Pharmacy Education Conference

Manchester 2016

Volume of Abstracts

Manchester Pharmacy School
Introduction

This booklet contains the abstracts of the presentations and posters from the third annual Pharmacy Education Conference at the Manchester Pharmacy School on 27th June 2016. The abstracts are also available online at: http://www.pharmacy.manchester.ac.uk/about/discover/events/pharmacy-education-conference/

<table>
<thead>
<tr>
<th>Abstract Number</th>
<th>Abstract title and Authors</th>
<th>Page Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Predicting success: A level or GCSE Authors: Akbari M, Purkayastha P, Marshal K, Hall J. <em>Manchester Pharmacy School, University of Manchester.</em></td>
<td>p.1</td>
</tr>
<tr>
<td>2</td>
<td>The Impact of the “Flipped Classroom” Instructional Model on MPPharm Students in Two Pharmacy Schools in the UK Authors: Mona Almanasef¹, Angel Chater¹, Jane Portlock² ¹<em>UCL School of Pharmacy, ²School of Pharmacy and Biomedical Sciences, University of Portsmouth</em></td>
<td>p.2</td>
</tr>
<tr>
<td>3</td>
<td>Pharmacy leadership and management: reflections on team working and peer coaching Authors: Claire Anderson, Kimberley Sonnex, Sarah Brydges, Vibhu Solanki, Matthew Boyd. <em>University of Nottingham.</em></td>
<td>p.3</td>
</tr>
<tr>
<td>4</td>
<td>Promoting the integration of science and practice in a interdisciplinary practical on substance misuse for third year pharmacy students Authors: Katrina Bicknell, Ben Whalley and Katja Strohfeldt-Venables. <em>University of Reading.</em></td>
<td>p.4</td>
</tr>
<tr>
<td>5</td>
<td>Integration with others: development of pedagogy in the MPPharm to promote students’ learning about as well as with each other Authors: Stephanie Bridges, Helen Boardman. <em>School of Pharmacy, University of Nottingham.</em></td>
<td>p.5</td>
</tr>
<tr>
<td>6</td>
<td>Integration with others: the role of group work in the development of pharmacy students’ intercultural capability and values Author: Stephanie Bridges. School of Pharmacy, University of Nottingham</td>
<td>p.6</td>
</tr>
<tr>
<td>8</td>
<td>Understanding different perspectives: A Mental Health Root Cause Analysis Workshop with Midwifery and Pharmacy Students Authors: Nicola Brown, <em>Manchester Pharmacy School.</em> Christine Furber, <em>School of Nursing and Midwifery, University of Manchester.</em></td>
<td>p.8</td>
</tr>
<tr>
<td>9</td>
<td>The use of Smallvoice in pharmacy to manage drug-drug interactions Authors: Nadiya Butt, Steve Ellis and Jill Barber. <em>Manchester Pharmacy School, University of Manchester.</em></td>
<td>p.9</td>
</tr>
<tr>
<td>10</td>
<td>Use of peer-teaching and reflection in preparing Year 4 MPPharm students as educators Authors: Dr Sue LF Chan, Dr Li-Chia Chen Mr Gautam C Paul and Prof Claire Anderson. <em>University of Nottingham.</em></td>
<td>p.10</td>
</tr>
<tr>
<td>Abstract Number</td>
<td>Abstract title and Authors</td>
<td>Page Number</td>
</tr>
<tr>
<td>-----------------</td>
<td>-----------------------------</td>
<td>-------------</td>
</tr>
<tr>
<td>11</td>
<td>Developing Technological Supports in Conducting an Oral Examination for Assessing Pharmacy Students’ Pharmaceutical Care Management Skills Authors: Dr Li-Chia Chen, Mr Gautam C Paul, Dr Sue LF Chan, and Prof Claire Anderson. <em>University of Nottingham</em></td>
<td>p.11</td>
</tr>
<tr>
<td>12</td>
<td>Implementation of an Oral Examination for Assessing Pharmacy Students’ Pharmaceutical Care Management Skills Authors: Dr Li-Chia Chen, Mr Gautam C Paul, Dr Sue LF Chan, and Prof Claire Anderson. <em>University of Nottingham</em></td>
<td>p.12</td>
</tr>
<tr>
<td>13</td>
<td>Impact of Community Pharmacy Placements on Masters of Pharmacy (MPharm) Students Authors: Ying Ying Choi, Victoria Silkstone, Sally Jacobs. <em>Manchester Pharmacy School, University of Manchester.</em></td>
<td>p.13</td>
</tr>
<tr>
<td>14</td>
<td>An Evaluation of Interprofessional Learning (IPL) Between Medical and Pharmacy Students in a Primary Care Setting Authors: Mrs Helen Cook, Dr Duncan Petty, Dr Leanne Roberts, Dr Jon Silcock (<em>Bradford School of Pharmacy</em>) and Dr Michael Scales (<em>School of Medicines, Leeds University</em>).</td>
<td>p.14</td>
</tr>
<tr>
<td>15</td>
<td>A comparison of the outcomes of inter-professional learning. Authors: Dr Margaret Culshaw¹, Dr John Stephenson², Dr Stephen Hemingway³ and Dr Sarah Hoye⁴. ¹<em>Department of Pharmacy, University of Huddersfield.</em> ²<em>School of Human and Health Sciences, University of Huddersfield.</em> ³<em>Huddersfield Royal Infirmary</em></td>
<td>p.15</td>
</tr>
<tr>
<td>16</td>
<td>Reversing the learning. Pharmacy students support the teaching and assessment of calculations in a Children’s Hospital. Authors: Dr Margaret Culshaw¹, Rachel Bailey¹, Sophie Wiseman¹, Mrs Elizabeth Cawthorne². ¹<em>Department of Pharmacy, University of Huddersfield</em> ²Pharmacy Department, <em>Sheffield Children’s Hospital</em></td>
<td>p.16</td>
</tr>
<tr>
<td>17</td>
<td>The experiences of Queen’s University Belfast MPharm Students of the Pre-Registration recruitment process Authors: Cunningham, J*; Barry, J; Holden, P and Haughey, S. <em>School of Pharmacy, Queen’s University Belfast</em> (<em>Level 4 MPharm student</em>)</td>
<td>p.17</td>
</tr>
<tr>
<td>18</td>
<td>Development of an Experiential Learning Programme for Pharmacy Students Authors: Donovan Ga, Byrne Ta, Rokib, Ta, Moffitt Ka,b. ¹<em>University of Sunderland, Sunderland</em> ²<em>Whickham Pharmacy, Whickham</em></td>
<td>p.18</td>
</tr>
<tr>
<td>19</td>
<td>Why don’t students use feedback? Authors: Sophie Dutta, Maria Ali, Maryam Alsaeid, Steve Ellis, Jill Barber. <em>Manchester Pharmacy School, University of Manchester.</em></td>
<td>p.19</td>
</tr>
<tr>
<td>20</td>
<td>Collaborating for consultation: an interprofessional approach to developing communication skills Authors: Fattah, L., Shah, L., Chung, O., Green, S. <em>Central Manchester NHS Foundation Trust / University of Manchester</em></td>
<td>p.20</td>
</tr>
<tr>
<td>21</td>
<td>“Physical assessment and history taking as part of the MPharm. What do students think?” Authors: Mr Ryan Ferbrache, Mr Michael Leech and Mrs Helen Hull. <em>University of Portsmouth.</em></td>
<td>p.21</td>
</tr>
<tr>
<td>Abstract Number</td>
<td>Abstract title and Authors</td>
<td>Page Number</td>
</tr>
<tr>
<td>-----------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-------------</td>
</tr>
</tbody>
</table>
| 22              | Technology-enhanced laboratory (TEL) sessions for Masters of Pharmacy (MPharm) students to promote active learning: identification and management of dysrhythmias  
Authors: Dr Rajendran Gopalan, Professor Timothy Martin Palmer, Dr Bishwa Tuladhar, Mr Darren Brown, Dr Diana Wood. University of Bradford. | p.22        |
| 23              | “Suicide: the public, the patient, the medicine and the pharmacist”-an evaluation of student perceptions  
Author: Hayley Gorton. Manchester Pharmacy School, University of Manchester. | p.23        |
| 24              | Assessing Personal & Academic Development Portfolios (PADP): Mission Impossible?  
Authors: Daniel T. Grant, Ravi K. Savania and Rebecca J. Green. University of Reading | p.24        |
| 25              | Integrating and Inspiring International Students  
Author: Dr Lezley-Anne Hanna, Dr Raj Thakur. Queen’s University Belfast (School of Pharmacy) | p.25        |
| 26              | Using debate as a tool to integrate the teaching of science and practice-based pharmacy ethical issues  
Authors: Dr Lezley-Anne Hanna  
Other authors: Ms Jhanne Barry, Dr Louise Carson, Dr Janine Cooper, Dr Garry Laverty, Dr Paul McCague. Queen’s University Belfast (School of Pharmacy) | p.26-27     |
| 27              | The Introduction of an Accredited Community Pharmacy Placement Programme for MPharm Undergraduate Students  
Authors: Holden P, Hall M, Parsons C, Hanna LA  
School of Pharmacy, Queen’s University Belfast, 97 Lisburn Road, BT9 7BL | p.28        |
| 28              | Learning together to work together – a pilot for multidisciplinary team-based interprofessional education  
Author: Louise Hughes, Jennifer Acton, Andreas Artemiou, Elizabeth Bowring-Loscock, Rhiannon Evans, Colin Powell, Hannah Shaw. Cardiff University  
School of Pharmacy and Pharmaceutical Sciences, School of Optometry and Vision Sciences, School of Mathematics, School of Healthcare Sciences, School of Social Sciences, School of Medicine, School of Biosciences | p.29        |
| 29              | Benefits of Peer Assisted Learning (PAL) for PAL leaders  
Author: Mrs Helen Hull and Miss Hollie Broome. University of Portsmouth. | p.30        |
| 30              | Impact of Peer Assisted Learning (PAL) on MPharm students’ transition to university and preparedness for assessments  
Authors: Mrs Helen Hull and Miss Hollie Broome. University of Portsmouth. | p.31        |
| 31              | Interprofessional education – What can we learn from practice?  
Authors: Andrew Jenkins, Louise Hughes, Efi Mantzourani, Mathew Smith. Cardiff University. | p.32        |
| 32              | Integration of teaching of chemistry, pharmacology, formulation, drug delivery and clinical and practice considerations using beta 2 agonists  
Authors: Dai John & Claire Simons. Cardiff University | p.33        |
<table>
<thead>
<tr>
<th>Abstract Number</th>
<th>Abstract title and Authors</th>
<th>Page Number</th>
</tr>
</thead>
</table>
| 33              | **Flipping Critical Appraisal: Integrating NHS Professional Development Tools into a Postgraduate Flipped Classroom**  
Authors: Matthew D Jones¹ and Tiffany Barrett¹². ¹University of Bath, ²South West Medicines Information and Training.                                                                                   | p.34        |
| 34              | **Investigating Student Perceptions of Feedback**  
Authors: Mr Alykhan Kassam & Dr Josie Fraser. Bradford School of Pharmacy, University of Bradford.                                                                                                               | p.35        |
| 35              | **Developing and evaluating a pilot mental health hospital placement for third year pharmacy students at Manchester Pharmacy School (MPS)**  
Authors: Richard N Keers, Clinical Lecturer in Pharmacy¹²³  
Petra Brown, Chief Pharmacist³  
¹Manchester Pharmacy School, The University of Manchester, Manchester, UK;  
²NIHR Greater Manchester Primary Care Patient Safety Translational Research Centre, Manchester Academic Health Sciences Centre (MAHSC), The University of Manchester, Manchester;  
³Medicines Management Team, Manchester Mental Health and Social Care NHS Trust, Manchester. | p.36        |
| 36              | **Simulation – friend or foe? An investigation into student perceptions of clinical simulation as a teaching method for pharmacy undergraduate education.**  
Authors: Mr Michael Leech, Prof. Jane Portlock and Dr Adrian Hunt. University of Portsmouth.                                                                                                           | p.37        |
| 37              | **Aston University Integration with the West Midlands Clinical Pharmacist Network**  
Authors: Miss Natalie Lewis (Aston University) and Mr Puneet Sharma (University Hospitals Coventry and Warwickshire NHS Trust)                                                                                   | p.38        |
| 38              | **Optimisation of a sari filter.**  
Authors: Sophina Mahmood, Jill Barber and William Sampson. University of Manchester.                                                                                                                                 | p.39        |
| 39              | **“It feels like being a ‘real’ pharmacist“: developing a community health clinic for pharmacy undergraduate students in a General Practitioner practice**  
Authors: Dr Efthymia Mantzourani¹, James Morgan³, Dr Catherine Rothwell³, Dr Jeremy. Black², Dr Keziah Maizey³. ¹Cardiff School of Pharmacy and Pharmaceutical Sciences, Cardiff. ²Llandaff North Medical Centre, Cardiff. | p.40        |
| 40              | **“Teaching Clinical Skills to prepare pharmacists about to work in the Emergency Department”**  
Authors: Martin SJ, Steinke DT and Cutts C. Manchester Pharmacy School, University of Manchester                                                                                                           | p.41        |
| 41              | **“Using a combined approach with simulation increases the competency and skills of the pharmacists that work in the Emergency Department”**  
Authors: Martin SJ, Dwyer P, Cutts C and Steinke DT. Manchester Pharmacy School, University of Manchester                                                                                              | p.42        |
| 42              | **Integrating workplace learning: Evaluating workplace tutor arrangements for postgraduate learners**  
Author: Andrew Mawdsley. Manchester Pharmacy School, University of Manchester.                                                                                                                                       | p.43        |
<table>
<thead>
<tr>
<th>Abstract Number</th>
<th>Abstract title and Authors</th>
<th>Page Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>43</td>
<td>Evaluation of a flipped classroom approach for delivery of a pharmacokinetics course. Authors: Paul J. McCague, Amy Wilson School of Pharmacy, Queen’s University Belfast</td>
<td>p.44</td>
</tr>
<tr>
<td>44</td>
<td>Student participation in extra curricula education opportunities Author: Ricarda Micallef, Dr Reem Kayyali. Kingston University</td>
<td>p.45</td>
</tr>
<tr>
<td>45</td>
<td>MPPharm students perceptions of how Clinical Pharmacy Practice Hospital Placements allow integration of the MPPharm course at the Manchester Pharmacy School Authors: Diane Mitchell, Layla Fattah, Sarah McBride, Lara Shah Clinical Tutors at Manchester Pharmacy School (MPS) and Central Manchester University Hospitals NHS Foundation Trust Debra Morris, Holly Devine Clinical Tutors at MPS and Salford Royal NHS Foundation Trust Adele McKellar, Caroline Mitchell, Lisa Blackburn Clinical Tutors at MPS and University Hospital of South Manchester NHS Foundation Trust</td>
<td>p.46</td>
</tr>
<tr>
<td>46</td>
<td>Academic staff perspectives on innovative assessment in MPPharm programme Authors: Dr Julie D Morgan, Miss Piril Erel. University of Bradford.</td>
<td>p.47-48</td>
</tr>
<tr>
<td>47</td>
<td>Student perspectives on subject integration in the MPPharm 2012 curriculum Authors: Dr Julie D Morgan, Mr Jim Johnston. University of Bradford.</td>
<td>p.49</td>
</tr>
<tr>
<td>48</td>
<td>Pharmacists Are from Mars, Nurses are from Venus: Nurse visits in the MPPharm curriculum Authors: Bob Morris¹, Alison Gaskell². ¹Liverpool John Moores University ²Practice Education Facilitator Southport and Ormskirk Hospital NHS Trust</td>
<td>p.50</td>
</tr>
<tr>
<td>49</td>
<td>Brazilian stakeholders’ perspectives about pharmaceutical human resources training for the public sector. Authors: Silvana Nair Leite¹,³, Fernanda Manzini¹, Debora Melecchi¹, Margo Karnikowski¹, Celia Chaves³, Ronald Ferreira dos Santos¹. ¹Escola Nacional dos Farmaceuticos; ²FENAFAR; ³Federal University of Santa Catarina – Brazil.</td>
<td>p.51</td>
</tr>
<tr>
<td>50</td>
<td>Schools of pharmacy in Brazil, 2003-2013: increasing numbers but unequal geographical distribution Authors: Silvana Nair Leite, Paulo Roberto Boff, Bruna Maciel de Alencar, Dayde Lane Mendonca, Claire Anderson. Federal University of Santa Catarina; University of Brasilia, The University of Nottingham.</td>
<td>p.52</td>
</tr>
<tr>
<td>51</td>
<td>Clinical Cultural Competency and Knowledge of Health Disparities Amongst Pharmacy Students Author: Zachariah Nazar, Farhana Begum. University of Portsmouth</td>
<td>p.53</td>
</tr>
<tr>
<td>52</td>
<td>Preparing students for professional practice, supporting and integrating incremental experiential learning. Authors: Michelle O’Driscoll, Ronan Quirke, Dr Laura Sahm &amp; Dr Eileen M. O’Leary. University College Cork</td>
<td>p.54</td>
</tr>
<tr>
<td>Abstract Number</td>
<td>Abstract title and Authors</td>
<td>Page Number</td>
</tr>
<tr>
<td>-----------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-------------</td>
</tr>
<tr>
<td>53</td>
<td>Preparing students for professional practice: integrating the CPD requirement of professional pharmacists into our curriculum for undergraduate pharmacy students Authors: Dr Eileen M. O’Leary, Dr Kevin Murphy, Dr Margaret Bermingham &amp; Dr John J. Keating. <em>School of Pharmacy, University College Cork.</em></td>
<td>p.55</td>
</tr>
<tr>
<td>54</td>
<td>The Framework for Discussion (FFD): A useful tool to promote integration and independent-study in Problem-based learning (PBL) Author: Dr Helen Paine. <em>Department of Pharmacy and Pharmacology, University of Bath, Claverton Down, Bath. BA2 7AY</em></td>
<td>p.56</td>
</tr>
<tr>
<td>55</td>
<td>Evaluating the impact of a final-year project on health promotion and public engagement on student’s perceived confidence for demonstrating skills in practice. Authors: Harsha Parmar, Jenny Hughes, Victoria Tavares, Ruth Ledder, Andrew Mc Bain, Jeff Penny, Mary Rhodes, Victoria Silkstone and Kaye Williams. <em>University of Manchester.</em></td>
<td>p.57</td>
</tr>
<tr>
<td>56</td>
<td>Development of an examination to assess the clinical assessment of prescriptions by 4th year pharmacy students Authors: Mr Gautam C Paul, Dr Sue LF Chan, Dr Li-Chia Chen and Prof Claire Anderson. <em>University of Nottingham</em></td>
<td>p.58</td>
</tr>
<tr>
<td>57</td>
<td>Shadowing a Practice Pharmacist in General Practice: A Pilot Placement Author: Sadia Qayyum. <em>Manchester Pharmacy School, University of Manchester.</em></td>
<td>p.59</td>
</tr>
<tr>
<td>58</td>
<td>Impact of Industrial Pharmacy Site Visits on Masters of Pharmacy (MPharm) Students Authors: Victoria Silkstone, Sally Jacobs (<em>Manchester Pharmacy School</em>) and Matt Bunker (<em>AstraZeneca</em>)</td>
<td>p.60</td>
</tr>
<tr>
<td>59</td>
<td>Using student blogs for reflective learning, engagement and evaluation Authors: Silverthorne, J and Mawdsley, A. <em>Manchester Pharmacy School, University of Manchester.</em></td>
<td>p.61</td>
</tr>
<tr>
<td>60</td>
<td>Student perspectives of scenarios in a simulated pharmacy business module Authors: Vibhu Solanki, Kimberley Sonnex, Sarah Brydges, Claire Anderson, Matthew Boyd. University of Nottingham</td>
<td>p.62</td>
</tr>
<tr>
<td>61</td>
<td>Inter-professional learning opportunities for pharmacy and speech and language students Authors: Stratham L, Nazlie H, Scott L, Hardisty J. <em>University of Sunderland, Newcastle University</em></td>
<td>p.63</td>
</tr>
<tr>
<td>62</td>
<td>Exploring the management of infections and the prevention and treatment of sepsis in an inter-professional context. Authors: Louise Stratham, Lesley Scott, Claire Guilding, Elsa Randles, Alan Green, Jessica Hardisty. <em>University of Sunderland, Newcastle University.</em></td>
<td>p.64-65</td>
</tr>
<tr>
<td>63</td>
<td>What do students expect from integration? An exploration of student views and expectations about a new integrated pharmacy programme Authors: Judith Strawbridge, Mark Philbin, Paul Gallagher. <em>Royal College of Surgeons in Ireland.</em></td>
<td>p.66</td>
</tr>
<tr>
<td>Abstract Number</td>
<td>Abstract title and Authors</td>
<td>Page Number</td>
</tr>
<tr>
<td>-----------------</td>
<td>--------------------------------------------------------------------------------------------</td>
<td>-------------</td>
</tr>
<tr>
<td>64</td>
<td>Observed Structured Clinical Examination (OSCE) Assessor Training Authors: Victoria Tavares, Mary Rhodes. University of Manchester</td>
<td>p.67</td>
</tr>
<tr>
<td>65</td>
<td>Exploring how MPharm students respond to real-life examples of breaking the rules for patient safety in community pharmacy Authors: Thomas, C.E.L, Worrall, K &amp; Silkstone, V. University of Manchester</td>
<td>p.68</td>
</tr>
<tr>
<td>66</td>
<td>A qualitative evaluation of a formative skills-based assessment using students as partners in the learning process. Authors: Dr Jon Waterfield &amp; Dr Peter Rivers. De Montfort University.</td>
<td>p.69</td>
</tr>
<tr>
<td>67</td>
<td>Using case studies to develop students’ higher order thinking in an integrated research skills unit Authors: Willis SC, Demonacos C. Manchester Pharmacy School, University of Manchester</td>
<td>p.70</td>
</tr>
<tr>
<td>68</td>
<td>Evaluation of individualised dispensing support for pharmacy students Authors: Mr Adam Yates, Dr Margaret Culshaw. Department of Pharmacy, University of Huddersfield</td>
<td>p.71</td>
</tr>
</tbody>
</table>
1. Predicting success: A level or GCSE

