Pharmacy Education Conference
Manchester 2015
Volume of Abstracts
Manchester Pharmacy School
Introduction

This booklet contains the abstracts of the presentations and posters from the 2nd Pharmacy Education Conference at the Manchester Pharmacy School on 29th June 2015. The abstracts are also available online at: http://www.pharmacy.manchester.ac.uk/about-us/events/conference/papers2015

List of Abstracts and Authors

1. Practice makes perfect: applying the theory of expertise development on non-medical prescribers’ competencies
   • Authors: Abuzour, A. S.; Lewis, P. J.; Tully, M. P. Manchester Pharmacy School, University of Manchester.

2. Using technology to break down barriers in pharmacy education: a case study
   • Author: Majid Ali. Department of Pharmacy, University of Hertfordshire

3. Mobile technology in pharmacy education: a case study
   • Author: Mr Majid Ali. Department of Pharmacy, University of Hertfordshire.

4. Challenges facing the development of pharmacy education in Jordan
   • Authors: Lina R. Bader¹, Claire Anderson¹, Simon McGrath². ¹School of Pharmacy, University of Nottingham, ²School of Education, University of Nottingham.

5. Innovative Assessment and Personalised Feedback in Pharmacy
   • Authors: Jill Barber and Steve Ellis. Manchester Pharmacy School, University of Manchester.

6. The Role of Social Media in Interprofessional Education (IPE)
   • Authors: Aron Berry and Shereen Nabhani-Gebara. Kingston University School of Pharmacy and Chemistry

7. Large scale practice projects as a model for undergraduate research
   • Authors: Dr Matthew J Boyd, Dr Claire Mann and Dr Helen F Boardman. School of Pharmacy, University of Nottingham.

8. Comparing two cohorts using Pharmaceutical Care Plan
   • Author: Nicola Brown. Manchester Pharmacy School, University of Manchester.

9. A breakdown of final year pharmacy student’s results on PSA style questions
   • Authors: Nicola Brown¹ and Kurt Wilson². ¹Manchester Pharmacy School, University of Manchester, ²Manchester Medical School, University of Manchester.

10. Design and Development of Virtual Chemistry Practicals for Pharmacy Students.
    • Authors: Sam Butterworth, Youcef Mehellou, Peter Rainger, Sarah Thomas, Julie Mason, Parbir Jagpal, Anthony Cox and John Marriott. University of Birmingham.

11. Career inspirations - A Student’s perspective from one academic advisor’s group.
    • Authors: Joanne Canning¹, Hannah Phelan¹, Alison Howard¹, Fatema Lukmanji¹, Karen Butterworth², Sarah Ashworth² and Harmesh Aojula¹ ¹Manchester Pharmacy School & ²The University of Manchester Careers Service
12. Stakeholders’ perspective towards formal preceptor preparation for the Doctor of Pharmacy (PharmD) programme in Thailand

- Authors: Teeraporn Chanakit, MSc\textsuperscript{a}, Bee Yean Low, PhD\textsuperscript{b}, Payom Wongpoowarak, PhD\textsuperscript{c}, Summana Moolasarn, PhD\textsuperscript{d}, Aporn Jaturapatarawong, MSc\textsuperscript{e}, Wiwan Worakunphanich, BPharm\textsuperscript{f}, Mayuree Tangkiatkumjai, PhD\textsuperscript{g}, Claire Anderson, PhD\textsuperscript{a} \textsuperscript{a}School of Pharmacy, University of Nottingham, United Kingdom. \textsuperscript{b}School of Pharmacy, University of Nottingham Malaysia Campus, Malaysia. \textsuperscript{c}Faculty of Pharmaceutical Sciences, Prince of Songkla University, Songkhla, Thailand. \textsuperscript{d}Faculty of Pharmaceutical Sciences, Ubon Ratchathani University, Ubon Ratchathani, Thailand. \textsuperscript{e}Hospital Pharmacy Unit, Warinchumrab Hospital, Ubon Ratchathani, Thailand. \textsuperscript{f}Thai Traditional Medicine Research Institute, Bangkok, Thailand. \textsuperscript{g}Faculty of Pharmacy, Srinakharinwirot University, Nakhonnayok, Thailand

13. An evaluation of the attitudes towards Interprofessional Education (IPE) of 1st and 4th year MPharm students at the University of Bradford

- Authors: Mrs H Cook, Mr D Toffolo*, Miss T Solomon*. School of Pharmacy, University of Bradford (*3rd year pharmacy students)

14. Using stakeholders to inform the development of medicines based calculations teaching and assessment at one UK school of pharmacy

- Authors: Sion Coulman, Mui Hoon Tan and Dai John. School of Pharmacy and Pharmaceutical Sciences, Cardiff University.

15. The use of social media as a learning tool in health promotion

- Authors: Philip Crilly and Dr. Reem Kayyali. Kingston University.

16. Simulation based learning: perceptions of pharmacy students

- Authors: Suzanne Cutler, Paul McCague and Kelly Crampton. Liverpool John Moores University.

17. Building a community of practice to enrich pharmacy students learning

- Authors: Amr ElShaer\textsuperscript{a}, Gianpiero Calabrese\textsuperscript{b}, Diogo Casanova\textsuperscript{b}, Isabel Huet\textsuperscript{b}.\textsuperscript{a}Drug Discovery, Delivery and Patient Care (DDDPC), School of Pharmacy and Chemistry, Kingston University London. \textsuperscript{b}Centre for Higher Education Research and Practice (CHERP), Kingston University London.

18. Patient actors in Interprofessional Education (IPE): developing a patient-centred approach to collaborative learning

- Authors: Layla Fattah, Jennifer Bridge, Jalak Shah. University of Manchester / Central Manchester University NHS Trust

19. Survey of inhaler technique for patients of the Cardiff and Vale University Health Board: An MPharm research project.

- Author: William Ford. Welsh School of Pharmacy and Pharmaceutical Sciences, Cardiff University.

20. Learning from each other: an inter-profession education (IPE) pilot on respiratory health for pharmacy and medical students

- Authors: William Ford, Louise Hughes. Welsh School of Pharmacy and Pharmaceutical Sciences, Cardiff University.


- Authors: D.T. Grant, A. Anwar, C.O. Folorunso, S. Sharma, F. Price-Jones and K.A. Bicknell, Reading School of Pharmacy, University of Reading, Berkshire, United Kingdom

22. Student-led ePortfolio for assessment of Professional (Pre-registration) Placements

- Authors: Tom Gray, Yvonne Hood, Malgorzata Miranowics, Gautam Paul. School of Pharmacy, The University of Nottingham
23. Testing the waters with augmented reality (AR) and revision webinars; lessons learnt
   • Authors: Jodie Gwenter¹, Kurt Wilson¹; Matt Ramirez² and Nicola Brown³.
     ¹Manchester Medical School (MMS), University of Manchester, ²MIMAS, ³Manchester Pharmacy School, University of Manchester.

24. Taking integration one step further in an integrated exam
   • Authors: J Hall, E Schafheutle, S Freeman, H Parmar. Manchester Pharmacy School, University of Manchester.

25. Inter Professional Education: An evaluation of a joint learning experience for podiatry and pharmacy students.
   • Authors: Elizabeth Horncastle and Katie Greenwood. University of Huddersfield
     Co-Authors: Matthew Rothwell and Jim Pickard. University of Huddersfield

26. Learning through research – what do students know about antibiotic resistance?
   • Authors: Sadaf Ilias and Jill Barber. Manchester Pharmacy School, University of Manchester.

27. Using publicly available determinations to help MPharm students understand the General Pharmaceutical Council’s Fitness to Practise procedures and guidance
   • Author: Dai John, School of Pharmacy and Pharmaceutical Sciences, Cardiff University

28. Gaining Hospital Summer Placements in the United Kingdom - The Pharmacy Student Experience
   • Authors: Jaspreet Kaur, Natalie Lewis, Keith Wilson. Aston University

29. The use of online, formative assessment for contextualising key physicochemical concepts underpinning drug action
   • Authors: J.J. Keating, Eileen M. O’Leary and Timothy P. O’Sullivan, University College Cork

30. Development of a case-based MPharm programme at the University of Brighton
   • Authors: Alison B. Lansley and George W. Olivier. University of Brighton

31. Undergraduate inter-professional education using simulated patients and actors.
   • Authors: MacKellar A¹, Barker R¹, Blackburn L¹, Brown N².¹University Hospitals of South Manchester (UHSM). ²Manchester Pharmacy School, University of Manchester. Co-authors: Alongside clinical skills tutors and pre-registration pharmacists at UHSM (University Hospitals of South Manchester)

32. Use of a new tool to assess students’ consultation skills in taking a medication history from real patients in hospital practice.
   • Authors: MacKellar A¹, Silverthorne J², Mawdsley A³, Fattah L³, Morris D⁴, Blackburn L¹, Steinke D², Rhodes M² Co-authors: Shah J³, Brown N², Bridge J³, Keers R², Devine H⁴.¹University Hospitals of South Manchester (UHSM). ²Manchester Pharmacy School, University of Manchester. ³Central Manchester Hospitals. ⁴Salford Royal Foundation Trust

33. Student involvement in Hospital Medicines Reconciliation processes: Opinions and views of key stakeholders.
   • Authors: Prabhjot Kaur Mahal, Natalie Lewis, Keith Wilson. Aston University.

34. Using summative peer-assessment to develop critical reflection on clinical placements.
   • Authors: Andrew Mawdsley, Adele Mackellar and Debra Morris. Manchester Pharmacy School, University of Manchester

35. Impact of Specialist Technical Services Teaching on MPharm Undergraduate Students' Opinions of a Career in Technical Services
   • Author: Hannah Miller. The University of Bradford

36. MPharm integrated assessment - what have we learned?
   • Authors: Dr Julie Morgan, Mrs Alison Hartley and Mr Jim Johnston. Bradford School of Pharmacy, University of Bradford
37. ‘Academic speed dating’: a class activity promoting patient-centred practice.
   - Authors: Ian Naylor, Beverley Lucas and Mohammed Isreb. Bradford School of Pharmacy, University of Bradford

38. Preparing final year MPharm students for leadership in practice
   - Author: Harsha Parmar. Manchester Pharmacy School, University of Manchester.

39. Using Team-based learning (TBL) to promote integration of Public Health and Microbiology
   - Author: Harsha Parmar. Manchester Pharmacy School, University of Manchester.

40. Evaluation of students’ expectation and perception of electronic feedback
   - Authors: Hozefa Patrawala, Gianpiero Calabrese and Amr ElShaer. Drug Discovery, Delivery and Patient Care (DDDPC), School of Pharmacy and Chemistry, Kingston University London

41. Do Bradford MPharm students find portfolios valuable for professional development?
   - Authors: Gemma Quinn, Aamna Khan, Arfan Kahn and Waliy Adegboye. The University of Bradford

42. Reducing assessor variation in consultation skills assessments
   - Author: Mary Rhodes. Manchester Pharmacy School, University of Manchester

43. Development of an MPharm module ‘Pharmacotherapy: from Person to Population’ based upon a Constructivist / Professional Unit of Study
   - Authors: Dr Peter Rivers and Dr Jon Waterfield. School of Pharmacy, De Montfort University

44. Measuring empathy: a comparison of two measures?
   - Authors: Deepa Sardana and Angela MacAdam. University of Brighton.

45. Developing the next generation of pharmaceutical scientists
   - Authors: Victoria Silkstone¹ and Jane Norris². ¹Manchester Pharmacy School, University of Manchester. ²AstraZeneca.

46. The impact of performance management coaches on student performance during a simulated pharmacy business module
   - Author: Mr Vibhu Solanki, Dr Matthew J Boyd and Dr Helen F Boardman. University of Nottingham.

47. Using nominal group technique to establish students’ expectations of meeting expert patients
   - Author: Victoria Tavares. Manchester Pharmacy School, University of Manchester.

48. Using Team Based Learning (TBL) to deliver Inter Professional Education (IPE) with Optometry and Pharmacy students
   - Authors: Victoria Tavares and Catherine Porter. University of Manchester.

49. Learning styles of 1st year MPharm students
   - Authors: Sarah Willis¹, Harsha Parmar¹, Victoria Silkstone¹, Zubin Austin². ¹Manchester Pharmacy School, University of Manchester. ²Leslie Dan Faculty of Pharmacy, University of Toronto.
1. Practice makes perfect: applying the theory of expertise development on non-medical prescribers’ competencies

Authors: Abuzour, A. S.; Lewis, P. J.; Tully, M. P. Manchester Pharmacy School, University of Manchester.

Background: Assessment of competencies, established through competency-based education, underpins the postgraduate independent prescribing courses. The theory of expertise model ("the model") was originally developed to assess the literature on medical students learning to prescribe and proposes individuals deliberately engage their knowledge, skills and attitudes within a social context(1). A systematic review was conducted exploring whether the model is also applicable to literature on non-medical prescribing.

