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Report of Use of the Prescribing Safety Assessment in MPharm Students and Preregistration Pharmacists 2017

Summary of Findings

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1. Background

The Prescribing Safety Assessment [1] was piloted in 2011/12 as a means of formatively assessing the prescribing abilities of final year medical students in response to concerns about prescribing competences in junior doctors. This was extended to all medical schools in 2014 and in 2016 passing the PSA became a prerequisite for successful completion of foundation medicine year 1. Those who do not pass the assessment in the final year of their medical degree are given the opportunity to re-sit the assessment during foundation year 1, with remedial support.

Health Education England (HEE) is actively supporting the clinical development of pharmacists' roles in a range of settings including general practice, urgent care and care homes. Increasing clinical confidence at the point of registration further supports this; the General Pharmaceutical Council has recently revised its registration examination to focus on clinical decision making and previous discussions in the Modernising Pharmacy Careers programme[2] debated whether pharmacists should be prescribers or at least have the underpinning knowledge required to prescribe at the point of registration. This is expected to be explored further in the forthcoming review of the Initial Education and Training Standards for Pharmacists by the GPhC.

This project helps us to understand the current baseline knowledge of MPharm students and preregistration pharmacists in relation to knowledge of prescribing. Although we would not expect them to prescribe medicines, we do expect them to be developing their skills in proactively reviewing medicines which would be supported by the knowledge of prescribing safety tested in the Prescribing Safety Assessment.

To support this, the HEE Pharmacy Education Reform programme has supported small scale pilot projects in 2015 and 2016 [3,4] to:

- Look at the acceptability and usability of the PSA in pharmacy students and trainees
- Consider the logistics and practicalities of administering the PSA for pharmacy students and trainees
- Provide an early insight into how students and trainees perform in the PSA

The results of these pilots showed:

- Both MPharm students and preregistration pharmacists performed well in the assessment. Results were similar across years with preregistration pharmacists scoring more highly than MPharm students

Table 1: Performance of Preregistration Pharmacists and MPharm students in the PSA 2015 and 2016

	2015		2016	
	MPharm	Prereg	MPharm	Prereg
Number of students/ trainees	43	46	397	236
Mean score	73%	86%	74%	85%

Both preregistration pharmacists and MPharm students performed better in the calculations and provision of information domains and least well in data interpretation.

As a result of these findings a decision was made to expand the pilot to a third phase with a larger number of participating organisations. A larger sample size would enable more meaningful study of the results including looking for possible correlations with GPhC registration assessment.

2. Process

Participating Universities and Preregistration Pharmacist Providers/ Regions are listed in Table 2

Table 2- Participating Universities and Preregistration Pharmacist Providers/ Regions in 2017

MPharm	Preregistration Pharmacist
Bradford (4 year and sandwich programme)	East of England (Univ. of East Anglia)
Durham	East Midlands
Keele	London and South East (part region only plus Hampshire)
Manchester	North East
Nottingham (4 year and 5 year integrated)	North West (Univ. of Manchester)
Portsmouth	Thames Valley
Sunderland	West Midlands (Keele)
	Yorkshire and Humber

Assessments were held between March 15th and May 18th over 6 dates; dates were agreed by the PSA team and Universities with the aim being to limit the numbers of dates used. As in previous years, the assessment was shortened to one hour as opposed to the normal 2-hour examination that medical students undertake. It did however still reflect the same domains that are assessed.

Each University invited current year 4 students and local preregistration pharmacists to take part. The list of student and trainee names to take the assessment was provided to the PSA team in advance who provided individual log in details for the assessment.

Students were able to feedback on their experience online immediately after the assessment and whilst still logged onto the PSA system. Universities were provided with a standard feedback form.

3. Results

3.1 Performance

672 MPharm students took part in the 2017 pilot from seven schools of pharmacy, 400 pre-registration trainees based in a hospital setting, 5 based in an industrial setting and 49 based in a community setting.

The assessment tests eight distinct prescribing domains across a range of clinical contexts:

- prescribing
- prescription review
- planning management
- providing information about medicines
- calculation skills
- adverse drug reactions
- drug monitoring
- data interpretation.

The results are shown in Table 1 reported against each of the domains. In summary, preregistration pharmacists scored better in all categories than undergraduates by some margin. Hospital trainees performed better than community trainees (albeit only small sample size).
As in previous years, trainees performed best in calculations and less well in data interpretation.

Table 1: Candidate performance in each question type (%): Pre-registration trainees based in hospital, community and final year MPharm undergraduates

	PWS	REV	MAN	COM	CAL	ADR	TDM	DAT	Total
Community	56.3	71.8	38.8	52.4	78.1	54.1	53.6	41.5	57.6
Hospital	61.4	78.5	42.3	55.8	82.8	63.2	62.4	48.3	63.4
MPharm	46.5	66.2	32.1	38.2	66.6	52.0	46.8	29.1	49.0

3.2 Relationship to the GPhC registration assessment

46 pre-registration pharmacists who took part in the PSA pilot did not appear on the June 2017 GPhC registration assessment pass list. There was a significant difference in performance in the PSA pilot between candidates who appeared on the pass list. (n = 408, x = 63.6 %, sd = 11.3 %) and those who did not appear on the pass list (n= 46, x = 55.0 %, sd = 12.4%).

3.3 Feedback from Students and Trainees

Feedback was obtained from 1059 candidates, (response rate 94%).

42% of candidates (n=445) agreed or strongly agreed that their pharmacy course had prepared them to undertake the PSA whilst 27% (n=289) felt it had not; the remaining having a neutral opinion.

78% (n=822) of candidates reported having written less than five prescriptions throughout their pharmacy training.