Authors: Akbari M, Purkayastha P, Marshal K, Hall J. Manchester Pharmacy School, University of Manchester.

Background: Attaining a Pharmacy degree requires a considerable investment in time, effort and money on the part of the student and universities derive a large proportion of their income from tuition fees. It is not in the university or in the student’s interests if students fail to progress on their chosen programme. Schools are required to maintain high standards as part of the professional accreditation process and therefore setting entry requirements at the appropriate level is important. Previous studies have investigated the impact of A-levels on progression.

Method: The entry qualifications, progression and final degree mark for an MPharm cohort (2011-2015) from a single pharmacy school was anonymised to maintain confidentiality. Progression was assessed by counting the number of resit examinations a student had during the four years and whether they achieved their degree within the four years. Students who arrived with non-standard qualifications and those who transferred to a different cohort were excluded from the study. The statistical significance of the correlation between A-level/GCSE grades and degree mark was evaluated by a one-way ANOVA test. If there was a difference, a T-test identified where the difference lay. A chi-squared test compared progression with different A-level/GCSE grades.

Results: Students that did not study A-level maths or biology were more likely to have at least one resit (P-value= 0.0000000417). There was a significant positive correlation between A-level grades in Biology and chemistry and final degree mark (Biology P-value=0.000067, Chemistry P-value=0.04). However, there was no link between A-level physics or any of the GCSE subjects and student progression or degree mark.

Conclusion: A-level chemistry, biology and maths are better predictors of student progression and degree mark than A-level physics or GCSE results. Further work is required to ascertain whether additional targeted support would impact on the progression of students without biology.

Reference:
2. The Impact of the “Flipped Classroom” Instructional Model on MPharm Students in Two Pharmacy Schools in the UK

**Authors:** Mona Almanasef\(^1\), Angel Chater\(^1\), Jane Portlock\(^2\)

\(^1\)UCL School of Pharmacy, \(^2\)School of Pharmacy and Biomedical Sciences, University of Portsmouth

**Background:** A “flipped classroom” is one of the innovative approaches to teaching that utilises technology to shift the traditional lecture outside the scheduled class time and uses the face-to-face time to engage students in interactive activities\(^1\). Robust research studies on this topic are rather limited. There is a lack of consensus of what comprises a flipped classroom format. However, in most studies, pre-recorded lectures were used as a means to deliver the content of the course and as a tool for students to prepare for in-class activities\(^1, 2, 3, 4\). This study set out to assess the feasibility, acceptability and effectiveness of the “flipped classroom” teaching format on MPharm students in two pharmacy schools in the UK: UCL School of Pharmacy and the School of Pharmacy and Biomedical Sciences at University of Portsmouth.

**Description of work:** In this experimental mixed method research, year four MPharm students were allocated to attend a teaching session on “rheumatoid arthritis” into two groups; the flipped classroom group and the lecture group. The flipped classroom group were required to do pre-class preparation including: viewing online lecture and/or completing reading materials, and completing online quiz. The session time was spent on engaging students in case studies on a rheumatoid arthritis patient. A formative test was conducted at the end of both teaching sessions using turning point technology. A survey was used to gather information about students’ perception of the teaching format used. Focus groups were carried out to further assess student perception of the flipped classroom teaching method.

**Proposed evaluation:** Quantitative data analysis will be conducted on the student survey to compare student perception of the flipped classroom with the traditional method of teaching. Thematic data analysis will be employed on the focus group sessions using Nvivo. The results of the formative assessment will be compared between the two groups for statistical differences.

**References:**
3. Enfield, J., 2013. Looking at the Impact of the Flipped Classroom Model of Instruction on Undergraduate Multimedia Students at CSUN. TECH TRENDS -Wash. DC- 57, 14–27
3. Pharmacy leadership and management: reflections on team working and peer coaching


Background: In line with GPhC standards, students require a platform to learn, practise and develop their leadership and team working skills. The Pharmacy Leadership and Management (PLM) module provides an experiential learning simulation drawing on leadership and management skills coupled with clinical problem solving. Teams of six students run their own primary care based pharmacy business competing against each other, based on a successful model currently run by the GIMMICS consortia of universities across Europe. Part of the module assessment is to produce nine short reflections (written and video-based) in line with the GPhC learning outcomes. The aim of the study was to analyse the student reflections on two of the nine outcomes 1) “contribute to the development of other members of the team through coaching and feedback” and 2) “contribute to the development and support of individuals and teams”.

Method: Thematic content analysis using a constant comparison approach of student written or video reflections were undertaken for the reflections on the two outcomes.

Results: The analysis highlighted a number of key themes about how students reviewed fellow team members’ performance of tasks including telephone queries, responding to requests for advice, smoking cessation counselling, clinical checking and then developed each other using coaching and feedback. Themes included working with their fellow team members to improve the overall performance of the team, supporting individual skill development, developing solutions and implemented change initiatives. Examples include:

“When coaching I was slightly nervous about providing feedback and didn’t want to patronise my colleagues. I take the development of my team seriously and could have stressed some feedback points better.”

“I discussed the important counselling points ... this really helped build her confidence prior to the patient returning for her medication”

Conclusion: The simulation provides a safe and effective environment for students to practice and develop their leadership, coaching and team working skills which has been demonstrated by the student’s reflections.

4. Promoting the integration of science and practice in a interdisciplinary practical on substance misuse for third year pharmacy students

Authors: Katrina Bicknell, Ben Whalley and Katja Strohfeldt-Venables. University of Reading.

Background: Integration in Pharmacy education strives to develop graduates with an established ability to apply their broad science knowledge base to inform their clinical practice. Design and delivery of a fully integrated Pharmacy curriculum is challenging but there is growing evidence that integration promotes retention and a capacity to use fundamental information in real-life situations. This paper describes the development of an interdisciplinary practical on substance misuse that aimed to encourage students to put detailed scientific information in context.

Description of work: A small multidisciplinary academic team with expertise in pharmacology, pharmaceutical chemistry and pharmacy practice collaborated to develop a practical on cannabis use and misuse for third year Pharmacy students. The practical was designed to be interdisciplinary in terms of Harden’s Integration ladder, with content combined with no reference to different Pharmacy disciplines. Working from the scenario that a herbal substance suspected to be cannabis had been seized, students were required to use their science and practice knowledge to identify the substance and establish how drug use might be confirmed. Integrated content in this practical session included controlled drug handing, storage and record keeping, the General Pharmaceutical Council’s code of conduct and raising concerns procedures, analytical chemistry techniques and drug analysis, drug testing methods, pharmacokinetics (bioavailability, drug metabolism and elimination), manufacturing medicines from biological sources and therapeutic use of cannabis extract.

Proposed evaluation: Student views on the relevance and impact of this integrated practical session to their learning will be specifically evaluated using the formal student module evaluation process. Student attainment in examinations requiring students to bring together and apply scientific information in context will also be scrutinised with content taught in discipline-led sessions compared to that taught in fully integrated sessions. Student engagement and informal feedback from students following the practical session was very positive.

References
5. Integration with others: development of pedagogy in the MPharm to promote students’ learning about as well as with each other

Authors: Stephanie Bridges, Helen Boardman. School of Pharmacy, University of Nottingham

Background: Undergraduate multicultural group working can have a significant effect on students’ sense of belonging, friendships and development of intercultural capability. A curricular space providing opportunity for collaboration and exchange can have a profound and positive effect upon development of students’ personal and professional outlook and values. Conversely, ill-will caused through negative experiences can affect students’ attitudes, through tensions, exclusion and dissatisfaction – creating or reinforcing cultural stereotyping. Additionally, our course relies on a significant amount of (assessed) group working within the fourth year, so it is essential that foundations are laid in earlier years. Careful management of multicultural collaborative working is required, in order to create an environment wherein students can develop greater mutual understanding both as undergraduates and for their future careers and lives.

Description of work: Semi-structured interviews with current 2015-16 first and third year students have explored experiences and perceptions of interactions with others, particularly through group work, and the nature of course friendships. Evaluation - of change in attitudes and intercultural capability from first to third year and of factors which helped or hindered relationships and intercultural capability - suggests that students value and desire greater opportunity to learn with others different from themselves.

Changes to pedagogy within the first year will be made in the light of findings, to promote students’ learning, not only with each other but also about each other, as a means of becoming more interculturally capable – vital for their role within pharmacy serving a diverse patient population and working within diverse teams. As an action research project, these changes will then be evaluated as above, informing further potential changes in the first and subsequent years of the course.

Proposed evaluation: Interviews with the subsequent cohort to measure the effect of changes. In the light of findings, re-think changes made within first year and / or introduce successful changes in higher years of the MPharm. The process will be similarly followed through in subsequent years of the course.
Integration with others: the role of group work in the development of pharmacy students’ intercultural capability and values

Author: Stephanie Bridges. School of Pharmacy, University of Nottingham

Background: Pharmacists serve a diverse population of patients, working in multi-professional, multi-skilled and multi-cultural teams. This research therefore explored how undergraduate group work might contribute to development of intercultural professional and personal values.

Method: Semi-structured interviews with 44 home and international pharmacy undergraduates explored their experiences of an international educational environment. Development of students’ intercultural values was framed and evaluated using the ‘capability approach’, which promotes individuals’ opportunity and agency to be or do what is considered of value. A theoretically and empirically-informed ‘capability set’ which provided a descriptive framework for being interculturally-aware was formulated, encompassing 4 overarching capabilities, against which interview data was analysed.

Results: Analysis of data against the capability set descriptors showed how group work affected the acquisition of intercultural capability. For students who rated highly, group work had impacted positively on capability development through promoting agency, mutual learning and sharing; a space wherein students could develop capabilities for their future professional and personal lives. Firstly it forced students out of comfort groups and into conversation with others, which proved foundational in paving the way to development of other capabilities. Secondly, students learnt to work with others, seen as training for their careers and lives. This enabled them to be challenged but to recognise difference and the value in working with each other. When group work functioned badly, not only were opportunities for intercultural interactions missed, but unresolved differences caused tensions, exclusion and dissatisfaction. This was illustrated by low ratings against the capability set.

Conclusion: Group working can support or hinder intercultural capability. A curricular space providing opportunity for collaboration and exchange, for some students had a profound and positive effect upon development of their personal and professional outlook and values. Conversely, the alienation and ill-will caused through negative experiences can affect students’ attitudes for their future careers and lives. Careful management of multicultural collaborative working is required, in order to structure meaningful tasks in a safe environment wherein students can integrate their knowledge and understanding of pharmacy alongside their knowledge and understanding of others – informing the development of their personal and professional selves.

References:
7. Pharmacy student’s perception of the benefits of participating in a clinical checking simulation with medical students.

**Authors:** Nicola Brown, *Manchester Pharmacy School.*

**Background:** A full cohort of final year pharmacy students simulated electronic clinical checking with medical students. Clinical and legal problems were discussed between professions. A safe and appropriate final decision was required under time pressures.

**Aim:** To establish pharmacy students perceived benefits of undertaking a clinical-check interprofessional interaction.

**Method:** A post simulation questionnaire evaluated the student experience and perceptions. An open question addressing the benefits of taking part in the workshop was thematically analysed.

**Results:** Response rate was 130 (92%). Knowledge and skill development were the perceived benefits of the workshop.

Knowledge themes included
1. Understanding roles: “it made me realise how important the role of a pharmacist is”
2. Clinical knowledge: “we could learn from each other and practice real life scenarios”.

Skills included:
1. Communication: “knowing how to communicate with other professionals groups effectively”
2. Knowing limitations: “understanding my role and limitations within a multidisciplinary team”
3. Applying guidelines: “good to be able to use guidelines and communicate with the medics”
4. Confidence: “good to communicate with medics and be more confident in that”, “confidence in conveying ideas”
5. Workload management: “we were able to experience what working with different professionals will be like under a time limit”
6. Decision making: “I understood the need to make full recommendations rather than just pick out the problem”

**Conclusion:** Many of the benefits identified are set out in the Standards for Initial Education and Training\(^1\). The interprofessional simulation covers a range of skills required of the pharmacist indicating educational benefit.

**References:**
8. Understanding different perspectives: A Mental Health Root Cause Analysis Workshop with Midwifery and Pharmacy Students

Authors: Nicola Brown, Manchester Pharmacy School. Christine Furber, School of Nursing and Midwifery, University of Manchester.

Background: A joint workshop was conducted in February 2016 between final year pharmacy and midwifery students. Students performed a root cause analysis for a bipolar patient who received misinformation on the safety of medication in pregnancy due to poor communication, resulting in deterioration in mental health. Students had access to a series of resources from the patient journey to mimic an investigatory panel.

Aim: To identify if an interprofessional workshop between final year pharmacy and midwifery students allows students to understand the benefits of different perspectives that healthcare professionals bring to patient care.

Method: A questionnaire was distributed at the end of the workshop developed from the RIPLS\(^1\) scale and modified to incorporate the expected inter-professional outcomes. Extra open questions addressing the benefits, challenges and change in practice to capture unexpected inter-professional outcomes. Open question were thematically analysed.

Results: 103 (73%) of the pharmacy cohort and 43 (68%) of the midwifery cohort responded. The pharmacy students rated understanding the benefits of different perspectives as 4.38, midwifery students as 4.63 on a scale of 1-5 with 5 being strongly agree. Midwives highlighted they would change their practice as a result of the workshop to improve communication within the midwifery team, multidisciplinary team and woman through clear documentation and follow up of referrals: “ensure follow up and interdisciplinary communication” Pharmacy students identified they had a greater appreciation of the midwifery role and responsibility: “appreciate the role and duties of other health care professionals”; “ensure I communicate properly with healthcare professionals”.

Conclusion: Many serious case reviews highlight the lack of communication between agencies as one of the causes for patient harm. Modelling a patient journey interacting with different professionals can help students appreciate the roles of others and the value of multi-professional communication with the aim of preventing future patient harm.

References
9. The use of Smallvoice in pharmacy to manage drug-drug interactions

Authors: Nadiya Butt, Steve Ellis and Jill Barber. Manchester Pharmacy School, University of Manchester

Background: Polypharmacy is common and the associated pill burden is often related to increasing drug-drug interactions (DDIs) that are poorly managed. The introduction of newly approved drugs into the immense pool of pre-existing medicines means that practitioners now require an accurate computer system to prevent drug interactions. Current computerized drug interaction screenings that exist lack enough relevance and accuracy to be successful.

The primary aim of this project is to establish a proof-of-principle for the use of the Smallvoice app in pharmacy to read prescription medications and generate a report stating relevant interactions and action to take.

Description of work: Firstly a compilation of the relevant P450 enzymes, drug substrates, inhibitors and inducers involved in common interactions was gathered through an extensive literature search on reliable databases. Several models were designed including the inputs: patient attributes, drugs, interactions and counselling points. Data entry into Smallvoice will generate two separate reports for the doctor and patient, providing the suspected interaction, mechanism and action. A barcode scanner will potentially serve as the ultimate source of data entry to the Smallvoice app.

Further work will aim to prove that the prescription barcode can be scanned, allowing the medications and patient ID to be fed into the Smallvoice app. Following this, the report can be modified and tailored to the patient according to preference and understanding.

Proposed evaluation: The work aims to build up towards a pilot involving a small number of drugs and enzymes. The proposed system will be tested for functionality and output through a conduction of a small pilot study with two separate groups of prescribers and patients. Focus groups asking the participants whether this style/ approach in managing DDIs is helpful, will establish whether the system is fit for purpose. Future work will aim towards a trial in a clinical setting such as a hospital.
10. Use of peer-teaching and reflection in preparing Year 4 MPharm students as educators

Authors: Dr Sue LF Chan, Dr Li-Chia Chen Mr Gautam C Paul and Prof Claire Anderson. University of Nottingham

Background: A key responsibility of pharmacists is in educating and supporting patients. As well as training/supervising junior or trainee staff, there may also be peer-teaching within a multi-disciplinary team. Within the Integrated Pharmaceutical and Patient Care module (Year 4 MPharm), University of Nottingham, we have used peer-teaching of clinical cases - a patient-focussed approach to medicine optimisation - together with reflective portfolio writing, to develop the skills of our MPharm students as educators in their future profession.

