

RESEARCH

Design and Evaluation of a New National Pharmacy Internship Programme in Ireland

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ABSTRACT

Objective. To design, deliver and evaluate a National Pharmacy Internship Programme to meet the educational needs of pharmacy graduates for registration as competent pharmacists, recognising the learning by way of an educational award.

Methods. The programme was designed as a twelve month, full-time, blended-learning, competency-based programme leading to an educational award at Master's Level. Intern performance was assessed academically and by pharmacy tutor (preceptor) appraisals. Interns who demonstrated competency

were invited to sit the Professional Registration Examination (PRE). Feasibility and performance were evaluated and a longitudinal approach allowed intern and tutor views to be compared to the former pre-registration year.

Results. Overall performance in the PRE was good and relatively consistent with almost all interns proceeding to register as pharmacists. Interns expressed a view that the programme had enabled them to develop the knowledge, skills and overall competencies required for future independent practice as a pharmacist. Tutors considered the programme to have built on prior learning and provided a sufficiently rounded experience for professional practice. Tutors also expressed the view that the programme was an improved educational experience over the former, less structured, pre-registration training.

Conclusion. The National Pharmacy Internship Programme was a structured, competency-based programme at Master's Level. The education and training was perceived to be an improvement on the previous pre-registration year. The programme quality assured pharmacy education outcomes at entry-to-practice on a national basis, and uniquely recognised the learning by way of an educational award.

Keywords: competency, internship, qualification, pharmacy, education

INTRODUCTION

The education of pharmacists in Ireland has undergone a period of significant change over the past decade. Prior to 2009, the education and training comprised a four year Honours Bachelor Degree followed by a fifth year of pre-registration training. The fifth year was overseen by the Pharmaceutical Society of Ireland (PSI), the National Competent Authority for Pharmacy. The pre-registration year involved pharmacy graduates working in community pharmacy, hospital pharmacy, industry or academia (with a minimum block of six months in either community or hospital practice) under the supervision of a tutor pharmacist (also called pharmacy preceptor). Tutors were required to confirm that the pre-registration graduate had completed the year, but there was no requirement to confirm competency for practice. The pre-registration examination was a multiple choice examination, mainly pertaining to medicines-related legislation, set by the PSI. There was no defined

structure, learning outcomes, quality assurance of experiential learning or recognition of the pre-registration training by way of an educational award. Similarly, pharmacy graduates in the United Kingdom, Australia and New Zealand were completing separate pre-registration training prior to registration. These programmes varied in their academic requirements and education provision, but none recognised the learning by way of an educational qualification or award.¹

The introduction of a new *Pharmacy Act 2007* acted as a catalyst for change in pharmacy education.² The PSI was given enhanced responsibilities for overseeing the education and training of pharmacists. In 2008, the PSI commissioned The Pharmacy Education and Accreditation Reviews (PEARs) project - a root and branch review of pharmacy education in Ireland.³ The aims of the PEARs project were to identify strengths and weaknesses and make recommendations on a future strategy for the education and training of student pharmacists.³ The PEARs project revealed that there was considerable variability in the experience within the pre-registration year. Concern was expressed that the pre-registration year was educationally distinct from the undergraduate degree, lacked clear educational objectives, had poor central quality control and inadequate assessment.³ New secondary legislation, also introduced in 2008, required pharmacy graduates to undertake a year of in-service practical training, followed by tutor sign-off of professional competency, and a Professional Registration Examination (PRE).⁴ The PSI subsequently sought applications for the provision of a competency-based programme of in-service practical training and PRE to replace the pre-registration year. The new programme would be delivered on behalf of, and overseen by, the PSI. The Royal College of Surgeons in Ireland (RCSI) was appointed by the PSI in 2009 to design and deliver the programme and the PRE. This was designed by the School of Pharmacy as the National Pharmacy Internship Programme (NPIP). The term “intern” was deliberately chosen to differentiate the educational experience through the NPIP from the previous pre-registration training provided. The NPIP was designed as a twelve month, full-time, blended-learning, competency-based programme leading to an educational award at Master’s level. The limitations within which the NPIP was designed and delivered, were to be addressed in the longer term with a the introduction of a new integrated five year MPharm programme, which was the major recommendation of the PEARs report.³

The NPIP was a novel instructional design by international comparison and recognised as “a major change in the educational landscape in Ireland.”³ Evaluation was designed from the outset to incorporate items from the PEARs project to determine the interns’ and tutors’ perspectives. The evaluation allowed exploration of the hypothesis that the education and training provided by the NPIP was an improvement on the previous pre-registration training and would produce competent pharmacists. The purpose of this paper is to describe the first stage in the journey in the reform of pharmacy education in Ireland; namely the design of the NPIP, the limitations within which it was designed and delivered, and the findings of the evaluation of the programme over the first iteration 2009 – 2014 and comparing it to training provided prior to 2009.

