



## Pharmacy Practice Research Trust

### Programme 3: Pharmacy: A profession fit for purpose

#### RESEARCH IN PHARMACY AND THE ROLE OF THE UNDERGRADUATE PROGRAMME

##### 1. *Call for Proposals*

1.1 The Pharmacy Practice Research Trust invites applications for a single research project investigating how research principles, use and practice are taught and embedded at undergraduate level and in the research project in particular, and the value of these resulting research outputs and skills.

1.2 Funds of up to £60,000 are available to support this research.

##### 2. *Background*

###### 2.1 *The need for research skills and capacity within pharmacy*

Research can be broadly described as defining a problem, systematically gathering and interpreting data and reporting the results, and pharmacists must be able to understand this process whether they are critically evaluating the research results of others in order to apply evidence-based practice, or undertaking research themselves.<sup>1</sup>

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<sup>1</sup> Murphy JE *et al.* Research-related coursework and research experiences in doctor of pharmacy programs *Am J Pharm Educ.* 2007;**71(6)**:113

Pharmacy is a rapidly changing profession with the addition of more specialist services, technological developments, and changing patient expectations and it is vital that the educational preparation keeps pace with, and even anticipates, these changes in practice<sup>2</sup>. Furthermore, as pharmacy continues its transformation to a clinical profession, pharmacists must be able to access, understand and implement clinical evidence in order to make decisions.

Research suggests that pharmacists recognise the importance of research towards advancing their profession, however they do not perceive their practice role as compatible with leading research<sup>3</sup> and identify a number of barriers to undertaking research when in practice. These include: mindset - pharmacists lack confidence in their own ability to undertake research and there is a perception that research projects in practice are not economically viable; communication - journal articles are not seen as an effective means of communicating with most pharmacists and it is felt that the aims and purposes of research projects are not always clearly communicated; infrastructure - time, money and staffing are all seen as barriers to conducting research and even generating research ideas; and skills and knowledge - most pharmacists feel they lack the necessary skills and knowledge to organise and carry out research activity, and to apply the results of their research to their own practice. In addition, the number of academic pharmacists has declined in the last decade which has led to an imbalance between teaching commitments and research capacity.<sup>4</sup> This needs to be addressed in order to rebuild and sustain research at a capacity where it can support pharmacy practice and medicines use.

## **2.2 The need for profession-led research**

The 2008 White Paper 'Pharmacy in England – Building on strengths, delivering the future' sets out a vision for “delivering further improvements in the pharmaceutical services over the coming years as part of an overall

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<sup>2</sup> Making Pharmacy Education Fit for the Future  
<http://www.rpsgb.org.uk/pdfs/maphedfitforfuturesumm.pdf>

<sup>3</sup> Armour C *et al.* Pharmacists' views on involvement in pharmacy practice research: Strategies for facilitating participation. *Pharmacy Practice* 2007;**5(2)**:59-66

<sup>4</sup> Pharmacy in England; Building on strengths - delivering the future. <http://www.official-documents.gov.uk/document/cm73/7341/7341.pdf>

strategy to ensure safe, effective, fairer and more personalised care”<sup>5</sup>. It is hoped that pharmacy will continue to expand its role in the NHS further by offering advanced and local enhanced services in addition to essential services.

Pharmacy Practice Research broadly aims to support and advance the professional practice and performance of pharmacists by providing a sound evidence base that underpins and demonstrates how pharmacy delivers effective, high quality and value-for-money services. These services encompass everything from dispensing services, health promotion and lifestyle advice, support for self care, disposal of medicines, and MUR services, through to stop smoking schemes, supervised administration, patient group directions, and minor ailment schemes. Research provides evidence for the evaluation of pharmacy services in areas such as: patient and public perceptions and satisfaction; impacts on clinical-effectiveness, safety, patients understanding of their medicine and cost-effectiveness; quality of service provision; value-for-money; impact on workload and flow; and pharmacy staff attitudes.

Future commissioning decisions need to be based on sound evidence of improved health outcomes in the long term, rather than short term outputs. This research should be profession led,<sup>6</sup> i.e. carried out by, or at the very least with the collaboration of, practising pharmacists who, therefore, must possess the necessary research skills.

### ***2.3 Research training in the undergraduate programme and its effectiveness***

The aim of all stages of pharmacy education is to ensure that pharmacists are capable and practise ethically throughout their careers in whatever context. With respect to research skills the European Directive 85/432/EEC and EC

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<sup>5</sup> Pharmacy in England; Building on strengths - delivering the future. <http://www.official-documents.gov.uk/document/cm73/7341/7341.pdf>

<sup>6</sup> PPRT response to the White Paper for Pharmacy 2008  
[www.pprt.org.uk/Documents/TrustNews/Response\\_to\\_the\\_White\\_Paper\\_for\\_Pharmacy\\_270608.pdf](http://www.pprt.org.uk/Documents/TrustNews/Response_to_the_White_Paper_for_Pharmacy_270608.pdf)

Advisory Committee on Pharmaceutical Training dictate that a substantial part of the MPharm degree course must involve the student preparing for, undertaking and analysing the outcomes of experiments, exercises or observations and reaching their own conclusions; and that the student must undertake a significant research project of 3-6 months duration which addresses a research question or problem, involves a critique of research methodology, and contains an analysis of results<sup>7</sup>.

