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Volume of Abstracts

Introduction

This booklet contains the abstracts of the presentations and posters from the sixth Pharmacy Education Conference at the University of Manchester on 24th June 2019. The abstracts are also available online at:

<https://www.bmh.manchester.ac.uk/conferences-meetings/pharmacy-education-conference/>

Oral Presentations 2019**Session I (Parallel sessions) – 11.00 – 11.55**

A - Placements		Chair: Johanne Barry, Queen's University Belfast	
Venue: Lecture Theatre 1			
Presenter	Authors	Institution	Title
1. Aisling Kerr	A. Kerr, T. Pawlikowska, P. Gallagher, F. Boland, J. Strawbridge.	RCSI Dublin.	Does an early longitudinal community practice placement for pharmacy students promote learning by establishing more opportunities for connection with patients, curriculum integration and professional engagement?
2. Shannon Nickson	S. Nickson, S. Greensmith, B. Glavin, M. Shaw.	Centre for Pharmacy Post-graduate Education.	Pharmacists and pharmacy technicians learning together to develop and deliver Medicines optimisation in care homes as part of the multidisciplinary health and social care team.
3. Nicola Young	N. Young, D. N. Wigg, T. Wareing, D. Goddard, G. Cooper, L. Hanning.	University of Bath.	Evaluation of the impact of 'Clinical Learning in Practice' (CLIP) on MPharm students' self-assessment of their competence and confidence working in a ward-based setting.
B - IPE		Chair: Jennie Watson, UCLan	
Venue: Lecture Theatre 2			
Presenter	Authors	Institution	Title
4. Zachariah Nazar	H. Herrera, N. Barnes, Z. Nazar, K. Wanyonyi, P. Rutter.	University of Portsmouth & Qatar University.	Investigating students' perspectives of their involvement in inter-professionally delivered health checks to hard-to-reach patients.
5. Paul McCague	P. McCague, B. Macklin, H. Barry, F. Hughes, A. Maxwell, S. Haughey.	Queen's University Belfast.	What's the verdict? Evaluation of an interprofessional simulated court trial.
6. Roisin McMenamin	R. McMenamin, M. J. Dungersi, M. Christou, D. Wright.	University of East Anglia.	Implementing an inter-professional learning approach for hospital pre-registration trainee pharmacists – Feasibility and evaluation of outcomes.
C - Peer led teaching and learning		Chair: Mark Green, University of Bradford	
Venue: Lecture Theatre 3			
Presenter	Authors	Institution	Title
7. Abolfazl Maasoumi Sarvestani	A. M. Sarvestani, K. Medlinskiene, J. Tomlinson, K. Adams.	University of Bradford.	Introducing a Pharmacy Undergraduate Student-led Health Check Service at the University of Bradford.
8. Matthew Stibbs	C. Uppal, M. Stibbs, M. Allinson.	Keele University.	Does the use of interviews in the recruitment of undergraduate pharmacy students influence choice of university? A study of Year 1 & 2 MPharm students.
9. Emma Williams	E. Williams, D.G. Allison, S.C. Willis	University of Manchester	Undergraduate-led mental health promotion in high schools: impact upon pharmacy students.

Oral Presentations 2019
Session II (Parallel sessions) – 1.30 –2.30

D - Assessment and Feedback		Chair: Jeremy Sokhi, University of East Anglia	
Venue: Lecture Theatre 1			
<i>Presenter</i>	<i>Authors</i>	<i>Institution</i>	<i>Title</i>
10. Karen Gunnell & Rebecca Venables	K. A. Gunnell, R. H. Venables.	Keele University.	'A Practical Guide to Medicines Administration': application for Competency Based Assessments (CBAs).
11. Efi Mantzourani & Cherie Lucas	E. Mantzourani, S. Buckingham Shum, C. Lucas.	Cardiff University & University of Technology Sydney.	Instant online feedback on reflective writing using AcaWriter-V1: What do students think of it?
12. Hamde Nazar	H. Nazar, W. Lau, A. Husband.	Newcastle University.	Assessment summative assessment adopting a multi-stage dialogic approach.
E - Teaching Methods		Chair: Natalie Lewis, Aston University	
Venue: Lecture Theatre 2			
<i>Presenter</i>	<i>Authors</i>	<i>Institution</i>	<i>Title</i>
13. Steven Ford	S. J. Ford, A. C. Boyter	University of Strathclyde	Pharmacist's dilemma: an example of large scale, in-lecture gamification.
14. Mary-Carmel Kearney	M.C. Kearney, E. Larraneta	Queen's University Belfast.	Integrated analytical chemistry and pharmacy practice group case-studies: an evaluation.
15. Sudaxshina Murdan	S. Murdan	University College London.	Object-based learning in Pharmacy Education.
F - Innovation		Chair:	
Venue: Lecture Theatre 3			
<i>Presenter</i>	<i>Authors</i>	<i>Institution</i>	<i>Title</i>
16. Ruth Edwards	R.M. Edwards, A.J. Brown	Aston University. Robert Gordon University.	What might it be like to be you? Using poetry to explore person-centred care with pharmacy students.
17. Joe Bridgeman	A. Hitchings, J. Bridgeman, D. Burrage, T.K. Khong.	Kingston University & St George's University of London.	Preparedness for prescribing and interprofessional working through clinical simulated - preliminary findings.
18. Clare Smith	C. Smith, H. Middleton, N. Butler, A. Mawdsley, M. Shaw.	Centre for Pharmacy Postgradua te Education.	Development of a robust and effective learning programme for education supervisors - Manchester Statement of Teaching Proficiency (STP).

Attended Electronic Poster Presentations (Parallel sessions)**Time: 12.00 – 12.30**

A - Curriculum Design and Assessment		Chair: Victoria Silkstone, UoM
Venue: Lecture Theatre 1		
Authors	Institution	Title
19. A. Bain, E. Bennett	University of Huddersfield.	Informing the design of interprofessional education using an action research approach.
20. K. Bullen, K. Ainsley, K. Davison	University of Sunderland.	Patient safety: evaluating the numerical skills of undergraduate MPharm students and their perceptions of numeracy in clinical practice.
21. L. Ellis, J. Li, J. Desborough, E. Smith.	University of East Anglia.	Exploration of the use of an e-portfolio for pre-registration training within an integrated MPharm degree.
22. D.T. Grant	University of Reading.	Supporting Transition: MPharm 2+2 students' experiences of transferring from a Malaysian campus to the UK.
23. M. A. Green, J. R. Johnston, M. Isreb, J. Silcock, R. T. Wheelhouse.	University of Bradford	Introducing Entrustable Professional Activities (EPAs) and "do-able tasks" to Stage 1 MPharm students: a student inclusive approach.
24. E. Hackl, I. Ermolina	University of Reading & De Montfort University	Inclusion by Design: embedding inclusive teaching practice into design and preparation of laboratory classes.
25. S. A. Jones, D. Hay	King's College London	Telling things: Ethnography of Pharmacy university students' recipe-like science laboratory classes.
26. A. Kerr, C. Kelleher, T. Pawlikowska , J. Strawbridge.	RCSI Dublin.	Development of initial programme theories regarding how pharmacists can develop patient-pharmacist communication skills.
27. Z. Nazar, F. Begum.	Qatar University & University of Portsmouth.	A scoping review of the literature: The management of pharmaceutical waste in pharmacy education.

Attended Electronic Poster Presentations (Parallel sessions)**Time: 12.00 – 12.30**

B – Learning-focused Enquiry		Chair: Sarah Willis, UoM
Venue: Lecture Theatre 2		
Authors	Institution	Title
28. S. Amadesi, J. Gunner, B. Stoyanova	University of Reading.	Surviving the pitfall of learning biology and physiology: can we support pharmacy students to 'start strong' and 'stay strong' in their educational path to become healthcare professionals?
29. A. Astles	University of Huddersfield.	Cultural effectiveness: a curriculum framework.
30. E. Boxer, A. Sturrock.	University of Sunderland.	Investigating the impact of dementia friend's information session delivery on undergraduate healthcare students in relation to current teaching.
31. L-C. Chen, H. Yeung, J. Li	University of Manchester.	Explore the feasibility of applying online distance learning to facilitate pharmacy continuous professional development in China.
32. E. Fielding, S. Scott, D. Bhattacharya, J. Sokhi	University of East Anglia.	An assessment of Emotional Intelligence in MPharm undergraduates.
33. L. Grimes, P. Higginson, M. Shaw.	Centre for Pharmacy Postgraduate Education.	Evaluation of the use of video as a learning tool in a national Polypharmacy workshop.
34. D. Mitchell, H. Juwale, C. Wheeler, L. Blackburn, A. Graves, H. Devine	University of Manchester.	Evaluating second year MPharm students' perceptions of their consultation skills when advising a patient on taking a medicine for the first time.
35. T.P. O'Sullivan.	University College Cork.	Application of a technology-assisted flipped classroom to promote and measure student engagement in pharmacy education.
36. R. Sandhu, M. Waraich, J. Tullett, S. Thorpe.	Aston University. Birmingham and Solihull Training Hub.	Student perceptions of Inter-professional joint undergraduate student placements across the health science curriculums.
37. E. Wright, M. Karolczak-Bayatti, G. Cosens, N. Matthews, M. Coupe, M. Shaw, S. Greensmith.	Centre for Pharmacy Postgraduate Education.	Collection and analysis of learner specific data improves delivery of national training programmes for pharmacy professionals.
38. E. Wright, N. Butler, M. Shaw.	Centre for Pharmacy Postgraduate Education.	Supporting pharmacy professionals to transition to patient facing roles.

Attended Electronic Poster Presentations (Parallel sessions)**Time: 12.00 – 12.30**

C - Learning in Practice		Chair: Harsha Parmar, UoM
Venue: Ground Floor Training Room, room G.223		
Authors	Institution	Title
39. A. Conway, N. Tester, L. Innes, V. Kalidasan, A. Elkins	Brighton and Sussex University Hospital Trust.	Developing Medical and Pharmacy Education Supervisors within an Acute Trust.
40. A. Elgebli, H. Nazar.	Newcastle University.	Student and staff perceptions of voluntary sector placements.
41. K. A. Gunnell, A. Kamoga	Keele University.	Does the process of self-organising community pharmacy placements help Keele MPharm students to demonstrate graduate attributes?
42. I.Y.K. Iskandar, H. Juwale, D. Mitchell, C. Wheeler, H. Devine, N. Sabry, S. Farid, D.T. Steinke	University of Manchester & Cairo University.	Evaluating the students' perceptions of their communication skills before and after UK clinical placements: an international clinical pharmacy summer school for Cairo University students.
43. S. A. Jacob, A.C. Boyter	University of Strathclyde.	Graduates' Perceptions of Experiential Learning (EL) in the MPharm, and its Effectiveness in Preparing Them for Practice.
44. R. Micallef, M. Styles	Kingston University & CPPE.	Evaluation of a pharmacist training intervention on assessing and managing urgent cases.
45. S.Ridgway-Green, K. Wragg, P.Gandham, M.Shaw	Centre for Pharmacy Postgraduate Education.	Development of a national leadership and management programme for mid-grade pharmacy professionals.
46. M. Shaw, S. Quaye, S. Ridgway-Green	Centre for Pharmacy Postgraduate Education.	Pharmacists – helping and hindering pharmacy technician professional development.
47. R. Venables, S. Harris, E. Mills, S. Chotai, M. Tariq, S. White.	Keele University, Green Light Pharmacy & UCL.	Evaluating collaborative working of GPs and Community Pharmacists in a novel project: a Focus Group Study.

Attended Electronic Poster Presentations (Parallel sessions)**Time: 12.00 – 12.30**

D – Teaching innovation		Chair: Andrew Mawdsley, UoM
Venue: Lecture Theatre 3		
Authors	Institution	Title
48. D. G. Allison, S. C. Willis, E. Williams	University of Manchester.	Peer-education: an effective pedagogical approach to supporting pharmacy undergraduate and high school student learning.
49. D. Bell, E. Wright, M. Shaw	Centre for Pharmacy Postgraduate Education.	Creating an engaging synchronous online learning environment for pharmacy professionals to explore the Myers Briggs Type Indicator®
50. M. Cullen, C. Cadogan, S. Murphy, J. Strawbridge.	Royal College of Surgeons in Ireland.	Patient and public involvement in health professions education: a qualitative exploration.
51. J. Sowter, D. P. Petty, S.J. Martin, G. Quinn	University of Bradford.	Using stakeholder engagement to develop Postgraduate Taught Programmes for Primary Care Pharmacists.
52. S.J. Martin, J. Sowter, G. Quinn, D. P. Petty	University of Bradford.	Teaching cross-sector medicines optimisation to primary care pharmacists using an expert patient.
53. R. Matala, D. Wright	University of East Anglia.	Medication Adherence: Developing a simulation tool for trainee Pharmacists.
54. S. E. Matthews, P. J. McDermott, A. Ganesan, T. H. Tran, L. M. Bui, T. Huynh, D. T. Pham, D. L. Tran.	University of East Anglia, Nguyen Tat Thanh University, Vietnam Institute for Tropical Technology.	Developing an Innovative Trans-National Education Approach to the Teaching of Natural Products Chemistry.
55. S. McCarthy, P. Finnegan, G. Laverty, A. Pope, G. Barrett	University College Cork & Queen's University Belfast.	An initiative to enhance entrepreneurial skills among undergraduate pharmacy students.
56. B. Morris, L. Ziad	Liverpool John Moores University.	The value of a secondary school lesson in improving sun safe knowledge.
57. B. Morris, R. Abdulrazeq	Liverpool John Moores University.	BNF app training for nursing students.

Traditional Posters		
Time: 12.30		
Authors	Institution	Title
58. S. Artis, J. Kinsey, S. White	Keele University.	An evaluation of one year's data on the uptake of community pharmacist clinical pharmacy modular training, delivered on behalf of the Pharmacy Integration Fund (PhIF).
59. Z. Azim, K. Paluch, J. Tomlinson	University of Bradford.	Exploring the impact of Research Culture and Supervision on Post Graduate Researcher engagement within the School of Pharmacy
60. D. Breen, A.C. Boyter, G. Lyna	University of Strathclyde.	Gamification in MPharm teaching.
61. M.Carter, J.Hamer, R.Smith	North Bristol NHS Trust-Southmead Hospital.	The Benefits of Training and Implementing Clinical Prioritisation Pharmacy Technicians at North Bristol Trust (NBT).
62. P. Carter, S. McQueen	University of Sunderland.	Calculating the cost of student Fitness to Practise Investigations.
63. E. Dunwoody, M. Hall, L-A. Hann	Queen's University Belfast.	Do females perform better academically? An analysis of gender performance in the MPharm and A-level data for STEM subjects.
64. S. Greensmith, M.Shaw, A. Sellers.	Centre for Pharmacy Postgraduate Education.	Developing a novel online learning environment, and supportive study days, to replicate clinical practice for pharmacy professionals.
65. N. Gulzar, A. Latif, S. Gohil, T. Ansong	De Montfort University & University of Nottingham.	What can educators learn from the types of clinical interventions made by community and hospital pharmacists.
66. T. Harrison, H Dunbar, K Ford	De Montfort University.	The contemporary prescriber: improving working relationships between disciplines.
67. A. Iannetti, P. Masadur, L. Temple, N. Kyei, H. Nazar	Newcastle University.	A student-led curriculum review of undergraduate programme.
68. S. A. Jacob, A. C. Boyter	University of Strathclyde.	Experiential Learning in MPharm Programmes: a Survey of UK Universities.
69 A. Latif, L. Chen, C. Demonacos, J. Hall, K. Williams.	University of Manchester.	Identification of Learning Preferences and Background Knowledge Differences to Facilitate Students' Learning and Experience.
70. W. Leadbeater, S. Baig, N. Lascar, N. Lewis, R. Edwards.	Aston University.	Undergraduate Pharmacy and Medical student views on working inter-professionally using patient-centred endocrinology workshop.
71. N.Lewis, D.Kemp, R.Edwards, H.Aujla, S.Phull, J.Miks, K.Shingadia	Aston University	"This gave me an insight into hospital pharmacy!": MPharm hospital orientation placements, facilitated by pre-registration pharmacists.

Traditional Posters (continued)		
Time: 12.30		
72. E. Lim	University of Central Lancashire.	Use of Reality Television in Video Case-Based Pharmacy Practice Teaching.
73. S. J. Martin, M. Isreb	University of Bradford.	Assessing the suitability of Team-Based Learning (TBL) approach to delivering the national Antimicrobial Stewardship (AMS) competencies to undergraduate pharmacy students.
74. A. Mawdsley, G. Groves, S. Lakhani, E. Cope, S. Kotecha	University of Manchester.	Waste medicines and environmental harm: a pharmacy student project.
75. M. McReynolds, L-A. Hanna, M. Hall	Queen's University Belfast.	A questionnaire-based study to investigate future pharmacists' attitudes towards team work.
76. H. Middleton, L. Grimes, M. Shaw	Centre for Pharmacy Postgraduate Education.	Development and validation of the Medicines Related - Consultation Assessment Tool (MR-CAT): A new global assessment tool for assessing pharmacy professionals' consultations.
77. R. Sandhu, M. Waraich, J. Tullett, S. Thorpe	Aston University.	Student perceptions and experiences of primary care GP placements during the undergraduate MPharm degree.
78. R. Sandhu, A. Sheppard, W. Leadbeater, S. Baig	Aston University.	Pharmacy and Optometry student views on inter-professional learning to improve patient wellbeing.
79. T. Saqi, M. Nejad, H. Fok, T. Khong	Kingston University.	MPharm Student-Led Opportunistic Screening for Hypertension and Atrial Fibrillation in Community Pharmacy.
80. S.Sarwar, N.Lewis	Aston University.	An evaluation of student support for the national pre-registration recruitment scheme at Aston University.
81. A. Turner	Swansea University.	Ensuring Academic Accountability: Design Decisions on a New MPharm Programme
82. S. Varia, H. Middleton, M. Shaw.	Centre for Pharmacy Postgraduate Education.	Evaluation of training for Case based Discussion (CbD) assessors.
83. S. C. Willis, S. Ajmal, S. Ashraf, J.G. Barry, J. Brocklebank, A. Dempster, J. Dobbs, A. Hashmi, S. Haughey, E. Okang, H. Parmar, O. Salami, J. Seaman, V. Silkstone	University of Manchester & Queen's University Belfast.	Preparation for practice: final year pharmacy students' reflections on their MPharm.

1. Does an early longitudinal community practice placement for pharmacy students promote learning by establishing more opportunities for connection with patients, curriculum integration and professional engagement?

Authors: A. Kerr, T. Pawlikowska, P. Gallagher, F. Boland, J. Strawbridge.

Institution: RCSI Dublin

Background: Longitudinal clinical placements are defined as involving “a regular, recurrent placement in the same setting with the same supervisor over a period of time” and are further defined as integrated clerkships when the intention is to provide “experiential clinical learning of all core specialist disciplines concurrently” (Thistlethwaite et al., 2013).

The underlying mechanism promoting learning is “continuity” in its varying forms of patient, supervisor and location longitudinal exposure. Longitudinal placements have been reported to promote learning by establishing more opportunities for connection with patients (“continuity of care”), integrating knowledge, skills and attitudes across science and practice (“continuity of curriculum”) and by enhancing supervision, role modelling and mentoring (“continuity of supervision”) (Thistlethwaite et al., 2013).

Longitudinal placements in pharmacy are not described in the literature. This study seeks to answer the question: Does an early longitudinal community practice placement for pharmacy students promote learning by establishing more opportunities for connection with patients, curriculum integration and professional engagement?

Description of work: This is a two phase mixed methods study. Phase one is a quantitative before and after study. Data was collected using a validated tool called the Student Pharmacist Inventory of Professional Engagement (S-PIPE) (Aronson and Janke, 2018), relating to continuity of supervision. The questionnaire also contains questions related to connection with patients and curriculum integration.

Phase two will consist of qualitative semi-structured interviews with students, supervisors and practice-educators following completion of the 12-week longitudinal placement. The interviews will focus on continuity of care, curriculum and supervision.

Proposed evaluation: Questionnaire responses will be analysed using summary and descriptive statistics. Distributions of responses to questions concerning key outcomes will be explored. McNemar’s test will be used to explore responses pre and post placement.

Qualitative interview data will be thematically analysed to identify and explore prominent themes as they emerge from the data.

References:

Aronson, B.D. and Janke, K.K., 2018. Measuring a state of mind indicative of thriving using the Student Pharmacist Inventory of Professional Engagement (S-PIPE). *Research in Social and Administrative Pharmacy*, 14(7), pp.678-685.

Thistlethwaite, J.E., Bartle, E., Chong, A.A.L., Dick, M.L., King, D., Mahoney, S., Papinczak, T. and Tucker, G., 2013. A review of longitudinal community and hospital placements in medical education: BEME Guide No. 26. *Medical teacher*, 35(8), pp.e1340-e1364

2. Pharmacists and pharmacy technicians learning together to develop and deliver Medicines optimisation in care homes as part of the multidisciplinary health and social care team.

Authors: S. Nickson, S. Greensmith, B. Glavin B, M. Shaw.

Institution: Centre for Pharmacy Post-graduate Education (CPPE), University of Manchester

Background: In 2017, our organisation was successful in securing the contract to deliver the national Medicines optimisation in care homes training pathway for registered pharmacy professionals. The pathway, funded by Health Education England (HEE) on behalf of NHS England (NHSE), has been designed using the Framework for Enhanced Health in Care Homes (EHCH) (NHS England, 2016). Both pharmacists and pharmacy technicians have a valuable role in contributing to the care of people living in a care home setting. Development of these roles in the wider healthcare system is highlighted in the NHS Long Term Plan (NHS England, 2019).

Description of work: The care homes training pathway is delivered over 18 months and brings pharmacists and pharmacy technicians together to learn. The aim is to develop a mutual understanding of each other's roles and increase confidence to lead best practice in medicines optimisation as part of the wider multidisciplinary health and social care team (MDHSCT) as described in the EHCH framework (NHS England, 2016).

A blended approach to learning includes online learning, study days, residential workshops, work-based support and assessment enhanced with input from the MDHSCT.

The importance of working as part of the MDHSCT with care homes (NHS England, 2016) and residents is articulated throughout. Learners are challenged to evaluate their role to maximise the benefits of skill mix and work in line with the framework.

Proposed evaluation: Data on the learner's experience is collected at events and end of modules in feedback forms. These forms establish the learner's perspective on the relevance of the material to their role, understanding of the topic, and how the learning will develop their practice. This data informs our review of the learning and that of HEE and NHSE. Learners self-reflect on the impact of their learning, accumulating 'Evidence of impact in role' statements aligning to the EHCH framework (NHS England, 2016). NHSE will evaluate the impact of the learning using central data collection.

References:

NHS England. 2016. *The Framework for Enhanced Health in Care Homes* [Online]. [Accessed 7 March 2019]. Available from: <https://www.england.nhs.uk/wp-content/uploads/2016/09/ehch-framework-v2.pdf> (accessed 1st March 2019)

NHS England. 2019. *The NHS Long Term Plan*. [Online]. [Accessed 7 March 2019]. Available at: <https://www.longtermplan.nhs.uk/wp-content/uploads/2019/01/nhs-long-term-plan.pdf> (accessed 7th March 2019)

3. Evaluation of the impact of ‘Clinical Learning in Practice’ (CLIP) on MPharm students’ self-assessment of their competence and confidence working in a ward-based setting.

Authors: N. Young, D. N. Wigg, T. Wareing, D. Goddard, G. Cooper, L. Hanning.

Institution: University of Bath

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Background: In 2016 the University of Bath introduced a restructured MPharm programme with a greater focus on preparing students for future practice through utilisation of a spiral curriculum and Specialised Integrated Units (SIUs). A CLIP session has been specifically designed within each SIU to achieve SIU specific learning objectives and an overarching set of learning outcomes, linked to General Pharmaceutical Council graduate competencies (GPhC, 2011).

Description of work: A 5 Point Likert Scale based self-assessment tool was designed and mapped to GPhC Graduate Competencies alongside the learning objectives for the CLIP sessions. MPharm students have been invited to use this tool to self-assess their confidence and competence when working in a clinical setting according to a set of 10 standards. Students completed the self-assessment prior to their first CLIP session in October 2017, at the end of the same academic year and again on completion of their final CLIP session in March 2019.

Proposed evaluation: Focus groups are to be carried out at the end of the 2018-19 academic year to further explore the impact of CLIP. Internal consistency of the self-assessment tool will be assessed using Cronbach’s Alpha when all data is available. Data will be paired and statistically analysed to assess the impact of CLIP on students’ self-assessment of their competence and confidence. Results will be used to inform future development of CLIP alongside standardised student feedback.

References:

General Pharmaceutical Council (GPhC), 2011. *Future Pharmacists: Standards for the Initial Training and Education of Pharmacists*. London: General Pharmaceutical Council.

4. Investigating students’ perspectives of their involvement in inter-professionally delivered health checks to hard-to-reach patients.

Authors: H. Herrera¹, N. Barnes¹, Z. Nazar², K. Wanyonyi¹, P. Rutter¹.

Institution: ¹University of Portsmouth, ²Qatar University.

Background: There is emerging evidence that effective inter-professional educational (IPE) interventions can contribute to positive outcomes in collaborative teamwork within the delivery of healthcare (Reeves et al., 2013). Furthermore, the literature recognises that student-lead health clinics benefit student learning and enhance communication, collaboration and leadership skills (Thistlethwaite, 2012).

Aims: To investigate the perspectives of pharmacy and dental students’ following their involvement in student-lead health checks to the local homeless population.

Method: A topic guide was informed by a review of the literature; and following their collaborative participation in delivering health checks to the local hard-to-reach population (typically homeless), pharmacy and dental students were invited to take part in focus groups. The focus group interviews were audio-recorded and transcribed verbatim. Two members of the research team independently subjected the transcripts to thematic analysis.

Results: Three focus group interviews were conducted and included 5 pharmacy students and 8 dental students. Two major themes and four sub-themes emerged from the data. (Table 1)

Themes	Sub-themes
Skills learnt/developed	Service delivery Role characteristics
Collaborative behaviours	Professionalism Communication

Table 1: Themes and sub-themes that emerged from the data.

Pharmacy and dental students described examples of seeking learning from each other to further their understanding of each other’s role and the activities each performed in the delivery of the health checks. Moreover, students reported seeking peer-advice on the development of their own ‘soft skills’ following observing each other’s interaction with the service users. All students expressed their belief that patient care could be enhanced through this collaborative approach.