METHODS

The programme was, out of necessity, introduced over a very short time frame with limited resources. The PSI issued the tender to provide the training programme in June 2009, and RCSI designed and developed the programme for commencement in October of the same year. The design of the NPIP was undertaken by core members of staff from the School of Pharmacy: Aisling O’Leary, Judith Strawbridge and Paul Gallagher, who also then took on module leadership roles. James Barlow had oversight of the PRE. The involvement of a number of departments within RCSI, including the Department of Medicine, Department of Surgical Affairs, the Institute of Leadership and the Quality Enhancement Office, harnessed the skills of those who had designed similar competency based programmes and the skills of medical educators and content experts. Muirne Spooner from the Department of Medicine, and Ciaran O’Boyle from the Institute of Leadership also undertook module leadership roles. Access to a well-developed information technology infrastructure also made the rapid development feasible. Professors Chris Langley and Keith Wilson collaborated with Judith Strawbridge and the Quality Enhancement Office in the evaluation of the NPIP, providing an opportunity for longitudinal evaluation aligned with the PEARs project. The PEARs project involved interviews with key staff at the PSI, focus groups and interviews with pre-registration students in 2007/8 and self-completion questionnaires to all former pre-registration students and tutors in the five year period up to 2007/8.³ This provided, in essence, major stakeholder consultation. Consultation

with other stakeholders and international pharmacy education experts was also undertaken on a less formal basis.

The primary aim of the NPIP was to develop the knowledge, skills and attitudes acquired at undergraduate level, in the practice environment, ensuring that the emerging practitioners were competent and capable of providing pharmacy services professionally, safely and effectively. The programmatic learning outcomes defined that graduates would be able to ensure the safe supply of all medicines to patients; contribute to improving prescribing within the health care team; practise pharmacy competently in the primary or secondary health care setting; relate pharmacy law and ethics to practice; implement a safe, high quality service in all health care settings within a clinical governance framework; apply information and mastery skills to the provision of health related information and implement change within their organisation or complete a clinical audit.

These programmatic outcomes were based on a NPIP competency framework. Aisling O'Leary led on the development of the competency framework, having previously been commissioned by the PSI in 2006 to investigate competency-based education. The competency framework was developed with reference to general level elements of key international pharmacy competency lists and frameworks that were available at that time.⁵⁻¹⁴ Consultation with international experts from the EVOLVE intern programme New Zealand, and the Competency Development and Evaluation Group (CoDEG), proved particularly valuable. All the information was distilled to formulate six core standards. Behavioural descriptors were developed to assist with interpretations of whether intern performance met expected standards. The resulting competence standards were piloted in diverse training establishments and subsequently amended based on feedback. The NPIP competency framework is available on request.

The programme design was influenced by Fink in creating opportunities for significant learning that prepares the learner for the working environment.¹⁵ Immersion in the practice environment provided opportunities for application of knowledge and skills and gave interns the vision of becoming a pharmacist. Experiential learning, therefore, formed the core of the programme with particular attention to integration with academic components.¹⁵ Interns undertook between thirty-five and forty hours experiential learning per week in a training establishment approved by the

PSI, in accordance with The PSI (Education and Training Rules) 2008.⁴ Interns spent a minimum of six months in either a community pharmacy or hospital pharmacy, although there were a very limited number of hospital internship placements available at that time in Ireland. Some interns elected to undertake six months in a non-clinical placement such as the pharmaceutical industry or an academic placement in one of the three Schools of Pharmacy. A tutor pharmacist was defined as a registered pharmacist who had practised for a minimum of three years with a minimum of one year of experience in the field of pharmacy practice in which he or she intended to act as a tutor pharmacist, and who completed the requisite programme of education and training. The provision of standardised training to tutor pharmacists was obligated by the PSI (Education and Training) rules 2008⁴ and so a tutor training programme was developed by RCSI. The first iteration of the tutor training programme was an on-line modular course, with fourteen eLearning packages, summatively assessed via multiple-choice questions (MCQs). A Tutor Training and Accreditation Programme (TTAP) Project Steering Group, which included stakeholder representation from across the profession, was set up in 2010 to further develop the tutor training programme. The TTAP was designed to provide tutor pharmacists with the knowledge and skills to more effectively train and coach pharmacy interns. The required competencies for tutor pharmacists, consistent with international best practice, were identified. A novel blended learning programme was designed using advanced multi-media techniques. Tutor network meetings were provided for tutors to learn skills, such as coaching and providing feedback, in an interactive format and facilitate networking opportunities. The workload allocated to the TTAP was ten hours. Successful completion of the e-learning programme and summative assessment resulted in accreditation for the training establishment in which the tutor pharmacist operated, and tutors were recognised as associated teaching faculty of the College. Tutors were required to attend a tutor network meeting every two years, after initial accreditation, to refresh their skills and knowledge. This frequency was a recommendation supported by tutors.

Interns were geographically dispersed throughout the country in a wide variety of training establishments for their experiential learning. Personal difficulties were identified as a concern in pre-registration training in the PEARs report, and so it was important to identify ways to ensure interns were supported.³ A Memorandum of Understanding between RCSI and the PSI enabled the

development of a suite of support services including access to advice, assistance with change of placement, counselling and specialist mental health services. Interns and tutors were encouraged to contact RCSI in confidence to access these services, which were provided through RCSI and funded by the PSI.

