

58. Tell us about how you learnt during learning event 3 (tick all that apply)

Face-to-face learning (e.g. presentations, workshop) ☐　　　Collaborative learning with peers ☐

Online learning ☐　　　Role play / simulation ☐

Distance learning booklet(s) ☐　　　Other (please describe) ☐

Webinar(s) ☐　　　_____

Your views on learning event 3

In the following tables, please rate your overall agreement or disagreement with the statements about learning event 1

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

Learning event 3	Not applicable	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
59. The content of this learning is directly relevant to my current role as a pharmacist	O	O	O	O	O	O
60. The content of this learning is likely to be relevant for roles I plan to take on in the future	O	O	O	O	O	O
61. The content of the learning was delivered in ways that I found stimulating	O	O	O	O	O	O
62. I valued the support I received from the learning provider	O	O	O	O	O	O
63. I felt supported by my employer in completing this learning	O	O	O	O	O	O
64. I found it easy to access this learning	O	O	O	O	O	O
65. I have been able to apply the skills or knowledge I gained from undertaking this learning in my current role(s)	O	O	O	O	O	O

66. What kind of support was available through the learning provider while completing learning event 1? (Tick all that apply)

Named personal tutor / educational supervisor	☐	Course leader / event facilitator	☐
Online forum / telephone helpline	☐	No support	☐
Peer support	☐	Other (please describe)_____	☐

67. What kind of feedback did you receive through the learning provider while completing learning event 1? (Tick all that apply)

Verbal feedback on my performance or progress	☐	Peer feedback on my performance	☐
Written feedback on my performance or progress	☐	No feedback	☐
		Other (please describe)_____	

14

68. When did you complete this learning? (Tick all that apply)

In my own time outside of work hours	☐	Using annual leave	☐
Protected study time during work	☐	The learning / training is part of my current role	☐
During quiet periods during work hours	☐	Other (please describe)_____	

69. Please describe how learning event 3 has benefited your professional practice.

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Do you have any further comments to add about learning event 3?

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Learning event 4

70. Name of learning event 4:

_____

71. Duration of learning event 4: DROP DOWN (up to 7 hours/1-5 days/2-4 weeks/1-11 months/1 year or more):

_____

72. Provider of learning event 4:

CPPE	☐	NHS Employer	☐
Community pharmacy employer	☐		
Higher education institution	☐	Other (please describe)_____	

15

73. Have you completed the learning?

Yes ☐

No, still studying ☐

74. Please tell us why you undertook this learning (tick all that apply)

Personal interest	☐	Career development/promotion	☐
Employer mandated	☐	CPD to meet revalidation requirements	☐
Other (please describe)	☐	_____	

75. Please tell us who sponsored or funded this learning (tick all that apply)

Self-funded	☐	Employer	☐
Health Education England	☐	Other (please describe)	☐
Course was free-of-charge	☐	_____	

76. Tell us about how you learnt during learning event 4 (tick all that apply)

Face-to-face learning (e.g. presentations, workshop)	☐	Collaborative learning with peers	☐
Online learning	☐	Role play / simulation	☐
Distance learning booklet(s)	☐	Other (please describe)	☐
Webinar(s)	☐	_____	

Your views on learning event 4

In the following tables, please rate your overall agreement or disagreement with the statements about learning event 1

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

Learning event 4	Not applicable	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
77. The content of this learning is directly relevant to my current role as a pharmacist	○	○	○	○	○	○
78. The content of this learning is likely to be relevant for roles I plan to take on in the future	○	○	○	○	○	○
79. The content of the learning was delivered in ways that I found stimulating	○	○	○	○	○	○
80. I valued the support I received from the learning provider	○	○	○	○	○	○
81. I felt supported by my employer in completing this learning	○	○	○	○	○	○
82. I found it easy to access this learning	○	○	○	○	○	○
83. I have been able to apply the skills or knowledge I gained from undertaking this learning in my current role(s)	○	○	○	○	○	○

84. What kind of support was available through the learning provider while completing learning event 1? (Tick all that apply)

Named personal tutor / educational supervisor	☐	Course leader / event facilitator	☐
Online forum / telephone helpline	☐	No support	☐
Peer support	☐	Other (please describe)_____	☐

85. What kind of feedback did you receive through the learning provider while completing learning event 1? (Tick all that apply)

Verbal feedback on my performance or progress	☐	Peer feedback on my performance	☐
Written feedback on my performance or progress	☐	No feedback	☐
		Other (please describe)_____	

17

86. When did you complete this learning? (Tick all that apply)

In my own time outside of work hours	☐	Using annual leave	☐
Protected study time during work	☐	The learning / training is part of my current role	☐
During quiet periods during work hours	☐	Other (please describe)_____	

87. Please describe how learning event 4 has benefited your professional practice.

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Do you have any further comments to add about learning event 4?