Conclusion: The findings of this study offer rare insight into the contribution of an IPE intervention for the delivery of patient care in students’ learning. Building on the plethora of literature reporting on short-term and/or self-assessed changes in collaborative attitudes, knowledge and skills; this study identifies the development of collaborative behaviours and peer-learning amongst pharmacy and dental students can take place.

References:

Reeves, S., Perrier, L., Goldman, J., Freeth, D. and Zwarenstein, M., 2013. Interprofessional education: effects on professional practice and healthcare outcomes. *Cochrane Database of systematic reviews*, (3).

Thistlethwaite, J., 2012. Interprofessional education: a review of context, learning and the research agenda. *Medical education*, 46(1), pp.58-70.

5. What's the verdict? Evaluation of an interprofessional simulated court trial.

Authors: P. McCague, B. Macklin, H. Barry, F. Hughes, A. Maxwell, S. Haughey.

Institution: Queen's University Belfast.

Background: Professional negligence is a key aspect of pharmacy education (GPhC, 2011). As a result of the evolving role of the pharmacist, there is the increased risk of professional negligence in their everyday practice. Simulated court trials provide a valuable learning experience for students.

Aims: To determine the views and attitudes of pharmacy students and trainee barristers who participated in an interprofessional learning (IPL) mock court event exploring cases of professional negligence.

Method: Following ethical approval, a paper-based survey was completed by students and trainee barristers who participated in a mock court trial. A total of 105 pharmacy students and 21 trainee barristers took part in the activity. Two separate focus groups were undertaken, one for pharmacy students and one for trainee barristers. Descriptive statistics were used to analyse the questionnaire data and a thematic analysis was undertaken on transcripts from the focus groups.

Results: Ninety-six pharmacy students (response rate= 91.4%) and thirteen trainee barristers (response rate = 61.9%) completed the questionnaire. In addition, six pharmacy students and four trainee barristers took part in the focus group. Overall both students groups had very positive feedback with regards to the teaching session. The main concerns from the pharmacy student respondents were based on preparation, court procedures and case information. Both pharmacy students and trainee barrister respondents reported issues with the timing of the session in the semester, as well as the time available for the cross examination. Themes that arose from the focus groups included realism, future improvements for the session, intensity of the experience, future practice, engagement and application of knowledge.

Conclusion: The use of mock court trials are a valuable activity to allow students to have a better understanding of the medico-legal world. In addition to allowing students to apply their knowledge of the legislative framework and professional standards, they can be used to promote confidence, oral skills, critical thinking skills and teamwork skills. Results from this study will be used to refine this learning activity in the future.

References:

General Pharmaceutical Council, 2011. 'Future pharmacists: Standards for the initial education and training of pharmacists'.

6. Implementing an inter-professional learning approach for hospital pre-registration trainee pharmacists – Feasibility and evaluation of outcomes.

Authors: R. McMenemy^{1,2}, M. J. Dungersi^{1,3}, M. Christou¹, D. Wright¹

Institutions: ¹University of East Anglia School of Pharmacy, Norwich ²Norfolk & Norwich University Hospital, ³North West Anglia NHS Foundation Trust.

Background: Hospital trainee pharmacists normally develop their clinical skills by accompanying qualified pharmacists on ward visits and their learning is mainly pharmacy- led. The Health Education England (HEE) Quality Framework (HEE, 2017) sets the expectation that work-based educators should promote inter-professional learning for the benefit of patients. The importance of inter-professional education in pre-qualifying health professional education is also highlighted in the recent GPhC consultation for the Initial Education and Training of Pharmacists (Steven et al., 2017).

This study explores innovative ways to implement inter-professional learning opportunities for hospital trainee pharmacists. We seek to identify potential benefits of this approach, via evaluation of view-points from all learner groups participating in the sessions.

Description of work: Trainee pharmacists from East of England hospitals, are allocated to small inter-professional learning groups (3-4 members). The groups consist of a year-3 or year-5 medical student, a Foundation year 1 doctor, a trainee nurse and a trainee pharmacist. Groups are asked to discuss sequentially two case-based scenarios, prior to making a clinical decision on appropriate treatment choices. This is followed by group discussion with a facilitator, who evaluates the quality of their answers and addresses any questions raised regarding the scenarios. Trainee pharmacists will be invited to a follow-up discussion to express their views regarding the inter-professional learning experience and perceived benefits to their learning. Ethical approval was obtained from the UEA Faculty of Medicine and Health Ethics Committee under “Service evaluation”.

Proposed evaluation: Individual participants are asked to complete a pre- and a post-session questionnaire (utilising rating of statements on a Likert scale and several open questions). Focus Group discussions will be used to collect views of trainee pharmacists on the inter- professional learning approach to their learning. Data analysis will be largely descriptive with thematic analysis for responses to open questions and focus group discussions.

References

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Steven, K., Howden, S., Mires, G., Rowe, I., Lafferty, N., Arnold, A. and Strath, A., 2017. Toward interprofessional learning and education: Mapping common outcomes for prequalifying healthcare professional programs in the United Kingdom. *Medical teacher*, 39(7), pp.720-744.

7. Introducing a Pharmacy Undergraduate Student-led Health Check Service at the University of Bradford.

Authors: A. M. Sarvestani, K. Medlinskiene, J. Tomlinson, K. Adams

Institution: School of Pharmacy and Medical Sciences, University of Bradford.

Background: Development of communication and clinical skills is an important part of pharmacy undergraduate education. Skills training that complements learning from traditional approaches leads to better learning (Vogel and Harendza, 2016). Student-led health check services allow learners to apply their theoretical knowledge to practice and develop such skills.

Aims: To pilot feasibility of a student-led health check service.

Method: Following ethical approval a health check service was designed by adapting the national health check service framework and work at University of Reading (Langran et al., 2017). Six undergraduate students (Year 3) were trained to deliver the service. Students worked in pairs to perform checks over three days in consultation rooms by following standard operating procedures. Supervisors were available at all times. Assessments by students included: BMI calculation; blood pressure; physical activity and lifestyle; QRISK3 calculation. Supervisors performed cholesterol and blood glucose tests. Students interpreted results and offered lifestyle advice to participants. Participants completed feedback forms.

Results: Thirty-eight participants from across the University attended the service. Majority of participants, n=36 (98%) stated they are very likely to recommend the service to a colleague. Many participants (n=33, 87%) stated they would make changes to their lifestyle. The pharmacy students valued the opportunity to perform activities that they would be using once qualified. Students reflected their knowledge improved on cardiovascular risk factors and they felt more confident to provide lifestyle advice. Working in pairs was thought to be a supportive approach, especially during the first checks when students felt most nervous. Whilst students felt competent to perform the tests, they were apprehensive about the questions that participants may ask them. This is an area recommended for future training.

Conclusion: A student-led health check service contributes to the development of students' confidence in performing clinical activities. Future work will focus on incorporating this service within the pharmacy undergraduate programme.

References:

Langran, C., Hannan, R., Greenland, B., Donyai, P., 2017. Outreach activity of healthy living assessments provided by pharmacy students to the local community. *International Journal of Pharmacy Practice*, Supplement 1, pp. 43- 44.

Vogel, D. and Harendza, S., 2016. Basic practical skills teaching and learning in undergraduate medical education – a review on methodological evidence. *GMS Journal for Medical Education*, 33(4), doi: 10.3205/zma001063.

8. Does the use of interviews in the recruitment of undergraduate pharmacy students influence choice of university? A study of Year 1 & 2 MPharm students.

Authors: C. Uppal, M. Stibbs, M. Allinson.

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Background: Interviews are not currently compulsory in the recruitment of undergraduate pharmacy students, however a General Pharmaceutical Council (GPhC) consultation for changes to the Standards for Initial Education and Training for Pharmacists (*GPhC, 2019*) proposes to make interviews and assessment of numeracy skills a compulsory requirement in the admissions process.

Johnston (2010) established that factors such as personal contacts and visits to the university influence choice of university, however it is not clear whether being interviewed is a factor in this decision, with no published data found that indicates what pharmacy students believe should be involved in an interview for a pharmacy programme.

Aims: The study aimed to determine whether or not inclusion of interviews in the admissions process influenced students' choice of School of Pharmacy. Specific objectives included identifying whether or not pharmacy students believe interviews and numeracy assessments should be part of the recruitment process.

Method: Following ethical approval, an anonymous paper questionnaire composed of 5- point Likert rating scales and free text questions was circulated to all MPharm year 1 and 2 students at the end of a teaching session. Descriptive analysis was applied to the data and free text responses analysed for emerging themes.

Results: With a response rate of 82% (n = 114/138), 77% of participants (n = 88/114) indicated that being interviewed influenced their choice of university; however only 12% of participants (n = 14/114) ranked interview the most influential factor, with viewing the campus identified as the most influential factor. 77% (n = 88/114) of students felt that interviews should be a compulsory part of the recruitment process, with only 24% of respondents (n = 28/114) agreeing that assessment of numeracy should be included in the interview.

Conclusion: The findings of this study suggest that although interviews are an influential factor in choice of university, viewing the campus is of greater importance to students. Participants feel interviews should be a compulsory step in the admissions process, however assessment of their numeracy skills should not be included in the interview.

References:

General Pharmaceutical Council (GPhC), 2019, Consultation on initial education and training standards for pharmacists, January 2019 [online], *pharmacyregulation.org* Accessed 7/3/19]. Available from https://www.pharmacyregulation.org/sites/default/files/document/consultation_on_initial_education_and_training_standards_for_pharmacists_january_2019.pdf

Johnston, TC, 2010, Who and what influences choice of university? Student and university perception, *American Journal of Business Education*, 3, 10 November 2010, 15-24. Available at <https://eric.ed.gov/?id=EJ105823>

9. Undergraduate-led mental health promotion in high schools: impact upon pharmacy students.

Authors: E.Williams, D.G. Allison, S.C. Willis

Institution: University of Manchester

Background: Peer education provides benefits to both peer educators and peer learners, including the development of leadership skills, and can bring about positive change in individual health behaviours (Badura et al., 2000). Peer education can be effective for delivering mental health promotion interventions in high schools, and offers an opportunity to contribute to the development of a young persons' mental health and prevent illness and disorders (Weare and Nind, 2011).

Aims: To evaluate the impact of peer education on third year MPharm students delivering a mental health promotion pilot intervention to high school pupils.

Method: A mental health promotion intervention was designed using the Medical Research Council (MRC) framework for complex interventions (Craig et al., 2008). This process involved a scoping review followed by focus groups to establish intervention content and acceptability. The intervention, an hour long workshop involving interactive activities, was then delivered by third year MPharm students to Year 9 (13-14 years old) high school pupils. Impact on peer educators was investigated through thematic analysis of reflective continuing professional development records.

Results: All twenty-eight students who delivered the intervention submitted a reflective piece related to their experiences of delivering the mental health promotion intervention. Reported outcomes of involvement included skills and knowledge development: "This session allowed me to develop and practice my abilities in person-centred care and my communication and consultation skills". Students also learned how to be an educator, and valued this for their future practice: "As a future pharmacist, my role will include educating the public of different age groups and different education backgrounds".

Conclusion:

Peer education has a positive impact on MPharm students, and provides an opportunity for students to contribute to public health promotion. The next stage of this study will involve investigating the impact upon high school pupils using a repeated measures design.

References:

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- Weare, K. & Nind, M. 2011. Mental health promotion and problem prevention in schools: what does the evidence say? *Health promotion international*, 26, i29-i69.

10. 'A Practical Guide to Medicines Administration': application for Competency Based Assessments (CBAs).

Authors: K.A. Gunnell and R.H. Venables.

Institution: School of Pharmacy, Keele University, Keele, Staffordshire, ST5 5BG.

Background: A recent study has shown that only 7% of healthcare professionals could demonstrate the correct usage of an MDI (Baverstock, Woodhall and Maarman, 2010). Pharmacists are in the best place within the healthcare setting to provide information on optimal formulation administration techniques. It is vital to ensure that such techniques are performed accurately in order to provide correct drug doses, thus to minimise sub-therapeutic responses and also to promote safety (through reduction of overdose and also promoting points of good practice). When designing MPharm Competency Based Assessments (CBAs), and following a review of published literature, it was determined that an 'easy to read' and 'easy to access' book covering all common administration techniques in one place was unavailable. When reviewing patient information leaflets, it was also discovered that there were several discrepancies between these; some leaflets had omitted important and basic good practice principles. As a result of these findings, the presenters wrote and published 'A Practical Guide to Medicines Administration' (Venables and Gunnell, 2018).

Description of work: One station in the stage 2 & 3 CBAs at Keele University involves advising a patient on how to administer a product that has been dispensed. Activities to help them prepare for CBAs include in-class counselling practice (both with peers and tutors) and peer reflection on their counselling skills. 'A Practical Guide to Medicines Administration' (Venables and Gunnell, 2018) was used in stage 2 pharmacy practice skills classes and promoted to stage 2 & 3 students as a resource to support their preparation for CBAs.

Following positive anecdotal feedback from staff and students, the authors decided to undertake an evaluation of the book's application to CBAs.

Proposed evaluation: Stage 2 & 3 MPharm students (n=200) will be invited in October 2019 to participate in an online semi-structured questionnaire comprised of Likert scale and free text questions; design informed by relevant literature and mapped to intended learning outcomes.

References:

Baverstock M., Woodhall N. and Maarman V., 2010. Do healthcare professionals have sufficient knowledge of inhaler techniques in order to educate their patients effectively in their use? *Thorax*, 65:A117. doi: 10.1136/thx.2010.150979.45

Venables, R.H. and Gunnell, K.A., 2018. *A Practical Guide to Medicine Administration*. Routledge.

11. Instant online feedback on reflective writing using AcaWriter-V1: What do students think of it?

Authors: E Mantzourani¹, S Buckingham Shum², C Lucas³

Institution: ¹Cardiff University, ²University of Technology Sydney, Connected Intelligence Centre, Sydney, Australia ³University of Technology Sydney, Sydney, Australia Cherie.lucas@uts.edu.au.

Background: AcaWriter-V1 (Gibson, 2017) is an online, open source, evidence-based tool that assists students' development of their reflective writing capacity by providing immediate formative feedback on reflective writing tasks. The text in the tasks is processed using Natural Language Processing techniques resulting in analytics and automatic assignment of feedback (Gibson 2017, Lucas 2018a,b).

Aims: Explore student engagement and satisfaction with AcaWriter-V1

Method: An online survey created using Jisc Online Surveys[®] was distributed to all year 2, 3 and 4 undergraduate pharmacy students in Cardiff School of Pharmacy ($n=333$). Students were asked to fill in the survey following submission of their personal development portfolios. Open-ended questions were used to explore barriers and facilitators to using the tool, closed-ended questions to establish future intentions, and a 5-point Likert-type scale question explored satisfaction with the tool. Explicit consent was obtained from the students to include data from their survey in published analysis.

Results: A total of 53 responses received (response rate: 16%), of which 20 reported non-engagement with the online tool. Most students who used AcaWriter-V1 engaged with the tool 1-2 times ($n=25$), with two students noting they have used the tool more than 5 times. Students found useful how different areas were highlighted when they had reflected on a different setting, challenge, or emotion and liked the output of a set of criteria identified as needed for improvement. Suggested areas for improvement included providing more detail and free text on how to make changes with feedback. Mean satisfaction was 3.48 (SD=0.99) and 82% stated that they would recommend the use of this tool in every instance where reflective writing is required.

Conclusion: Preliminary results utilising AcaWriter-V1 with three cohorts of pharmacy students are positive, and highlighted areas that would make the tool more helpful. The low response rate limits generalisability of results; further evaluation needs to be completed on an updated version of the tool, with higher number of students.

References:

Gibson, A., Aitken, A., Sándor, Á., Buckingham Shum, S., Tsingos-Lucas, C. and Knight, S. 2017. Reflective Writing Analytics for Actionable Feedback. Proceedings of LAK17: 7th International Conference on Learning Analytics & Knowledge, March 13-17, 2017, Vancouver, BC, Canada. (ACM Press). DOI: <http://dx.doi.org/10.1145/3027385.3027436>

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Lucas C. 2018b, [Accessorizing the Science Foundation with Internal Mirrors: A Novel Open Source Tool to Enhance Reflective Practice](#). *Pulses*. *CPTL*. Available at <https://cptlpulses.com/2018/08/28/lucas-reflectivepractice/> [Accessed: 18/04/2019]

12. Assessment summative assessment adopting a multi-stage dialogic approach.

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Background: Feedback has traditionally been regarded as a post-submission, summative event. There has been a recent shift towards viewing feedback as a guidance process, managed through a continuous dialogue between learner and educator. This perspective supports students through provision of clarification and enhances internal motivation through external impetus. A Dialogic Feedback Cycle (Figure 1(a)) has been proposed as a tool to scaffold learning through an assessment. It offers a reconceptualised system for facilitating student-centred learning (Beaumont, 2011).

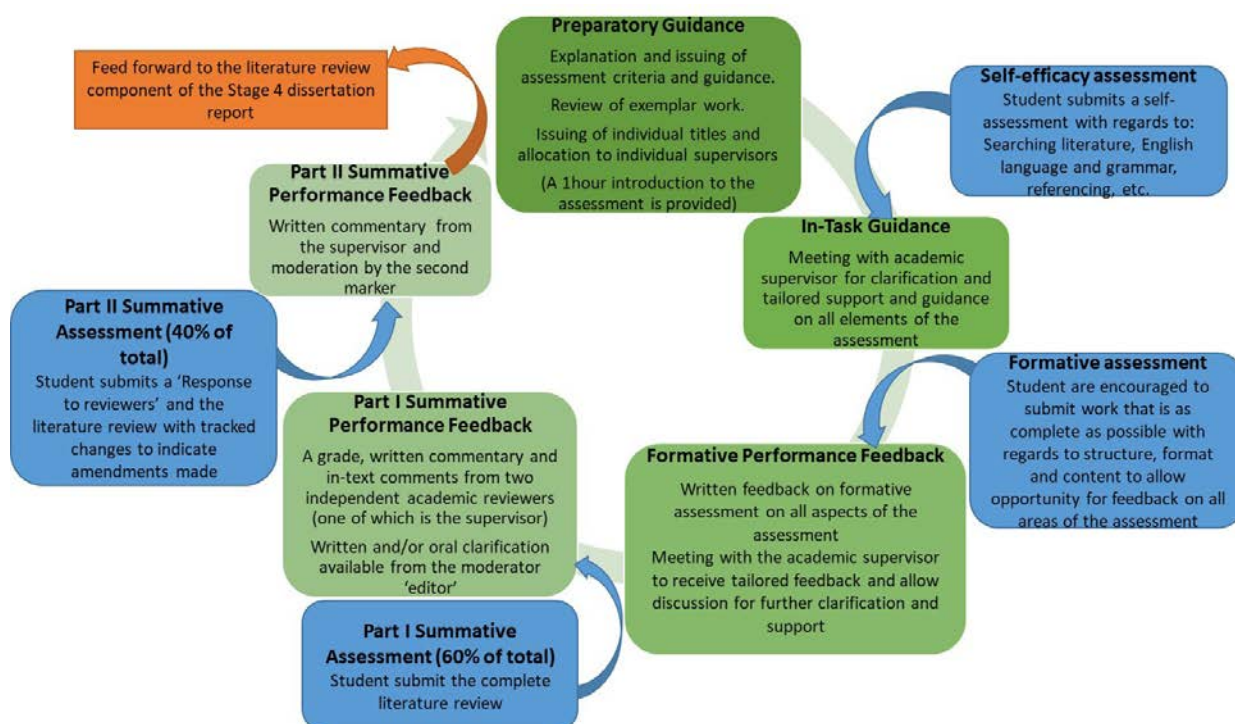


Figure 1. The multi-stage, dialogic approach to the Stage 3 Literature Review

Description of work: A summative assessment, at Stage 3 of the four-year Master of Pharmacy programme at a School of Pharmacy, is designed and constructed as a literature review following a process similar to a peer-reviewed journal submission. It exists as an exercise to support students' knowledge and skill development in the reviewing, critiquing and reporting of literature, that will form a component part of their Stage 4 dissertation. The Dialogic Feedback Cycle has been used to inform the Stage 3 literature review process (Figure 1(b)). There are distinct, iterative elements of formative and summative assessment and stages of discursive feedback between the academic and student.

Proposed evaluation: Students will complete a self-assessment after the assessment to investigate changes in self-efficacy. This will provide some insight of the student's development. Any observable relationship will be limited to one of correlation, due to the confounding of student exposure to other activities within the programme.

The feedback of the assessors at Part I and Part II Summative Assessment, and the accompanying student 'Responses to Reviewers' and amended changes to the original submission, will be subject to content analysis. The aim will be to investigate the nature of feedback provided and how students have assimilated, interpreted and acted upon provided feedback. Follow-up, semi-structured interviews with assessors and students will be undertaken to explore how the iterative, discursive nature of feedback was managed and experienced.

References:

Beaumont, C., O'Doherty, M. and Shannon, L., 2011. Reconceptualising assessment feedback: a key to improving student learning? *Studies in Higher Education*, 36(6), pp.671-687.

13. Pharmacist’s dilemma: an example of large scale, in-lecture gamification.

Authors: S. J. Ford and A. C. Boyter

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Background: Gamification is the process of using ‘play-based’ activities to promote the learning or consolidation of knowledge or understanding. One important aspect of gamification is that learners, of any age, can see the positive or negative consequences of their actions within a safe and controlled environment. There are several examples of the adoption of gamification both in pharmacy education (Sera and Wheeler, 2017) and in other professions (Routledge, 2016).

Aims: To use a game-based activity, which models commercial transactional choices across the pharmaceutical supply chain, to demonstrate how trading quality improves as regulatory checks are introduced. The effectiveness of the activity in illustrating the learning outcomes is monitored.

Method: The game of Pharmacist’s Dilemma is based upon the famous game theory concept of ‘Prisoner’s Dilemma’.

140 third year pharmacy students attending a lecture were given four pieces of paper (representing batches of product) labelled with numbers (-4, +1, +1 and +1) to trade with their neighbours under different rules mimicking regulatory checks (specifically GMP technical agreements and audits). The object of the game was to finish the lecture with an overall ‘positive hand’. Trading behaviour and student feedback was monitored with a web-based Kahoot quiz.

Results:

The trading behaviour of the 47 survey respondents is shown in Table 1.

Regulatory checks	Game mimic	Respondents trading ‘-4 batches’
None	Anonymous, blind trades	52%
Technical agreements	Agreed, blind trades with a chosen individual	23%
As above with audits	As above after inspecting individuals hand.	29%

Table 1: Survey results under different trading conditions.

57% of respondents answered positively when asked if the game illustrated the lecture’s learning outcomes.

Conclusion: The Pharmacist’s Dilemma game illustrates effectively how regulatory checks improve trading choices and contributes positively to the lecture’s learning outcomes.

References:

Routledge, H., 2016, *Why Games are Good for Business*, Basingstoke UK: Palgrave Macmillan

Sera, L., and Wheeler, E., 2017, Game on: the gamification of pharmacy. *Currents in pharmacy education*, 9, pp.155-15

14. Integrated analytical chemistry and pharmacy practice group case-studies: an evaluation.

Authors: M.C. Kearney and E. Larraneta

Institution: School of Pharmacy, Queen's University Belfast

Background: Pharmacy is traditionally referred to as a 'science-led' profession, however, the manner in which the science and practice elements of the course is taught is often debated. In particular, students often fail to understand the relevance of science to their future profession (Husband, Todd and Fulton, 2014). A study by Jesson *et al.* (2006) reported that students had a preference for 'clinical' material over fundamental science, particularly in the early years of the degree, however, students in year 4 reported that they understood the relevance of science to practice. The issue therefore, seems to be the perceived relevance of science and how it is taught, rather than the inclusion of science. To ensure students are equipped with the relevant scientific knowledge and clinical skills for their future roles, it is important that they are taught in an 'integrated' manner. This study aims to evaluate group case-studies focused on the integration of science with practice.

Description of work: Year 2 MPharm students who have attended lectures and workshops on medicinal chemistry and pharmaceutical analysis will complete three formative, clinical case-studies based on Beta blockers. Students will be divided into groups ($n = 4$ or 5) and review three scenarios (two based on published clinical cases and one theoretical). Students will have to analyse patient clinical presentations and analytical spectra (NMR, mass spectroscopy and infrared) and identify the correct Beta blocker in each scenario, providing a rationale for their answer using both the clinical and analytical information provided.

Proposed evaluation: Following the workshops, students will be contacted via email and invited to complete an anonymous evaluation questionnaire constructed by the researchers on SurveyMonkey®. The survey consists of five sections evaluating; the perceived value of the workshop (including applying material covered in lectures, integrating science and practice and relevance of science to practice), the potential of the workshop to stimulate interest in the topic, the appropriateness of the case-studies, the enjoyment of the class and an open-ended 'additional comments' response. Quantitative data collected from the questionnaire will be analysed to identify strengths and/or areas for improvement, with potential facilitation of future 'integrated' workshops.

References:

Husband, A. K., Todd, A. and Fulton, J., 2014. 'Integrating Science and Practice in Pharmacy Curricula', *American Journal of Pharmacy Education*, 78(3), pp. 1–8.

Jesson, J.K. et al., 2006. Science or practice? UK undergraduate experiences and attitudes to the MPharm degree. *Pharmacy World and Science*, 28, pp.278–283.

15. Object-based learning in Pharmacy Education

Authors: S. Murdan

Institution: UCL School of Pharmacy

Background: Object-Based Learning (OBL) is a student-centred approach which uses objects to facilitate active learning. The objects provide a direct link to the topic, encourages learners to use all their senses, especially touch, sight and smell and are ideal for generating group discussion (Chatterjee et al., 2015). By handling and interrogating the object, students synthesise knowledge based on their prior experience and reasoning. OBL has been used in various disciplines with a range of objects, such as museum pieces, art works, molecular models (Baigent, 2017, Baigent et al., 2017, Gaunt, 2017, Salmon, 2017, Schultz, 2018). In Pharmacy education, medicines are the obvious and relevant objects to use.

Description of work: The activity takes place in a wet laboratory, so that students can use beakers, weighing boats etc. Each group of student is presented with a box containing several GSL, P and POM medicines, including tablets, capsules, suppositories, pessaries, foam, inhalers, injections, oral suspensions, eye drops, ointments, traditional herbal medicinal products, etc.

Students are asked to examine the objects (including the packaging) and decide whether they are medicines, and if so, their category. Students scrutinise the medicines' properties such as state, shape, colour, any coating, sterility, and establish their indication, the nature of the active ingredient and of the excipients, the route of administration, whether the medicine is for local or systemic action, user-friendliness, storage requirements and possible costs. Students then invent their own medicine and associated properties.