The experiential learning was encompassed within an academic framework, integrated through alignment to the NPIP competency framework, which mapped to the programmatic outcomes (Table 1). The curricular design of the academic component was based on the principles of andragogy, fostering learner-focused enquiry and critical thinking. Interns learned by experience and had flexibility in how they engaged with the content, influenced by self-appraisal and their own learning needs assessment. There was an emphasis in the course-work on problem solving, related to authentic practice, structured around the competency standard framework. The academic framework of the programme was modular and compatible with the award of European Credit Transfer System (ECTS) credits.¹⁶ The programme offered six taught modules and a research module. Each ECTS credit represents 25 hours of learning, and so the taught modules each consisted of 250 hours of learning, encompassing direct contact, coursework preparation, independent learning, formative and summative assessment. The workload of each module only comprised a small proportion of the hours spent in the workplace in the first iteration of the NPIP. The learning outcomes were developed to Masters Level 9 on the Irish National Framework of Qualifications (NFQ), equivalent to Level 7 on the European Qualifications Framework (EQF) and consistent with the second cycle of the Bologna framework.¹⁷ There was an elective option for the research component. Interns chose between doing a dissertation in Organisational Development or completing a Clinical Audit. The module Interprofessional prescribing science provided an opportunity to introduce interprofessional education at entry to practice, addressing common and collaborative IPE competencies.¹⁸ Prescribing competencies and collaboration between doctors and pharmacists are important, and this module built on clinical pharmacy taught at undergraduate level for the pharmacy interns and addressed training gaps in prescribing competence for the medical students and medical interns also enrolled on the module.

The Virtual Learning Environment (VLE) provided the core vehicle for delivery of the academic content, harnessing the interactive capacity of on-line learning and overall permitting a blended learning approach to the programme. Learning communities of interns were established via the VLE as interns connected on-line without having to be in the same place at the same time. This facilitated networking, problem solving, synchronous and asynchronous on-line discussion, and learning through the social domain.¹⁹⁻²¹ Block activities in College were designed to supplement the on-line component and address topics that could not be effectively delivered on-line; such as orientation, first aid skills, communication skills, team dynamics, and project support sessions. Block activities comprised one full-time week in College, scheduled at the mid-point of the programme.

The assessment strategy for the NPIP used a variety of modalities, mindful of validity and reliability, and the need to assess knowledge skills and performance, encompassing all levels of Miller's pyramid.²² There were a number of assignments including participation in case-moderated studies, evidence of compounding of extemporaneous preparations, medicine usage reviews, drug evaluations and medicines information queries. On-line MCQs were used for summative assessment of calculations and interprofessional prescribing science. All assessments were graded and contributed to the module marks for the academic award. Formative quizzes were also delivered via the VLE, with the facility for immediate feedback on quiz completion. A formative Competence Assessment and Performance Appraisal (CAPA) was conducted mid-way through the programme. This consisted of an interview between the intern and a member of academic staff to assess academic progress and competency development, with follow-up as necessary. The CAPA also afforded the opportunity to identify interns with difficulties and refer them appropriately for support.

The performance element in the assessment strategy was enabled by the development of the NPIP competency framework, and the behavioural descriptors which assisted with interpretation of whether intern performance met expected standards. Interns were appraised against the competence standards on three occasions in accordance with a five point scale of Levels 0 - 4 (Level 0: Not encountered/applicable; Level 1: Rarely; Level 2: Sometimes; Level 3: Usually and Level 4: Consistently; Table 2). The competency management feature of a bespoke e-portfolio allowed the interns to record self-reflection and tutor appraisal of the competencies. On the final appraisal, interns

were required to have obtained a Level 4 rating on all applicable competencies to be invited to sit the PRE. This was to ensure that graduates of the programme were able to practise competently and fit for purpose, as required by the Education and Training Rules.⁴ The PRE was the high-stakes, licensure examination designed to provide a holistic measurement of competency, conducted by RCSI on behalf of the PSI. The legislative framework for the PRE is set out in Part 5 of The PSI (Education and Training Rules 2008).⁴ The PRE consisted of MCQs on pharmaceutical calculations and interprofessional prescribing science, and a 12 station OSCE. The MCQs were standard set using a modified Angoff method and the OSCE was standard set using Borderline Regression. The OSCE is a recognised, valid and reliable method for assessing integration of knowledge and skills, which heretofore had only been employed at entry-to-practice in Canada.^{23 - 24}

The evaluation of the programme was planned from the outset, with the authors of the PEARs report, to permit a longitudinal approach to programme evaluation and comparison with the previous pre-registration year. All graduates from the three Schools of Pharmacy in the Republic of Ireland, approximating to 150 per annum, were required to undertake the NPIP from 2009. The outcome measures for evaluation were an estimation of the feasibility of the PRE, with a focus on the costs of running the OSCE, the performance of candidates in the PRE and the intern and tutor reactions to the NPIP longitudinally.