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SECTION C FUTURE EDUCATION AND TRAINING

In this last section of the survey we are interested in how prepared you feel for **future roles for pharmacists**.

88. **Please answer the extent to which you feel prepared to undertake a variety of roles that might be required of <u>pharmacists</u> in the future.**

Domains of future practice	Completely unprepared	A little unprepared	Somewhat prepared	Fully prepared	I am already performing this role
Physical observations (e.g. measuring temperature, blood pressure)	O	O	O	O	O
Diagnostic examinations (e.g. examining a patient's eyes or ears; listening to a patient's chest using a stethoscope)	O	O	O	O	O
Collecting samples for laboratory analysis (e.g. taking a blood sample or throat swab)	O	O	O	O	O
Interpretation of investigation findings (e.g. blood test results)	O	O	O	O	O
Advanced consultation skills (e.g. gaining consent for examination or treatment; explaining test results)	O	O	O	O	O
Independent prescribing	O	O	O	O	O
Working across care settings (e.g. primary, secondary, intermediate care)	O	O	O	O	O
Medicines optimisation (full clinical medication review)	O	O	O	O	O
Providing education / training to other healthcare professionals	O	O	O	O	O

89. **In the period since you first registered as a pharmacy professional, what single training course or learning experience has had the most significant influence on your career to date? Please explain why.**

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[blank text box]
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THANK YOU FOR COMPLETING THIS SURVEY

Figure II: Post-registration pharmacy technician learner engagement survey

Pharmacy technicians' views on education and training

Health Education England (HEE) have commissioned a research team from the Centre for Pharmacy Workforce Studies in the Division of Pharmacy and Optometry at the University of Manchester to undertake a survey of pharmacists and pharmacy technicians to find out their views on education and training they have undertaken.

Please select your current profession:

Pharmacist ☐

Pharmacy technician ☐

When did you first register with the GPhC as a pharmacy technician?

Before 1st March 2018 ☐

After 1st March 2018 ☐

Thank you for selecting the survey which is aimed pharmacy technicians, who have been registered for longer than 12 months; i.e. you will have registered <u>before</u> March 2018. The survey is anonymous and asks you about your **pharmacy education and training after qualification** as a pharmacy technician. You will then be asked to think about up to four learning events you have participated in in the last year. Finally, the survey will also seek your views on how prepared you feel to take on new roles.

Further information about the survey can be found in the Participant Information Sheet.[ADD LINK]

If you have any questions about the survey please contact Dr Liz Seston, a member of the research team at the University (liz.seston@manchester.ac.uk; 0161 275 2420 (answerphone)).

The survey will take approximately **15 minutes** to complete. Your contributions will help inform future decisions about future education and training.

Everything you say in this survey will remain confidential. After your responses have been entered onto a secure computer database, the survey data will be securely stored in accordance with data protection regulations and destroyed after five years.

CONSENT

Before you complete the survey, please confirm that you consent to participate in the study.

I consent to take part in the survey ☐

I DO NOT consent to take part in the survey ☐

Learners who do not give consent will see the message below:

Thank you for considering taking part in this study. You are not required to do anything more.

About you

1. **How old are you?** *Please write your age in years*

_____

2. **What is your gender?**

Male ☐   Transgender ☐   Prefer not to say ☐

Female ☐   Non-binary ☐

3. **How would you describe your ethnicity?** *Please select one option*

English/Welsh/Scottish/Northern Irish/British	☐	Irish	☐	Gypsy or traveller	☐	Any other white	☐
White/Black Caribbean	☐	White/Black African	☐	White/Asian	☐	Other mixed	☐
Indian	☐	Pakistani	☐	Bangladeshi	☐	Other Asian	☐
Black African	☐	Black Caribbean	☐	Black other	☐	Prefer not to say	☐
Chinese	☐	Arab	☐	Any other	☐		

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4. **What type of pharmacy technician qualification do you hold?** (Tick all that apply)

