

**Final Report**

**Pharmacy Additional Costs of Teaching (ACTp):**

**2019/2020 Evaluation of Experiential Learning Initiatives around Assessment of Outcomes  
of Experiential Learning (EL)**

**Prepared by**

**Dr Sabrina Anne Jacob**

**Dr Anne Boyter**

**University of Strathclyde (UoS)**

**On behalf of the ACTp Evaluation Team**

<b>Prof Jane Portlock</b>	<b>Dr Ailsa Power</b>	<b>Prof Scott Cunningham Dr Tesnime Jebara</b>
<b>University of Sussex</b>	<b>NHS Education for Scotland</b>	<b>Robert Gordon University</b>

**September 2020**

## TABLE OF CONTENTS

1.	EXECUTIVE SUMMARY ☞	4
2.	BACKGROUND ☞	11
3.	STUDY 1: NATIONWIDE SURVEY OF UK UNIVERSITIES ☞	14
4.	STUDY 2: QUALITATIVE INTERVIEWS INVOLVING FACILITATORS ☞	20
5.	STUDY 3: INTERVIEWS AND FOCUS GROUPS INVOLVING STAKEHOLDERS ☞	29
5.1	Group 1: Stakeholders from academia, NES, key organizations/bodies, and key personnel with experience in assessments of EL	29
5.2	Group 2: Student pharmacists from RGU and UoS	35
6.	STUDY 4: DOCUMENTARY ANALYSIS ☞	41
7.	DISCUSSION ☞	42
8.	RECOMMENDATIONS FOR FUTURE WORK ☞	45
9.	ACKNOWLEDGEMENTS	47
10.	REFERENCES ☞	48
11.	APPENDICES ☞	
	Appendix 1: Nationwide Survey of Assessments within Experiential Learning in MPharm Programmes in the UK	49
	Appendix 2: Interview Guide for Facilitators and Stakeholders	54
	Appendix 3: Table of Themes and Illustrative Quotes from Interviews with Facilitators	56
	Appendix 4: Interview Guide for Stakeholders	68
	Appendix 5: Table of Themes and Illustrative Quotes from Interviews and Focus Groups with Stakeholders	70
	Appendix 6: Gantt Chart for Proposed 3-year Plan	86

## LIST OF TABLES & FIGURES

Table 1: Deliverables for Work Package 2	13
Table 2: When assessments are undertaken and by whom	15
Table 3: Competencies that can be assessed by facilitators	16
Table 4: Assignment/activities that could be assessed by facilitators based on specific competencies	17
Table 5: Tools/methods that could be used to undertake assessments	18
Table 6: Demographics of interview participants in facilitator study	21
Table 7: Themes, subthemes and illustrative quotes from facilitator interviews	56
Table 8: Demographics of participants in stakeholder interviews and focus group discussions	30
Table 9: Themes, subthemes and illustrative quotes from stakeholder interviews and focus groups	70
Table 10: Characteristics of survey respondents	36
Figure 1: Theme and subthemes of facilitators' feedback	23
Figure 2: Theme and subthemes of stakeholders' feedback	31

# 1. EXECUTIVE SUMMARY

## **Introduction**

The Additional Cost for Teaching Pharmacy (ACTp) was made available by the Scottish Government to support the development of experiential learning (EL) student pharmacists in Scotland. The current work focusses on facilitator involvement in the assessment of student pharmacists during EL.

## **Methods**

This evaluation utilised multiple methods of data collection: (1) nationwide survey to determine current assessment approaches of student pharmacists in UK universities; (2) interviews of facilitators from primary care, community, and hospital pharmacy; (3) interviews, focus groups, and a survey of stakeholders with a role in or impacted by the assessment process which included University academics, NHS staff, NHS Education for Scotland (NES) staff, and student pharmacists; and (4) document analysis to determine assessment policies at the University of Strathclyde and Robert Gordon University around external assessors.

## **Results**

### Nationwide survey to scope existing structures, processes, and outcomes associated with assessment within EL in undergraduate MPharm programmes across the UK

Twenty-one universities responded, with 17 included in the final analysis. Assessments were predominantly undertaken only on return to the university, and no consensus was achieved with regard to the tool(s) or method(s) to be used to assess students' competencies. Open-ended comments highlighted the need for facilitator training to ensure consistency in marking.

Interviews to explore facilitators' perceptions of processes and characteristics of the structures (resources), and training needs required for development and implementation of facilitator involvement in assessment of student pharmacists on EL

Fifteen facilitators participated in one-on-one interviews, five from each practice site.

While facilitators felt the current method of assessment was unfair to students as they were assessed by someone who was not observing them, they did express anxiety and hesitation about taking on the role as they were unfamiliar with the assessment process, and were worried about the impact of their assessment on students' final grades. Facilitators noted that if they undertook the assessments, it would increase their own self-development, while university staff would benefit from a reduction in workload. It was perceived that students would benefit from real-time feedback, and from increased confidence to work in the practice environment as they were being assessed in the real-world setting.

A lack of consistency in marking was highlighted as a potential drawback, along with the potential for personality clashes between students and facilitators. The major barriers noted were the lack of time to undertake these assessments, the limited duration of the placements which could impact the ability of students and facilitators to build relationships, and the fact that several staff are involved in the training of students during EL.

While the ACTp funding was available, there was only a finite supply of pharmacists. There also seemed to be a lack of awareness of the ACTp funding or how it was utilised by employers. Facilitators had no concerns about students being able to achieve their learning outcomes in the practice sites, however COVID-19 could potentially complicate this along with the space needed to undertake their EL. There was near unanimous preference for competencies such as communication skills, professionalism, and clinical skills to be assessed during EL. However, no consensus could be achieved with regard to tools/methods and grading of students, although the majority expressed a dislike for failing students.

In terms of support/resources and assistance needed, facilitator training was highlighted as key, especially on the tools that would be used and the assessment process. It was also noted that both universities and NES should assume key roles in coordinating the effort. Facilitators stressed the need for clear information and guidelines on assessments processes and what was expected of them, as well as information on students' level of knowledge and the MPharm curriculum. Support needed from their own practice sites was generally around assistance with the organisation of the EL and protected time to undertake assessments.

#### Exploration of the views and experiences of stakeholders involved in or affected by the assessment process.

a) Interviews and focus groups (FGDs) to assess the perception of stakeholders

Eighteen stakeholders participated in one-on-one interviews (7 interviews: senior management from RGU and UoS, 3 NES staff, 1 NHS hospital director, and one member of staff from Community Pharmacy Scotland), and two focus groups (FGD1: 5 UoS teaching staff; FGD2: 6 RGU teaching staff).

Current assessment was thought to be artificial, with NES staff expressing concerns that facilitators would feel slighted as they were currently tasked with training students, but not 'allowed' to assess them. General support was expressed for facilitators assuming this role, with some noting it was the way forward and would provide a more accurate assessment of the competencies students had developed during EL. There was, however, some scepticism expressed by academics which was mainly around uncertainty about the impact of assessment by facilitators on the overall grades and progression of the students through the MPharm course. None agreed that university staff should be sent to placement sites to assess students as it was logistically unsound, with some also questioning the expertise of academics to undertake such assessments in the practice setting.

Stakeholders were of the opinion that students would benefit from being assessed in the practice setting by practitioners who could then provide on-the-spot feedback, while assessments by different people would expose students to different styles of learning and teaching. Being tasked with the role was thought to underline the importance of facilitators in developing future pharmacists as well as increasing their confidence and self-reflection. In

addition, the university would benefit from closer collaboration with practice staff and the freedom to focus on other aspects of the curriculum.

The biggest drawback noted was variation in marking due to the larger pool of markers. Concerns were also expressed about the added burden on facilitators. The short placement durations were a potential barrier as students would have difficulties building relationships with facilitators and would not have enough time to achieve their competencies, while facilitators would lack the time to assess them. Other barriers or concerns noted were the lack of experience facilitators had in assessments, and the variations in placement sites such as the different experiences and the fact that students are supervised by several different staff members.

Competencies that could be assessed were communication, clinical skills, and professionalism, with stakeholders noting the list should be small so as not to overwhelm facilitators. There was a preference for students to be assessed continuously through-out their placement and for the assessments to be undertaken face to face with students. There was also a preference for students to be evaluated on a scale, but stakeholders were also open to a pass/fail noting that failing a student is necessary for safety and could be beneficial to students. No consensus could be achieved on the tool or method to be used, but it was suggested that we should look toward other schools such as Medicine and adapt the tools already being used.

It was noted that the onus should be on both universities and NES to work together and provide facilitators with the necessary support and resources, which includes contact persons who can provide pastoral care to facilitators, and peer-support groups to assist facilitators with the assessment process. Regular training of facilitators, with a focus on feedback, was key to ensure consistency and that students were marked in an equitable manner. Likewise, quality assurance was necessary to ensure the latter. Practice sites could support facilitators by ensuring they had protected time.

Stakeholders highlighted the importance of starting small and engaging with facilitators early in the design of the structure and content of assessments so that facilitators had an input and would not feel too overwhelmed by the new role. More pre-work was needed to determine best practices and it was suggested that the universities look toward other programmes with already established policies and structures around competency-based assessments. A pilot study was also needed to identify gaps and fine-tune the proposed approach.

b) Survey to assess students' perceptions

Eighty-two responses were received, with 69 included in the final analysis: 42 UoS, 27 RGU.

EL was perceived as a place for students to learn and make mistakes, with students also noting that their experiences hinged largely on the facilitators and the placement site. Students felt that being assessed by facilitators would be beneficial as they would be getting feedback from qualified practitioners who were actually observing them in the real-world, would ensure facilitators were more engaged, and allow students to be more involved during placements. It was also perceived that facilitators would benefit from students who were more engaged, while the university would benefit from placements which were more formalised and structured.

The biggest drawback highlighted by students was the additional stress being assessed during EL would place on them, as students already felt daunted being in a new place and around new people. There were also concerns and questions about the assessment process and the impact on their overall grades. Students worried that facilitators would feel burdened by the extra task, and expressed concerns about consistency of marking due to different levels of expectations. A potential barrier was the limited placement duration with students lamenting it prevented them from being able to build a rapport with facilitators.

Students also questioned the suitability and capability of facilitators to undertake assessments, noting that facilitators were often unaware of students' level of knowledge and expectations or were too busy, with some highlighting poor experiences with facilitators. There was also great variation in experiences in different placement sites, with students also noting being trained by different staff, which could then complicate the assessment process.

Students suggested that facilitators should be trained to ensure standardisation in assessment, that they were provided with sufficient information on students' level of knowledge, and that strict guidelines are set so facilitators were aware of students' roles and did not use them as an extra pair of hands. Students also wanted clearer information about the assessment process and the impact of the assessments undertaken by facilitators on their overall grades, as well as clearer information on what was expected of themselves.

#### Documentary analysis to explore the processes relating to the governance infrastructure required for assessment

Assessment policies from UoS lacked clear details on the use of external assessors, while such a document was not available in RGU.

#### **Discussion**

While there was general support for facilitators assuming this new role, several gaps and concerns were highlighted from/in the findings of each study. These included the need to determine the tools/methods to be used and the competencies to be assessed, the need to look to other programmes with established competency-based assessment policies and to involve students, facilitators, and academics in the design and structure of the assessment process and policies, and the importance of training programmes and modules for facilitators to train them in the assessment process and in providing feedback to student pharmacists.

#### **Recommendations**

We recommend that a community-based participatory approach is adopted where the research team work together with the 'communities' impacted by proposed plans and outcomes of future work i.e. the facilitators on the ground who will be tasked with undertaking the assessments, student pharmacists, and academics from both universities who are directly involved in assessing student pharmacists. We feel a separate advisory group made up of these groups should be formed, where they will collaborate with the research teams through shared-decision making on all aspects of the research process, which will include study design, participant recruitment, study implementation, and feedback on study findings.

Based on the recommendations suggested by facilitators and stakeholders, the potential barriers and challenges identified from the studies, as well as the findings from the nationwide survey and document analysis, it is clear that more groundwork is needed prior to rolling out the new approach. We therefore recommend the following work to be undertaken with the proviso that they are conducted in the order suggested:

1. Part 1: Qualitative interviews and/or focus group discussions involving experts from healthcare and teaching who have established governance around assessments by external assessors as well as established structures around competency-based assessments.
2. Part 2: Document analysis with regard to the use of external assessors, from other fields of healthcare such as medicine, nursing and professions allied to medicine, as well as assessment policies adopted in postgraduate programmes.
3. Part 3: Design of the structure and content of assessments involving stakeholders utilising e-Delphi or nominal group technique (NGT) to determine the (1) competencies that could or should be assessed by facilitators, and the (2) selection and/or design of a tool(s) to conduct these assessments.  
Part 3(a): If new tools are designed, they should be validated, and proper tests undertaken to check for reliability.
4. Part 4: Development of training modules for facilitators utilizing e-Delphi and NGTs to obtain expert opinions and consensus from key stakeholders. Pre and post-surveys can also be undertaken to evaluate the effectiveness of the training session.
5. Part 5: Pilot testing of facilitators conducting competency-based assessments of students using the tools and competencies developed in Part 3, and the training received in Part 4.

## 2. BACKGROUND

In 2018, the Scottish government made the Additional Cost for Teaching Pharmacy (ACTp) funding available to support the development of experiential learning (EL) for students undertaking the undergraduate Masters in Pharmacy (MPharm) programme (hereafter referred to as student pharmacists). The current project builds on work undertaken in 2019, which was a collaboration between the University of Strathclyde (UoS), Robert Gordon University (RGU) and NHS Education for Scotland (NES), where the focus was on evaluating the structures, processes, and outcomes associated with the participation of student pharmacists in three EL pilot sites, namely primary care, out of hours, and remote and rural.

The current ACTp Project is a collaboration between UoS, RGU, and NES, overseen by an external advisor (Professor Jane Portlock); and was divided into two work packages. Briefly, Work Package 1 focused on interprofessional learning in EL, while Work Package 2 focused on facilitator involvement in the assessment of student pharmacists during EL. We present here the work and findings of Work Package 2.

### **AIMS/OBJECTIVES**

The overall aim of this work was to evaluate the structures, processes, outcomes, and feasibility of developing formative and summative assessment of competencies gained during EL by practice-based facilitators. A 360-degree approach employing multi-modal methods was utilised to obtain the views of all key players/stakeholders involved in or affected by the assessment process.

#### **Objectives**

1. Scope existing structures, processes, and outcomes associated with assessment within EL in MPharm programmes across the UK through a national survey which included:

- Determination of existing assessment of EL – both by university staff and facilitators
- Characterisation of documentation and resources used/needed for assessments

- Identifying potential barriers and enablers to facilitator involvement in assessment of students during EL
- Identifying potential advantages to assessment of EL by facilitators
- Identifying training provided to facilitate assessment

2. To explore, via qualitative interviews of facilitators, perceptions of processes and characteristics of the structures (resources) required for development and implementation of facilitator involvement in assessment of student pharmacists on EL including:

- Identifying potential facilitator assessment opportunities during EL
- Quantification of the resource(s) required for development and delivery of assessment
- Nature, extent, and feasibility of required training for involvement in student assessment
- Characterisation of documentation and other resources at all stages including university regulations

3. To explore via documentary analysis and qualitative interviews with stakeholders, the processes involved in development and implementation of facilitator assessment of students on EL including:

- Exploration and clarification of the role of all stakeholders involved including university staff, facilitators, employers, student and other supporting pharmacy staff
- Explore the views and experiences of all stakeholders to what worked well with assessment
- Explore the view and experiences of all stakeholders to what could be improved with assessment initiatives
- Evaluation of the processes relating to the governance infrastructure required for assessment

4. To make recommendations, with timelines, for pilot sites to test assessment by facilitators in practice using different models which could be evaluated in the future.

## Deliverables

A number of deliverables were identified by the commissioners of this evaluation (Table 1) including the methods of data collection that were used for each item.

**Table 1: Deliverables for Work Package 2**

<b>Deliverables*</b>	<b>Method of Data Collection</b>
Insight into University governance of assessment	Documentary analysis and interviews
Survey of assessment within EL in undergraduate pharmacy curriculum nationwide	Survey
Perceptions of feasibility of assessment by facilitators of EL	Questionnaires, interviews / focus groups
Understanding of quality assurance of assessment in the Universities	Interviews – University personnel and facilitators
Identification of training needs for facilitators assessing activities during EL	Interviews / focus groups
Scoping the funding implications for assessment of EL	Questionnaires, interviews / focus groups
Scoping of any regulation changes required to allow facilitator assessment of EL	Documentary analysis and interviews
Recommendations on pilot sites for evaluation in the future.	

\*EL: experiential learning

## Research Governance

While each work package was overseen separately by research teams from the two universities, the research team as a whole was involved in the validation of tools used in all studies including surveys and interview guides.

Ethical approval for all studies was granted by UoS Ethics Committee. NHS Greater Glasgow and Clyde confirmed on 02/03/20 that Research and Development (R&D) approval was not required as it was deemed to be service evaluation.

### 3. STUDY 1: NATIONWIDE SURVEY OF UK UNIVERSITIES

#### **Objective:**

Scope existing structures, processes, and outcomes associated with assessment within EL in undergraduate MPharm programmes across the UK.

#### **Method:**

An online survey (Appendix 1) was hosted on Qualtrics, an online platform. An invitation email was sent all directors of EL, with an anonymous link to the survey appended. Where contact details of the latter were not available, invitations emails were then sent to heads of school/department of pharmacy asking them to forward the survey/email to the director of EL. No financial incentives were offered, and reminder emails were sent one and two months after the initial email. The survey comprised five open-ended and four closed-ended questions. The survey explored current assessment practices of EL within MPharm programmes in the UK as well as respondents' perceptions on how these assessments could be undertaken going forward, along with perceived advantages and disadvantages. Respondents could omit responses to open-ended questions if desired.

The survey was developed based on a review of the literature and the research objectives. Possible competencies that could be assessed by facilitators were compiled from the Standards for the Initial Education and Training of Pharmacists by the General Pharmaceutical Council (GPhC) (General Pharmaceutical Council, 2011). This list was produced after a series of discussions between the researchers (ACB and SAJ), and guided by a review of the literature. Survey validation and pilot testing were undertaken prior to use.