Method: Six electronic databases (EMBASE, Medline, AMED, CINAHL, IPA and PsychInfo) were searched for 2006-2014. Papers reporting empirical data related to the model’s themes/competencies in relation to non-medical prescribing education/practice were included. Data were extracted using predefined themes from the model and coded using framework analysis.

Results: Twenty-nine studies met the inclusion criteria. Influences on prescribing practice were multifactorial; those applicable to the model were knowledge, undergraduate education, experience, support and confidence. Lack of knowledge in pharmacology and bioscience was attributed to undergraduate rather than postgraduate education or practice. Interventions using experiential learning in comparison to re-enforcing knowledge were seen as more useful with long-term benefits. All studies demonstrated how engaging knowledge and skills affected the individual’s attitude by e.g. increasing professional dignity, which is central to the model. With support from colleagues and adherence to guidelines, non-medical prescribers were able to integrate their competencies within a social context and develop their expertise.

Conclusion: The model demonstrates how knowledge, skills and attitudes are an integral part of learning and prescribing within a complex social context. However, there is a need for stronger foundations in sound scientific knowledge amongst non-medical prescribers, where continuous practice can be made within context to improve skills and strengthen attitudes. This could facilitate a smoother transfer of learnt theory to practice in order for such prescribers to be experts within their fields and not merely adequately competent.

2. Using technology to break down barriers in pharmacy education: a case study

Author: Majid Ali. Department of Pharmacy, University of Hertfordshire

Background: Students perceive complex mathematical calculations especially related to therapeutic drug monitoring (TDM) as very difficult. Majority of the students wish to experience somebody explaining difficult concepts to them in their own time and at pace suitable to them. Often they consider leaving these calculations out while revising for examination.

Aim: To develop a tool for pharmacy students to enhance learning calculations.

Method: In last academic year for 4th year pharmacy undergraduate students, a video podcast was made using Camtasia Studio 6 and a tablet PC, which captured the lecturer’s voice with ‘live’ working out of calculations on the screen. The podcast also included interactive questions, so that students could listen to the podcast and answer some questions on the screen (related to what was mentioned in the podcast). The interactive questions in the video podcast were then able to reveal at the same time whether their answers were correct. Interactive questions and zoom in effects made the video file very large and thus the whole podcast had to be divided into seven different parts for uploading on student intranet. Students had unlimited number of attempts to watch the video podcast and attempt the interactive questions. The podcast was evaluated via ‘end of module questionnaire’ (a formal survey with open and close ended questions about how students found the resources in the module useful and how these have added to their learning. It was further evaluated via comparing the marks on TDM related questions/calculations in the exam from this cohort with last year’s.

Results: This received very encouraging feedback from students via ‘end of module questionnaire’. No negative comments were received. Students average mark in the following examination increased significantly from previous year [64% (n=81) versus 70% (n=118), p<0.001]. There were two compulsory questions in the examination related to the calculation explained in the video podcast. All students achieved 100% on these questions in the examination compared to only 55% students achieving 100% on the same questions last year.

Conclusion: Available technology i.e. Camtasia software and a tablet PC were used together to develop a video podcast which not only received excellent feedback from students but also improved their ability to deal with TDM related calculations.
3. Mobile technology in pharmacy education: a case study

Author: Mr Majid Ali. Department of Pharmacy, University of Hertfordshire.

Background: MPharm students after graduation undergo one year registration training either in community or hospital pharmacy. After completing the training, they become eligible to take the registration exam to become qualified pharmacists. Our graduates generally do not perform well in registration exam - the pass rate in first attempt as compared to other universities is lower. This coupled with the fact that there are only three attempts to pass the registration exam has a significant impact on the employability of our graduates. Students’ engagement when they are university students can be enhanced by various learning activities and coursework but it is difficult to keep them engaged after they have graduated. Our department has devised a strategy to support our graduates throughout their pre-registration training year in order to prepare them well for the registration exam.

Description of work: Since majority of the students use smart phones and are very active in engaging with the activities linked to their mobile phones, a mobile app (iOS & Android) had been designed and launched particularly for pre-registration pharmacists by Department of Pharmacy, University of Hertfordshire in the UK. The hallmark of the app is short weekly quizzes which keep them updated with the knowledge required to pass the registration exam and ultimately become better and safe pharmacists. Each quiz delivered weekly consists of 10 questions. Students who have downloaded the app are able to attempt the quizzes on their mobile phones through a user friendly interface and submit their answers after which they receive instant score and feedback for their learning. The app keeps the record of quizzes and scores, so that they can track their learning. This was previously piloted by sending weekly emails to our graduates but was not successful due to the lack of their engagement.

Proposed evaluation: The app for this purpose will be evaluated using a student survey at the end of the pre-registration year. It will be further evaluated by comparing this year’s pass rate in the registration exam with that of previous years (national as well as of our department).
4. Challenges facing the development of pharmacy education in Jordan

Authors: Lina R. Bader¹, Claire Anderson¹, Simon McGrath².
¹School of Pharmacy, University of Nottingham, ²School of Education, University of Nottingham.

Background: The advent of competency-based education has transformed pharmacy education worldwide, shifting the focus towards achieving set outcomes and away from knowledge-based degrees. Despite this and the continuously prominent pharmaceutical and medical tourism industries, Jordan's pharmacy education system remains largely science-based and lags behind its international counterparts. This study set out to understand the challenges hindering the advancement of pharmacy education in Jordan and proposes key policy-oriented recommendations.

Methods: Between September 2013 and May 2014, semi-structured interviews were conducted with 53 cross-sector pharmacy professionals and stakeholders in Jordan. Participants were asked open-ended questions about the challenges facing pharmacy education in Jordan and their proposed solutions to those issues. The transcripts were analysed thematically using NVivo 10. In April 2015, the results will be reported back to the participants. Focus groups will be conducted to share key findings in an effort to corroborate them and identify any gaps in theory or conclusions.

Results: Participant interviews have found several factors contributing towards the current status of pharmacy education including: the negative effect of uncontrolled academic growth on graduate quality, the unpreparedness of graduates for practice as a result of their skill gaps, and the variance in educational provision between private and public institutions. Some of the key causes were rooted in the lack of a clear national education strategy, the inadequacy of the current higher educational quality assurance and accreditation mechanisms, and the systemic absence of stakeholder collaboration and involvement.

Conclusion: Recommendations addressing those challenges and their underlying causes will be reported back to the participants for final input. Those final evidence-based conclusions will inform current and future policy makers positioned to impact the development of the education and in due course lead to the advancement of the profession as a whole in Jordan.
5. Innovative Assessment and Personalised Feedback in Pharmacy

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

Background: The technology for delivery of online summative assessments has been available for around 20 years\(^1\). We have been using online summative assessments since 2005, gradually increasing the range of question types and the complexity of the assessments\(^2\). We have, in addition, developed methods for delivering personalised feedback, based on online assessments. The aim was to produce easily-marked online examinations, and feedback on these examinations and other aspects of students’ performances.

Method: Assessments are now created within Blackboard, downloaded and marked offline. We have developed a range of macros for manipulating the download so that it can be marked on a shared drive by several people at the same time. Several data validation methods ensure that marking is as accurate as possible; for example only marks in the correct range can be entered into the spreadsheet, and unmarked questions are formatted to be highlighted in red. We have also developed Smallvoice, a tool for delivering personalised feedback to students about their performance.

Results: Spontaneous feedback from students, as well as the results of University Unit Questionnaires show that, although some students still complain about having to type during examinations, they are generally swayed by the quality of the feedback offered. NSS scores for feedback have improved by 20 points since the introduction of Smallvoice. Silent keyboards in all examination clusters have reduced complaints about typing considerably. Estimates by staff suggest that the time saved in marking an e-assessment relative to a similar paper-based assessment is typically a factor of between 2 and 10.

Discussion and Conclusion: We are now able to deliver high quality assessments online. Using Smallvoice, we can deliver high quality feedback. There are still numerous frustrations surrounding online assessment, including the difficulties of creating questions containing diagrams, of downloading the assessment into a form that can be marked by many people, and of enabling students to draw diagrams and structures as part of the assessment. Nevertheless, the time-saving, the improved quality assurance in marking and the improved feedback persuade us that online assessment is here to stay.

6. The Role of Social Media in Interprofessional Education (IPE)

Authors: Aron Berry and Shereen Nabhani-Gebara. Kingston University School of Pharmacy and Chemistry

Background: With the changing learning landscape in the UK Higher Education, there is a growing need for innovative teaching methods to engage the students. The use of social media (SoMe) in education has been documented in literature to be effective in engaging students. Twitter® has been used for professional and educational purposes. Several Twitter® ‘WeCommunities’ have been established for healthcare professionals: WePharmacists (WePh), WeDocs and WeNurses. These forums keep followers well connected and share weekly tweet chats discussing relevant topics. The aim of this project was to explore the role of Twitter in promoting IPE.

Methods: The project was conducted in three phases Phase 1 encompassed a qualitative analysis of a WePh Twitter® chat held on 19/06/14 discussing IPE. This entailed a thematic analysis of the tweets of chat participants. Phase 2 involved a multi-disciplinary (MD) collaboration between pharmacists (3), nurses (2) and doctors (2) to design a COPD case study, co-hosted by WePh, WeNurses and WeDocs. The case was released as several ‘screens, showing the case developing, and hash tags were also used for participants to follow and share views #IPECaseStudy. Phase 3 was an online-based questionnaire to survey case study participants.

Results: The predominant themes from Phase 1 centred around the importance of IPE in undergraduate (UG) and need for lifelong IPE for practicing professionals. The case study was hosted on 17/02/15, with 75 contributors, 691 tweets reaching 3,106,551 tweeters. 31 respondents completed the questionnaire. Respondents representation includes: students (13), pharmacists (7), doctors (3), nurses (4), physiotherapists (2), speech therapist (1) and patient (1). 30% (n=10) attended IPE sessions in their UG studies. Only 4 participants had heard of CAIPE (Centre for the Advancement of IPE). 77% (n=24) expressed interest in an IPE forum and 87% believed the case promoted MD collaboration. 96% agreed that Twitter® is a suitable medium for IPE.

The use of Twitter® facilitated this MD patient case discussion in an effort to promote IPE. The latter has been endorsed by all healthcare professional bodies however there are several organisational barriers to its widespread implementation. Therefore, we have described an alternative delivery method that can overcome some of these barriers.
7. Large scale practice projects as a model for undergraduate research

Authors: Dr Matthew J Boyd, Dr Claire Mann and Dr Helen F Boardman. School of Pharmacy, University of Nottingham.

Background: All University of Nottingham pharmacy students undertake research projects as part of their degree. In the pre-2012 course this is in year 4, in the post 2012 course in year 3. Thus in 2014/5 we were presented with a unique opportunity, some 550 project students requiring projects, and a year 4 cohort asking for more placement experience. Relationships with local community pharmacies are good however the School wished to build on this further.

Description: Academics in the School identified potential areas of interest and discussed these with the Local Professional Network for Pharmacy and the Nottinghamshire Local Pharmaceutical Committee. It was agreed that students would survey patients in community pharmacies locally about perceptions of OTC medicines and delivery of services from community pharmacy with a special focus on the delivery of influenza vaccination. Academics from the School designed a researcher administered questionnaire covering the areas of interest. Training was provided to the student group undertaking the project in research methods in line with normal undergraduate project procedures. Eighty three students attended 31 community pharmacies in the Nottinghamshire area over a four week period including weekends. Up to three students were assigned to each pharmacy to maximise data collection coverage and to be as representative as possible. In total 7154 questionnaires were completed which are currently being analysed.

Proposed Evaluation: As this was a new way to provide projects in the School, student and supervisor views on the project experience are being sought. The aim of this study is to evaluate student and stakeholder experiences of this model of research project. Questionnaires will gather student and supervisor views of the project. Additionally interviews and focus groups with staff, students and hosting pharmacists will explore some of the issues in depth.
8. Comparing two cohorts using Pharmaceutical Care Plan

Author: Nicola Brown. Manchester Pharmacy School, University of Manchester.

Background: Pharmaceutical care plans address individual patient needs to identify and recommend safe evidence based therapeutics to achieve specific outcomes. It is the paper version of the thought process of a practicing pharmacist. It is a good evaluation tool to gauge a student’s preparation for practice. The graduates of 2015 are the first year completing a new MPharm curriculum with an integrated approach between science and practice and a final year addressing preparation for practice.

Aim: To compare the student ability to complete a clinically accurate pharmaceutical care plan between the 2014 (old-MPharm) and 2015 (new-MPharm) cohort, as a potential marker to see if the new MPharm better prepares students for pharmacy practice.

Method: A pharmaceutical case on Parkinson’s disease was released on Blackboard Virtual Learning environment as a revision tool in 2014 and 2015. Students were required to complete a pharmaceutical care plan for the case study and complete a self-test with their suggested answers. Students were only permitted to do the test once. On completion, the students had access to suggested answers. Students had to correctly identify all points to each section of the plan to achieve allocated marks. The test results were collated from Blackboard and analysed using Excel.