UK pharmacy technician qualification ☐

European pharmacy technician qualification ☐

International pharmacy technician qualification ☐

Other (please describe)_____

5. **Using the map below showing the four geographical Health Education England regions, please tick the box representing the region where your GPhC registered address is located.**

◉ North (light blue)

○ Midlands and east (purple)

○ London (dark blue)

○ South (orange)

6. **Using the dropdown list below, please indicate the county where your GPhC registered address is located.**

(DROP DOWN BOX FOR COUNTY)

Avon	Dorset	City of London	Suffolk
Bedfordshire	Essex	Merseyside	Surrey
Berkshire	Gloucestershire	Middlesex	Sussex
Bristol	Greater London	Norfolk	Tyne and Wear
Buckinghamshire	Greater Manchester	Northamptonshire	Warwickshire
Cambridgeshire	Hampshire	Northumberland	West Midlands
Cheshire	Herefordshire	Yorkshire	Wiltshire
Cleveland	Hertfordshire	Nottinghamshire	Worcestershire
Cornwall	Kent	Oxfordshire	Yorkshire
County Durham Cumbria	Lancashire	Shropshire	
Derbyshire	Leicestershire	Somerset	
Devon	Lincolnshire	Staffordshire	

7. **In which pharmacy sector(s) have you worked since qualifying as a pharmacy technician? Tell us what sectors you are working in currently, and those that you have worked in previously as a pharmacy technician** (tick all that apply).

	Currently work in	Previously worked in		Currently work in	Previously worked in
Community pharmacy	☐	☐	Hospital pharmacy (including specialist and private hospitals)	☐	☐
GP practice	☐	☐	Secure environment pharmacy	☐	☐
Care homes	☐	☐	Primary Care organisation (e.g. CCG)	☐	☐
Pharmaceutical Industry	☐	☐	Research, education or training	☐	☐
Other (please describe)	☐		_____		

8. **If you currently have a patient-facing role(s), in what type of setting(s) do you currently work?** Tick all that apply.

Community setting		Hospital setting	
Independent	☐	NHS Teaching hospital	☐
Small chain (2-4 stores)	☐	NHS District general hospital	☐
Small-sized multiple (5-25 stores)	☐	Specialist NHS hospital (e.g. oncology, mental health)	☐
Medium-sized multiple (26-100 stores)	☐	Private hospital	☐
Large multiple (>100 stores)	☐	Outpatient pharmacy	☐
Supermarket	☐		

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	Other setting	
	GP practice	☐
	Secure environment	☐
	Care home	☐
	Other (please describe) _____	

9. **If you are employed by the NHS, what is your Agenda for Change band?**

Band 4	☐	Band 8a	☐
Band 5	☐	Band 8b	☐
Band 6	☐	Band 8c or above	☐
Band 7	☐		

10. **In your current pharmacy role(s), do you have line-management responsibilities?**

No	☐	Yes (1-2 staff)	☐
Yes (3-5 staff)	☐	Yes (6 or more staff)	☐

11. **Please state the total number of hours you work as a pharmacy technician, per week, on average.**

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SECTION B YOUR EDUCATION AND TRAINING

12. In order to find out about the qualifications you have and the training you have undertaken during your pharmacy career, please tick all relevant qualifications from the list below (you can tick more than one box). Please note there is no need to detail all CPPE packages in this section or all mandatory training as part of your job (e.g. GDPR), unless it is has been significant in your career development in pharmacy.

Registered as pharmacy technician via grandparenting arrangements	☐	BTEC Level 3 Diploma in Pharmaceutical Science (from UK education provider)	☐
Pharmacy technician qualification from a county outside the UK	☐	NVQ level 3 Diploma in Pharmacy Service Skills (from UK education provider)	☐
Accuracy checking pharmacy technician training programme	☐	CPPE learning programmes	☐
CPPE Declaration of Competence (DoC) training	☐	Clinical Services Professional Diploma for pharmacy technicians (e.g. Bradford College)	☐
Taught Masters qualification e.g. MSc, MBA, MEd	☐	Research qualification (e.g. MRes, MPhil, PhD)	☐
PhIF / HEE Leadership training (Mary Seacole)	☐	PhIF / HEE pathway (care homes)	☐
Other (Please describe in the box below)	☐		

Please add detail on any learning not included in the table above

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In this section, we are interested in relevant learning you have undertaken in the **past 12 months ONLY**. Although this learning does not have to have been fully completed, for you to be able to answer questions about it we need you to have completed at least half of the training. We are interested in a maximum of **4 learning events** you have undertaken (in the past 12 months). These could be online packages, training workshops, or full courses or programmes.