This activity - tailored to each group - has been used with MPharm, MSc, non-pharmacy undergraduates and secondary school students.

Proposed evaluation: At the end of each session, students will be asked to provide written feedback about what they liked and what they would change. Their comments will be analysed quantitatively, for example, for the frequency of certain comments, and qualitatively. Focus groups will also be held with small groups of students to understand the student experience.

References:

Baigent, M., 2017. HOW DOES OBJECT-BASED LEARNING WORK IN PSYCHIATRY? *Australian and New Zealand Journal of Psychiatry*, 51, p. 37.

Baigent, M., Salmon, F. and Gaunt, H., 2017, OBJECT-BASED LEARNING: TEACHING PSYCHIATRY AND MEDICINE WITH ART. *Australian and New Zealand Journal of Psychiatry*, 51, p. 37.

Chatterjee, H.J., Hannan, L. and Thomson, L., 2015. *An Introduction to Object-Based Learning and Multisensory Engagement*.

Gaunt, H., 2017. OBJECT-BASED LEARNING IN OTHER HEALTH DISCIPLINES. *Australian and New Zealand Journal of Psychiatry*, 51, p.38.

Salmon, F., 2017. WHAT IS OBJECT-BASED LEARNING? *Australian and New Zealand Journal of Psychiatry*, 51, p. 37.

Schultz, L., 2018. Object-based learning, or learning from objects in the anthropology museum. *Review of Education Pedagogy and Cultural Studies*, 40, pp. 282-304.

16. What might it be like to be you? Using poetry to explore person-centred care with pharmacy students.

Authors: R.M. Edwards¹, A.J. Brown²

Institution: ¹Aston University. ²Robert Gordon University

Background: There is a changing professional focus in pharmacy with less emphasis on 'the medicine' alone and an increasing emphasis on person-centred care. Inspired by the work of McKie et al., (2008) on using arts and humanities in nursing education and challenged by Shapiro and Rucker (2003) who argue that poetry can make better doctors, the authors designed this session for pharmacy students using poetry to explore person-centred care.

Aims: To explore the use of poetry in developing person-centred care and helping foster empathy in pharmacy students.

Method: Small groups of Year 3 pharmacy students listened to recitation of a poem written by a patient with dementia. Staff facilitated discussions using a semi-structured approach. Students reflected in silence and then facilitated in discussing questions adapted from the literature. Evaluation was using student reflections during the activity and via an online qualitative questionnaire afterwards. Data were analysed thematically.

Results: The session has run for a number of academic sessions with over 300 students. Reflections during the sessions were overwhelmingly positive. Following the activity, small numbers of students completed the online questionnaire (n=8) however reflections were consistent with those during the session and were rich in information. These included the power of the experience and the potential impact on their professional lives.

Conclusion: The findings, both during the session and from the small numbers completing the questionnaire show that poetry has the potential to support pharmacy students developing empathy. Shapiro (2003) argues that poetry encourages engagement with situations and people emotionally and intellectually and helps us to help us see familiar experiences in different ways as well as helping us to explore conflicting values. This activity appeared to have had the same impact on pharmacy students.

References:

McKie, A., Adams, V., Gass, J.P., MacDuff, C. 2008. Windows and mirrors: reflections of a module team teaching the arts in nurse education. *Nurse Education in Practice*, 8 pp.156-164.

Shapiro, J., Rucker, L. 2003. Can poetry make better doctors? Teaching the humanities and arts to medical students and residents at the University of California, Irvine, College of Medicine. *Academic Medicine*, 78(10) pp.953-957.

17. Preparedness for prescribing and interprofessional working through clinical simulated - preliminary findings.

Authors: A. Hitchings^{1,2}, J. Bridgeman¹, D. Burrage¹, T.K. Khong^{1,2}.

Institution: ²Kingston University & ¹St George's University of London.

Background: The National Health Service (NHS) faces unprecedented patient demand and financial pressure. Proposals that pharmacists - through expanded clinical roles and greater integration into NHS services [1], may help address these challenges. In doing so, pharmacists will be required to undertake more prescribing-related duties and interprofessional team-working. However, to enable tomorrow's pharmacists to contribute fully in such roles, it is likely that curricula and teaching methods will need to evolve to meet their changing training requirements.

Aim: To assess the effectiveness of an interprofessional teaching session to facilitate acquisition of prescribing skills and preparedness for interprofessional team-working in MPharm and also MBBS (medical) students.

Method: A 1½ hour inter-professional teaching session was conducted for 3rd year MPharm students and final year MBBS students over two successive year-cohorts. Teaching comprised prescribing problems which students worked through in inter-professional groups of 2-4 with facilitation from tutors as required and covered therapeutic areas relevant to the management of in-patients, out-patients with chronic disease and patients in special circumstances. The teaching was optional and undertaken in the St George's University of London Low-Fidelity Simulation Suite with appropriate props to replicate elements of clinical environmental working. All participants were required to complete a self-administered feedback questionnaire incorporating the Inter-professional Educational Perception Scale (IEPS) [2] before and after the teaching session.

Results: A total of 123 students (89 MPharm, 34 MBBS students) completed feedback questionnaires in the two year-cohorts observed. Students agreed or strongly agreed the session was useful (88% of MPharm and 89% of MBBS students) and improved confidence in interprofessional working. Total IEPS scores improved in both MPharm (92.1±8.4 after vs 86.6±9.1 before, p<0.001) and MBBS students (92.8±8.4 after vs 88.1±9.1 before, p=0.003) after compared to before the teaching session.

Conclusion: Inter-professional MPharm and MBBS small group, facilitated teaching sessions of prescribing problems incorporating low-fidelity simulation may be a useful format for helping prepare students for future interprofessional team-working and prescribing roles.

References:

Smith J, Picton C and Dayan M., 2013. Now or Never: Shaping pharmacy for the future. Royal Pharmaceutical Society.

McFadyen AK, Maclaren WM, Webster VS., 2007 The Interdisciplinary Education Perception Scale (IEPS): an alternative remodelled sub-scale structure and its reliability. *J Interprof Care* 2007; 21(4), pp.433-443.

18. Development of a robust and effective learning programme for education supervisors - Manchester Statement of Teaching Proficiency (STP).

Authors: C. Smith, H. Middleton, N. Butler, A. Mawdsley, M. Shaw

Institution: Centre for Pharmacy Postgraduate Education, University of Manchester

Background: The Centre for Pharmacy Postgraduate Education (CPPE) has been commissioned by Health Education England (HEE) to provide the education for pharmacy professionals on two national pathways – Clinical pharmacists in general practice and Medicines optimisation in care homes. CPPE has also developed a 12-month Foundation pharmacist training pathway programme to enable early career pharmacists working in independents and small multiples to complete stage 1 of the Royal Pharmaceutical Society (RPS) Foundation practice programme.

An integral part of these pathways is the one-to-one support provided by an education supervisor. The Manchester Statement of Teaching Proficiency (STP) was developed to enable education supervisors to demonstrate the necessary knowledge and skills to carry out this role effectively.

Description of work: To assure capability and confidence in the role, CPPE education supervisors follow a structured programme, delivered through a formal learning and assessment process. The programme is aligned with the RPS Advanced Pharmacy Framework cluster 5 for education, training and development (Royal Pharmaceutical Society, 2013) and guides the learner through an active process of reflection, planning, action and evaluation.

The programme takes a blended learning approach and consists of:

- Online learning
- Face-to-face study days
- Written reflective account
- Written assessment

The programme has been developed in conjunction with University of Manchester, and is also open to education supervisors within the School of Pharmacy.

Proposed evaluation: We will present qualitative data taken from the education supervisors via self-reported online surveys and focus groups. The data will be obtained to gain a global perspective of the STP programme and assess whether it has helped the education supervisors to feel more confident in their role and if it has enabled them to support learners more effectively. Data will be gathered from each of the study days, and again at the end of the study programme. The data will be used to support the programme's fitness for purpose and further development.

References:

Royal Pharmaceutical Society. 2013. *Advanced Pharmacy Framework* [Online]. Available at: www.rpharms.com/resources/frameworks/advanced-pharmacy-framework-apf [Accessed 7 March 2019]

19. Informing the design of interprofessional education using an action research approach.

Authors: A. Bain, E. Bennett

Institution: University of Huddersfield

Background: Interprofessional education (IPE) is used to develop collaborative behaviours and practice in undergraduate pharmacy students. IPE should be guided by student-practitioner dialogue and theory, with realistic approaches to evaluation that are inclusive of, and responsive to context (Olson and Bialocerkowski, 2014). The use of action research methodologies are well-suited to guide a rigorous and learner-centered approach to the development of IPE.

Aims: To critically explore undergraduate pharmacy student perceptions of the role of IPE in developing collaborative behaviours and practice at the study institution.

Method: A sequential exploratory mixed methods design was used, including structured post-session evaluation questionnaires and voluntary semi-structured focus group interviews with final-year undergraduate pharmacy students at the study university. Qualitative data was anonymised, transcribed and coded before being inductively thematically analysed by the researcher-practitioner, and confirmed with student participants. Data was interpreted with reference to learning theory, through a reflexive, context-specific lens by the researcher-practitioner.

Results: A total of 64 students (86%) completed the post-IPE session evaluation questionnaire, seven of whom later participated in the focus group. Findings showed that students particularly valued how IPE helped foster their appreciation of other professionals' roles and challenged misconceptions. Participants described IPE interventions that encouraged meaningful discussion and challenge as most helpful and engaging, particularly when undertaken in a simulated environment.

Conclusion: Overall, students demonstrated a positive attitude to IPE and its ability to develop collaborative behaviours and practice. Students were able to articulate, through the focus group and session evaluation, both beneficial and hindering features of IPE, which enabled critical reflection in order to evaluate and develop IPE at the study institution. The study was limited by a short duration and small sample of highly engaged students. Ongoing curriculum evaluation and development with a greater variety of students is required to sustain improvements to IPE.

References:

Olson, R. and Bialocerkowski, A., 2014. Interprofessional education in allied health: a systematic review. *Medical Education*, 48(3), pp.236-246

20. Patient safety: evaluating the numerical skills of undergraduate MPharm students and their perceptions of numeracy in clinical practice.

Authors: K. Bullen, K. Ainsley, K. Davison

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Background: Healthcare professionals are required to utilise numeracy skills as part of their everyday practice to ensure the safe and effective use of medicines (Arkell, 2012). Ensuring competency in pharmaceutical calculations is therefore an essential part of pharmacy education. In 1993, the registration assessment was introduced and tested numeracy skills in the form of 20 multiple choice questions (MCQ). In 2016, the General Pharmaceutical Council (GPhC) introduced significant changes to the assessment (GPhC, 2016); the numeracy aspect became a standalone assessment, with 40 free-text answer questions over two hours. There is a paucity in research evaluating numeracy skills in pharmacy undergraduates.

Aims: To assess undergraduate MPharm student performance in a range of pharmaceutical calculations and evaluate their perceptions of numeracy in clinical practice.

Method: Level 3 (n=163) and level 4 (n=168) MPharm students at one UK pharmacy school were invited to sit two numeracy papers. Paper 1 included 10 questions using an MCQ format, followed immediately by paper 2 with 10 questions that matched the new GPhC free-text answer format. The papers were designed to map key numerical skills (Table 1) with a pass mark of 70%. A questionnaire was given to all participants to explore their perceptions of numeracy used by pharmacists in practice.

Ethical approval was granted by the University Research Ethic Committee.

Table 1: Mapping of key numerical skill within paper 1 and 2

Numerical skill	Question in paper 1	Question in paper 2
Dilutions	3	7
Displacement value	8	3
Dose regimens	1	5
Extemporaneous preparation	4	1
Health economics	9	6
Infusion rates	5	8
Molecular weight	6	4
Pharmacokinetics	2	9
Quantities to supply	7	2
Using provided formula	10	10

Results: Completion of the assessments and questionnaire achieved a response rate of 75% (n=247); 28% of level 3 and 48% of level 4 students passed both papers. Most students (74%) felt the free-text answer calculations were most like clinical practice, but struggled with these with 72% of students failing this paper. These questions tested the same numeracy skills as the MCQ question paper where 61% of students passed. Students commented that they needed more support in numeracy from the institution.

Conclusion: Level 3 and 4 pharmacy students had difficulty with the numeracy assessment, especially with free-text answer questions that reflect the new GPhC assessment and clinical practice. The institution will review and redesign the numeracy support provided to students.

References:

Arkell, S. Rutter, M., 2012. Numeracy skills of undergraduate entry level nurse, midwife and pharmacy students. *Nurse Education in Practice*, 12(4), pp.198-203

General Pharmaceutical Council: The Registration Assessment 2016.
https://www.pharmacyregulation.org/sites/default/files/the_registration_assessment_2016_-_overview_of_the_changes.pdf Accessed 05.03.19.

21. Exploration of the use of an e-portfolio for pre-registration training within an integrated MPharm degree.

Authors: L. Ellis, J. Li, J. Desborough, E. Smith.

Institution: University of East Anglia.

Background: The University of East Anglia introduced an MPharm with Placement degree in September 2016, enrolled students undertake two integrated pre-registration placements in years 4 and 5 respectively. Trainees collect a portfolio of evidence to demonstrate competence in 76 performance standards (GPhC, 2018). To facilitate this UEA introduced an electronic portfolio.

Aims: To explore the benefits and drawbacks of the e-portfolio when used as part of integrated pre-registration pharmacist training.

Method: UEA ethics committee granted ethical approval. An on-line questionnaire was sent to eligible tutors and trainees. The questionnaire included Likert scale or free text response questions. Questions explored opinions on functionality and impact of the e-portfolio and compared it to a paper based portfolio. Participants were also invited to undertake a telephone interview. Questionnaire results were analysed using descriptive statistics, with thematic analysis of interview transcripts.

Results: Seventeen questionnaires were received from 45 potential respondents; 13 trainees (46.4%), 4 tutors (23.5%). Four telephone interviews were undertaken (3 trainee, 1 tutor). The results indicated the majority of respondents found the e-portfolio to have a high level of usability, with over 80% finding features including performance standard sign-off, ability to log evidence and the progress summary to be useful or very useful. 90% felt the e-portfolio allowed for successful transfer of information between placements. Most acknowledged the e-portfolio allowed third parties to review evidence. Time required to upload or review evidence were the main negative aspects reported. Four themes were identified from the telephone interviews: Information technology, Impact of training, Security and Transferability.

Conclusion: The use of an e-portfolio is a useful tool for the collection of evidence during pre-registration training. The major benefit reported was the ability to transfer information and monitor progress. There was limited generalisability with only one university involved.

References:

General Pharmaceutical Council., 2018. Pharmacist pre-registration manual version 5.9.

22. Supporting Transition: MPharm 2+2 students' experiences of transferring from a Malaysian campus to the UK.

Authors: D.T. Grant

Institution: School of Pharmacy, University of Reading

Background: Approximately one in five students in UK Higher Education are from non-UK countries (Higher Education Statistics Agency, n.d.). In addition to challenges faced by all students transitioning from school/college to University education, these students may face challenges associated with cultural differences, learning in a second language and the need to become accustomed to different approaches to learning and assessment (Scudamore, 2013). It is therefore important that Universities and their curricula are cognisant of these challenges and provide appropriate support to students in their transition. Whilst there are only small numbers of students on such "2+2" programmes, the findings from the work should also be indicative of the challenges faced by students moving to the UK at the start of the traditional 4 year MPharm. In September 2016, the University of Reading Malaysia (UoRM) pharmacy department welcomed its first cohort of eleven MPharm 2+2 students; these students study for 2 years at UoRM then transfer to the UK campus to complete the final 2 years of their studies. In September 2018, the first cohort made the transition to the UK.

Description of work: A programme of activities was implemented to support students in their transition to the UK, including pre-arrival information sessions, joint Skype UK/Malaysia academic tutor meetings and a web-based "meet and greet" between the Malaysian student cohort and their UK counterparts. Upon arrival in the UK, a "Welcome fortnight" was put in place, including a series of welcome talks, meetings with academic tutors and meetings with student "buddies" from the UK programme. Workshop and coursework groupings were specifically assigned to promote the integration of the Malaysian cohort with the existing UK cohort. Academic tutors and senior programme staff continued to provide support through termly meetings.

Proposed evaluation: Students' experiences of the transition process will be evaluated through two focus groups which will explore students views of the challenges and successes of the transition process, the support provided and areas for development of the programme. The qualitative data obtained will be analysed using thematic analysis to identify common themes.

References:

Higher Education Statistics Agency. (n.d.) HE student enrolments by domicile and region of HE provider (2017/18). Available online at <https://www.hesa.ac.uk/data-and-analysis/students/where-from> [accessed 7/3/19]

Scudamore R. (2013). Engaging home and international students: A guide for new lecturers. Higher Education Academy (now Advance HE). Available online at <https://www.heacademy.ac.uk/system/files/rachelscudamorereportfeb2013.pdf> [accessed 7/3/19]

23. Introducing Entrustable Professional Activities (EPAs) and “do-able tasks” to Stage 1 MPharm students: a student inclusive approach.

Authors: M. A. Green, J. R. Johnston, M. Isreb, J. Silcock, R. T. Wheelhouse.

Institution: School of Pharmacy and Medical Sciences, University of Bradford, UK

Background: Developing Professional Practice (DPP) is included at each stage of the Bradford MPharm. The SLICE assessment tool (Green and Silcock, 2018) is used to plot student development towards Entrustable Professional Activities (EPAs) (Haines *et al.* 2017). Students have initially struggled with matching their learning to EPA development, particularly when this is not explicitly referred to in the classroom.

Aims: To identify do-able tasks from recent teaching and relate these to EPA development and student perception of teaching material.

Method: Stage 1 student representatives (n=10 - 61) and 5 academics (responsible for recent teaching) attended fortnightly focus groups where teaching material was reviewed to determine any new skills development, these were tabulated and shared with the whole cohort. All students subsequently used the SLICE assessment tool to self-grade a range of these do-able tasks.

Results: After two weeks of teaching students were able to identify 38 different do-able tasks, many of which they were encountering for the first time. Students were able to see these do-able tasks as being developmentally important in achieving end of programme EPA completion. After 3 months, students had identified over 100 discrete do-able tasks, related them to EPA development and observing that earlier tasks were being repeated at a higher level of complexity (as evidenced by the SLICE assessment tool). In addition, the focus groups provided useful two-way feedback about which skills were being developed (intended and unintended) allowing for the identification of curriculum gaps or missed learning opportunities.

Conclusion: Our student-inclusive focus groups have been instrumental in introducing EPAs to our students who can now identify do-able tasks and relate them to their development. This student-inclusive review of teaching also highlights student perception of teaching material and can be used to support curriculum mapping, review and development.

References:

Green, M. A. and Silcock, J., 2018. Developing an Assessment Tool for Undergraduate Competency in Pharmacy Education. available at: https://www.fip.org/menu_sitemap?page=abstracts&action=generatePdf&item=20141

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24. Inclusion by Design: embedding inclusive teaching practice into design and preparation of laboratory classes

Authors: E. Hackl¹ and I. Ermolina^{2*}

Institution:

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²Leicester School of Pharmacy, De Montfort University, Leicester, UK

Background: Creation of an inclusive learning environment and providing individual adjustments are duties of the higher education providers (Hockings, 2010). However, teaching on the ground level, and especially laboratory practical teaching, is not always inclusive beyond the general university requirements. Practical in-lab classes especially can present many barriers to disabled learners. At the same time some proactive adjustments embedded into the design and preparation of the laboratory classes can make lab-based teaching as inclusive and accessible as possible.

Aims: The aim of study was to develop general accessibility guides and provide the laboratory teaching staff with examples of good inclusive teaching practice.

Method: The main challenges/difficulties/barriers students with disabilities might experience during the practical in-lab classes were identified (through consultation with University disability advisors and on-line resources (SCIPS <<https://scips.worc.ac.uk/>>), personal teaching experience) and analysed. A systematic review of a large number of sources (i.e. International and British Dyslexia Associations, UK Association for Accessible Formats, Institute of Physics, W3C Consortium) was conducted and the best available evidences of inclusive practice in science/medicine laboratories (including those already implemented in the Reading School of Pharmacy and Leicester School of Pharmacy) were retrieved, critically appraised and summarized.

Results: Recommendations on the embedding inclusive practice into design and preparation of the practical classes in pharmaceutical science were developed. In particular, comprehensive recommendations on how to make: i) all printed materials (handouts, SOPs, instructions, notes, etc.) accessible (with emphasis on the readability, reading comprehension and preparation for text-reading software); ii) video files accessible; iii) careful use of colours. Also the usage of a range of pedagogic techniques as well as assistive technologies (AT) in inclusive teaching was discussed and many examples of AT were provided.

Conclusion: Active implementation of the “inclusive-by-design” approach, in contrast to “inclusive-on-request”, can be beneficial not only for the learners but for the teaching staff as well since inclusion-by-design helps not only to modify a particular practical class once but to establish an inclusive culture in laboratories.

References:

Hockings C. (2010). *Inclusive learning and teaching in higher education: A synthesis of research*. York: Higher Education Academy.

SCIPS (Strategies for Creating Inclusive Programmes of Study), Available from <<https://scips.worc.ac.uk/>> [Accessed: 6 March 2019].

25. Telling things: Ethnography of Pharmacy university students' recipe-like science laboratory classes.

Authors: S. A. Jones and D. Hay

Institution: King's College London

Background: Recipe-like science laboratory classes continue to be a major component of undergraduate pharmacy training despite the educational literature persistently questioning their effectiveness (Kirschner and Meester, 1998). This type of laboratory classes are distinct from lectures as they bring pharmacy students into contact with apparatus, materials and processes that are used to understand the science of pharmacy practice, but the virtues of these interactions and how they facilitate student learning is not completely understood.

Aims: The aim of this work was to explore student interactions with the non-human entities in traditional 'recipe-like' laboratory MPharm science practical classes.

Method: Students' talk and action was recorded with a tripod-mounted video-camera and two wireless lapel-microphones in six classes over a period of 12 weeks (ETHICS CODE REDACTED-/12/13-1225). Audio transcriptions and videos were used by the authors/analysts working independently to thematically analyse the data. The analysis themes were presented as a series of episodes. Each episode was documented through a written commentary, a description of students and teachers in the episode, the action and verbatim transcripts of speech.

Results: The episodes draw out from the observational data were entitled: 'Telling' weights and volumes; 'Telling' with machines and indicators; Telling qualities; and Telling on the surface of the product. Each episode emphasised the process of 'telling', which described how students mobilised solvents, creams and emulsion-types, in order to learn how to distinguish their properties. Telling included not only talk, but actions, which led to new understandings of the materials being used. The episodes demonstrated that the recipe-driven practical's did stimulate student learning but, this learning occurred as a consequence of the student's apprenticeship in the material properties of chemicals, the laboratory apparatus and scientific equipment that they employed during their laboratory work.

Conclusion: The recipe-like pharmacy laboratory practicals were a rich learning environment. The classes gave the students an apprenticeship to non-human entities, e.g., solvents, creams and emulsions, that underpinned the science of pharmacy. These entities taught students in ways that were not possible in the lecture theatre.

References:

Kirschner, P.A., Meester, M.A.M., 1988. The laboratory in higher science education: Problems, premises and objectives. *Higher Education*, 17(1), pp.81-98.

26. Development of initial programme theories regarding how pharmacists can develop patient-pharmacist communication skills

Authors: A. Kerr, C. Kelleher, T. Pawlikowska and J. Strawbridge.

Institution: RCSI Dublin.

Background: Good patient-pharmacist communication improves health outcomes (Stewart et al., 2000). There is, however, room for improving pharmacists' communication skills. These develop through complex interactions during undergraduate pharmacy education, practice-based learning and continuing professional development. Research is needed to determine how best to approach teaching patient-pharmacist communication. The realist review asks what works for whom, how, and why for pharmacists to develop interpersonal pharmacist-patient communication?

Aims: The aim of the research is to understand how educational interventions to develop patient-pharmacist interpersonal communication skills produce their effects.

Method: Realist review methodology explores the link between context, mechanism and outcome (Wong et al., 2012; Pawson et al., 2005). An important step in realist synthesis is locating existing theories and developing initial theories. A scoping search in PubMed and Google Scholar of communication literature revealed a number of substantive theories. Three focus groups were conducted with communications training: one with students representing years 1-5, one with department of psychology and pharmacy faculty involved in teaching communication skills and one with public participants recruited from advocacy groups. The findings from the focus groups and substantive theories were used to develop initial programme theories.

Results: A number of substantive theories: experiential, structured training, reflective and relational were identified from a scoping review. Focus groups identified a number of aspects for initial theory development. Students favoured experiential learning, simulation and role play and appropriately acknowledged the need for more authentic communication. Faculty favour simulation and role-play but do not feel adequately prepared or trained for communication teaching. The focus group with the public revealed poor communication in real life practice and participants feel real-life patients should be more involved in training.

Conclusion: Experiential learning and simulation appear to be the favoured interventions working through contextualization, repetition, reflection and surprise. Faculty require training for consistent communication teaching. Real-life patients may improve training outcomes through contextualisation. Limitations of this study include substantive theories were identified from the healthcare communication literature only. Communication issues in practice need to be addressed in training.

References:

Pawson, R., Greenhalgh, T., Harvey, G. and Walshe, K., 2005. Realist review-a new method of systematic review designed for complex policy interventions. *Journal of health services research & policy*, 10(1_suppl), pp.21-34.

Stewart, M., Brown, J., Donner, A., McWhinney, I., Oates, J., Weston, W. and Jordan, J., 2000. The impact of patient-centered care on outcomes. *Journal of Family Practice*, 49, pp.796-804.

Wong, G., Greenhalgh, T., Westhorp, G. and Pawson, R., 2012. Realist methods in medical education research: what are they and what can they contribute?. *Medical education*, 46(1), pp.89-96.

27. A scoping review of the literature: The management of pharmaceutical waste in pharmacy education.

Authors: Z. Nazar¹, F. Begum².

Institution: Qatar University¹. University of Portsmouth².

Background: There is an increasing body of evidence suggesting that pharmaceuticals are present in waterways, eg, streams, rivers, and lakes and reports that this could contaminate water supplies and threaten aquatic ecosystems. Furthermore, antibiotics disposed of into mainstream sewage may lead to selective pressure and contribute to the development of resistance among populations of bacteria (Kümmerer, 2009). Pharmacists are ideally placed to promote safe medication disposal practice to the public.

Aims: To review the pharmacy education literature for studies relating to the management of pharmaceutical waste.