Description of work: Rather than didactic teaching on how to teach, student views of good teaching practice – how they themselves would like to be taught - were collated following facilitated reflective group discussions. Students worked in small groups (pairs, trios) on assigned case studies (problem-based learning), developing teaching material and activities, before teaching clinical knowledge and skills from the case to their peers (group of 9-10) at the end of term. Mid-term formative feedback (staff, peers) on the teaching of 15 minutes of material was provided. Each student teacher received a Student Evaluation of Teaching summary. Students received marks on their reflective teaching portfolio (comprising of: teaching philosophy, evaluation and reflection of the teaching experience). Most students described their enjoyment, with many enthusing about what they gained from the experience (confidence, teamwork, teaching, communication skills, greater/different learning).

Proposed evaluation: To gain views on how we can provide greater support in peer teaching and to identify areas for further improvement of teaching design, a questionnaire survey and focus group discussions will be conducted to explore students’ views on their experience of peer-teaching in Year 4 at the end of the year, and a follow-up survey will be conducted during their pre-registration (transitioning to a challenging educational experience).

11. Developing Technological Supports in Conducting an Oral Examination for Assessing Pharmacy Students’ Pharmaceutical Care Management Skills

Authors: Dr Li-Chia Chen, Mr Gautam C Paul, Dr Sue LF Chan, and Prof Claire Anderson. University of Nottingham

Background: The University of Nottingham, School of Pharmacy implemented an Integrated Pharmaceutical and Patient Care module in the final year of MPharm programme from autumn semester 2015-16. The module uses three types of assessment, of which an oral examination was adopted to assess students’ knowledge and their ability to provide clinical reasoning and manage pharmaceutical care related issues. After student appraisal of a clinical case (50 minutes), the exam itself consists of a care plan presentation (5 minutes), answering 3 questions about the case (5 minutes), and a further 4 questions based on 4 case studies studied during the semester (10 minutes). To manage and streamline the examination process (217 students in one day), several technologies and strategies were used.

Description of work: Students were given access to restricted websites in a computer laboratory during their appraisal of the clinical case. The progress of oral examination sessions was controlled by a timer slide shown on screens in each examination room. Each student’s oral examination was audio-recorded using a laptop computer and saved onto a password-protected university server; these recordings were used for quality assurance and moderation processes. The optical mark recognition exam mark sheet was designed to capture both free text comments and checklist marks. Student feedback at the assessment review indicated the technologies were easily adopted but several suggestions were made for the logistics of using those technologies. In addition, infrastructure issues such as movement between exam rooms and noise have also been raised. Improvement strategies have been implemented in the spring semester.

Proposed evaluation: This evaluation aims to explore the usability and management of technologies in oral examination. In the spring semester, a questionnaire survey will be conducted after the oral examination to explore further issues about using the technologies at the assessment. A focus group of supporting staff will also be conducted to explore how to sustain and streamline the technological support effectively.
12. Implementation of an Oral Examination for Assessing Pharmacy Students’ Pharmaceutical Care Management Skills

Authors: Dr Li-Chia Chen, Mr Gautam C Paul, Dr Sue LF Chan, and Prof Claire Anderson. University of Nottingham

Background: To develop students’ knowledge and skills in pharmaceutical care management, the University of Nottingham, School of Pharmacy implemented an Integrated Pharmaceutical and Patient Care module in the MPharm programme from Autumn semester 2015-16. The module took a case-based learning and peer-teaching approach. Students worked in pairs or trios on an assigned case study and taught other 9 students about the clinical knowledge and skills that they learned. The four case studies take a patient-focused approach to medicine optimisation and follow patients through a number of care pathways. An oral examination was implemented at the end of semester to assess students’ knowledge of case studies and their ability to provide clinical reasoning and manage pharmaceutical care related issues.

Description of work: The oral examination included student appraisal of the exam case (50 minutes), presentation of care plan (5 minutes), answering 3 questions about the case (5 minutes), and 4 questions about the 4 case studies studied in the semester (10 minutes). The four examination cases were piloted on 5 pre-registration pharmacy trainees (Oct 2015). Prior to the exam revision period, an assessment review lecture, case study guides and a mock examination case and recommendation answers were given to students. Overall, students gained good results. (Post-examination assessor focus group also showed this to be a good assessment to discriminate students’ competence.

Proposed evaluation: An evaluation aims to explore students’ perspectives of the oral examination and identify the supports that students need to prepare the examination. A questionnaire survey will also be conducted to explore students’ views on how the assessment reflecting to their learning of clinical knowledge, and what supports needed to improve their pharmaceutical care management skills.
13. Impact of Community Pharmacy Placements on Masters of Pharmacy (MPharm) Students

Authors: Ying Ying Choi, Victoria Silkstone, Sally Jacobs. Manchester Pharmacy School, University of Manchester.

Background: The General Pharmaceutical Council’s (GPhC’s) educational standards\(^1\) state ‘the MPharm degree curriculum must include practical experience of working with patients, carers and other healthcare professionals. Practical experience should increase year on year’. The standards go on to describe that the MPharm should provide learning opportunities where relevant science is integrated with practice and where theory and practice are integrated. For many years, Manchester Pharmacy School (MPS) have delivered practice placements in the hospital setting where students apply taught material to real-life practice scenarios\(^2\). MPS are currently rolling out a series of community pharmacy placements to complement this experience. Here, the development and evaluation of the first year community pharmacy placement is described.

Description of Work: Academic staff worked with practitioners to identify relevant learning opportunities relating to all academic units in the community placement. Asthma was chosen as an integrating theme for this 1st year placement. A workbook, including pre-placement tasks, was developed to structure the student placement in order for students to gain an overview of community pharmacy. In addition, students were expected to use their underpinning knowledge gained at university to counsel a patient, or member of the pharmacy team, on the use of a salbutamol inhaler. The purpose of this was for the students to integrate aspects of physiology, pharmacology, chemistry, drug delivery, public health and communication skills in the practice setting.

Proposed Evaluation: Two cohorts of students have now completed the first year community pharmacy placement. All have completed an evaluation form. Quantitative data are currently being analysed to determine whether the intended learning outcomes have been met as well as a thematic analysis of free text responses. Future evaluation will include gathering detailed feedback from the community pharmacy placement mentors to identify if students are able to integrate the relevant science with community pharmacy practice.

References:
**14. An Evaluation of Interprofessional Learning (IPL) Between Medical and Pharmacy Students in a Primary Care Setting**

**Authors:** Mrs Helen Cook, Dr Duncan Petty, Dr Leanne Roberts, Dr Jon Silcock (*Bradford School of Pharmacy*) and Dr Michael Scales (*School of Medicines, Leeds University*).

**Background:** IPL has become an important part of the integrated MPharm curriculum, equipping students with the skills needed to work as part of a multi-disciplinary team. IPL is a requirement set by the General Pharmaceutical Council (GPhC) in their standards for education and training of pharmacy students¹ and there is a body of literature which supports its use in medical and healthcare degree programmes.² The aim of the workshop evaluation was to determine the benefits for medical and pharmacy students.

**Method:** Bradford School of Pharmacy, in collaboration with Leeds School of Medicine, set up a pilot IPL day in GP surgeries across the Yorkshire region (*n=* 7 surgeries). This day involved small group learning (*n=* 6-8 students) with 4th year pharmacy students and 5th year medical students. The morning session was led by a pharmacist tutor (focussed on medication safety using case studies) and the afternoon session was led by a GP tutor (focussed on consultation skills using video scenarios). A feedback form with rating-scale questions (analysed using percentage responses) and space for free text comments was given to all participants.

**Results:** 97% (108/111) of all students agreed (scored ≥ 3/5) they had a better understanding of the role of the medic/pharmacist. 98% (109/111) of all students agreed that they learned and practiced ways to improve the safety of medication use and 100% (111/111) agreed they had the opportunity to identify key elements of a good consultation.

**Conclusion:** This positive evaluation of the IPL day has shown the benefits of IPL between pharmacy and medical students. This IPL day is now compulsory for all final year medical and pharmacy students at Leeds and Bradford University respectively. We envisage that this will improve working relationships between pharmacists and doctors in the future, leading to an improvement in patient care.

**References**

**Authors:** Dr Margaret Culshaw¹, Dr John Stephenson², Dr Stephen Hemingway² and Dr Sarah Hoye³.

¹ Department of Pharmacy, University of Huddersfield. ² School of Human and Health Sciences, University of Huddersfield, ³ Huddersfield Royal Infirmary

**Background:** Inter-professional learning, using a prescription based workshop and focusing on problem solving brought together pharmacy students (MPharm), medical students and non-medical prescribers (NMPs) with a common purpose. The workshop aimed to improve skills relating to knowledge needed for safe prescribing, understanding of the processes for ensuring an appropriate supply of medicines and an appreciation of the added value which can result from good inter-professional relationships.

**Method:** Participants completed an exit questionnaire comprising nine 6-point Likert-style items with responses ranging from 1 (strongly disagree) to 6 (strongly agree). Scores were processed into the three components: ‘knowledge’, ‘process’ and ‘relationships’ based on the questions asked then compared across groups using analysis of variance (ANOVA) with post hoc testing.

**Results:** Data was collected from 190 participants; 72 MPharm (37.9%), 85 NMPs (44.7%), 13 medical students (6.8%) and 20 incomplete (10.5%). The mean knowledge score across all participants was 4.35 (SD 1.42), representing moderate agreement that the workshop had increased knowledge of prescribing with NMPs reporting higher and less variable knowledge levels (5.05; SD 1.02) than either MPharm (3.51; SD1.40) or medical students (4.23, 1.42; \( p < 0.001 \)). The mean process score was 10.4 (SD1.61) with medical students reporting higher and less variable scores (11.0; SD 0.91) than NMPs (10.8; SD1.68) and substantially higher than MPharm (9.81; SD1.45; \( p < 0.001 \)). The mean relationship score was 32.8 (SD 4.24) with medical students reporting higher and less variable relationship levels (34.2; SD 1.73) than either NMPs (32.8; SD5.07) or MPharm (32.6; SD3.37). There was no significant difference between the groups (\( p = 0.469 \)).

**Conclusion:** All students benefited; demonstrating positive scores for knowledge, process and relationships related to safe prescribing. NMPs exhibit significantly more benefit in knowledge and process than MPharm. Medical students exhibit significantly higher levels of process than MPharm with no significant differences across the groups in relationship scores.
16. Reversing the learning. Pharmacy students support the teaching and assessment of calculations in a Children’s Hospital.

**Authors:** Dr Margaret Culshaw\(^1\), Rachel Bailey\(^1\), Sophie Wiseman\(^1\), Mrs Elizabeth Cawthorne\(^2\)

\(^1\)Department of Pharmacy, University of Huddersfield \(^2\)Pharmacy Department, Sheffield Children’s Hospital

**Background:** Both nurses and pharmacy students must be competent in dose calculations. Paediatric calculations pose specific challenges and errors offer additional risks\(^1\). Learners may have difficulty in transferring classroom learning to practice and this project challenged pharmacy students to develop an attractive and effective learning tool which was suitable to assess competence in the paediatric environment.

**Method:** Analysis of error reports in the hospital provided a list of 13 ‘high risk’ drugs and 7 specific calculation skills which are needed in practice. The students used photographs of actual products in use and prescriptions for characters from Harry Potter to develop a 20 slide PowerPoint presentation. The user is required to choose a product, calculate a dose, determine a dose quantity and calculate a rate of administration as well as select an appropriate administration device with ‘pass’ at 70%.

**Results:** The presentation was piloted assessed by questionnaire and found to be ‘attractive’, and ‘memorable’. Importantly, users found the content to be relevant to their practice. As learners themselves the students were able to appreciate the challenges in developing competence and to identify problem areas. The use of well-known characters assisted in making the learning memorable and users reported that the format reduced apprehension associated with a traditional written test. Further development of the package has been undertaken by the NHS IT team to make it interactive and to provide instant assessment and feedback. This development provides greater scope for assessing individuals at different times.

**Conclusion:** Pharmacy students were able to classify the calculation needs of paediatric nursing staff from the errors which had been reported. The students successfully identified with the needs of the learners and designed a learning and assessment tool which could be adopted by the hospital. Further development has been made possible by the involvement of the IT specialists.

17. The experiences of Queen’s University Belfast MPharm Students of the Pre-Registration recruitment process

Authors: Cunningham, J*; Barry, J; Holden, P and Haughey, S.
School of Pharmacy, Queen’s University Belfast (*Level 4 MPharm student)

Background: Following graduation with a MPharm degree, students wishing to register as a pharmacist in the UK must successfully complete a pre-registration year and pass a registration assessment set by the Pharmaceutical Society of Northern Ireland (NI only) or the General Pharmaceutical Council (GB only). Pre-registration places are limited by the numbers of tutors and training sites and are mainly located in hospital and community practice. This project aims to establish the experiences of final year MPharm students at Queen’s University Belfast (QUB) on the pre-registration recruitment process. Students are required to apply for and, in most cases, complete a successful interview in order to secure a pre-registration place. With no one centralised recruitment process and multiple pre-registration employers it can be difficult for students to know what is to be expected.

The new QUB Education Strategy currently being developed has a strong focus on employability. One of the key aims is to develop employability, entrepreneurship and citizenship in a global world. In addition, educators must do their utmost to ensure students are at the required competency level expected by both patients and employers, so student employability is enhanced.

Description of work: A questionnaire was developed and distributed to the Level 4 MPharm students (n=120) during the 2015-2016 academic year. The questionnaire has been approved by the School of Pharmacy ethics committee. Students were invited to complete the questionnaire and were made aware that completion was voluntary and that all results would be kept anonymous.

The results of this project will be used to inform the development of the MPharm course to support employability. Members of our School of Pharmacy Stakeholders Committee will be informed of the study results.

Proposed evaluation: A response rate of 79% (n=95) has been achieved. Simple descriptive statistics are currently being used to analyse the results. Free text comments will be reviewed and themed by the investigator.

References:
18. Development of an Experiential Learning Programme for Pharmacy Students

Authors: Donovan G\textsuperscript{a}, Byrne T\textsuperscript{a}, Rokib, T\textsuperscript{a}, Moffitt K\textsuperscript{a,b}
\textsuperscript{a}University of Sunderland, Sunderland \textsuperscript{b}Whickham Pharmacy, Whickham

Background: GPhC standards for the initial education and training of pharmacists state that students should receive practical experience as part of their training, potentially including off-site placements\textsuperscript{(1)}. Placements had previously been structured using pre-determined student tasks. An evaluation of these tasks found that they provided a focus to placements but were also sometimes detrimental to learning \textsuperscript{(2)}. It was decided to explore a system using an electronic personal portfolio (ePortfolio) and a competency framework as an alternative method for the delivery and assessment of placements.

Description of work: The aim was to develop an experiential learning programme which uses an ePortfolio and competency framework. To do this, a working group was convened between October 2014 and June 2015 composed of academics, placement providers and MPharm students. Communication was through a combination of face-to-face meetings and email feedback. The group considered:

- Scope of the experiential learning programme
- Competencies on which the programme would be based
- How the programme would be assessed
- Support required for students
- Support required for placement providers
- Support required for academics

It was decided that the scope for the programme should include off-site placements, IPL sessions and patient experience opportunities. A bespoke set of ‘Experiential Standards’ was developed for the programme.

Support resources were created for students, placement providers and academics.

Proposed evaluation: A mixed method evaluation is planned. Focus groups (FGs) will be used to allow qualitative exploration of student perceptions. Focus groups will be facilitated using a topic guide which draws from the peer reviewed literature around experiential learning.

FGs will be audio recorded and transcribed verbatim before undergoing thematic content analysis. The findings will be used to design a questionnaire which can be used for a larger scale quantitative evaluation which can identify trends and further areas for improvement.

References
19. Why don’t students use feedback?

Authors: Sophie Dutta, Maria Ali, Maryam Alsaeid, Steve Ellis, Jill Barber. 
Manchester Pharmacy School, University of Manchester.

Background: Each year students are given feedback (using the Small voice software) for each of their examinations. Due to lack of response to the feedback it is believed that students do not utilise feedback to their advantage. The principle of this student project is to improve the response to feedback by making the feedback more personalised. Another aim for this project is to try and find out why students do not read, engage and reflect on the feedback they are sent. Feedback is essential for students, therefore finding out about how they view it, will really improve their progress throughout the years. If they are able to improve with the advice received from feedback, they can fulfil the aims set out in their intended learning outcomes.

Description of work: Firstly, a pre-feedback questionnaire assessed the opinions of Pharmacy students regarding feedback and preferences to the format of their feedback (example: Has previous exam feedback been useful? ☐Very helpful ☐Interesting but not helpful ☐Not interesting and not helpful). The questionnaire was uploaded via Blackboard and the students were recruited using their university email. The students were reminded to complete the pre-feedback questionnaire during a lecture and they were informed that it was not compulsory however it would be beneficial to their education. The data was collected and reversibly anonymised (this is so as students we cannot identify the students being sent the feedback but if the tutors need access in case of an emergency, they can reverse the anonymity) from the pre-feedback before being presented to the students undertaking the project. The 4th year project students involved in this project (three students) will only receive anonymised data.

Proposed evaluation: The data was used alongside the students’ exam results to formulate the personalised feedback that students specified they wanted in the pre-feedback questionnaire. Exam feedback from the Unit leads was integrated with the feedback written by the 4th year project students. This will hopefully provide a different perspective for students that will encourage them to use their feedback. A post-feedback questionnaire was then conducted with questions regarding how the students will use their feedback effectively. The students were then guided, in collaboration with their academic advisors, on how to improve and use their feedback to their benefit. This will help improve feedback for future students in years to come.
20. Collaborating for consultation: an interprofessional approach to developing communication skills

Authors: Fattah, L., Shah, L., Chung, O., Green, S. Central Manchester NHS Foundation Trust / University of Manchester

Background: In an evolving NHS which puts patient-centred care at the heart of practice, it is more important than ever that healthcare professionals can demonstrate excellent communication and consultation skills. The literature has identified a more integrated approach to communication and consultation skills training is required in the pharmacy undergraduate curriculum, to meet the needs of future pharmacists (Hargie, 2006). Practicing communication skills with an interprofessional group of peers provides the opportunity for students from different professions and training backgrounds to learn from one another, through modelling and imitation (Bandura, 1977), while developing positive communication behaviours through tutor and peer feedback.