Learning event 1

13. Name of learning event 1:

_____

14. Duration of learning event 1: DROP DOWN (up to 7 hours/1-5 days/2-4 weeks/1-11 months/1 year or more):

15. Provider of learning event 1:

CPPE ☐   NHS Employer ☐

Community pharmacy employer ☐

Higher education institution ☐   Other (please describe)_____

16. Have you completed the learning?

Yes ☐

No, still studying ☐

17. Please tell us why you undertook this learning (tick all that apply)

Personal interest ☐   Career development/promotion ☐

Employer mandated ☐   CPD to meet revalidation requirements ☐

Other (please describe) ☐   _____

18. Please tell us who sponsored or funded this learning (tick all that apply)

Self-funded ☐   Employer ☐

Health Education England ☐   Other (please describe) ☐

Course was free-of-charge ☐   _____

19. Tell us about how you learnt during learning event 1 (tick all that apply)

Face-to-face learning (e.g. presentations, workshop) ☐   Collaborative learning with peers ☐

Online learning ☐   Role play / simulation ☐

Distance learning booklet(s) ☐   Other (please describe) ☐

Webinar(s) ☐   _____

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Your views on learning event 1

In the following tables, please rate your overall agreement or disagreement with the statements about learning event 1. *Mark your answers by placing a tick in the circle on each line corresponding to your agreement rating.*

Learning event 1	Not applicable	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
20. The content of this learning is directly relevant to my current role as a pharmacy technician	O	O	O	O	O	O
21. The content of this learning is likely to be relevant for roles I plan to take on in the future	O	O	O	O	O	O
22. The content of the learning was delivered in ways that I found stimulating	O	O	O	O	O	O
23. I valued the support I received from the learning provider	O	O	O	O	O	O
24. I felt supported by my employer in completing this learning	O	O	O	O	O	O
25. I found it easy to access this learning	O	O	O	O	O	O
26. I have been able to apply the skills or knowledge I gained from undertaking this learning in my current role(s)	O	O	O	O	O	O

27. **What kind of support was available through the learning provider while completing learning event 1?** (Tick all that apply)

Named personal tutor / educational supervisor ☐   Course leader / event facilitator ☐

Online forum / telephone helpline ☐   No support ☐

Peer support ☐   Other (please describe)_____ ☐

28. **What kind of feedback did you receive through the learning provider while completing learning event 1?** (Tick all that apply)

Verbal feedback on my performance or progress ☐   Peer feedback on my performance ☐

Written feedback on my performance or progress ☐   No feedback ☐

Other (please describe)_____

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29. When did you complete this learning? (Tick all that apply)

In my own time outside of work hours	☐	Using annual leave	☐
Protected study time during work	☐	The learning / training is part of my current role	☐
During quiet periods during work hours	☐	Other (please describe)_____	

30. Please describe how learning event 1 has benefited your professional practice.

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[                                                                  ]
[                                                                  ]
[                                                                  ]
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31. Do you have any further comments to add about learning event 1?

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[                                                                  ]
[                                                                  ]
[                                                                  ]
[                                                                  ]
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Learning event 2

32. Name of learning event 2:

_____

33. Duration of learning event 2: DROP DOWN (up to 7 hours/1-5 days/2-4 weeks/1-11 months/1 year or more):

_____

34. Provider of learning event 2:

CPPE	☐	NHS Employer	☐
Community pharmacy employer	☐		
Higher education institution	☐	Other (please describe)_____	

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35. Have you completed the learning?