The feasibility of the PRE was evaluated in 2009 with data pertaining to the costs of 146 interns undertaking the PRE. The OSCE was identified as being one of the most resource intensive components of the PRE, and the costs estimated in accordance with Reznick and colleagues "Guidelines for Estimating the Real Cost of an Objective Structured Clinical Examination".²⁵ The costs were estimated in the four phases of implementation of an OSCE namely: examination development, examination production, examination administration and post-examination analysis. The true costs of the actors, assessors, data input, catering, hire of room dividers and consumables were recorded. The cost of services provided by RCSI including venue hire and examination development, administration and analysis were estimated in accordance with the time taken and hourly staff rates.

An in-depth analysis of the validity and reliability of the PRE was determined in 2009 with data from 146 candidates. Item analysis of the MCQs was conducted and the Cronbach alpha coefficient was calculated for the OSCE. Candidate demographics were retrospectively inserted into the master OSCE data set. Analysis was conducted by parametric and non-parametric ANOVA, as appropriate, to determine significant relationships. The overall performance in the PRE was recorded longitudinally from 2009/10 to 2012/13.

The interns' and tutors' views of the NPIP and the PRE were obtained by survey on completion of the entire programme on an annual basis to evaluate the programme and inform continuous quality improvement. All interns were surveyed from 2009/10 to 2012/13 inclusive. All tutors were surveyed from 2009/10 to 2010/11 and again in 2012/13. Data are missing for tutors 2011/12 as in this year the questionnaire focused on how tutors could be better supported. Permission was given by the authors of the PEARs Report to use items from the PEARs instruments to allow comparison between the previous pre-registration year and the Internship Programme.³ The questionnaire comprised items eliciting yes or no responses, those requiring Likert scale utilisation and also allowed for capture of free text comments. The questionnaires were reviewed and transposed for electronic delivery using the online survey software "SurveyMonkey" (www.surveymonkey.com). Cross-tabular analysis of the responses to the questionnaires in 2009/10 was achieved using SPSS® v18 and statistical evaluation undertaken using the Chi-squared statistical test due to the ordinal nature of the data. A Mann-Whitney test was used to compare the data from the PEARs study and data obtained from this study. Significance was taken to be where $p \leq 0.05$.

The evaluation of the programme was exempt from investigational review board approval, but was required to be conducted through the Evaluation Working Group, a sub-committee of the Quality Enhancement Office. This was required to uphold the ethical considerations, including safeguards for the protection of anonymity and appropriate quality standards.

RESULTS

The feasibility of the PRE was investigated. The total (real) cost of conducting the mock and first PRE was estimated to be €105,451 and the cost per candidate €722. The cost with faculty time donated and RCSI contributing services was €43,360 with a cost per candidate of €297.

The overall performance in the PRE was generally good, and relatively consistent (Table 3). This is particularly impressive as candidates had to pass all three parts, the calculations MCQ, clinical MCQ and OSCE independently. Over the period 2009/10 to 2012/13 only five interns were recorded as failing to achieve Level 4 on all the competencies and therefore ineligible to undertake the PRE. These candidates were offered additional supports and opportunities for extended placement to achieve the requisite performance level. A further seven interns required additional time to complete their training for various reasons. Almost all interns who passed the PRE proceeded to register with the PSI to practice as pharmacists. Data analysis after the first year of the programme indicated that there was no correlation between the MCQ and OSCE components overall, which was not surprising given that they were assessing different constructs. A Cronbach alpha coefficient of 0.6 indicated moderate reliability of the OSCE component. There was no evidence to suggest a difference in scores in accordance with interns' age, gender or whether they undertook their clinical placement in hospital or community.

All interns who had completed the programme for the first time were surveyed at the end of the programme. The response rates were 59.6% in 2009/10 (n=87/146), 62.3% in 2010/11 (n=103/162), 63.6% in 2011/12 (n=94/153) and 54.7% in 2012/13 (n=87/159). Overall response rate for the years 2009/10 to 2012/13 inclusive was 59.8%. A majority of the respondents were female (74.4% n=258/347) and 90.4% (n=322/356) were aged less than 30. The majority (73.6% n=273/371) of the respondents undertook their clinical placement entirely within community pharmacy (Table 4). The respondents were, therefore, reflective of the composition of the intern group.

Intern respondents were very positive about their overall internship experience. The vast majority (92.5% n=320/346) either strongly agreed (33.8% n=117) or agreed (58.7% n=203) that the internship had enabled them to develop the knowledge, skills and overall competencies required for future independent practice as a pharmacist. Only 2.6% (n=9) disagreed and 0.3% (n=1) strongly disagreed with this statement (Figure 1). This is a significant improvement on the findings from the PEARs report whereby 78% (n=212/272) either strongly agreed or agreed, and 10% (n=27) disagreed and 2% (n=6) strongly disagreed that the pre-registration training had enabled them to develop the knowledge, skills and overall competencies required for future independent practice as a pharmacist.³

A Mann-Whitney test indicated the distribution of responses from the NPIP respondents was different from the PEARs responses ($W=36880$, $p<0.001$).