#### **Data management and analysis:**

Demographic data were presented using descriptive statistics. To create a composite picture of what respondents disagreed and agreed on for questions employing the five-point Likert scale, responses were collapsed to a 3-point scale (agree, neutral, disagree) for ease of interpretation, where the scores for the first two columns ("strongly disagree" and "disagree") were added up to show what they disagreed on, while the scores for the last two

columns (“agree” and “strongly agree”) were totalled to show what they agreed on. Mean values of respondents’ feedback were generated by tabulating their responses on the 5-point Likert scale, which were numbered as follows: 1 – Strongly disagree, 2 – disagree, 3 – neutral, 4 – agree, 5 – strongly agree. All analyses were performed using Microsoft Excel and SPSS 24.0 statistical software (SPSS Inc, Chicago, IL, USA).

### Results:

There were 21 responses (Response rate: 67.7%), of which four only filled in details on programme characteristics. Therefore, only 17 responses were included in the final analysis. Fourteen of the 17 (82.4%) offered the 4-year programme, while 3 (17.6%) offered both the 4-year and 5-year integrated programme. Three (17.6%) received funding for their EL, two from the government, and one from a joint funding between the department of health and universities.

Assessments were mainly undertaken by university staff, with minimal amounts undertaken during EL (Table 2).

**Table 2: When assessments are undertaken and by whom (n=17)**

	During EL, n(%)*	On return to the university, n(%)*	Total, n (%)
a) Facilitators/tutors/preceptors	10 (47.6)	3 (14.3)	13 (16.4)
b) Director of experiential learning	0 (0.0)	5 (23.8)	5 (6.33)
c) Academic staff directly involved in EL	1 (4.8)	13 (61.9)	14 (17.7)
d) Academic staff not directly involved in EL	0 (0.0)	8 (38.1)	8 (10.1)
e) Patients	2 (9.5)	2 (9.5)	4 (5.06)
f) Students (self-assessment)	6 (28.6)	4 (19.0)	10 (12.7)
g) Students (peer-review/assessment)	2 (9.5)	3 (14.3)	5 (6.33)
h) University-employed clinical facilitators (including teacher practitioners, university regional tutors)	10 (47.6)	10 (47.6)	20 (25.3)
<b>Total, n(%)</b>	<b>31 (39.2)</b>	<b>48 (60.8)</b>	<b>79 (100)</b>

\*Respondents were allowed to select more than one option; therefore, totals might exceed 100%.

Respondents strongly agreed with facilitators assessing students' communication skills and professionalism during EL. One noted that clinical skills such as measuring temperature and blood pressure could be assessed (Table 3)

**Table 3: Competencies that can be assessed by facilitators (n=16)**

Competencies	Agree, n(%)	Neutral, n(%)	Disagree, n(%)	Mean (± SD)
a) Contributing as members of an interprofessional healthcare team	12 (75.0)	3 (18.8)	1 (6.3)	3.94 (± 0.85)
b) Counselling patients on their medicines	15 (93.8)	1 (6.3)	0 (0.0)	4.50 (± 0.63)
c) Communication skills	16 (100.0)	0 (0.0)	0 (0.0)	4.63 (± 0.5)
d) Analysing prescriptions for validity and clarity	16 (100.0)	0 (0.0)	0 (0.0)	4.50 (± 0.52)
e) Clinically evaluating the appropriateness of prescribed medicines	16 (100.0)	0 (0.0)	0 (0.0)	4.25 (± 0.45)
f) Obtaining and documenting patient data and consultation records	13 (81.3)	3 (18.8)	0 (0.0)	4.13 (± 0.72)
g) Safe and legal handling of medicines	15 (93.8)	1 (6.3)	0 (0.0)	4.19 (± 0.54)
h) Using pharmaceutical calculations to verify the safety of doses and administration rates	16 (100.0)	0 (0.0)	0 (0.0)	4.31 (± 0.48)
i) Demonstrating team work	13 (81.3)	3 (18.8)	0 (0.0)	4.25 (± 0.78)
j) Demonstrating the characteristics of a prospective professional pharmacist as set out in relevant codes of conduct and behaviour	16 (100.0)	0 (0.0)	0 (0.0)	4.63 (± 0.50)

With regard to assignments or activities that could be assessed by facilitators, respondents displayed a preference for handbooks/learning portfolios/workbooks (31%), and diaries (38%) (Table 4).

**Table 4: Assignment/activities that could be assessed by facilitators based on specific competencies (n=13)**

Competencies	Assignments/activities, n(%)*					
	Written answers (e.g. written assignments/ projects, written papers)	Presentations (e.g. individual oral, small-group, poster)	Handbook / learning portfolios/ workbook	Clinical documentation	Diaries [e.g. reflective diaries/journals, E-log/electronic diary/report (written evidence of performance during EL)]	Facilitators should not assess this
a) Contributing as members of an interprofessional healthcare team	2 (15.4)	4 (30.8)	10 (76.9)	1 (7.69)	12 (92.3)	0 (0.0)
b) Counselling patients on their medicines	0 (0.0)	1 (7.69)	9 (69.2)	2 (15.4)	9 (69.2)	0 (0.0)
c) Communication skills	0 (0.0)	5 (38.5)	7 (53.8)	0 (0.0)	10 (76.9)	0 (0.0)
d) Analysing prescriptions for validity and clarity	4 (30.8)	3 (23.1)	8 (61.5)	4 (30.8)	5 (38.5)	0 (0.0)
e) Clinically evaluating the appropriateness of prescribed medicines	5 (38.5)	4 (30.8)	9 (69.2)	5 (38.5)	9 (69.2)	0 (0.0)
f) Obtaining and documenting patient data and consultation records	3 (23.1)	4 (30.8)	6 (46.2)	5 (38.5)	8 (61.5)	0 (0.0)
g) Safe and legal handling of medicines	2 (15.4)	1 (7.69)	7 (53.8)	2 (15.4)	10 (76.9)	0 (0.0)
h) Using pharmaceutical calculations to verify the safety of doses and administration rates	5 (38.5)	3 (23.1)	6 (46.2)	1 (7.69)	8 (61.5)	1 (7.69)
i) Demonstrating team work	1 (7.69)	4 (30.8)	7 (53.8)	0 (0.0)	12 (92.3)	0 (0.0)
j) Demonstrating the characteristics of a prospective professional pharmacist as set out in relevant codes of conduct and behaviour	2 (15.4)	2 (15.4)	8 (61.5)	0 (0.0)	11 (84.6)	0 (0.0)
k) Other: Clinical skills	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (7.69)	0 (0.0)
<b>Total, n(%)</b>	<b>24 (9.68)</b>	<b>31 (12.5)</b>	<b>77 (31.0)</b>	<b>20 (8.06)</b>	<b>95 (38.3)</b>	<b>1 (0.40)</b>

\*Respondents were allowed to select more than one option; therefore, totals might exceed 100%.

As it pertained to tools or methods that could be used to perform assessments, most respondents selected direct observation of students (33.7%) especially for assessing professionalism, team work, and interprofessional working. Less than 5% of respondents selected validated or established assessments tools (Table 5)

**Table 5: Tools/methods that could be used to undertake assessments (n=13)**

Competencies	Tools/methods, n(%)*							
	Student interviews/oral assessment	Validated/established assessment tool	Assessment tool designed internally	Marking rubric	Mini Clinical Evaluation Exercise (mini-CEX)	Formal (objective) evaluation sessions on site	Direct observation of student during EL	Facilitators should not assess this
a) Contributing as members of an interprofessional healthcare team	3 (23.1)	1 (7.69)	3 (23.1)	3 (23.1)	4 (30.8)	3 (23.1)	13 (100.0)	0 (0.0)
b) Counselling patients on their medicines	3 (23.1)	2 (15.4)	4 (30.8)	3 (23.1)	3 (23.1)	8 (61.5)	12 (92.3)	0 (0.0)
c) Communication skills	3 (23.1)	3 (23.1)	4 (30.8)	3 (23.1)	4 (30.8)	7 (53.8)	12 (92.3)	0 (0.0)
d) Analysing prescriptions for validity and clarity	2 (15.4)	2 (15.4)	3 (23.1)	4 (30.8)	4 (30.8)	7 (53.8)	7 (53.8)	0 (0.0)
e) Clinically evaluating the appropriateness of prescribed medicines	3 (23.1)	1 (7.69)	4 (30.8)	3 (23.1)	9 (69.2)	6 (46.2)	7 (53.8)	0 (0.0)
f) Obtaining and documenting patient data and consultation records	2 (15.4)	2 (15.4)	3 (23.1)	3 (23.1)	6 (46.2)	7 (53.8)	10 (76.9)	0 (0.0)
g) Safe and legal handling of medicines	1 (7.69)	1 (7.69)	4 (30.8)	2 (15.4)	2 (15.4)	4 (30.8)	9 (69.2)	0 (0.0)
h) Using pharmaceutical calculations to verify the safety of doses and administration rates	3 (23.1)	1 (7.69)	5 (38.5)	5 (38.5)	5 (38.5)	5 (38.5)	7 (53.8)	1 (7.69)
i) Demonstrating team work	3 (23.1)	1 (7.69)	4 (30.8)	1 (7.69)	3 (23.1)	3 (23.1)	13 (100.0)	0 (0.0)

j) Demonstrating the characteristics of a prospective professional pharmacist as set out in relevant codes of conduct and behaviour	4 (30.8)	0 (0.0)	3 (23.1)	1 (7.69)	2 (15.4)	5 (38.5)	13 (100.0)	0 (0.0)
k) Other: Clinical skills	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (7.69)	1 (7.69)	0 (0.0)
<b>Total, n(%)</b>	<b>27 (8.74)</b>	<b>14 (4.53)</b>	<b>37 (12.0)</b>	<b>28 (9.06)</b>	<b>42 (13.6)</b>	<b>56 (18.1)</b>	<b>104 (33.7)</b>	<b>1 (0.32)</b>

\*Respondents were allowed to select more than one option; therefore, totals might exceed 100%.

There were 13 (76.5%) responses to the open-ended comments, where one of the advantages noted of facilitators formally assessing students during EL was that it would be a more authentic assessment of students in the real-world setting, compared to assessing their skills based on manufactured scenarios. One reflected: *'Assessment and feedback in the work environment, most closely mirrors skills, knowledge and attitude required when qualified.'* Other advantages noted were that it will ensure greater involvement of practicing staff in education, will reduce academic workload, and will motivate students to perform better during EL. Disadvantages noted were the burden of time and workload on facilitators, variability in marking, the involvement of different facilitators and their lack of knowledge on assessments, and the limited duration of EL. Training of facilitators thus highlighted as very important to ensure fairness and consistency, along with the need to use tools and mechanisms that were simple and accessible. There were also calls for a change in the current culture, with one noting the following: *'We really need the support of the regulator in this - if education and training was more a part of the role of practicing pharmacists, in the way it is for medics and nurses, it would be easier to change the culture and break the barriers currently in place.'*

## 4. STUDY 2: QUALITATIVE INTERVIEWS INVOLVING FACILITATORS

### **Objective 2:**

To explore facilitators' perceptions of processes and characteristics of the structures (resources), and training needs required for development and implementation of facilitator involvement in assessment of student pharmacists on EL.

### **Method:**

A series of semi-structured interviews which adopted a grounded-theory approach were undertaken (Creswell, 2013). Two methods of recruitment were employed to recruit study participants: an invitation email along with the Participant Information Sheet (PIS) was sent by NES to all pharmacists in primary care, community pharmacy, and hospital pharmacy who had experience as an EL facilitator (purposive), and interviewees were asked to suggest other facilitators and/or encourage other facilitators to participate in the study (snowball). Both methods were also employed to recruit more facilitators and ensure all three EL sites (community, hospital and primary care) were represented. All interviews were conducted by SAJ over the phone or via zoom, and signed consent forms were collected from all participants via email. Sessions were audio- and/or video-recorded (via zoom), and field notes were taken to capture key points.

The interview guide (Appendix 2) was developed based on a review of the literature and the study objectives, and was validated by members of the research team, and experts in qualitative study and pharmacy education prior to use. The guide sought to elicit feedback on facilitator's perception of assessments of students during EL, and to determine their needs in terms of training and resources. Demographic details were also collected. No incentives were offered to participants.

### **Data management and analysis:**

Recorded interviews were transcribed verbatim and anonymised prior to analysis. Transcripts were returned to all participants for comments and/or corrections. Results were then imported into NVivo 12 Software (QSR International Pty Ltd., Version 12, 2018). One

transcript from each practice type (community, hospital, and primary care) was coded and a coding framework was generated. The remaining transcripts were coded with new codes added to the framework as and when they occurred. Thematic analysis was performed on the transcripts as well as open-ended comments, guided by Braun and Clarke’s six phase approach to coding (Braun & Clarke, 2006).

While saturation was achieved after approximately 10 interviews, we continued until we had interviewed an equal number of participants from each of the three practice sites\*. Quotations by participants were edited on a limited basis to remove content that did not convey meaning (repeated words, stutters) or that had no relevance to the theme being discussed. An ellipsis was used to note removal of such extraneous content. Square brackets were used in quotations to replace sensitive or identifiable information.

\*In qualitative research, sample size is not calculated. Instead, interviews are conducted until saturation of themes are observed i.e. no new information is discovered and further data collection will produce similar results (Faulkner & Trotter, 2017). In qualitative studies adopting a grounded theory approach, this is typically achieved after 10 – 12 interviews.

**Results:**

Fifteen facilitators participated in the interviews, five from each practice site. There was a female preponderance (n=12, 80%) and the majority (n=12, 80%) had been EL facilitators for less than five years (Table 6)

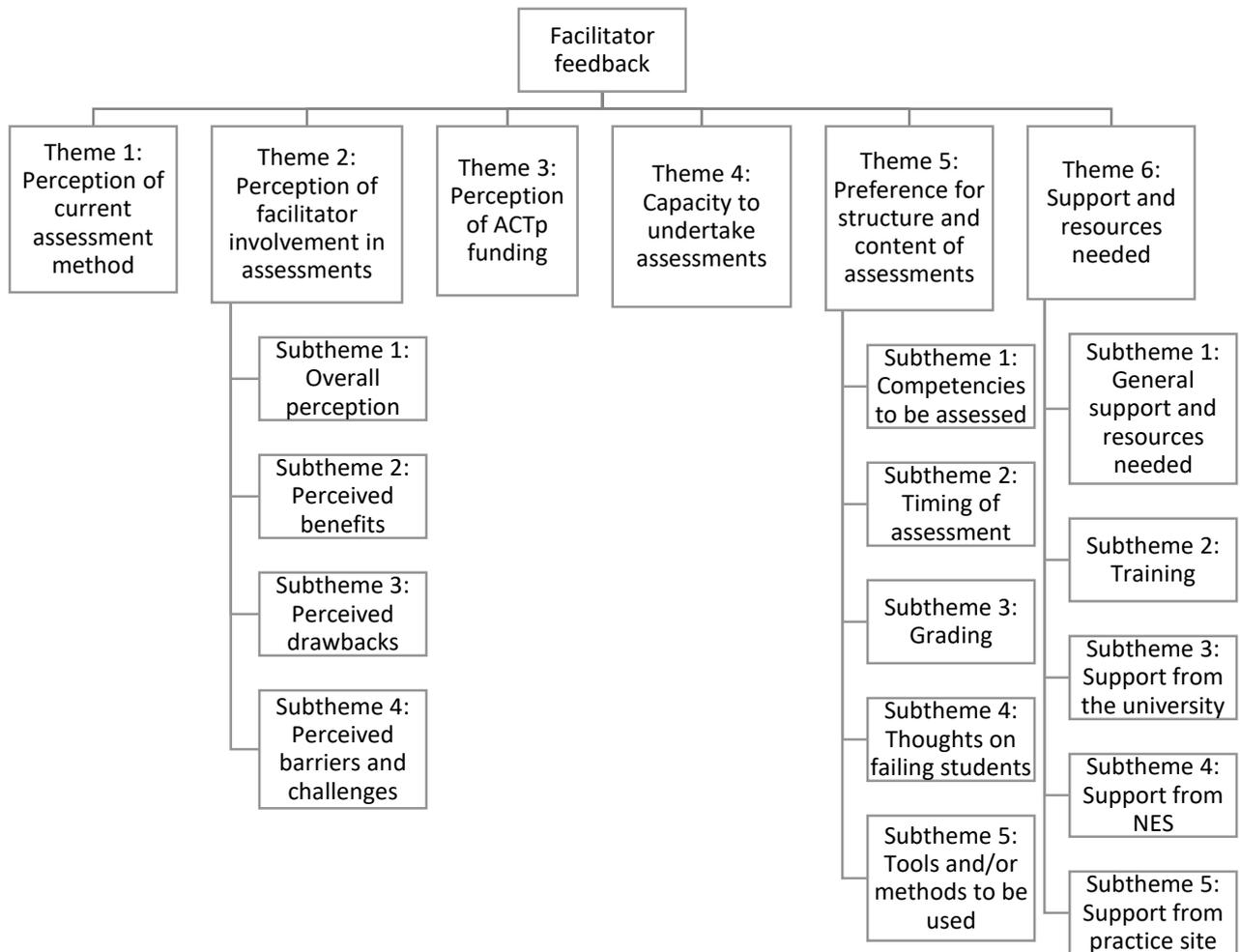
**Table 6: Demographics of interview participants in facilitator study (n=15)**

Demographics	n (%)
Age	
20-29	7 (46.7)
30-39	4 (26.7)
40-49	3 (20.0)
50-59	1 (6.67)
Education*	
BSc	3 (20.0)
MPharm	13 (86.7)
Postgraduate masters	4 (26.7)
PhD	1 (6.67)
Number of years registered as a pharmacist	
<5	4 (26.7)
5-9	6 (40.0)

10-14	1 (6.67)
15-19	1 (6.67)
20-24	2 (13.3)
25-29	1 (6.67)
Tutored students in the following years of study*	
Year 2 (UoS)	5 (33.3)
Year 3 (UoS)	6 (40.0)
Year 4 (UoS)	8 (53.3)
Year 5 (UoS)	7 (46.7)
Stage 1 (RGU)	0 (0.0)
Stage 2 (RGU)	0 (0.0)
Stage 3 (RGU)	4 (26.7)
Stage 4 (RGU)	8 (53.3)

\*Respondents were allowed to select more than one option; therefore, totals might exceed 100%.

Thematic analysis revealed six key themes (Figure 1 and Table 7: Appendix 3): (1) Perception of current assessment method, (2) Perception of facilitator involvement in assessments, (3) Perception of ACTp funding, (4) Capacity to undertake assessments, (5) Preference for structure and content of assessments, and (6) Support and resources needed.