Based on this the RPSGB 'Accreditation of UK Pharmacy Degree Courses' document explains that MPharm graduates will be able to 'undertake critical appraisal of information or conjecture in all forms of presentation' and 'apply appropriate research approaches and methods to manage scientific and practice problems'<sup>8</sup>. There is currently a gap in the research showing how and to what extent these objectives are successfully achieved, for example, how does the research training received influence future pharmacists to use research as a tool for guiding clinical practice and decision making, and how effective is this training in encouraging pharmacists into academia and research?

### **2.3.1 The Research Project**

Studies have shown that academic staff feel that undergraduate research projects can and do make a valuable contribution to the research output of a department, although this is unlikely to be in the form of tangible peer-reviewed research papers, and the number of publications arising from undergraduate project work is universally low.<sup>9</sup> Of course it is acknowledged that the primary purpose of the project is to teach and train students to do research; it is not a results producing exercise. Research projects are sometimes used to pilot larger proposed studies, thereby further supporting

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<sup>7</sup> Prerequisites dictated by European Directive 85/432/EEC and resolutions of the EC Advisory Committee on Pharmaceutical Training.  
<http://www.rpsgb.org/pdfs/eddegnewreq.pdf>

<sup>8</sup> Accreditation of UK Pharmacy Degree Courses.  
<http://www.rpsgb.org/pdfs/eddegnewreq.pdf>

<sup>9</sup> Mottram D *et al.* Evaluation of the current and future provision of undergraduate research projects in UK Schools of Pharmacy. *Pharm Educ.* 2007;**7**:315-323

the continuum of research, and academic staff also find them useful as a means of recruiting for PhD studentships. Further benefits include the development of collaborations with external colleagues and enhancement of the reputation of the school.<sup>10</sup>

At the majority of schools of pharmacy, research projects titles are proposed by staff and allocated by student choice, however a few schools allow the students themselves to originate a project title.<sup>11</sup> Further constraints on project choice include funding - practice based projects are seen as cheaper than laboratory projects, and many schools rely on research funding to subsidise these projects; and staffing levels - most full-time staff are expected to supervise around 3-4 students, and some subject areas (e.g. practice) are very popular but there are not enough staff to meet demand. It is also unclear what level of experience and training is necessary to be an effective research supervisor, and as the number of Schools of pharmacy increase this issue may become particularly acute.

### **2.3.2 Effectiveness of Research Training**

Studies carried out in the US investigating research related coursework and research experiences on the PharmD program have revealed that both faculty and graduates think that the project and coursework is beneficial, and potentially enhances the likelihood of graduates conducting future research.<sup>12,13</sup> Furthermore, participation in a summer research program has been shown to increase the likelihood of a student pursuing a research career path after completing their PharmD degree.<sup>14</sup> Similarly, studies involving UK medical students have demonstrated that those undertaking an intercalated honours year show greater interest in research and laboratory medicine

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<sup>10</sup> Mottram D *et al.* Evaluation of the current and future provision of undergraduate research projects in UK Schools of Pharmacy. *Pharm Educ.* 2007;**7**:315-323

<sup>11</sup> Langley CA *et al.* What purpose does the MPharm research project serve? *Pharm Educ.* 2007;**7**:199-205

<sup>12</sup> Murphy JE, Valenzuela R. Attitudes of doctor of pharmacy graduates of one U.S. college toward required evaluative projects and research-related coursework. *Pharm Educ.* 2002;**2**:69-73

<sup>13</sup> Murphy JE. Faculty attitudes toward required evaluative projects for doctor of pharmacy graduates. *Am J Pharm Educ.* 1997;**61**:73-8

<sup>14</sup> Johnson JA *et al.* A summer research training program to foster PharmD students' interest in research. *Am J Pharm Educ.* 2008;**72**(2):23

careers,<sup>15,16</sup> and that the type of honours year department strongly influences the subsequent choice of speciality.<sup>17</sup>

On the other hand there is the issue of the resources required (both time and cost) to deliver MPharm graduates with research skills. There is an ongoing debate into the balance of science and practice in the MPharm curriculum,<sup>18</sup> and it has been questioned how beneficial shorter and less in-depth projects, which are compulsory but thus limited by available resources, are in terms of achieving educational outcomes.<sup>19</sup> This represents a further need for research into the effectiveness of research training to ensure that any future recommendations and alterations to the MPharm curriculum are evidence based.