A substantial majority (78.7% $n=273/347$) of respondents also stated that they enjoyed their internship. This is a similar finding to PEARs where 81% ($n=220/272$) enjoyed the former pre-registration year.³ This is an interesting finding given that the interns provided some free-text comments indicating that it was a source of stress to have additional academic commitments during the year. Furthermore, this finding is set in the context of a consistent number of interns encountering personal difficulties, such as illness and difficult workplace relationships. Personal difficulties were encountered by 28% ($n=24/86$) in 2009/10, 40% ($n=40/100$) in 2010/11, 39% ($n=36/93$) in 2011/12 and 36% ($n=31/87$) in 2012/12, with 35.7% ($n=131/367$) of the respondents reporting that they encountered personal difficulties overall. The results of the survey, and in-house data, showed that interns did seek assistance from a range of identified sources.

Interns were asked to identify aspects of their internship that they would deem the “one best thing”. This was an open question. Interns were most likely to identify their placement experience as the best thing about their internship. Other themes that emerged as being the “best thing” for the interns included the academic programme, structure to the year, the tutor’s support and patient interaction. The most frequent aspects identified as the “worst thing” were related to the workload and difficulty in achieving a work/life balance. Interns described “pressure” and “stress” associated with the thirty-five to forty hours placement per week with additional academic commitments. One intern expressed the worst thing as “the workload from the masters on top of working a forty hour week – I felt that I had a constant weight and burden with me.” Interns had mixed opinions regarding the benefits of having a Level 9 qualification. The majority recognised that there may be advantages in having a qualification that would be recognised overseas, but the view that it made little difference regarding job opportunities in Ireland was also frequently articulated.

A total of 78 responses were received from the cohort of 182 tutor pharmacists in 2009/10, giving a response rate of 42.8%. Overall, pharmacy tutors were very positive, with 87.7% ($n=64/74$) either strongly agreeing (25.7% $n=19$) or agreeing (60.8% $n=45$) that the internship programme provides a sufficiently rounded experience for a future as a pharmacist (see Figure 2). This is again a

shift in opinion from the tutor opinion on the pre-registration programme where 70% (n=99/142) either strongly agreed (9% n=13) or agreed (61% n=86) that the pre-registration year provides a sufficiently rounded experience as a foundation for the future.³ There was a similar pattern in 2010/11 (response rate 32.9% n=54/164) and again in 2012/13 (response rate 52.3% n=104/199) when 91.5% (n=43/47) and 87.3% (n=83/95) of respondents either agreed or strongly agreed that the internship programme provides a sufficiently rounded experience as a foundation for the future as a pharmacist.

Tutors were asked how strongly they agreed or disagreed with the statement “Overall, I think the National Pharmacy Internship Programme is an improvement on the pre-registration year”. The majority of respondents (76% n=54/71) in 2009/10 either strongly agreed (33.3% n=24) or agreed (42.2% n=30) that it was an improvement. A minority of respondents (9.8% n=7) disagreed that it was an improvement, but no tutor strongly disagreed. Cross-tabulation with sector did not reveal any significant difference (n=70, Chi, p=0.347). This is of interest as the pre-registration year was generally more structured in the hospital pharmacy sector and the large multiple community pharmacies. Essentially the same overall percentage (76.7% n=33/43) of respondents to the survey in 2010/11 either strongly agreed (25.6% n=11) or agreed (51.2% n=22) that it was an improvement. This question was not asked thereafter.

Tutors considered that the main strengths of the NPIP were that it was structured, standardised, challenging, supportive and that it rewarded interns with a Master’s qualification. Comments included; “It formalises the learning process and sets a standard for all throughout the country. Previously students were very dependent on the tutor and their setting to have a good pre-reg year” and “It gives the student a Masters. It demands all round ability, skills and knowledge; the exam is broader, the competencies are useful for illustrating strengths and weaknesses.” Tutors also identified areas for improvement. The primary concern was the workload for the intern. One comment was that there was “huge workload and pressure on the interns, to the extent that they spent the entire year stressed out about checking off all the various things that needed to be done and viewing their work experience entirely through the prism of the RCSI course. This left them with little time to

spend relaxing and becoming at ease with the role of a pharmacist and developing work experience naturally.”

DISCUSSION

The hypothesis was that the education and training provided by the NPIP was an improvement on the previous pre-registration training and would produce competent pharmacists. The results show that the NPIP compares favourably with the pre-registration year, from both the interns’ and tutors’ perspectives, when compared across the metrics employed in the PEARs report.³

The NPIP has a number of key strengths. The programme was designed to permit students to undertake a programme of education and learning that would enable them to be competent pharmacists. The NPIP incorporated a national licensure examination in the form of the PRE, which gave assurance to the PSI with respect to an appropriate national standard for application for registration and entry-to-practice. Interns are not required to undertake a separate regulator run national licensure examination after graduation and before first registration. There were significant costs associated with the OSCE component of the PRE. These were comparable to those reported in the literature²⁵ and deemed justifiable for the outcomes achieved.