**Figure 1: Theme and subthemes of facilitators' feedback**

### **Theme 1: Perception of current assessment method**

Facilitators felt it was *'strange'* and *'unfair'* that student pharmacists were currently assessed by university staff who had not actually observed their performance in practice. This then did not allow them to provide accurate or timely feedback to students on how to improve their performance. Assessments were based on what students had written in their reflective diaries instead, which some suggested could be contrived. Assessing the competencies that students had gained in the university via OSCE sessions or role-plays were also thought to be inauthentic, and not reflective of the real-world situation. It was also suggested that students

were dismissive of their EL, especially those who already had part-time jobs, assuming they could be less engaged as they were not going to be assessed. There was some support for academics conducting assessment, as they were more familiar with assessment procedures and criteria, and had more experience as compared to facilitators.

## **Theme 2: Perception of facilitator involvement in assessments**

### **Subtheme 1: Overall perception**

Facilitators were nervous and hesitant about taking on the role of assessing students formally, mainly due to the lack of experience with and knowledge of assessments. There were also concerns about the impact their marks would have on students' overall grades. Facilitators were nonetheless supportive of them taking on such a role, feeling they were best placed to assess students as they spent a substantial amount of time observing them in the practice. It was suggested, however, that the new format should be piloted first and should be implemented in a phased manner. It was also imperative that facilitators were provided with clear guidelines and training on assessment procedures.

### **Subtheme 2: Perceived benefits**

Facilitators stated that students would benefit from someone actually observing them in the real-world practice setting, and who are more engaged with them. This will also allow students to receive real-time feedback which they can then use to identify their strengths and improve on weaknesses while still in the practice setting. In addition, as students are not being assessed by their own lecturers or tutors, they will be more relaxed. Students will also have more confidence to work in the real-world setting once they have qualified as they were assessed while in the actual practice setting.

Facilitators were of the opinion that students will be more focused and motivated to perform if they knew they were being assessed. In assuming the new role, facilitators felt it would increase their self-development and skills in giving feedback, and encourage them to reflect on themselves especially if students performed poorly. The new format would also ensure feedback was more formalised and that placements were more structured. Finally, universities could benefit from a reduction in academic workload and be able to focus their efforts in other areas to improve EL.

### **Subtheme 3: Perceived drawbacks**

The main drawback highlighted was the lack of standardisation and consistency in marking, given that numerous facilitators would be involved, each with their own style of learning and teaching as well as standards. It was also thought that by taking on such a role this would add to the burden of responsibility on facilitators. A potential drawback to students is the possibility of personality clashes between themselves and the person assessing them.

### **Subtheme 4: Perceived barriers and challenges**

Time was highlighted as a major barrier to facilitators undertaking such a role, due to their own workload. The short placement durations where students were only attached for half a day or a day would also impede relationship-building between facilitators and students, which was thought to be necessary to conduct the assessments. In hospitals and primary care, students are regularly attached to different facilitators other than the named facilitator. In all settings, students are also supervised by other pharmacy staff such as technicians, dispensers, etc. Placement sites also have an impact as different sites will provide students with different experiences and different opportunities to achieve their learning outcomes. Finally, some facilitators could be less engaged or less confident than others, which again could have an adverse outcome on the assessment process.

### **Theme 3: Perception of ACTp funding**

Facilitators agreed that the ACTp funding allowed for facilitators to be trained on how to facilitate and supervise students, which was previously not available. It also allowed for locums or bank pharmacists to be brought in so that they had protected time with the students on placements. It was noted, however, that there was a finite supply of locum and bank pharmacists, who were also not necessarily available at the time needed or equipped with the skills needed. Despite the presence of the extra staff, facilitators still had their own workload and responsibilities. There was also a sense that there was a lack of awareness about the funding and how it would be used, and in a few cases the funding had not been utilised as yet. Facilitators also felt that the funding was for them to supervise and monitor students, as opposed to assessing them.

#### **Theme 4: Capacity to undertake assessments**

Despite noting the barrier of time, facilitators felt they would have time to undertake this responsibility. There were no concerns about students not being able to achieve their objectives as most EL sites offered a range of services. While space for conducting assessments would usually be available, the situation was different for COVID due to the social-distancing needed. In some instances, capacity in primary care may become an issue with COVID 19 restrictions.

#### **Theme 5: Preference for structure and content of assessments**

##### **Subtheme 1: Competencies to be assessed**

There was near-unanimous agreement that the main competency that could be assessed by facilitators was students' communication skills, not just with patients but also other healthcare professionals and other staff members. Other competencies identified included professionalism, problem-solving skills, and clinical skills such as preparing care plans. Some felt that the list of competencies facilitators was asked to assess should be small and that there should be some flexibility in how students achieved them. Competencies should also be individualised according to the stage students were at and placement site, given that certain competencies were individualised to certain specialist EL sites. Similarly, it should be determined which competencies might be best assessed at the university compared to practice sites.

##### **Subtheme 2: Timing of assessment**

There were differences in preference with regard to the timing of assessments, however most preferred for the assessment to be undertaken periodically to allow students to improve on their shortcomings. As students' EL were sometimes staggered with weeks or months between two placements, this method would also be preferable to ensure facilitators did not forget how students had performed in previous placements. There was a concern that leaving assessments to the end could result in things being overlooked in case of unexpected issues including staff absences.

### **Subtheme 3: Grading**

There was large variation in how students should be graded, with some preferring to give scores, rankings, or percentages. Many were not favourable toward giving students a pass or fail.

### **Subtheme 4: Thoughts on failing students**

There was a general dislike for failing students as facilitators were not comfortable doing this and viewed it as a last resort, saying *'it would be hard to sort of crush somebody's hope.'* Failing a student was thought to be unconstructive and demotivating to students, and would reflect poorly on their skills as facilitators as failure in a student would also allude to failure in their supervision. Some did agree that students should be failed if they were incompetent given the demands and importance of their future role as healthcare professionals, as long as it could be backed up by university criteria on failing.

### **Subtheme 5: Tools and/or methods to be used**

Preferences on tools to be used to assess students differed based on placement sites and previous experience with a tool i.e. those who had experience using miniCEX especially hospital facilitators, preferred using it as according to them it allowed more detailed feedback to be provided to students. Most preferred using checklists for the simple reason that they were quick and easy to use. It was also suggested that multiple tools should be used dependent on the different competencies to be assessed, and the preferences of facilitators and students given the differences in learning styles. There was general agreement that assessments should be undertaken face to face with students, as opposed to something done online separately and submitted directly to the university. This was because face to face sessions would allow for students to interact with the facilitator and feedback to be given.

## **Theme 6: Support and resources needed**

### **Subtheme 1: General support and resources needed**

There was a general call for more information to be provided on the objectives and procedures to be followed in undertaking assessments, including what was expected of facilitators in this new role. Facilitators also felt that the onus should be on universities and

NES to provide training and resources to facilitators, rather than the General Pharmaceutical Council or the Royal Pharmaceutical Society.

### **Subtheme 2: Training**

Training would be needed depending on the tools being used such as the miniCEX or validated tools. Similarly, facilitators required training on the procedure for assessments. Facilitators felt peer support sessions would be very helpful where they could see how more experienced facilitators marked students and obtain feedback on their own marking.

### **Subtheme 3: Support from the university**

Facilitators mainly spoke of the need for more information on students' level of knowledge and what had been covered in the MPharm so they knew what to expect of students and were able to pitch their supervision at the right level. Similarly, clear guidance and information on the assessment criteria and procedures were needed, along with feedback on their marking, to ensure consistency and that all facilitators were marking to the same standards. Having a person to contact at the universities would also be helpful to assist facilitators when faced with challenging situations or when they had concerns about issues related to assessments.

### **Subtheme 4: Support from NES**

Facilitators were generally of the opinion that NES could support them in providing training and resource material, and that there should be different options for online training and resources to accommodate all facilitators.

### **Subtheme 5: Support from practice site**

Facilitators generally needed support from their own practice site in matters related to the organisation of EL such as in hiring bank or locum pharmacists to ensure they had protected time to supervise students. Support was also needed from other staff to supervise students. This included nurses and other healthcare professionals when students were attached to some sectors.

## 5. STUDY 3: INTERVIEWS AND FOCUS GROUPS INVOLVING STAKEHOLDERS

### **Objective 3:**

To explore the views and experiences of stakeholders involved in or affected by the assessment process.

#### 5.1 Group 1: Stakeholders from academia, NES, key organizations/bodies, and key personnel with experience in assessments of EL

### **Methods:**

A series of semi-structured one-on-one interviews and focus group discussions (FGDs) which adopted a grounded-theory approach were undertaken (Creswell, 2013). We decided to undertake FGDs with the teaching/lecturing staff to gather their collective views on the topic. The research team determined the list of key stakeholders to be interviewed from different key organisations which included academia, NES, and the NHS. Those with extensive experience in EL and assessments were also included in this list. An invitation email was sent out by the researchers to potential participants along with the PIS. All interviews were conducted by SAJ via Zoom, and signed-consent forms were obtained from all participants via email. Sessions were audio- and video-recorded (via Zoom), and field notes were taken to capture key points.

The interview guide (Appendix 4) was kept as similar as possible to the one used for facilitators, to allow for comparison between the different groups/stakeholders. The guide was validated by members of the research team, and experts in qualitative study and pharmacy education prior to use. The guide sought to elicit feedback from stakeholders on their perception of facilitators formally assessing students during EL. Demographic details were also collected. No incentives were offered to participants.

### Data management and analysis:

Recorded interviews were transcribed verbatim and anonymised prior to analysis. Transcripts were returned to all participants for comments and/or corrections. Results were then imported into NVivo 12 Software (QSR International Pty Ltd., Version 12, 2018). Three transcripts were initially coded and a coding framework was generated. The remaining transcripts were coded with new codes added to the framework as and when they occurred. Thematic analysis was performed on the transcripts as well as open-ended comments, guided by Braun and Clarke's six phase approach to coding (Braun & Clarke, 2006).

Data saturation was achieved, however we continued to interview all the different key stakeholders that had been identified, given the variation in role, organisation, and experience in assessments and/or EL. Quotations by participants were edited on a limited basis to remove content that did not convey meaning (repeated words, stutters) or that had no relevance to the theme being discussed. An ellipsis was used to note removal of such extraneous content. Square brackets were used in quotations to replace sensitive or identifiable information.

### Results:

A total of 18 stakeholders participated. Seven one-on-one interviews were conducted via Zoom: one senior member of management staff from each university, three NES staff, one NHS hospital Director of Pharmacy, and one executive member of Community Pharmacy Scotland (CPS). Two FGDs involving 11 participants (five UoS, six RGU) were conducted over Zoom with teaching/lecturing staff from each university (Table 8). Interviews lasted an average of 41mins while the focus groups lasted an average of 75mins.

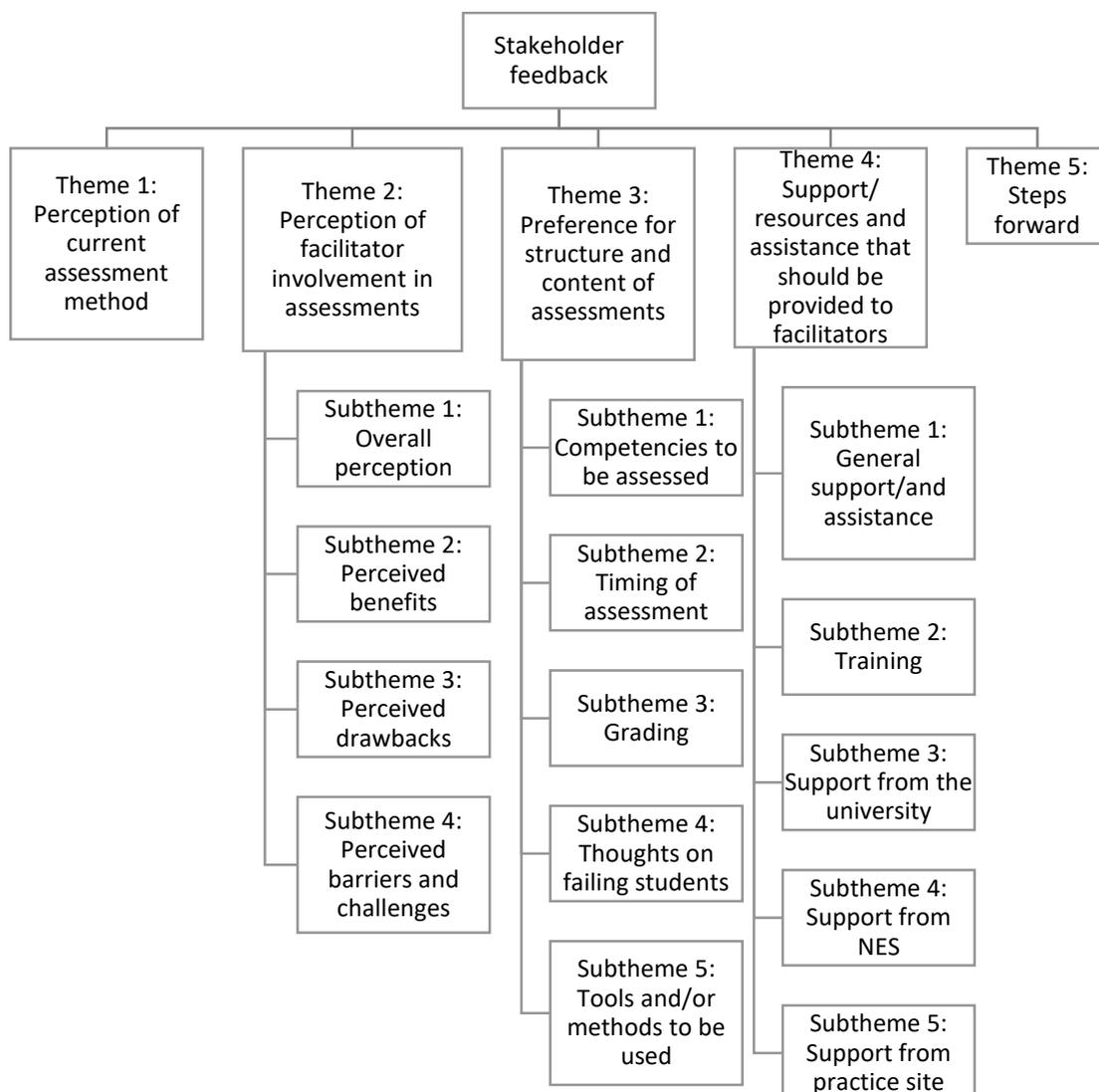
**Table 8: Demographics of participants in stakeholder interviews and focus group discussions (n=18)**

Demographics	n (%)
Age	
30-39	6 (33.3)
40-49	5 (27.8)
50-59	6 (33.3)
Education*	
BSc	10 (55.6)
MPharm	7 (38.9)
Postgraduate masters	7 (38.9)

PhD	4 (22.2)
Number of years in current role	
<5	10 (55.6)
5-9	2 (11.1)
10-14	2 (11.1)
15-19	4 (22.2)

\*Respondents were allowed to select more than one option; therefore, totals might exceed 100%.

Thematic analysis revealed five key themes (Figure 2 and Table 9: Appendix 5): (1) Perception of current assessment method, (2) Perception of facilitator involvement in assessments, (3) Preference for structure and content of assessments, (4) Support/resources and assistance that should be provided to facilitators, and (5) Steps forward.



**Figure 2: Theme and subthemes of stakeholders' feedback**

## **Theme 1: Perception of current assessment method**

While the current approach to assessments, where students are assessed by academics on their return to the university, would afford more consistency in marking, it was thought to be artificial and inaccurate as academics did not observe students during their placements, and students could potentially fabricate experiences in their reflective diaries. The issue of trust was highlighted by NES staff, as it was perceived that facilitators are only 'allowed' currently to supervise students but are not entrusted with assessing them.

## **Theme 2: Perception of facilitator involvement in assessments**

### **Subtheme 1: Overall perception**

There was general support for facilitators assuming this responsibility as they were the experts in practice, spent a significant amount of time with, and were actually observing students' competencies in the work environment, thus proving a more accurate picture of competence. It was also noted that some competencies were more appropriate to be assessed in practice. While it was perceived that the majority of facilitators are already equipped with the skills and experience to assess students due to their responsibility assessing their own staff, it was stressed that training was key to ensure consistency and calibration in marking and that students are assessed equitably.

There was scepticism expressed, mainly by academics who were concerned about the impact of facilitators' assessments on students' final grades and progression through the MPharm programme, stressing that it was okay for facilitators to undertake assessments as long as they formed part of the assessment and did not impact students' progression through the course. On whether university staff should be sent to placement sites to undertake the assessments, academics were concerned as it would be difficult logistically and would add to their already high workload. The expertise of academics in the practice environment was also questioned, and it was also noted that academics would only have a snapshot view of students' competencies in the workplace, which could result in a skewed assessment.

### **Subtheme 2: Perceived benefits**

It was perceived that students would benefit from being assessed by experts in the practice environment who were actually observing them and providing timely feedback which they could then use to identify their gaps and strengths. It was also thought that being assessed by both academics and facilitators would expose students to different learning and teaching approaches, as well as obtain different perspectives.

It was perceived that tasking facilitators with such a role was a recognition of their importance in developing the workforce and would bring esteem to their role. Stakeholders also felt the experience of assessing students would increase facilitators' confidence and self-reflection, thereby making them better practitioners. It was also thought that facilitators would feel more involved in the MPharm programme and have a better understanding of students and what should be expected of them.

Academics felt if students were being assessed in practice, they would take it more seriously and they would appreciate the importance of EL in the MPharm curriculum. Stakeholders also were of the opinion that this would result in a better working relationship between university staff and facilitators and would also allow academics to focus on other aspects of the curriculum.

### **Subtheme 3: Perceived drawbacks**

The biggest drawback perceived was with regard to the variation in marking due to the larger pool of assessors. There were also concerns of the added burden on facilitators. It was perceived that students would have trouble building relationships with facilitators, due to the limited duration, the inexperience of students, and the potential for personality clashes, all of which could have an impact on their assessment.

### **Subtheme 4: Perceived barriers and challenges**

The current short duration of placements was highlighted by several stakeholders, where students might not have enough time to achieve their competencies, and facilitators might not have enough time to assess them. It was perceived that the lack of experience in assessments and the fact that students will be supervised by different facilitators could be

barriers to the assessment process. Other variations such as students' level of experience due to part-time work as well as different experiences in different placement sites may also pose a challenge to facilitators undertaking assessments.