Yes ☐

No, still studying ☐

36. Please tell us why you undertook this learning. (Tick all that apply)

Personal interest ☐ Career development/promotion ☐

Employer mandated ☐ CPD to meet revalidation requirements ☐

Other (please describe) ☐ _____

37. Please tell us who sponsored or funded this learning? (Tick all that apply)

Self-funded ☐ Employer ☐

Health Education England ☐ Other (please describe) ☐

Course was free-of-charge ☐ _____

38. Tell us about how you learnt during learning event 2. (Tick all that apply)

Face-to-face learning (e.g. presentations, workshop) ☐ Collaborative learning with peers ☐

Online learning ☐ Role play / simulation ☐

Distance learning booklet(s) ☐ Other (please describe) ☐

Webinar(s) ☐ _____

Your views on learning event 2

In the following tables, please rate your overall agreement or disagreement with the statements about learning event 2

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

Learning event 2	Not applicable	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
39. The content of this learning is directly relevant to my current role as a pharmacy technician	O	O	O	O	O	O
40. The content of this learning is likely to be relevant for roles I plan to take on in the future	O	O	O	O	O	O
41. The content of the learning was delivered in ways that I found stimulating	O	O	O	O	O	O
42. I valued the support I received from the learning provider	O	O	O	O	O	O
43. I felt supported by my employer in completing this learning	O	O	O	O	O	O
44. I found it easy to access this learning	O	O	O	O	O	O
45. I have been able to apply the skills or knowledge I gained from undertaking this learning in my current role(s)	O	O	O	O	O	O

46. **What kind of support was available through the learning provider while completing learning event 1?** (Tick all that apply)

Named personal tutor / educational supervisor	☐	Course leader / event facilitator	☐
Online forum / telephone helpline	☐	No support	☐
Peer support	☐	Other (please describe)_____	☐

47. **What kind of feedback did you receive through the learning provider while completing learning event 1?** (Tick all that apply)

Verbal feedback on my performance or progress	☐	Peer feedback on my performance	☐
Written feedback on my performance or progress	☐	No feedback	☐
		Other (please describe)_____	

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48. When did you complete this learning? (Tick all that apply)

In my own time outside of work hours	☐	Using annual leave	☐
Protected study time during work	☐	The learning / training is part of my current role	☐
During quiet periods during work hours	☐	Other (please describe)_____	

49. Please describe how learning event 2 has benefited your professional practice.

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[blank text box]
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50. Do you have any further comments to add about learning event 2?