The NPIP was also designed to fulfil the requirements of Level 9 of the National Framework of Qualifications (NFQ), building on prior learning from the four year bachelor programmes (Level 8 NFQ). The structure is fully compatible with the Bologna agreement, in that the learning occurs during a second cycle after the first Bachelors level degree, which is important for consistency and transparency in educational provision across Europe. The requirement for overseas graduates to have completed five years of education and training to begin to be recognised as a pharmacist in the United States is fulfilled, thus allowing graduates to engage in recognition of their qualifications in that jurisdiction. The formal recognition of learning, through an educational award, is an advantage over some other programmes provided internationally.

The provision of support services as part of the programme addressed the concerns expressed in the PEARs report regarding personal difficulties and the “lack of any national backup scheme to the tutor for student support”.³ The programme was perceived by tutors to have begun the journey in standardising the experience for students from all educational institutions and across all sectors. The

academic component not only addressed gaps in knowledge and skills, but advanced the educational provision for entry-to-practice pharmacists. The Baseline Survey of Community Pharmacies, commissioned by the PSI in 2009, reported that pharmacists in Ireland were willing to adopt new roles.²⁶ The education and training provided by the NPIP, is an important first step in enabling enhanced scope of practice for pharmacists, with quality assurance for regulators and the public.

Performance in the PRE was consistent with expectations. The PRE itself was evaluated and found to be moderately reliable. The data analysis was presented to the PSI with the recommendation to add one standard error of measurement to the cut score of the OSCE to reduce the risk of false positives. This was adopted and further assures the competency of candidates who pass the PRE and are eligible to registration as pharmacists.

It is important to note that the programme was, out of necessity, introduced over a very short time frame with limited resources. The design and implementation of the programme was undertaken with an increase of just 1.5 full-time equivalent staff in the School of Pharmacy at RCSI. There were challenges with the rapid development. Students and tutors were expecting to be involved in a pre-registration year and the new arrangements, compounded by perceived communication deficits, inevitably resulted in some initial intern and tutor dissatisfaction. Community practice tutors were, at that time, practicing through a restructuring of the contractual basis of services as part of a government response to adverse economic circumstances. There was no available funding to employ practice educators. These would have been appointees of the academic institutions whose role would have been to support interns and tutors, and assist in enhancing quality assurance of training and training establishments. Ideally, planning for the design and delivery of such a new programme of education needs to be timed so that all external stakeholders can be involved in the process.

The programme underwent continuous quality improvement, based on intern and tutor feedback, which informed an annual quality improvement plan. Attempts were made to incrementally reduce the workload. A major revision of the programme was subsequently undertaken for the year 2014/15, which corresponded with RCSI successfully winning the tender to run the programme for additional years. This provided an opportunity for the programme to be redesigned around a new national Core Competency Framework for pharmacists²⁷, rebalance the academic workload, give due

recognition to the hours associated with work-place based learning, make better use of technology enhanced learning, and pay more attention to the “learning-to-learn” element in developing a culture of self-directed learning, and increase the number of OSCE stations in the PRE to enhance reliability. The provision of a national programme by one educational provider was, however, not regarded as a long-term solution, merely an interim measure until the establishment of a 5 year integrated programme, as recommended by the PEARs report.³

CONCLUSION

The introduction of the National Pharmacy Internship Programme provided a unique and previously unexplored opportunity to move beyond student perception, evaluate outcomes at entry-to-practice and benchmark the quality of education. The National Pharmacy Internship Programme has a number of key strengths. The programme is designed to fulfil the requirements of Level 9 of the National Framework of Qualifications (NFQ), building on prior learning. The award of Master’s provides recognition of the learning in line with the entry-to-practice qualification awarded throughout the European Union/European Economic area. This qualification is recognised in countries beyond the EU/EEA, and facilitates opportunities for employment across the globe.

The findings from this evaluation of the internship will be useful for educators as they strive to design and develop new programmes. The delivery of an academic component alongside experiential learning is valuable for learning. The institutions involved in delivery need to manage the learning, and take into account the support required for both students and their tutors. This is particularly important during orientation, and paying sufficient attention to “learning-to-learn” and facilitating self-directed learning and learning through communities of practice. Attention should be paid to the workload for both students and tutors, as excessive workload is a source of stress. Developing student-support services, which meet the needs of students dispersed geographically, is essential given previous concerns raised about students with personal difficulties. The design of a new programme must take into account the views of the stakeholders to ensure successful implementation. The feasibility of any proposal will then be the limiting factor; due consideration for the availability of quality experiential learning and resource constraints. OSCEs, in particular, are expensive but costs can be contained and it should be financially feasible to develop them and implement than as part of

an overall multi-format assessment strategy. Implementation of a comprehensive quality framework for experiential learning is even more resource intensive, but necessary for the provision of a quality assured, standardised, educational experience.