### **Theme 3: Preference for structure and content of assessments**

Stakeholders generally agreed that key competencies that could be assessed by facilitators are professionalism, communication, and clinical skills. They did, however, feel that facilitators should not be asked to assess too many competencies so as not to overburden or stress them. While the timing of the assessments was dependent on the length of the placement, the competencies being assessed, and students' year or stage, there was general agreement that assessments should be a continuous process and not just undertaken at the end of the placement to give the opportunity for students to work on their weaknesses.

There also seemed to be a preference for students to be assessed on a scale, or awarded a pass or a fail, with stakeholders stressing that facilitators should not have any reservations about failing students as it was a matter of safety and would be of benefit to them.

Stakeholders had different preferences for the tools or methods used to undertake the assessments, as they were dependent on different variables such as the competencies that would be assessed and the placement site. There were suggestions however that the wheel should not be reinvented and new tools designed, but that existing tools currently used by other healthcare programmes be adapted instead. Stakeholders were unanimous in their preference for assessments to be undertaken face to face as it provided the opportunity for two way conversations to take place.

### **Theme 4: Support/resources and assistance that should be provided to facilitators**

Stakeholders felt that facilitators should be provided with clear guidelines and information on the assessment process as well as what was expected of them, with the stipulation that facilitators should not be overburdened in this new role. Regular practical training was thought to be key, with the majority agreeing that the onus should be on NES and the two universities to ensure facilitators received sufficient support and resources. As feedback was thought to be a key component in the assessment process, stakeholders felt it was imperative

that facilitators received training on how to provide feedback, along with calibration exercises to ensure consistency in marking. Quality assurance by the universities was also thought to be key to ensure the latter.

Stakeholders also felt that both the universities and NES should assign certain staff as contact persons to help facilitators with queries and to provide pastoral care. NES staff noted that they could assist facilitators with networking for peer-support groups, as well as setting up buddy-systems so facilitators could get support from peers or guidance from more experienced facilitators on assessments. It was suggested that practice sites could support facilitators by ensuring they had protected time to supervise and assess students.

### **Theme 5: Steps forward**

Stakeholders felt that a change in mind-set and culture was needed within pharmacy, where facilitators were more open to supervising and assessing the future workforce. Before the new approach is implemented, stakeholders also felt it was imperative that more groundwork was undertaken for example examining other programmes which have established governance and structure around competency-based assessments by external assessors. It was noted that the key thing was to start small and build up in complexity over the years so that facilitators did not feel too overwhelmed, and to involve facilitators early-on in the design of the structure and content of assessments so they felt some ownership and would feel more committed. A pilot study was also needed to help determine the structure and content, and to identify any potential gaps.

### **5.2 Group 2: Student pharmacists from RGU and UoS**

#### **Method:**

An online survey was hosted on Qualtrics. The survey consisted of two questions to capture demographic details and one open-ended question assessing students' thoughts on facilitators assessing them during EL. An anonymous link along with the PIS was placed on the University virtual learning environment. No financial incentives were offered and a reminder email was sent after two weeks. A notice was placed at the end of the survey asking for

volunteers to participate in one-on-one interviews or focus groups, with the opportunity to win two £25 gift vouchers through a lucky draw.

**Data management and analysis:**

Demographic data were presented using descriptive statistics. Thematic content analysis was performed on the open ended comments, as it allows researchers to not just focus on code-counting but highlight as well key themes that emerge.(Haynes-Maslow et al., 2018) All open-ended comments were read and reread and keywords were identified. These keywords were sorted into categories, and then subjected to thematic analysis. NVivo and Microsoft Excel were used to analyse these comments. Respondents of open-ended comments were identified according to their year of study (e.g. Y2) and part-time job status, with the letter ‘P’ indicating they had part-time jobs.

**Results:**

There were 82 responses, however one did not provide demographic data, and 12 did not ‘answer’ the question, and instead commented solely on their experience with facilitators. As such, only 69 responses were included in the final analysis. The majority of students (n=56, 69.1%) had part time jobs (Table 10). We were unable to carry out interviews/FGDs due to an insufficient number of volunteers.

**Table 10: Characteristics of survey respondents (n=69)**

	n (%)	Part-time work, n(%)
UoS (n=49)		
Year 2 (Y2)	8 (11.6)	3 (37.5)
Year 3 (Y3)	8 (11.6)	7 (87.5)
Year 4 (Y4)	8 (11.6)	8 (100.0)
Year 5 (Y5)	18 (26.1)	15 (83.3)
RGU (n=32)		
Stage 1 (S1)	6 (8.70)	0 (0.0)
Stage 2 (S2)	6 (8.70)	6 (100.0)
Stage 3 (S3)	5 (7.25)	2 (40.0)
Stage 4 (S4)	10 (14.5)	6 (60.0)

Responses were an average of 86 words, with a range from 16 to 667 words. Overall, 34 (49%) were positive about facilitators assessing students, 22 (32%) were negative, while seven (10%) had mixed opinions. Thematic content analysis revealed five key themes: (1) Current perceptions and expectations of experiential learning placements, (2) Perceived benefits of facilitators assessing students, (3) Perceived drawbacks of facilitators assessing students, (4) Potential barriers and challenges in facilitators assessing students, and (5) Suggestions and concerns.

### **Theme 1: Current perceptions and expectations of experiential learning placements**

Students perceived EL as a place for them to learn and make mistakes, saying: *'This should be our provided time to GAIN important experience and learn from it for the future.'* (S4P). This was especially true for hospital placements which were perceived as novel. Students also felt EL afforded them the opportunity to set their own learning objectives and expectations of their placements. The quality of their placement experience was perceived to be largely dependent on the facilitator and characteristics of the placement site. It was also noted that the placements should be a welcoming, inclusive environment that is enjoyable and makes students look forward attending.

### **Theme 2: Perceived benefits of facilitators assessing students**

#### **2.1 Quality of assessment**

Assessment by facilitators was perceived as beneficial as students would be getting advice from a qualified professional who was directly observing them and was impartial, as opposed to assessments undertaken by academics. Assessments during EL were also thought to be more authentic, reflecting students' actual involvement and performance in the real-world setting compared to manufactured scenarios such as those in OSCE sessions, with one noting: *'I think it would be useful as it is them who are actually seeing how you work and cope in real life environments.'* (Y2P) Being assessed during EL was also thought to accommodate different learning styles given that some students perform better in practical versus written examinations.

## **2.2 Students**

It was perceived that students will benefit from facilitators who are more engaged, as currently some facilitators have a *"this is a burden" type of attitude* (S4). It was also perceived that if facilitators assessed students it would ensure that students received more constructive feedback, which would then allow them to recognise and reflect on their strengths and weaknesses and work on them. It would also facilitate a better learning experience for students as students will be allowed to be more involved and complete more tasks, which would help develop their skills and application of knowledge in a practical setting.

## **2.3 Facilitators and/or university**

Facilitators would benefit from students who were more engaged and motivated to perform and apply themselves, as there was a perception *'many students do not attend placement and student performance can be relatively haphazard.'* (Y5P). Students felt it would be an effective method to gauge students' understanding and knowledge, as well as the benefits they had gained from the placement. Facilitator involvement in assessments would also help formalise placements and provide more structure and organisation, while also providing a more formalised avenue for feedback to be provided to students.

## **Theme 3: Perceived drawbacks of facilitators assessing students**

The major drawback highlighted by students was the fact that students will be more stressed and anxious if they knew they were going to be assessed during placements, which were already perceived to be stressful, saying it would be *'nerve-wrecking'* and *'terrifying'*. As stated by a Stage 4 student: *'Students should not be going into the placement sites scared of being assessed!'* (S4P) They felt this could then have a negative impact on students' placement experience as they would be too nervous and feel under pressure, resulting in them either making mistakes or not performing to the best of their ability. It was perceived that this could then potentially deprive them of obtaining the maximum benefit of their placements or even enjoying it. This is illustrated in the following comment: *'Introducing assessment may cause students to engage less with the working environment and concentrate more on meeting outcomes of assessment.'* (S4P).

Another drawback noted was the fact that students already had to learn how to navigate a new place, new staff, new patients, and new situations, which was already thought to be daunting. This was even more so with students who did not have any part-time job experience or students placed in the hospital setting. As such, adding assessments was thought to be 'irresponsible': *'None of us would have ever had the opportunity to review patients in a real-life hospital and none of us would know what to do and how to deal with real patients - this is why we go on these placements - to LEARN!'* (S4P).

A potential drawback to facilitators' assessing mentioned by students was the fact that they were often too busy with their own workload, and may feel burdened by the extra responsibility, with one saying: *'...so by asking them to assess us you place a much larger burden on them in an environment where one error could lead to a fatality.'* (Y3P). Variability in marking was also highlighted, with students noting that facilitators had different levels of experience as well as different marking styles. This was thought to be unfair to students, as illustrated in the following comment: *'If the assessment were to go towards the student's grade this would be very unfair as the facilitators vary largely from site to site.'* (Y4P)

#### **Theme 4: Potential barriers and challenges in facilitators assessing students**

The current limited duration of placements was highlighted as a major barrier, with students lamenting that *'they haven't had time to build a rapport with the student and so they don't know what I'm capable of academically'* (S4), and that facilitators would *'only experience a snap shot of the student's abilities.'* (Y4P) The limited duration was also perceived as having a negative impact on students' ability to be able to adapt to the unfamiliar environment, thereby affecting their ability to perform. Not having work experience was another barrier highlighted as students with part-time jobs would potentially perform better and be graded higher compared to those who lacked experience.

There were a few strong opinions expressed about facilitators, with words such as *'rubbish'* used. Students were worried that as the EL and assessments were very much dependant on the facilitators, students might not be graded fairly or properly as some facilitators were either too busy, not engaged, or *'poorly equipped....to give the most comprehensive experience'* (Y5P). Students were often supervised by different facilitators, even within the

same practice site, and by a range of different staff. This could then impede relationship-building which was perceived to then have an impact on the assessment process. Similarly, different students had different experiences in different placement sites, occasionally being unable to meet all their learning objectives due to the lack of services provided or lack of patients.

There were also concerns that facilitators lacked the knowledge on assessments as *'directly and formally assessing university students is not something they are traditionally required to do...'* (Y5P) In the same vein, facilitators were said to be unfamiliar with students' level of knowledge and what is expected of students so *'it could be difficult for them to adapt the EL placement and assessment to be at the required level for the student.'* (S4P)

#### **Theme 5: Suggestions and concerns**

There was a call for facilitators to be trained in assessment criteria and procedures, and for quality assurance measures to be adopted to ensure standardisation in training and assessment. In the same vein, it was suggested that strict guidelines are set so students are not used merely as an extra pair of hands during placements. The university should also provide information to facilitators on the students' level of knowledge so they know what to expect of them. Similarly, students would also need clearer information on what was expected of them. There were several questions pertaining to the structure of the assessments such as when and how it would be conducted and the impact on students' overall grades. One noted that there should be opportunities to re-sit in case of failures.

## 6. DOCUMENTARY ANALYSIS

### **Objective:**

To explore the processes relating to the governance infrastructure required for assessment.

### **Method:**

A documentary analysis was undertaken. Documents of interest were assessment policies related to the use of external assessors. Course leaders from UoS and RGU were emailed to obtain the relevant documents/resources. The online resource for assessment policies for RGU was also reviewed.

### **Results:**

A document detailing who was allowed to teach and mark was available at UoS. This document, however, had little or no details on the use of external personnel to conduct assessments. No document or information on the use of external assessors was available at RGU.

## 7. DISCUSSION

This report presents the findings of a series of studies involving multiple stakeholders and utilising multiple methods, to investigate the proposal for facilitators to undertake assessments of student pharmacists during their EL. While there was some anxiety and scepticism expressed by a few stakeholders and facilitators, findings revealed an overall support for facilitators assessing student pharmacists which they felt would reflect the dynamic nature of the practice environment, versus current methods which were thought to be artificial.

Concerns highlighted by all groups were the lack of consistency in assessments, the current limited placement duration which could impede relationship-building between students and facilitators, and the fact that different staff could be involved in the training of students, which may complicate the assessment process.

No consensus could be achieved with regard to tools/methods to be used and how students should be graded. There was, however, general consensus on the need for structured guidelines on assessments which are calibrated according to university assessment policies, and for facilitators to be trained to ensure consistency.

The following is a summation of other key findings for each study, along with a brief discussion aligned according to each study objective.

### **Objective 1: Survey to scope existing structures, processes, and outcomes associated with assessment within EL in undergraduate MPharm programmes across the UK**

Minimal assessments are currently undertaken during EL, with students predominantly assessed on return to the university. No consensus could be achieved with regard to the tool(s) or method(s) to be used to assess students' competencies, suggesting that perhaps there is no one-size-fits all, and that the tools and methods used should be informed by the competencies being assessed.

**Objective 2: Interviews to explore facilitators' perceptions of processes and characteristics of the structures (resources), and training needs required for development and implementation of facilitator involvement in assessment of student pharmacists on EL**

Anxiety and hesitation was expressed by facilitators as they were unfamiliar with the assessment process. The added workload and lack of time were major challenges highlighted by the majority, along with the lack of knowledge on students' capabilities. Training and resources are needed especially on matters related to assessments such as tools, criteria, providing feedback, etc. Information on students' level of knowledge and skills as well as clear guidance on what was expected of them is also warranted.

Moving forward, obtaining facilitators' input on the design and structure of the assessment component will ensure they are comfortable undertaking the tasks and using tools and methods with which they are familiar. This will also ensure that resources and training programmes designed are tailored according to the actual needs of the facilitators, and not according to what is presumed to be of importance to them.

**Objective 3: To explore the views and experiences of stakeholders involved in or affected by the assessment process.**

Interviews and focus groups to assess the perception of stakeholders

Stakeholders were overall supportive of facilitators undertaking assessments, however there was some scepticism expressed by academics around uncertainty on the impact of assessment by facilitators on the overall grades and progression of the students through the MPharm course. This then alludes to the importance of involving teaching staff who play a key role in the assessment process in the design of the new approach to assessing students on the skills gained during EL.

Stakeholders also highlighted the importance of starting small and engaging with facilitators early on in the design of the structure and content of assessments so that facilitators had an input and would not feel too overwhelmed by the new role. These points again underline the importance of involving facilitators in structuring of their new role and responsibilities.

### Survey to assess students' perceptions

Students were worried about the additional stress being assessed during EL would place on them, and also had concerns and questions about the assessment process and the impact on their overall grades. As it pertained to facilitators, students questioned the capability of facilitators to undertake assessments, noting that facilitators were often unaware of students' level of knowledge and expectations, or were too busy.

It would thus seem imperative to include students in the design and structure of the assessment components to allay their anxiety and fears. By working collaboratively with facilitators in this design, this will result in co-production of the assessment.

### **Objective 4: Documentary analysis to explore the processes relating to the governance infrastructure required for assessment**

Neither universities had any clear details on governance associated with using external assessors, which are essential to ensure standardisation, and that all students are treated fairly. It is thus proposed that we look to other programmes which have established policies on using external assessors such as Medicine, and postgraduate pharmacy programmes.

## 8. RECOMMENDATIONS FOR FUTURE WORK

Based on the findings of this work as well as the gaps highlighted in our discussion, we suggest that a community-based participatory research (CBPR) approach is adopted, where researchers and the 'community' affected by the outcomes of future studies/plans i.e. students, academics, and facilitators, will collaborate on all aspects of the research process through shared decision-making. This approach will increase 'buy-in' from the 'community' and give them a sense of ownership over the processes and outcomes of the work. Indeed, CBPR has been shown to lead to increased external validity and higher rates in participation (Viswanathan M, 2004).

In line with that, a separate advisory group should be established made up of those who will be directly impacted by the changes in assessments of EL i.e. undergraduate students, facilitators on the ground who will actually be involved in conducting these assessments, and academics from both universities who are actually assessing students on skills gained during EL. A list of potential members can be generated based on participation in facilitator and stakeholder interviews, and open-calls to ensure non-biasness and that the group is well-represented. We recommend that this advisory group work together with the research team on the following (Rhodes et al., 2002; Viswanathan M, 2004):

- Development of study proposals
- Design of study methods and research tools which will include surveys, interview guides, etc.
- Participant recruitment and retention
- Study implementation e.g. the distribution of surveys, forms, etc.,
- Provide feedback on the translation of research findings into 'policy' changes.

We also make the following recommendations for future work to be undertaken. These are divided into several parts, with the proviso that the findings from each part inform the next. As such, the work should be undertaken in the order suggested below.

### Part 1: Study involving experts from health and teaching

Qualitative interviews and/or FGDs with other academics/relevant experts in fields such as medicine, nursing, physiotherapy, teaching etc. who have more experience in having external facilitators assess students, and/or established assessment policies with regard to external assessors, and/or established structures around competency-based assessments.

### Part 2: Document analysis

Analysis of documents on assessment policies pertaining to the use of external assessors, from other fields of healthcare such as medicine, nursing and professions allied to medicine, as well as assessment policies adopted in postgraduate programmes.

### Part 3: Design of the structure and content of assessments

This phase will involve obtaining input from relevant/key stakeholders via virtual platforms such as e-Delphi and/or nominal group technique (NGT) to determine the (1) competencies that could or should be assessed by facilitators, and the (2) selection and/or design of a tool(s) to conduct these assessments.

Part 3(a): If new tools are designed, they should be validated, and proper tests undertaken to check for reliability.

### Part 4: Development of training modules for facilitators

Design and development of the content and structure of modules to train facilitators on assessments. E-Delphi and NGTs can be employed here to obtain expert opinions and consensus from key stakeholders such as teaching teams, leads in teaching and training within the NHS, key staff from NES, etc. Pre and post-surveys can also be undertaken to evaluate the effectiveness of the training session.

### Part 5: Pilot testing

Pilot testing of facilitators conducting competency-based assessments of students using the tools and competencies developed in Part 3, and the training received in Part 4.

To undertake the proposed work in a cost-effective and time-efficient manner, as well as contribute to research-capacity building, we recommend that the work is undertaken by a full-time PhD student, under supervision by the research team and the guidance of the proposed new advisory group, reporting outputs to the Pharmacy ACT Oversight Group (PAOG). This research plan is outlined in the Gantt Chart in Appendix 6.

## 9. ACKNOWLEDGEMENTS

We would like to thank the following for their participation and/or help with this project:

- Respondents of the nationwide survey.
- Facilitators, university staff, NES personnel, and the other key stakeholders who participated in the interviews and focus groups.
- Undergraduate students who gave their valuable feedback via the online survey.
- Those who validated the surveys and interview guides, and who were involved in pilot-testing the study tools.
- Members of the ACTp research team for assistance, feedback and guidance on research methodology, the design of study instruments, participant recruitment, and review of draft reports.
- Members of Pharmacy ACTp Oversight Group for feedback on the presentation of preliminary results.