Results: There was a statistically significant difference between cohorts (P=0.009). The average score was 27% (2014) and 42% (2015). In 2015, 85% of the cohort identified to contact the GP to change metoclopramide to domperidone in Parkinson’s Disease. Submission rates were 49% (2014) and 60% (2015).

Discussion: The case study requires students to identify conditions, aims of treatment, adverse drug reactions, contra-indications, choice of therapy and recommend solutions and monitoring plans. The 2015 cohort maybe more able to ‘think’ like a pharmacist, and are more readily able to apply their knowledge to patient scenarios and be more prepared for practice.
9. A breakdown of final year pharmacy student’s results on PSA style questions

**Authors:** Nicola Brown¹ and Kurt Wilson². ¹Manchester Pharmacy School, University of Manchester, ²Manchester Medical School, University of Manchester.

**Background:** Cohorts of medical and pharmacy students shared an inter-professional education day, learning together about safe hospital prescribing. Students worked in inter-professional groups to jointly apply their knowledge to seven prescribing problems in the format of the national medical school exit prescribing exam (prescribing skill assessment, PSA).

To prepare students, Pharmacy students were pre-set thirty optional PSA questions and received generic feedback.

**Aim:** To identify final year MPharm student strengths and weakness in PSA question type to ensure an interprofessional session using PSA questions with 5th year medical students is balanced with opportunity to learn with and from each other.

**Method:** Submissions were collated from Blackboard. Questions were pre-themed into PSA topics. An analysis of each question type was performed.

**Summary of results:** Response rate was 106 (83%) of the final year cohort.

<table>
<thead>
<tr>
<th>Question type</th>
<th>Average correct score</th>
<th>Correct answer range (%)</th>
<th>Number of questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADR</td>
<td>82%</td>
<td>73-91</td>
<td>4</td>
</tr>
<tr>
<td>Prescribing</td>
<td>34%</td>
<td>22-52</td>
<td>4</td>
</tr>
<tr>
<td>Planning Management</td>
<td>51%</td>
<td>50-52</td>
<td>2</td>
</tr>
<tr>
<td>Data interpretation</td>
<td>41%</td>
<td>24-58</td>
<td>2</td>
</tr>
<tr>
<td>Prescription review</td>
<td>71%</td>
<td>26-92</td>
<td>8</td>
</tr>
<tr>
<td>Calculations</td>
<td>77%</td>
<td>66-89</td>
<td>4</td>
</tr>
<tr>
<td>Drug Monitoring</td>
<td>47%</td>
<td>32-61</td>
<td>3</td>
</tr>
<tr>
<td>Communicating information</td>
<td>68%</td>
<td>58-86</td>
<td>3</td>
</tr>
</tbody>
</table>

Questions scoring below 50% contained subjects on choice of fluid prescription (22%); choice of antimicrobial therapy and dose (32%); recommending appropriate action in response to deranged biochemical markers (24%); monitoring response to antimicrobial therapy (32%) and understanding timing in ADRs (26%).

**Discussion / conclusion:** By the start of the final year, pharmacy students have good understating of the application of calculations, communicating fundamental counselling points, identifying dosage errors and identifying ADRs.

The opportunity to discuss cases with medical students to help develop higher application skills is a potentially valuable learning opportunity and is balanced with topics where the students appear more competent.

Higher application skills of clinical decision-making and application specific to the patient are further developed during the final year.
10. Design and Development of Virtual Chemistry Practicals for Pharmacy Students.

Authors: Sam Butterworth, Youcef Mehellou, Peter Rainger, Sarah Thomas, Julie Mason, Parbir Jaggal, Anthony Cox and John Marriott. University of Birmingham.

Background: Traditional lab-based chemistry practicals generally focus on technical lab skills, with students often failing to link the content to the broader learning objectives of the module. At the same time, the physical manipulations involved in conducting a typical undergraduate chemistry practical are insufficient to develop genuine competence in lab skills.

Description of Work: The University of Birmingham MPharm programme team have developed a series of e-lab based chemistry practical simulations. Removing the linear, staged “recipe” nature of a conventional practical can allow students to experiment, make mistakes and generate new ideas about how to approach problems, thus encouraging the students to think more deeply about the process of undertaking an experiment. The virtual environment also provides an opportunity to integrate the content with the clinical practice of pharmacy, for example by addressing clinical issues with the use of the drugs or applying appropriate techniques to identify and solve problems that start and finish within a simulated clinical situation. We will show examples of the practicals, discuss the ethos of the development, the challenges in developing these into effective learning objects, and identify future development opportunities.

Proposed Evaluation: This project was initiated from the start of the MPharm development, meaning we have no historic data on students undertaking chemistry labs. Furthermore the learning objectives from the lab session are integrated within module. Together this has hampered our ability to evaluate the practicals. We have gathered extensive student evaluation and have completed the first fully assessed practical. We will share the data of student performance in this setting, supporting the idea that e-labs can be a productive learning environment for students.
11. Career inspirations - A Student’s perspective from one academic advisor’s group.

Authors: Joanne Canning¹, Hannah Phelan¹, Alison Howard¹, Fatema Lukmanji¹, Karen Butterworth², Sarah Ashworth² and Harmesh Aojula¹

¹Manchester Pharmacy School & ²The University of Manchester Careers Service

Background: Pharmacy being a multidisciplinary field of science can potentially offer a huge variety of career opportunities. However, patient-facing sectors, including community, hospital, and primary care pharmacy, remain the mainstream workforce. In the future, supply of graduates is expected to exceed the demand suggesting stiffening of competition in these and other sectors. In response, we shifted the focus of year-2 personal academic advisor tutorials to employability skills and expected this change would lead the students to secure summer placements that are better targeted to their preferred sector. The ultimate aim being to arm the students with relevant experience thereby enhancing competitiveness. My year-3 advisees have decided to pursue different areas of Pharmacy as their career ambitions. We report key defining moments, which led them to their decisions in year-2.

Method: To develop employability skills, year-2 MPharm students received; (a) five academic advisor tutorials, (b) a lecture plus a small group workshop explaining career options and the need to evidence/strengthen skills and (c) practice interviews targeted to summer placements. There were 30 second year academic advisors in the school, each with an average of 5.5 students. My year-3 advisees reflected on how year-2 reshaped their ambitions.

Conclusion: This is a small study, limited to student reflections within a single academic advisor group. Nevertheless, it demonstrates that Year-2 is a critical time window to inspire students in developing employability skills which are better targeted to their future aspiration. It is interesting to note that even within a single group students were able to reach out into patient and non-patient facing sectors. With rising number of graduates, a year-2 focus on employability skills provides the impetus to start exploring options early. Students can then stay abreast of competition in securing summer placements, more relevant to their interest.
12. Stakeholders' perspective towards formal preceptor preparation for the Doctor of Pharmacy (PharmD) programme in Thailand

**Authors:** Teeraporn Chanakit, MSc\textsuperscript{a}, Bee Yean Low, PhD\textsuperscript{b}, Payom Wongpoowararak, PhD\textsuperscript{c}, Summana Moolasarn, PhD\textsuperscript{d}, Aporn Jaturapatarawong, MSc\textsuperscript{e}, Wiwan Worakunphanich, BPharm\textsuperscript{f}, Mayuree Tangkiatkumjai, PhD\textsuperscript{g}, Claire Anderson, PhD\textsuperscript{a}  
\textsuperscript{a}School of Pharmacy, University of Nottingham, United Kingdom. \textsuperscript{b}School of Pharmacy, University of Nottingham Malaysia Campus, Malaysia. \textsuperscript{c}Faculty of Pharmaceutical Sciences, Prince of Songkla University, Songkhla, Thailand. \textsuperscript{d}Faculty of Pharmaceutical Sciences, Ubon Ratchathani University, Ubon Ratchathani, Thailand. \textsuperscript{e}Hospital Pharmacy Unit, Warinchumrab Hospital, Ubon Ratchathani, Thailand. \textsuperscript{f}Thai Traditional Medicine Research Institute, Bangkok, Thailand. \textsuperscript{g}Faculty of Pharmacy, Srinakharinwirot University, Nakhonnayok, Thailand.

**Background:** WHO, UNESCO and FIPEd are concerned about the lack of quantity and quality of pharmacy preceptors in many developing countries who changed to PharmD programme. Pharmacy education in Thailand started moving to all PharmD programme from 2008. The new PharmD curriculum requires 2,000 hours of practice training, a four-fold increase as compared to BPharm programme. This study aims to explore stakeholders’ perspective towards formal preceptor preparation for the PharmD programme in Thailand.

**Method:** Semi-structured interviews were conducted with 10 policy makers, 33 pharmacy practitioners, 14 health care providers, 25 educators and 13 students from August-October, 2013 in Thailand. The data were audio recorded, transcribed verbatim and analysed using an inductive thematic analysis.

**Results:** Stakeholders felt there were benefits for institutions if they are offered as training sites (eg contributing to pharmacy profession, updating preceptors’ knowledge and skills, having highly competent academic members who are able to empower preceptors and enhance training sites and opportunity to recruit good performance pharmacy students). However, majority of the interviewees had common concerns regarding the insufficient quantity and quality of preceptors. Stakeholders’ perceived barriers towards formal preceptor preparation, such as the workload (eg high routine workload of the preceptors, lack of time/money/management staff/space), inadequate role models, the need for more recognition and support from administrators regarding preceptors’ roles, training sites requiring standardisation and quality assurance, the need to put in place a preceptor development programme and the establishing of an active Memorandum of Understanding (MoU)/long term commitment between training sites and universities.

**Conclusion:** This is the first study to highlight the challenges of preparing training sites during the significant transition in Thai pharmacy education. Faculties, provider sites, pharmacy professional organisations and regulatory bodies need to collaborate to overcome these challenges.
13. An evaluation of the attitudes towards Interprofessional Education (IPE) of 1st and 4th year MPharm students at the University of Bradford

Authors: Mrs H Cook, Mr D Toffolo*, Miss T Solomon*. School of Pharmacy, University of Bradford (*3rd year pharmacy students)

Background: Bradford School of Pharmacy introduced IPE into its new curriculum in 2012. Attitudes influence how individuals from differing professional backgrounds work well together and negative attitudes of participants has been documented as a major barrier to IPE\(^1\).

Method: The Readiness for Interprofessional Learning Scale (RIPLS) Questionnaire\(^2\) was completed by 104 1st and 77 4th year MPharm students, who had not undertaken any taught IPE sessions, to:
- Evaluate their attitudes towards and readiness for IPE
- Establish whether previous work experience in a health care setting has an influence

The questionnaire comprised 19 statements with a 5-point Likert scale response (strongly agree to strongly disagree). The Mann Whitney U test was used to compare the quantitative data sets.

Results: Fig 1: Comparison RIPLS scores (Normal Distribution Curves)

Students with more work experience in a healthcare setting (particularly those having completed their first 6 months pre-registration training) had significantly lower RIPLS scores.

Discussion: Students generally had positive attitudes towards IPE as the qualitative data showed that they perceive that IPE will enhance teamwork and collaboration. However, students who had recently returned from six months working in a healthcare setting had more negative attitudes towards IPE. There was not sufficient qualitative data to suggest a reason for these findings and further research is required to understand what aspects of their training / behaviours they have observed in practice, have led to these results.

References
2. Parsell, G. and Bligh, J. (1999), The development of a questionnaire to assess the readiness of health care students for interprofessional learning (RIPLS), Medical Education, 33(2), 95-100.
14. Using stakeholders to inform the development of medicines based calculations teaching and assessment at one UK school of pharmacy

Authors: Sion Coulman, Mui Hoon Tan and Dai John. School of Pharmacy and Pharmaceutical Sciences, Cardiff University.

Background: Errors in medicines-based calculations (MBCs) can negatively impact on patient safety. The General Pharmaceutical Council (GPhC) requires a high pass mark in the calculations component of its current and new format registration assessments. The aim of this study was to engage with stakeholders to identify what MBCs are currently used in pharmacy settings so that learning, teaching and assessment materials for pharmacy students are current and otherwise appropriate.

Method: A favourable opinion from the School of Pharmacy and Pharmaceutical Sciences Ethics Committee was obtained. Emails were sent out to all MPharm III and MPharm IV students asking for examples of MBCs they had encountered in practice. Also, using purposive, convenience sampling 3 pre-registration and 18 registered pharmacists working in hospital or community were approached for MBC examples from practice, as were 27 hospital oncology pharmacists and pharmacy technicians.