Description of work: To integrate the consultation skills learning of pharmacy, nursing and medical students, an interprofessional workshop was devised using trained simulated patient actors. A patient scenario was developed by clinical tutors from pharmacy, nursing and medicine to ensure realism and relevance to all students. Students from the three disciplines, all in the third year of study, collaborated with one another to explore their own roles and the role of others in patient communication. Interprofessional groups of three students consulted with a simulated patient, initially taking a history on admission to hospital, devising a plan for management and communicating with the patient at discharge home. Students took it in turns to undertake the consultation and observe their peers. The focus of the learning was on self and peer reflection, based on an individual and group feedback. The aim of the evaluation was to assess the impact of the interprofessional experience on the students’ confidence and competence in communication.

Proposed evaluation: All students were asked to complete a questionnaire before and after participating in the simulation. The questionnaire asked students to rate their confidence in communication on a five point Likert scale. Results from the pre and post evaluation questionnaires will be compared through paired T-test to identify and assess any changes after participating in the workshop. Qualitative data was also gathered on student experience.

References:
21. “Physical assessment and history taking as part of the MPharm. What do students think? ”

Authors: Mr Ryan Ferbrache, Mr Michael Leech and Mrs Helen Hull. University of Portsmouth.

Background: Pharmacy roles are changing and the expectation is pharmacists will “run clinics”. CPPE provide training to “increase understanding of history taking and clinical examination”¹. GPhC draft revised learning outcomes for the initial education and training of pharmacists (2013) states pharmacists upon registration are able to undertake “safe and appropriate physical examination and use clinical skills to inform clinical decision making and therapeutic action”². This study determined students’ perceptions of physical assessment and history taking (PAHT) during the MPharm.

Methods: Mixed methods combining quantitative with qualitative approaches was conducted. Year 3 and Year 4 MPharm students attending PAHT workshops were targeted. For ease of access Year 3 students completed a self-administered questionnaire to gather large amounts of factual data. Meanwhile Year 4 students attended focus groups to gain in-depth understanding of their thoughts. Quantitative data was analysed using Microsoft Excel and qualitative using Braun and Clarke’s thematic analysis. Ethics approval was granted.

Results: 126 questionnaires were distributed, 56 returned producing 44% response rate, meanwhile 17/110 Year 4 students attended focus groups. Key findings confirmed students appreciate the relevance of incorporating PAHT and suggested that PAHT skills be introduced from Year 1 of the MPharm course. Personal and professional concerns were raised that the pharmacist role may change too much too quickly, encroaching on other healthcare professionals. There was a strong impression the public are unaware of key skills pharmacists offer.

Conclusion: This study supports literature in nursing education, students identified apprehension, interest and awareness of role changes and additional clinical skills. Students have good awareness of NHS pressures and are excited for the pharmacist role to change. Students can see the relevance of learning PAHT skills at university and have offered suggestions to improve future teaching.

References:
22. Technology-enhanced laboratory (TEL) sessions for Masters of Pharmacy (MPharm) students to promote active learning: identification and management of dysrhythmias

Authors: Dr Rajendran Gopalan, Professor Timothy Martin Palmer, Dr Bishwa Tuladhar, Mr Darren Brown, Dr Diana Wood. University of Bradford.

Background: Active learning is beneficial for improving student learning in small classes (Freeman et al 2014). Here we present our use of simulation to promote active learning among students on the MPharm programme. The intended outcome of the session was to improve student understanding of dysrhythmias, their causes and the medications used to treat these conditions.

Method: Two technologies, namely LabTutor® and the human patient simulator, iStan®, were employed in tandem. Students in year 2 of the programme were involved in recording electrocardiograms (ECGs) from iStan®, which was programmed to simulate six different heart rhythm abnormalities. Students then used the appropriate web links provided on LabTutor® to identify and classify abnormal rhythms before assigning appropriate treatments, thereby introducing a diagnostic element to the session. The data, along with their results and justifications were emailed to students and a central server which could be accessed by the lab session lead. A Likert scale questionnaire was then used to capture student feedback on the session. The data was then analysed using Microsoft Access and Microsoft Excel.

Results: All students actively engaged in the session and were able to have hands-on experience of using these technologies as they took turns to record the ECGs. The addition of a diagnostic element also promoted discussion on the nature of the ECG rhythm, further embedding the students’ understanding of ECG patterns. Of the 184 students invited to complete the evaluation in 2014-15, 33 responded (17.93%). A more detailed feedback on student experience from this year’s cohort has been collected, with a response rate of 50.33% (77 of the 153). Feedback was generally positive and highlighted the usefulness of these sessions in providing a better engagement with understanding of the topic.

Conclusion: The use of simulation technology to understand cardiac dysrhythmias provides a novel approach to promoting active learning among students on the programme and could be beneficial in promoting student engagement with the topic among the wider population of pharmacy students.

Reference:
23. “Suicide: the public, the patient, the medicine and the pharmacist”-an evaluation of student perceptions

Author: Hayley Gorton. Manchester Pharmacy School, University of Manchester.

Background: In 2014, 6,122 people in the UK died due to suicide¹ and the World Health Organization has declared the prevention of suicide a global public health priority². Pharmacists, particularly in community, are at the forefront of public health. Suicide is a seldom discussed topic in pharmacy curricula and there is little training for pharmacists in suicide prevention. More training might be required to satisfy both current and evolving roles of the pharmacist.

Method: An invited lecture on suicide demographics, risk factors and potential roles of the pharmacist was given to 4th year MPharm students in the preparation for practice module. At the end of the lecture, students were asked to answer evaluation statements using Turning Point technology. Participation was anonymous and on a voluntary basis, and students were informed of the intention to present the evaluation. Statements related to the student’s perception of the subject content and relevance to the pharmacy profession. Agreement to statements was measured on a Likert scale (ranging from strongly disagree to strongly agree).

Results: There were 51 available respondents and between 48 and 50 students responded to each statement. All students agreed that suicide awareness is important. Impressions of the baseline level of knowledge of both pharmacy students and pharmacists were variable. 63% of students agreed or strongly agreed that pharmacy students need more training on suicide awareness. This was raised to 68% when asked if pharmacists need more training. 94% of students agreed or strongly agreed that pharmacists require additional training in suicide awareness if antidepressants are to feature in the new medicines service (NMS).

Conclusion: Many students can see the value of increased training in suicide risk, especially if antidepressants are featured in the NMS. The extent of training required at undergraduate and post-graduate level warrants further discussion.

References

Authors: Daniel T. Grant, Ravi K. Savania and Rebecca J. Green. University of Reading

Background: As future healthcare professionals, it is important that MPharm students develop skills required for effective, reflective practice. Portfolios are widely used within pre- and post-registration training to record progress and provide evidence of competence. The General Pharmaceutical Council’s Standards for Initial Education & Training of Pharmacists1 specifies learning outcomes, many of which relate to personal and professional development and reflective practice. There is a focus on the integrated application of science and practice concepts. In 2014, we introduced our Personal & Academic Development Portfolio (PADP) to facilitate students’ development of these skills.

Description of work:
The PADP has five sections:
• career management
• self-development
• clinical knowledge (integrating science and practice concepts relating to key medicines)
• research skills
• feedback & assessment – encouraging engagement with feedback

Students work on their portfolio throughout the first three years of the MPharm, building on transferable skills from year-to-year in a spiral approach. Learning activities/opportunities are signposted where appropriate. Minimum requirements are specified regarding content and topic areas.

The portfolio is summatively assessed in three sections:
1 – Engagement
2 – Continuing Professional Development (CPD)
3 – Medicines Information Monographs

2 and 3 are assessed via viva voce. The use of viva voce for portfolio assessment is time intensive, but was chosen to enable assessment of students’ understanding of the CPD process and their ability to use and apply science concepts within a practice context.

Proposed evaluation: Marks will be evaluated for spread and correlation between assessment components. Students’ opinions will be sought by anonymous questionnaire utilising a rating scale and seeking comments relating to: intended benefits of the portfolio, support and assessment process. A focus group (5 students) will be held to elicit further insight. Assessors’ will be asked to complete a questionnaire on the assessment process. Thematic analysis will be used to identify common themes from qualitative data.

References:
25. Integrating and Inspiring International Students

Author: Dr Lezley-Anne Hanna, Dr Raj Thakur. Queen’s University Belfast (School of Pharmacy)

Background: A strategic development for many higher education establishments is internationalisation, which includes a drive to recruit and retain international students. Unfortunately, studying overseas may present challenges for students and acculturative stressors include issues with language and education, loneliness, and practical problems associated with a change of environment. It is therefore vital that international students are adequately supported, so that they can grow personally and professionally, hence the rationale for developing a peer mentoring scheme for international MPharm students at Queen’s University Belfast. Mentoring is part of university culture and increasingly accepted as playing a role in development and career progression in the workplace. It also helps confirm that necessary skills are being fostered (future pharmacists should have various skills such as effective communication, including interpersonal skills, and leadership).

Method: The aim was to have an effective scheme run by students, for students. It was launched in 2014-15 for Level 1 international students, with mentors from other levels. Mentors attended centrally organised training (2-day course). Formal and informal meetings occurred throughout the year. Mentors were assessed by attendance at meetings, whether actions were completed in time and via verbal and written feedback from other mentors and mentees provided to the academic co-ordinator. We evaluated the scheme itself by recording data on feasibility, length/frequency of meetings, drop-outs, number of mentor applicants for the following year, and by asking mentees and mentors to reflect on the scheme and provide us with benefits, barriers and suggested changes so that identified issues could be rectified for future participants.

Results: Participants: 14 mentors and 43 mentees. As reported by mentors and mentees, benefits included: improved oral communication, leadership and problem-solving skills, refreshed knowledge of various subject(s), increased confidence, enhanced employment opportunities, relationship and team-building, sense of fulfilment. Indeed, in 2015, one mentor won a university ‘Peer Mentor of the Year’ award (and subsequently an external student leadership award in 2016) and another graduate presented her work on alumni peer mentoring at a leading pharmacy conference. Barriers: drop-outs, communication via email ineffective, scheme needs to be made more pharmacy-specific.

“I would say being in the peer mentoring team has been the most important decision in my uni [university] life...it has enhanced my CV and employment opportunities; the experience I have gained and the skills I have developed are helpful in my employment process.” Mentor

“I have learnt a lot of things from my current peer mentor and they are like my elder siblings who will assist you whenever you have hesitation or hassles. They helped me a lot in my academic [studies] and also living in overseas.” Mentee

Conclusion: While the scheme needs work to ensure optimum engagement, it is helping to address acculturation stressors and appears to be enabling skills development and improving the student experience.

References
26. Using debate as a tool to integrate the teaching of science and practice-based pharmacy ethical issues

**Authors:** Dr Lezley-Anne Hanna  
Other authors: Ms Johanne Barry, Dr Louise Carson, Dr Janine Cooper, Dr Garry Laverty, Dr Paul McCague. *Queen’s University Belfast (School of Pharmacy)*

**Background:** Integrating science and practice elements of undergraduate pharmacy teaching is a key focus for the UK MPharm degree course accrediting body. Coupled with this is the requirement for future pharmacists to have a sound understanding of ethics. Therefore, the aim of this work was to implement and evaluate debating as a method of teaching pharmacy undergraduate students about ethical issues that had relevance to both science and practice. Debates can be an effective way to introduce complex or controversial issues into teaching whilst enabling active engagement in learning. They encourage the consideration of numerous sources of evidence and various standpoints before arriving at a decision, which mirrors the skills required during ethical decision-making.

**Description of work:** Following on from initial work in this area, debate workshops were further developed (i.e. they became summative rather than formative assessment, and encompassed a large range of topics (n=12 ethical motions in total) for second-year MPharm students at Queen’s University Belfast. The year group of students were firstly allocated to one of three groups (Groups 1-3) and then within each group, to one of four teams (A-D). Each team was given a motion (Table 1); students in each team were further sub-divided into the proposition and opposition. The debates ran over 2x2.5 hour sessions; two debates occurred per session. Students had the opportunity to debate and act as member of the audience/floor. Attendance was compulsory. The learning outcomes were that students would have an appreciation of four ethical issues that had relevance for practice and science including the pharmaceutical industry and that they had developed debating skills, including the formulation of arguments and the evaluation of evidence. Students were assessed by pharmacist staff facilitators and peers (group mark awarded) and it contributed to the overall module mark.

**Proposed evaluation:** Ascertain whether there are significant differences between the students’ marks for the 12 debate motions (Table 1) and also for the proposition versus opposition. Obtain facilitator views, and also student feedback on the debates (including skills developed and suggested changes for next year) using an evaluation questionnaire.

**References:**
Table 1 Debate motions (n=12 different motions in total i.e. 4 per group for three groups)

| Group 1; A | This house believes that the ‘science-focus’ within MPharm degrees should end |
| Group 1; B | This house believes that it is currently unethical for pharmacies to sell e-cigarettes |
| Group 1; C | This house believes that it is unethical to conduct embryonic stem cell research and something the pharmaceutical industry should avoid getting involved in |
| Group 1; D | This house believes that it is unethical for pharmacies to be involved in needle-exchange programmes for drug users |
| Group 2; A | This house believes that the pharmaceutical industry unethically medicalises ordinary aspects of life by disease mongering |
| Group 2; B | This house believes that it is unethical for pharmacies to sell weight-loss products or slimming aids |
| Group 2; C | This house believes that selling or supplying emergency contraception should be a mandatory professional requirement for all pharmacists, regardless of their personal beliefs |
| Group 2; D | As experts in medicines, this house believes that it would be appropriate and ethical to legalise medical marijuana in the UK, given the potential health benefits for people |
| Group 3; A | While pharmaceutical technology has made numerous advances in recent years, this house believes that ‘personalised medicine’ (via pharmacogenetics) is largely unfeasible and unrealistic. It is unethical to raise people’s expectations about better health care via this route |
| Group 3; B | This house believes that methadone-maintenance programmes, supplying methadone indefinitely to drug users, are not evidence-based or an expense that the Government can ethically justify |
| Group 3; C | This house believes that the pharmaceutical industry puts profits before patients |
| Group 3; D | This house believes that it is unethical to conduct research about medicines on animals |
27. The Introduction of an Accredited Community Pharmacy Placement Programme for MPharm Undergraduate Students

**Authors:** Holden P, Hall M, Parsons C, Hanna LA  
*School of Pharmacy, Queen’s University Belfast, 97 Lisburn Road, BT9 7BL*

**Background:** According to the General Pharmaceutical Council (GPhC), pharmacy schools must provide students with opportunities for practical experience in interacting with patients and other healthcare professionals.1 The aim of this work was to create and evaluate a quality-assured framework for community pharmacy placements, delivered in partnership with a network of Queen’s University Belfast accredited ‘Student Training Centre’ pharmacies across Northern Ireland (NI).

**Method:** Community pharmacists complete online training (which had been developed by academic pharmacists within the School of Pharmacy and piloted), and submit a training agreement to become an accredited member of the placement network. Students are allocated to pharmacies within the network and feedback obtained from both parties via pre-piloted online questionnaires through Survey Monkey® (n=10 questions in the mentor version and 13 questions in the student version). The questionnaire responses are entered into Microsoft Excel®. Simple descriptive statistics are used to analyse the results and free text comments are reviewed and themed by the investigator in order to assess level of satisfaction with the programme and also gain feedback on potential areas of improvement.

**Results:** There are currently 162 accredited placement pharmacies across NI and 767 students have completed placements over two academic years. To date, the response rate for the mentor questionnaire is 80%, and for the students 82%. Results and feedback have been encouraging thus far; 99.2% of mentors strongly agreed or agreed that the training has helped them support the student whilst on placement. Similarly 97% of student respondents believed the placement provided a good environment for learning and 91% gave their placement experience a mark of ≥7 out of 10.

**Conclusion:** Professional placements are as much about gaining an insight and understanding of the culture and language of that profession as gaining technical skill and experience². We propose that having a network of formally accredited pharmacists, who have purposefully opted into the process, will ultimately help ensure better learning outcomes and skills for the students. This programme is still in its infancy but the initial results and feedback are very encouraging.

**References**
28. Learning together to work together – a pilot for multidisciplinary team-based interprofessional education

**Author:** Louise Hughes\(^a\), Jennifer Acton\(^b\), Andreas Artemiou\(^c\), Elizabeth Bowring-Loscock\(^d\), Rhiannon Evans\(^e\), Colin Powell\(^f\), Hannah Shaw\(^g\)
Cardiff University

\(^a\) School of Pharmacy and Pharmaceutical Sciences, \(^b\) School of Optometry and Vision Sciences, \(^c\) School of Mathematics, \(^d\) School of Healthcare Sciences, \(^e\) School of Social Sciences, \(^f\) School of Medicine, \(^g\) School of Biosciences

**Background:** In both primary and secondary care sectors, patients are cared for by multidisciplinary teams (MDTs) involving many different health professionals. Poor communication between the MDT members can lead to poor care and even patient harm as highlighted in the Francis Report \(^1\). To address this, there is an increasing interest in interprofessional education (IPE) at the undergraduate level, but these learning experiences usually involve just two or three professions and are not reflective of the more complex interactions of a true MDT. As such, we are piloting and evaluating an IPE session to give students the opportunity to work in a simulated MDT to address patients’ care needs.

**Description of work:** Approximately twenty students from five different specialties – medicine, nursing, pharmacy, optometry and social work – will take part in a pilot MDT IPE session. The students will work together in MDTs to manage two different patient cases, drawing on the different expertise of their professions to identify and resolve problems. The use of simulated patients will bring an authenticity to the cases, enabling students to experience multidisciplinary clinical management in realistic scenarios.

**Proposed evaluation:** The RIPLS tool \(^2\) will be used to evaluate the students’ attitudes towards interprofessional learning prior to and following the session to identify any changes in attitude. This 19-item Likert scale-based questionnaire was designed specifically to determine the attitudes of healthcare students in order to measure their readiness for interprofessional learning. It covers three domains: teamwork and collaboration, negative and positive professional identity, and roles and responsibilities. A further questionnaire will obtain specific qualitative feedback about the session with regard to what worked, what did not work and students’ suggestions for future sessions. The evaluation will be used to determine the feasibility and benefits of expanding this pilot in future years.

**References**
29. Benefits of Peer Assisted Learning (PAL) for PAL leaders

Author: Mrs Helen Hull and Miss Hollie Broome. University of Portsmouth.

Background: PAL involves trained Year 2 MPharm students, PAL leaders, facilitating study groups for 15-20 Year 1 MPharm students. PAL leaders encourage group discussion for Year 1 MPharm students to explore answers to problems together. PAL leaders do not teach new material; the sessions are co-curricular. This study aimed to determine how MPharm students benefitted from undertaking the role of a PAL leader.

Method: Qualitative research was carried out which targeted Year 2 PAL leaders at the University of Portsmouth. A self-administered questionnaire, consisting of open-ended questions about Peer Assisted Learning and being a PAL leader, was distributed to PAL leaders during a PAL debrief meeting at the University of Portsmouth. The qualitative approach was based on a philosophy of interpretivism to gather an in-depth understanding of MPharm students’ thoughts about their role as a PAL leader. Analysis was undertaken using an adaptation of Braun and Clarke’s thematic analysis method.