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Table 1. National Pharmacy Internship Programme Academic Structure

Module	Programme learning outcomes	Core Competencies	Module Delivery	Module Type	ECTS credits
Patient care-safe dispensing	Ensure the safe supply of all medicines to patients	Patient care: safe dispensing competencies	Taught	Core	10
Interprofessional prescribing science	Contribute to improving prescribing within the health care team	Interprofessional prescribing science competencies	Taught	Core	10
Pharmacy practice	Practice pharmacy competently in the primary or secondary health care settings	Community and Hospital practice competencies	Taught	Core	10
Professional practice	Relate pharmacy law and ethics to practice	Professional practice competencies	Taught	Core	10
Patient safety and risk management	Implement a safe, high quality service in all health care settings within a clinical governance framework	Patient safety and risk management competencies	Taught	Core	10
Health and medicine information	Apply information and mastery skills to the provision of health related information	Health and medicine information competencies	Taught	Core	10
Organisational development	Implement change within the organisation		Research	Elective	30
Clinical audit	Complete a clinical audit		Research	Elective	30

Table 2 Competence Standards Assessment Ratings for the National Pharmacy Internship Programme, adapted with permission from the NHS Competency Development and Evaluation Group (CoDEG)⁷

Level	Rating	Definition	Expression (%)
0	Not applicable	Not encountered in training establishment	n/a
1	Rarely	Very rarely meets the standard expected.	0-20
2	Sometimes	Much more haphazard than “mostly”	21-50
3	Mostly	Implies standard practice with occasional lapses	51-84
4	Consistently	Demonstrates the expected standard practice with very rare lapses	85-100

Table 3. Performance in the RCSI Master of Pharmacy, incorporating the Professional Registration Examination 2009/10 – 2012/13

Year	Number sitting	Number failing	Pass (%)
2009/10	146	4	97
2010/11	164	11	93
2011/12	157	16	90
2012/13	179	16	91

Table 4. National Pharmacy Intern Respondent Demographics as per Sector of Pharmacy Practice

Year	2009/10 Number %	2010/11 Number %	2011/12 Number %	2012/13 Number %
Total number of respondents	(n=87)	(n=103)	(n=94)	(n=87)
Internship entirely within community pharmacy	66.7 (n=58)	74.8 (n=77)	77.7 (n=73)	74.7 (n=65)
Internship entirely within hospital pharmacy	20.7 (n=18)	12.6 (n=13)	10.6 (n=10)	13.8 (n=12)
A split position between community and hospital pharmacy	1.1 (n=1)	2.9 (n=3)	0 (n=0)	2.3 (n=2)
A split position between community and industry	9.2 (n=8)	9.7 (n=10)	8.5 (n=8)	8 (n=7)
A split position between hospital and industry	0 (n=0)	0 (n=0)	2.1 (n=2)	1.1 (n=1)
A split position between community and a School of Pharmacy	2.3 (n=2)	0 (n=0)	0 (n=0)	0 (n=0)
A split position between hospital and a School of Pharmacy	0 (n=0)	0 (n=0)	1.1 (n=1)	0 (n=0)