Results: MBC examples were received from 24/219 undergraduates (11%), two pre-reg and from 30/45 registered professionals. MBCs identified were categorized into eight types namely, dosage calculation, quantity (including volume), infusion dose/rate, creatinine clearance, dilutions, body surface area/weight-related, unit conversion and molarity. Examples of the following were particularly useful to add to the bank of MBCs used in the MPharm: reducing doses (e.g. prednisolone) or increasing doses (e.g. pramipexole) of tablets when prescribed as duration of treatment; intravenous infusion rates; drug doses for infusion or via a syringe driver; use of dispersible aspirin 75mg to provide 45mg for a child.

Discussion: This use of stakeholder involvement in curriculum design aligns with the GPhC’s criteria for accreditation of MPharm degrees. The higher response rate from practitioners may have been because they thought that it was important that universities prepared pharmacy students for calculations they encountered in practice. This approach was successful in identifying additional types of MBCs to include in undergraduate teaching and also, importantly, confirming that other MBCs used in teaching and assessment were appropriate for current practice and for the current and new format GPhC registration assessments.

Reference
15. The use of social media as a learning tool in health promotion

Authors: Philip Crilly and Dr. Reem Kayyali. Kingston University.

Background: In the UK, nearly all 16-34s are online and 66% of them have social networking profiles. Those with a current online profile (96%) have one on Facebook and 83% of 16-24s visit social networking sites more than once daily. With increased social media use popularity, this study aimed to identify whether this can be used as a learning medium for students and the public regarding health promotion.

Method: Final year MPharm students (n=132) were divided into groups of 15 and assigned a health topic to promote using evidence-based information. Topics ranged from weight loss and physical activity to stress management and sexual health. Students had to develop a social media presence and produce health promotion posts to share with their followers; students, staff and members of the public. Students delivered a presentation to their peers outlining their campaign strategy, content and outcomes. The learning experience of the students was evaluated using a questionnaire.

Results: All students used Facebook as a campaign platform, with 75% also using Twitter and 51% using Instagram. Reasons for Facebook use included ease to upload and share information. 81% of students agreed that social media is an effective platform for learning about public health. Furthermore, 78% agreed that creating and preparing posts for their social media platforms enhanced their knowledge of the topic they were promoting. In addition, 68% of students indicated that reviewing peer social media sites and presentations enabled them to learn about the topics promoted by others.

Discussion and/or Conclusion: The results indicate that students value social media as a learning platform. They learned about their own health topic by creating evidence-based posts and also learned about other topics by reviewing the social media profiles of other groups. The use of social media as a learning tool needs to be further explored.
16. Simulation based learning: perceptions of pharmacy students

Authors: Suzanne Cutler, Paul McCague and Kelly Crampton. Liverpool John Moores University.

Background: Simulation based learning is an educational process which can replicate clinical practices such as management of acute asthma or anaphylaxis in a controlled environment. Integrating SBL into the pharmacy curriculum is key to developing non-technical skills (such as communication and teamwork), to prepare undergraduate pharmacy students for their future roles. The study aims to explore the views and opinions of final year pharmacy students on the value of simulation-based learning as a learning tool within the MPharm undergraduate programme.

Method: Following institutional ethical approval, an invitation was emailed to all final year students. Three focus groups were conducted. The interview schedule consisted of open ended questions and was developed from a review of the literature. Focus groups were recorded, transcribed and content analysis undertaken.

Results: Following analysis, two main themes emerged:

Skills and competencies
Participants identified key non-technical skills that they felt they developed through participating in SBL including communication and team working. Participants recognised the importance of a leader within team. SBL allowed students to improve their clinical knowledge through application to scenarios.

The simulation experience
Participants felt that SBL provided them with “a real experience of working in a team”; however some participants “felt a bit out of (our) depth”. Participants felt that the experience was realistic and enhanced their understanding of the role of pharmacist and other healthcare professionals in practice. All participants expressed the need to “have more contact with medical and nursing students” throughout their university education.

Conclusion: Undergraduate exposure to interprofessional SBL in a safe and controlled learning environment may be a significant contributing factor to the development of pharmacists’ of the future. Interprofessional SBL provides students with the opportunity to work in interprofessional teams, developing non-technical skills whilst consolidating their classroom learning.
Building a community of practice to enrich pharmacy students learning

Authors: Amr ElShaera, Gianpiero Calabrese, Diogo Casanova, Isabel Huet. 
Drug Discovery, Delivery and Patient Care (DDDPC), School of Pharmacy and Chemistry, Kingston University London; Centre for Higher Education Research and Practice (CHERP), Kingston University London.

Background: Conventional supervision is no longer compatible with the current challenges facing the higher education sector. Community of practice (CoP) is one approach that can be adopted to help students avoid isolation by facilitating informal interaction with peers and other networks of support. The aim of the current study was to investigate the impact of creating a formal CoP with students from different levels of study in supporting each other to develop their learning and research output.

Method: This was a qualitative study and involves the generation of qualitative data from two focus-groups. The sample is constituted by 2 PhD students, 5 students at Master level and 2 undergraduates at level 6 (third year students) from the School of Pharmacy at Kingston University. Domain, community and project (Figure 1) are the three elements that shape up a CoP; researching the role of powder technology in tablet manufacturing was the domain used to define the identity of this community. Sharing interest and practice within this domain, evolved discussion which would help students to learn from each other. Communication was established face to face (f2f) and via a VLE known as “Diigo”.

Results and Discussion: Participants believed that working in a group would boost their learning experience by sharing knowledge. Analysis of the data on Diigo showed that 95 posts have been shared between mid-April to mid-September (Figure 2). Most of these posts were shared by students at master level with minimum contribution by the undergraduate and PhD students. PhD students thought a CoP was not designed for them to learn as they are experts in their field. On the contrary, master students believed that Diigo helped them to build up their research knowledge by sharing information online and referring to them in their f2f discussions. In a conclusion, this small scale study demonstrated that working within a community will foster pharmacy students’ learning experience.

Reference

18. Patient actors in Interprofessional Education (IPE): developing a patient-centred approach to collaborative learning

Authors: Layla Fattah, Jennifer Bridge, Jalak Shah. University of Manchester / Central Manchester University NHS Trust

Background: Approaches to IPE vary widely, but the educational literature commonly suggests that active, authentic, experiential learning facilitates effective IPE\(^1\).\(^2\). Pharmacist tutors based at Central Manchester Foundation Trust (CMFT) developed and delivered an IPE session utilising patient actors in a simulated ward environment. The session aimed to provide students with an opportunity to engage in authentic practice activities in a collaborative manner.

Description of work: Third year pharmacy, nursing and medical students were recruited to attend a one off joint IPE session in January 2015. Students were divided into groups of four; two nursing or medical students with two pharmacy students. The student group were asked to work together to approach a three-stage patient scenario. The students were required to engage with a simulated patient actor at each stage of the process, promoting an integrated approach to patient-centred care. The patient actors provided open and honest feedback to the students “within character”, allowing the students to understand how their behaviours and actions may impact real patients. A significant improvement in student performance was observed over the duration of the tutorial by both the patient actors and the clinical tutors.

Results: The session was evaluated both quantitatively and qualitatively through pre- and post-session evaluation forms. Students were asked to rate their understanding of own and others roles and confidence in collaboration on a 5-point Likert scale. A statistically significant increase was seen across all the questionnaire criteria, including understanding of one another’s roles and confidence communicating with the other professional group. Qualitative data is currently being analysed and will attempt to determine what student’s perceptions of the session. Tutors identified different strengths in each of the professional groups, which they were able to role model for one another.

Discussion / Conclusion: The results indicate that small group IPE sessions with simulated patients provides a vehicle to allow students to learn from one another and support students to develop team working and communication skills in preparation for practice.

References
19. Survey of inhaler technique for patients of the Cardiff and Vale University Health Board: An MPharm research project.

Author: William Ford. Welsh School of Pharmacy and Pharmaceutical Sciences, Cardiff University.

Background: We set out to design a 4th year MPharm research project that would be relevant to future practice, feasible to be carried out in one month and sufficiently scalable to allow the participation of multiple undergraduates.

Method: We designed a project to audit inhaler technique in patients of the local health board. Ethical approval was obtained prior to students starting work. Students were trained in the use of a Vitalograph™ AIM device, to check inhaler technique, and how to provide corrective advice before data collection. Over a month, patients recruited in primary and secondary care, had their technique in using either a dry powder inhaler (DPI) and/or a metered dose inhaler without (MDI) or with a spacer (MDI+spacer) assessed.

Results: Unless otherwise stated, percentages refer to the total of 89 patients who consented to participate in the study. 38% used both an MDI and DPI, 43% used a MDI and 18% used a DPI alone. Of the patients using MDIs, 12 (16% of MDI users) used spacers. Based on the AIM device, the technique of 74% of MDI users was categorised as ‘fail’, 25% as ‘suboptimal’ and 2% as ‘good’. For users of DPIs, 8% were classified as ‘fail’, 64% as ‘suboptimal’ and 28% as good. The majority of patients reported that a nurse (52%) was the last health-care professional who gave them advice about inhaler technique was a nurse (52%) with pharmacists (6%) lagging behind GPs (22%).

Conclusions: The audit worked well as an MPharm group research project with students gaining experience in working with patients and other healthcare professionals. Positive feedback was received about the relevance of the project to future practice. We hope that the project could be expanded to other areas of the UK by collaborations with other Schools of Pharmacy.
20. Learning from each other: an inter-profession education (IPE) pilot on respiratory health for pharmacy and medical students

Authors: William Ford, Louise Hughes. Welsh School of Pharmacy and Pharmaceutical Sciences, Cardiff University.

Background: Inter-professional education (IPE) can increase health students’ understanding of each other’s roles, enhance interpersonal skills and aid a more holistic approach to working. We therefore designed and piloted an IPE session for pharmacy and medical students involving peer-led training of clinical skills, focusing on respiratory health. Selection of the participating cohorts was based on previous training in complementary clinical skills (for pharmacy students, effective inhaler; for medical students, chest examination). The IPE exercise was designed to educate both sets of students about spirometry and encourage them to use their respective skills and knowledge to teach each other and jointly solve patient cases.

Description: All undergraduate year 2 pharmacy (n=112) and year 1 medical (n=116) students took part in a compulsory session (repeated four times over two days). Each session began with an introductory lecture on concepts and principles of spirometry. Following this, small (n=2-3) mixed subsets were taught to operate a Vitalograph™ alpha spirometer to obtain data such as forced exhaled volume in 1 second (FEV₁) and forced vital capacity (FVC). In parallel, pharmacy students used their counselling skills to teach the medical students how to use different placebo inhaler devices in conjunction with the Vitalograph™ AIM device, providing corrective feedback where necessary; while medical students taught the principles of basic chest examination (e.g. breath sounds, asymmetry) to their pharmacy partners through demonstration and feedback. The students also worked together to apply their knowledge to written patient-based respiratory cases.

Proposed evaluation: An evaluation form was provided to all undergraduate participants and comprised four questions: ‘What was the best feature of today’s teaching?’, ‘Would you change anything about the day?’, ‘What did you learn today?’ and ‘Any other comments?’. Resulting data will be analysed thematically. Feedback from the staff facilitators will also be sought using interviews to explore their views.

Incorporating Student-Led Teaching Initiatives in the Development of an Integrative Spiral Pharmacy Curriculum.

Authors: D.T. Grant, A. Anwar, C.O. Folorunso, S. Sharma, F. Price-Jones and K.A. Bicknell, Reading School of Pharmacy, University of Reading, Berkshire, United Kingdom

Background: Pharmacy education in the UK is moving away from traditionally modular discipline-led Pharmacy courses towards a more integrated approach to teaching relevant scientific principles in a clinical context. Approaches to delivering an integrated Pharmacy Education course range from fostering integrative learning between discipline-specific content to the design and delivery of explicitly integrated programmes. This study evaluated the role that staff-student partnerships might play in the development of teaching resources that promote independent and integrated learning opportunities in Reading’s MPharm programme.

Methods: Staff-student partnerships were established to develop student-led e-learning resources that complemented staff-led Therapeutics module teaching materials and promoted integrated learning. Design and development of interactive and integrated resources was undertaken by four MPharm students during their Summer vacation. Students were able to draw on the experience of staff mentors during the development of the e-learning resources to ensure that opportunities for fostering integrated learning were not overlooked.

Results: Student-developed e-learning resources were developed and released to coincide with the delivery of staff-delivered content. Student perceptions of the developed e-learning resources were investigated. Typically, the student-developed e-learning resources were well received by their peers with students describing them as a useful addition to existing teaching materials.

Conclusion: This initiative has demonstrated that students, supported by staff mentors, can play a valuable role in the development of effective learning resources for their peers.
22. Student-led ePortfolio for assessment of Professional (Pre-registration) Placements

Authors: Tom Gray, Yvonne Hood, Malgorzata Miranowics, Gautam Paul. School of Pharmacy, The University of Nottingham

Background: Currently, delivery and assessment of pre-registration training is inconsistent across the country/region, sectors and ethnicity of trainees\(^1\). The School of Pharmacy, University of Nottingham offers a 5 year MPharm degree with an integrated pre-registration scheme to address this. As well as meeting MPharm learning outcomes, students must demonstrate competence with respect to future practice. The General Pharmaceutical Council (GPhC) pre-registration manual provides guidance on how competence can be developed, including gathering a portfolio of evidence\(^2\).