## 10. REFERENCES:

- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77-101. doi:10.1191/1478088706qp063oa
- Creswell, J. W. (2013). *Qualitative Inquiry and Research Design: Choosing Among Five Approaches* (Third ed.). Thousand Oaks, California: Sage Publications Inc.
- Faulkner, S. L., & Trotter, S. P. (2017). Data Saturation. In J. Matthes, C.S. Davis, & R.F. Potter (Eds.), *The International Encyclopedia of Communication Research Methods* (pp. 1-2).
- General Pharmaceutical Council. (2011). *Future pharmacists: Standards for the initial education and training of pharmacists*. Retrieved from London, UK: [https://www.pharmacyregulation.org/sites/default/files/document/gphc\\_future\\_pharmacists\\_may\\_2011.pdf](https://www.pharmacyregulation.org/sites/default/files/document/gphc_future_pharmacists_may_2011.pdf)
- Haynes-Maslow, L., Andress, L., Jilcott Pitts, S., Osborne, I., Baquero, B., Bailey-Davis, L., . . . Ammerman, A. S. (2018). Arguments Used in Public Comments to Support or Oppose the US Department of Agriculture's Minimum Stocking Requirements: A Content Analysis. *Journal of the Academy of Nutrition and Dietetics*, 118(9), 1664-1672. doi:<https://doi.org/10.1016/j.jand.2017.12.005>
- Rhodes, P., Nocon, A., Booth, M., Chowdrey, M. Y., Fabian, A., Lambert, N., . . . Walgrove, T. (2002). A service users' research advisory group from the perspectives of both service users and researchers. *Health & Social Care in the Community*, 10(5), 402-409. doi:10.1046/j.1365-2524.2002.00376.x
- Viswanathan M, A. A., Eng E, et al,. (2004). *Community-Based Participatory Research: Assessing the Evidence: Summary AHRQ Evidence Report Summaries 1998-2005* Retrieved from <https://www.ncbi.nlm.nih.gov/sites/books/NBK11852/>

## 11. APPENDICES

### Appendix 1: Nationwide Survey of Assessments within Experiential Learning in MPharm Programmes in the UK

The following questions are for statistical purposes:

i Type(s) of programme(s) offered (select **ALL** that apply):

- 4-year MPharm
- 5-year integrated MPharm

ii Funding currently received for experiential learning (EL)

- Yes (please state name of funder): \_\_\_\_\_
- None received

Q1 Kindly indicate the person(s) who conducts any competency-based assessments of students during their EL? (Select **ALL** that apply) [**Competency-based assessment seeks to determine whether a person can do a task or group of tasks and how well they can do them**]

	During EL	On return to the university
a) Facilitators/tutors/preceptors ( <i>pharmacists who supervise students during EL</i> )	<input type="radio"/>	<input type="radio"/>
b) Director of experiential learning	<input type="radio"/>	<input type="radio"/>
c) Academic staff directly involved in EL	<input type="radio"/>	<input type="radio"/>
d) Academic staff not directly involved in EL	<input type="radio"/>	<input type="radio"/>
e) Patients	<input type="radio"/>	<input type="radio"/>
f) Students (self-assessment)	<input type="radio"/>	<input type="radio"/>
g) Students (peer-review/assessment)	<input type="radio"/>	<input type="radio"/>
h) University-employed clinical facilitators (including teacher practitioners, university regional tutors)	<input type="radio"/>	<input type="radio"/>
i) Other (please state):	<input type="radio"/>	<input type="radio"/>
j) No one	<input type="radio"/>	<input type="radio"/>

**Questions 2-4 are specifically related to competency-based assessments conducted during students' EL placements, and not on their return to the university.**

Q2 Please rate your level of agreement in relation to whether the following **competencies** could be assessed by facilitators during student pharmacists' EL. These competencies are based on the learning outcomes in the General Pharmaceutical Council Standards for the Initial Education and Training of Pharmacists 2011.

	Strongly disagree	Disagree	Neither agree not disagree	Agree	Strongly agree
a) Contributing as members of an interprofessional healthcare team	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b) Counselling patients on their medicines	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c) Communication skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d) Analysing prescriptions for validity and clarity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e) Clinically evaluating the appropriateness of prescribed medicines	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f) Obtaining and documenting patient data and consultation records	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g) Safe and legal handling of medicines	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
h) Using pharmaceutical calculations to verify the safety of doses and administration rates	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
i) Demonstrating team work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
j) Demonstrating the characteristics of a prospective professional pharmacist as set out in relevant codes of conduct and behaviour	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
k) Others (please state):	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q3 Which of the following types of **assignments/activities** could be assessed by facilitators based on specific competencies, when conducting competency-based assessments of students during their EL? (Select **ALL** that apply)

	Written answers (e.g. written assignments/projects, written papers)	Presentations (e.g. individual oral, small-group, poster)	Handbook/ learning portfolios/workbook	Clinical documentation	Diaries [e.g. reflective diaries/journals, E-log/electronic diary/report (written evidence of performance during EL)]	Facilitators should not assess this
a) Contributing as members of an interprofessional healthcare team	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b) Counselling patients on their medicines	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c) Communication skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d) Analysing prescriptions for validity and clarity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e) Clinically evaluating the appropriateness of prescribed medicines	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f) Obtaining and documenting patient data and consultation records	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g) Safe and legal handling of medicines	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
h) Using pharmaceutical calculations to verify the safety of doses and administration rates	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
i) Demonstrating team work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

j) Demonstrating the characteristics of a prospective professional pharmacist as set out in relevant codes of conduct and behaviour	<input type="radio"/>					
k) Others (please state):	<input type="radio"/>					
l) Others (please state):	<input type="radio"/>					
m) Others (please state):	<input type="radio"/>					

Q3a If there are other types of **assignments/activities** which can be assessed, please state in the box below along with the specific competencies.

Q4 Which of the following **tools/methods** could be used by facilitators to conduct competency-based assessments of students during their EL, based on specific competencies? (Select **ALL** that apply)

	Student interviews/oral assessment	Validated/established assessment tool (please state name in box Q4a)	Assessment tool designed internally	Marking rubric	Mini Clinical Evaluation Exercise (mini-CEX)	Formal (objective) evaluation sessions on site	Direct observation of student during EL	Facilitators should not assess this
a) Contributing as members of an interprofessional healthcare team	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b) Counselling patients on their medicines	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c) Communication skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d) Analysing prescriptions for validity and clarity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e) Clinically evaluating the appropriateness of prescribed medicines	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f) Obtaining and documenting patient data and consultation records	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

g) Safe and legal handling of medicines	<input type="radio"/>							
h) Using pharmaceutical calculations to verify the safety of doses and administration rates	<input type="radio"/>							
i) Demonstrating team work	<input type="radio"/>							
j) Demonstrating the characteristics of a prospective professional pharmacist as set out in relevant codes of conduct and behaviour	<input type="radio"/>							
k) Others (please state):	<input type="radio"/>							

Q4a If there are others **tools/methods** which can be used by facilitators, please state in the box below along with the specific competencies. Please also use this space to specify the name of the validated tool used as per Q4 above

Q5 What do you think are the potential **advantages** of asking facilitators to conduct competency-based assessments of students during their EL?

Q6 What do you think are the potential **disadvantages** associated with asking facilitators to conduct competency-based assessments of students during their EL?

Q7 Kindly use the space below to provide further suggestions on how competency-based assessments of students during their EL could be carried out by facilitators

## Appendix 2: Interview Guide for Facilitators and Stakeholders

<p><b>Overview</b></p>	<p>Currently student pharmacists are not routinely assessed formally during Experiential Learning, but only on their return to the university by staff who did not observe the student during their experiential learning.</p> <ol style="list-style-type: none"> <li>1. What are your thoughts on the fact student pharmacists are not assessed during experiential learning?</li> <li>2. What are your thoughts on the fact that student pharmacists are assessed by someone who did not observe them during their experiential learning?</li> </ol>
<p><b>Facilitator-involvement in assessments</b></p>	<ol style="list-style-type: none"> <li>3. How would you define competency with regard to student pharmacists?</li> </ol> <ol style="list-style-type: none"> <li>1. What are your thoughts on Experiential Learning facilitators conducting competency-based assessments of student pharmacists during Experiential Learning?  <b>Competency based assessment seeks to determine whether a person can do a task or group of tasks and how well they can do them</b>  <u>Prompts:</u> <ol style="list-style-type: none"> <li>i) Do you think it should be the role of every facilitator to assess student pharmacists? Please elaborate on your answer</li> <li>ii) How do you think this might differ from assessments done by academics or others who are not involved in the direct supervision of student pharmacists during Experiential Learning?</li> <li>iii) What do you think are the potential <i>benefits</i> in getting facilitators to conduct competency-based assessments on student pharmacists during Experiential Learning?  <u>Prompts:</u> any benefits to students, to the university, to yourself (the facilitator)?</li> <li>iv) What do you think are the potential <i>drawbacks</i> in getting facilitators to conduct competency-based assessments on student pharmacists during Experiential Learning?  <u>Prompts:</u> any drawbacks to students, to the university, to yourself (the facilitator)?</li> <li>v) What do you think could potentially <i>assist</i> facilitators in conducting competency-based assessments on student pharmacists during Experiential Learning?</li> <li>vi) What do you think are the potential <i>barriers</i> to getting facilitators to conduct competency-based assessments on student pharmacists during Experiential Learning?  <u>Prompt:</u> Are there any issues such as lack of resources which would be a barrier? If so, please elaborate</li> </ol> </li> </ol> <ol style="list-style-type: none"> <li>2. From a scale of 1 -10 how would you rate your <u>competence</u> in assessing student pharmacists, where 1 is least competent, and 10 is most competent? Please elaborate  <b>By competence, I mean your actual ability to be able to assess the student pharmacists.</b>  <u>Prompt:</u> <ol style="list-style-type: none"> <li>i) What factors have influenced how you have rated your competence?</li> <li>ii) What might increase your competence in assessing students?</li> </ol> </li> </ol> <ol style="list-style-type: none"> <li>3. From a scale of 1 -10 how would you rate your <u>confidence</u> in assessing student pharmacists, where 1 is least confident, and 10 is most confident? Please elaborate <u>Prompt:</u> <ol style="list-style-type: none"> <li>i.) What factors have influenced how you have rated your confidence?</li> <li>ii.) What might increase your confidence in assessing students?</li> </ol> </li> </ol> <ol style="list-style-type: none"> <li>4. What do you think about your capacity to perform assessments with regard to: <ol style="list-style-type: none"> <li>a) the time needed to spend with students</li> <li>b) your practice environment</li> </ol> </li> </ol>

	<p>c) your own workload  d) space  e) anything else?</p>
<b>Structure and content of assessments</b>	<p>1. On which competencies do you think student pharmacists could be assessed by facilitators during their EL? (<i>To prompt from Standards</i>)</p>
	<p>2. What are your preferences on how competency-based assessments by facilitators could be done e.g. with regard to time, tools used, grading method etc?  <u>Prompt:</u>  i) With regard to time e.g. how long should this take and when should this be done?  ii) What tools/methods could be used?  <u>Prompts:</u> Suggestion of tools/methods such as miniCEX, validated tool, internally designed tool, interviews, rubrics etc.  iii) Should it be paper-based, online, face to face (group or individual)?  iv) In terms of grading, would you prefer pass/fail, or giving a ranking, score, percentage etc?  v) What are your thoughts about failing a student?</p>
<b>Support</b>	<p>1. What specific training do you think you would need to be able to conduct competency-based assessments of student pharmacists during their Experiential Learning?</p>
	<p>2. What other support/resources would you need to be able to conduct competency-based assessments?  <u>Prompts:</u>  i) support/resources from NES?  ii) support/resources from the university?  iii) support/resources from your pharmacy business/practice?  iv) support/resources from the General Pharmaceutical Council or the Royal Pharmaceutical Society?  v) is there anything else you would like to add about the support you would need if you were to undertake this role?</p>
<b>Closing</b>	<p>1. Do you have any other suggestions with regard to facilitators conducting competency-based assessments of students during their experiential learning?</p>
	<p>2. Do you have any final comments?</p>

### Appendix 3: Table of Themes and Illustrative Quotes from Interviews with Facilitators

Table 7: Themes, subthemes and illustrative quotes from facilitator interviews.

Themes	Elaboration	Illustrative quotes
<b>Theme 1: Perception of current assessment method</b>		
	Unable to guide students to improve in a timely manner.	<i>"So it's quite hard when you're not the ones assessing them to make sure that they're doing the right things as well, or getting to see the right things" (H5)</i>
	Current assessments perceived as inauthentic and based on contrived situations.	<i>"I mean anybody can go back and write a good essay...that they've researched it but they might not be performing in the way that they write that down afterwards you can write what you think you should have done, but you might not have actually done it." (H2)</i>  <i>"I think it's so different than when they're back at uni maybe in a pretend thing it's really good to be able to assess them when they're in the actual situation so it's easy it's very different to speak to a fake GP or a fake doctor than it is to actually get them to go up and speak to somebody and see how they do or to speak to a patient who they know is a real patient." (H5)</i>
	Perception that students take it less seriously as they knew they were not going to be assessed.	<i>"...and they can be quite dismissive of it they obviously think that because they work on a Saturday or during the week or whatever and doing some cover they do all this stuff fits all fine and dandy you know, they don't need to give it a lot of their attention and have real dedication to it so I suppose that's probably the big downside of not actually assessing them in practice." (C3)</i>
	Academics are more familiar with assessments.	<i>"...when they're being assessed back at the university, I suppose, at least it's somebody who is experienced with assessment and somebody who is I suppose they're assessing similar competencies because obviously lots of people will have had a different experience in practice." (P5)</i>
<b>Theme 2: Perception of facilitator involvement in assessments</b>		
Subtheme 1: Overall perception	General sense of anxiety and hesitation in formally assessing	<i>"I think pharmacists will be nervous to sign off... I think I wouldn't feel confident being any sort of final sign off in any kind of way." (P3)</i>

	students, fearing that facilitators were not ready to undertake such a task.	
	Concern about the impact of facilitators' marks on students' overall grades.	<i>"... my worry will be what implications does that assessment have on their final degree..."(P5)</i>
	Nonetheless, there was overall support for it as long as clear guidelines and training were available.	<i>"So I think probably it's better if the assessment comes directly from us... I think moving forward it is a much better idea for us to be able to give feedback to the students rather than us feeding back to the university and then the university having to feed it just seems like an extra step that is not required." (H4)</i>  <i>"...there's a lot of us that want to get involved in it and we are really keen, but we just haven't done it before especially in primary care." (P4)</i>
	Facilitators are best-positioned to assess them as they spend a significant amount of time observing them in practice.	<i>"...we are spending the majority of the time with them so we have the best knowledge to assess them because we have watched them over their week or their half days so I think it would be good for us to assess them." (C4)</i>
	Should be a phased roll-out with a trial run prior to establishing it formally.	<i>"I think it would be a good thing to maybe eventually roll out. Maybe think at the start, it might be good that we don't assess them...will carry out an assessment but that wouldn't have any effect on the student so it will be almost like a practice run for ourselves and even a practice run for the students..."(C5)</i>
Subtheme 2: Perceived benefits	Students will benefit from someone who was actually observing them in the real-world setting.	<i>"...they're going to be assessed by someone who has actually seen them doing it live doing it in a real live environment." (C3)</i>
	Students will get real-time feedback which will allow them to identify their strengths and weakness and improve on them in the practice setting.	<i>"...they could get sort of more real time feedback...some of them they don't actually assess the skills until the OSCEs at the end of the year well it's a bit late isn't it if there's an actual problem for example with their communication skills that they maybe don't even realize that they have, then you want to give them the chance to fix it and you want to give them a chance in the environment where they can practice to practice it if they need to... there's no point in letting them fail and then telling them six months later that they can't do it when they've missed the opportunity to practice it."(H2)</i>

Students will be more relaxed as they are not being assessed by their own lecturers.		<i>"...they don't really need to be nervous around us they don't know us they'll never see us again kind of thing again. So they maybe get a bit more fearful when they're at uni." (C2)</i>
Students will benefit from facilitators who are more engaged.		<i>"... more dedicated and more interested in the students and their development."(P4)</i>
The knowledge that they're being assessed in practice will then give students more confidence to work in the real-world setting.		<i>"...if they know they've been assessed as being able to do something in real life, then they might be more confident because they could do both. If you're assessed at uni and then you're able to go out to practice and have somebody watch you and say, actually yeah, you did that really well with a real patient maybe take some of the anxiety out for when they actually go to do their pre-reg...or a placement they're like, actually I've done this before I know I can do it even if it's just once." (H5)</i>
Facilitators will benefit from students who are more engaged and motivated to perform.		<i>"So I think that if they were knowing at the start of it that there is going to be some sort of assessment I think they would turn up and come a bit more prepared to a kind of experiential learning. I know a lot of them feel at the moment that they are just used an extra labourer. A lot of them already have Pharmacy jobs so they're coming in and they're being asked to do certain tasks and they've already done them in quite a lot of their work and then they've got to go back and do a diary entry on something that they've already done before. So I think if they were to come in and know that at the end of it they don't just need to write up something they actually need to prove to the person in front of them that they know what they're doing I think that would be very valuable." (C5)</i>
Being tasked with assessing students will motivate facilitators to be more committed to the placement and focused on making it a good experience for students, which they felt was a benefit to themselves.		<i>"...we'll make the placement work better if we're given the opportunity in a structured way to feedback to people and tell them how they can improve, if you can explain why you're doing things a certain way because you need to meet these competencies and you're not quite there yet, but we're going to help you so yes I think it would probably be quite beneficial for us as well." (H2)</i>
Facilitators felt this would ensure feedback was more formalised and that placements were more structured.		<i>"So I think we had a difficult student and I think if we had maybe been able to feed back to her that maybe her attitude wasn't great or maybe asked her what she would find more interesting, I think maybe we would have had a better experience with her rather than it kind of carrying on and carrying on and us not really being able to do anything about it." (H4)</i>