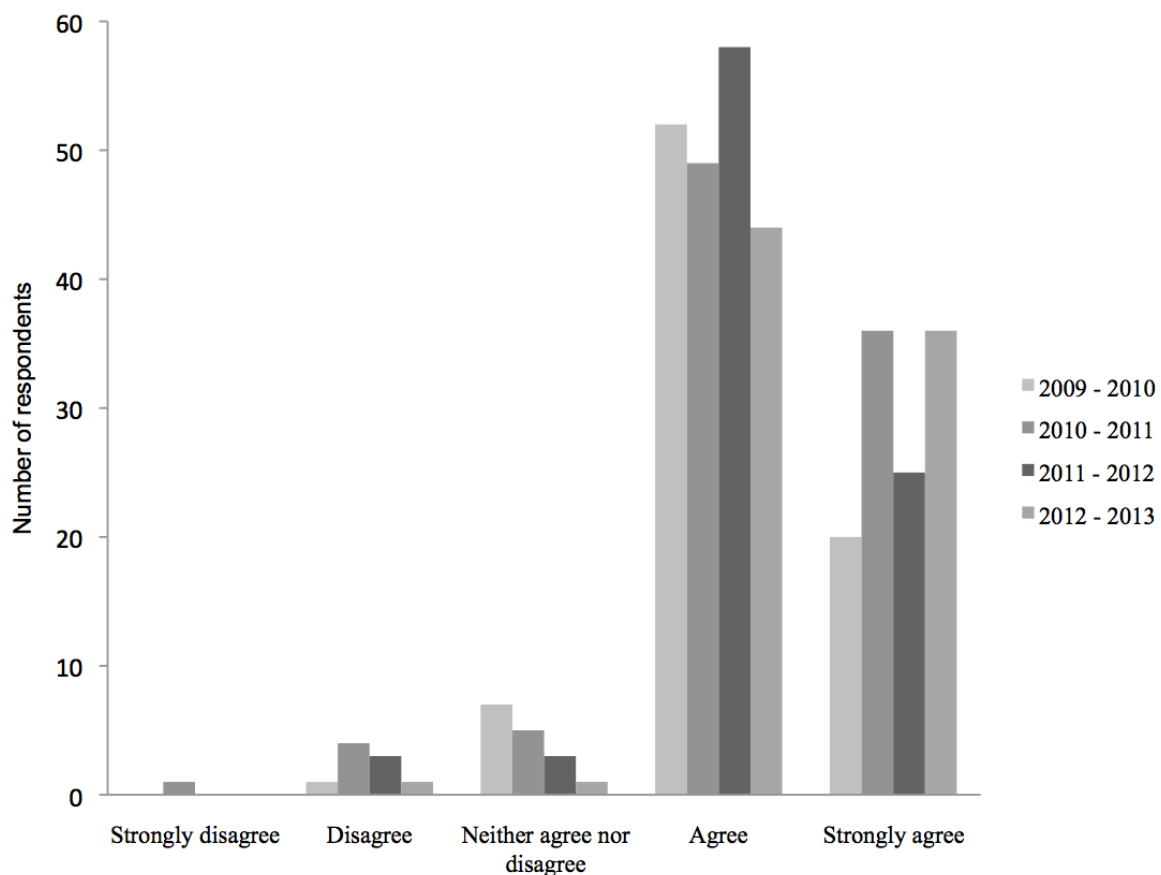


Figure 1. Intern respondents' overall opinion of the National Pharmacy Internship Programme 2009/10 – 2012/13 reflecting on the statement “taking everything into consideration I feel that my internship enabled me to develop my knowledge, skills and overall competencies required for future independent practice as a pharmacist.”

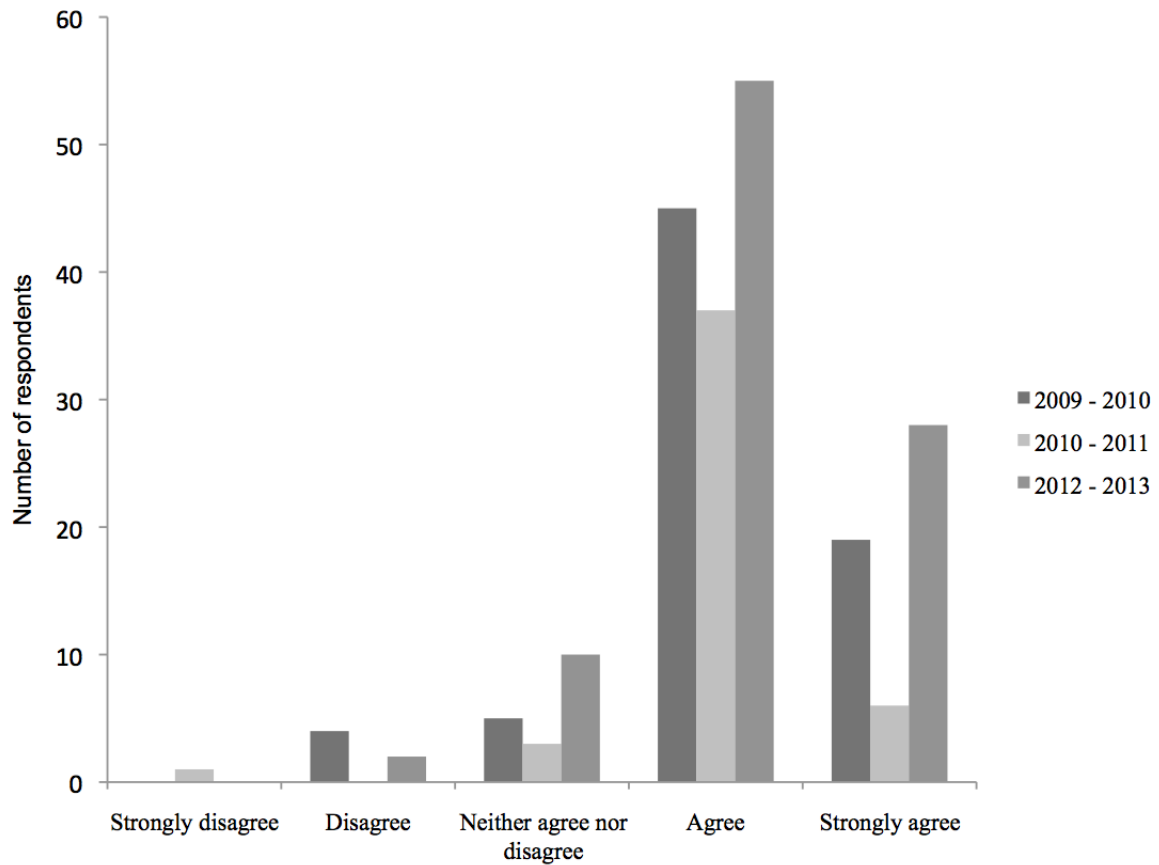


Figure 2. Respondent Tutor Pharmacist overall view of the National Pharmacy Internship Programme 2009/10, 2010/11 and 2012/13 reflecting on the statement “taking everything into consideration, I feel that the internship programme provides a sufficiently rounded experience as a foundation for a future as a pharmacist.”