Our aim was to develop a standardised ePortfolio to allow students to gather and collate evidence from practice and undertake assessment in a consistent manner. Evidence mapped to GPhC Standards\(^3\) is assessed by the pre-registration tutor who provides feedback on performance, allowing the student to reflect and plan further development. The ePortfolio allows the University to quality assure placements to improve consistency.

Description of work: PebblePad™ was chosen as the ePortfolio as it meets the following criteria\(^4\):
- Accessibility
- Standard mapping
- Record entry and Sign off
- Reporting and Assessment
- Feedback on placements

The ePortfolio incorporates the learning contract, training plan, records of evidence, meetings, appraisals, and assessment. A key feature is that the ePortfolio allows timely feedback for the student and evidence of assessment for University progression.

Proposed evaluation: The ePortfolio allows students to continually reflect on their performance and, with support from their tutor and the University, to develop into a competent pharmacist. Prior to the placements, the ePortfolio will be trialled by current trainees and their tutors, and feedback sought using questionnaires. The data collected will focus on the usability and functionality of the ePortfolio and whether the trainees and tutors are using it in a consistent manner. Analysis of the results will be carried out to identify further development and inform training and implementation.

---

23. Testing the waters with augmented reality (AR) and revision webinars; lessons learnt

**Authors:** Jodie Gwenter¹, Kurt Wilson¹; Matt Ramirez² and Nicola Brown³.
¹Manchester Medical School (MMS), University of Manchester, ²MIMAS, ³Manchester Pharmacy School, University of Manchester.

**Background:** The prescribing team at MMS have developed a number of Technology-enhanced learning (TEL) aids and interactive interprofessional education (IPE) sessions. Four examples are provided.

**Method:**
1. **Small group work using iPADs and AR-enhanced leaflets**
   Students used the Junaio app on their iPADs in order to scan and access candidate instructions for OSCE practice. Medical and pharmacy students also used AR-enabled leaflets to access examples of PSA MCQs.
2. **Interactive touch-screen presentations/homework sessions**
   Students used the Nearpod app on their iPADs in order to join a live presentation. Best answer MCQs were also set using an additional Nearpod functionality: Nearpod homework.
3. **AR-ready prescribing posters**
   AR-enabled posters were displayed in areas of medical teaching and learning.
4. **Live prescribing webinars**
   The prescribing team held a series of live evening webinars in order to provide a Q&A forum for discussing results of the Nearpod homework (as described above).

**Results:** The use of TEL during the IPE series failed for many reasons and lessons were learnt. In the main, tutors felt the devices were out-dated and wi-fi capability was lacking. Medical students were provided an opportunity to submit their views and comments re: the use of TEL during the live webinars (by e-mail or instant messenger) and via eNotes. Students provided positive comments on the use of Nearpod and live webinars. Responses for the use of Junaio seemed mixed and many felt they hadn’t had the opportunity to utilise the prescribing posters.

**Discussion:** The use of TEL resources to enhance prescribing skills is evolving and improving. User and organisational capabilities may be contributing factors in delivering negative student experiences. Students enjoyed the prescribing webinars and appreciate the potential for AR-enhanced resources.
24. Taking integration one step further in an integrated exam

Authors: J Hall, E Schafheutle, S Freeman, H Parmar. Manchester Pharmacy School, University of Manchester.

Background: The General Pharmaceutical Council education standards require pharmacy curricula to be integrated. In 2013/14, a single end of semester examination replaced individual assessments in four 30-credit year 1 MPharm units. An evaluation aimed to investigate students' views regarding the integrated assessment and whether this approach helped them integrate different disciplines.

Method: All year 1 students (n=154) were invited to attend a focus group led by one of the authors who was not involved with first year teaching. The focus group took place in April 2014, was recorded, transcribed verbatim and subjected to a thematic analysis.

Results: Nine female students participated. Students recognised that different units integrated when teaching and found it valuable that links between science and practice were made explicit, allowing them to relate their learning to their future professional careers. Participants felt that separate units helped them organize their learning revision. They thought the single end of semester exam was beneficial, however they found the case study questions, which integrated all units, to be the most challenging. The students felt that a single exam would allow them to do well in some disciplines and worse in others, but still progress. Some students were uneasy about all material being assessed in a single sitting in case they had a bad day. In addition, they felt the exam was not able to assess the depth of the curriculum and that there were areas that were not assessed. There was a consensus regarding the need for additional support, particularly around the preparation for answering integrated case study type questions.

Conclusion: Students appreciate that science and practice integration would benefit their future practice. They were positive about a single, integrated exam. However, students may need further support to help them integrate their learning and exam preparation.
25. Inter Professional Education: An evaluation of a joint learning experience for podiatry and pharmacy students.

Authors: Elizabeth Horncastle and Katie Greenwood. University of Huddersfield
Co-Authors: Matthew Rothwell and Jim Pickard. University of Huddersfield

Background:

"Interprofessional Education occurs when two or more professionals learn with, from and about each other to improve collaboration and the quality of care" (CAIPE 2002)

Working with and understanding the roles of other healthcare professionals will impact on the quality of care of the patient. Interprofessional learning forms part of the Standards for the Initial Education and Training of Pharmacists. The Healthcare Professionals Council have also identified that allied health professionals will work as part of a team whose collective focus is the health and well-being of people and understanding this collaboration is essential.

At the University of Huddersfield second year pharmacy students attend a clinic run by podiatry students, under the supervision of podiatrists. Following excellent student feedback it was decided to expand this collaboration and produce a 2 hour workshop. Tutors from both disciplines met to design and develop case scenarios based on patients with high risk medical conditions that would impact on the work of both professions.

Aim: To expose pharmacy and podiatry students to inter professional learning at an early stage in their careers. Thus developing their knowledge, skills and attitudes to enhance patient centred care.

Description of Work: The 2 hour workshop was facilitated by pharmacist and podiatrist. Groups of six students (4 pharmacy and 2 podiatry) studied two case studies, one concerning a patient with complications of diabetes and the other with problems associated with rheumatoid arthritis. Details of the cases and suggested reading were given to the students two weeks before the event.

Proposed Evaluation: A feedback form including a combination of Likert scale, open and closed questions was provided to all students following the session. Data collected will be thematically evaluated and analysed to determine whether the workshop met the stated aims.

References
1. CAIPE 2002 Centre for the advancement of Interprofessional Education  
2. GPhC (2011)  
26. Learning through research – what do students know about antibiotic resistance?

Authors: Sadaf Ilias and Jill Barber. Manchester Pharmacy School, University of Manchester.

Background: Both healthcare professionals and the general public have a role in limiting the spread of antibiotic resistance. Countrywide, strategies for ensuring that antibiotics are used responsibly include education of healthcare professionals and the public. The principal aim of this project is to engage Pharmacy students with antibiotic guardianship by researching what people on campus know about antibiotic resistance.

Methods: A questionnaire designed to assess knowledge of antibiotic resistance was designed, piloted (100 students) and appropriately modified. 21 second year MPharm students were recruited as researchers (the project was presented during a lecture and email invitations sent to students; all volunteers were recruited). The volunteers were charged with questioning 705 subjects, mostly students of Medicine, Pharmacy and Life Sciences, and were trained accordingly. Face-to-face interviews were conducted on campus in a teaching building used by students of Health and Life Sciences, using multiple choice and multiple response questions (example: Tick any of following that you think antibiotics are effective against: □ Fungi, □ Worms, □ Viruses, □ Bovine Spongiform Encephalopathy). Where a subject was unable to answer a question, the researchers were trained to explain the correct answer. Finally the data collected were quantitatively analysed, in order to assess and compare the knowledge of the different groups of students and staff.

Results: The 705 completed questionnaires showed that Pharmacy, Medicine and Life Sciences students were generally aware of antibiotic resistance as an issue, and knew many of the behaviours that lead to antibiotic resistance. For example, 94% Pharmacy students (n=241) recognised that discontinuing antibiotic treatment on feeling better could contribute to antibiotic resistance, compared with 86.5% Life Sciences students (n=251). The numbers appreciating that inadequate hygiene could contribute to antibiotic resistance was disturbingly low, however (60% Pharmacy students, n=241; 45% Life Sciences students, n=251).

Discussion and Conclusion: The activity enabled second year students to take part in research at an early stage of their careers, to practise communication skills in a research setting and to engage actively with antibiotic guardianship. While it is gratifying that students were generally well-informed about antibiotic resistance, there is scope for reinforcing the importance of good hygiene.
27. Using publically available determinations to help MPharm students understand the General Pharmaceutical Council’s Fitness to Practise procedures and guidance

Author: Dai John, School of Pharmacy and Pharmaceutical Sciences, Cardiff University

Background: The General Pharmaceutical Council (GPhC), including fitness to practise (FTP), is an important part of the MPharm curriculum. The aim of this study was to ascertain student understanding of the types and appropriateness of sanctions available to a FTP panel relating to pharmacists following a finding of impaired FTP.

Method: Students had covered pharmacist fitness to practise in formal teaching sessions. Three determinations were identified from the GPhC website and copies of part of the determinations were provided to 1st and 4th year students in advance of a teaching session, namely up to the stage where ‘current impaired fitness to practise’ was found. In the sessions students were asked, by reference to teaching materials previously provided, to identify what they thought was an appropriate sanction. They were reassured that it was acceptable to have different views to their peers. Cohort data were then shared with students together with the remaining sections of the FTP committee determinations, which contained the actual sanction imposed and the FTP committee’s reasons.

Results: In total 107/112 first year (96%) and 122/125 fourth year (98%) students provided their opinions on sanctions for all three cases. Results are shown in Table 1. The actual sanctions imposed by the FTP committee were periods of suspension of four, three and twelve months for Cases 1, 2 and 3, respectively.

Table 1: FTP sanctions as identified as appropriate by students (as rounded %s)

<table>
<thead>
<tr>
<th>FTP Sanction</th>
<th>Case 1</th>
<th>Case 2</th>
<th>Case 3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Year 1</td>
<td>Year 4</td>
<td>Year 1</td>
</tr>
<tr>
<td>Warning</td>
<td>5</td>
<td>32</td>
<td>22</td>
</tr>
<tr>
<td>Conditions</td>
<td>16</td>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td>Suspension</td>
<td>68</td>
<td>48</td>
<td>54</td>
</tr>
<tr>
<td>Removal</td>
<td>5</td>
<td>8</td>
<td>19</td>
</tr>
<tr>
<td>Other</td>
<td>7*</td>
<td>2*</td>
<td>0</td>
</tr>
</tbody>
</table>

*more than one sanction; **either removal or suspension

Discussion: Informal feedback from students identified written determinations, and reference to FTP hearings and indicative sanctions guidance, as well as having sight of sanctions proposed by peers, proved helpful to their understanding. The identification of ‘Other’ as a sanction by some allowed clarifying misunderstanding, i.e. only one sanction was possible. The GPhC is currently consulting on new draft FTP hearings and guidance but the approach identified here would still be relevant.

Reference
1. [http://pharmacyregulation.org/sites/default/files/FtPC%20Indicative%20Sancantions%20Guidance%20%28ISG%29%20g.pdf](http://pharmacyregulation.org/sites/default/files/FtPC%20Indicative%20Sancantions%20Guidance%20%28ISG%29%20g.pdf) [Last accessed 31st March 2015]
28. Gaining Hospital Summer Placements in the United Kingdom - The Pharmacy Student Experience

Authors: Jaspreet Kaur, Natalie Lewis, Keith Wilson. Aston University

Background: The rising competition between Pharmacy undergraduates for pre-registration places has increased the importance of undertaking a vocational placement. Despite high demand, there is no centralised application system for hospital placements. Shortage or variability of, information may be a barrier to students’ access to placements and cause negative experiences. This research explores students’ experiences of applying and the role that Hospital Teacher Practitioners (HTP’s) play.

Method: Two electronic self-completion questionnaires were compiled using Bristol Online Surveys. The link to the student questionnaire was emailed by both the student’s School of Pharmacy and the British Pharmaceutical Students’ Association. The link to the HTP questionnaire was emailed directly to HTP’s or through their School of Pharmacy. Results were analysed using SPSS Version 21 and Microsoft Excel. Schools of Pharmacy where the student response rate was 1% or less (n=6) were excluded from analysis.

Results: Responses were analysed from 577 students at 15 Schools of Pharmacy and 51 HTP’s at 18 Schools of Pharmacy. The main barriers reported by students were a shortage of information sources, a lack of awareness of placement availability and insufficient information about placements outside their School of Pharmacy region. Despite these barriers, 74.8% (n=297) of students who were not in final year, still planned to apply for hospital placements.