Method: A scoping review methodology was employed to identify reports of pharmacy education interventions and to describe gaps in the literature. Google Scholar, Medline and Embase were searched for English language articles published after January 1, 2010 using the key words and MeSH terms agreed upon by the two authors. Articles were selected for inclusion independently, through an iterative process following consensus between the two authors of a broad inclusion criterion. One author extracted the data and adopted thematic analysis to summarise the findings. The second author reviewed the analysis for agreement.

Results: There is a dearth of literature indicating the inclusion of the management of pharmaceutical waste in pharmacy education programmes (Figure 1). Eleven studies met the inclusion criteria from five countries. Six studies described educational interventions, 3 studies reviewed students' knowledge and perspectives, and the remaining 2 studies evaluated an awareness campaign.

Further, both the Canadian and Great Britain standards for pharmacy education were reviewed, and found to contain no reference relating to the management of pharmaceutical waste.

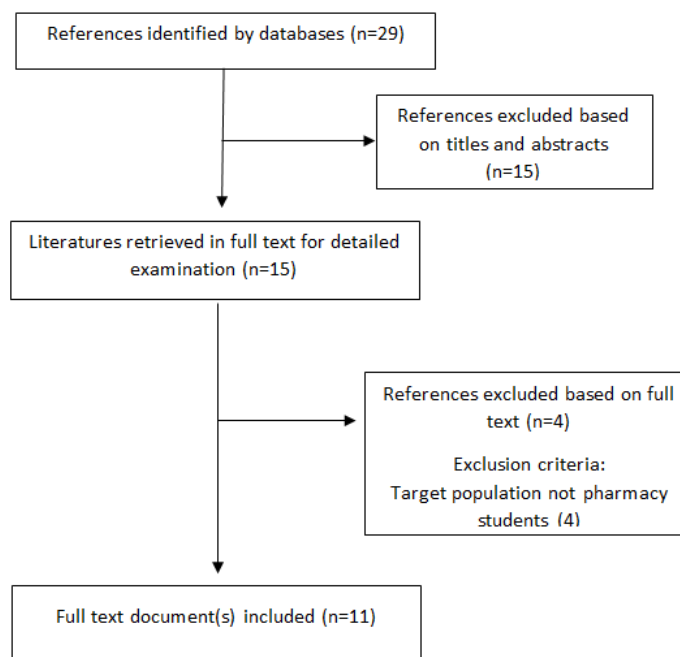


Figure 1: Flow diagram results of the search

Conclusion: The United Nations Environment Program recognises that the management of pharmaceutical waste is a global challenge that requires a multi-stakeholder approach to prevent, reduce and manage their entry into the environment (Thomas, 2017). The findings from this study indicate that pharmacy curricula are yet to fully adopt inclusion of this issue. This may hinder the establishment of a professional role for pharmacists in this area.

References:

Kümmerer, K., 2009. The presence of pharmaceuticals in the environment due to human use—present knowledge and future challenges. *Journal of environmental management*, 90(8), pp.2354-2366.

Thomas, F. and World Health Organization, 2017. Pharmaceutical waste in the environment: a cultural perspective. *Public health panorama*, 3(01), pp.127-132.

28. Surviving the pitfall of learning biology and physiology: can we support pharmacy students to 'start strong' and 'stay strong' in their educational path to become healthcare professionals?

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Institution: University of Reading, School of Pharmacy,
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Background: Biology and physiology topics are the foundations of any medical undergraduate programmes including the Masters of Pharmacy (MPharm) degree. It was noticed that ~20% of year1 MPharm students, failed the biology and physiology-focused module and >88% of these students did not have A-level biology or had a Bachelor of Technology degree (BTech). Importantly, academic achievements in therapeutic-focused modules for those non A-level biology/BTech students that progressed to year2, were poorer than students with a biology qualification.

This *student-led* project aims to understand MPharm students' views, needs and difficulties encountered when learning biology and physiology topics also in relation to later years of the programme and to the pharmacy practice. This new knowledge will help re-shaping the teaching approaches to the education of future healthcare professionals and delivering a more effective teaching.

The results will support a larger project aimed to develop a new technology- and web-based tool that, through interactive teaching and tailored material, will offer effective and accessible support to students with different academic and individual needs (McKendree, 2010).

Description of work: 1 single and 3 multiple-category design focus group discussions with MPharm students will be used to collect initial views on learning needs and major difficulties encountered when studying biology and physiology (Williams and Katz, 2001). Timescale: weeks 1-2.

A survey with 'Likert scale' and 'open' questions, informed by the focus group discussions, will be then developed and distributed to MPharm year 1-4 students. Timescale: weeks 3-4.

Survey results will be evaluated by quantitative and qualitative (*Thematic*) analysis. Timescale: weeks 5-8.

Proposed evaluation: The results will allow understanding of: 1) specific difficulties experienced by year1 pharmacy students when learning biology and physiology; 2) students' learning needs in relation to later years of the MPharm and challenges experienced as pharmacist trainees when practicing the profession and 3) students' views and preferences in relation to learning tools. Moreover, the outcomes of the project will inform future teaching and learning strategies for biology and physiology subjects.

References:

McKendree J (2010). E-learning, in *Understanding Medical Education Evidence, Theory and Practice* ch 11. In T. Swanwick (Ed) Wiley-Blackwell Oxford UK.

Williams A. and Katz L. (2001). The Use of Focus Group Methodology in Education: Some Theoretical and Practical Considerations. *International Electronic Journal for Leadership in Learning*, 5.

29. Cultural effectiveness: a curriculum framework

Authors: A. Astles

Institution: University of Huddersfield

Background: Cultural issues are known to lead to health disparities, and effective provision of healthcare needs to address cultural differences to provide equitable care for all (NHS England, 2019). National performance standards for UK pharmacists describe the need to involve, support and enable every person when making decisions about their health, care and wellbeing. To do this successfully requires the pharmacist to work in a culturally effective manner.

Description of work: A framework for developing cultural effectiveness amongst pharmacy undergraduates at the University of Huddersfield has been drafted and an evaluation of the impact of this framework is planned. The framework identifies both explicit and implicit cultural awareness development within the MPharm degree.

Proposed evaluation: Following ethical approval, MPharm students will be surveyed in years one to four to assess their cultural effectiveness development (Sales et al., 2013). This will be part of a larger project to validate an assessment tool for UK pharmacy practice and the assessment process will develop over time. In addition, specific elements of existing assessments that address cultural effectiveness will also be monitored, to determine if an holistic method of assessing cultural effectiveness across the curriculum can be devised.

References:

NHS England. 2019. *The Equality and Health Inequalities Hub*. [Online]. Available from: <https://www.england.nhs.uk/about/equality/equality-hub/> [Accessed 8 March 2019].

Sales, I., Jonkman, L., Connor, S. and Hall, D., 2013. A comparison of educational interventions to enhance cultural competency in pharmacy students. *American journal of pharmaceutical education*, 77(4), p.76.

30. Investigating the impact of dementia friend's information session delivery on undergraduate healthcare students in relation to current teaching.

Authors: E. Boxer, A. Sturrock.

Institution: University of Sunderland.

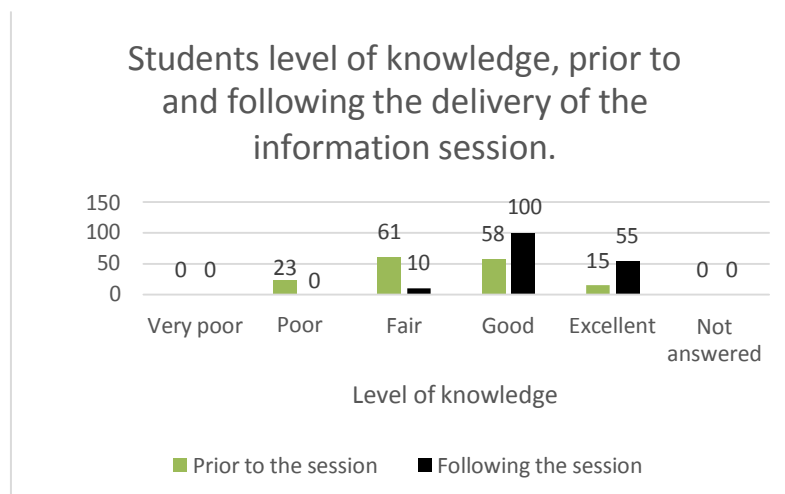
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Background: With current aging populations, dementia prevalence is rising. Already 1 in 14 people over the age of 65 in the UK have dementia [Alzheimer's society, 2018]. This number is expected to rise, with the estimate being the number will double by 2045 [David Cameron, 2015]. With this, it is important to evaluate healthcare professionals understanding of the condition, as it is imperative, they are able to provide appropriate care for the ever increasing patient group. Dementia friends information sessions were designed to dispel common myths about dementia and provide information on how to better interact with said patients based on their needs. It is thought this session may be of value to undergraduate healthcare students to help prepare them to interact with this patient group in practice.

Aims: The objectives of this study were to ascertain whether; there is currently a gap at undergraduate level surrounding dementia teaching, the dementia friends session could bridge this gap, student knowledge of dementia improved, students felt this session would benefit them and their patients in practice and finally whether undergraduate level was appropriate to implement the session.

Method: Between October 2018 and March 2019 165 undergraduate health care professionals (pharmacy (N=119), public health (N=22), adult nursing (N=21) and mental health nursing (N=3)) took part in a dementia friends' session through university. Students then completed a short survey. This survey was designed to assess students views on current teaching practices, the value of the session and how they felt it would impact them going forwards.

Results: Student's dementia knowledge increased after the session with a 72.41% increase in those who felt they had a good knowledge and a 266.67% increase in students who felt they had an excellent knowledge. When asked if students felt there was a gap at undergraduate level surrounding dementia teaching, just over half of students either agreed or strongly agreed (52.11%) and most of the remaining students were undecided. 78.18% of students felt the information session was relevant to their university learning and 84.85% of students concluded the session was either important or very important to undergraduates



Conclusion: The dementia friends information session is a successful tool in increasing student knowledge of the condition. It is suitable to be incorporated at an undergraduate level as students feel it is in line with their current curriculum and they feel it will benefit them when they enter practice. Students were undecided as to whether they felt there was currently a gap in their undergraduate teaching therefore going forwards this could be further investigated with a larger student cohort to find out if students feel there is something missing from their current teaching and if so, what they feel needs to be added to provide a full education for this subject area.

References:

Alzheimer's Society . 2018. Who gets dementia. Available: <https://www.alzheimers.org.uk/about-dementia/types-dementia/who-gets-dementia..> Last accessed 18/01/2019

David Cameron. 2015. Prime Minister's challenge on dementia 2020. Department of Health and Social Care.

31. Explore the feasibility of applying online distance learning to facilitate pharmacy continuous professional development in China.

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Background: Currently, there is a shortage of pharmacist workforce in China, and increasing healthcare need due to the ageing population. E-learning has the potential to address China's need for a vast-scale of pharmacist capacity development. This study aimed to explore the feasibility of applying e-learning to facilitate Chinese pharmacists' continuous professional development (CPD).

Method: Anonymous surveys were conducted in 2017 and 2018 at CPD training workshops from four institutes in China to identify pharmacists' needs and preferred learning styles. A series of four, 10-minute online learning units were co-developed between British final year pharmacy students and a Chinese pharmacist, under advice from academic e-learning experts. The online course was launched on the China Health Promotion Foundation platform from March 2019. Five-week administrative data were collected to analyse the engagement.

Results: The response rate of survey varied from 22.5% to 64.4% across different institutes. Of the 91 and 115 responses collected in 2017 and 2018, community pharmacy services (94%-85%) and drug abuse prevention (96%-67%) were recognised as the most urgent development needs in China. Most participants favoured small-group lecture (81%-83%), and 59%-50% favoured self-direct study and e-learning. There is a significant reduction in preferring large-group lecture (78%-43%, $p < 0.001$) and workshop (79%-59%, $P = 0.026$) between 2017 and 2018. Five weeks after launching of the course, 2356 learners registered to the four units (589 each), but only 90 learners (3.8%) accessed the video. Overall, only 16 (0.7%) and 25 (1.1%) learners completed the pre- and post-course questionnaire survey.

Conclusions: Most Chinese pharmacists favour the traditional style of teaching delivery methods, although increasingly prefer interactive small-group teaching. Many pharmacists are interested in the online course, but the completion rate is low due to no reinforced incentives and suboptimal learning management system. Further qualitative study is needed to explore learners' journey and usability of e-learning CPD.

32. An assessment of Emotional Intelligence in MPharm undergraduates.

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Background: Emotional Intelligence (EI) is the ability to perceive, understand and manage emotions. Higher EI is associated with effective leadership and improved patient outcomes (Sfantou et al., 2017). EI may be developed through training, however the majority of UK pharmacy schools do not explicitly teach leadership. An assessment of MPharm students' EI may determine whether current teaching supports EI development.

Aims: To measure MPharm students' EI and explore any variation between and within year groups.

Method: All MPharm students at one UK University were invited to complete the short form trait EI questionnaire (TEIQue-SF) online (Petrides, 2009). TEIQue-SF measures an overall global trait EI score and produces separate scores in four domains: well-being, self-control, emotionality and sociability. Participants rated their agreement with 30 statement items on a 7 point Likert scale (1 = strongly disagree, 7 = strongly agree). A mean score was calculated for each measure with higher scores indicating greater EI. An open question was included to capture leadership experience. Descriptive and inferential statistics were used to characterise participant responses and explore the relationship with leadership experience.

Results: Eighty-two (22%) students participated and the mean \pm SD EI score was 5.02 ± 0.7 . There was no correlation between EI and year of study. Mean EI score was higher in students with self-identified leadership experience (5.10 ± 0.61) than those without (4.61 ± 0.13 , ISTT, $p < 0.001$). Figure 1 illustrates the distribution of domain scores across the different cohorts. Statistical analysis of EI scores across the four domains was prohibited due to the distribution of response

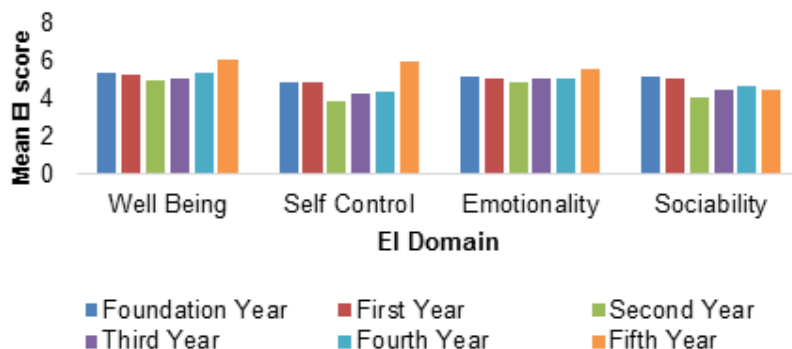


Figure 1: Distribution of EI domain scores by cohort

Conclusion: Possible explanations for the higher EI scores in those with leadership experience include that those with higher EI are more likely to seek leadership positions or that leadership experience supports the development of higher EI. Further investigation is required to explore how the MPharm degree can support EI development.

References:

- Petrides, K.V. 2009. Psychometric Properties of the Trait Emotional Intelligence Questionnaire (TEIQue). In Parker, J., Saklofske, D., Stough, C. (Eds.), *Assessing Emotional Intelligence*. The Springer Series on Human Exceptionality (pp. 85-101). Boston, MA: Springer.
- Sfantou, D.F., Laliotis, A., Patelarou, A.E., Sifaki-Pistolla, D., Matalliotakis, M., and Patelarou, E. 2017. Importance of Leadership Style towards Quality of Care Measures in Healthcare Settings: A Systematic Review. *Healthcare*, 5, p.73.

33. Evaluation of the use of video as a learning tool in a national Polypharmacy workshop

Authors: L. Grimes, P. Higginson, M. Shaw.

Institution: Centre for Pharmacy Postgraduate Education

Background: The concept of modelling is recognised as an effective method in teaching consultation (Bandura, 1997). The aim is to enable the observer to recall observations and have the motivation and capability to apply to practice (Dickson et al., 1989). A series of videos were created to demonstrate effective consultation skills for pharmacy professionals consulting with people affected by polypharmacy.

The videos were shown after the clinical vignette (communication and taking a patient-centred approach) activities in the national *Polypharmacy* focal point workshops. The purpose was to model good practice and deliver real practice examples of using role play to support learning and change in practice.

Aims: The use of video in focal point was a new concept for tutors and learners. The evaluation aimed to establish whether the videos:

- Reflected real practice
- Illustrated good practice
- Reinforced learning outcomes
- Supported individual learning about consultation skills and taking a patient-centred approach
- Contributed to the overall learning experience.

Method: A simple evaluation form was developed. Three tutors from each region were nominated to ask learners to complete the evaluation forms at the end of their *Polypharmacy* focal point workshops. Completed forms were input into a Survey Monkey questionnaire by Head Office staff. General comments from tutors regarding the use of video in focal point events were also collated.

Results:

465 completed evaluation forms were received.

	[Not at all] 1 (1)	2 (2)	3 (3)	4 [A lot] (4)	Total	Weighted Average
Reflect real practice	1.08% 5	10.75% 50	48.39% 225	39.78% 185	465	3.27
Illustrate good practice?	0.00% 0	0.65% 3	24.95% 116	74.41% 346	465	3.74
Reinforce the learning objectives of the workshop?	0.00% 0	2.37% 11	27.96% 130	69.68% 324	465	3.67
Support your learning about communication and taking a patient-centred approach?	0.00% 0	2.80% 13	29.89% 139	67.31% 313	465	3.65
Contribute to your overall learning experience at the workshop?	1.08% 5	6.67% 31	38.49% 179	53.76% 250	465	3.45
Motivate you to want to watch the other Polypharmacy videos on the CPPE website?	1.29% 6	5.38% 25	31.18% 145	62.15% 289	465	3.54

Conclusion: The use of video to support learning from the clinical vignettes section was generally very well received by participants and tutors. The results suggest that the video learning enhanced the face-to-face learning experience. Learners felt the videos reflected real practice and could relate to them. They also recognised the demonstration of good practice. Video learning is now an integral part in the development and delivery of face-to-face and other learning formats.

References:

Bandura, A., 1997. *Social Learning Theory*. Englewood Cliffs NJ: Prentice-Hall.

Dickson, D., Hargie, O. and Morrow, N., 1989. *Communication Skills Training for Health Professionals*. London: Chapman & Hall.

34. Evaluating second year MPharm students' perceptions of their consultation skills when advising a patient on taking a medicine for the first time.

Authors: D. Mitchell¹, H. Juwale¹, C. Wheeler¹, L. Blackburn¹, A. Graves², H. Devine²

Institution: ¹Clinical Tutors at University of Manchester and Manchester University NHS Foundation Trust. ² Clinical Tutors at MPS and Salford Royal NHS Foundation Trust.

Background: Educating patients about their medications is a key role of pharmacists to ensure patients get the best out of their prescribed medications. The GPhC's standards for initial education and training for pharmacists' states MPharm students should be able to show how to communicate with patients about their prescribed treatment. (GPhC, 2011) Traditionally this occurs in a simulated environment through role play.

Clinical Pharmacy Practice hospital placements offer students the opportunity to develop consultation skills through talking to patients about their medications and medical conditions. However, our students have never had the opportunity to provide information to patients about a medicine. Hospital placements were identified as an ideal opportunity to develop their skills in this area.

Description of work: A clinical placement was designed to give the students the opportunity to educate a patient about taking a proton pump inhibitor for the first time. The format includes: pre-work to develop a list of the information which should be given to patients about PPIs which is consolidated in the tutorial, role play allowing the students opportunity to verbalise the information, before carrying out a ward-based consultation with a hospital inpatient. Students will receive feedback and be encouraged to complete self-reflection.

At the beginning and end of the placement, a questionnaire will be administered to assess the student's perception of their readiness to carry out a patient consultation centred on educating a patient about a medicine.

Proposed evaluation: The student's perceptions before and after the placement will be evaluated quantitatively and qualitatively through the questionnaire and compared to see if the placement changed the students perceptions. It will use a closed Likert scale and free text questions stemming from five themes: confidence in talking to patients; knowing what to say; preparedness; importance of talking to patients; and sources of anxiety. The qualitative data will be reviewed to determine common themes regarding the students concerns about talking to patients and what could be done to better prepare the students. As a Clinical Tutor team we shall use our findings to help shape hospital placements for the future.

Reference:

General Pharmaceutical Council, 2011. Standards for initial education and training for pharmacists. https://www.pharmacyregulation.org/sites/default/files/document/gphc_future_pharmacists_may_2011.pdf

35. Application of a technology-assisted flipped classroom to promote and measure student engagement in pharmacy education.

Authors: T.P. O'Sullivan.

Institution: School of Pharmacy, University College Cork, Cork, Ireland.

Background: The flipped classroom (FC) is an increasingly popular means of promoting active learning (Rotellar, 2016). Lecture material is delivered beforehand, while class time is devoted to problem-solving. The teaching of pharmaceutical analysis is well suited to this approach. However, one potential pitfall is where some students have not engaged with the background material and are, therefore, unable to fully participate. Additionally, it may be difficult to measure the level of student understanding in large FC settings.

Aims: The aim of this project was to develop a technology-assisted FC in pharmaceutical analysis, which promoted and tracked student engagement with the background material, as well as measuring individual student competency post-FC.

Method: Year 2 Mpharm students were presented with two pre-FC online video modules on spectroscopy, interspersed with related questions. Completion of these 25 minute modules was automatically recorded by the Virtual Learning Environment (VLE). Students subsequently participated in two FC sessions on the application of spectroscopy to pharmaceutical analysis. Finally, students completed two post-FC online assignments using a web-based molecular editor (O'Sullivan, 2014). Marks were recorded by the VLE to measure student competency. Following this intervention, student opinions were captured via an anonymous online survey.

Results: Two FC sessions were implemented with 61 undergraduates. Analytics demonstrated that 100% of students had completed both the pre-FC modules and the post-FC assignments in which they attained a 71% average mark. 42% of students completed the online survey. 78% of students agreed/strongly agreed that the pre-FC modules promoted engagement with the background material while 83% agreed/strongly agreed that the overall approach was a 'beneficial learning experience'.

Conclusion: VLE analytics and student feedback confirmed that our technology-assisted approach promotes pre-FC student engagement. This approach also successfully measures student competency post-FC. However, the effectiveness of the actual FC sessions was inhibited by larger class sizes

References:

O'Sullivan, T.P. and Hargaden, G.C., 2014. Using structure-based organic chemistry online tutorials with automated correction for student practice and review. *Journal of Chemical Education*, 91(11), pp.1851-1854.

Rotellar, C. and Cain, J., 2016. Research, perspectives, and recommendations on implementing the flipped classroom. *American journal of pharmaceutical education*, 80(2), p.34.

36. Student perceptions of Inter-professional joint undergraduate student placements across the health science curriculums.

Authors: R. Sandhu^{1,2} M. Waraich² J. Tullett² S. Thorpe².

Institution: ¹Aston University. ²Birmingham and Solihull Training Hub.

Background: Primary care placements have been introduced to the undergraduate MPharm course to introduce the role of a pharmacist in the primary care setting, in the changing NHS (NHS England, 2019). There is a shortage of undergraduate medical student placements which is putting pressures on higher education institutions and placement sites. Joint placements between undergraduate medical students and pharmacy students for experiential learning can be beneficial to overcome the current barriers. Inter-professional learning is already being rolled out and there is potential for inter-professional joint placements. The aims of the joint placement sessions are to increase both disciplines' awareness and knowledge of their own and others' professional roles and to encourage collaborative working and learning from each other.

Description of work: The placements developed by primary care pharmacists, will entail experiential learning for both medical and pharmacy undergraduates. Students will shadow GPs and clinical pharmacist prescribers in clinics to enhance their learning. Students will be required to complete reflections on their joint learning and experiences in practice.

Proposed evaluation: Student opinions across both disciplines will be captured at the end of the sessions using a questionnaire. Responses will be anonymous and participation in the questionnaire will be optional. Nine Likert scale questions will form the questionnaire, with five options from strongly disagree, to strongly agree. Two open questions will be used to provide comments on the sessions. Quantitative analysis will be used to summarise the findings and thematic analysis will be used for the open comments questions. The questionnaire will evaluate (i) pharmacy and medical students' perception of joint placements, (ii) students' opinion of the session content and structure (iii) organisation and improvement of the session.

References:

NHS England, 2019. A five-year framework for GP contract reform to implement The NHS Long Term Plan, England: NHS England.

37. Collection and analysis of learner specific data improves delivery of national training programmes for pharmacy professionals.

Authors: E. Wright, M. Karolczak-Bayatti, G. Cosens, N. Matthews, M. Coupe, M. Shaw, S. Greensmith.

Institution: Centre for Pharmacy Postgraduate Education, University of Manchester

Background: CPPE was commissioned by Health Education England to provide national learning programmes. The NHS England Clinical pharmacists in general practice education programme will place 1650 clinical pharmacists in general practice by 2020/2021(NHS England,2016) and the NHSE Medicines Optimisation in Care Homes programme will train 600 pharmacy professionals. Data analytics is required to support learners and efficient learning delivery in in both national pathways.

Aims: To support learning of pharmacy professionals in national pathways through utilising data to monitor learners' progress, increase engagement, identify early additional support and planning effective learning delivery

Method: A data analyst is currently employed for the duration of the learning national pathways. The pathway lead, data analyst and IT team created responsive data solutions and engaged with the education support team to support the growing number of learners. Live online trackers were developed for learners. All data in the CPPE database was collected according to GDPR.

Results: A variety of resources were created. A regional learner distribution map was created, supporting peer group learning and the assignment of education supervisors to learners. Automated monthly reports were used to sequence each learner's module choices, including booking and attending learning modules and workshops. Each learner completes a live online tracker that monitors their progress, increasing their level of engagement with the pathway and allowing for early identification of any required additional support by their education supervisor.

Conclusion: Collection, analysis and presentation of learner data has proved to be effective in supporting national learning pathways teams in planning modules, monitoring progress and ensuring learner-centred educational support for learners. Using these solutions allows a training programme and educational support to be run on a national scale for a large cohort of learners. Future use of data could include predicting attrition rates of learners and changing some less-attended events to an online platform.

References:

NHS England, 2016. General practice forward view.. <https://www.england.nhs.uk/wp-content/uploads/2016/04/gpfv.pdf> (accessed 20 Feb 2019).

38. Supporting pharmacy professionals to transition to patient facing roles.

Authors: E. Wright, N. Butler, M. Shaw.