Results: Following analysis, TWO main themes emerged:

Transferable skills
Students identified key skills they had developed from being PAL leaders including confidence, communication, organisation, teamwork, interpersonal and time management. PAL leaders stated that their role helped them to integrate with MPharm students in the same and other academic years.

Professionalism
PAL leaders reported that their role made them think about how they behaved and approached their own academic work. All PAL leaders stated that the skills they had developed could be used when they become pharmacists and believed that this opportunity would make them more employable.

Conclusion: PAL benefits both attendees and leaders. The role of the PAL leader compliments the MPharm degree course and provides opportunities for MPharm students to develop skills which could make them more employable.

References
30. Impact of Peer Assisted Learning (PAL) on MPharm students’ transition to university and preparedness for assessments

Authors: Mrs Helen Hull and Miss Hollie Broome. University of Portsmouth.

Background: PAL involves trained Year 2 MPharm students, PAL leaders, facilitating study groups for 15-20 Year 1 MPharm students. PAL leaders are more approachable and familiar with the course from students’ perspectives, than course lecturers. PAL leaders can empathise with new experiences Year 1 students face when commencing university.

Method: Quantitative research was carried out which targeted Year 1 and Year 2 MPharm degree students at the University of Portsmouth who had previously attended PAL sessions. The questionnaire consisted of questions and statements about Peer Assisted Learning. Questionnaires were self-administered and distributed in Year 1 and Year 2 MPharm lectures at the University of Portsmouth.

Results: 213 questionnaires were distributed and 182 were returned, producing 85% response rate. The majority of MPharm students, 70% (n=174), reported that PAL sessions supported their learning, helped improve their knowledge of subjects and/or helped them understand how to meet course expectations. Furthermore, 75% (n=182) reported that PAL helped them adjust to university life, make new friends, adjust to living away from home and/or improved their overall experience of university. MPharm students felt better prepared for effective study 79% (n=47) and assessments 78% (n=74) if they attended more than half of the scheduled PAL sessions. PAL was an enjoyable learning experience for 89% of students (n=127) and 88% (n=166) preferred to ask PAL leaders questions rather than members of staff.

Conclusion: Peer Assisted Learning aids MPharm students’ transition into university and regular attendance of PAL helps students feel better prepared for assessments and could improve their overall academic performance.

References
31. Interprofessional education – What can we learn from practice?

Authors: Andrew Jenkins, Louise Hughes, Efi Mantzourani, Mathew Smith. Cardiff University.

Background: Understanding and utilising the skills and knowledge of other healthcare professionals (HCPs) is vital in optimising the patient care delivered across the NHS. Although there are many barriers to interprofessional working in practice, such as professional bias and preconceptions, interprofessional education (IPE) during the undergraduate component of an individual’s career is seen as one method that can break down such barriers before entering practice. With the acceleration of the embedding of clinical pharmacy roles both in community and secondary care settings, pharmacists need now more than ever to interact with other healthcare professionals to provide optimal patient care services to improve health outcomes. The need for professional cooperation and understanding has been recognised by the GPhC and IPE is now a compulsory element of MPharm programmes. However, there is less guidance surrounding the types and content of these IPE sessions. This affords the schools a degree of flexibility to provide IPE with any healthcare profession, whether this is entirely consistent with professional practice or not. In many cases this is simply because it is difficult to quantify the extent and types of interactions that pharmacists have on a day-to-day basis.

Description of work: The aim of this study is to determine the frequency of interprofessional interactions between practicing pharmacists and other HCPs in order to help integrate current practice into undergraduate IPE sessions. Data will be gathered using an anonymous, self-complete questionnaire sent to pharmacists in both community pharmacies and hospital pharmacy departments across Wales.

Proposed evaluation: The questionnaire will be used to quantify the frequency of interactions, helping to map the interprofessional communication occurring in practice. Data will be input and analysed using SPSS statistical software. Results will be presented at the conference.
32. Integration of teaching of chemistry, pharmacology, formulation, drug delivery and clinical and practice considerations using beta 2 agonists

Authors: Dai John & Claire Simons. Cardiff University

Background: To further integrate science and practice teaching within the Cardiff MPharm, a new workshop was designed by a medicinal chemist, pharmacist and pharmacologist. The 3 hour sessions (33-35 students per group) facilitated by chemist and pharmacist required year 2 students to work in small groups. Using beta 2 agonists as the focus, chemistry, pharmacology, formulation, drug delivery, clinical and practice elements were included. Teaching tools used were Powerpoint® slides linked to a student workbook. Other resources were student lecture notes, BNFs and i-Pads. The aim was to obtain and evaluate student feedback on this workshop.

Method: At the end of each session students were invited to complete anonymously a standard school teaching evaluation proforma containing eight likert questions (a) (1= strongly disagree to 5= strongly agree). Open response questions asking for the most positive aspect(s) and suggestion(s) for change and these were analysed using content analysis (b). Ethical approval was not needed for this evaluation.

Results: 90/99 completed evaluations were received (91% response). Mean likert responses (a) were: spoke clearly (4.7/5), good at explaining things (4.5), made subject interesting (4.1), enthusiastic (4.6), intellectually stimulating (4.4), related material to a pharmacy context (4.6), materials were easy to read (4.5) and maintained interest throughout (4.0). The aspects listed as most positive following content analysis of open question responses (b) () were workshop/workbook structure (n=51), integration/links between topics (n=30), relevance to a pharmacy context (n=18). Suggestions for improvement (three most frequent codes) were shortening session (n=26), making available paper copies of the slides at end of session (n=5), having another member of staff present (n=3).

Conclusion: Students found the workshops useful in a number of ways including awareness of integration and relevance to pharmacy, for example, “Practising mechanisms. Clear understanding of adrenoceptors. Good source of revision. Links loads of topics together” #74. The session will be modified and reduced to 2 hours for 2016/2017 and students will be asked a specific question about integration on the evaluation form.

Acknowledgement: We acknowledge the contribution of Will Ford to elements of the pharmacology content.
33. Flipping Critical Appraisal: Integrating NHS Professional Development Tools into a Postgraduate Flipped Classroom

Authors: Matthew D Jones¹ and Tiffany Barrett¹,². ¹University of Bath, ²South West Medicines Information and Training.

Background: Students undertaking Masters level distance learning programmes in Clinical Pharmacy Practice study evidence-based medicine and critical appraisal as part of a compulsory unit. At entry, the students have variable knowledge of the underpinning statistics, so historically the majority of the critical appraisal workshop was dedicated to discussion of statistics, with limited opportunities to actively engage with critical appraisal tasks. Feedback suggested that for some students this introduction assumed too much prior knowledge, whilst others learnt nothing new. This project therefore aimed to increase the amount of active engagement with critical appraisal activities, whilst still providing teaching about statistics.

Method: With limited contact hours available, a “flipped” approach was adopted (1). Students studied statistics and critical appraisal at home, allowing them to assimilate the material at their own pace. This was achieved using UK Medicines Information training materials, especially MiCAL, an RPS accredited e-learning package (CoAcS). This approached released workshop time, which was almost wholly dedicated to tutor-supported critical appraisal of clinical trials and the discussion of other examples of flawed publications.

Results: Formal student evaluation of the last non-flipped and the first flipped workshop was compared. The new approach resulted in a considerable improvement:

<table>
<thead>
<tr>
<th>Students strongly agreeing that the workshop...</th>
<th>Before Flipping (n = 26)</th>
<th>After Flipping (n = 25)</th>
</tr>
</thead>
<tbody>
<tr>
<td>...was well prepared</td>
<td>27%</td>
<td>52%</td>
</tr>
<tr>
<td>...was relevant</td>
<td>35%</td>
<td>60%</td>
</tr>
<tr>
<td>...was clearly presented</td>
<td>30%</td>
<td>60%</td>
</tr>
<tr>
<td>...maintained interest</td>
<td>15%</td>
<td>36%</td>
</tr>
</tbody>
</table>

The number of comments describing the critical appraisal workshop as the “most useful” part of the unit increased (10/23 to 13/23) and the number of comments describing it as “least useful” decreased (4/14 to 0/13).

Performance in a subsequent assessed critical appraisal task was maintained (median marks before and after flipping of 61% and 64%, respectively).

Conclusion: A flipped approach increased the range of critical appraisal topics covered and improved student satisfaction, whilst maintaining assessment performance. This was made possible by the use of an e-learning package originally designed for professional development within the NHS. Such integration between workplace and university education may be useful in other pharmacy courses.

References:
34. Investigating Student Perceptions of Feedback

Authors: Mr Alykhan Kassam & Dr Josie Fraser. Bradford School of Pharmacy, University of Bradford.

Background: Feedback is a pertinent feature of a student’s academic experience, not least due to the lack of consistency which students have reported across higher education (HE) institutions in regards to the quality and regularity of feedback (Weaver, 2006). Whilst there is a large body of research into the different components of feedback, there are limited studies which examine the emerging notion concerning student perceptions of feedback. Over recent years, feedback has frequently been rated poorly in student satisfaction surveys. A staff-student research project was conducted to obtain student perceptions of feedback. The aim of this project was to make key recommendations to senior staff within the Faculty of Life Studies at the University of Bradford as to what students perceive to be ‘good feedback’ and how current feedback mechanisms could be improved.

Method: Results from the National Student Survey (NSS) and the internal Bradford Student Survey (BSS) were analysed quantitatively by organising data in a tabular format and comparing responses across programmes; and qualitatively by searching for the term ‘feedback’ across all raw comments. This generated the questions and themes for two focus groups in which student representatives from within the Faculty were invited to attend. Recordings of the focus groups were played back repeatedly and a thematic analysis was conducted, with key themes determined from the questions asked at the focus groups.

Results: Qualitative analysis from the student surveys indicated that the concept of ‘good feedback’ needed to be explored further to understand exactly how feedback could be made specific, constructive and detailed. Several key concepts emerged including:
- Formative feedback;
- Signposting feedback; and
- The presentation of feedback.

The focus groups were attended by five student representatives – each representing their respective cohorts. Overall findings from the NSS and BSS analysis in addition to findings from the focus groups suggest that students and staff need to work as partners to set realistic expectations for feedback.

Conclusion: Realistic expectations for feedback can be achieved by signposting feedback throughout programmes within the Faculty. The term ‘good feedback’ is multi-faceted and consists of feedback which is specific and personalised to the student through the use of relevant examples and suggested areas for improvement – a vital element of formative feedback. The creation of a generic feedback template was also proposed with a view to achieve consistency across the Faculty.

Reference:
35. Developing and evaluating a pilot mental health hospital placement for third year pharmacy students at Manchester Pharmacy School (MPS)

Authors:
Richard N Keers, Clinical Lecturer in Pharmacy\textsuperscript{1,2,3}
Petra Brown, Chief Pharmacist\textsuperscript{3}

\textsuperscript{1} Manchester Pharmacy School, The University of Manchester, Manchester, UK;
\textsuperscript{2} NIHR Greater Manchester Primary Care Patient Safety Translational Research Centre, Manchester Academic Health Sciences Centre (MAHSC), The University of Manchester, Manchester;
\textsuperscript{3} Medicines Management Team, Manchester Mental Health and Social Care NHS Trust, Manchester.

Background: Whilst many pharmacy schools in the UK provide classroom based teaching on mental health disorders to help prepare students to provide medicines optimisation to service users, few offer experiential opportunities in mental health hospitals where learning can be contextualised.\textsuperscript{1} The aim of this project was to introduce and evaluate a pilot mental health hospital placement for pharmacy students, with the goal of facilitating application of theoretical knowledge and development of communication skills and professionalism.

Method: Third year pharmacy students with MPS were invited to apply for limited places to visit a local mental health NHS hospital during February 2016. Visits were timed to coincide with undergraduate teaching on psychiatry. Applications required a short description of why the student wished to attend the placement to guide the selection process. Each site hosted up to six students per afternoon placement, with visits including a facility tour, group exercises, ward visit with pharmacist and short talks from non-pharmacy professionals. Following their visit, each student completed an evaluation form and reflective log.

Results: A total of sixteen students attended the pilot placements and completed evaluation forms. The evaluation forms indicated that students felt the placements were beneficial for their future practice and helped inform their future career choices. Qualitative free text comments revealed that students’ learning goals were met and that they enjoyed exploring how mental health services functioned along with the roles of different professionals in this setting. Students were in agreement that in future a greater number of placements should be offered, where the focus was on understanding specific disease states and interacting with patients.

Conclusion: We successfully implemented and evaluated a pilot mental health hospital placement for third year pharmacy students at MPS. Future plans are to address student demand by expanding the placements to include contact with patients and to focus more on individual mental disorders.

References:
36. Simulation – friend or foe? An investigation into student perceptions of clinical simulation as a teaching method for pharmacy undergraduate education.

Authors: Mr Michael Leech, Prof. Jane Portlock and Dr Adrian Hunt. University of Portsmouth.

Background: Clinical simulation in UK pharmacy education is an emerging theme. Simulation in nursing education creates a learning environment developing knowledge, skills, safety and confidence. Few MPharm courses include comprehensive interaction with real/expert and simulated patients, in simulated environments.

Methods: A workshop for year one MPharm students highlighting a patient journey through hospital admission, inpatient stay and discharge with pharmacists interventions highlighted was created. Stable angina pectoris and chronic obstructive pulmonary disorder (COPD) patients were explored, utilising human patient simulators, simulated hospital environments and simulated patients in both scenarios. A mixed method approach was used to identify principal themes, specifically student perceptions of simulation workshops and understanding of the role of the pharmacist in early years of the course. Ethics approval was granted.

Results: Thematic Analysis identified themes from eight focus groups and 394 questionnaires over repeated runs of the same first year workshop over four academic years. Table 1 summarises key benefits and limitations identified. Students highlighted background noise and the realistic environment helped familiarise them with the distractions they may face in real clinical environments (i.e. reduce transition shock).

Table 1 – benefits and limitations of simulation workshops:

<table>
<thead>
<tr>
<th>Benefits</th>
<th>Limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Their own skills were improved</td>
<td>The workshops were challenging and stressful</td>
</tr>
<tr>
<td>It was good to see real life simulated and to meet simulated patients</td>
<td>In some cases waiting time to meet real patients was excessive</td>
</tr>
<tr>
<td>The session offered a chance to practice health promotion activities</td>
<td>Pre workshop lecture not detailed enough</td>
</tr>
<tr>
<td>The session allowed group / teamwork development</td>
<td>Pre workshop lecture too detailed</td>
</tr>
<tr>
<td>The session allowed us to put taught material into perspective</td>
<td>Reflection and debrief not useful</td>
</tr>
<tr>
<td>The session allowed us to learn a lot about hospital pharmacy</td>
<td>Simulation helped prepare me for placements</td>
</tr>
</tbody>
</table>

77% of respondents stated simulation workshops assisted learning more easily than traditional workshops. 93% stated the simulation workshop was a more useful way of learning compared to lectures. 93% would like more simulation sessions of this type. TA identified simulation puts theoretical knowledge into practice.

Conclusion: This study supports nursing education literature demonstrating that simulation assists the development of knowledge, skills and confidence. Students responded that transition shock was reduced, and they could focus on the task itself in subsequent placements.

References:
37. Aston University Integration with the West Midlands Clinical Pharmacist Network

**Authors:** Miss Natalie Lewis (Aston University) and Mr Puneet Sharma (University Hospitals Coventry and Warwickshire NHS Trust)

**Background:** The West Midlands Clinical Pharmacist Network (WMCPN) was set up in 2010 and comprises of a lead clinical pharmacist from each of the 14 trusts in the region. It works under the direction of the regional chief pharmacists group. It aims to act as a forum for sharing of information and acts to review service provision by comparing Key Performance Indicators (KPIs) from each trust. In 2015 Aston University integrated into the WMCPN by providing a representative to work with the group on its objectives.

**Description of work:** The Aston University representative has worked with the group to identify areas required to be investigated by research. In 2015 two areas were identified; the perceptions of hospital pharmacists by patients (arising from KPI data) and difficulties faced by newly qualified hospital pharmacists in the region (arising from group discussion). Aston University leads and delivers the research through undergraduate students, with input from the WMCPN. Both projects will be presented back to the group in May 2016. The WMCPN meetings also provide a forum for other academic researchers to engage trusts in their work.

**Proposed evaluation:** Both Aston University and the WMCPN will be evaluating the relationship and assessing the value that the other brings at the May 2016 meeting via panel discussion; which marks 1 year of the partnership. A major feature will be the outcome of the research projects. For the WMCPN the research will need to have been robust and met their original brief. For the university the research process would need to have been supported by the trusts in order to generate adequate data. A key factor driving the involvement of a University was the need of the group to produce publishable material. If the both parties agree that the work is publishable then the involvement of the university will be seen to be positive.
38. Optimisation of a sari filter.

Authors: Sophina Mahmood, Jill Barber and William Sampson. University of Manchester

Background: The second leading cause of death in children under the age of five years is diarrhoeal disease. However, the mortality rate can be significantly reduced through the provision of safe-drinking water and improved sanitation and hygiene. Diarrhoea is a symptom of infections caused by water-borne organisms, such as cholera, shigella and rotavirus. An innovative way of removing these microbes from household water supplies is through using sari filters. By folding a sari four to eight times the pore size of the cloth can act as effective and robust size-based removal mechanism. Huq et al\(^1\), confirmed folding an old sari at least four times provides a filter with pore sizes of approximately 20 μm and this retains >99% of V. cholera attached to plankton. This is a fourth year MPharm project culminating knowledge making up the spiralled course, from pharmaceutics and microbiology initially taught in the early years and also, sociology, research skills and pharmacy practice from the final years. Additionally, research from various disciplines, such as material sciences and textiles, was explored and integrated due to the nature of the sari filter concept.

Description of work:
The aims of this project are:
• to review literature related to sari filters, pore size distribution of filters and the effectiveness of fabrics for filtering water
• using mathematical models developed by Sampson\(^2\):
  o to determine the ideal pore size for a sari filter, which when folded four times gives a pore size distribution of 20um
  o to determine the most effective number of sari layers (between four and eight) by calculating the probability density and cumulative distributions
• to consider the effect of different cotton weaves on pore sizes through image analysis
• to evaluate the retention properties of cotton weaves with the smallest pore sizes.

Proposed evaluation: Measure the pore sizes of different cotton weaves by examining single layers of cotton sari via electron microscopy. The two weaves with the smallest pore sizes will undergo evaluation of their retention properties by comparing the turbidity of chalk suspension filtrate, where the chalk is of a known size.

References
39. “It feels like being a ‘real’ pharmacist”: developing a community health clinic for pharmacy undergraduate students in a General Practitioner practice

**Authors:** Dr Efthymia Mantzourani\(^1\), James Morgan\(^2\), Dr Catherine Rothwell\(^2\), Dr Jeremy Black\(^2\), Dr Keziah Maizey\(^2\). \(^1\)Cardiff School of Pharmacy and Pharmaceutical Sciences, Cardiff. \(^2\)Llandaff North Medical Centre, Cardiff.