The role of HTP’s in providing placement support for students was found to be varied. Responses concluded that about one third (35.3%, n=18) of HTP’s promoted their own hospital / Trust placements, but not those provided by others. Additionally, 41.2% (n=21) of HTP’s believed that they could do more to promote hospital placements.

Discussion: Access to information about hospital placements is highly varied across the UK. Findings confirmed the need to review the methods for placement recruitment and demonstrated the potential contribution that HTPs could make.
29. The use of online, formative assessment for contextualising key physicochemical concepts underpinning drug action

Authors: J.J. Keating, Eileen M. O’Leary and Timothy P. O’Sullivan, University College Cork, Cork, Ireland

Background: Pharmacy students entering the final stages of their degree often display an inability to apply fundamental scientific concepts to clinical scenarios. Important physicochemical principles such as lipophilicity (LogP) and acidity/basicity (pKa) are often poorly understood despite repeated exposure to these topics in early years.[1] An appreciation of the link between drug structure and both LogP and pKa is critical to the understanding of drug action in vivo.[2] We have developed an online, formative assessment model to improve students’ application of these concepts.

Methods: Our model is composed of three parts. Firstly, a set of short videos provides a summary of basic concepts such as LogP, pKa and drug metabolism. The second intervention comprises a series of online exercises focussed on the physicochemical properties of drugs and their impact on clinical application. These exercises are divided on the basis of system, disease and drug class. The final part of the model takes the form of automatic, standardised feedback supplemented with detailed solutions following a weekly deadline. Students are exposed to the same fundamental concepts in different scenarios, with the combination of exercises and feedback forming the basis of the formative assessment.

Results: The impact of our intervention was assessed using both survey feedback and pre- and post-assignment quizzes. Survey feedback was positive across the range of questions posed. Equally, student’s displayed an improved performance in the post-assignment quizzes, further highlighting the positive impact of this approach.

Discussion: We describe the use of online, formative assessment for contextualising key physicochemical concepts underpinning drug action, including the design of online assignments and novel methods for the manipulation of molecular structures in electronic form. Both surveys and quizzes demonstrate that this intervention had a positive impact on student performance. Finally, we outline the benefits of our approach as well as remaining challenges.

References
30. Development of a case-based MPharm programme at the University of Brighton

Authors: Alison B. Lansley and George W. Olivier. University of Brighton

Background: An exclusively case-based approach in years 1-3 of the course has been adopted to deliver the MPharm programme. The aim was to contextualise the science into the practice of pharmacy, making it immediately relevant to the students, one of the principles behind the Modernising Pharmacy Careers workstream 1 proposed changes in undergraduate education\(^1\) and was supported by Brighton student feedback.

Method: A range of mainly patient-focused cases was carefully designed to cover the required curriculum while maintaining a spiral of learning so that subject matter (pharmaceutical science, therapeutics, pharmacy practice) was presented in a logical sequence. A case-leader and multidisciplinary case-team, including pharmacy practitioners, pharmaceutical scientists, pharmacologists, and a health psychologist (where appropriate), was chosen with the appropriate expertise in the areas that needed to be covered. These teams met to optimise the integration of the material to help the students appreciate the relevance of the scientific information to the safe and effective treatment of the patient. At the end of the year, all students were surveyed electronically for their views using a range of multiple choice and free text options.

Results
- Most students found the case-based approach enjoyable and good for integrating information.
- Cases were most popular when they were straight-forward, interesting and of an appropriate length with the material well-integrated.

Discussion: This new approach has been well-received but cases are kept under review so they can be modified, if required, in response to student feedback and changes in scientific, clinical or professional practice. The multidisciplinary nature of case teams has increased interaction among staff which has promoted a better understanding of the areas of expertise of other staff members and how these can best provide for the needs of the pharmacy student. This has developed staff into more well-rounded contributors and provided added value to the course.

Reference
31. Undergraduate inter-professional education using simulated patients and actors.

Authors: MacKellar A, Barker R, Blackburn L, Brown N.  
1University Hospitals of South Manchester (UHSM). 2Manchester Pharmacy School, University of Manchester.

Co-authors: Alongside clinical skills tutors and pre-registration pharmacists at UHSM (University Hospitals of South Manchester)

Background: The need for effective collaborative working in the NHS to provide optimal and safe patient care is essential. Patient care involves many different health care professionals: each having their own roles, skills and responsibilities. It is important that pharmacy and medical undergraduates are given experience of working within a multidisciplinary team to develop the skills and competencies needed for their future professional roles.

Description of work: Third year medical and pharmacy students were required to work collaboratively, applying their professional knowledge and skills to manage two common clinical scenarios in the safe environment of a simulated ward at UHSM. Students worked in pairs or as a group of three to represent the actions and contributions of their own profession. Each scenario was made as realistic as possible with the use of clinical skills tutors (with backgrounds in nursing and pharmacy) playing the role of a nurse, patient and relative. A clinical tutor facilitated each simulation and was responsible for the pre-session briefings and post-session de-briefs. The aim of the evaluation was to assess the impact of the multidisciplinary team working experience on the students’ ability to perform their professional role working in collaboration with other healthcare professionals.

Proposed evaluation: All students were asked to complete a questionnaire before and after participating in the simulation. The questionnaire asked students to rate their understanding and confidence in working with other healthcare professionals on a five point Likert scale. Results from the pre and post evaluation questionnaires will be compared using SPSS and paired T-test to identify and assess any changes in their views after taking part in the session. Results will be presented at the conference.

1. Interprofessional Education in pre-registration courses. CAIPE. January 2012.

32. Use of a new tool to assess students’ consultation skills in taking a medication history from real patients in hospital practice.

Authors: MacKellar A 1, Silverthorne J 2, Mawdsley A 3, Fattah L 3, Morris D 4, Blackburn L 1, Steinke D 2, Rhodes M 2.
Co-authors: Shah J 3, Brown N 2, Bridge J 3, Keers R 2, Devine H 4.
1 University Hospitals of South Manchester (UHSM). 2 Manchester Pharmacy School, University of Manchester. 3 Central Manchester Hospitals. 4 Salford Royal Foundation Trust

Background: Medication histories are essential in medicines optimisation. Accurate medication histories are important in: reducing prescribing errors; identifying adverse drug reactions; investigating concordance and reducing risk to patients. The knowledge, skills and behaviors that are the key to conducting an effective patient-centered consultation set out in the consultation skills for pharmacy practice standards are explored in depth throughout the curriculum. Hospital placements allow students the opportunity to develop their consultation skills with real patients in practice. This abstract describes the implementation of a new tool to assess the consultation skills of fourth year pharmacy undergraduates in taking a medication history from a real patient in hospital practice.

Method: Fourth year pharmacy students were required to undertake an interview with a patient on a ward to obtain a medication history. In addition, students were asked to identify any medication related issues: including how the patient manages their medication at home, concordance and side effects. A clinical tutor or university lecturer directly observed all patient interviews. A new assessment tool developed by the Manchester Pharmacy School was used to rate the consultation skills for each student. Students were also assessed on their ability to communicate the information obtained during the interview to other members of the multidisciplinary team by completing an entry in mock medical notes.

Results: A consensus meeting was held to validate the mark-scheme and the pass mark was set using the Ebel standard setting method before the assessment. During the consultation, students were assessed on each element of the consultation as documented on the mark scheme. The assessor was also required to allocate a global assessment of the consultation independent of the mark scheme. Post assessment borderline regression analysis was performed and pass mark was derived. Both pass marks for the consultation skills assessment were the same (14/20) providing confidence in the standard setting procedure and pass mark. All assessors were required to complete an evaluation form to investigate their experience of use of the assessment tool in practice.

Discussion: This research describes the successful use of a new consultation skills assessment tool to indicate whether fourth year pharmacy undergraduates meet the required level of competence in undertaking a consultation with a real patient in practice.
33. Student involvement in Hospital Medicines Reconciliation processes: Opinions and views of key stakeholders.

Authors: Prabhjot Kaur Mahal, Natalie Lewis, Keith Wilson. Aston University.

Background: The aim of the study was to explore the views and opinions of key stakeholders about the involvement of pharmacy undergraduates within medicines reconciliation processes in NHS hospitals. The potential for medication reconciliation to reduce medication errors is well established\(^1\) as is the advantage of pharmacist involvement\(^2\). Despite this there is a lack of placement opportunities for medicines reconciliation within pharmacy undergraduate study.

Method: Three different self-completion questionnaires were created and distributed to three stakeholder groups; Chief Pharmacists from NHS trusts within the West Midlands, Pre-registration students from NHS trusts within the West Midlands and MPharm undergraduates from Aston University. The questionnaires included both open and closed questions. All responses remained confidential. Quantitative data was analysed with SPSS (v21) and qualitative by thematic analysis.

Results: The highest response rate was seen with the pre-registration students (90%, n= 47) compared to chief pharmacists (21%, n=4) and MPharm students (21%, n= 56). All stakeholder groups were positive about the inclusion of pharmacy undergraduates within medicines reconciliation. All groups supported inclusion via hands-on supervised placements with Chief Pharmacists willing to explore the implementation of both observational and supervised placements. The majority of current pharmacy undergraduates had little experience of medicines reconciliation and felt they would benefit from undertaking the placement. There was no consensus between the groups with regards to placement length and assessment. All Chief Pharmacists agreed that any mandatory training for the placements would be a joint responsibility of the trust and the university.

Conclusion: All stakeholder groups supported the possible implementation of observational and supervised placements with 75% of Chief Pharmacists agreeing they would like to explore this initiative further. Both students and preregistration trainees recognised the potential advantages of undergraduate placements. Further research is required to develop an implementation strategy for student medicines reconciliation placements.


34. Using summative peer-assessment to develop critical reflection on clinical placements.

Authors: Andrew Mawdsley, Adele Mackellar and Debra Morris. Manchester Pharmacy School, University of Manchester

Background: Integrated Professional Placements provide learners in years two and three the opportunity to develop the skills, knowledge and behaviours required for preregistration training. Placements assess learners’ critical reflection through the use of continued professional development (CPD); offering opportunities to evaluate and contextualise strengths and weaknesses to define development needs, rationalise behaviours and practices, and consider the views of peers to gain further insight into their own learning needs.

Description of work: Peer assessment is the processes of having members of a group judge the extent to which their fellow group members have exhibited specific traits, behaviours or competence. By definition, peer assessment involves individuals who have the same general level of training or expertise, exercise no authority over each other and share the same status. This process harbours open personal and professional reflection on a task, by reflecting on self and others reflections.

A summative CPD entry was submitted anonymously on Blackboard through Turnitin. Each student was randomly allocated an anonymous CPD entry to then assess. Students grade the CPD using a CPD mark scheme, provide written feedback, and assign a global performance rating (from unacceptable to outstanding). Students then reflect on the peer review to maintain and/or improve.

Proposed Evaluation: A questionnaire (rating scales of perceptions and open comments) was administered to all second and third year students to evaluate perceptions of the peer review process. This will be analysed by simple frequencies in Excel to consider future use of peer-assessment of professional skills in practice.

35. Impact of Specialist Technical Services Teaching on MPharm Undergraduate Students’ Opinions of a Career in Technical Services

Author: Hannah Miller. The University of Bradford

Background: This study reviewed the opinions of final stage MPharm undergraduate students on technical pharmacy, focusing on career choice and exploring potential misconceptions of the area. An elective module was developed for students to undertake in their final year: “Specialist Technical Skills in Hospital Pharmacy Practice”. This research was undertaken to assess the impact of the teaching on students’ opinions of technical services as a career.

Research question: Does the provision of dedicated teaching in technical services affect undergraduate students’ opinions about careers in this area?

Methods: Students who had chosen to study an elective component of the MPharm course were asked to complete a short questionnaire, the results of which were then analysed.

Results: 23 students across 3 cohorts were invited to complete the survey, 16 responded. 87.5% of students stated that the module increased their interest in a career in technical pharmacy. 75% of students were interested in pursuing a career involving technical pharmacy skills by the end of the module (from 87.5% at the start of the module, however, the number of students interested in working in industrial pharmacy increased). The majority of students felt that the module would be beneficial to their practice as pharmacists overall, even if they were not intending to pursue a career in the area.

Discussion and Conclusion: Providing the opportunity for students to learn more about this area of pharmacy increased interest in technical services as a career choice. As this was an elective component of the course, it is likely that these students were already interested in the area, and therefore more inclined to choose to study this module, however, the results show that increased exposure led to the development of an even greater interest in most students. Increased opportunities for undergraduate students to be exposed to this aspect of pharmacy should be provided and encouraged wherever possible.
36. MPharm integrated assessment - what have we learned?

Authors: Dr Julie Morgan, Mrs Alison Hartley and Mr Jim Johnston. Bradford School of Pharmacy, University of Bradford

Background: In 2013-14 a synoptic assessment was introduced into the Bradford MPharm, in year 2. This comprises a comprehensive assessment of all year 2 modular content based around body systems and includes both written and practical components. The aim is for students to integrate knowledge and skills horizontally, from across year 2 modules, and vertically by drawing on learning from year 1.