Institution: Centre for Pharmacy Postgraduate Education, University of Manchester .

Background: The NHS emphasised the patient-facing aspect of the general practice pharmacist in their Five year forward view (2016). Evaluation of the Centre for pharmacy postgraduate education's (CPPE) national pilot learning programme in 2016 identified some barriers to the 450 enrolled GP pharmacists becoming patient-facing (Bradley et al., 2018). In March 2017, a report found that only 84% of these pharmacists were patient-facing. A further survey (Wright, 2019) uncovered the main remaining barriers and led to the creation of resources to support pharmacists.

When CPPE developed the second phase training programme for 1650 pharmacists in general practice, proactive action was needed to address these identified barriers to the patient-facing role.

Aims: To support pharmacy professionals become patient-facing

Method: Building on the learning from the pilot programme, more support was given to pharmacists to be patient-facing. A role progression handbook and 30 minute facilitated peer training session was introduced at the beginning of the programme. The handbook clearly outlines progression in both medicines leadership and patient-facing roles, with practical examples given to pharmacists. In the face to face session, pharmacists work together to plan how to implement their personal role progression journey in their GP practice and create an action plan.

Results: There are currently 155 pharmacists who are 12 months or more into their pathway. Results were recorded for 76% of pharmacists (n=117). 94% of these pharmacists are patient-facing, an increase of 10% after the introduction of active support and resources.

Conclusion: There seems to be a positive correlation between the active support of pharmacy professionals early on in their training to become patient-facing and being patient-facing within a year. A significant limitation of this study is around the definition of 'patient-facing'. Further research could focus on the amount of time spent on patient-facing activities.

References:

Document: NHS England. General practice forward view. 2016. <https://www.england.nhs.uk/wp-content/uploads/2016/04/gpfv.pdf> (accessed 20 Feb 2019)

Bradley, F., Seston, E., Mannall, C. and Cutts, C., 2018. Evolution of the general practice pharmacist's role in England: a longitudinal study. *Br J Gen Pract*, 68(675), pp.e727-e734.

Wright, E., 2019. Barriers to developing the clinical pharmacist in general practice. *Clinical Pharmacist*. <https://www.pharmaceutical-journal.com/opinion/correspondence/barriers-to-developing-the-clinical-pharmacist-in-general-practice/20206292.article>

39. Developing Medical and Pharmacy Education Supervisors within an Acute Trust.

Authors: A. Conway, N. Tester, L. Innes, V. Kalidasan, A, Elkins

Institution: Medical Education Department, Pharmacy Department, Brighton and Sussex University Hospital Trust.

Background: Medical and Pharmacy Education Supervisors (ESs) are required to undertake update supervisor role recognised training under respective regulatory and professional bodies guidance. Local Education Providers are required to provide an ongoing programme of faculty development needs. Brighton and Sussex University Hospital Trust had successfully established a Medical ES one day course to help fulfil this requirement.

This was further developed to include Pharmacy ES and support Interprofessional Learning (Barr, 1998).

Aims: The course's aims were to bring together Medicine and Pharmacy ES, providing support, supervision and training in a large multi-site and multi-professional Trust, share learning from challenging and fulfilling situations and event evaluation.

Method: Workshops with interactive sessions related to supervision relevant to both ES professional groups were developed. Scenarios were provided to enable participants to work through the difficult areas of educational supervision ie Trainee in need of Support. For each session participants completed a four-point Likert scale questionnaire where 1=poor and 4=excellent. Participants were asked to identify good aspects, least useful aspects and areas for improvement.

Results: 26 ES attended. 85% (22) Medical and 15% (4) Pharmacy. Evaluation response was 100% (26).

Sessions scored an average 3.3. Practical updates and skills sessions were more popular especially sessions on trainee support (3.7), feedback provision (3.3) and Technology Enhanced Learning (3.4). Comments identified the benefits of this opportunity to network with other ES and felt the day had improved working relationships. Requests acknowledged for additional case studies, further integration with the Medical and Pharmacy ESs, Eportfolio profession specific session and open the event to other HCPs.

Conclusion: Evaluation highlights benefits of integrated Medical and Pharmacy ES training. Small numbers of Pharmacy ES acknowledged as a limitation. The agenda is being developed for all HCPs with additional practical sessions and a session running concurrently on specific professional portfolios.

References:

Barr, H., 1998. Competent to collaborate: Towards a competency-based model for interprofessional education. *Journal of Interprofessional Care*, 12, pp. 81-187.

40. Student and staff perceptions of voluntary sector placements.

Authors: A. Elgebli and H. Nazar.

Institution: Newcastle University.
hamde.nazar@newcastle.ac.uk

Background: Voluntary sector placements offer a promising form of experiential learning for undergraduate healthcare students to facilitate the development of a range of intrapersonal and professional characteristics and skills that are important for both undergraduate education and future practice (Bell, 2015).

Aim: This qualitative study aims to investigate the perspectives and anticipated outcomes of both academic staff organising the initiative and students required to participate.

Method: All Stage 2 Pharmacy students (n=75) were invited to participate in the study and academics were selected due to their involvement in the scheme (n=4). All consenting students were included in the study. In-depth, semi-structured interviews were conducted to investigate student and staff perceptions of voluntary sector placements. Interviews were audio-recorded, transcribed verbatim and analysed using inductive thematic analysis. Ethical approval was awarded by the institutional research ethics committee.

Results: The study comprised six students (male n=2, female n=4) and three academics (male n=1, female n=2). Academics and students interviewed believed that voluntary sector placements could foster the development of multiple beneficial skills such as communication and organisational skills, empathy, leadership and professional responsibility. Academics stated that the placements could improve students' academic development and help them to appreciate the wider context and issues around health and the healthcare system that could affect an individual's health. Academics also believed the experience could help students meet the General Pharmaceutical Council's competency standards for pharmacy professionals, specifically around professional intrapersonal and communication skills. Although students agreed with the many benefits of these placements, the main perceptions included such placements would be time-consuming and are less relevant to their education at this stage.

Conclusion: Academics conveyed that voluntary sector placements could aid pharmacy students learning and develop their interpersonal and communication skills, helping them to fulfil the required competency standards for pharmacists. However, students may not perceive the link of volunteering to their education and future profession, which hinders their acceptance of the initiative.

References:

Bell, K., Tanner, J., Ruddy, J., Astley-Pepper, M. and Hall, R., 2015. Successful partnerships with third sector organisations to enhance the healthcare student experience: A partnership evaluation. *Nurse education today*, 35(3), pp.530-534.

41. Does the process of self-organising community pharmacy placements help Keele MPharm students to demonstrate graduate attributes?

Authors: K. A. Gunnell, A. Kamoga.

Institution: School of Pharmacy, Keele University, Keele, Staffordshire, UK.

Background: The GPhC requires that MPharm syllabi ensure students learn from experience (GPhC, 2011). One way of facilitating this is to expose students to pharmacy placements. At Keele University, MPharm students undertake mandatory community placements (minimum of 18 hours at stage 2 and 6 hours at stage 3). These students organise their own community pharmacy placements, however support is available, where needed.

Aims: To evaluate whether self-organising community placements helped Keele students demonstrate graduate attributes.

Method: This research was part of a larger evaluation of students' views on self-organisation of community placements. Stage 4 MPharm students (n=58) attending a law ethics and practice lecture in November 2018 were invited to participate in a mixed methods paper-based questionnaire at the beginning of a lecture, using a 4-point Likert scale and open questions to allow justification of ratings. Question design was based on literature and placement intended learning outcomes (ILOs). They were asked to rate their agreement on whether self-organisation of placements helped them to demonstrate or improve their ability in nine different attributes:

- a. self-confidence
- b. communication skills
- c. initiative
- d. personal motivation
- e. time management
- f. writing skills
- g. IT skills
- h. networking skills
- i. professionalism

The data were analysed using descriptive statistics and thematic analysis.

Results: Most students responded to the invite to participate (95%). The participants agreed or strongly agreed that self-organising community placements helped them to demonstrate or improve 7 of the 9 attributes. The attributes that were not improved were writing or IT skills. Participants reported that the process of self-organisation of placements "made [them] feel independent". The process also "helped to improve [their] professionalism, confidence and communication."

Conclusion: Self-organising community pharmacy placements helps students to demonstrate a number of different attributes that are required after graduation. The participants did not feel that this process improved their writing or IT skills. This process has been praised by external examiners.

Reference:

General Pharmaceutical Council (GPhC). 2011. *Future pharmacists: Standards for the initial education and training of pharmacists*. [online] London: General Pharmaceutical Council. Available at: https://www.pharmacyregulation.org/sites/default/files/document/gphc_future_pharmacists_may_2011.pdf [Accessed 20 Feb. 2019].

42. Evaluating the students' perceptions of their communication skills before and after UK clinical placements: an international clinical pharmacy summer school for Cairo University students.

Authors: I.Y.K. Iskandar^{1,4}, H. Juwale², D. Mitchell², C. Wheeler², H. Devine³, N. Sabry⁴, S. Farid⁴, D.T. Steinke¹, on behalf of the Manchester University and Salford Royal NHS Foundation Trusts Clinical Tutor Group.

Institution: ¹Division of Pharmacy and Optometry, School of Health Sciences, University of Manchester, Manchester. ²Manchester University NHS Foundation Trust, Manchester. ³Salford Royal NHS Foundation Trust, Manchester. ⁴ Department of Clinical Pharmacy, Faculty of Pharmacy, Cairo University, Egypt.

Background: MPharm students in the UK are commonly exposed to patients during their programme of study. Such interactions help them apply their clinical knowledge, practise communication skills, and develop their soft skills (Alshahrani et al. 2018). Cairo University pharmacy students may not have the same opportunities because of different requirements of their programme. The University of Manchester in partnership with 3 teaching hospitals hosted an International Clinical Pharmacy Summer School (ICPSS) for students in their penultimate year of a 5 year BSc programme. The two-week programme combined ward- based learning and didactic teaching to contextualise students' knowledge with real-life patients.

Aims: The aim of this study is to evaluate the students' perception of their communication skills before and after completing ICPSS.

Method: A questionnaire was administered twice to all 14 participating students which assessed their perception of their communication skills using closed Likert scale and free text questions stemming from five themes: confidence in talking to patients; knowing what to say; preparedness; importance of talking to patients; and sources of anxiety. Cochran- Armitage trend test was used to assess changes in trends in response.

Results: Initially, 2(14.3%), 2(14.3%), and 3(21.4%) students agreed to the statements "I feel prepared to talk...", "I feel confident about talking.." and "I feel comfortable in a ward environment", respectively, but after the placements 92.9% strongly agreed/agreed to these statements. Moreover, 5(35.7%) and 8(57.1%) students initially strongly agreed/agreed to the statements "I know how to start a conversation..." and "I know how to end a conversation...", respectively, however after the placements all the students strongly agreed/agreed to these statements (14, 100%).

Conclusion: Results underscore a positive trend in students' perceived communication skills, which demonstrates the importance of contextualising learning with patient interaction. Limiting factors include not quantifying their actual communication ability, small sample size, short duration of the ICPSS and presence of social desirability bias.

References:

Alshahrani, Y., Cusack, L. & Rasmussen, P., 2018. Strategies for coping with their first clinical placement: descriptive survey study. *Nurs Educ Today*, 69, pp.104-108.

43. Graduates' Perceptions of Experiential Learning (EL) in the MPharm, and its Effectiveness in Preparing Them for Practice.

Authors: S. A. Jacob, A.C. Boyter.

Institution: Strathclyde Institute of Pharmacy and Biomedical Sciences, University of Strathclyde

Background: Studies have found that pharmacy students were overwhelmed during their hospital placements, felt EL in community pharmacies was poor preparation for hospital practice (McCartney and Boschmans, 2018), could not connect university learning with what happens in the pharmacy (Burrows *et al.*, 2016), and struggled to apply their knowledge. (McCartney and Boschmans, 2018).

Aims: To determine graduates' perceptions of EL, and its effectiveness in preparing them for practice.

Method: A cross-sectional online survey involving MPharm graduates from the University of Strathclyde within a year of graduation. The link to the survey was distributed to the graduates in an email sent by NES, who coordinate the preregistration year in Scotland. An 8-item survey form was used. Close-ended questions were analysed using SPSS while content analysis was performed on open-ended responses. The Departmental Ethics committee approved the study.

Results: There were 51 responses (45.1%): ten (19.6%) with a hospital post and 41 (66.7%) in community practice. Three-quarters felt the undergraduate EL in hospital was insufficient to prepare them for practice, more than 90% felt students should be allowed to do placements in other settings such as GP surgeries, more than 70% felt part-time Saturday employment should be recognised by the university as EL, approximately 70% felt the EL was unnecessary, while only approximately 45% felt the EL prepared them for practice. Graduates were ambivalent with regard to the effectiveness of the EL in preparing them in clinical (3.12 ± 0.73), communication and professionalism (3.42 ± 0.79), and technical (2.93 ± 0.80) skills. Content analysis revealed that 16 (70%) had a poor experience during their community EL, with 10 (62.5%) of these commenting that they were mainly used as dispensers.

Conclusion: There is a need to restructure EL to allow more time in hospital, and restructure the content to ensure students will be well-prepared for the workforce in core skills. Quality assurance of placement sites along with a greater emphasis on tutor-training are warranted. Future planned qualitative interviews will provide more depth to the findings.

References:

McCartney, J. and Boschmans, S.A., 2018. South African pharmacy student perspectives of a hospital-based experiential learning programme. *Pharmacy Education*, 18, 29-40

Burrows, J., Dall'Alba, G. and La Caze, A., 2016. Becoming pharmacists: Students' understanding of pharmacy practice at graduation from an Australian University. *Currents in Pharmacy Teaching and Learning*, 8(6), pp.729- 741.

44. Evaluation of a pharmacist training intervention on assessing and managing urgent cases.

Authors: R. Micallef,¹ M. Styles²

Institution: ¹Kingston University. ²CPPE, University of Manchester.
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Background: The pressure on the NHS urgent care system is growing, with urgent or unplanned cases accounting for over 100 million NHS interventions annually (NHS England, 2014). The Centre for Pharmacy Postgraduate Education (CPPE) developed training to support community pharmacists to acquire confidence, knowledge and skills to assess and manage urgent and emergency care interventions (CPPE, 2018), such as ear ache, supporting the NHS vision.

Aims: To evaluate the impact of urgent and emergency care training for community pharmacists on outcomes for practice.

Method: In South London 56 pharmacists attended three pharmacist and GP led 2-day training sessions. Pre and post course evaluation forms (15 questions pre) consisting of free- text and 10-point Likert scale responses were used, plus follow-up utilising 15 question semi- structured telephone interviews. Questionnaires were analysed with thematic analysis and Microsoft Excel. Interviews were analysed using Quirkos® for thematic analysis. Ethics approval was received.

Results: Response rate for the questionnaires was 100% (n=56). All participants (n=56) agreed the course was good, very good or excellent. Knowledge and confidence increased in all areas after the event from Likert scale responses, with knowledge in physical- examination increasing 5.2 points and confidence in clinical history-taking increasing by 4.3 points. Interviews were completed with 7 participants to ensure saturation of themes. From these interviews, five themes were identified, each with corresponding subthemes; consultation skills and history taking, minor ailments, attitudes, local relationships and barriers. Comments received echoed the value of the course, with confidence, patient interaction and improved questioning mentioned by all participants.

Conclusion: This training intervention increased the knowledge and confidence of pharmacists, and application of the learning into practice was good. Pharmacists are an untapped resource who can be used to support NHS initiatives, and training should be considered at undergraduate level to support patient care. More funding is required to enable more pharmacists to be upskilled.

References:

NHS England, Care Quality Commission, Health Education England, Monitor, Public Health England, Trust Development Authority. 2014. NHS five year forward view. London: NHS England. Available at <https://www.england.nhs.uk/publication/nhs-five-year-forward-view/> Accessed 18/01/2019

The Centre for Pharmacy Postgraduate Education. 2018. Urgent Care, Available at: <https://www.cppe.ac.uk/gateway/urgent> Accessed 18/01/2019

Keywords: Pharmacist, urgent care, evaluation, NHS

45. Development of a national leadership and management programme for mid-grade pharmacy professionals

Authors: S.Ridgway-Green, K. Wragg, P.Gandham, M.Shaw

Institution: Centre for Pharmacy Postgraduate Education (CPPE)

Background: We know that the NHS needs effective clinicians at all levels with strong leadership and management skills. We also recognise that pharmacists and pharmacy technicians need support with providing clinical leadership to drive Medicines Optimisation and to implement changes suggested in documents such as the NHS Long Term Plan. Through our work with senior pharmacy professionals we identified that access to leadership and management training for post-foundation pharmacy professionals across the NHS varies widely.

Whilst there are opportunities in some regions, time and geography can be a barrier to completion for many people so we needed to develop a national, engaging learning programme with local influence that would allow for region-wide networking whilst overcoming these barriers.

Description of work: We developed a 6-month blended programme consisting of four online modules and two regional workshops, supported by work-based activities.

The workshops are fully interactive to allow learners to network widely and build relationships to support their further learning online. The focus of the days is on self-awareness and soft skill development.

The online content is aligned to the NHS Healthcare Leadership Model² and uses discussion forums to encourage the sharing of ideas and best practice throughout the online community.

The programme was initially designed for secondary care however the audience has now been expanded to include primary care and other service providers, allowing for networking across the wider system.

Proposed evaluation: We have used the online discussion forums to allow learners to share their immediate experiences of the programme and enable them to suggest improvements as part of the programme itself.

We will also use an online questionnaire after completion of the course to establish learner perceptions about whether the programme has succeeded in helping them to develop their leadership skills. The questionnaire will be constructed by the programme developers as a validated tool is not currently available. It will utilise a combination of Likert scale and free text. The Likert scale will be used to measure the degree with which participants think that their learning objectives were met, whilst the open questions will be used to provide further information such as the benefits of the programme to both the participants and their organisations and suggestions for change. The collated feedback will inform the next iteration of the programme planned for mid-2019.

References:

The NHS Long term Plan, NHS England, January 2019 <https://www.longtermplan.nhs.uk/> Healthcare Leadership Model, NHS Leadership Academy, <https://www.leadershipacademy.nhs.uk/resources/healthcare-leadership-model/>

46. Pharmacists – helping and hindering pharmacy technician professional development.

Authors: M. Shaw, S. Quaye, S. Ridgway-Green.

Institution: Centre for Pharmacy Postgraduate Education, University of Manchester.

Background: Pharmacy technicians form a relatively new professional group in the pharmacy team. Typically they work closely with a pharmacist, who is their line manager and team leader. As we seek to support pharmacy technicians in learning about professionalism in practice, we identified different experiences of the impact of the pharmacist and their role in supporting the development of the pharmacy technician.

Aims: To build an awareness of the varied impact of pharmacists on the professional development of pharmacy technicians.

Method: We held a single focus group with 12 pharmacy technicians from different areas of practice to support our creation of a learning programme on professionalism. Part of the conversation related to examples of pharmacist impact on their learning and personal development resulting in creation of case studies.

Results: Although a small group, our participants shared case examples from their own practice which demonstrated a stark contrast in the impact of the pharmacist on their development. In some cases the pharmacist had been the catalyst for the learning and career development of the pharmacy technician, building their sense of self worth and opening opportunities. In other cases the pharmacist had actively prevented the pharmacy technician from being able to develop their career.

Conclusion: Pharmacists have a large impact on the learning that their team does and may not realise that they are both a barrier and a catalyst to the ongoing development and concepts of professionalism for their colleagues.

References:

Beardsley, R., Benner, J. and Knapp, K. 2000. 'White paper on pharmacy student professionalism.', *J Am Pharm Assoc.*, 40(1), pp. 96–102.

Deselle, S.P., 2016. 'An in-depth examination into pharmacy technician worklife through an organizational behavior framework', *Research in Social and Administrative Pharmacy*, 12(5), pp. 722-732.

47. Evaluating collaborative working of GPs and Community Pharmacists in a novel project: a Focus Group Study.

Authors: R. Venables¹, S. Harris², E. Mills³, S. Chotai¹, M. Tariq¹, S. White¹

Institution: ¹School of Pharmacy, Keele University, Keele, Staffordshire. ²Green Light Pharmacy, London. ³UCL School of Pharmacy, London.

Background: Interprofessional collaboration is defined as "when multiple health workers from different professional backgrounds work together with patients, families, carers (caregivers), and communities to deliver the highest quality of care" (WHO 2010). Recent NHS strategy promotes the collaborative working of GPs and Community Pharmacists. A novel project was designed to facilitate collaborative working between GPs and Community Pharmacists. Five GP-Community Pharmacist pairs participated, over a one-year period, which included: dedicated time to observe each other's practices, leadership training and a quality improvement project.

Aims: To evaluate the collaborative working of GPs and Community Pharmacists using a conceptual model of collaboration.

Method: A multidisciplinary Focus Group (FG), using a pre-designed guide, informed by the Bradley et al. (2012) model of collaboration was utilised as the data collection tool. The themes covered, encompassed seven themes (Bradley et al. 2012): locality, service provision, trust, knowing each other, communication, professional roles and professional respect. The tool was designed to explore collaboration with their partner within the ongoing GP-Community Pharmacist project. Data were analysed using thematic analysis.

Results: Five GP-Community Pharmacy pairs participated in this study. Key themes identified were Communication, IT, Cost, Time, Insight to Professional Role, Trust and Mutual Dependency and Education. Themes were mostly discussed as barriers to collaborative working. Trust and mutual dependency resulted in participants discussing their negative perceptions of such terminology. Positive feelings about how collaborations have strengthened throughout this project were reported, and evidenced by the quality improvement projects.

Conclusion: GP-Community Pharmacist pairs agreed unanimously that collaborative working facilitates improved patient care. In this project, facilitating collaborative practice has improved knowledge and insight of the roles of the other HCP, improving positivity towards future interprofessional working; albeit with foreseeable barriers. Future studies should develop data collection tools to explore the stages of collaborative working of HCPs.

References:

Bradley, F., Ashcroft, D., Noyce, P. (2012). Integration and differentiation: A conceptual model of general practitioner and community pharmacist collaboration. *Research in Social and Administrative Pharmacy*. 8(1), pp.36-46.

World Health Organization. Framework for action on interprofessional education & collaborative practice. Geneva: World Health Organization. http://apps.who.int/iris/bitstream/10665/70185/1/WHO_HRH_HPN_10.3_eng.pdf. Published 2010. Accessed on 20/02/2019.

48. Peer-education: an effective pedagogical approach to supporting pharmacy undergraduate and high school student learning.

Authors: D.G. Allison, S.C. Willis and E. Williams

Institution: Division of Pharmacy & Optometry, University of Manchester

Background: Education policy encourages schools to provide health and well-being learning within the curriculum, with the aim of promoting both academic achievement and improving mental and physical health. One method for delivering this learning is peer education, which has benefits for educators as well as learners (Badura et al., 2000). In this study, pharmacy undergraduates were involved in a peer education health promotion activity with high school pupils.

Aims: To develop, deliver and evaluate pharmacy undergraduate-delivered health promotion workshops relevant to health and well-being for high school pupils.

Method: Interactive workshops covering public health topics relevant to 14-16 year olds (Alcohol, Diabetes, Mental Health & Sexual Health Awareness) were developed and co-designed with teachers, with workshop learning outcomes mapped to the appropriate curriculum Key Stage. All third year MPharm students were then randomly allocated to groups (of 4) and provided with training prior to delivering a workshop to a class. Brief surveys of pupils and teachers evaluating the workshops were analysed using descriptive statistics; students' perceptions were captured in an assessed continuing professional development (CPD) record and analysed thematically.

Results: Since 2017, 288 MPharm students have delivered 72 workshops to over 2000 pupils across 12 schools. Pupils and teachers rated the workshops highly, with more than 4/5th of survey respondents viewing workshops as having a positive impact on pupils' learning. MPharm students reflected on the value of being a peer educator in terms of improving their team working, presentation, communication and engagement skills, the application of health and well-being learning, and recognition of their role and contribution to sharing knowledge and skills with a younger generation.

Conclusion: Peer education provides opportunities for undergraduate pharmacy students to practise their future role in health promotion. High school children's learning also benefited and supported development of knowledge and skills needed to promote their health.

References:

Badura, A. S., Millard, M., Peluso, E.A. and Ortman, N., 2000. Effects of peer education training on peer educators: Leadership, self-esteem, health knowledge, and health behaviors. *Journal of College Student Development*, 41(5), pp. 471-478.

49. Creating an engaging synchronous online learning environment for pharmacy professionals to explore the Myers Briggs Type Indicator®

Authors: D. Bell, E. Wright, M. Shaw

Institution: Centre for Pharmacy Postgraduate Education

Background: The organisation has a rigorous, evidence-based programme development process that ensures every programme is engaging for learners. This includes a range of formats, including e- learning courses, distance learning programmes, face to face workshops and residential courses. The Myers-Briggs Type Indicator® (MBTI) is a personality inventory to help raise self-awareness and support personal and professional development (Holt *et al*, 2015) that we have incorporated into several programmes. It is usually explored as a face-to-face coaching session or workshop but, working on a national scale, we needed to create a flexible, cost-effective alternative.

Description of work: An MBTI e-workshop was created for a Leadership and Management module as part of a community pharmacy postgraduate diploma. The familiar principles of online learner engagement were applied to the creation of the MBTI e-workshop, which the authors believe has not been done before. This e-workshop was repurposed and scaled to cater for over 260 pharmacy professionals enrolled on the *Clinical Pharmacists in General Practice Education* pathway.

Proposed evaluation: The MBTI e-workshops were part of leadership modules that finished in February 2019. A module evaluation questionnaire is sent out to all participants about the learning throughout the module. Participant feedback about the MBTI e-workshop will be collated during March/April this year.

A second questionnaire will be created and distributed to the MBTI practitioners who facilitated the online events to explore their experiences of the e-workshop compared with face-to-face delivery.

The collated feedback will inform delivery of another cycle of e-workshops in the next leadership module in June/July 2019.

Reference:

Holt, J. T., Ghormoz, J., Sung, Y. J., White, M. W. & Szarek, J. L. (2015). Medical Student Benefit from Learning Objectives Correlates to Specific Myers-Briggs Types. *Medical Science Educator*, 25(3), pp.249–254.