		<i>"...because it definitely is always easier to run a placement if it's quite structured it's actually harder to run it if you're given too much kind of freedom sort of thing so if it's fairly if you know you've got to focus on certain things then you can plan the placement around that." (H2)</i>
	Role will increase skills and self-development in facilitators, and encourage self-reflection.	<i>"Well, I think first of all from a facilitator point of view it actually helps a facilitator gauge their own success because personally speaking, I would be devastated if I had someone with me for final year, for example, who comes with us for a week and spends a week with me...then went to assess that person and they weren't meeting the criteria. That's a poor reflection on you. So it allows self-assessment for the facilitator and what they're delivering." (C3)</i>
	The universities will benefit from a reduction in academic workload.	<i>"...it frees up a bit of time maybe to look at other tasks and building other things into experiential learning which continue to evolve and develop." (C3)</i>
Subtheme 3: Perceived drawbacks	Lack of consistency in marking due to the involvement of different facilitators with different standards.	<i>"we're probably more variable than the uni tutors probably because that's not what we do all day. We maybe have them a few times a year or once a year so we're maybe less consistent with our marketing." (H5)</i>  <i>"Well I suppose it's the variability of the facilitators, so you'll have some a lot of facilitators so far greater number facilitators and potentially there's going to be a lot of variability based on level of experience, level of knowledge of how to give feedback, level of just general expertise really." (P5)</i>
	Facilitators felt a drawback was also the added burden of responsibility on themselves.	<i>"So for individual pharmacists it perhaps feels like another responsibility that's been added to them and perhaps without particular recognition." (P3)</i>
	A drawback to students is the potential personality clash with someone who is assessing them.	<i>"...if they take a dislike to us or they don't think it's totally fair that somebody they haven't met before is giving feedback on them I guess that would be unfair from their point." (C2)</i>
Subtheme 4: Perceived barriers and challenges	Time was said to be a major barrier for facilitators due to their own workload.	<i>"...the biggest one that that would be the time of the assessment and how long it would take and the input that was expected from the facilitator." (C3)</i>

	The limited placement duration was another key barrier as facilitators would not be able to build a relationship with students and properly assess them.	<i>"Where it would prove more difficult would be when you're only seeing the younger students for half a day and then they disappear for a few weeks. That wouldn't work the same I think they would have to be in for a full week as well you couldn't just come in for a half day I can't see that working I can't see us being able to assess them. They would need to have an extension."</i> (C4)
	Students are attached to different facilitators and different staff during placements which could impact the assessment process.	<i>"So as a facilitator I'm not with the I'm not necessarily with the student 24-7...so it's recognizing that there is going to be more than one pharmacist in our setting that will be associated and involved with the learning of that and the experience of that student, just to give them as rich an experience as possible really."</i> (P5)  <i>"...some students might have more than one facilitator as well. So that could be difficult for them if they have to get the two facilitators together to do an assessment that might be a barrier."</i> (H2)
	Students have different experiences in different placement sites, with some not being able to achieve all their learning outcomes in certain sites.	<i>"...the situation that they come into in the pharmacy it may be a really, really busy day your staff might be kind of all over the place you might be all over the place so I think maybe based on a kind of certain time it might not be great it might not be the best."</i> (C5)  <i>"...there's what 1250 community pharmacies across the country and not one of them will be the same."</i> (C3)
	Characteristics of the facilitators could be a barrier where facilitators who were less confident or less committed could have an impact on the assessment process.	<i>"...people are going to be more up for it and probably some pharmacists maybe aren't as hands-on and that could impact on the students' marks."</i> (C4)
<b>Theme 3: Perception of ACTp funding</b>		
	Funding allowed for facilitators to undergo training which would help up-skill facilitators.	<i>"...we've got this funding and the people have done the facilitator training they've got more and more comfortable giving face to face feedback they should have anyway because they should have been doing it so practice..."</i> (C3)
	Funding allowed for 'cover' so facilitators could engage more with students.	<i>"...now we've got the funding, we've got a process in place where we can organize...we organize some backfill most of the time or one of us will go in and we'll make sure the student can get a real good run at learning what they need to learn..."</i> (C3)

	There was, however, a finite supply of locum or bank pharmacists, and replacements may not have the level of expertise needed.	<i>"So I've still only got a finite supply of pharmacists even with the ACT funding. It's very difficult to find extra pharmacists time because actually the nature of it is that you're only getting it, it's not, I can't get a locum in for a week or two while I've got a student in primary care that's just not practical....so I need somebody else who can also do that and there's a very limited expertise there a limited body of that people will have all types of expertise." (P5)</i>
	Funding thought to serve different purpose, other than assessing students.	<i>"Well the ACT money has obviously become available at the moment when we're not assessing the students. So it's become available to give us time to dedicate to student not to assess the student." (C3)</i>
	Funding could impact the approach to supervision and engagement with students.	<i>"I can maybe get a student who will come in on day one and be absolutely smashing at doing everything and I could comfortably spend the rest of the day sitting with them chatting through things assessing them with no thought on time whereas I could have a student who was very unexperienced didn't get any of the tasks needed constant repetition constant explanation, lengthy time dedicated to them to get them up to speed. So I would rather do that and dedicate my time to the student than trying to rush have them...to speed and then tick them off because I was getting funding to get do this assessment if you will." (C3)</i>
	Facilitators still have other responsibilities and workload.	<i>"...you get a couple of students so at least 4 plus your pre-reg and currently I already have to monitor staff. So it's quite a lot of assessments to fit in so it's not the time constraint of just getting a locum it's also trying to find the time and yourself to split off different times for each person." (C5)</i>
	Funding not utilised as yet, and lack of awareness about the funding and how it will be used.	<i>"I have no idea. No well it's certainly not been discussed with us." (H4)</i>  <i>"...I know there's the additional cost of training money which is paid to the health board. I think individual pharmacists probably don't feel that it's not as if it's paid to them as a bonus it goes into the training fund the director of pharmacy the leads will decide how that's spent." (P3)</i>
<b>Theme 4: Capacity to undertake assessments</b>		
	Despite noting the barrier of time, facilitators felt they would have time to undertake this responsibility.	<i>"Quite often when we've got the students, we make sure that we have the time to accommodate them so that would just be built into that our line managers' really good at making sure that if we</i>

		<i>are taking on something that we do it to the best of our ability and the time is scheduled in for that.” (H4)</i>
	Practices mostly offered a range of services which would allow students to achieve their learning outcomes.	<i>“So we have a surgical ward, an orthopedic ward, general medicine ward, an acute care of the elderly, we’ve got a high dependency, there’s a pediatric, there’s a maternity, there’s an A&amp;E...so I think that we can have huge variation of what comes through our doors and there’s always a learning opportunity.” (H4)</i>
	Space usually not an issue in most pharmacies, however this would be impacted by COVID.	<i>“...the hospital again is also a bit of a challenge because of COVID but hadn’t normally been a great problem for space” (P3)</i>
	Clinics cancelled due to COVID, which will not allow for student placements if situation continues.	<i>“...if all the restrictions from COVID-19 continue, I wouldn’t be able to take the students because our clinics are all cancelled so that could change.” (H2)</i>
<b>Theme 5: Preference for structure and content of assessments</b>		
Subtheme 1: Competencies to be assessed	Competencies mainly focusing on communication skills, as well as professionalism, problem-solving, and clinical skills, could be assessed by facilitators.	<i>“so I would definitely think communication, professionalism... we’ve got certain facilities in university but again that’s a very kind of fake set up environment whereas we’ve got it all at hand in the pharmacy so you would be able to see how they would be able to act, see how they would interact with also other staff members, not just patients, but how they would be in a group setting.” (C5)</i>
	Competencies to be assessed dependent on placement site and stage students are at.	<i>“In community I was guessing some of that would be around dispensing and accuracy of that, but maybe not do that while you’re in the hospital maybe take advantage of the other services that happened in the hospital rather than that.” (P3)</i>  <i>“I think when it comes to maybe the lower years when they’re starting to do their kind of counter selling and things like that, the WHAMM questions...In the higher up years when they are maybe a bit more involved one on one with people.” (C2)</i>
	Certain competencies might be best assessed at the university versus the placement site.	<i>“I think the universities might be in a position that certain competencies are better assessed in a university setting, but I think a lot of the competencies could be assessed in a pharmacy and we would be in a great position to assess a lot of them...” (C5)</i>

	List of competencies should be small and there should be flexibility	<i>"But I think maybe a big broad list could maybe be not effective enough because they may be jumping between tasks so maybe a bit of flexibility from the uni to say they weren't able to complete all these tasks, but it wasn't because they were unable as a student it was just time constraints on the students' part." (C5)</i>
Subtheme 2: Timing of assessment	Assessments undertaken periodically instead of leaving at the end to ensure nothing was missed, that students can improve on their weaknesses, and to allow for extenuating issues that might arise such as staff absences. As students' placements were sometimes staggered, this method would also be preferable to ensure facilitators' did not forget how students had performed in the beginning.	<p><i>"some students would come three, four five times, if they came maybe six, seven weeks apart from first to last visit you might forget what's happened at the start..." (C5)</i></p> <p><i>"I think it would have to be done periodically, because I think it's unfair to get to the end until someday that they've not achieved something, they need to be given a chance to if they are failing in something that we give them a chance to remedy that before the end of it." (C1)</i></p>
	Assessments undertaken only at the end to allow students to improve on weaknesses.	<i>"I think at the end would probably be better because if you're going to give them feedback as you go then at the end would be better to give them time to improve along the way if you've got say a week or so. So also to give them a chance to improve if they're performing quite poorly before actually putting pen to paper kind of thing." (C2)</i>
	There should be flexibility in timing, as opportunities to achieve learning outcomes could vary depending on placement site and students' level of experience.	<p><i>"...you don't want to put too much pressure on the situation because sometimes just how it happens with the patients that are available who you can see what sort of experience that you can give them will depend on the staffing, other people who are sick in the department or who turns up to some of the clinics and things." (P3)</i></p> <p><i>"I think that's probably dependent on what they've come to you with if they've had a lot of experience the experiential learning already they might be ready for you know suitable for an assessment earlier in the week." (P5)</i></p>

Subtheme 3: Grading	Variation in how students should be graded, with some preferring to give scores, ranking or percentages, and few agreeing with giving a pass or fail.	<p><i>"Probably I was thinking it would be towards like a ranking so if I was thinking of the case discussions or the miniCEX forms that we use for Foundation maybe it's a meets expectations, exceeds expectations or whatever the rest of them are and with the proviso that you're expecting less of them because they're a student than you would have a qualified pharmacist and maybe sort of similarly that you're only looking for them that you know that they are given the expectation that they're unlikely to be getting like meets expectations, exceeds expectations that you are probably going to be on the meet rather than greater than that if that makes sense." (P3)</i></p> <p><i>"It's probably easier to pass or fail them, I'd probably feel more confident passing or failing them unless I had like really really clear guidance on how to score them because I think I would feel worried that I was maybe scoring them badly, and it would affect their grade or something unfairly..."(H5)</i></p>
Subtheme 4: Thoughts on failing students	General dislike and discomfort with failing a student, as it was thought to be demotivating and not constructive to students.	<i>"I just don't think it's constructive. I don't think it gives them the student anywhere to go with that...by failing someone you're not giving them the opportunity to develop." (H2)</i>
	Failing a student would reflect poorly on facilitators as it suggested a failure in the supervision as well.	<i>"...your responsibility to try and explain to them how not to do it. So if you did fail a student then I think that would be a reflection on you as well and I think at some point, you should have stepped in to try and help them." (C5)</i>
	Some agreed students should be failed if they were incompetent, as long as it could be backed up by university criteria on failing.	<p><i>"If they deserved it then that's what should happen because our job is difficult it's highly pressured, and it's also incredibly dangerous at times. So if someone's not competent, then they're not competent and you can't take a risk with patients if someone is continually incompetent." (H4)</i></p> <p><i>"...if I could fail somebody but if it were something where I could show them like you've not met this criteria, then I think I'd be okay." (H5)</i></p>
Subtheme 5: Tools and/or methods to be used	Preference for checklists to be used as they were simple and quick.	<i>"I suppose the end goal's got to be, do you sign them off as a yes or no so it's back to the black and white thing. So I suppose a checklist is probably the easiest way to log that, diarise it and then come to a decision with it." (C3)</i>

	<p>MiniCEX preferred especially by those who already have experience with it, as it allowed more detailed feedback to be provided to students compared to checklists.</p>	<p><i>"...miniCEX I suppose that would give them a focus just, that would be certainly a bit more time consuming but it might be more useful for the students they'd maybe get more feedback from that." (H2)</i></p>
	<p>Multiple tools to be used dependent on competencies to be assessed, and preference of facilitators and students given difference in learning styles.</p>	<p><i>"I would be happy to use multiple different tools and then I think that you just find which one suits you best. Everybody learns and everybody teaches differently so different tools will suit different people... So I guess it's about having the variation of tools out there for what works for different and again It might be that that works for you as an assessor but it doesn't really work for the student. So you have to then adapt it to the student as well as the assessor..." (H4)</i></p>
	<p>Assessments to be undertaken face to face with students to allow for interaction with students and for them to be able to ask questions or explain their actions or inactions.</p>	<p><i>"I think face to face is better because you can have an interaction then rather than you writing down on a bit of paper and the student reading it and then the student has no ability to ask you what you mean or can you expand on that. I think if you do it face to face, then it can be a much better experience for both the assessor and the student." (H4)</i></p>
<p><b>Theme 6: Support and resources needed</b></p>		
<p>Subtheme 1: General support and resources needed</p>	<p>Information needed on objectives and the assessment process, including expectations of facilitators.</p>	<p><i>"...maybe information on what's expected of us. So if a student comes in and they aren't maybe doing a task at what point have we to step in or have to leave it to the student and let them do the task and we assess them without any input or have we are we allowed to input and say, look, this isn't really how you do it, this is how you would improve that so kind of guidance on what's expected of us and what we're allowed to do." (C5)</i></p>
	<p>Universities and NES should play key roles in providing training and resources as opposed to the GPhC and RPS.</p>	<p><i>"...the main crux of the support for EL should come from NES and the universities." (C3)</i></p>
<p>Subtheme 2: Training</p>	<p>Training needed on assessment procedure as well as tools to be used to undertake assessments.</p>	<p><i>"...depends what form of assessment you're going to use but you need training on the specific tool that you wanted us to use, like if it was miniCEX then you would have to train everyone to ensure they were following the same standards." (H2)</i></p>

		<i>"...general guidance on how we assess the students and how we mark them. Maybe a kind of rundown of different things on what they would be doing and tasks that we would expect them to do."(C5)</i>
	Peer sessions and support group to allow them to see how experienced facilitators mark and to obtain feedback on their marking.	<i>"If you then see other pharmacists and other facilitators who are marking them you'll get kind of better overview of oh that's what they're looking for, oh I missed that I didn't mark them in that or oh I was being about too kind of strict or lenient with things." (C5)</i>
Subtheme 3: Support from the university	Information needed on students' level of knowledge as well as expectations.	<i>"...so it would be really quite useful to get a bit of a course outline of where they are what competencies they've already marked off with the university you know what the university feel they have already covered and what they're going to go straight on to when they come back because then it makes it relevant for the students it's always easier to practice something that you've just been taught makes it much more relevant." (H2)</i>
	Information on performance in previous attachments would assist in carrying out assessments.	<i>"...there might be great comments and you're like oh ok I know what to expect of the student, then they come in and they're not quite what they live up to. So I think that could be dangerous, potentially, but I also think knowing something about the student that you've got coming in might be of benefit to assess them." (C5)</i>
	Contact person at the universities needed to assist with issues that facilitators might find challenging.	<i>"Probably just a contact either at the uni...so that if there was something you weren't sure of you could phone and you weren't you know having to wait till after the placement or something. So if there was maybe, I don't know if you didn't know how to mark them or there was an incident and you didn't know how to deal with it that you just have something that you can easily contact someone and just check with them." (H5)</i>
	Clear guidance and information on assessment criteria and procedures also needed to ensure consistency.	<i>"Again I think if you are marking them according to their marketing grids, then you should be given their marketing grids and have those marketing grids explained to you so that there's little to no variation in the marking between the different assessors." (H4)</i>
	Feedback on marking to ensure consistency.	<i>"...if you're marking like if it's something you submit to the uni you know if you're doing it in the right way or if you were marking if your marks were like super good compared to everyone else or super bad compared to everyone else so that you knew that you were doing okay." (H5)</i>

Subtheme 4: Support from NES	Support from NES mainly in the form of training and providing resource material for facilitators to refer to. Different options for online training and resources needed to accommodate all facilitators.	<i>"I think just reference material being able to look at things at your own leisure. So I mean webinars are good, but I think it's great to be able to look at those things in your own time so recorded webinars. Just again the worked examples of case based discussion for example if people weren't sure as to what kind of things might arise and just lots of reference material that you can look at."</i> (P5)
Subtheme 5: Support from practice site	Support mainly in ensuring protected time by hiring locum or banks pharmacists.	<i>"...so getting the sort of green light from the company to get locums in and utilise that funding I think it would be important. You don't want to be worrying about the shop and worrying about the patients whilst also you're deciding the mark of a student, deciding their fates how they get on so from the company itself and the pharmacy it would be utilizing that money to get the support in to allow us to carry out these assessments."</i> (C4)
	Support also needed from other staff to supervise students.	<i>"...but I think it's important that you do have everybody on board or else the students not going to have a good experience because...they can't shadow you for the whole week you know they need to be with other people so you need to be sure that other people are going to be willing to take them."</i> (H2)