This evaluation focuses on the year 2 synoptic practical assessment, which comprised 4 steps:
1. Assessing prescriptions for legal and clinical appropriateness
2. Dispensing prescriptions featuring multiple items for single conditions
3. Writing counselling points in response to specific questions
4. Answering short answer questions integrating science and practice aspects

Students followed the “journey of a prescription” through each step described above. Prescriptions focused on different medical conditions studied during this stage of the course to support horizontal integration of the clinical and scientific knowledge developed during year 2. Students were also required to demonstrate vertical integration of legal knowledge and practical dispensing skills gained in year 1.

The aim of this work was to review our synoptic assessment to inform development of year 3 synoptic assessment, in addition to amending the year 2 synoptic assessment if necessary.

Method: We evaluated student performance using assessment data. The course, year and module leaders reviewed this data to inform future development of synoptic assessment.

Results: In 2013-14, 71% of students passed this assessment at the first attempt, suggesting that some found it challenging to apply knowledge and skills from their previous learning. Additional support was provided to those students who failed, including a revision support booklet and optional face-to-face taught and drop-in sessions. At the supplementary assessment 98% of the resitting students passed.

Discussion: Based on our experiences and to improve student performance in the subsequent academic year a number of changes were made. These included increasing the number of timetabled integrated practical dispensing sessions throughout the year and providing additional revision support sessions. These experiences have informed the development of synoptic assessments for years 3 and 4.
37. ‘Academic speed dating’: a class activity promoting patient-centred practice.

Authors: Ian Naylor, Beverley Lucas and Mohammed Isreb. Bradford School of Pharmacy, University of Bradford

Background: The involvement of patients and the public is central to the promotion of patient centred pharmacy practice. Within the Bradford School of Pharmacy, a spectrum of involvement taxonomy¹ was adopted as a way of locating the degree to which patients are actively involved in the learning process, ranging from scenario case-based approaches to the use of volunteer patients. This classification helps to clarify the patient’s role, duration of contact with learner, training, patient involvement in planning and curriculum and institutional commitment to patient involvement in education. The use of real case based scenarios was adopted to facilitate a patient focus to consultation skill acquisition.

Description of work: A series of case based scenarios² were developed and third year MPharm students were offered directed reading on the subject topics before attending classes. Academic speed dating is a class-based pedagogical technique that gets students into rapidly shifting pairs to work with key ideas, offering lots of practice in oral skills within a formative environment³. On arrival at class, participants randomly selected a card and sat down facing each other in a consultation format. One participant (acting patient) and the other (acting pharmacist) were given five minutes to read the information cards. Both were then allocated time to take part in a meaningful consultative conversation. Examples of scenarios that ‘patients’ were seeking advice about; included OTC medication for acid reflux, medication containing codeine for endoscopy-negative gastro-oesophageal reflux disease (GERD), cimetidine to treat heartburn, information advice about asthma and suggestions for alleviating symptoms of sinusitis. At the end of the allocated time, both parties were encouraged to share their experience of being either a patient or pharmacist and were given the opportunity to discuss this with academic facilitators.

Evaluation: Student evaluation of this innovation is ongoing, with anonymised qualitative data collection, which will form part of an overall evaluation in terms of promoting active patient involvement in teaching and learning. The use of a spectrum of involvement taxonomy¹ helps to provide clarity in terms of the patient’s role, thus facilitating effective communication of different initiatives across the curriculum.

References
1. Towle, A. Bainbridge, L., Godolphin, W., Katz, A., Kline, C., Lown, B., Madularu, I., Solomon, P., Thistlethwaite, J. (2010). Active patient involvement in the education of health professionals, Medical Education; 44: (1), 64-74
2. www.patient.co.uk [Accessed 11/05/2015]
38. Preparing final year MPharm students for leadership in practice

Author: Harsha Parmar. Manchester Pharmacy School, University of Manchester.

Background: Leadership in healthcare has received increasing emphasis following findings published in both the Francis Review and Berwick Report. The Royal Pharmaceutical Society have developed a leadership competency framework to support pharmacists develop leadership behaviours, beginning with pre-registration trainees.\(^1\) To address the undergraduate leadership requirements of the General Pharmaceutical Council (GPhC)\(^2\) and bridge the gap between student and pre-registration trainee, a component of a year 4 unit was designed, consisting of three workshops, to enable students to develop self-awareness, identify methods developing others and manage services. Workshop content was informed by student views and the GPhC standards of education.

Description of work: Final year students’ views of attributes of a prepared graduate about to enter pre-registration training were gathered in a nominal group study in 2014. Key themes that emerged in relation to leadership were the ability to make decisions and adapt to working in new teams and situations. Reflecting on students’ views, and the leadership competencies that students work towards demonstrating in the pre-registration year, the author looked to using a teaching and learning strategy that would address these needs. A team-based learning strategy was adopted to promote teamwork and peer-learning.\(^3\) Pre-reading packs were developed for each workshop, drawing upon approved literature from the Centre of Postgraduate Pharmacy Education, and professional literature on leadership and management. Each workshop was assessed via individual and team Readiness Assurance Tests (iRAT and tRAT). Team-based learning sessions focussed on role-playing scenarios where theory of self-awareness, developing others and managing services was applied.

Proposed evaluation: Learning experiences will be evaluated in a follow up study of the cohort to identify how the knowledge has been put into practice and, to identify areas for further improvement of teaching design.

References:
39. Using Team-based learning (TBL) to promote integration of Public Health and Microbiology

**Author:** Harsha Parmar. Manchester Pharmacy School, University of Manchester.

**Background:** Team-based learning (TBL) has been used as a teaching and learning strategy to promote a learner-centred environment whereby learners are provided with opportunities to identify gaps in their understanding and gain new experiences by working in small groups to solve case-based problems.\(^1\) TBL was introduced into a year 1 unit designed to enable students to apply their learning of the role of the pharmacist in health promotion and its underpinning microbiology in the context of the provision of patient-care.

**Method:** A series of five TBL sessions was developed, each focusing on a pharmacy service. Pre-reading was developed for each session, drawing upon literature from pharmacy practice, and microbiology. This was assessed via individual and team Readiness Assurance Tests (iRAT and tRAT). TBL sessions focused on discussing patient-cases relevant to the pharmacy service and the role of the pharmacist in preventing and controlling associated communicable and non-communicable disease. Students (n=176) were asked to complete an anonymous end-of-semester evaluation questionnaire to comment on their learning experiences in this unit.

**Results:** The overall iRAT mean was 71% and the overall tRAT mean was 95%. 71 (40%) students completed the survey. 80% agreed that the content of the unit enabled them to link theory and practice. Students reported that TBL sessions were useful opportunities for instant feedback to learning and contextualising their prior learning to patient-cases at an early stage of the course, whilst simultaneously building their communication skills. They valued the facilitator’s role in guiding them to make informed decisions about the scenarios. Students felt that being rewarded a mark for self-directed learning was a motivator to learn the material well, though some found this challenging.

**Conclusion:** TBL can nurture an environment where the learner can contextualise underpinning theory of science and practice in the provision of patient-care.

**Reference**
40. Evaluation of students’ expectation and perception of electronic feedback

**Authors:** Hozefa Patrawala, Gianpiero Calabrese and Amr ElShaer.
Drug Discovery, Delivery and Patient Care (DDDPC), School of Pharmacy and Chemistry, Kingston University London, Penrhyn Road, Kingston Upon Thames, Surrey.

**Background:** Feedback is an important aspect of student education as it is used as a part of their longitudinal development, whilst studying in higher education. Weaver described feedback as “an essential component in the learning cycle, providing for reflection and development”\(^1\). Conventional methods of feedback have changed overtime. For many years the conventional method has been handwritten feedback, which includes one-to-one feedback and group feedback. Recently, many institutions have adapted electronic feedback as a tool for enhancing students’ learning experience.

**Aims and Objective:** The current project will evaluate feedback provided to Science students at Kingston University and its impact on students’ learning. The study compared between Pharmacy students and other Science degree students including Biochemistry, Biomedical science, Chemistry and Forensic sciences at Kingston University.

**Method:** Quantitative research was carried out using Likert scale 4 points questionnaires which targeted Science degree students at Kingston University. The questionnaire consisted of statements about feedback, and divided into 5 sections; General, Expectations, Perceptions, Method and demographics. Questionnaires were self-administered and were distributed at lectures and in science societies across Penryhn Road campus at Kingston University.

**Results and Discussion:** 935 questionnaires were distributed, and 643 were returned completed, producing 68.78% response rate. Majority of the participants (91.14%) preferred one-to-one feedback to group feedback as group feedback was seen as a general way that accommodate all students’ work, which can limit its use in future learning. On the other hand, in One-to-one feedback tutor focuses at individual students’ work, performance, strengths and weakness which is believed to be highly beneficial in students’ future learning. Results also signify that feedback is best preferred electronically with respect to characteristics as 95.80% of the students argued that feedback should be easily accessible regardless of their location. Moreover, electronic feedback was identified as the best way to receive the content of their feedback for its language and legibility. In conclusion, Students expect feedback to be timely, accessible, of quality, clarity, language, legible, structured and tailored to the individual students and electronic feedback could facilitate this, hence boost students’ learning experience.

**Reference**
41. Do Bradford MPharm students find portfolios valuable for professional development?

Authors: Gemma Quinn, Aamna Khan, Arfan Kahn and Waliy Adegboye. The University of Bradford

Background: Portfolios are increasingly utilised as a learning and assessment tool, in an effort to improve student integration of knowledge and foster self-awareness. At the University of Bradford (UoB) students produce an e-portfolio annually, in preparation for practice. The aim of this study was to evaluate whether 3rd year MPharm students feel that the use of portfolios is valuable for their professional development. Ethical approval for the study was obtained.

Method: A questionnaire was developed to assess students’ views on the value of portfolios for their professional development, on a scale of 1-10. Additional questions related to the clarity of the aim of the portfolio, perceived tutor’s understanding of the aim, and the level of support students received and, finally, whether they felt time demands were appropriate. Questionnaires were distributed in teaching sessions.

Results: 82% of sandwich students and 85% of continuous students completed the questionnaire. 47% of sandwich students felt that portfolios were valuable (i.e. gave a value of 6 or more), compared to 31% of continuous students. There was a positive correlation between the perceived clarity of the aim of the portfolio and its value (r = 0.64 and 0.63 for continuous and sandwich students respectively). There was also a small, but positive correlation between the support students felt they received from tutors and the value they attached to the portfolio (r=0.37 and 0.45). Continuous students were more likely to use negative words to describe portfolios than sandwich students. They were also more likely to feel the time demands of the portfolio were unreasonable (62%) compared with sandwich students (27%).

Discussion and/or Conclusion: These results suggest that students struggle to see the value of portfolios in their professional development, with sandwich students having a more positive view than continuous students. This may reflect a difference in the type of students that choose the sandwich course. The importance of explaining the aims of the portfolio and its relevance to practice is apparent.

Reference
1. Buckley S et al. The educational effects of portfolios on undergraduate student learning: A Best Evidence Medical Education (BEME) systematic review. BEME Guide No. 11, Medical Teacher 2009; 31: 282-298
42. Reducing assessor variation in consultation skills assessments

Author: Mary Rhodes. Manchester Pharmacy School, University of Manchester

Background: Patient communication is often assessed by role-play stations with simulated patients as part of Objective Structured Clinical Examinations (OSCE). Assessing communication skills is subjective and difficult to quantify, increasing variation between assessors and reducing reliability\textsuperscript{1,2,3}. A pharmacy consultation skills mark-scheme to be used at any level of undergraduate education was developed based on the Consultation Skills for Pharmacy Practice Framework\textsuperscript{4}. This study aims is to evaluate the impact of consensus methods in improving reliability and validity of the consultation skills mark scheme.

Method: Staff involved in the assessment of communication skills were invited to a two phase pilot study. Phase one entailed staff independently marking eight year 1 student role-plays videos. Mark analysis demonstrated a large variation between assessors for the same student. Phase two involved staff participating in a consensus meeting, where minimal competent student descriptors for each of the criteria were decided. Staff then remarked the original eight videos, marks from both phases were then compared. A paired t-test was used to determine if there was a statistical difference between phases.

Results: Analysis of phase one demonstrated a mean range of 45.8\% (SD ± 10.95). The greatest difference between markers was 66\%. After the consensus meeting the mean range fell to 28.5\% (SD ± 8.12), this equated to a 37.8\% reduction mark variation. Comparing mark ranges between phases for each student found a statistical difference ($p = 0.01$).

Discussion and conclusion: Assessor variation was demonstrated to be a problem when assessing communication skills. Using a consensus method can not only reduce mark variation between assessors, but also ensure validity as assessment criteria descriptors are agreed by the assessment team in relation to the task.