50. Patient and public involvement in health professions education: a qualitative exploration

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Background: There is increasing recognition that patients and the public have an integral role in teaching healthcare professionals, such as helping to demonstrate the relevance of learning, fostering empathy and developing communication skills. The role of the public and patients in healthcare professional education has been largely passive, with consensus on how to best optimise public and patient involvement and engagement (PPI/E) in education yet to be achieved (Regan De Bere and Nunn, 2016). Consideration of key stakeholders' views, experiences and expectations of PPI/E is required to ensure authentic partnerships between higher education institutions and those who contribute to the education process. This study was designed to examine key stakeholders' views, experiences and expectations of PPI/E including the nature of the involvement, motivations for involvement, and requirements for deep and sustained PPI/E.

Description of work: Purposive and snowball sampling was used to identify patients, carers, patient advocates and academics for focus groups and semi-structured interviews. Focus groups were selected for public and patient participants to gain multiple perspectives in an interactive group setting. Interviews were selected for academics with an interest in PPI/E and were held in person and via the telephone. Focus groups and interviews were conducted until data saturation was achieved. Questions asked by the facilitator during interviews and focus group discussions were guided by theme sheets. Theme sheets were refined based on data generated from the scoping review of the literature and piloted prior to data collection. All data was audio-recorded, transcribed and anonymised.

Proposed evaluation: Data will be coded and thematically analysed in accordance with published guidance (Krueger and Casey, 2008). It is anticipated that the findings will help inform recommendations on how PPI/E in the education of healthcare professionals can be improved.

References:

Krueger, R. and Casey, M., 2008. *Focus groups: A practical guide for applied research*, SAGE Publications.

Regan de Bere, S. and Nunn, S., 2016. Towards a pedagogy for patient and public involvement in medical education. *Medical education*, 50(1), pp.79-92.

51. Using stakeholder engagement to develop Postgraduate Taught Programmes for Primary Care Pharmacists.

Authors: J. Sowter, D.P. Petty, [S.J. Martin](#), G. Quinn

Institution: University of Bradford.

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Background: For over 25 years the University of Bradford has successfully delivered high quality Postgraduate taught (PGT) Clinical Pharmacy Programmes for Secondary Care and Community Pharmacists. Recent initiatives supporting the development of pharmacists working in Primary Care (NHS England, 2016) led to discussions with stakeholders who suggested that similar PGT programmes aimed at pharmacists working in Primary Care would be beneficial.

Aims: To evaluate feedback from stakeholders to support curriculum development and delivery of new and innovative PGT Programmes for pharmacists working in Primary Care.

Method: After initial discussions with colleagues working in Primary Care, a stakeholder event was held. Delegates, academics, General Practitioners, Clinical Commissioning Group managers and pharmacists working in Primary Care explored actual and potential roles for practice pharmacists. Data captured included the types of skills and knowledge required for pharmacists working in general practice which was analysed into themes. These informed suggestions for curriculum development to meet identified learning needs.

Results: 56 participants attended the event. Evaluation identified the importance of “softer” skills including an understanding of the Primary Care team, clinical decision making, project management, quality improvement, staff management and leadership in addition to therapeutics and prescribing skills. A significant theme was recognition of the need to provide support for experienced pharmacists changing sector of practice as well as a longer term solution through the education and training of junior pharmacists to develop their knowledge and skills.

Conclusion: Stakeholder feedback led to the development of two new PGT Programmes The Clinical Pharmacy (Primary Care) programme, aimed at newly qualified pharmacist, delivers a broad, defined pathway which brings General Practice pharmacists to a minimum required level. The Advanced Pharmacy Practice (Primary Care) programme, aimed at more experienced pharmacists whether new to, or experienced with working in Primary Care, consists of optional modules which allows a route for experienced pharmacists to tailor their development and take account of previous learning and workforce needs.

Reference:

NHS England, 2016. *General Practice Forward View*, London

52. Teaching cross-sector medicines optimisation to primary care pharmacists using an expert patient

Authors: S.J. Martin, J. Sowter, G. Quinn, D.P. Petty

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Background: Working in general practice requires pharmacists to develop a detailed understanding of the complex issues involved with medicines optimisation between different healthcare sectors to facilitate patient centred care throughout the care pathway. In September 2018 the University of Bradford launched a new postgraduate “Advanced Therapeutics in Primary Care Practice” module. Innovative teaching methods for the module include the use of an expert patient in a clinical teaching session using the Cambridge Framework “Questioning-Informing” domain (Spencer *et al.*, 2000).

Aims: To evaluate student satisfaction for teaching of medicines optimisation across healthcare sectors to general practice pharmacists utilising the experiences of an expert patient.

Method: The teaching consisted of a two hour workshop in which an expert patient with long term medical conditions described personal experiences of medicines optimisation between Primary and Secondary Care. The patient journey was split into several stages. Key issues discussed included supply of “red or hospital only” drugs in Primary care, polypharmacy, synchronisation of complex medication supply and communication barriers regarding medication changes. Problems that the patient had encountered were discussed and options for possible strategies explored. Qualitative and quantitative evaluation of teaching was undertaken using anonymous student feedback questionnaires.

Results: Quantitative assessment of student feedback on study day evaluation forms scored highly (mean score 6, score 1-6 where 6=highest). Qualitative feedback showed that students had engaged with the interactive nature of the workshop “*The expert patient was the most useful part of the module*”

Conclusion: Pharmacists were able to reflect on previous experiences with cross sector scenarios and work with the patient to identify potential solutions for future practice. They valued this opportunity and felt it would impact on their practice. This successful model for patient involvement reflects level 2 for the “Ladder of Involvement framework” for service user involvement in teaching and learning. (Tew *et al.*, 2004).

Reference:

Spencer, J., Blackmore, D., Heard, S., McCrorie, P., McHaffie, D., Scherbier, A., Sen Gupta, T., Singh, K and Southgate, L., 2000. Patient-oriented learning: a review of the role of the patient in education of medical students. *Medical Education*; 34, pp.851-857

Tew, J., Gell, C., and Foster, S., 2004. Learning from experience. Involving service users and carers in mental health education and training. Nottingham: Higher Education Academy/National Institute for Mental Health in England/Trent Workforce Development Confederation

53. Medication Adherence: Developing a simulation tool for trainee Pharmacists

Authors: R. Matala, D. Wright.

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Background: Several studies have highlighted the benefits of using simulation-based interventions in pharmacy education to improve student performance. Medication adherence support is central to many pharmacist's activities, therefore developing an in depth understanding from the patient's perspective of medication taking could enhance their understanding, empathy and inform the clinical review and counselling for patients. (Hasan et al., 2017) (Witry, LaFever and Gu, 2017).

Description of work: The aim of this evaluation is to describe the effect of simulating complex medication taking in pre-registration trainee pharmacists recruited from the East of England hospital pre-registration training programme.

This simulation will take a phased approach starting with a medication taking experience and then integrating this activity with other practice skills to form a complex simulation. These practice skills will include clinical screening of prescriptions, dispensing, counselling, taking medication with real time cues, medication reviews and care planning in view of improving adherence.

In phase 1, trainees will have pre-dispensed medicines (in the form of sweets) to take for 7 days. They will report on adherence in real time. At the end of the simulation they will write a reflective account of the process and impact of regular medication taking on their daily life.

Proposed evaluation: Quantitative analysis will be conducted on self-reported adherence in order to identify reasons for and factors that contributed to non-adherence.

Qualitative analysis of Reflective accounts will allow testing of the hypothesis regarding change medication review practice and patient counselling behaviours, and focus group discussions will be used to identify how we can enhance the experience further and introduce methods to reduce intentional non-adherence.

Findings will inform phase 2 where trainees will be required to clinically review, dispense and counsel peers on a complex prescription. They will analyse the reported adherence and identify strategies to improve the adherence outcomes for their peer.

References:

Hasan, S., Chong, D., Se, W., Kumar, S., Ahmed, S. and Mittal, P. 2017. *Simulation-based instruction for pharmacy practice skill development: A review of the literature*. [online] Available at: <http://www.archivepp.com/article.asp?issn=2045-080X;year=2017;volume=8;issue=2;spage=43;epage=50;aulast=Hasan> [Accessed 29 Apr. 2019].

Witry, M., LaFever, M. and Gu, X. 2017. *A Narrative Review of Medication Adherence Educational Interventions for Health Professions Students*. [online] PubMed Central (PMC). Available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5508094/> [Accessed 29 Apr. 2019].

54. Developing an Innovative Trans-National Education Approach to the Teaching of Natural Products Chemistry.

Authors: S. E. Matthews, P. J. McDermott, A. Ganesan, T. H. Tran, L. M. Bui, T. Huynh, D. T. Pham, D. L. Tran.

Institution: University of East Anglia, Nguyen Tat Thanh University, Vietnam Institute for Tropical Technology.

Background: Traditional Vietnamese Medicine (TVM) plays an important and growing role in the treatment of disease in Vietnam (Pham, 2013). Furthermore, natural products based on medical folklore and plant screening (Eder, 2014), remains the most successful route for identification of new chemical entities with therapeutic potential. Thus, the teaching of natural products chemistry and the role of traditional medicine are important aspects of the education of Pharmacists and Chemists in both the UK and Vietnam and can serve as a basis for the development of innovative transnational education (TNE) approaches.

Description of work: In this project, we have developed two alternative modes of TNE, which enable students to experience cross-cultural learning without studying overseas. In the initial phase of this project we have prepared a series of open source multi-lingual videos to support natural products chemistry teaching. These resources have been incorporated into existing modules in both the UK and Vietnam and will be made available as open-source resources for the wider education community in both countries.

Proposed evaluation: We will present our findings from a mixed methods evaluation of these resources which will focus on learning gain and student perceptions of the learning resources. A bespoke concept inventory (Treagust, 1988) will be used to assess distance travelled in conceptual understanding through use of the resources. We will also implement a novel answer format (Michaelson, 2004) for the MCQs in the concept inventory that gives an implicit measure of self-assessment accuracy. We will discuss this methodology as well as the student's calibration between actual performance and their confidence in the context of self-efficacy and learning development. We will then disseminate our findings from focus group discussions which will be used to gather more context around the patterns we observe in the quantitative analysis.

References:

Eder, J., Sedrani, R., Wiesmann, C. 2014 *Nature Reviews Drug Discovery*, 13, 577.

Michaelson, L. K., Bauman-Knight, A. and Dee Fink, L., (2004) *Team Based Learning: A Transformative Use of Small Groups in Teaching*, Stylus Publishing, ISBN: 157922086X

Pham D. D., J. H. Yoo, B. Q. Tran, T. T. Ta. 2013. *Evidence-Based Complementary and Alternative Medicine*, 52, p. 181

Treagust, D. F., 1988 Development and use of Diagnostic Tests to Evaluate Students' Misconceptions in Science. *Int. J. Sci. Edu.*, 10:2, pp. 159-169

55. An initiative to enhance entrepreneurial skills among undergraduate pharmacy students.

Authors: S. McCarthy¹, P. Finnegan², G. Lavery³, A. Pope⁴, G. Barrett⁴.

Institution: ¹School of Pharmacy, University College Cork. ²Blackstone LaunchPad, University College Cork; ³School of Pharmacy, Queen's University Belfast; ⁴Cork University Business School, University College Cork.

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Background: Entrepreneurial skills are important for the holistic development of undergraduate students, so that as pharmacists, they can lead on the creation of innovative health-related services, technologies and therapies in an ever-changing healthcare environment (Lavery et al., 2015).

Aim: The aim of this initiative, implemented for the first time with 3rd year students, was to provide students with the opportunity to develop entrepreneurial skills.

Methods: A 1-day programme was developed by the multidisciplinary research team. Students received talks from established entrepreneurs and were guided through the process of idea generation (e.g. design thinking, problem identification, solution development, market research). Students worked in groups to develop a business idea which, at the end of the programme, they pitched to an evaluation panel. A pretest–post-test questionnaire design was implemented; the questionnaires were based on previous research in the area (Souitaris et al., 2007). Analysis was conducted using IBM SPSS Statistics Version 25. Thematic analysis was conducted on open-ended data.

Results: 41 (65%) and 35 (58%) students completed the pre- and post-questionnaires respectively. Overall increases in entrepreneurial attitudes and intention scores were observed, particularly among female students. Twelve students (37.5%), 10 of whom were female, responded that the programme drastically changed their 'heart and mind' and made them consider becoming an entrepreneur. The main themes identified from the findings of the programme were: i) Something different ii) Think in new ways iii) Think of pharmacy in new ways iv) Teamwork v) Inspiring.

Conclusion: The data from this research, albeit from a small study, suggests that this was a successful initiative, which provided students with the opportunity to enhance their ability to identify a business opportunity and increased their awareness of the attitudes, values and motivation of entrepreneurs. Further research should examine extending the initiative and investigate the potential for interprofessional entrepreneurial education.

References:

Lavery, G., Hanna, L.A., Haughey, S. and Hughes, C., 2015. Developing entrepreneurial skills in pharmacy students. *American journal of pharmaceutical education*, 79(7), p.106.

Souitaris, V., Zerbinati, S. and Al-Laham, A., 2007. Do entrepreneurship programmes raise entrepreneurial intention of science and engineering students? The effect of learning, inspiration and resources. *Journal of Business venturing*, 22(4), pp.566-591.

56. The value of a secondary school lesson in improving sun safe knowledge

Authors: B. Morris and L. Ziad

Institution: Liverpool John Moores University

Background: Primary schools have access to a number of resources to help improve pupils' appreciation of safe behaviour regarding sun exposure. Currently there are limited resources for secondary schools and studies indicate knowledge and behaviour around sun safety could be improved (Kyle et al., 2014).

Skcin, a national charity aiming to reduce skin cancer through education, indicated a stand-alone secondary school lesson may be useful. NICE 2016 recommend children should be made aware of the risks and benefits of sunlight.

As part of a final year research project three students developed and delivered an interactive lesson in two local schools.

Description of work: Pharmacy students investigated what information could be useful for secondary school pupils and what methods of delivery could be effective. They developed three activities planned to last approximately one hour in total. This helped them meet many pharmacy learning outcomes.

Part one involved participants responding with voting cards to facts and misconceptions about the sun, safe sun behaviour and skin cancer. Part two was a domino based group activity encouraging pupils to match questions with facts. Part three was a group based activity requiring pupils to produce a poster encouraging safer behaviour in the sun.

Two schools were recruited prospectively and ethics approval granted for a study involving pupils from Year Nine and above. Lessons were delivered. Resources were produced by the pharmacy students and sets left with the schools.

Proposed evaluation: A paper questionnaire was administered to consenting participants following the lesson.

Responses to Likert scale questions will be analysed to evaluate how the lesson was perceived by pupils. Some comparative analysis will be undertaken to identify any interesting correlations between student groups and particular responses. Free text responses will be analysed for any emerging themes. Pharmacy students will describe personal development benefits of the project.

References:

Kyle, R.G., MacMillan, I., Forbat, L., Neal, R.D., O'Carroll, R.E., Haw, S. and Hubbard, G., 2014. Scottish adolescents' sun-related behaviours, tanning attitudes and associations with skin cancer awareness: a cross-sectional study. *BMJ open*, 4(5), p.e005137.

National Institute for Health and Care Excellence., 2016. Sunlight exposure: risks and benefits [NG34]. London: National Institute for Health and Care Excellence.

57. BNF app training for nursing students

Authors: B. Morris and R.Abdulrazeq

Institution: Liverpool John Moores University.

Background: Following the introduction of the BNF and BNFc app and BNF Online many NHS Trusts have reduced their reliance on paper copies of the British National Formulary (BNF) and moved to accessing information electronically in line with various NHS targets to “go Paperless” (Honeyman et al., 2016).

Indications are that electronic access is efficient and helpful (McSherry and Prashar, 2017). A pilot session outlining how to use electronic versions of the BNF was requested by and delivered to groups of Non-Medical Prescribers in two NHS Hospital Trusts.

Feedback from the sessions was extremely positive and it was suggested the session could be useful for undergraduate nursing and pharmacy students. Following discussion with the School of Nursing and Allied Health further sessions were arranged for three cohorts of nursing students.

Description of work: Two final year pharmacy undergraduates reviewed and updated the existing teaching session, checking for accuracy and currency. Nursing students were instructed how to access and download the app and an interactive question and answer session gathered some of their thoughts on the use of the app.

The session consisted of a brief BNF app outline followed by facilitated worksheets for nursing students to complete. Worksheet questions required students to locate answers via the BNF or BNFc app and were selected to align with the particular nursing specialisms. Engagement data was collected.

Proposed evaluation: A paper questionnaire was administered to consenting participants following the workshop.

Responses to Likert scale questions will be analysed to evaluate how the session was perceived by nursing students. Some comparative analysis will be undertaken to identify any interesting correlations between student groups and particular responses.

Free text responses will be analysed for any emerging themes and future Interprofessional Learning opportunities explored. Mapping against General Pharmaceutical Council standard 10 descriptors will be undertaken.

References:

Honeyman, M., Dunn, P. and McKenna, H., 2016. A digital NHS? An introduction to the digital agenda and plans for implementation. London. The King's Fund.

McSherry, C and Prashar, P. 2017. How to use the new BNF and BNF for Children app .The Pharmaceutical Journal, July 2017, Vol 299, No 7903, online | DOI: 10.1211/PJ.2017.20203143

58. An evaluation of one year’s data on the uptake of community pharmacist clinical pharmacy modular training, delivered on behalf of the Pharmacy Integration Fund (PhIF).

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Background: The PhIF was established in October 2016 (NHS England), to promote the greater integration of pharmacy professionals in local NHS care models. As part of the implementation strategies, funding was made available for eligible community pharmacists to undertake postgraduate clinical pharmacy courses.

The data to be presented was drawn from a full year’s intake of distance-learning students.

Aims: To collect, collate and analyse data on: Numbers of enrolled students and the run rates; Which module choices had the greatest uptake; Patterns in the first three module choices, which could be linked with NHS service transformation goals; Demographic data on where the students were employed.

Method: Descriptive statistical analysis was performed on data routinely collected, in relation to students on modular study pathways. This included module choices, recruitment rates and applicant demographics.

Results: There have been 204 registered students. 136 modules have been completed, with a further 240 in progress.

Table 1 shows the most popular first three module themes, chosen by the individual students.

Table 1: First three module choices, by key themes

Module Themes (first three choices)	Total number of students	Percentage of students
Cardiovascular Disease	168	82%
Preparation for working in general practice	148	73%
Endocrine (inc. diabetes)	62	30%
Leadership & Change Management	38	19%
Respiratory Disease	26	13%

The geographical spread of applicants showed a nationwide pattern, with only 32% coming from the West Midlands (historical catchment for PG Pharmacy courses). (Table 2)

Table 2: Breakdown of student applications per region (England only)

Students by Location

Region	Total	Percentage of students
North East	23	11%
North West	34	17%
East Midlands	19	9%
West Midlands	65	32%
East of England	12	6%
South East	39	19%
South West	12	6%
Total	204	

Conclusion: So far, the module choices made by students, with a preference for cardiovascular, endocrine (including diabetes) and respiratory disorders, would support that the pharmacists have engaged with the most common long-term conditions seen in primary care. They are also indicating a preference for modules that would prepare them for working alongside local general practice multi-disciplinary teams. This would be in-line with key goals of the PhIF and the NHS Long Term Plan (NHS England, 2019).

References:

NHS England., 2016. Pharmacy Integration Fund [online]. *NHS England*. [Viewed 4/3/2019]. Available from: <https://www.england.nhs.uk/pharmacy/pharmacy-integration-fund/>

NHS England., 2019. The NHS Long Term Plan [online]. *NHS England*. [Viewed 4/3/2019]. Available from: <https://www.longtermplan.nhs.uk/online-version/chapter-4-nhs-staff-will-get-the-backing-they-need/5-supporting-our-current-nhs-staff/>

59. Exploring the impact of Research Culture and Supervision on Post Graduate Researcher engagement within the School of Pharmacy.

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Background: Institutional research culture is influential to a Post Graduate Researcher's (PGRs) PhD journey and their future career path. It can also impact on how well their research is conducted and the extent of dissemination (The Royal Society 2018). Recent Postgraduate Research Experience Survey results indicated that 76% of PGRs felt their supervisor helped them to identify their training and developmental needs and 68% believed they had frequent opportunities to discuss their research with a wider community. Despite these encouraging results, engagement with School PGR seminars and meetings is observed to be poor.

Aim: To explore the impacts of research culture and supervision on PGR engagement by exploring individual perceptions and experiences of resources, environment and training opportunities.

Method: PGRs within the School (n=60) were invited to take part in an anonymous online survey. Open and closed questions were developed based on a review of the current literature surrounding research culture. Responses (n=14) were subsequently used to develop a semi structured interview topic guide. Interviews were conducted with willing participants (n=5) and thematic analysis was used to develop arising themes. Ethical approval was obtained.

Results: PGRs wanted to be part of and engage with a research culture, where they could "promote, celebrate and... share ideas and experiences" (participant v). However, the rare use of facilities such as the dedicated PGR lounge and poor attendance at seminars and workshops was felt to hinder this. This was primarily based on lack of encouragement for these activities from supervisors. PGRs reported the need to have regular, informal contact with their supervisors, alongside monthly meetings.

Conclusion: Supervisor encouragement was concluded to be one of the major contributing factors driving student engagement with School research culture. This project was limited by the low number of respondents and it is likely that those PGRs who participated were already contributing significantly to the research culture.

References:

The Royal society. 2018. Research Culture | Royal Society. [online] Available at: <https://royalsociety.org/topics-policy/projects/research-culture/> [Accessed 31 Oct. 2018].

60. Gamification in MPharm teaching

Authors: D. Breen, A.C. Boyter, G. Lynas

Institution: University of Strathclyde

Background: Gamification is the use of game mechanics to promote engagement and enjoyment in a variety of tasks for the purposes of learning. This interactive and collaborative approach when applied to healthcare education has been shown to improve student knowledge and understanding (Shawaqfeh, 2015), and further develops communication and interpersonal skills in a range of settings (Kim et al, 2018). The benefits of these activities rely on well-designed games, based on the “laws of learning” and the “laws of good game design” (Mora et al., 2017).

Aims: To develop pharmacy-based games, that provide an interactive peer led learning activity and evaluate their ability to increase student engagement in key areas of the MPharm curriculum.

Method: Final year project students surveyed all 107 final year MPharm students using the Ombea® audience response system. Analysis of these results identified pharmaceutical/medicinal chemistry and pharmacokinetics as areas of interest, which guided the focus, and design of the games. Students developed game prototypes and a process of initial testing and refinement was carried out within the development group. Beta testing with small groups of students from final year was conducted (3 groups, 8 students per group). Feedback was collected from each test as a group interview and individual questionnaire to assess engagement and effectiveness.

Results: This project produced a versatile new game - “Pharmopoly”. This fits well within our integrated spiral curriculum, with game mechanics which place particular emphasis on the chemistry and pharmacokinetic concerns raised, providing a fun and novel way for students to engage with course content. Pharmopoly represents a versatile teaching tool which can be used to target specific year groups and subjects through development of appropriate question banks while maintaining the game mechanics.

Conclusion: This game provided a fun and engaging teaching tool while supporting the attainment of key learning outcomes as demonstrated by the positive student responses in the post-test evaluation. However, this game needs to be further tested with larger groups of student in a classroom setting. These results add to the growing body of literature supporting gamification as an effective tool in healthcare education.

References:

Kim, S., Song, K., Lockee, B., Burton, J. 2018, Gamification in Learning and Education - Enjoy Learning Like Gaming, Springer International Publishing AG, DOI: 10.1007/978-3-319-47283-6

Mora, A., Riera, D., González, C., and Arnedo-Moreno, J. 2017. Gamification: A systematic review of design frameworks, Journal of Computing in Higher Education. DOI: 10.1007/s12528-017-9150-4

Shawaqfeh, M.S. 2015. Gamification as a Learning Method in Pharmacy Education, J Pharma Care Health Sys, DOI: 10.4172/jpchs.S2-004

61. The Benefits of Training and Implementing Clinical Prioritisation Pharmacy Technicians at North Bristol Trust (NBT)

Authors: M.Carter, J.Hamer, R.Smith

Institution: Pharmacy Workforce Development South (PWDS), North Bristol NHS Trust- Southmead Hospital.

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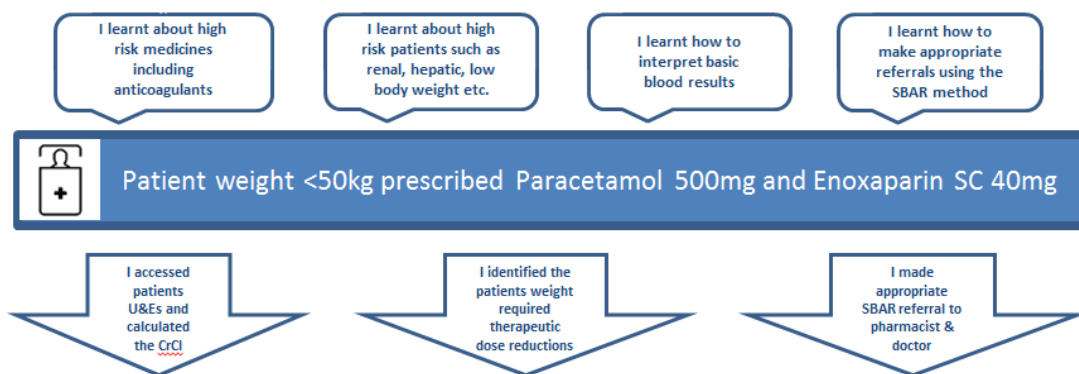
Background: Pharmacists and ‘clinical’ pharmacy technicians need to spend more time on clinical services than other activities (Carter, 2016 p.31) and increase capacity to deliver the NHS Long Term Plan (NHS England, 2019). Pharmacy services can be transformed by optimising the skill mix of the pharmacy workforce to ensure high risk patients and medicines are prioritised to improve outcomes and reduce risk. The clinical prioritisation training programme develops new skills enabling pharmacy technicians to meet the demands for this evolving clinical role.

Aims: Demonstrate the benefits of training and upskilling pharmacy technicians to apply clinical prioritisation skills at NBT.

Method: A change in practice as a result of the training programme undertaken by pharmacy technicians was evaluated by recording pharmacist activity data was collected before (2017) and after (2018) implementation of the new clinical prioritisation role. Clinical Prioritisation pharmacy technicians applied a Red, Amber and Green ranking tool to prioritise patients for the pharmacist and recorded the interventions they could identify as a result of the knowledge gained from the training programme. Feedback from pharmacy technicians who had undergone the training programme was obtained.

Results: The pharmacy technicians who undertook the training to develop clinical prioritisation skills were able to identify, manage and refer significant interventions. This practice was deliverable through the underpinning knowledge taught in the clinical prioritisation training programme such as identifying high risk medicines and patients, interpretation of blood results and methods of referral.