Thematic analysis of free-text comments obtained in response to the questions 'were any particular items [on the assessment] unclear or unreasonably difficult?' and 'do you have any comments regarding the PSA or prescribing education?'

It was found in the 2016 pilot that it is feasible to deliver the PSA assessment to pharmacy trainees and that it is acceptable to trainees, these themes also emerged in the 2017 pilot feedback.

> '*This is brilliant. I love the assessment and I think this type of questions (case studies/patient based) should be heavily incorporated into the MPharm degree - more tests required to test clinical judgement and scenarios.'*

In the 2017 pilot we specifically wanted to explore how well-prepared candidates felt to undertake the PSA. Revealed. Three themes related to this emerged: i) Relevance of the assessment to pharmacy trainees ii) Content and breadth of pharmacy training iii) Clinical experience and exposure.

Relevance

With regards to the relevance of the assessment to pharmacy trainees there were a large number of candidates who enjoyed the experience and felt it to be highly relevant to pharmacy training, and more broadly noted pharmacists increasing prescribing roles:

> *'The PSA is very useful for testing knowledge and assessing thinking'*

> *'Will be a good means of bridging the pharmacy degree to the working healthcare environment. Should be stressed further within the pharmacy degree because it gives a lot of context to the multiple medication we learn about.'*

> *'Should have done this years ago. really good practice for pharmacy students to make sure our knowledge is more integrated and makes sense.'*

'Prescribing course should be introduced into MPharm course as it's really useful nowadays as there are more and more independent prescribing pharmacist[s].'

There was a small but significant minority of candidates who did not recognise the PSA or prescribing training more generally to be relevant or applicable to pharmacy training.

'Not used to filling out prescriptions - doctors are trained on writing prescriptions, not pharmacists.'

'Pharmacy undergraduates aren't trained to prescribe.'

'We don't prescribe in pharmacy so the first question about prescribing were difficult.'

Content and breadth of pharmacy training

There was a significant amount of feedback obtained from candidates commenting on the aspects of the PSA candidates felt their training to date had not prepared them for.

'As a pharmacy student, I find it difficult to diagnose the patients based on their symptoms.'

'Some of the terminology used in the medical notes was unfamiliar to me - not been taught the terminology in my degree'

'I strongly [believe] we should be taught extensively about the medical abbreviations doctors are using.'

'Diagnosis is not the strength of pharmacy students. This makes medicines recommendation difficult.'

'Questions were extremely clinically worded. hard to understand the information clearly'

'Some of the actual prescribing was difficult for a new pharmacy graduate to do because we do not have experience in managing symptoms for conditions which are not long term. We are only used to managing conditions such as asthma and diabetes.'

'As a pharmacy graduate a lot of the questions were more focused on diagnosis - as a pre-reg we aren't trained for this aspect yet, and so the assessment could possibly be tweaked to better suit the role we have with medicines doses, interactions, and counselling points.'

'Medications and medical conditions which we never learnt throughout our MPharm course.'

Lack of clinical experience was also noted by some candidates:

'I found writing the prescriptions the most difficult part of the assessment. Making the clinical decision as the pharmacist was something that we do not experience too much, despite undergraduate training.'

In response to the question 'My course prepared me for this assessment' 4.7% strongly disagreed, 22.6% disagreed, 30.7% neutral, 36.6% agreed, 5.4% strongly agreed.

78% of candidates reported that they had written between zero and five prescriptions during their training. 3.8% of candidates reported that they had written more than 50.

Analysis of free-text comments on the exam identified the following key themes: -

- Appreciation for the opportunity to take the assessment
- Students and trainees find the highly clinical/realistic nature of the cases useful and applicable
- Support for assessments of this type to be incorporated into pharmacy training
- Identification of aspects of the assessment which students/ trainees were not prepared for by their current training including; diagnostic information, medical terminology, certain conditions and therapeutic areas, medical emergencies, prescribing in general. It is important to note that there remains (as there was in the 2016 feedback) a significant number of students who refer to pharmacists as non-prescribers and therefore query the relevance of the exam
- Comments relating to the exam itself, difficulty entering doses, time pressures, clashes with other assessments

4. Discussion

The percentage of trainees passing in 2017 was greater for preregistration pharmacists compared with MPharm students. This is consistent with previous years. The overall scores this year were lower than in previous years. This could be explained by the examination being harder (medical students also scored lower in 2017 which affected the pass mark) and also the questions selected for the abridged 1 hour's pharmacy PSA were more closely aligned to the 2-hour medical examination.

The link between GPhC registration assessment and PSA pass rates suggest that the PSA might have be a useful formative tool for identifying trainees at risk of not passing the GPhC assessment.

The feedback themes are also reflective of previous years. Trainees continue to find the assessment useful although a minority of MPharm students query its value and do not recognise the future role of pharmacists in a prescribing capacity.

5. Next Steps

Further analysis is required to confirm the predictive validity of the PSA towards GPhC registration. If so, it may be that the PSA forms part of a wider base of assessments used at the 39-week preregistration appraisal to determine whether a trainee should be signed off as competent and entered for the regulatory registration assessment. This would sit alongside the current HEE pilot of an ARCP equivalent competence assessment pilot in preregistration pharmacists.

The feedback provided by students and trainees via an online questionnaire is limited and therefore focus groups are now planned to provide greater depth and insight into the themes identified, in particular perceptions of the role of the pharmacist in future and how the MPharm curriculum and Preregistration Pharmacist training prepares them for this.

The PSA will continue to be used formatively in MPharm year 4 and preregistration pharmacists in 2018. This will inform a future decision on its place within the Initial Education and Training of pharmacists alongside the forthcoming review of these standards by the GPhC.

6. References

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