References
Development of an MPharm module ‘Pharmacotherapy: from Person to Population’ based upon a Constructivist / Professional Unit of Study

Authors: Dr Peter Rivers and Dr Jon Waterfield. School of Pharmacy, De Montfort University

Background: In preparation for a new MPharm programme a 3rd year module was developed based upon a constructivist / professional unit of study. The module was designed to integrate science with practice and reduce the emphasis upon tutor-led learning and positivistic approaches that may hinder the application of scientific knowledge in practice.

Description of work: A series of six workshops were introduced where students worked in small groups to plan and submit a group portfolio. The module was designed to incorporate the following key areas of learning whilst also enhancing teamwork:

1. Socio-economic factors affecting the use of medicines
2. Enhancing care through personalisation
3. Pharmacotherapeutics, pharmacodynamics and pharmacokinetics affecting drug response
4. Use and misuse of medicines in individuals and populations

The teaching component of the module was arranged over 21 weeks with 24 x1 hour lectures acting as a precursor to six workshops where the students worked in groups of 4-6. The workshop sessions were designed to support independence in designing the portfolio and to empower groups to develop analytical and debating skills. Formative assessment included provision of individual verbal feedback on the presentation of portfolio chapter plans and after group presentations. Summative assessment was conducted as follows: 1. Outline plan of a portfolio based upon a broad scenario, 2. Group presentation of chosen portfolio, 3. Individual portfolio chapter, 4. Group mark incorporating coherence of portfolio, 5. Multiple choice test based on introductory lecture materials.

Proposed Evaluation: The module will be evaluated by using a standardised structured questionnaire in order to compare student and tutor perception of this new approach with more traditional didactic methods. Early indications suggest that a constructivist approach can enrich the learning process within a challenging team-working environment.

44. **Measuring empathy: a comparison of two measures?**

**Authors:** Deepa Sardana and Angela MacAdam. University of Brighton.

**Background:** Pharmacists are required to be to more patient-facing than was traditionally required as the need for consultations has increased. It is essential that pharmacists are empathic as it has been shown that consultation skills contribute to the medication-related problems which patients experience. The aims of this study was to take a behaviourial empathy assessment tool which has been developed for measuring behaviours such as eye gaze, body position etc. by medical students during patient consultations and compare the results with a validated questionnaire that provides an empathy score.

**Method:** Twenty-five final year MPharm students at the University of Brighton volunteered to take part in the study. Participants completed the Jefferson Scale of Physician Empathy (JSPE) questionnaire and then conducted a medication consultation with a simulated patient. The consultations were observed during which the participant's empathic behaviours were recorded using the behaviourial empathy assessment tool.

**Results:** Of the 25 students, 5 were male and 20 were female. The mean score for the JSPE was 111.2, (range 80-135) and the mean score for the behaviourial measure was 30.0 (range 19-32). There was a significant relationship between the two measures when p<0.1 was considered but not at 0.05, the p value being 0.096 using an independent t-test.

**Discussion:** There appears to be a link between the two different measures of empathy, however, the results should be treated with caution as this was a pilot with a very small sample size. If the relationship between the behaviourial measure and the JSPE exists, the JSPE could be used as a tool to determine empathy in applicants to pharmacy schools.

45. Developing the next generation of pharmaceutical scientists

Authors: Victoria Silkstone¹ and Jane Norris². ¹Manchester Pharmacy School, University of Manchester. ²AstraZeneca.

Background: The GPhC’s educational standards¹ require MPharm degree courses to provide opportunities for students to develop specialist knowledge, such as industrial pharmacy. Although, the GPhC Registrant Survey² reported just 3% of pharmacists work in the pharmaceutical industry, it is a growing area of interest for undergraduate students at this pharmacy school.

Description of Work: Academics from the school and the Pharmaceutical Development group at AstraZeneca (AZ) have forged a strategic link, the aim of which is to generate increased student awareness of the roles that pharmacists play in industry to bring new medicines to patients. Other aims of this programme are to stimulate interest in industry as career option, whilst equipping pharmacy students with appropriate knowledge skills to fill roles in industry once they have registered as pharmacists. In this regard, AZ scientists have defined areas of technical focus required from newly qualified pharmacists entering the industry, with school staff using this input shape the content of the pharmaceutical sciences curriculum within the MPharm. To inspire students we introduced the first site visit for fifty MPharm students to AZ Pharmaceutical Development in 2014. Subsequent opportunities under development are ‘hands-on’ practical site visit for 3rd year students and joint undergraduate research projects for 4th year students.

Proposed Evaluation: All students who participated in the 2014 visit to AstraZeneca completed a feedback form, 97% of students agreed that the day had met their expectations and 93% agreed that the visit had increased their awareness of industrial pharmacy. Suggestions for improvement included an increase in hands-on practical work and more information about career opportunities. The feedback is currently being used to inform the planning of the 3rd year visit and modify AZ input to the MPharm curriculum.

The impact of performance management coaches on student performance during a simulated pharmacy business module

Author: Mr Vibhu Solanki, Dr Matthew J Boyd and Dr Helen F Boardman. University of Nottingham.

Background: In 2011 the General Pharmaceutical Council introduced new educational standards for undergraduate degree programmes, with each one assigned a level of competence required according to the four levels of Miller’s Triangle. In line with these standards, students require a platform to learn, practise and develop their leadership and team working skills and this should be directly related to their future working environment. When major organisations introduce new projects or transformation programmes, change management and performance coaches are used to good effect. In developing a new module which, in part, allows students to demonstrate team working skills, a decision was made to employ performance coaches to support the students personal and team performance.

Description of Work: Pharmacy Leadership and Management (PLM) is a module which provides an experiential learning simulation drawing on leadership and management skills coupled with clinical problem solving. Teams of 6 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. Working with the university graduate school, coaching posts coaches were appointed, using a robust application, interview and training process. The coaches directed student-led group sessions, coaching them to reflect on performance, develop solutions and change initiatives. During the smaller scale pilot of the module, teams were each provided a coach. Teams had access to their coach at agreed times throughout the pilot. The performance coaches were able to monitor the progress of their clients and stimulate interventions to improve their performance.

Proposed evaluation: As part of the evaluation of the module pilot, the role and perceived benefit of the coaches will be evaluated via student and coach focus groups and interviews, to determine how best coaches might be used in the future module.

47. Using nominal group technique to establish students’ expectations of meeting expert patients

Author: Victoria Tavares. Manchester Pharmacy School, University of Manchester.

Background: The General Pharmaceutical Council states that the MPharm must include practical experience of working with patients; this can be achieved by using expert patients in class. While there has been some evaluation of patient and public involvement in healthcare education this has tended to focus on students’ experiences of taking part in the teaching and learning. In the study described here a nominal group technique was used to elicit opinions, goals and ranking of priorities of a group of students to investigate their expectations of meeting expert patients.

Method: First year pharmacy students were invited to participate in a nominal group prior to meeting expert patients, students were not aware of the intended learning outcomes (ILO) of the session. The key ILO were to introduce patient centred care and to practise communication skills. Students individually wrote down as many responses as possible to the question, ‘What do you expect to be the benefits to you of meeting patients in week 6?’ Responses were collated, discussed and clarified; with duplicated items removed fourteen different responses to the question were generated. Students then selected the ten most important responses to them and ranked them on a scale of 1 (least important) to 10 (most important).

Results: Twelve students took part in the nominal group. The ranking suggests that students were most likely to expect to learn about patients’ perspectives on their illness (see table for rank order).

<table>
<thead>
<tr>
<th>Score (max 120)</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>80 (most important)</td>
<td>Understanding and insight into how disease and treatments affect someone’s life</td>
</tr>
<tr>
<td>69</td>
<td>Apply knowledge to real life situations</td>
</tr>
<tr>
<td>58</td>
<td>Develop interpersonal skills at early stage</td>
</tr>
<tr>
<td>57</td>
<td>Become more confident in meeting new patients</td>
</tr>
<tr>
<td>55</td>
<td>Experience different learning method</td>
</tr>
<tr>
<td>48</td>
<td>Opportunity to develop empathy</td>
</tr>
<tr>
<td>43</td>
<td>Learn how disease and treatments affect family and friends</td>
</tr>
<tr>
<td>41</td>
<td>Put communication skills in to practice</td>
</tr>
<tr>
<td>37</td>
<td>Appreciation of the role of the pharmacist in caring for patients</td>
</tr>
<tr>
<td>35</td>
<td>Understand what patients want from pharmacists</td>
</tr>
<tr>
<td>33</td>
<td>Motivation to learn about long term conditions</td>
</tr>
<tr>
<td>31</td>
<td>Awareness of different long term conditions</td>
</tr>
<tr>
<td>21</td>
<td>Gain an idea of the number of medicines taken by a patient</td>
</tr>
<tr>
<td>18 (least important)</td>
<td>Learn about experiences with hospital pharmacy</td>
</tr>
</tbody>
</table>

Discussion: Students’ expectations of meeting expert patients matched the intended learning outcomes of the session. The students also identified other perceived benefits. The next step in the evaluation process will be to develop a questionnaire to determine the extent to which expectations are perceived as having been met.

References
48. Using Team Based Learning (TBL) to deliver Inter Professional Education (IPE) with Optometry and Pharmacy students

Authors: Victoria Tavares and Catherine Porter. University of Manchester.

Background: The General Pharmaceutical Council state that the undergraduate degree must include practical experience of working with other healthcare professionals, this view is shared by the General Optical Council. Active learning methods have previously been used to deliver IPE between healthcare professionals, and are seen as eminently suitable for this purpose.

Method: 204 third year optometry and pharmacy students attended TBL sessions as part of their respective course units about preparation for practice. The key intended leaning outcome of the session was to develop understanding of the roles of a pharmacist and optometrist in primary health care. Prior to the session all students were asked to read information about the professions and red eye symptoms. Students worked in teams of six comprising of two optometry students and four pharmacy students. A semi structured online questionnaire was circulated after the session to seek the learners’ reactions.

Results: 64 students completed the questionnaire (34 Pharmacy, 30 Optometry)
- 51 students reported an increased understanding of the other profession
- 32 students reported preference of TBL over lectures

Students reported both positive and negative reactions to the TBL session
- Positive reactions included:
  - Learning from others
  - Teaching method used
  - Meeting new people
  - Consolidation of knowledge
- Negative reactions included:
  - Less learning in group work environment
  - Pharmacy students’ knowledge of the eye

Discussion: The results suggest that most students met the key intended learning outcome of the session. Some students suggested that the optometry students were better prepared for the case study exercises; due to their knowledge of the eye compared to the pharmacy students. Differences in knowledge base have previously been identified as a challenge to IPE. Pharmacy students could be supported by providing a broader range of pre class reading before the session.

References
49. Learning styles of 1st year MPharm students

Authors: Sarah Willis¹, Harsha Parmar¹, Victoria Silkstone¹, Zubin Austin². ¹Manchester Pharmacy School, University of Manchester. ²Leslie Dan Faculty of Pharmacy, University of Toronto.

Background: Learning styles are attitudes and behaviours related to how students prefer to learn.¹ While learners can and do learn using a variety of modes of enquiry, learning preferences can be conceptualised as constructed along two axes: performance and information processing. These two axes intersect to produce four quadrants upon which the Health Professionals’ Inventory of Learning Styles (H-PILS)² tool is based – accommodator, assimilator, converger and diverger. In the study described here we used the H-PILS with 1st year students to understand students’ differences in how they approach their learning.

Method: The H-PILS tool was distributed to students to complete at the end of a teaching session. With permission from the students and using their ID number, data from the H-PILS were merged with demographic data and anonymised prior to analysis. SPSS was used to determine learning styles and to investigate relationships between students’ learning style and demographic characteristics.

Results: 143 students completed the H-PILS (81% response rate); most were female (n=95, 66.4%), and of white (n=38, 26.8%), Chinese (n=33, 23.2%), Pakistani (n=20, 14.1%) or Indian (n=15, 10.6%) ethnicity. Around a fifth (n=30, 21%) paid overseas student fees. Students were most likely to be assimilators (n=84, 58.3%) or convergers (n=29, 20.1%). Although not reaching statistical significance, females were more likely to be assimilators than males (66.3% vs 43.8%), as were home students compared to those paying overseas student fees (61.1% vs 50%) and Indian (73.3%) or Pakistani (70%) students compared with white (60.5%) or Chinese (54.5%) students.

Discussion: Students taking part in our study were more likely to be assimilators or convergers than have been reported by other studies.³ While assimilators are organised and pay attend to detail, convergers prefer problem-solving and experimentation – and both prefer to learn on their own. Given much current undergraduate teaching and learning involves small group learning students the implications of our findings is that our students may need support in developing learning styles suited to this teaching and learning as it conflicts with their personal learning preferences.

Pharmacy Education Conference
2016

Monday 27th June 2016

Manchester Pharmacy School