### **3. Key areas of research**

There is an apparent lack of engagement with research at practice level, and therefore there is a need to understand how research is taught and embedded at undergraduate level.<sup>20</sup> The Trust has identified a number of priority areas that they are particularly interested in, although these are neither exhaustive nor exclusive.

- How is research taught at undergraduate level and what place does research have in the curriculum?
- What impact do research projects have on student appreciation of research? Does it influence their career choice? Does it influence their use of it as a tool to guide clinical decision making and practice?

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<sup>15</sup> McManus IC *et al.* Intercalated degrees, learning styles, and career preferences: prospective longitudinal study of medical students. *BMJ* 1999;**319**:542-6

<sup>16</sup> Wyllie AH, Currie AR. The Edinburgh intercalated honours BSc in pathology: evaluation of selection methods, undergraduate performance, and postgraduate career. *BMJ* 1986;**292**:232-5

<sup>17</sup> Nguyen-Van-Tam JS *et al.* What happens to medical students who complete an honours year in public health and epidemiology? *Medical Education* 2001;**35**:134-136

<sup>18</sup> Jesson JK *et al.* Science or practice? UK undergraduate experiences and attitudes to the MPharm degree *Pharm World Sci* 2006;**28**:278-83

<sup>19</sup> Murphy JE *et al.* Research-related coursework and research experiences in doctor of pharmacy programs *Am J Pharm Educ.* 2007;**71**(6):113

<sup>20</sup> Workshop Participants & Stakeholder Recommendations for Research Priorities for Pharmacy Practice Research  
[http://www.pprt.org.uk/Documents/ResearchActivity/Workshop\\_Outcomes\\_0309.pdf](http://www.pprt.org.uk/Documents/ResearchActivity/Workshop_Outcomes_0309.pdf)

- How do student research projects contribute to priorities for pharmacy practice research?
- What impact do resources have on the delivery and effectiveness of research projects?

#### **4. *Criteria for determining which applications will be funded***

4.1 Research proposals will be assessed by a panel of referees with academic, policy and service backgrounds. Criteria for determining which proposal is to be funded will be as follows: -

- Focus on the issues identified in this research brief
- Scientific quality; clear research questions, sound design and methodology to address these, analytical strategy likely to produce meaningful (and preferably generalisable) results from the data, integrating with and contributing to existing knowledge and theory.
- Details of public involvement in the project; where applicable, and in accordance with NIHR guidance.
- Fitness and feasibility; the research team is able to carry the project through with clear project management arrangements and realistic objectives and timings, evidence of a suitable research infrastructure with an appropriate mix and seniority of disciplinary expertise and track record.
- All people named on the bid are to be involved in the conduct of the research.
- Demonstrate value for money and impact; propose appropriate resources for the work and consider the likely impact on policy and practice in relation to other research in the field.

4.2 The Trust will favour applications which are innovative and those which enable a timely start. It would also like to hear about applicants' ability to work across organisational and professional boundaries.

## **5. Governance and Ethics**

5.1 Day-to-day management of the work will be provided by the lead investigator and they and their employers should ensure that they identify and are able to discharge their respective responsibilities. All research that involves patients, carers, staff and external data must be subject to ethics committee consent (LREC/MREC etc).

5.2 Please ensure that your proposal complies with the Research Governance Framework, which can be found at the Department of Health's website:

[http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH\\_4108962](http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4108962)

## **6. Outputs and Timetable**

6.1 A steering group comprising professional stakeholders from health policy and education will be set up to support the research process. The group will meet periodically over the lifetime of the research in order to provide overall project management, advice and support to the research team.

6.2 The project timetable from start to completion should be no more than 18 months and the Trust would be looking for the project to commence in the Spring of 2010 with an interim report available in the third quarter of 2010 and a publishable final research report provided to the Pharmacy Practice Research Trust in the third quarter of 2011.

## **7. Application Process**

7.1 Please note before submitting applications, applicants are expected to have discussed their proposals with their own or any other body whose cooperation will be required in the conduct of the research.

7.2 Copies of the application forms can be obtained from:

Charlotte Coates ([charlotte.coates@rpsgb.org](mailto:charlotte.coates@rpsgb.org), 020 7572 2278), or from our website ([www.pprt.org.uk/](http://www.pprt.org.uk/)).

Five copies of the completed full application form should be returned to the following address by **close of business on 29<sup>th</sup> January 2010**:

Charlotte Coates  
Senior Research Administrator  
Pharmacy Practice Research Trust  
1 Lambeth High Street  
London  
SE1 7EH

- 7.3 Applications will be subject to peer review and the final decision will be made by the Pharmacy Practice Research Trust.
- 7.4 The project will be overseen by the Research Strategy Coordinator at the Pharmacy Practice Research Trust and the research team will be expected to submit progress reports during the project. The project will be covered by a contractual agreement between the Trust and the successful applicant/institution (an example contract can be provided if required in advance of commissioning).