An example of its application in practice:



Feedback shows the training programme for pharmacy technicians to develop clinical prioritisation skills has benefits to pharmacy skill-mix and job satisfaction.

- ❑ *'The programme has given me new knowledge which helps identify problems with patients medications that I may not have recognised previously; I look at a drug chart in a completely new way'*
- ❑ *'Gives me the confidence to have greater clinical input, reigniting my passion as a pharmacy technician'*

Conclusion: Pharmacy technicians are valued members of the ward based clinical pharmacy team. Their role can be greatly enhanced by providing post registration training which develops new relevant skill sets to complement their knowledge and skills and enhance their roles and responsibilities. The clinical prioritisation training programme has provided a structured competency based framework where pharmacy technicians can demonstrate that they have the necessary skills to develop into advanced practice and improve outcomes for patients

References:

Publications: Carter of Coles, Lord P.,2016. Operational Productivity and performance in English NHS acute Hospitals: unwanted variations. An independent report for the Department of Health (p31)

NHS England, 2019. The NHS Long Term NHS Plan.

62. Calculating the cost of student Fitness to Practise Investigations

Authors: P. Carter, S. McQueen

Institution: University of Sunderland

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Background: The Faculty of Health Sciences and Wellbeing, University of Sunderland, includes Nursing, Pharmacy and Health, Paramedic and Clinical Sciences, all regulated by professional bodies. Fitness to Practise (FtP) investigations commence when there is an allegation that a student's behaviour or health may impact on the safety of patients, the public, other students and staff and on the public's trust in the profession (David and Ellson, 2015).

Aims: FtP Investigations can be resource intensive in terms of staff time so the aim of this work was to establish the real financial cost of a 'typical' FtP investigation that included an investigation and Hearing.

Method: All allegations (academic years 2016-2019) that were accepted by the Faculty for investigation as potential breaches of FtP within professional codes of conduct were analysed. The cases judged to typically represent a range of issues that doubted the student's suitability to stay on the professional programme and therefore register with a professional regulatory body were chosen. The representative cases were (i) Unprofessional behaviour (First year student, Adult Nursing), (ii) Dishonesty/plagiarism by cheating in exams (4th year student, Pharmacy), (iii) Dishonesty by misrepresentation of driving offence (2nd year student, Pharmacy) and (iv) Persistent inappropriate behaviour (First year student, Adult Nursing). Case (ii) required two Hearings as a result of a successful appeal and Case (iv) reconvened the Hearing since further information was required.

Results: Of the 29 total allegation cases presented to the Fitness to Practice Faculty Lead (average 0.86% of eligible students per year), 25 required investigation by an investigation officer, and of this number, 10 required a Fitness to Practise Hearing in order to conclude the case. From records, the time for each university staff member to undertake various tasks was estimated and used for middle of scale staff cost calculations with added overheads. The total staff time for each case was (i) 141 hrs., (ii) 219 hrs., (iii) 105 hrs., and (iv) 102 hrs. and this yielded an estimated average cost of £7471 per case. The average time spent by the Investigating Officer and Chair of FtP/Appeal Panel for each case was 35 and 21 hours respectively and each Hearing required between 30 and 48 hrs. total staff time.

Conclusion: Pharmacy students must spend a significant time in practice environments to develop competence in providing care to patients and the public, to a level required by the GPhC to register as a pharmacist. FtP as with qualified health professionals, is essential to safeguard patients, the public and the professions. The results of this study will contribute to a deeper understanding of staff time resource allocation with respect to FtP incidents and raise awareness of the importance of improved prevention strategies and interventions in professional programmes to raise standards and minimise the occurrence of prolonged expensive FtP cases. .

Reference:

David, T.J. and Ellson, S., 2015. Fitness to practise procedures for medical students. *British Journal of Hospital Medicine*, 76(7), pp.405-408.

63. Do females perform better academically? An analysis of gender performance in the MPharm and A-level data for STEM subjects.

Authors: E. Dunwoody, M. Hall and L-A. Hanna

Institution: Queen’s University Belfast

Background: There is an extensive amount of literature based on students’ academic performance at university (Richardson et al, 2012). Several papers postulate reasons for this but relatively few investigate gender as a factor affecting performance.

Aims: This study aimed to investigate whether there is a difference in academic performance between genders within the MPharm degree programme at the School of Pharmacy, Queens University, Belfast (QUB). Objectives were to: ascertain if there were differences in performance between stages and modules in the MPharm degree and to investigate performance difference in A- level STEM subjects commonly taken by entrants to the MPharm degree.

Method: Anonymised gender-disaggregated MPharm module results were obtained from the School of Pharmacy for the past 5 years of student cohorts (n=627). A-level results from 2010 to 2018 for four Science Technology and Maths (STEM) subjects (Chemistry, Biology, Physics and Maths) were obtained from the Joint Council for Qualifications (JCQ) website (Joint Council for Qualifications, 2018). All data were analysed using Microsoft Excel® (2018) to calculate mean marks and grade profiles for male and female students. Gender performance within and between the data sets was plotted using bar charts i.e. STEM subject grades and MPharm module results, and trends in performance noted.

Results: Overall, male and female students achieved similar grades for each STEM subject, with females marginally out-performing male students. There is a drop in the percentage of female students achieving the highest grades in some STEM subjects. There is a large difference in academic performance between genders in the MPharm degree, with females achieving higher marks in 33/36 of the modules over the five-year period (see Figure 1).

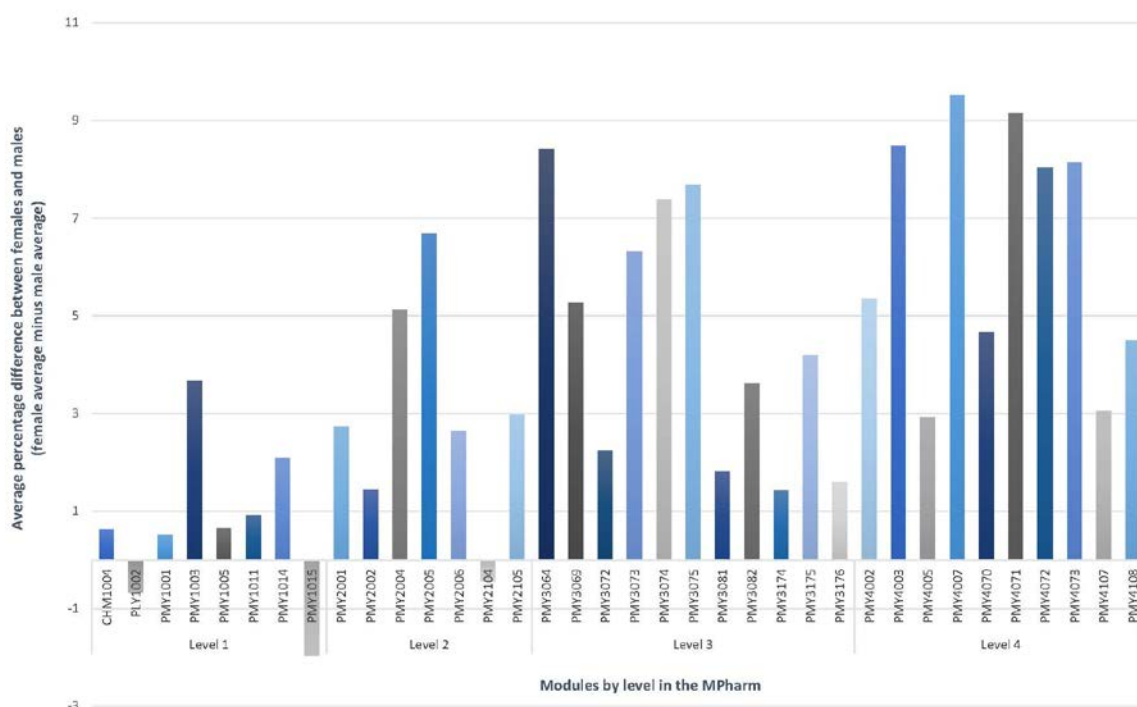


Figure 1

Conclusion: Data show that while there is little difference between gender performance at A-level in STEM subjects, females outperform males in the MPharm degree subjects. This performance difference widens as students progress through the degree. Further research is required to understand the reasons why males underperform on the MPharm degree at QUB.

References:

Richardson, M., Abraham, C. and Bond, R., 2012. Psychological correlates of university students' academic performance: A systematic review and meta-analysis. *Psychological bulletin*, 138(2), p.353.

Joint Council for Qualifications. (2018). Examination results – A-Levels. [Online]. [10 Nov 2018]. Available from: <https://www.jcq.org.uk/examination-results/a-levels>

64. Developing a novel online learning environment, and supportive study days, to replicate clinical practice for pharmacy professionals

Authors: S. Greensmith, M. Shaw, A. Sellers.

Institution: Centre for Pharmacy Postgraduate Education

Background: CPPE is providing a professional developmental pathway for pharmacists and pharmacy technicians, the *Medicines optimisation in care homes training pathway for pharmacy professionals*. This is funded by Health Education England (HEE) (Health Education England, 2018) through the NHS England Pharmacy Integration Fund (NHS England, 2016). All pharmacy professionals on this pathway work at least part time in care homes. The second module in the pathway *Clinical knowledge and its application for people living in care homes* includes five complex cases which focus on key clinical topics. The intention is that these case studies will help learners to consider how they can optimise medicines by managing polypharmacy, contributing to deprescribing, reducing hospital admissions and minimising waste.

Description of work: We use an online interactive learning platform where the cases are presented and linked to 'fact sheets' about the relevant clinical conditions. The learners work through each online case and have the opportunity through online forums to discuss the case. They then attend a study day where they further discuss the case in small groups, learn from their peers and meet a speaker who brings experience and expertise to the day. This learning material has been developed in collaboration with clinical experts. It has been subject to CPPE's quality assurance process which involves internal educational review and external expert review.

Proposed evaluation: We gather data using feedback forms to determine the learners' experience of both the online platform and study days. This includes establishing the learners' perspective on the value of the content, relevance to their practice and format of the learning delivery. We use the data to improve the learning and it forms part of regular reports to HEE. Learners self-evaluate their progress by completing 'Evidence of impact in role' statements. NHS England will evaluate the impact the learning has had using central quality improvement data collection.

References:

Health Education England., 2018, *Pharmacy Integration Fund training*, accessed 6 March 2019, www.hee.nhs.uk/our-work/pharmacy/pharmacy-integration-fund

NHS England., 2016, *Pharmacy Integration Fund*, accessed 6 March 2019, www.england.nhs.uk/publication/pharmacy-integration-fund-briefing-november-2016

65. What can educators learn from the types of clinical interventions made by community and hospital pharmacists?

Authors: N. Gulzar¹, A. Latif², S. Gohil¹, T. Ansong¹

Institution: ¹School of Pharmacy, De Montfort University. ² School of Health Sciences, University of Nottingham.

Background: As the pharmacist role continues to expand (Scahill et al, 2017), it is increasingly important for postgraduate (PG) educators to understand individual pharmacist learning priorities. Continuing education is important for lifelong learning and should reflect meeting current practice challenges. (Tofade et al, 2015).

Aims: The aim of this evaluation is to provide clinical educators insights into the type of clinical interventions made by community pharmacists and how this compares to hospital pharmacists.

Method: As part of De Montfort University's PG Clinical Diploma, there is a pharmacy education module called 'Clinical Foundations'. One of the assessment components requires pharmacists to self-select and submit four clinical interventions from a variety of clinical topics to demonstrate learning from the module and that which is directly relevant to their professional practice. Available topics include: 1. Assessment of Clinical Data 2. Antimicrobial Stewardship 3. Use of Medical Records 4. Drug Interactions 5. Therapeutic Drug Monitoring (TDM) 6. Drug Handling in Special Groups (e.g. pregnancy, paediatrics) 7. Venous Thromboembolism (VTE). The interventions submitted by community pharmacists were compared to those from the hospital sector. Anonymised data was collected, with permission, from their final assignment.

Results: Data was collected from a cohort of postgraduate pharmacists (101 from community, 97 from hospital). The Drug Interactions topic accounted for the highest number of interventions from each sector (40.1% in community vs 27.0% in hospital). Community pharmacists submitted approximately three times as many interventions than hospital pharmacist on Drug Handling in Special Groups (34.7% vs 12.1%). Hospital pharmacists submitted greater numbers in Assessment of Clinical Data (26.8% vs 8.5, TDM (7.7% vs 3.7%) and VTE (10.2% vs 3%).

Conclusion: This investigation is of importance to pharmacist educators. It demonstrates that whilst there are areas of common practice between different pharmacy sectors there are also areas of differences. In order to improve pharmacists' engagement with the widest possible scope of clinical interventions, pharmacy educators need to be mindful of intra-disciplinary expectations. To improve their scope of practice, further practical learning examples / vignettes could be used to expose pharmacist to clinical situations that they would not otherwise experience. Data was collected in one institution so the findings may not be generalisable to all pharmacists.

References:

Scahill, S.L., Atif, M. and Babar, Z.U., 2017. Defining pharmacy and its practice: a conceptual model for an international audience. *Integrated pharmacy research & practice*, 6, p.121.

Tofade, T., Duggan, C., Rouse, M. and Anderson, C., 2015. The responsibility of advancing continuing professional development and continuing education globally. *American journal of pharmaceutical education*, 79(2).

66. The contemporary prescriber: improving working relationships between disciplines

Authors: T. Harrison, H Dunbar, K Ford

Institution: De Montfort University

Background: UK health policy increasingly promotes collaborative working and integrated care. Shifting boundaries that have existed between traditional roles, with many professions working from common competency frameworks, for example, in prescribing practice. Interprofessional Education (IPE) is acknowledged as an effective approach to enabling collaborative practice (World Health Organisation, 2011), however, key to success is the opportunity for genuine practical engagement and interaction, allowing development of mutual respect and insight into the perspectives of other professions to facilitate effective communication (Gilligan, Outram and Levett-Jones, 2014).

Description of work: Adopting a flipped classroom approach existing workshop material, historically delivered by face to face teaching to multidisciplinary groups of pharmacy, nursing and allied healthcare students, has been transferred to online and e-learning formats. Following this, a workshop using a single collaborative problem-based approach focusing on a complex case study, a vulnerable patient with complex problems. Students are divided into multidisciplinary teams to explore legal, ethical and professional aspects of the case, together with patient management and therapeutics. Facilitated discussion between teams who have explored different aspects of the case, a plenary session, reflection and personal development planning conclude the cycle of learning.

Evaluation: Using a Likert scale questionnaire, students complete a pre and post self- assessment of their knowledge and confidence relating to the workshop learning outcomes. Open questions are used to explore experiences of interprofessional learning, skill and knowledge acquisition, and identified personal development. Comparisons of pre and post workshop scores are analysed using descriptive statistics for each cohort level and each single profession. Thematic analysis of open questions are used to explore the student experiences of the approach to learning and course development.

References:

Gilligan, C., Outram, S. and Levett-Jones, T. , 2014. Recommendations from recent graduates in medicine, nursing and pharmacy on improving interprofessional education in university programs: a qualitative study. *BMC Medical Education*, 14 (1), p. 52.

World Health Organisation. 2011. *Framework for Action on Interprofessional Education and Collaborative Practice*. WHO: Geneva.

67. A student-led curriculum review of undergraduate programme.

Authors: A. Iannetti, P. Masadur, L. Temple, N. Kyei, H. Nazar

Institution: Newcastle University

Background: At the School of Pharmacy, we have mapped out learning outcomes of the undergraduate Masters of Pharmacy (MPharm) curriculum. This is intended to improve the transparency of the horizontal and vertical integration of concepts within the programme, allowing staff to augment further opportunities for linkages and address any duplication or incoherency (Kinchin IM, 2014). The student perspective is required to highlight gaps in knowledge and discrepancies but also areas of successful integration and knowledge development (Healey, 2014)

Description of work: Academic staff have produced concept maps for the teaching and learning across three body systems taught in Stage 2 of undergraduate programme. These include the teaching disciplines of pharmacology, medicinal chemistry, pharmaceuticals, clinical practice and public health. Three students from Stage 3 of undergraduate programme were recruited as interns to hold focus groups with 6-8 fellow colleagues. Each of the three students was assigned one body system and tasked to undertake a series of 3 iterative focus groups to collect the student learning perspective of the respective body system. The interns audio-recorded the focus groups with consent and developed concept maps to best illustrate the focus group discussions. Staff and intern students have worked in partnership to compare the student maps to the academic concept map and probe the congruence and incongruence.

Proposed evaluation: Currently the three recruited students have held two focus group each. The students have started to list concepts related to the respective body systems. In the last focus group, the students will revisit these findings, optimise them and start to arrange these concepts in relation to their hierarchy and interconnectedness with each other. The three body systems will be mapped out by the students by Summer 2019. The anticipation is that this student-staff relationship will continue beyond the project, so that the student perspective is incorporated into curriculum review, design and delivery moving forward.

References:

Healey, M., Flint, A., and Harrington, K., 2014. Engagement through partnership: students as partners in learning and teaching in Higher Education. *The Higher Education Academy*

Kinchin, I. M., 2014 Concept mapping as learning tool in Higher Education: A critical analysis of recent reviews. *Journal of Continuing Higher Education*, 62, pp.39-49

68. Experiential Learning in MPharm Programmes: a Survey of UK Universities

Authors: SA Jacob, AC Boyter

Institution: Strathclyde Institute of Pharmacy and Biomedical Sciences, University of Strathclyde

Background: The General Pharmaceutical Council's (GPhC) Standards for the Initial Education and Training of Pharmacists has stressed the importance of experiential learning (EL) in the MPharm, with stipulations that EL should increase year on year, and that tutors receive the necessary support (General Pharmaceutical Council, 2011).

Aims: To determine how universities in the United Kingdom currently structure their EL in the MPharm, and assess how the standards specified by the GPhC are met.

Method: Staff in charge of EL in MPharm programmes were surveyed, using a 31-item on-line questionnaire, which consisted of open and close-ended questions. Variables of interest were administration and structure of the EL, tutor issues, and placement sites. To rank the challenges faced, the Relative Importance Index (RII) was calculated (Jarkas and Bitar, 2012).

Results: Twenty (66.7%) universities responded. EL coordinators were mostly academic/teaching fellows (19), and spent 0.29 ± 0.31 Full Time Equivalent on coordination. In 53.8% of universities, tutors completed training annually, with topics primarily focusing on placement structure (85.7%) and requirements (78.6%). Total placement hours in all practice sites over the four years of study ranged from 54 to 496 hours, mainly in hospital and community pharmacy, but also hospices, prisons, and nursing homes. RII calculation revealed the three biggest challenges faced were obtaining/retaining hospital placements (81.82), financial support (80) and quality assurance of tutors (60).

Conclusion: While there has been an increase in the variety of placement sites and EL hours since the last survey in 2003 (Wilson et al., 2006), universities still face the challenges of obtaining placement sites and financial support. There are also gaps in tutor training and development. More standardisation and regulation with regard to the quality assurance of the programme, placement sites, and tutors is needed to ensure students obtain the most out of their placements.

References:

General Pharmaceutical Council., 2011. Future pharmacists: Standards for the initial education and training of pharmacists. London, UK: General Pharmaceutical Council.

Jarkas, A.M. and Bitar, C.G., 2011. Factors affecting construction labor productivity in Kuwait. *Journal of construction engineering and management*, 138(7), pp.811-820.

Wilson, K., Langley, C., Jesson, J. and Hatfield, K., 2006. Mapping teaching, learning and assessment in the MPharm in UK schools of pharmacy. *The Pharmaceutical Journal*, 277. pp.369-372.

69. Identification of Learning Preferences and Background Knowledge Differences to Facilitate Students' Learning and Experience.

Authors: A. Latif, L. Chen, C. Demonacos, J. Hall, K. Williams.

Institution: Division of Pharmacy and Optometry, School of Health Sciences, Faculty of Biology, Medicine and Health, University of Manchester.

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Background: Cancer biology is an optional unit for the final-year medicinal chemistry and pharmacy programmes. The considerable variation of student's background knowledge in advanced chemistry for medicinal chemists and a combination of biology and chemistry for pharmacy students affect their ability to understand advance topics taught in this unit. This pilot study was aimed to inform the design of taught materials by identifying students' learning preferences and background in subject field. This information was used to bridge the knowledge gap and enhance efficient learning for students.

Method: An on-line survey combining the on-line Visual, Aural, Read/write, Kinesthetic(VARK) learning style questionnaire and lecture-specific background knowledge related questions was conducted (fall semester-2017-2018). VARK questionnaire was used to identify each students' learning preference by providing a platform for students to reflect on their learning style. Also, 20 questions (two questions per lecture) were used to evaluate students' background knowledge and ability to understand the lectures. The questionnaire was sent to all students via email and students were asked to fill these online independently without text book or support from their colleagues within two weeks. A descriptive statistic was used to report the results.

Results: Most students (58.3%) of this cohort(n=12) were multimodal learners, followed by visual learners (25%) and read/write learners (16.7%). Further, with the background questionnaire majority of the students knew correct answer to 14 questions. The knowledge for the remainder 6 questions was lower, only 33%-83% of the students knew correct answer.

Conclusions: Guided by this survey results, staff were able to (where appropriate) supply relevant material to bring everyone's background to a similar level and facilitate learning using different aids (such as: visual aids and papers). Future work will be developed to explore the differences between chemistry and pharmacy students, impact of this on student grades and student satisfaction with the unit.

70. Undergraduate Pharmacy and Medical student views on working inter-professionally using patient-centred endocrinology workshop.

Authors: W. Leadbeater, S. Baig, N. Lascar, N. Lewis, R. Edwards.

Institution: Aston University.

Background: With the recognised value to patient care and collaborative practice, inter-professional learning (IPL) (Barr et al., 2016) activities have been developed and integrated throughout the MPharm curriculum at Aston University. A new IPL activity co-developed with the medical school exploited the common theme of endocrinology, which both programmes deliver in the same semester. The aims of the session are to (i) develop student endocrinology knowledge in line with the curriculum for both programmes, (ii) develop the students' awareness and knowledge of their own professional role and that of others, and (iii) encourage collaboration to improve patient care in a simulated patient-centred scenario.

Description of work: The IPL developed by pharmacists and medics will use a scenario of a post-surgery patient after thyroidectomy with co-morbidity of diabetes. In small mixed groups, second year pharmacy and first year medical students will work together to review the case, evaluate bedside clinical information, communicate with the patient and consider discharge medication. The simulated ward environment will provide a more authentic experience, supported by student volunteers to act as patients. Pharmacists and medics together will facilitate the session.

Proposed evaluation: Students will be invited to complete a questionnaire at the end of each session, to gather their opinion. All questionnaires will be voluntary and anonymous. There will be nine Likert scale questions, with five ratings from strongly agree, to, strongly disagree. As well as four open questions and a final comments box, which will be assessed using thematic analysis. The questions will evaluate via descriptive statistics (i) student perception of learning from, and with, each other, (ii) their perception of the importance of working with other professional programmes and (iii) organisation of the session. Using the open questions will enable reflection on what they learned from, and taught their peers to improve understanding.

Reference:

Barr, H., Gray, R., Helme, M., Low, H., and Reeves, S., 2016. Interprofessional Education Guidelines. London: CAIPE.

71. “This gave me an insight into hospital pharmacy!”: MPharm hospital orientation placements, facilitated by pre-registration pharmacists.

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Institution: ¹Aston University. ²University Hospitals Birmingham NHS Foundation Trust.

³Birmingham Women’s and Children’s NHS Foundation Trust. ⁴South Warwickshire NHS Foundation Trust. ⁵University Hospitals Coventry and Warwickshire NHS Trust. ⁶Sandwell and West Birmingham Hospitals NHS Trust.

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Background: Interaction with patients and the healthcare context is essential for confident and competent pharmacy graduates and is a requirement of the UK pharmacy regulator. Despite this, delivery of student placement experience in MPharm courses is an ongoing challenge for Schools of Pharmacy in the current funding climate. Alternative ways of resourcing delivery of placement experiences need to be explored.

Aims: To explore the feasibility of using pre-registration pharmacists to deliver a hospital orientation placement experience for year 1 pharmacy students.

Method: Year 1 MPharm student at Aston University (n=167) visited 6 hospital sites in small groups (n=6) during 1 week in December 2018. Sessions were facilitated by pre-registration trainees following training from academic staff and teacher practitioners. The session explored the patient journey, the role of pharmacy in addition to general orientation to a hospital and ward environment. Student and pre-reg views were collected after the event via surveys and evidence statements.

Results: Student feedback about the experience was overwhelmingly positive. Comments included: *‘I felt I gained a lot of useful pharmacy related information that I would not have learnt if I did not complete this placement.’* One student felt that the session could have been more interactive with patients, however this was not the purpose of the placement. Feedback from the pre-regs indicated that they enjoyed the experience *‘I felt the sessions were beneficial and I wished I had them’*. It also enabled them to record evidence for “contributing to the education and training of other members of the team” (GPhC, 2011).

Conclusion: This placement activity was successful both in terms of the MPharm student experience and developing the pre-registration pharmacists in education and training. The logistics of large student numbers and 6 hospital sites were a challenge but it appears to have been worth the effort involved.

References:

General Pharmaceutical Council (GPhC), 2011. Future pharmacists: standards for the initial education and training of pharmacists. London: GPhC.

72. Use of Reality Television in Video Case-Based Pharmacy Practice Teaching

Authors: E. Lim

Institution: School of Pharmacy and Biomedical Science, University of Central Lancashire

Background: Case studies are used to help students apply scientific and theoretical knowledge within clinical contexts derived from real practice. Text-based cases are widely used in pharmacy practice teaching at a local university. These are easy to develop, cheap and do not require much resource or technological know-how (Kenny and Beagan, 2004; Pedersen et al, 2017). However, text-based cases cannot simulate emotion, body language and verbal cues, therefore may induce emotional detachment in students (Kenny and Beagan, 2004; Pedersen et al, 2017). Video-based cases can convey these elements, while also helping students develop powers of observation (Pedersen et al, 2017). In this study, Box of Broadcasts® was used to obtain clips from the reality medical television programmes Medical Emergency and Island Medics to develop video-based case studies for third-year teaching sessions.

Aims: To evaluate the impact of the use of reality television-based video cases (from the student’s perspective)

Method: This was piloted on 61 third-year MPharm students. An online wordcloud was used to gather immediate feedback from the students from two of four workshop sessions. This was followed-up by an online questionnaire to elicit more thoughtful, delayed feedback from all students.