**Background:** Integrating meaningful workplace learning to undergraduate pharmacy curricula is key to transform student perception of patient care and equip them with the skills required for a changing profession\(^1\). A novel placement opportunity was developed and piloted, whereby final year students would conduct a community health clinic in a General Practitioner (GP) practice. This project aimed to evaluate students’ perceptions on the placement’s contribution to their professional development.

**Description of work:** Intended learning outcomes were carefully reviewed by the placement lead and the practice manager of the GP surgery. The students would capture information on metrics, lifestyle monitoring and full medication history using a custom data entry tool on the clinical database. A protocol stating lower and upper limits or particular answers to questions was provided, to trigger logging of their concerns on the “GP query” screen.

Students would attend in groups of four: one student would take the lead and consult the patient, two would observe the consultation and one student would enter the data into the clinical system.

Two clinics were held in February 2016 and a third one is arranged for March 2016.

**Proposed evaluation:** All participating students were invited to attend focus groups to evaluate the session; focus groups would follow each clinic, to inform the structure of the following clinics. The schedule included open questions about the perceived value of the placement, barriers and facilitators.

Results from two focus groups have confirmed the value of the placement, and have informed the structure of the third session. Students stated that they felt “…like a ‘real pharmacist’ for probably the first time” and “…both that my confidence was increased by doing it, and that I was challenged to improve”.

Results from all three focus groups will feed forward to the rolling out of the placement throughout the next academic year.

Participating patients’ notes and related GP follow up will be reviewed to explore the value of the placement for the practice.

40. “Using a combined approach with simulation increases the competency and skills of the pharmacists that work in the Emergency Department”

Authors: Martin SJ, Dwyer P, Cutts C and Steinke DT Manchester Pharmacy School, University of Manchester

Background: Manchester Pharmacy School launched the new postgraduate “Advanced Clinical Skills” Course in September 2015 as part of the Advanced Specialist Training in Emergency Medicine programme. The course is designed to equip pharmacists with the necessary advanced clinical skills to work in the Emergency Department as specialist practitioners. The course uses a simulation mannequin (SimMan) as one part of a combined approach to teach physical examination skills. The aim of this research was to trial and assess this new method for teaching physical examination skills to the pharmacists.

Method: On face-to-face study days, the pharmacists were taught basic physical examination procedures for cardiovascular and respiratory examination. These skills were practiced on each other to enable students to learn “normal” sounds and pathology on examination. Tutors then used the SimMan to demonstrate “abnormal” cardiovascular and respiratory signs and symptoms. These included programming abnormal heart rhythms, such as aortic stenosis, in addition to abnormal respiratory sounds such as bilateral lower lobe pneumonia.

Results: From the evaluation questionnaires from these teaching sessions, students reported a high degree of satisfaction with this combined approach to teaching physical examination skills. “Excellent listening to normal and abnormal sounds”, “SimMan – good to hear various sounds” and “SimMan pathology was really useful”. Application of the learning has been demonstrated in practice. One student subsequently identified an abnormal heart sound on examining a patient in the ED.

Conclusion: The use of structured simulation for postgraduate pharmacist teaching of abnormal signs and symptoms for cardiovascular and respiratory examination enabled students to develop an appreciation of the differences between abnormal and normal findings. This complemented the traditional approach of practicing these physical examination skills on each other, which generally demonstrates “normal” findings. Using the combined learning approach enhances the competencies and skills needed to work in an emergency medicine environment independently.
41. “Teaching Clinical Skills to prepare pharmacists about to work in the Emergency Department”

**Authors:** Martin SJ, Steinke DT and Cutts C. *Manchester Pharmacy School, University of Manchester*

**Background:** Working in the Emergency Department (ED) requires experienced pharmacists who can work under pressure. Studies have shown that pharmacists who are Independent Prescribers with enhanced clinical skills could manage up to 48% patients presenting to the ED. In September 2015 Manchester Pharmacy School launched a new postgraduate “Advanced Clinical Skills” (ACS) Course as part of the Advanced Specialist Training in Emergency Medicine programme. The course is designed to equip pharmacists with the necessary advanced clinical skills to work in the Emergency Department as specialist practitioners. 16 experienced hospital pharmacists started the Course in September 2015.

**Description of work:** Traditionally, pharmacists have had a more “hands-off” clinical role. This needs to change if they are to take new roles in the ED. There are no nationally agreed competencies for pharmacists working in the ED and as yet, there is no defined role for the ED Pharmacist. The ACS Course uses a blended learning approach of taught face-to-face study days, webinars, e-learning and supervised practice to teach pharmacists these clinical skills. On the taught study days students learn practical skills including cannulation, vaccination and physical examination for a range of body systems. In addition, the use of case-based learning and simulation scenarios enables the pharmacists to build upon their previous clinical knowledge of pathophysiology, infection, safeguarding and mental health.

**Proposed evaluation:** The competencies and skills learnt on the Course are assessed by case presentations, an on-line examination and a reflective portfolio. A programme evaluation from the September 2015 cohort, along with student recommendations will be presented. The students will also be followed post qualification to evaluate their new enhanced role. Qualitative and quantitative feedback from these pharmacists will identify the strengths and weaknesses of the Course to equip pharmacists with the necessary enhanced clinical skills to work in the ED.
42. Integrating workplace learning: Evaluating workplace tutor arrangements for postgraduate learners

Author: Andrew Mawdsley. Manchester Pharmacy School, University of Manchester.

Background: Work-place tutors are integral to the blended postgraduate MSc in clinical pharmacy. Tutors are expected to support learners in the workplace to help develop basic and advanced skills, knowledge and behaviours that support a formal qualification. However, this arrangement has not been evaluated for a number of years. In line with re-established frameworks of competence for pharmacists (1), how this arrangement is functioning in the workplace, and how the University supports this, requires review.

Description of work: A questionnaire will be administered to all students (n = 46), and tutors (n = 29), enrolled on the current MSc. This will evaluate how the arrangement is functioning within the workplace, and offer insights in to how the University can better support workplace learning. Questions will explore how satisfied students and tutors feel with regards to support, communication, training and inclusion offered by the University and the reasons for these views. The questionnaire will capture the activities happening within the workplace which support learning, and perceptions on how effective this relationship is. This research will inform progression and change in the programme, and highlight how the University can develop the role of the workplace tutor.

Proposed evaluation: Interpretive analysis and comparison of a questionnaire open to all current students and tutors associated with the MSc Clinical and Health Services Pharmacy. The questionnaire will pose a series of Likert scale-type questions, and free text response questions, that will help to draw conclusions between participant groups, to compare and evaluate perceptions of satisfaction and benefit that workplace learning offers, in addition to University taught elements of the programme.

References
Evaluation of a flipped classroom approach for delivery of a pharmacokinetics course.

Authors: Paul J. McCague, Amy Wilson  
School of Pharmacy, Queen’s University Belfast

Background: Pharmacokinetics is a fundamental, scientific discipline which underpins therapeutics. It is embedded in the GPhC outcomes for the initial education and training of pharmacists (GPhC, 2011) and is taught throughout the MPharm degree at QUB in a spiral manner (Harden et al., 1999). Anecdotal evidence from students suggest they find this topic challenging and require additional support. This issue has been reflected in examination results, module reviews, student councils and staff student consultative committee. An integrated, method of delivering pharmacokinetics was developed and delivered in the academic year 2015/16. This involved case-based learning and use of a flipped classroom approach. The aim of this study is to assess the new method of delivery.

Description of work: A questionnaire methodology was used to determine Level 3 \((n=108)\) and Level 4 \((n=120)\) student views on the teaching of pharmacokinetics. Level 4 students received the traditional didactic lecture style delivery, whilst the Level 3 students received the newly developed course. Questionnaires were administered in January 2016. The questionnaire sought views on areas such as relevance of pharmacokinetics, usefulness of various teaching methods employed and student confidence in specific areas of pharmacokinetics. The study has received full ethical approval.

Proposed evaluation: All data has been collated using SPSS (v22). A total of 206 questionnaires were returned (response rate=91%). Preliminary findings suggest that the new approach has been successful. Ninety four percent of Level 3 students agreed that they had received adequate training in relation to pharmacokinetics compared to 21% of Level 4 students \((p<0.05)\). Furthermore, 84% of Level 3 students rated the lectures beneficial or very beneficial compared to 24% of Level 4 students \((p<0.05)\). Data analysis is ongoing and will be complete by March 2016. Content analysis will be used to evaluate free text responses. Results of this project will further help inform teaching of this topic.

References:  
44. Student participation in extra curricula education opportunities

Author: Ricarda Micallef, Dr Reem Kayyali. Kingston University

Background: Pharmacy Education South London (PESL) was formed in 2014, with funding from Health Education England South London, bringing together multiple providers of training, including Local Practice Forums (LPFs) and The Centre for Pharmacy Postgraduate Education (CPPE).1 These meetings are voluntary and open to all, including students and support staff, with multiple events running on the same topic. South London contains two schools of pharmacy. This study aimed to investigate the motivators for students’ uptake of extra curricula learning activities.

Method: A questionnaire based evaluation form was designed, based on a previous LPF evaluation form, using tick box questions to establish motivators for attendance and how learning will be applied into practice, plus free text for the least and most positive aspects of the session and an outcome based learning plan. Ethical approval was given for this study by a Higher Education Institute ethics committee. During the period of April to December 2015, 5 topics were held; 3 workshops run by CPPE and 2 lecture based topics. These were publicised through the LPF pages and details were emailed directly to pharmacy students in their 3rd and 4th year in one School of Pharmacy (n=200) through the researcher. Only two years were emailed due to venue capacities. The evaluation form was given out for completion at the end of each event. The responses per question were transposed into Microsoft Excel for collation of question totals to enable data evaluation.

Results: During the survey period 607 participants attended a session across South London. 13.7% (n=83) of these were students. 49 attended a lecture (9 in April and 40 in December) with 34 attending a workshop (2 in May, 5 in July and 27 in October). 20.5% (n=17) were male and 79.5% (n=66) female. 72.3% (n=60) stated they attended due to an interesting topic, with 100% stating the topic was relevant to current or future role. 36.1% (n=30) said they would complete a Continuing Professional Development (CPD) cycle after the session, with 38.6% (n=32) saying that attending the session would help them to proactively deal with patients.

Conclusion: When given the opportunity, students are keen to engage. Attendance is affected by holiday and exam periods, therefore the timings of events need to be planned to enhance student attendance Students are aware of CPD and keeping up to date to support their current and future practice. Engagement can be increased by publicising the learning outcomes/opportunities to be gained for the event and ensuring topics are relevant to practice. Promoting supplementary learning activities to students will enhance the quality of the future workforce and ensure effective practice based learning.

Reference:
45. MPharm students perceptions of how Clinical Pharmacy Practice Hospital Placements allow integration of the MPharm course at the Manchester Pharmacy School

Authors: Diane Mitchell, Layla Fattah, Sarah McBride, Lara Shah Clinical Tutors at Manchester Pharmacy School (MPS) and Central Manchester University Hospitals NHS Foundation Trust
Debra Morris, Holly Devine Clinical Tutors at MPS and Salford Royal NHS Foundation Trust
Adele McKellar, Caroline Mitchell, Lisa Blackburn Clinical Tutors at MPS and University Hospital of South Manchester NHS Foundation Trust

Background: Integration has been accepted as an important educational strategy in medical education. The GPhC recognised this and in the Future Pharmacists Standards for the initial training of pharmacists document they state that “learning opportunities must be structured to provide an integrated experience of relevant science and pharmacy practice.” The GPhC state that the ‘trans-disciplinary’ model of integration meets the expectations of future pharmacists, were students learn through the application to the real world.

As part of the Integrated Professional Practice pillar of the MPharm programme, students in the 2nd, 3rd and 4th year of the MPharm programme at Manchester Pharmacy School visit one of the three teaching hospitals CMFT, UHSM and SRFT for placements. We aim through patient and healthcare professional contact to allow students to apply principles of pharmacy practice in the practice environment and develop professional and communication skills whilst experiencing the practice of pharmacy in the hospital environment.

Description of work: For each tutorial we set objectives based on each strand of the MPharm degree (The Medicine, The Patient, The Pharmacist and The Public / Research) to integrate the students learning. As Clinical Tutors we have our opinions on how well we feel that we meet our aims and objectives around integration. As a group we decided it would be important to determine the student’s views on how well the placements allowed them to integrate their knowledge to allow us to improve our placements for the future.

Proposed evaluation: The session will be evaluated both quantitatively and qualitatively through a questionnaire. Students in the 2nd, 3rd and 4th years will be asked to rate how well they feel that the Clinical Pharmacy Practice course over the 2015/16 academic year brings together what they have learnt in the four stands of the MPharm and which strands they feel they can draw on to help complete their assessments. We will also determine what the students understand by the term integration and whether they feel it is important. Through the students answers we will use the qualitative data to determine common themes across each year group which, as a Clinical Tutor team we shall use to help shape the hospital placements for the future.

2. GPhC. Future Pharmacists. Standards for the initial education and training of pharmacists. May 2011
3. GPhC. Supplementary guidance for schools of pharmacy on integration.
46. Academic staff perspectives on innovative assessment in MPharm programme

**Authors:** Dr Julie D Morgan, Miss Piril Erel. *University of Bradford.*

**Background:** In 2012, Bradford School of Pharmacy (BSP) introduced a new MPharm curriculum (C2012) which was transformational for teaching/learning and assessment. A Team Based Learning (TBL) approach incorporated an assessment strategy via:

- **Assessment for learning:** Classroom assessments
- **Assessment of learning:**
  - Authentic practice problems
  - Evidence and reflection on skills (webfolio)
  - Traditional modular assessments
  - Innovative yearly synoptic assessment spanning the content of the whole stage

This blend of traditional (e.g. module exams) and innovative (including TBL classroom tests, webfolios, synoptic examinations) assessments was designed to improve the quality and meaningfulness of assessment in conjunction with the development of transferable graduate skills, aligning with National guidance [HEA, 2015]. The aim of the study was to obtain staff opinions on our assessment strategy to inform ongoing evaluation and review of MPharm C2012.

**Method:** An online questionnaire was devised using a Likert scale (1 = Strongly Disagree; 5 = Strongly Agree) based on the RADAR dimensions model, including questions on eight domains; all pharmacy academic staff were invited to participate. (Table 1) [University of Exeter, 2015]. Staff were asked to indicate their level of their agreement with the statements extrapolated from the RADAR dimensions model and consider the impact of the MPharm C2012 teaching/learning/assessment as whole.

**Table 1 – Assessment domains in questionnaire**

<table>
<thead>
<tr>
<th>Domain number</th>
<th>Aspect of assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Student choice in assessment</td>
</tr>
<tr>
<td>2</td>
<td>Influence of student feedback</td>
</tr>
<tr>
<td>3</td>
<td>Self-assessment &amp; feedback</td>
</tr>
<tr>
<td>4</td>
<td>Assesses learning outcomes</td>
</tr>
<tr>
<td>5</td>
<td>Encourages deep learning</td>
</tr>
<tr>
<td>6</td>
<td>Assessment of reasoning</td>
</tr>
<tr>
<td>7</td>
<td>Assessment frequency</td>
</tr>
<tr>
<td>8</td>
<td>Motivational assessment</td>
</tr>
</tbody>
</table>
Results: The response rate was 38.8% (n=19). From Figure 1 a high level of agreement was seen all domains except 1 and 6. Open comments indicated that the C2012 assessments were good at assessing learning outcomes whilst also promoting deep learning and providing intrinsic opportunities for feedback.

Conclusion: Findings show a largely positive attitude towards C2012 assessment, with further developments to be considered including:
- Review the level of student choice in assessment
- Provision of further opportunities for student self-assessment
- Review the frequency of assessment

This work has proven useful in our internal review and could be informative for other Schools of Pharmacy.

References
2. University of Exeter. RADAR dimensions model for evaluating assessment and feedback. 2015. Available at: http://www.exeter.ac.uk/staff/development/academic/assessmentandfeedback/radartoolkitresourcesforassessmentdesignalignmentandreview/ (accessed 2/2/16)
47. Student perspectives on subject integration in the MPharm 2012 curriculum

Authors: Dr Julie D Morgan, Mr Jim Johnston. University of Bradford.

Background: In 2012, Bradford School of Pharmacy (BSP) introduced a new MPharm curriculum (C2012). C2012 transformed our approach to learning, teaching and assessment; key tenets include student-centred Team-Based learning, spiral curriculum and integration of pharmaceutical, pharmacological sciences and pharmacy practice in line with national standards.[GPhC, 2011] In C2012, teaching is horizontally and vertically integrated through body systems, and revisited year-on-year covering increasingly complex cases, ultimately assimilated for holistic patient care. We believe C2012 is predominantly at the “Multi-disciplinary” step of Harden’s ladder of integration.[Harden, 1999] Assessment is varied including end-of-module assessments and end-of-year synoptic assessments which assess learning across multiple modules.

The aim of the study was to obtain student opinions on integration in teaching and assessment to inform ongoing evaluation and review of MPharm C2012.

Method: An electronic questionnaire was devised and completed anonymously by MPharm C2012 students during a taught session. Ethical approval was obtained. Questions were included on subject areas that were taught and assessed in each year, namely pharmaceutical chemistry, pharmaceutics, pharmacology, pharmacognosy, pharmacy practice and health & wellbeing.

Results: Year 1 students indicated that modules were focused on one main subject area with some horizontal integration. Students in years 2 and 3 indicated that there was a good balance of subject areas across the body systems modules in both teaching and assessment, with vertical integration of the subject areas introduced in year 1. During the data collection it was apparent that some students did not clearly understand the definition of some subject areas, particularly pharmacognosy.

Conclusion: Good integration was seen between science and practice subject areas, both horizontally and vertically in teaching. Synoptic assessment is able to assess across these subject areas in both written and practical assessments. The difficulty expressed with understanding the definition of some specific subject areas warrants further investigation to determine whether these subjects require an increased focus in the curriculum or whether integration is taking place in the minds of the students, resulting in them not recognising isolated disciplines.

References
48. Pharmacists Are from Mars, Nurses are from Venus: Nurse visits in the MPharm curriculum

Authors: Bob Morris1, Alison Gaskell2. 1Liverpool John Moores University 2Practice Education Facilitator Southport and Ormskirk Hospital NHS Trust

Background: Experiential learning and team working skills are encouraged by the General Pharmaceutical Council and pharmacy students have reported value and enjoyment from the various placements organised for them. A local Practice Education Facilitator offered, unsolicited, the opportunity to send Level 6 students on day visits with tutor District Nurses. Visits were integrated into the curriculum with one aim being to improve Interprofessional working.

Aim of research: To investigate student perceived value and issues associated with Level 6 Nurse Visits

Description of work: Students helped develop learning outcomes and a workbook for the visits by brainstorming ideas when visits were proposed and discussing development not provided elsewhere on course. These were piloted in a small cohort of student in 2014. The workbook and process were developed further and used for a full cohort in 2014-15.