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[blank text box]
```

Learning event 3

51. Name of learning event 3:

_____

52. Duration of learning event 3: DROP DOWN (up to 7 hours/1-5 days/2-4 weeks/1-11 months/1 year or more):

_____

53. Provider of learning event 3:

CPPE	☐	NHS Employer	☐
Community pharmacy employer	☐		
Higher education institution	☐	Other (please describe)_____	

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54. Have you completed the learning?

Yes ☐

No, still studying ☐

55. Please tell us why you undertook this learning (tick all that apply)

Personal interest ☐	Career development/promotion ☐
Employer mandated ☐	CPD to meet revalidation requirements ☐
Other (please describe) ☐	_____

56. Please tell us who sponsored or funded this learning (tick all that apply)

Self-funded ☐	Employer ☐
Health Education England ☐	Other (please describe) ☐
Course was free-of-charge ☐	_____

57. Tell us about how you learnt during learning event 3 (tick all that apply)

Face-to-face learning (e.g. presentations, workshop) ☐	Collaborative learning with peers ☐
Online learning ☐	Role play / simulation ☐
Distance learning booklet(s) ☐	Other (please describe) ☐
Webinar(s) ☐	_____

Your views on learning event 3

In the following tables, please rate your overall agreement or disagreement with the statements about learning event 1

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

Learning event 3						
	Not applicable	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
58. The content of this learning is directly relevant to my current role as a pharmacy technician	O	O	O	O	O	O
59. The content of this learning is likely to be relevant for roles I plan to take on in the future	O	O	O	O	O	O
60. The content of the learning was delivered in ways that I found stimulating	O	O	O	O	O	O
61. I valued the support I received from the learning provider	O	O	O	O	O	O
62. I felt supported by my employer in completing this learning	O	O	O	O	O	O
63. I found it easy to access this learning	O	O	O	O	O	O
64. I have been able to apply the skills or knowledge I gained from undertaking this learning in my current role(s)	O	O	O	O	O	O

65. What kind of support was available through the learning provider while completing learning event 1? (Tick all that apply)

Named personal tutor / educational supervisor ☐   Course leader / event facilitator ☐

Online forum / telephone helpline ☐   No support ☐

Peer support ☐   Other (please describe)_____

66. What kind of feedback did you receive through the learning provider while completing learning event 1? (Tick all that apply)

Verbal feedback on my performance or progress ☐   Peer feedback on my performance ☐

Written feedback on my performance or progress ☐   No feedback ☐

Other (please describe)_____

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67. When did you complete this learning? (Tick all that apply)

In my own time outside of work hours	☐	Using annual leave	☐
Protected study time during work	☐	The learning / training is part of my current role	☐
During quiet periods during work hours	☐	Other (please describe)_____	

68. Please describe how learning event 3 has benefited your professional practice.

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Do you have any further comments to add about learning event 3?

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Learning event 4

69. Name of learning event 4:

_____

70. Duration of learning event 4: DROP DOWN (up to 7 hours/1-5 days/2-4 weeks/1-11 months/1 year or more):

_____

71. Provider of learning event 4:

CPPE	☐	NHS Employer	☐
Community pharmacy employer	☐		
Higher education institution	☐	Other (please describe)_____	

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72. Have you completed the learning?

Yes ☐

No, still studying ☐

73. Please tell us why you undertook this learning (tick all that apply)

Personal interest ☐ Career development/promotion ☐

Employer mandated ☐ CPD to meet revalidation requirements ☐

Other (please describe) ☐ _____

74. Please tell us who sponsored or funded this learning (tick all that apply)

Self-funded ☐ Employer ☐

Health Education England ☐ Other (please describe) ☐

Course was free-of-charge ☐ _____

75. Tell us about how you learnt during learning event 4 (tick all that apply)

Face-to-face learning (e.g. presentations, workshop) ☐ Collaborative learning with peers ☐

Online learning ☐ Role play / simulation ☐

Distance learning booklet(s) ☐ Other (please describe) ☐

Webinar(s) ☐ _____

Your views on learning event 4

In the following tables, please rate your overall agreement or disagreement with the statements about learning event 1

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

Learning event 4	Not applicable	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
76. The content of this learning is directly relevant to my current role as a pharmacy technician	O	O	O	O	O	O
77. The content of this learning is likely to be relevant for roles I plan to take on in the future	O	O	O	O	O	O
78. The content of the learning was delivered in ways that I found stimulating	O	O	O	O	O	O
79. I valued the support I received from the learning provider	O	O	O	O	O	O
80. I felt supported by my employer in completing this learning	O	O	O	O	O	O
81. I found it easy to access this learning	O	O	O	O	O	O
82. I have been able to apply the skills or knowledge I gained from undertaking this learning in my current role(s)	O	O	O	O	O	O

83. What kind of support was available through the learning provider while completing learning event 1? (Tick all that apply)

Named personal tutor / educational supervisor ☐   Course leader / event facilitator ☐

Online forum / telephone helpline ☐   No support ☐

Peer support ☐   Other (please describe)_____ ☐

84. What kind of feedback did you receive through the learning provider while completing learning event 1? (Tick all that apply)

Verbal feedback on my performance or progress ☐   Peer feedback on my performance ☐

Written feedback on my performance or progress ☐   No feedback ☐

Other (please describe)_____

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85. When did you complete this learning? (Tick all that apply)

In my own time outside of work hours	☐	Using annual leave	☐
Protected study time during work	☐	The learning / training is part of my current role	☐
During quiet periods during work hours	☐	Other (please describe)_____	

86. Please describe how learning event 4 has benefited your professional practice.

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Do you have any further comments to add about learning event 4?

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SECTION C FUTURE EDUCATION AND TRAINING

In this last section of the survey we are interested in how prepared you feel for future roles for pharmacy technicians.

87. **Please answer the extent to which you feel prepared to undertake a variety of roles that might be required of <u>pharmacy technicians</u> in the future.**

Domains of future practice	Completely unprepared	A little unprepared	Somewhat prepared	Fully prepared	I am already performing this role
Accuracy checking	O	O	O	O	O
Dispensary management	O	O	O	O	O
Advanced consultation skills (e.g. providing advice to patients on prescribed medicines or healthy living)	O	O	O	O	O
Medication history-taking and documentation (e.g. medicines reconciliation)	O	O	O	O	O
Physical observations (e.g. measuring temperature, blood pressure)	O	O	O	O	O
Administration of medicines to patients	O	O	O	O	O
Working across care settings (e.g. primary, secondary, intermediate care)	O	O	O	O	O
Providing education / training to other healthcare professionals	O	O	O	O	O
Conducting quality improvement audits	O	O	O	O	O

88. **In the period since you first registered as a pharmacy professional, what single training course or learning experience has had the most significant influence on your career to date? Please explain why.**

THANK YOU FOR COMPLETING THIS SURVEY

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