\*H: hospital, C: community, P: primary care

## Appendix 4: Interview Guide for Stakeholders

<p><b>Role and responsibilities</b></p>	<ol style="list-style-type: none"> <li>1. Can you tell me about your current role with regard to experiential learning in the MPharm programmes?</li> <li>2. What are your responsibilities in this role? <u>Prompts:</u> <ol style="list-style-type: none"> <li>i) What is your role/responsibilities/experience in the assessment of student pharmacists on skills gained during their experiential learning?</li> </ol> </li> </ol> <hr/> <ol style="list-style-type: none"> <li>3. How are students currently assessed on the skills gained during experiential learning? (For university staff) <u>Prompts:</u> <ol style="list-style-type: none"> <li>i) When is it undertaken?</li> <li>ii) What type of assignments/activities are assessed? (E.g. written reports, presentations etc)</li> <li>iii) What type of tools/methods are used to conduct the assessments? (e.g. rubrics, validated tools etc)</li> </ol> </li> <li>4. What are the advantages of the current approach to assessing students?</li> <li>5. What are the gaps in the current approach to assessing students?</li> </ol>
<p><b>Current practice</b></p>	<p>Currently student pharmacists are not routinely assessed formally during Experiential Learning, but only on their return to the university by people who did not observe the student during their placement.</p> <ol style="list-style-type: none"> <li>1. What are your thoughts on the fact they are not assessed during EL?</li> <li>2. What are your thoughts on the fact that they are assessed by someone who did not observe the student during their EL?</li> <li>3. Do you think that University staff should visit students during EL to undertake assessments?</li> </ol>
<p><b>Facilitator-involvement in assessments</b></p>	<ol style="list-style-type: none"> <li>1. How would you define competency with regard to student pharmacists?</li> <li>2. What are your thoughts on Experiential Learning facilitators conducting competency-based assessments of student pharmacists during Experiential Learning? <b><i>Competency based assessment seeks to determine whether a person can do a task or group of tasks and how well they can do them</i></b> <u>Prompts:</u> <ol style="list-style-type: none"> <li>i) Do you think it should be the role of every facilitator to assess student pharmacists during EL? Please elaborate on your answer</li> <li>ii) How do you think this might differ from assessments done by academics or others who are not involved in the direct supervision of student pharmacists during Experiential Learning?</li> <li>iii) What do you think are the potential <i>benefits</i> in getting facilitators to conduct competency-based assessments on student pharmacists during Experiential Learning? <u>Prompts:</u> any benefits to students, to the university, to yourself/your organisation?</li> <li>iv) What do you think are the potential <i>drawbacks</i> in getting facilitators to conduct competency-based assessments on student pharmacists during Experiential Learning? <u>Prompts:</u> any drawbacks to students, to the university, to yourself/your organisation?</li> <li>v) What do you think could potentially <i>assist</i> facilitators in conducting competency-based assessments on student pharmacists during Experiential Learning?</li> </ol> </li> </ol>

	<p>vi) What do you think are the potential <i>barriers</i> to getting facilitators to conduct competency-based assessments on student pharmacists during Experiential Learning?</p> <p><u>Prompt:</u> Are there any issues such as lack of resources which would be a barrier? If so, please elaborate</p>
<b>Structure and content of assessments</b>	1. On which competencies do you think student pharmacists could be assessed during their EL? ( <i>To prompt from Standards</i> )
	<p>2. What are your thoughts on how competency-based assessments by facilitators could be done?</p> <p><u>Prompt:</u></p> <p>i) With regard to time e.g. how long should this take and when should this be done?</p> <p>ii) What tools/methods could be used?</p> <p><u>Prompts:</u> Suggestion of tools/methods such as miniCEX, validated tool, internally designed tool, interviews, rubrics e</p> <p>iii) Should it be paper-based, online, face to face (group or individual)?</p> <p>iv) In terms of grading, would you prefer pass/fail, or giving a ranking, score, percentage etc?</p> <p>v) What are your thoughts about failing a student?</p>
<b>Support</b>	1. What specific training do you think facilitators would need to be able to conduct competency-based assessments of student pharmacists during their Experiential Learning?
	<p>2. What other support/resources would facilitators need to be able to conduct competency-based assessments?</p> <p><u>Prompts:</u></p> <p>i) support/resources from NES?</p> <p>ii) support/resources from the university?</p> <p>iii) support/resources from the practice site?</p> <p>iv) support/resources from the General Pharmaceutical Council, or the Royal Pharmaceutical Society?</p> <p>v) any other kind of support/resources?</p>
	3. What support/resources can you provide to facilitators to enable them to conduct competency-based assessments?
<b>Closing</b>	1. Do you have any final suggestions with regard to facilitators conducting competency-based assessments of students during EL?
	2. Do you have any final comments?

**Appendix 5: Table of Themes and Illustrative Quotes from Interviews and Focus Groups with Stakeholders**

**Table 9 Themes, subthemes and illustrative quotes from stakeholder interviews and focus groups.**

Themes	Elaboration	Illustrative quotes
<b>Theme 1: Perception of current assessment method</b>		
	More consistency with current method due to smaller pool of markers.	<i>"...students are assessed by the academics so there's a consistency that we have at the moment of what we're assessing over having possibly over 100 maybe 200 different tutors assessing so our assessments are done by a small number of people. So there's much more control over it." (Senior management, UoS)</i>
	Due to variation in experience at different placement sites, current method utilising reflective diaries are effective at capturing students' experience.	<i>"...because we're so early in the quality aspect of the placements there's still a bit of sort of differences in what the students experience. So if we use the reflective diaries, it means if a student gets an amazing experience versus a student that doesn't get that good an experience you can actually still get a meaningful piece of work out of both placements... at the moment some placements, I'd say, like a student wouldn't be able to cover all the competencies that we would set if we were to do it that way whereas a reflective diary it doesn't...whereas if we go narrower like pre-reg where we set competencies we're to going to have to make sure that every placement can offer the same training. (FGD-UoS-#1)</i>
	Majority felt current approach was artificial as academics were not observing students during EL.	<i>"...what we do in-house is very artificial. And also the students always seem under more pressure because it is artificial and they're not relaxed and they're not going about their day to day business as they normally would." (FGD-UoS-#5)</i>  <i>"I'm not particularly loving the idea of them being assessed by somebody else unless the assessment is about knowledge that they've gained while they've been on their placement. I mean, the assessment is about how they might have behaved or what their approach was and that's kind of difficult for somebody to do after the fact." (Director, NHS)</i>
	Reflective diaries may not be accurate as students may fabricate experiences.	<i>"So the service feels that the students have been sent out and then that student then who may be terrible or a challenge during their EL experience may then go back to university and write a lovely reflection and get a very high mark when actually that does not at all reflect how they managed in practice, so they felt that there was there was a disconnect." (NES3)</i>

		<i>"The disadvantage is that they can make it up and we know that they do that and they copy each other so I think, you know, I think we've done it long enough to see that, you know, and year on year you get the same you can get the same thing coming slightly adapted." (FGD-UoS-#5)</i>
	The fact that facilitators are currently tasked with supervising students but not 'allowed' to assess them could impact the relationship between facilitators and the universities.	<i>"...it could be seen that if you're allowed to look after them, but you're not allowed to have any input into how they've done or their assessment, there's a bit of a breakdown in that trust and relationship." (NES2)</i>
	Current assessment not capturing informal assessments undertaken by facilitators during EL.	<i>"...now with the training that's going into the facilitators, the facilitators will have observed them, will have given them feedback, will have given them some form of assessment while they're there and we're not utilizing that. So that is something that I think which a lot of that assessment has been happening informally and we have just not captured it." (FGD-UoS-#4)</i>
<b>Theme 2: Perception of facilitator involvement in assessments</b>		
Subtheme 1: Overall perception	General agreement toward role of facilitators in undertaking assessments, with the proviso that they're trained adequately.	<i>"...but I think if we can be confident that we've upskilled the facilitators enough to be able to do that and also for them to identify where they haven't been able to do it and seek help...it should be that the facilitators should all be in a place to be able to do that. Otherwise, we shouldn't be allowing the students to go out and work with them." (NES2)</i>
	Facilitators thought to be best placed to assess students as they are the experts in practice.	<i>"...the people who are out there in the service doing the assessments are doing it as a practicing pharmacist within that particular sector of practice within that particular pharmacy understanding the team dynamics, understanding the patient groups that the students are working with." (NES2)</i>
	Facilitators are also the ones actually observing, supervising, and working with students in practice, and on a one-on-one basis compared to academics.	<i>"If they're going and they're spending time with a pharmacist acting in the role as a facilitator supervising them, the ones who are working side by side with them in that practice setting then there should be a role for their feedback forming part of the assessment as to how that student has progressed." (NES2)</i>  <i>"...the students are there potentially most of them are one on one with a facilitator which we don't get huge amounts of opportunity to do within the academic environment because they would always be</i>

		<i>in a group setting so it gives them potentially more of an opportunity the ones that are always quiet in class and you have to it's like pulling teeth, getting them to speak. But actually if they're one on one there's kind of nowhere to hide and they may act differently as well." (FGD-RGU-#5)</i>
Assessments by facilitators will provide a more accurate picture of students' competence in the actual working environment.		<i>"I do think this is the way forward though I think that a more work based assessment is a more appropriate and accurate reflection of what they're able to do in the practice." (FGD-UoS-#5)</i>
Assessments by facilitators will provide a 360-degree evaluation of students.		<i>"So I actually think there is value in being able to look at that 360 review if you like and that idea to be able to see how student pharmacists are performing in different ways and it just comes back down to people learn in different ways. People will approach assessments in different ways." (FGD-RGU-#2)</i>
Certain competencies are better assessed in practice.		<i>"So some of what we do for example in OSCEs may actually be better taking place in the practice environment. Some of what we do and some of the other classes that we do may actually be better being delivered an assessed in the practice environment so actually it allows you to then look at the balance of where things are designed and delivered." (FGD-RGU-#2)</i>
Facilitators thought to already have experience in assessments due to responsibilities assessing their own staff.		<i>"...the pharmacists that work in community pharmacy in particular they are already assessing pharmacy assistants, dispensing assists to make sure that they are doing and competent the skills that they need to do, so they're already doing that. So they've already got the skills that they need to do that. And therefore, we know that they've got the skills... I definitely think it's something that pharmacists should be able to do, shouldn't feel nervous about doing, because they're already doing it for lots of staff already."(FGD-UoS-#4)</i>
Facilitator involvement will be dependent on tasks students are allowed to perform, as well as type of assessments.		<i>"...depends on whether you're talking about a quantitative or qualitative assessment and whether it's formative or summative as well because actually, if it's just a formative assessment you don't really need that kind of academic rigor. You just need somebody who knows what that task should look like." (Director, NHS)</i>  <i>"...it also depends what it is you've got them doing, isn't it, because if they're just shadowing you there's not really much you can give feedback on apart from things like level of interest and whether they were professional or not. So as long as you've got them actually doing some tasks, then I can see no reason why you couldn't assess them" (Director, NHS)</i>

	<p>Some scepticism about facilitators assessing students with concerns expressed about how it will impact students' final grades and progression through the course.</p>	<p><i>"So I think yes facilitators could conduct competency based assessments...it's what happens with the output of that assessment and what impact that has for the student." (Senior management, RGU)</i></p>
	<p>Sending university staff EL sites to undertake assessments seen as a logistical nightmare and unnecessary as facilitators are just as qualified.</p>	<p><i>"I think that's there's not any need if you've got qualified people, pharmacists in practice are every bit as qualified to assess them on the things that they need to be assessed on as we are." (FGD-UoS-#5)</i></p> <p><i>"...we have up to 140 students out at any one time over one week to have the academic staff visiting all those students within one week it's just not physically possible..." (Senior management, UoS)</i></p>
	<p>University staff also perceived as lacking the expertise to assess them in practice, and will only have a snapshot view of students which is impractical for assessment.</p>	<p><i>"So if you're assessing an element of practice you could be sending somebody from the university who is not familiar with that element of practice." (Director, NHS)</i></p> <p><i>"I think an academic assessment is not best placed by an academic in the workplace environment because they're not facilitating they're not supervising they're not actually seeing what's happening and you'll be looking at a one point in time assessment, which actually can be done in an OSCE in the university setting." (FGD-RGU-#2)</i></p>
<p>Subtheme 2: Perceived benefits</p>	<p>Students will benefit from being assessed in the actual work environment and developing relevant competencies at the level required</p>	<p><i>"It's very much about ownership it's about doing things in real life. So the competencies that we could potentially have signed off so things like a student being able to undertake an over the counter medicine consultation for a simple query that's much better seen in the real situation with a real patient who can go off on all sorts of tangents rather than being in the university where you're following a very defined script with the patient..." (Senior management, UOS)</i></p> <p><i>"I think because you're doing it in a more realistic environment, they're picking up more real skills and skills are more relevant to what they're doing. And also because they're doing it in a real environment and they're doing it to a level that we're expecting them to show competence they actually are more likely to develop competence than they are in the narrow amount of time whatever that we're doing in university labs and workshops" (FGD-UoS-#4)</i></p>

		<i>"...that idea of actually being it being able to learn from feedback that you're getting from different places and from your performance in different environments as well and I think often we will see our student pharmacist being able to perform really well in the practice environment where sometimes the academic environment doesn't necessarily support that." (FGD-RGU-#2)</i>
	Students will obtain detailed feedback from people who are actually in the practice environment, and use the feedback obtained for self-development	<i>"...if you're marking someone it would allow positive and negative feedback to be given on a more structured basis. So if you've been working all week with a student and you know that if they're very good, but if they did this, this, and this slightly differently It would make them a much stronger professional." (NES3)</i>  <i>"...the benefit is the growth they get that you actually see from kind of year 2 to year five if it's consistent, then you can because it's regular any kind of things that are cropping up can be addressed and actually looked at and focused on in the next block so it's actually a continual measurement of not only their skills, but their professional practice as they go through the years so that when they come out as a pre-reg D they are more ready and they don't have a big a fear as well." (NES1)</i>
	Students will be less stressed as they will not be assessed by academics whom they are familiar with, allowing them to learn at their own pace as well as start networking.	<i>"...some students have said to me that they for example, in the recent OSCEs, some students have said to me that they'd prefer not to have had me because they know me well...others were saying, well, it's good to be at work with someone that maybe they didn't know because they didn't feel as if they had to kind of prove anything to them." (FGD-UoS-#2)</i>  <i>"It's also outwith the university environment so it goes back to building relationships and actually start to network as well for themselves." (NES1)</i>
	Being assessed by different people will allow students to obtain different and more comprehensive perspectives, as well as expose them to different styles of teaching and learning	<i>"so a different style on developing skills and it opens them up to more kinds of expertise and how they can actually build on their learnings so they can actually start on how can they get competent and how did they have to develop that skill and then how they can take it forward to actually build on other competencies. So it kind of shows them the roadmap of developing and this goes back again to that professional aspect because you're not just developing a skill for a task, you're developing a skill for a whole level of professionalism. So I think that things a big thing, particularly when it's within experiential learning because you can still be seeing all different behaviours that go</i>

		<p><i>with that task as well and they should be the best professional behaviours that they're seeing.” (NES1)</i></p> <p><i>“to add value to that rather than having to do something which they’re maybe not quite in the right like so I would see as being an additive effect as opposed to it used to be done by the academic staff now it's being done by the facilitators out there so what can both bring to the party to make it even better for the students to be getting assessed and getting the quality feedback that they should get from both aspects, because the facilitators getting a snapshot of the student at that particular time and maybe doesn't have any background as to previous work of the student or how a student is progressing through the academic course whereas the academic tutor has a whole different wealth of information and can use that as one piece of the jigsaw.” (NES2)</i></p>
	<p>Affording facilitators with this responsibility is a recognition of their importance in developing the work force and brings prestige to the role</p>	<p><i>“...they are being asked to do a really important job in supervising these student pharmacists and I think that it would be a benefit to be able to have input to how that student pharmacist is performing...” (NES2)</i></p> <p><i>“...gives the role a bit more prestige...that is a big driver actually to say yes I am a trained facilitator who can sign off and assess student pharmacists within that task is actually a big development for that pharmacist...” (NES1)</i></p>
	<p>Facilitators will benefit from self-development and increased confidence in their role.</p>	<p><i>“...I think it does make you better at what you do, because you think about it a bit more deeply than potentially you do when you're just doing the task yourself so I think from that point of view the facilitators themselves will learn a lot from it.” (Director, NHS)</i></p> <p><i>“I think it allows them to be more confident in their role that they provide to their team as well, and also be more confident in the role they provide to the wider team and the interprofessional team as well.” (NES1)</i></p>
	<p>Facilitators will have a greater sense of involvement in the MPharm programme and develop a better understanding of students and expectations.</p>	<p><i>“But I guess as well in thinking about from the perspective of when we're looking at professionals out working who are giving feedback at the undergraduate level and they would be identified as training sites from a NES perspective going into pre-reg as well. It's having that better understanding to develop the profession as a whole because they’ve understood sort of what the benchmark for certain levels</i></p>

		<i>of undergraduate level and then that can carry through into pre-registration level as well.” (FGD-RGU-#1)</i>
	Help the universities underline the importance of the curriculum to students and ensure they take EL more seriously	<i>“...there is sometimes a bit of this idea that...in the university you just need to get through and pass the exam...it’s all important and so I think, for us it would help us strengthen that message about what is important because they’re seeing it in practice and being assessed in practice on it.” (Senior management, RGU)</i>
	There will be better collaboration between universities and facilitators, which could potentially encourage the latter to undertake more work within the university.	<i>“just really thinking about how you engage these facilitators into the program so they’re not just here to host somebody which is maybe what it’s been like before or how they felt and not what we would ever want them to feel like and what we’ve ever tried to do with engagement. But it’s about actually having them as a partner in the development of that student and I think that mind-set is going to be beneficial to the student, the facilitator, but also what we can see coming back to university as well. (FDG-RGU-#1)</i>
	Universities will be able to assess competencies they were previously unable to, as well as reduce their workload so they are able to focus on different aspects of the curriculum.	<i>“...there are so many activities like the consultation skills, their communication skills, their ability to respond to symptoms their technical skills for example, dispensing, their ability to handle telephone calls all of those we’ve not been able to assess and bottom line is it would be brilliant if we could find a way that the tutors could help us with that, and that would give us much more faith in their competencies.” (FGD-UoS-#2)</i>  <i>“...the time we’re not assessing students we’re spending time supporting placement providers and doing those assessments and you know quality assuring what they have done.” (Senior management, RGU)</i>
	Facilitator involvement will raise the profile of the university as students are not only being assessed by academics, but also practitioners.	<i>“I think the kind of general benefit to the university is that we’re kind of raising the profile of the university within the profession...we’re engaging a lot more with facilitators so they’ll engage a lot more with the universities as well so I think it’s raising the profile and also it raises the profile of Strathclyde graduates as well. So I think it’s a bit of a win win. If it’s done right, you know, it really does help bridge that gap between practice and the university.” (FGD-UoS-#1)</i>