Students were briefed about the visits and asked to self-select suitable dates using Doodle® polls. Participants were allocated locations with nurse tutors. Feedback on the activity was gathered using tests via Blackboard® and was used to improve the sessions for the 2015-16 cohort.

Initial analysis indicated a wide variation in the perceived value of the visits with several students feeling associated tasks and discussions were not relevant to pharmacy undergraduates. Some students were surprised by the reality of some of the patient situations. Several students found the visits immensely valuable for improving their patient communication skills and developing approaches to work with other professionals.

Additional locations were included for 2015-16 and changes made to the briefing session with emphasis on the learning outcomes around patient experience, clinical decision making and Interprofessional collaboration. Feedback is being collected for these visits.

Proposed evaluation: Feedback responses to the 2015-16 visits will be analysed quantitatively to determine how comfortable students feel on placements, how appropriate they think the visits are and whether they would recommend the visits to other peers.

Free text responses about the visits will be analysed for emerging themes with the aim to improve the experience for the 2016-17 cohort.
49. Brazilian stakeholders’ perspectives about pharmaceutical human resources training for the public sector.

Authors: Silvana Nair Leite¹,³, Fernanda Manzini¹, Debora Melecchi¹, Margo Karnikowski¹, Celia Chaves², Ronald Ferreira dos Santos². ¹Escola Nacional dos Farmaceuticos; ²FENAFAR; ³Federal University of Santa Catarina – Brazil.

Background: Brazil launched the National Pharmaceutical Assistance Policy (PNAF) in 2004, guiding public policies for the formulation of sectorial activities: medicines production, science and technology, industrial development and human workforce education and training. 12 years after PNAF there are 444 Schools of Pharmacy in Brazil, 77.7% are private and increasing number of pharmacists are being hired to work in public health services and management. The study explored nationwide stakeholders’ perspectives about human resources education and training in public pharmacy sector.

Method: Through 15 nationwide workshops setup do evaluate PNAF, 2,200 stakeholders: pharmacists students, health advisors, health services users representatives and managers participated in a SWOT analyses (Strengths, Weaknesses, Opportunities, and Threats) of the 10 years of PNAF in Brazil. Participants discussed the PNAF in groups of 10-15 people identifying their perceptions of the major progress and challenges, and pointing them in SWOT categories. The results were recorded in separate spreadsheets. Qualitative thematic analysis was employed to identify and understand participants’ perspectives about human resources education and training in the context of PNAF. The results were organized in SWOT general categories.

Results: Six main categories stood out. As strengths and opportunities, the growth of training and improved knowledge and practice offered by the government to public sector pharmacists, the investment in research on pharmaceutical services in public health facilities and the guidelines (2002) of the Ministry of Education for pharmaceutical education were the main subjects. Among the weaknesses and threats the poor integration between academia, government and private sector, the poor quality of some schools of pharmacy (due to a poor regulatory and evaluation systems), ineffective human resources policy (careers, remuneration) and the few postgraduate courses in pharmaceutical practice were the main constrains discussed.

Conclusion: Stakeholders identified important public and academic investments progress in education and training in public pharmacy sector. They also appointed that some challenges still remain, such as quality education evaluation and few relationship between university world and the pharmacy police and practice.
50. Schools of pharmacy in Brazil, 2003-2013: increasing numbers but unequal geographical distribution

Authors: Silvana Nair Leite, Paulo Roberto Boff, Bruna Maciel de Alencar, Dayde Lane Mendonca, Claire Anderson. Federal University of Santa Catarina; University of Brasilia, The University of Nottingham.

Background: Brazil has invested in university education in last two decades to overcome its low educational rates. There was an increase in all undergraduate courses. In pharmacy area, there was also an increase in public services and market demands for pharmacists, and public and private investments in pharmacy education. This study characterises and discusses the pharmacy school’s growth and distribution in Brazil over one decade.

Method: Research was conducted on the historical data records from the Brazilian Ministry of Education, the Statistics and Geography Institute and the Brazilian Council of Pharmacy online databases

Results: Between 2003 and 2013 the number of schools of pharmacy registered in Brazil increased 241% (184 to 444 schools). Public courses increased in 98% in this period, but private courses increased more since the educational market opening in 1990s and nowadays they are 77%. The growth was uneven between the Brazilian geographic regions. Despite the great increase of schools in midwest and north regions, the school’s distribution is unequal: southeast region concentrate 50% of the schools (1/370,000 population); south region 20% (1/335,600 population); Midwest 11% (1/269,000 population), north region 6% (1/585,700 population) and northeast 13.7% (1/979,000 population). Northeast region is, historically, the poorest and the lowest socioeconomics region. Between 2010 and 2013 the number of schools began to decrease and some courses had closed because of low student demand.

Conclusion: Brazil had experienced a large increase in the number of schools of pharmacy over one decade. Despite public investment in new universities and pharmacy undergraduate courses, most schools are private. The richest regions southeast and south concentrate 70% of the schools, whereas northeast region has the lowest number of schools and the most socio and epidemiological needs. Brazilian government and university leaders must evaluate the real social and health needs in different country regions.
51. Clinical Cultural Competency and Knowledge of Health Disparities Amongst Pharmacy Students

Author: Zachariah Nazar, Farhana Begum. University of Portsmouth

Background: The UK census indicates the ethnic minority population is rising thus recognising culture with regards to healthcare is becoming increasingly important. Cultural competence within healthcare professionals has shown to eliminate health disparities in ethnic minorities\(^1\). Pharmacy students will be the future pharmacists facing this change in demographics, and therefore it is important that they are culturally competent. This study aimed to determine whether University of Portsmouth MPharm students are culturally competent and have appropriate knowledge regarding health disparities. Data was collected from first year and final year students to allow for comparisons. Demographic variables and other factors relating to different levels of cultural competency were also considered.

Method: An adapted version of the Clinical Cultural Competency Questionnaire (CCCQ)\(^2\) was used to assess students’ cultural competence. Quantitative and qualitative data analysis was employed to interpret the findings.

Results: 61% (n=135) of first and final year students participated in this study. Both first year and final year students were found not to be culturally competent and had a low amount of knowledge regarding health disparities. However, final year students were more culturally competent; it is thought this was due to them being older and a greater proportion having lived or travelled abroad. These outcomes are supported by the literature. Furthermore, final year students had undertaken more work-based placements and a greater amount of teaching, which may have contributed to their increased competency. Teaching with regards to cultural competence in the MPharm degree was found to be insufficient and not associated with what little cultural competence students had.

Conclusion: The University of Portsmouth MPharm degree should consider implementing further teaching in cultural competency to enhance students’ preparedness in tackling the health challenges of the changing UK demographics. The literature indicates that this is most effectively implemented through workshops or the organisation of experiential-based learning such as pharmacy work placements.

References
52. Preparing students for professional practice, supporting and integrating incremental experiential learning.

Authors: Michelle O’Driscoll, Ronan Quirke, Dr Laura Sahm & Dr Eileen M. O’Leary.  
*University College Cork*

**Background:** The School of Pharmacy in UCC is currently heading into the second year of an integrated MPharm Programme. Integration of university and workplace learning along with the development of integrated systems-based modules is a key feature of the new programme. It is envisaged that through the use of a virtual ‘Pharma Family’ that horizontal and vertical integration across subject matter and in placements will lead to spiral development for our students. This approach of building on prior learning, contextualising learning and putting learning into practice by integrating incremental placements throughout the five years will ensure our students transition to professional practice will be supported and yield students that are work and world ready.

**Description of work:** Our challenge is to ensure that our students are ready for each incremental placement and also that the pharmacy tutors are ready for our students. This project centres on year 1 students who are required to do a one day placement in a community pharmacy. While we have an electronic manual outlining what is required of the student on the placement, feedback indicates that tutors and students were not altogether clear on ‘the learning outcomes’ for the day. To this end we are using technology, animated videos, created using VideoScribe and interactive scenarios and self-assessment created using Articulate Storyline, to outline more clearly what the learning outcomes are for both students and tutors. We are also using these technologies to provide information relating to the intended learning outcomes to supplement the experiential learning and to ensure that all students receive a minimum standard of information. We will outline our work at this conference and are happy to share our experience and learn from others.

**Proposed evaluation:** We will organise focus groups with the students who went on placement this year and a separate one with their tutors to evaluate our resources.
53. Preparing students for professional practice: integrating the CPD requirement of professional pharmacists into our curriculum for undergraduate pharmacy students

Authors: Dr Eileen M. O’Leary, Dr Kevin Murphy, Dr Margaret Bermingham & Dr John J. Keating. School of Pharmacy, University College Cork.

Background: The Pharmaceutical Society of Ireland is the pharmacy regulator in Ireland and in 2013 devised the Core Competency Framework for Pharmacists. It outlines 6 domains of practice, divided into 25 competencies that are further subdivided into 178 behaviours. Pharmacy students and practicing pharmacists in Ireland must attain and retain a consistent level of competency in these behaviours. The Irish Institute of Pharmacy (IIoP) was established in 2011 to oversee the implementation of continuing professional development (CPD) for pharmacists and developed a bespoke electronic platform for pharmacists to document and reflect on their learning in and for practice.

Description of work: Our challenge is to ensure that students are ready for professional practice and ongoing CPD when they graduate. We must ensure that the behaviours identified in the Core Competency Framework are integrated into our curriculum and that the tasks our students complete reflect real-life expectations. We have adopted the PebblePad eportfolio to help integrate what we do with our students at undergraduate level with what will be expected of them in their profession. With PebblePad, we have mimicked the reflective CPD cycle used by the IIoP and students have used this CPD cycle to reflect on formal and non-formal learning. We have also mimicked the core competency self-assessment tool devised by the IIOP, which students will use to identify their learning needs against the specific behaviours expected of them. We believe it is essential that we instil reflective, developmental, independent learning in students at an early stage, so that lifelong learning is engrained and that students will recognise that the responsibility for learning and identifying learning needs resides predominantly with the learner.

Proposed evaluation: We will organise focus groups with students to evaluate their experience with PebblePad as a tool to monitor and track competencies, document reflections and identify learning needs.

Core Competency Framework:
http://www.thepsi.ie/libraries/publications/psi_core_competency_framework_for_pharmacists.sflb.ashx
54. The Framework for Discussion (FFD): A useful tool to promote integration and independent-study in Problem-based learning (PBL)

Author: Dr Helen Paine. Department of Pharmacy and Pharmacology, University of Bath, Claverton Down, Bath. BA2 7AY

Background: The integration of theory and practice is fundamental to the initial education and training of pharmacists. In addition, tomorrow's pharmacy team need to be exemplary communicators and team players. PBL is a well-recognised style of learning where students work together to come up with a solution, assessed via a creative output. Knowledge and skills developed throughout the MPharm course are required for PBL, however integration between different elements of the course is challenging and students find this difficult.

Method: The FFD, introduced in October 2015, was designed with the aim of facilitating and promoting integration and independent learning in the new Bath MPharm. The framework comprises of six coloured hexagons, each of which represent a key theme in the MPharm programme surrounding an overarching central topic. Students, in tutor-based teams, use the tasks and resources in each hexagon to scaffold their learning and develop their background knowledge, before applying it to a problem-based scenario. The impact of the FFD tool was evaluated in a number of ways. Following the first 5-week PBL cycle a Survey Monkey questionnaire was sent to all first year MPharm students, while tutors were also asked to provide written feedback. More recently, following the conclusion of two PBL cycles, short focus groups (20 students in two groups) were used to comprehensively evaluate its impact.

Results: In the Survey Monkey questionnaire (55 responses; 50% response rate), 45% agreed and 16% of students strongly agreed that the FFD was a useful tool for conducting research and enquiry around a PBL topic. In addition, 72% of students agreed and 13% strongly agreed that the FFD was appropriately scaffolded for their level of learning. Later on in the academic year, following a second PBL learning cycle, students, during short focus groups, commented that the FFD gave them confidence and direction for the PBL task and helped them to integrate different parts of the MPharm course. In addition, the FFD facilitated team work as students each took responsibility for a section of the hexagon and shared ideas in student-led meetings. It also promoted leadership through a team leader being nominated in each task. Feedback from staff running PBL has also been very positive.

Conclusion: The FFD is a structured, visually attractive and easy-to-use tool. Students have found it useful to scaffold and integrate their learning, whilst staff have commented that it provides a robust tool to support the PBL process. Future work could see the development of this framework in other areas of the MPharm.

References:
2. Rudkin, D & Clarke, N.Tomorrow’s Pharmacy team: Future standards for the initial training and education of pharmacists, pharmacy technicians and pharmacy support staff. GPhC. June 2015, pp 1-10.
55. Evaluating the impact of a final-year project on health promotion and public engagement on student’s perceived confidence for demonstrating skills in practice.

Authors: Harsha Parmar, Jenny Hughes, Victoria Tavares, Ruth Ledder, Andrew McBain, Jeff Penny, Mary Rhodes, Victoria Silkstone and Kaye Williams. University of Manchester.

Introduction: The future focus of healthcare is on prevention and public health. As educators we must ensure that future pharmacists are equipped to communicate effectively with the public, manage themselves, their workload and self-development to deliver community-based healthcare services. Health promotion and public engagement (HPPE) projects could address this by providing students with opportunities to design and deliver HPPE events and write healthcare service proposals underpinned by relevant scientific and practice-based literature. This study aimed to investigate the impact of the HPPE project on student’s perceived confidence for demonstrating self-management, self-development, and communication skills in practice.

Method: Perceived confidence was investigated using GPhC’s performance standards. Standards were initially assessed by the first author on the basis of relevance to the project objectives, with equivocal standards discussed by the team until consensus was reached. Standards were grouped into eight domains of practice: managing self, managing work, managing problems, commitment to quality, on-going learning and development, effective communication, working effectively with others, and providing additional clinical and pharmaceutical services. Final-year students were asked to (dis)agree with each standard using a 5-point Likert scale (using 5=strongly agree; 1=strongly disagree). Within each domain, responses to all statements were grouped and analysed by conducting an independent-samples t-test to explore differences in mean pre-completion and post-completion scores in order to investigate the impact of the HPPE project on perceived confidence in demonstrating domain-based skills. Ethics approval was not required.

Results: 23/25 students completed the questionnaire at the pre-completion stage and 25/25 at the post-completion stage. Statistical differences in perceived confidence to demonstrate domain-based skills were found in 5/8 domains, and the magnitude of difference was large (0.14 effect size), when comparing responses from the two time-points (Table 1).

<table>
<thead>
<tr>
<th>Domain</th>
<th>Pre-completion Mean (SD)</th>
<th>Post-completion Mean (SD)</th>
<th>t</th>
<th>p</th>
<th>Effect size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Managing self</td>
<td>4.32 (0.45)</td>
<td>4.67 (0.25)</td>
<td>-3.22</td>
<td>0.003</td>
<td>0.24</td>
</tr>
<tr>
<td>Managing work</td>
<td>4.32 (0.52)</td>
<td>4.73 (0.35)</td>
<td>-3.04</td>
<td>0.004</td>
<td>0.19</td>
</tr>
<tr>
<td>Managing problems</td>
<td>3.84 (0.61)</td>
<td>4.35 (0.41)</td>
<td>-3.43</td>
<td>0.001</td>
<td>0.28</td>
</tr>
<tr>
<td>On-going learning and development</td>
<td>3.86 (0.68)</td>
<td>4.33 (0.57)</td>
<td>-2.59</td>
<td>0.013</td>
<td>0.40</td>
</tr>
<tr>
<td>Effective communication</td>
<td>4.44 (0.46)</td>
<td>4.71 (0.29)</td>
<td>-2.51</td>
<td>0.016</td>
<td>0.14</td>
</tr>
</tbody>
</table>

Table 1. Comparison of mean confidence scores pre and post HPPE project.

Conclusion: On completion of this project, students felt more confident in demonstrating self-management skills, addressing on-going learning and development and communicating effectively. This type of a project could increase pharmacy student’s confidence in demonstrating skills imperative for future practitioners working in frontline healthcare.

Reference

56. Development of an examination to assess the clinical assessment of prescriptions by 4th year pharmacy students

Authors: Mr Gautam C Paul, Dr Sue LF Chan, Dr Li-Chia Chen and Prof Claire Anderson. 
University of Nottingham

Background: Patient-facing pharmacists must competently demonstrate clinical assessment of prescriptions and studies have recognised the contributions that pharmacists make via this process1,2. Nationally, there is no competence assessment requiring pharmacists to demonstrate this skill. Pre-registration training requires achieving competence in the assessment of prescriptions for safety and clinical appropriateness however, delivery and assessment of pre-registration training is inconsistent.

The East Midlands Clinical Pharmacy Network (EMPCN) and East Midlands Pharmacy Education & Training Network (EMPETN) introduced assessments for hospital pharmacists to demonstrate they can clinically assess prescriptions. The assessment has been adapted for the Integrated Pharmaceutical and Patient Care module (Year 4 MPharm), University of Nottingham.

Description of work: Testing for competence at final year level requires the assessment to be highly valid and reliable. In the absence of national guidance regarding clinical assessment of prescriptions, the assessment was blueprinted against:

- General Pharmaceutical Council (GPhC) Learning Outcomes
- EMCPN and EMPETN Standards
- Royal Pharmaceutical Society guidance on clinical checking and Hospital Pharmacy Standards

The assessment requires the student to clinically assess six prescriptions within an hour. Students are asked to document:

- Identified issues and actions taken to resolve them
- Monitoring to be undertaken
- Contact required with the prescriber

To pass, students must achieve an overall mark of 40% and demonstrate competence against associated GPhC Learning Outcomes. The assessment is undertaken twice in the final year (Jan, May).

Proposed evaluation: To support student’s learning and examination preparation, an evaluation will be undertaken after the second assessment (May 2016), including a questionnaire survey on the perception of the assessment and challenges associated with preparation for the assessment, and focus groups to explore what support is required to improve prescription assessment skills. Analysis of the results will be carried out to inform future student teaching and assessment.

57. Shadowing a Practice Pharmacist in General Practice: A Pilot Placement

Author: Sadia Qayyum. Manchester Pharmacy School, University of Manchester.

Background: The role of practice-based pharmacists, working as part of the clinical team to relieve the pressure on GPs (1) and contribute to patient care is one that we may see more of our future pharmacists working towards. An opportunity to observe a non-patient facing practice pharmacist in the workplace was designed where the learning outcomes were to observe how pharmacist skills are used to free up GPs time to improve patient health outcomes.

Method: A lecturer from the School working one day a week as a practice pharmacist, worked with her surgery to develop a pilot placement for 4th year undergraduate MPharm students; shadowing part of her role as a non-patient facing pharmacist. At the placement, students were able to process prescription requests, use computer software in practice and how each programme is used. There were opportunities to order routine bloods, recall patients for reviews, handle medicine reconciliation following hospital discharge as well as a handover over to the GP. Prior to attending the placement, the students attended a meeting to discuss their ideas and expectations of the pilot. A post-placement questionnaire was issued to students to evaluate whether their learning needs were met.