Subtheme 3: Perceived drawbacks	Variation in marking due to larger pool of markers, each with their own standards.	<i>"...because I think different pharmacists will have different standards of what they think is acceptable and my biggest worry would be students thinking of the staff set the bar too high and kind of saying, no, that's not acceptable when really they are bearing in mind that they're only in year two or year three or something like that where standards could be accepted as being a little bit lower." (FGD-UoS-#5)</i>
	Added responsibility will add to the workload of facilitators.	<i>"I think one of the major barriers that we've got at the moment is the perceived additional workload that the facilitators think they're going to have...when all this was kind of starting off like 18 months ago everyone was quite resistant to it because was this perceived extra workload. When although we're saying oh you're getting paid for it, they're not actually physically seeing, you know, the payment for it." (FGD-UoS-#1)</i>
	Students might have difficulties building relationships with facilitators or could potentially clash with them, affecting their assessment.	<i>"...I'm aware of the age of some of these guys (students) going out they'll be quite young going out on their first placements it can be quite daunting or difficult to pick up a relationship with somebody... and if you don't strike up a relationship then that could be awkward as well. (CPS)</i>
Subtheme 4: Perceived barriers and challenges	Short duration of placements will limit students' ability to undertake activities and achieve competencies. Similarly, facilitators will not have enough time to sufficiently observe and assess students.	<i>"So if there are only a for half a day or a day, then that could be quite it could be quite difficult to make some sort of a judgment on what they're like. I mean you probably could assess some things. I mean, you probably could give feedback on their attitudes and those kind of things and their level of interest and those kind of things. But I guess it would be quite difficult to assess them in any kind of formal way about their knowledge or their skills or their attributes potentially. If they're out for a bit longer so if you've got them for a week or longer than that, then clearly you would be in a position to at least give some feedback about that individual" (Director, NHS)</i>
	Lack of confidence in facilitators due to lack of training and experience in assessments.	<i>"...if this is a new thing that they've not had to do so people who have had previous experience of assessing pre-regs for example maybe more comfortable than somebody who's only two years qualified themselves and haven't actually been in that position before equally you've maybe got a person who's been qualified for 15 years and hasn't actually done a lot of training or theory work or anything for quite a long time. So I think confidence is going to be a big thing." (NES2)</i>
	Unpredictable nature and variation in experiences at different	<i>"...some people go to a site where there's been a high level of staff turnover, but there's very little dispensing turnover or the experience that they can get might be very limited. Somebody who goes</i>

	placement sites could have an impact on students' ability to achieve competencies.	<i>to a medium turnover store with competent staff that have been there a long time might have a totally different experience. People who go to really high volume stuff where people don't get enough time to interact with them so we've still got a good degree of variability that we need to try and get out of the system." (FGD-UoS-#4)</i>
	Students with different levels of experience due to part-time work, which could complicate the assessment process.	<i>"...if it's someone that's worked in a community pharmacy for three years they're going to be a lot more able than someone else who may be their first experience...so it would be hard to assess people because they've all got such different experiences." (FGD-RGU-#6)</i>
	Students will be supervised by staff other than the named facilitator.	<i>"...whereas we might have 10 (students) at a time in different parts of our service. But still, that's 10 different people that will be supporting those students so potentially 10 different assessors." (Director, NHS)</i>
<b>Theme 3: Preference for structure and content of assessments</b>		
Subtheme 1: Competencies to be assessed	Communication skills, clinical skills, and professionalism can be easily assessed in practice.	<i>"I think person centred care and professionalism, communication. I think the biggest one and it's certainly something from the pre-reg point of view that that can sometimes be the biggest challenge for trainees is their lack of ability to communicate well with patients with the team members with other professionals. So I think that's definitely one that has to be seen in person." (NES2)</i>
	List of competencies should be achievable and not too onerous so as not to add to burden and stress of facilitators.	<i>"...just maybe three or four like kinds of competencies major ones, but then have them aligned to the specific tasks. Because you don't want to go with hundreds because then you go like that's too much actually. I'm already scared and I already don't have much time and if you come with all that that's just too much... just make sure that they're ones that we can deliver and people are comfortable delivering and then we can expand but I would still stick with less." (NES1)</i>  <i>"...with pre-reg is there's the odd competency where actually if you're unlucky through the course of a year you might just you might actually not come across the situation and when you talk about experiential learning it's nowhere near a year that you're in practice so with professionalism we just need to be careful with which elements are would be suitable for assessing. Run of the mill stuff yes. Stuff like ethical dilemmas if you don't come across one that's going to have to be stimulated for you to in make a proper assessment of it." (CPS)</i>

Subtheme 2: Timing of assessment	Timing of the assessment was dependent on several variables such as the length of placement, competencies being assessed, year or stage of student, and type of assessment.	<i>"...suppose it depends on how long the placement is I mean for example, if it was an accuracy check or something like that I would suggest that's done towards the end of the placement also depends what year they're in as well though because if you took a year 2 you wouldn't want to do any assessments at the beginning of the placement at all. They're just getting comfortable with place. You don't want to frighten them." (NES3)</i>
	Overall general preference for continuous assessment versus assessments undertaken only at the end of placements, with feedback provided so students can improve before being signed off.	<i>"If you leave it all to the very end then there's nowhere to go for the students to recover so it's almost like there needs to be a wee bit formative a wee bit coaching and then the summative at the end of the week so it's like students should be building up an ongoing dialogue with their facilitator right the way through the week so that they're being supported all the way through the week so that they've reached the competency by the end of the week." (Senior management, UOS)</i>
Subtheme 3: Grading	Preference for either a pass or fail or for students to be assessed on a scale.	<i>"...the meets criteria, meets expectations, above expectations or below expectations or not showing...for your year 2s going out they'll have a lot of not showing and that's ok and some of your year 4s that will be their first experience and there will be a lot of not showing and you should capture that as well it's their first time in that area of practice so that you can actually show their development as well through-out the years, but I like that because it gives room for people who are doing it really, really well it shows that if they're doing something really really well then that's really good but also it shows if they don't meet the expectations but the feedback is actually detailed of how they can actually meet the expectations I think that's really powerful as well and then if you're meeting it, you can still be given feedback on how you can improve..." (NES1)</i>
Subtheme 4: Thoughts on failing students	Facilitators should have no reservations or hesitation in failing students if they are not competent, with feedback and opportunities provided for re-sitting.	<i>"...I don't think there would be a legal challenge to failing a student but what we as a university have to do is have a remedial pathway, that if a student has been failed they have another attempt at doing it so it not if you fail this in experiential learning you're never going to become a pharmacist so we need to make sure that those pathways are in there for the students to be able to redeem themselves." (Senior management, UOS)</i>
	Facilitators should be clear about implications of failing students, and have sufficient support from the universities.	<i>"So I think at the training, they have to be told what if they fail a student what does that mean so that if they do get a student that they feel should fail they're comfortable doing that, knowing that they're not, you know, stopping their progression to the profession." (NES3)</i>

		<i>"...if the NHS staff member felt that they were going to fail the student, they would involve an academic from the university to make sure that there was some kind of triangulation and it wouldn't be a bolt from the blue that this person had failed there would be some kind of link in with the university over students that were poorly performing or failing..."(NES3)</i>
	Failing a student perceived as beneficial to students to assist with self-development.	<i>"It is a useful thing to fail a student and you shouldn't be scared to fail and we have quite a lot of teaching and support how and when to fail a student, because that failure can actually be more beneficial to the student than allowing them a scrape past because they think they're doing okay whereas if you actually say I'm going to have to fail you here, but if you were to change A, B, C, D, and E, and I'll check you at the end of the week, you know, I'll see if you're if you improve I feel that can be really helpful." (NES3)</i>
Subtheme 5: Tools and/or methods to be used	Wide variety of method(s) and tool(s) proposed, dependent on the competencies being assessed, year or stage of study, and placement site.	<i>"...to make sure that they're hitting all the different elements and different competencies for that I think you have to have a mix of all things. You need to have the role play, you need to have the case study you need to have a presentation you need to have all the reflective log and everything, because...as a pharmacist you have all that as well..." (NES1)</i>  <i>"...foundation we use miniCEX we use case based discussions a lot which are helpful because basically the students talk through what they would do in each case and the facilitator sits listens adds in comments, so it's a good way of sitting down and checking clinical knowledge... miniCEX is currently the one we use but dobs direct observational is another one that can be used and probably is more is easier for the younger years you know so they're actually watched you know doing something and then they get a mark but more importantly, they get feedback on how to improve." (NES3)</i>
	Suggestions to use tools/methods already available and validated, and that students will use at different stages in their career.	<i>"...so I think it works quite well if the method of assessment that's being used for any experiential learning be it at the pre-reg year or these shorter blocks during their undergraduate it should be quite consistent so that it builds upon it and they get start to get used to." (NES2)</i>
	General agreement for assessments to be undertaken face to face.	<i>"...so if you honestly think somebody's not doing very well you have a responsibility to help them with that... and that message is much better delivered face to face where you can talk to them about what they can do to improve on that. So you're not just giving a flat you're not very good at that, you're</i>

		<i>giving a you know this could have been done better and here's what I think you could do to help you know to improve. And then I think that's much better.” (Director, NHS)</i>
<b>Theme 4: Support/resources and assistance that should be provided to facilitators</b>		
Subtheme 1: General support/resources and assistance	Ensuring the new responsibility isn't too much of a burden on facilitators.	<i>“It's already you know a big commitment to take a student on experiential learning and design, you know, the planning that goes into designing appropriate activities and being there for the student and supervising them, allowing them to do things...So I don't think we would wouldn't want to make it too onerous a task, either. So it's kind of that balance between yes, we'd add value, but within reason. (FGD-RGU-#5)</i>
	Clear assessment guidelines and frameworks needed, along with information on the assessment process to ensure consistency in marking and that facilitators are clear of their role.	<i>“...giving them examples of good practice and bad practice rather than just say are they competent at this and give them examples well, this is what we would accept. And if they were doing this, this or this, this wouldn't be acceptable...there needs to be quite a bit of detail in the assessment guide.” (FGD-UoS-#5)</i>  <i>“...it would probably be starting right from the basics of...here is what you're now being asked to do, you will have an impact on like if the person passes or based on your assessment here's what the impact is for the student. And that's not to put anybody off or to give them additional fear of failing it's just to give them a real appreciation of what it is they're actually doing.” (CPS)</i>
	Information on students' previous performance in other placements so facilitators can pitch the experience at the right level.	<i>“...the skills passport...it would be something that would potentially well would follow the student all the way through the course. So facilitators could see you know how they performed in a previous placement what experience they had so they can then tailor their so they could see the skills passport in advance as well so it's a continual development for the student and then they can tailor their placement appropriately to meet that students need.” (FGD-RGU-#5)</i>
	Regular training and practice sessions warranted to upskill facilitators.	<i>“...it's all very good doing the theory about how you're going to assess but then actually maybe kind of doing some practice or being observed doing some before you can get up to speed and things.” (NES2)</i>
	Minimal support needed from the GPhC or RPS. The onus should be instead on the two universities and	<i>“So don't think there's anything at this point specifically needed from them (GPhC) the same point I would say of RPS because generally NES are well respected and develop very good supporting</i>

	NES to provide support and resources to facilitators.	<i>documentation and very good easily accessible resource materials...they would be key in the support between the universities and NES...”(CPS)</i>
	Peer support sessions to provide assistance with assessments.	<i>“...peer support sessions can happen on zoom or whatever you know at lunchtime or if someone's been asked to do an assessment and they're not sure just having that network round about okay so they didn't do that very well but they did that. What do you think, you know? Am I being too harsh? So just that kind of support for each other.” (NES3)</i>
Subtheme 2: Training	Additional training on how to provide feedback needed.	<i>“There's also maybe a lot of feedback teaching or support required because you wouldn't want the student to go out and be really be disheartened or if they got feedback... to be told that they were dreadful...inappropriate feedback or very negative feedback...”(NES3)</i>
	Training on assessment criteria and tools that will be used warranted.	<i>“...an explanation of the tools available and then an explanation of what kind of the meets criteria or the pass criteria would be and then where it is aligned but you know when you have that kind of major one aligned to separate tasks different tasks, then it's quite easy to see where they're sitting on it so I think it's more just around the criteria.” (NES1)</i>
	Calibration exercises needed to ensure standardisation in marking.	<i>“We also do calibration exercises where we get people to mark a video and they all mark it and then we plot what marks they've given to find the hawks and the doves. So we do a calibration exercise where anybody who is a hawk or a dove we bring in and we explain that they're outwith the median.” (NES3)</i>
Subtheme 3: Support from the university	Universities can provide support in the form of a contact person to help with challenging situations or queries, and to provide pastoral care.	<i>“...having a point of contact of someone who can respond quickly and timely to a situation because what you don't want is for that to become an issue and actually not someone being able to address it for another week and a half or two weeks. That's not helpful. Whereas actually having those processes in place in those contact people is going to be really important as part of that.” (FGD-RGU-#4)</i>
	Universities should ensure EL is well organised and quality assurance checks are undertaken to ensure standardisation in marking.	<i>“but I'm just thinking of similar situations within other disciplines where they sometimes have external people or coming into assess the students. So the students would normally be assessed by the person working with them but occasionally they have an external person coming in to check that student's progress as well. So there could either be kind of spot check or whatever by the University.” (NES3)</i>

	Facilitators should be given clear information on what is expected of them, as well as information on students' level of knowledge so they know what to expect from them.	<i>"...the expectations of the placement facilitators particularly now that we're perhaps having students out on placement more often it is to make sure that they know you know what level the student is at and perhaps not the expectation isn't that the student has a breadth of clinical knowledge, but rather the focus is somewhere else it's on consultation skills or that kind of thing." (FGD-RGU-#3)</i>
Subtheme 4: Support from NES	Main role of NES would be around providing training for facilitators.	<i>"So I think we need to work with NES to make sure that the facilitator training is modified so that this happens and that might be online training it doesn't necessarily need to be face to face training, it can be webinars it doesn't necessarily mean they need to take a day out to come and do this so I think that is material that we could work with NES and with RGU to pull this together so that there's something consistent across Scotland and it's not just for Strathclyde." (Senior management, UOS)</i>
	NES should also have a point of contact to provide support and pastoral care to facilitators.	<i>"We've got a bit of a role for helping support those that supervision and the kind of ongoing questions that somebody might have it all depends what the questions are, because some of them might be very university specific and that sits with the university and some of them might be more general education and training that could sit with NES so it's about us all working together to understand where both of our strengths lie like almost kind of pastoral support for those in that role." (NES2)</i>
	NES can assist with networking and setting up or facilitating peer-support groups and buddy-systems for facilitators.	<i>"So I think it's about from NES it's about building that support and networking for facilitators and how they can actually develop and share that best practice across Scotland, because it's national isn't it... there will be a lot of cross-board working so there could be fantastic things happening up in Shetlands that we haven't even considered doing because we think it's not possible, but actually you know what, it is. So I think that's very powerful." (NES1)</i>  <i>"...we could also arrange for buddying up of people so more experienced people where they are for reference for the less experienced people..."(NES3)</i>
Subtheme 5: Support from practice site	Practice sites can ensure facilitators have protected time so they can spend sufficient time with students.	<i>"In an ideal world, they would have the time to make sure that the they can do this properly, which in community may need to be some sort of pharmacists support so that they know that they would have that dedicated time to be able to assess the student and have those conversations which I know is quite a luxury in some practices" (NES2)</i>

	Education and training pharmacists can be utilised to provide assistance to facilitators.	<i>"...if there's somebody that they are you know, not sure how to give feedback to or if you know something goes wrong then absolutely we need to provide them with some support around that. So we do have education and training pharmacists, I think all the boards have them. So that would be a role probably for them to pick up." (Director, NHS)</i>
<b>Theme 5: Steps forward</b>		
	Cultural shift needed to change mind-sets and prepare facilitators for new role.	<i>"... I think we need to change that culture because although people are uncomfortable about giving juniors feedback I think it's, you know, the culture must be changed we are learning profession, and we should be looking after those below us and giving feedback... it's just creating this culture of we've got to teach and give support to everybody coming through, which isn't really a culture in pharmacy at the moment. It's absolutely in medicine." (NES3)</i>
	More groundwork needed for example exploring what is currently adopted by other programmes which have ample experience in competency-based assessments, and adapting it to the MPharm programme.	<i>"So those kind of processes are already in place across our nursing all of our allied health profession courses our biomedical science courses, all of that kind of thing. There are already existing processes and I think if we're actually going to take this forward what we don't want to do is reinvent the wheel." (FGD-RGU-#2)</i>
	Start small with increasing complexity over the course so facilitators are not overwhelmed.	<i>"I think it's a gradual plan a gradual increase in complexity, etc. rather than doing it as a big bang because I think that might frighten the facilitators that might frighten the students that would frighten the University I'm sure as well I think this is something that will be built on year on year so we might need to start quite basic with basic assessments and move that complexity when our facilitators are feeling a little bit more comfortable." (NES3)</i>
	Pilot study will help in determining the structure and content of the assessment process.	<i>"...it may start off small as pilots and we may do things not correct with the first time and have to adapt as we go along." (NES2)</i>
	Engage with facilitators early and involve them in future plans to ensure they buy-in to it and don't feel over-burdened.	<i>"So I would stress that, if this is the route that is going to be pursued that engagement and I suppose it's exactly what you're doing just know that engagement with the sector as early as possible even just with the very, very top line things saying this is the direction we're likely to be heading in. It gets people used to it...It really needs to be planned out properly a road map of what, where is it you actually want to get to, once you've answered the question of whether or not tutors should assess if the answer is</i>

		<p><i>yes, you tell people the answer is yes well in advance and you get to work through all the reactions and work through all that but what if, how do I, where's the funding. All of those questions will come out, take a while to answer through and then you're giving yourself a really good chance of it working well. Because at the end of the day, if it doesn't land well with tutors or they don't feel empowered, you'll get one or two things you'll either get a drop off of people willing to do EL, which would be terrible or if people are confused by or they do EL and just do what was done before and don't fully get behind the whole assessment part which is not great none of that ends up as a great experience for students." (CPS)</i></p>
--	--	---

\*Interview participants are identified according to their organisation and role (where relevant). Focus groups identified as FGD with numbers indicating the number assigned to each participant during the focus group.

#RGU: Robert Gordon University, UoS: University of Strathclyde

**Appendix 6: Gantt Chart for Proposed 3-year Plan**

Proposed studies	Month																																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36			
<b>Part 1: Study involving experts from healthcare and teaching</b>																																							
Development of interview guide	█	█																																					
Validation and testing of interview guide		█	█																																				
Ethics application		█	█																																				
Recruitment of participants for interviews/FGDs				█	█																																		
Interviews/FGDs				█	█																																		
Transcribing and thematic analysis				█	█	█																																	
Write-up and presentation				█	█	█	█																																
<b>Part 2: Document analysis</b>																																							
Document analysis	█	█	█																																				
<b>Part 3: Design of the structure and content of assessments [e-Delphi and/or virtual nominal group technique (NGT)]</b>																																							
Ethics application					█	█																																	
Design and development of material to be discussed during the virtual sessions i.e. list of competencies and tools							█	█	█																														
Recruitment of study participants								█	█																														
e-Delphi and/or virtual NGT session(s) to achieve expert consensus and/or develop an assessment tool(s)									█	█	█	█																											
Data analysis										█	█	█	█																										
Write up and presentation										█	█	█	█																										