Results: All students who participated in the pilot completed a feedback form, 100% of students said the day had met their learning objectives and 94% of students rated the pilot as ‘interesting’ where a rating of 1, 2 or 3 was deemed boring and a score of 4 or 5 were deemed interesting. The feedback showed that the students enjoyed listening to the importance of pharmacists from the GPs’ viewpoint and seeing the skills needed as a practice pharmacist. Suggestions for improvement included having placements longer than four hours and to spend time consulting with patients. The feedback is currently being used to improve the roll out of this placement to all 4th year undergraduate students during the 2016/17 academic year.

References
Impact of Industrial Pharmacy Site Visits on Masters of Pharmacy (MPharm) Students

Authors: Victoria Silkstone, Sally Jacobs (Manchester Pharmacy School) and Matt Bunker (AstraZeneca)

Background: The General Pharmaceutical Council’s (GPhC’s) educational standards\(^1\) require MPharm degree courses to provide opportunities for students to develop specialist knowledge, such as industrial pharmacy. Although the pharmacy workforce within the pharmaceutical industry is small\(^2\), this is a key area of interest for some of our students. This abstract describes an initiative at Manchester Pharmacy School (MPS) where third year students worked in the Pharmaceutical Development department of AstraZeneca (AZ) for one day on small scale projects.

Description of Work: Academic staff at MPS worked closely with scientists at AZ to develop three small scale, industry relevant projects for the students to work on. Students undertook pre-reading on their chosen area before the site visit. They worked in groups of six, with two scientists (mentors) to plan a schedule of work for the day. They then undertook their planned experiments before presenting their findings to a group of academics and AZ scientists. The projects linked closely with existing MPharm teaching on pharmaceutical sciences to allow students to experience its application in the real world.

Proposed Evaluation: All students who participated in the visit to AZ completed an evaluation form focused around their expectations of the day and their experiences of the projects. Early analysis of this feedback is very positive with all students agreeing that the day had met their expectations. A more holistic evaluation will take place following the second cohort to undertake this visit during 2016. This aims to explore how well the visit aligned with the undergraduate teaching and learning experience and the impact of the visit on students’ career aspirations. To this end, all students attending the placement will be invited to participate in semi-structured interviews. Themes generated from the analysis will help inform the development of future industrial placements.

59. Using student blogs for reflective learning, engagement and evaluation

Authors: Silverthorne, J and Mawdsley, A. Manchester Pharmacy School, University of Manchester.

Background: The ability to critically reflect upon practice is an important skill for healthcare professionals. When delivering education and training, meaningful evaluation of learning materials can inform and enhance future delivery. Reflective blogs have been employed in a postgraduate education and training unit as an innovative, digital means of developing reflective learning and engaging students as partners in course evaluation.

Description of work: Students are allocated responsibility for a weekly blog to critically reflect on their learning during a 12 week course. Guidance on blog-writing and reflective models is provided and reflection is facilitated through the use of a series of structured questions. Using a blog is intended to engage students in reflective practice and peer discussion, consolidating individual and group learning while facilitating identification of development needs (1, 2). Additionally, through engaging in developing their own educational practice, students are actively involved in course evaluation in collaboration with the course leaders. The strengths and weaknesses of the learning materials are identified to further develop course content and inform course design.

Proposed evaluation: Blogs from three student cohorts (n= 19) will be analysed through an interpretive method to evaluate the value of this form of feedback in course evaluation and in promoting student engagement and reflective learning.

References:
60. Student perspectives of scenarios in a simulated pharmacy business module

Authors: Vibhu Solanki, Kimberley Sonnex, Sarah Brydges, Claire Anderson, Matthew Boyd. University of Nottingham

Background: The General Pharmaceutical Council educational standards for the Initial Education and Training of Pharmacists outline 58 learning outcomes, 36 of which are covered in a final year integrated synoptic module, Pharmacy Leadership and Management (PLM)¹. PLM provides an experiential learning simulation drawing on leadership and management skills coupled with clinical problem solving. Teams of six students run their own primary care-based pharmacy business competing against each other using gamification, based on a successful model currently run by the GIMMICS consortia of universities across Europe. The students are exposed to a wide variety of problem based scenarios throughout the simulation. These are linked to the 36 learning outcomes but broadly grouped into six domains of activity, business and people development, communication with patients and professionals, governance and safety, clinical practice, medicines supply and health promotion and public health.

Description of work: A total of 180 scenarios were developed by the module team in collaboration with key stakeholders including school staff, members of the profession at all levels, patients and academic colleagues. The scenarios were mapped to the 36 module outcomes to ensure full coverage and written giving due regard to the importance of the integration of science and practice delivered throughout the degree programme. The scenarios are designed to be delivered using a range of methods including face-to-face enquiries, telephone queries and email requests. Each scenario is graded for difficulty to reflect where and when the scenario should be used within the simulation to reflect the concept of spiral learning.

Proposed evaluation: An anonymous questionnaire will be circulated to students to understand the impact of the scenarios on student learning. Topics will include how effective scenarios were, realism, relevance and areas for improvement. In addition we will explore with students about how they used the experience of the scenarios to self-reflect and coach others to improve performance.

References:
61. Inter-professional learning opportunities for pharmacy and speech and language students

Authors: Stratham L, Nazlie H, Scott L, Hardisty J. University of Sunderland, Newcastle University

Background: The need to provide inter-professional learning opportunities for undergraduate healthcare students is well established\(^1\). The working relationships between speech and language teams and pharmacists are under explored as is how greater collaboration can be encouraged for the benefit of patients\(^2\). Several patient groups have significant intervention from both speech and language teams and pharmacists including those with swallowing and/or speech disorders and people with learning difficulties.

Description of work: We are developing teaching and learning opportunities for speech and language and pharmacy students. These full day sessions will provide opportunities to interact with laryngectomy patients to explore how healthcare professionals can work together to support these patients. Issues around the practicalities, legalities and clinical considerations of developing solutions to administering medication to patients with swallowing disorders will be explored through team-based learning. Students will also explore issues around communication with patients with learning difficulties and how to gain consent to treatment from this patient group.

Proposed evaluation: Students attending this event will have some limited previous experience of inter-professional learning and no experience of work between pharmacy and speech and language teams. All students attending the IPL conference will be asked to complete two questionnaires – at the start of the conference they will complete a modified version (that has previously been used with IPL activities) of Readiness for Interprofessional Learning Scale (RIPLS) and another questionnaire at the end of the conference they will complete a post-conference questionnaire reflecting on the seminar experience. Both evaluation forms contain both open ended questions and likert scale questions. It will be possible to carry out Wilcoxon signed ranks test, kruskal-Wallis test and Pearson’s chi-square test as the data will be non-parametric. Qualitative data from the post-conference evaluation will be coded into emergent themes and sub-themes which will form the basis of thematic analysis. Findings from both the quantitative and qualitative data will link into the conference themes and future developments.

References

Authors: Louise Stratham, Lesley Scott, Claire Guilding, Elsa Randles, Alan Green, Jessica Hardisty. University of Sunderland, Newcastle University.

Background: The need for antibiotic stewardship to be embedded into undergraduate teaching for healthcare professionals is well established as antibiotic resistance is considered to be a key issue which will affect the delivery of healthcare in the future. The prescribing and administration of antibiotics appropriately requires high-level clinical reasoning skills in order to reduce the risk of sepsis and other complications. The focus on reducing the use of antibiotics must therefore be balanced against an ability to recognise when prescribing is appropriate. All healthcare professionals require knowledge of infections and their management such that appropriate communications take place within and between healthcare teams.

Providing opportunities for inter-professional learning for healthcare students is challenging due to the geographical location of schools, timetabling constraints and differences in learning objectives and assessment schedules. The risk these demands place on inter-professional learning activities is that they focus on important aspects such as communication but are not able to explore clinical subjects in depth.

Pilot work was conducted in order to inform the development of a new inter-professional learning opportunity for medical and pharmacy students. Over 400 students were asked to complete a questionnaire following small group teaching sessions entitled ‘choosing the right antibiotic’. 90% (n=359/400) either agreed or strongly agreed with the statement “this seminar helped me understand how the roles of other healthcare professionals contribute to patient care”. 95% (n= 377/398) either agreed or strongly agreed with the statement “shared learning will help me think positively about other health and social care professionals”. 92% (n= 369/399) either agreed or strongly agreed with the statement “shared learning with other health and social care students will help me communicate better with patients and other professionals”.

A further 10 students took part in a small pilot looking at how the management of sepsis can be taught through inter-professional team-based learning and simulation approaches. Qualitative data from these students showed that they found the experience useful to their learning and future practice.

“(It) has helped me a lot in remembering information, IPLs (inter-professional learning sessions) in general are more memorable and you retain more information from them” Pharmacy student.

“To have an understanding of how pharmacy students would problem solve and what they would prioritise” Medical student

“Confidence, we know more than we think; and shouldn’t be intimidated by other professionals” Pharmacy student.
“It provides a good opportunity to see a case in practice and raises considerations which may not be thought of when looking at a piece of paper”.

Medical student

Description of work: We have developed full day inter-professional ‘conference’ days which involve medical and pharmacy students being released from normal timetabled activities to take part. During the day students take part in the following activities:

• Plenary sessions to provide context regarding the prescribing of antibiotics
• Small group inter-professional sessions in which students are challenged to make decisions on the prescribing and administration of antibiotics
• Simulation sessions in which the identification and management of sepsis is explored
• Significant event analysis around antibiotic usage.

Proposed evaluation: The evaluation will employ quantitative and qualitative methodology to explore student’s attitudes to inter-professional learning and the appropriateness of the conference format to deliver the clinical learning objectives. The evaluation data obtained will build on the pilot data.

References:
63. What do students expect from integration? An exploration of student views and expectations about a new integrated pharmacy programme

Authors: Judith Strawbridge, Mark Philbin, Paul Gallagher. Royal College of Surgeons in Ireland.

Background: Internationally educators are reflecting on the challenges of designing integrated curricula for healthcare professionals.1-11 The Pharmaceutical Society of Ireland commissioned a review of education of pharmacists in Ireland. This research, supported by international trends, led to the recommendation for a 5 year fully integrated pharmacy programme for Ireland.11 This study was conducted to understand students' needs to fully inform the design of the new integrated pharmacy programme nationally. The study was designed to determine students' expectations of an integrated programme and their perception of the merits, value and challenges of studying pharmacy through an integrated programme.

Method: Qualitative methodology was used to explore students' opinions. Nine focus groups were conducted; three in each of the three institutions delivering pharmacy programmes in Ireland. The student representative on the National Forum was also interviewed.

Results: The study showed that students recognised that the role of the pharmacist is changing and felt that an integrated programme would provide better context for learning and preparedness for practice. Students had an expectation that experiential learning would be provided in all sectors in an equitable and transparent manner. There was strong support for optional subjects, placements overseas and interprofessional education. Students identified that fiscal constraints were a potential barrier and might impact on the attractiveness of the degree.

Conclusion: This study has informed the development of the integrated pharmacy programme in Ireland, and should be of interest to those involved in curriculum design further afield as exploring student views and expectations is an important aspect of student-centred curriculum design.

64. Observed Structured Clinical Examination (OSCE) Assessor Training

Authors: Victoria Tavares, Mary Rhodes. University of Manchester

Background: OSCE can be used as a method of assessment in MPharm curricula to assess competence at the shows how level of Miller’s triangle. It is important for all assessments to be valid and reliable measures of competence, and one method of improving the reliability of an assessment is by reducing variation between assessors. It has been shown that training of OSCE assessors can reduce inter-rater variation when marking.\(^1\) OSCE are a labour intensive method of assessment and at least one trained assessor is required for each active station, this can pose a challenge for successful OSCE delivery.\(^2\)

Description of work: Both academic pharmacists (n=25) and pharmacists practicing in other sectors (n=23) have been recruited to act as OSCE assessors during spring 2016. All OSCE assessors will undertake a training programme. The aims of the OSCE training are to:

- Provide background to OSCE assessments
- Clarify the role of an OSCE assessor
- Practice marking OSCE via video
- Identify variation between markers

Proposed evaluation: Assessor marks will be analysed to identify variation between markers, with a particular focus on determining consistently outlying assessors. A training session evaluation form will be developed to capture satisfaction with the assessor training. Motivation to be involved with pharmacy education will be explored with the pharmacists practicing in other sectors.

References:
65. Exploring how MPharm students respond to real-life examples of breaking the rules for patient safety in community pharmacy

Authors: Thomas, C.E.L, Worrall, K & Silkstone, V. University of Manchester.

Background: Recent research has shown being a newly qualified pharmacist (NQP) can be a daunting and stressful experience [1]. NQPs describe a misalignment between the law-based, rule promoting environment of the degree and the somewhat more flexible reality of practice can cause unease for NQPs who fear bypassing or deviating from procedures may result in litigation [2]. Feeling unable to bypass or deviate from procedures when appropriate or necessary for patient care may risk patient safety.

Description of work: We aim to introduce 2nd year MPharm Manchester Pharmacy School students to situations where procedures were bypassed or deviated from in practice. Situations will be taken from interviews conducted with practicing community pharmacists [2]. Students will be required to answer questions regarding an evolving situation. Situations will include dispensing illegal prescriptions for example. Firstly, students’ understanding of the law in the situation will be tested. We then aim to understand which factors (if any) are deemed as sufficient justification to bypass or deviate from this procedure. Information regarding the patient, medication type, the prescriber and the day of the week will be provided. Students will be asked to consider if they would violate the procedure in this case. Alternative actions that could be taken in the given situation will also be discussed; such as referring the patient back to their GP. Students will also be informed of the action taken by the practising pharmacist who provided the situation at the end of the exercise. The proposed learning outcome is that students will have a more realistic expectation and are better equipped to deal with the realities of practice.

Proposed evaluation: We aim to explore the opinions of MPharm students regarding the violation of procedures in practice and their confidence to do this if it is required for patient safety. It is hoped that this exercise can be conducted throughout the MPharm degree in the future, to understand how professionalism develops over time.

References:
66. A qualitative evaluation of a formative skills-based assessment using students as partners in the learning process.

Authors: Dr Jon Waterfield & Dr Peter Rivers. De Montfort University.

Background: A new model of working for the formative assessment of a cohort of 140 third year MPharm students used groups of five students with clearly defined roles within an objective structured clinical exercise OSCE ‘assessment group’. The five roles included: 1) assessment lead/chair, 2) ‘pharmacist’ being assessed, 3) actor, 4) the first assessor (global assessment) and 5) the second assessor (technical checklist). Five patient counselling scenarios for each group were simulated in a role play, recorded using an iPAD and assessed by students. The student assessment lead provided detailed group feedback to the ‘pharmacist’. The aim of this evaluation was to explore the potential pedagogic advantages of using students as partners (HEA, 2014) compared to a traditional tutor-led OSCE model.

Method: Two focus groups of four students were held to evaluate student perception of this activity in third year practical classes. All focus groups were of one hour duration, audio-recorded, transcribed and analysed using a thematic framework.

Results: The nature of the learning experience was expressed positively: “Because it puts you in the student’s position and the markers position which allows you to see where you’ve gone wrong and what you could have done differently.” One description of the student-led process linked with future professional expectations: “Makes you more responsible and builds trust in yourself to look after your learning which I think is a priceless asset for the future and makes you more independent.” One of the perceived disadvantages of the new student-led model was the lack of formality and more lenient student interpretation of marking criteria.

Conclusion: Some of the key advantages of using students as partners such as increased engagement and alignment of learning are demonstrated in this formative student-led OSCE assessment. Integration of learning is evident but students require more training and exposure to this pedagogic approach before assessing their colleagues.

Using case studies to develop students’ higher order thinking in an integrated research skills unit

Authors: Willis SC, Demonacos C. Manchester Pharmacy School, University of Manchester

Background: The General Pharmaceutical Council’s education standards require MPharm curricula to be integrated. Integration is both a concept and a process for connecting knowledge across time between different undergraduate years and between subject disciplines in order to link theory and practice, creating relevance and meaning for new knowledge and improving retention of knowledge. Integration in the context of pharmacy education is thought to develop students’ ability to apply their knowledge effectively in clinical practice and enhance their self-directed learning skills. Yet integrating disciplines and promoting the acquisition of knowledge and higher order thinking skills is challenging.

Description of work: In year 3 of our MPharm programme an integrated research skills course has been designed to integrate horizontally with the content of teaching in other units within the year and to spiral within the programme. To promote integration, assessment of learning outcomes focuses on the extent to which students are able to identify, synthesise and link scientific research evidence to patient case studies based on the clinical topics they are learning about in other units in the year. Thus the intended learning outcomes for the case studies include literature searching, understanding research methodology and study design as well as connecting and applying their learning from science and practice disciplines.

Proposed evaluation: We intend to undertake an action research study, as this methodology is particularly suited to evaluating student perceptions of pedagogical approaches, and will enable us to investigate our own teaching and students’ learning. In our study, we will focus on exploring students’ views about learning how to learn for the case studies, as well as understanding whether an integrated curriculum prepares students better for contemporary practice and enables them to make accurate and appropriate clinical decisions. Through this process we will identify ways to support future cohorts of students in their understanding of the case study approach to learning.

References
68. Evaluation of individualised dispensing support for pharmacy students

Authors: Mr Adam Yates, Dr Margaret Culshaw. Department of Pharmacy, University of Huddersfield

Background: In 2013-14, 40% (33 of 82 students) of first year MPharm students passed their first dispensing assessment. In response, a range of dedicated resources were implemented to help 1st and 2nd year students who struggled with dispensing. Students could self-refer for support or were identified following in-class feedback on poor performance by tutors. Individualised support was managed by a lecturer-practitioner and included drop-in support sessions, one-to-one sessions and allocation of a student ‘dispensing mentor’. Students were provided with access to ‘SCRIPT’ software used under licence from the University of Strathclyde. ‘Dispensing mentors’ were 3rd year students, identified as they had excelled in their assessments in 1st and 2nd year.

Method: Support was evaluated using online surveys and pass rates. Dispensing assessment results were compared to a log of support accessed.

Results: 37/186 students responded to the survey; 14/100 from the 1st year and 23/86 from the 2nd year. 10 1st year and 19 2nd year respondents identified needing support. Of these 7 (1st) and 11 (2nd) were self-referrals, the remainder tutor referrals.
Most problems were difficulties in identifying and managing prescription issues and then completing worksheets, this accounted for 27/37 of the total respondents. An equal number (15/37) of the total chose to access support through one-to-one meetings, drop-in sessions, and ‘SCRIPT’. Only 4/37 chose a mentor.
In 2014-15, 63% (58 of 92) of 1st year and 53% (45 of 82) of 2nd year students year passed their dispensing assessment at the first attempt, this increased to 88% (7 of 8) and 57% (8 of 14) respectively for those who had one-to-one support.

Conclusion: Introducing additional support has improved the pass rate at first assessment. Students who were ‘struggling’ in some aspect of dispensing accessed all types of support offered and, despite low numbers, the most effective intervention was one-to-one support.
Pharmacy Education Conference 2017

Monday 26th June 2017

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