This study was ethically approved. Simple statistical methods were used to analyse quantitative data and thematic data analysis was used to draw out themes from qualitative data.

Results: The online questionnaire had a response rate of 25%. Figure 1 shows the responses from the Likert scale questions. The average score from all questions was 4.00-4.47 of 5.

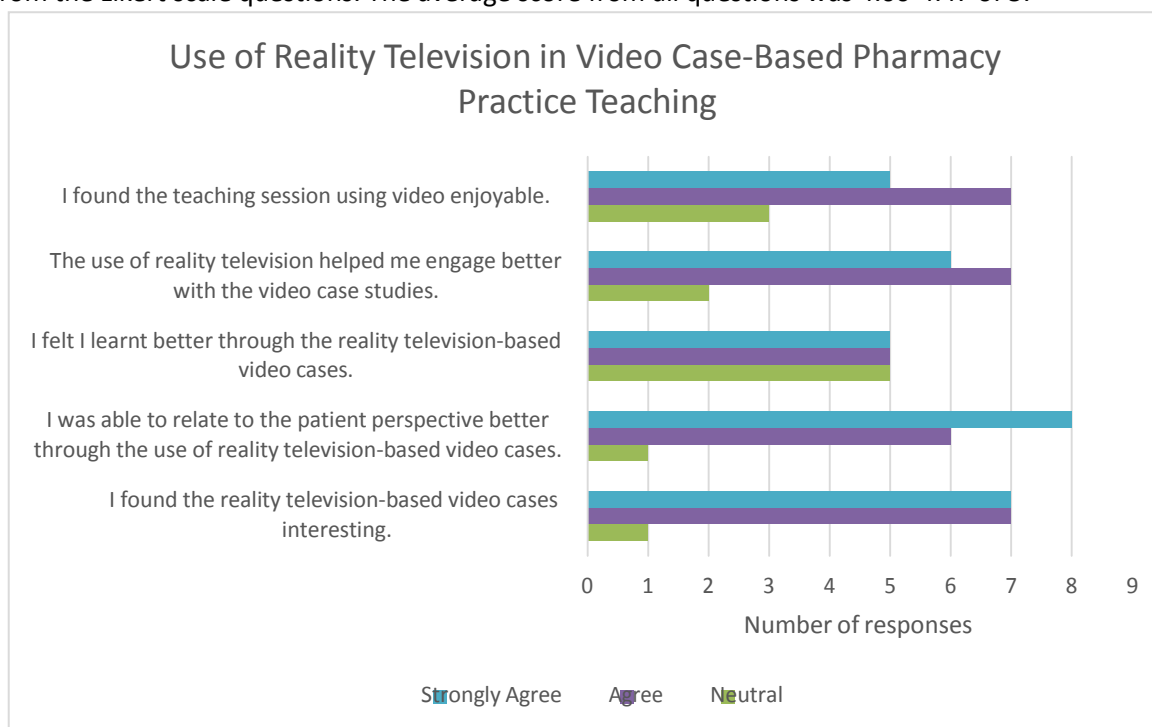


Figure 1

Themes emerging were:

1. Understanding the patient experience
2. Improved understanding of study material
3. Meaningful application of theory to practice
4. Realism

Conclusion: This study shows reality television-based case studies are useful to increase student understanding, application to practice and development of empathy. Future work could include comparing text-based against video-based case studies and inviting students to focus group discussions to further explore their views on this teaching method.

References:

Kenny, N.P. and Beagan, B.L., 2004. The patient as text: a challenge for problem-based learning. *Medical education*, 38(10), pp.1071-1079.

Pedersen, K., Moeller, M.H., Paltved, C., Mors, O., Ringsted, C. and Morcke, A.M., 2018. Students' learning experiences from didactic teaching sessions including patient case examples as either text or video: a qualitative study. *Academic Psychiatry*, 42(5), pp.622-629.

73. Assessing the suitability of Team-Based Learning (TBL) approach to delivering the national Antimicrobial Stewardship (AMS) competencies to undergraduate pharmacy students

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Background: TBL is a collaborative learning and teaching strategy that promotes a deep learning experience and is suitable for delivering multidisciplinary topics such as the national consensus on the AMS competencies for UK undergraduate healthcare professional education (Courtney *et al*, 2018). TBL pre-reading outsourced background learning that was applied in subsequent case discussions (Michaelsen *et al*, 2003)

Aims: Evaluation of an interactive and comprehensive AMS unit for stage 4 MPharm within 10 hours student contact time using TBL approach.

Method: The topic content, provided two weeks prior to the face-to-face teaching, was outsourced in the reading pack. Student contact time, 10 hours, was focused on two 1 hour expert lectures that set the national context for AMS and provided the latest research in antibiotics and immunity. This was followed by 8 hours of individual and group activity workshops where students applied the knowledge to short AMS MCQs and complex antimicrobial cases based on real-life scenarios from primary and secondary care settings. Student learning from pre-reading was quantitatively assessed individually and after team discussion. Student feedback was collected post teaching.

Results: Table 1. compares students scores from individual and post-team discussion. The two-way feedback nature of TBL application exercises meant that students benefited from debating with experienced staff to weigh up patients’ risk/benefits in AMS cases rather than just applying antimicrobial guidelines. Student feedback was positive about the format and level of complexity of the cases “I liked the full clerk-in format for the case”.

Table1: Students scores from the assesement of pre-reading material

Assessment type	Range of student marks (%)	Average mark of the class (%)
Individual assessment of pre-reading material (iRAT)	22.2-88.9	51.0
Team assessment of pre-reading material (tRAT)	66.7-94.4	80.8

Conclusion: Outsourcing the broad topic content in pre-reading did not compromise student learning and allowed class time to focus on debating complex simulated cases with experienced staff. Class scores were normally distributed and higher than individual scores for assessment of pre- reading, which is in line with other TBL units in the module.

References:

Courtenay, M., Lim, R., Castro-Sanchez, E., Deslandes, R., Hodson, K., Morris, G., Reeves, S., Weiss, M., Ashiru-Oredope, D., Bain, H. and Black, A., 2018. Development of consensus-based national antimicrobial stewardship competencies for UK undergraduate healthcare professional education. *Journal of Hospital Infection*, 100(3), pp.245-256.

Michaelsen, L.K., Knight, A.B. and Fink, L.D., 2003. *Team-based Learning: A Transformative Use of Small Groups in College Teaching* Sterling, VA: Stylus Publishing.

74. Waste medicines and environmental harm: a pharmacy student project

Authors: A. Mawdsley, G. Groves, S. Lakhani, E. Cope, S. Kotecha.

Institution: The University of Manchester

Background: Medicines are commonly disposed of in household domestic waste/sewage systems. This has a significant environmental impact on the water system and animals (Boxall, 2004; Owens, 2015). Community pharmacies provide an essential NHS collection and disposal service which helps to destroy or denature these medicines to reduce their effect on the environment which is rarely advertised.

Aim: To evaluate patient behaviour and understanding of waste medicines disposal, to educate the public on the environmental benefits of returning unused medications to the pharmacy, explain the impact of disposing medicines via domestic household waste and domestic sewage on the environment.

Method: The project team developed promotional materials that highlight and instruct the general public about how to safely dispose of waste medicines. Campaign materials include posters, stickers and dispensing bags distributed to 78 community pharmacies, a website, social media campaign and events at community pharmacies and on-campus. Data derived from questionnaires was analysed with simple frequencies and website traffic were analysed for reach and impact.

Results: The campaign indicators were analysed either through SPSS (survey data) or website traffic and reach.

- Pharmacy users (n= 1538) are more likely to dispose of medicines in inappropriate ways (household waste, water system) (42.2% vs. 34.9% return to pharmacy)
- Older pharmacy users (aged 66 to 75) are more likely to return medicines than younger pharmacy users (48% report returning to pharmacy)
- Females are more likely to return medicines to a pharmacy over males (64.1% of those that return are female)
- Males are more likely to dispose of waste medicines in household waste and water systems (36.4% vs. 31,8%)
- Pharmacy users are more likely to return medicines in pharmacies where the service is advertised. Study found 49.9% of sites advertised returns service and 38.7% in these sites returned their waste
- Social media was superior to a website in public engagement (241 website views) compared to Facebook (reach 1406) which is inferior to Twitter (4524 impressions).

Conclusion: Inappropriate medicines waste disposal practices exist. Patient education through digital and physical events can raise awareness of the issue and should be targeted at younger men.

References:

Boxall, A. 2004. The environmental side effects of medication, *EMBO Rep*, 5(12), pp.1110-1116. Owens, B. 2015. Pharmaceuticals in the environment: a growing problem, *Pharm J*, 294(7850) online.

75. A questionnaire-based study to investigate future pharmacists' attitudes towards team work.

Authors: M. McReynolds, L-A. Hanna, M. Hall

Institution: Queen's University Belfast

Background: Being able to work effectively in a team is an essential requirement of the United Kingdom (UK) Master of Pharmacy (MPharm) accredited degree programme (General Pharmaceutical Council, 2011) Future pharmacists need to know how to “engage in multidisciplinary team working” and show how they “contribute to the education and training of other members of the team” (General Pharmaceutical Council, 2011)

Aims: To investigate Queen's University Belfast pharmacy students' attitudes towards team work. Objectives were to: ascertain students' opinions on team work, including skills gained and professional development; determine preferred types of team-based activities; and establish whether parameters (such as gender) affected responses.

Method: Following ethical approval, final year MPharm students were invited to participate in this voluntary study. Data were collected via a self-completed, pre-piloted questionnaire (distributed at a compulsory class in December 2018). The questionnaire was developed with reference to published work in the area (Elmore et al., 2014) Questions were largely closed-question type style with only non-identifiable data requested. The responses were coded and entered into Microsoft Excel® and SPSS (Version 22). The analysis largely took the form of descriptive statistics and the Mann Whitney U-Test was employed for inferential statistical analysis, with significance set at $p < 0.05$ *a priori*.

Results: A response rate of 96.8% (92/95) was achieved. Most [81.5% (75/92)] found team work to be valuable and 76.7% (69/90) deemed it was essential to ensure they became safe and effective pharmacists. Males were more likely to want further team-based learning within the course than females (52.2% versus 34.3%, $p=0.03$). Only 53.8% (49/91) reported liking peer evaluation. An interprofessional session with medical students was the most popular activity (interpolated median score = 3.69, maximum score 5).

Conclusion: Opinions about team work (including multidisciplinary) were positive which is encouraging. However, more should to be done in relation to peer evaluation, particularly given its importance for professional development and revalidation.

References:

Elmore, L., Skelley, J. & Woolley, T., 2014. Impact of adapted team-based learning methods on student self-assessment of professionalism, teamwork, and skills in a self-care course. *Currents in Pharmacy Teaching and Learning*, 6(4), 488-493.

General Pharmaceutical Council, 2011. Future pharmacists: Standards for the initial education and training of pharmacists (online). Available from: https://www.pharmacyregulation.org/sites/default/files/document/gphc_future_pharmacists_may_2011.pdf Accessed 17th April, 2019.

76. Development and validation of the Medicines Related - Consultation Assessment Tool (MR-CAT): A new global assessment tool for assessing pharmacy professionals' consultations.

Authors: H. Middleton, L. Grimes, M. Shaw

Institution: Centre for Pharmacy Postgraduate Education, University of Manchester

Background: The Medicines Related Competency Framework (MRCF) is a validated formative assessment tool, developed specifically for the teaching and evaluation of medication-related consultation skills (Abdel-Tawab et al., 2011). The MRCF was developed in 2011 before the Consultation skills for pharmacy practice standards were published. More focus on assessment of person-centred skills could enhance the tool.

The aim was to develop a new global assessment tool for assessing pharmacy professionals' consultations by direct observation of practice (formative and summative assessment) in postgraduate education programmes. The new assessment tool would focus on a person-centred approach and key consultation skills and behaviours described in the consultation skills practice standards (Jee et al., 2016)

Description of work: MR-CAT, a new global assessment tool based on the structure of the Calgary Cambridge model was developed. Key skills and behaviours in the consultation skills practice standards were linked to each stage of the Calgary Cambridge model. Then descriptors were written which summarised key skills and behaviours for each stage of the Calgary Cambridge model at three levels of practice 'below expectations', 'competent' and 'excellent'. MR-CAT was iteratively refined through consultation with a wider reference group.

Proposed evaluation: The study will determine the extent to which MR-CAT can discriminate between three levels of practice ('below expectations', 'competent' and 'excellent') in a consultation. The study was reviewed and approved by the University ethics committee.

A purposive and convenience sample of pharmacy educators (n=10) will take part in this study. Participants will independently assess pre-recorded videos of simulated patient consultations. These videos will include consultations of different quality ('below expectations', 'competent' and 'excellent') and participants will be blind to the consultation quality. Participants will assess fifteen videos and re-assess a sub-sample (n=6) of the same videos eight weeks later. Participants' assessments of the videos will be recorded using Smartsurvey. Data will be analysed by a psychometrician.

References:

Abdel-Tawab, R., James, D.H., Fichtinger, A., Clatworthy, J., Horne, R. and Davies, G., 2011. Development and validation of the medication-related consultation framework (MRCF). *Patient education and counseling*, 83(3), pp.451-457.

Jee, S., Grimes, L., Desborough, J. and Cutts, C., 2016. The national consultation skills for pharmacy practice program in England. *Currents in Pharmacy Teaching and Learning*, 8(3), pp.442-446.

77. Student perceptions and experiences of primary care GP placements during the undergraduate MPharm degree

Authors: R. Sandhu^{1,2} M Waraich² J Tullett² S. Thorpe²

Institution: ¹Aston University. ²Birmingham and Solihull Training Hub

Background: Primary care placements have been introduced to the undergraduate MPharm course to introduce the role of a pharmacist in the primary care setting, in the changing NHS (NHS England, 2019). With the announcement of the NHS long-term plan and the place for clinical pharmacists, there is a growing need for experiential learning for undergraduate students to the sector. Awareness of future opportunities for pharmacy graduates in primary care, from pre-registration training through to being a clinical pharmacist are key to the development of a successful workforce, as students are not aware of the opportunities. The aims of the placement sessions are to (i) to encourage students to explore pre- registration and post-registration roles in primary care and (ii) increase student awareness of the contribution a pharmacist can make to patient care.

Description of work: The placements developed by primary care pharmacists, will entail an introduction to the role on site, at a practice offering a range of services. Students will have a tour of the practice and services offered, facilitated by a clinical practice pharmacist. The sessions will offer a short teaching session about the future roles of primary care pharmacists and the opportunity to experience taking basic observations and enhance learning and application of clinical skills.

Proposed evaluation: Student opinions will be captured at the end of the sessions using a questionnaire. Responses will be anonymous and participation in the questionnaire will be optional. Nine Likert scale questions will form the questionnaire, with five options from strongly disagree, to strongly agree. One open question will be used to provide comments on the session. Quantitative analysis will be used to summarise the findings and thematic analysis will be used for the open comments question. The questionnaire will evaluate (i) student perceptions of primary care placements, (ii) student perception of the session content and structure (iii) organisation and improvement of the session.

References:

NHS England, 2019. A five-year framework for GP contract reform to implement The NHS Long Term Plan, England: NHS England.

78. Pharmacy and Optometry student views on inter-professional learning to improve patient wellbeing

Authors: R. Sandhu, A. Sheppard, W. Leadbeater, S. Baig.

Institution: Aston University

Background: To improve professional role clarification, collaboration and patient wellbeing, an inter-professional learning (IPL) session was developed for common eye presentations and their management for pharmacy and optometry students. There is increasing evidence to support the value of learning together and with each other, to gain a better understanding of each professionals role and responsibilities to benefit patient care and wellbeing (Barr et al., 2016; WHO, 2010).

The aims of the session are to (i) enable students to discuss common eye presentations, (ii) develop the students' awareness and knowledge of their own and others' professional roles and (iii) to encourage collaboration and understanding of the management of various eye conditions to improve patient care.

Description of work: The IPL session developed by pharmacists and optometrists, will use five common eye presentations encountered in pharmacy practice. Using problem based learning format, students will work together to discuss the eye conditions, appropriate treatment(s) and referral allowing each profession to share their capabilities and responsibilities, ultimately for improved patient wellbeing. Qualified pharmacists and optometrists together will facilitate the session.

Proposed evaluation: Students will be invited to complete a questionnaire at the end of each session, to capture student opinion. All questionnaires will be optional and anonymous. There will be eight Likert scale questions, with five ratings from strongly agree, to, strongly disagree, and four open questions. Comments will be assessed using thematic analysis. The questions will evaluate (i) student perception of learning from, and with each other, (ii) student perception of the importance of working with other professional programmes and (iii) organisation and improvement of the session. Using open questions will provide an opportunity for students to reflect on what they learned from, and taught their peers.

References:

Barr, H., Gray, R., Helme, M., Low, H., & Reeves, S., 2016. Interprofessional Education Guidelines. London: CAIPE

WHO., 2010. Framework for action on Interprofessional Education and collaborative practice. Department of Human Resources for Health: Switzerland.

79. MPharm Student-Led Opportunistic Screening for Hypertension and Atrial Fibrillation in Community Pharmacy.

Authors: T. Saqi, M. Nejad, H. Fok, T. Khong.

Institution: Kingston University London and St Georges University of London.

Background: Hypertension and atrial fibrillation (AF) are predominant but preventable causes of stroke. However, the prevalence of undiagnosed hypertension and AF both remain high; and, there remains an urgent unmet need to improve their detection (Public Health England, 2017a; 2017b). With advancement of pharmacists' roles, it is possible this need can now be met within the community pharmacy setting.

Aims: A project was designed for a final-year MPharm student to pilot an opportunistic hypertension and AF screening service within a community pharmacy.

Method: Following training, the student approached individuals attending an urban community pharmacy and screened consenting participants for hypertension and AF using the Microlife Watch BP Home A device. Electrocardiogram (ECG) tracings were acquired using an AliveCor Kardia Mobile device. Those tracings that were abnormal or suggestive of possible AF, were emailed directly to a Cardiovascular Specialist for further interpretation and GP referral where appropriate. Patients identified with a high BP were offered a home blood pressure monitoring (HBPM) machine with training to confirm their BP. A self-administered questionnaire designed to establish knowledge on AF and feasibility of providing an AF/hypertension screening service within a community pharmacy was also distributed to local pharmacists.

Results: A total of 42 out of 66 (64%) people approached consented to screening. Six individuals were found to have an elevated BP and one with possible AF was identified. Approximately 25% of responding pharmacists (n=12) were unable to correctly identify at least half of the established risk factors for AF from a list of options (provided); four pharmacists were unable to identify at least half of the symptoms caused by AF.

Conclusion: This study demonstrates that, with appropriate training, hypertension and AF screening can be undertaken within community pharmacies; and, implemented more broadly to support national strategies aimed at preventing stroke. MPharm curricula now need to be developed to facilitate acquisition of composite skills and confidence for future pharmacists to develop and deliver such clinical services.

References:

Public Health England. 2017a. *Atrial fibrillation prevalence estimates in England: Application of recent population estimates of AF in Sweden*. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/644869/atrial_fibrillation_AF_briefing.pdf [Accessed 8 Mar 2019].

Public Health England. 2017b. *Health matters: combating high blood pressure*. Available at: <https://www.gov.uk/government/publications/health-matters-combating-high-blood-pressure/health-matters-combating-high-blood-pressure> [Accessed 8 Mar 2019].

80. An evaluation of student support for the national pre-registration recruitment scheme at Aston University.

Authors: S.Sarwar, N.Lewis.

Institution: Aston University, Aston Triangle, Birmingham, B4 7ET

Background: The national recruitment scheme (NRS) for pharmacy pre-registration training programmes in England and Wales was introduced in the 2016-2017 academic year. It allows students to submit one application for NHS hospital trusts and primary care pre-registration training programmes listed through the NRS. It involves students preferencing placements in addition to completing a numeracy test, situational judgement test and a multiple mini-interview. A student's overall score is then ranked on a national list determining the placement offered (Health Education England, 2018).

Aston University provides support for the NRS; however, it is unknown whether this is currently beneficial. The British Pharmaceutical Students' Association (BPSA) and Health Education England (HEE) gathered national feedback on student views regarding the NRS. The BPSA report represented 1.9% of the university population (British Pharmaceutical Students' Association, 2017) and the HEE report did not state a percentage (Health Education England, 2018). A lack of localised feedback remains an issue for higher education institutions.

Description of work: This work aims to evaluate the NRS support given to 4th year MPharm students at Aston University. Data will be gained through focus groups and an online questionnaire. Focus groups are intended to generate a list of recommendations for future support. These are to be presented in the questionnaire alongside in-depth questions to determine a more streamlined list of recommendations.

Proposed evaluation: The estimated response rate of the questionnaire is 40% (n=55). A true response rate cannot be calculated as the number of students applying through the NRS is unknown. Analysis of quantitative data utilising SPSS and the chi-squared test will determine whether there are associations between student satisfaction, usefulness and use of the support mechanisms. Qualitative data will be thematically analysed to individually evaluate each student support mechanism. Findings will be used to facilitate further development of the student support.

References:

British Pharmaceutical Students' Association, 2017. Oriel Applicant Feedback. Available at: <https://www.bpsa.co.uk/static/pdf/c297fbfbf2d9b3524ab2860186d5eeb7.pdf> (Accessed: 9th October 2018).

Health Education England, 2018. National pre-registration pharmacist recruitment evaluation report: Phase 1. Available at: <https://www.npa.co.uk/wp-content/uploads/2018/03/National-pre-registration-pharmacist-recruitment-evaluation-report-phase-1.pdf> (Accessed: 9th October 2018).

81. Ensuring Academic Accountability: Design Decisions on a New MPharm Programme

Authors: A. Turner

Institution: Swansea University, Swansea, UK

Background: One UK school of pharmacy is currently designing a new MPharm programme. It is recognised by the university that design of teaching, learning and assessment activities should be grounded in educational theory. Academic staff are expected to use educational theory and understand its role in evidence based educational practice during the design process. Support for design should come from three inter-dependent levels (Hénard and Roseveare, 2012):

1. At the institution-wide level: including projects such as policy design, and support to organisation and internal quality assurance systems.
2. Programme level: comprising actions to measure and enhance the design, content and delivery of the programmes within a department or a school.
3. Individual level: including initiatives that help teachers achieve their mission, encouraging them to innovate and to support improvements to student learning and adopt a learner oriented focus.

Description of work: A qualitative data collection tool has been developed which allows staff responsible for MPharm programme design to reflect on their design decisions. It uses Hénard and Roseveare's (2012) three levels of support as a framework to ensure all aspects of design are considered. The tool encourages reflection on the pedagogical factors, educational theory and quality of evidence used to make decisions.

Proposed evaluation: Staff responsible for MPharm programme design will be asked to complete the tool after initial submission of any contribution for review. Qualitative data will be collated and analysed using thematic analysis (Braun and Clarke, 2006). Particular focus will be given to personal accountability, school level support and university level support. Results will be used to identify areas of support needed to ensure staff are equipped to design a programme of teaching, learning and assessment activities grounded in educational theory. It will also help the University better understand the robustness of current support systems.

References:

Hénard, F and Roseveare, D, 2012. 'Fostering Quality Teaching in Higher Education: Policies and Practices', An IMHE Guide for Higher Education Institutions, <http://www.oecd.org/edu/imhe>

Braun, V and Clarke, V, 2006. Using thematic analysis in psychology. *Qualitative Research in Psychology*: 3(2), pp.77-101.

82. Evaluation of training for Case based Discussion (CbD) assessors.

Authors: S. Varia, H. Middleton, M. Shaw.

Institution: Centre for Postgraduate Pharmacy Education, University of Manchester

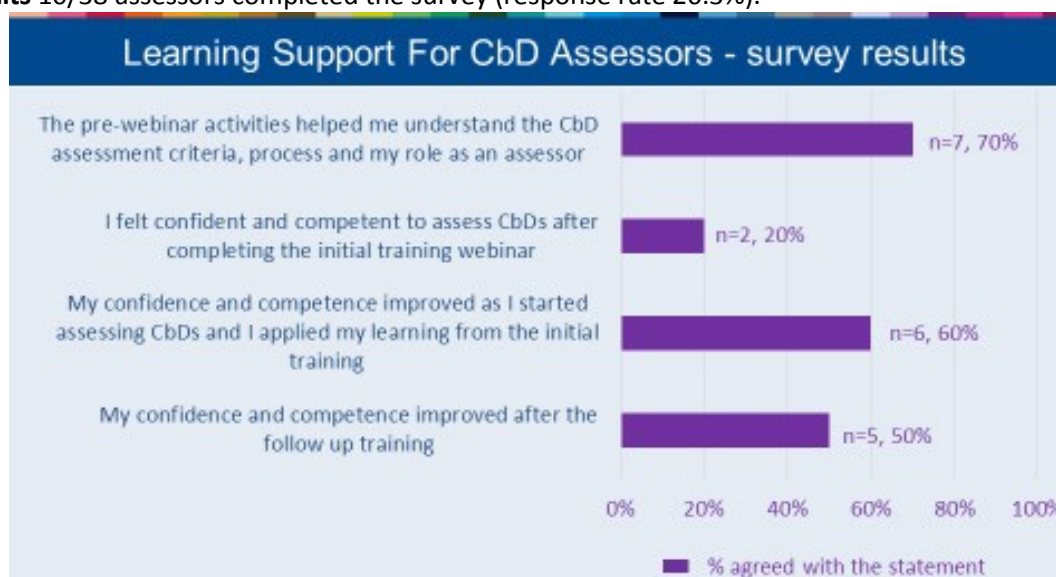
Background: Case-based discussion is one of the assessment methods used for postgraduate pharmacy education programmes. ¹The Academy of Medical Royal Colleges highlights that assessor training is essential to ensure understanding of the assessment system, assessment methods, their purpose and use.

Assessors completed pre-workshop activities, participated in a training webinar prior to assessing CbDs and a follow up webinar after assessing CbDs. The follow up webinar facilitated discussion around challenging assessment decisions and provided peer support opportunities.

Aims: To evaluate CbD assessor training workshops and make recommendations for the next cohort of assessors.

Method An anonymised online survey was sent to 38 assessors. The survey included multiple choice opinion statements and free text questions to gather assessors' opinions on their confidence and competence in undertaking CbD assessments following training.

Results 10/38 assessors completed the survey (response rate 26.3%).



Conclusion: The pre-workshop activities provided assessors with the underpinning knowledge for their role. However the majority of respondents did not feel confident or competent to assess CbDs after the initial training webinar and reported feeling improved confidence and competence once they had started to assess CbDs. The follow up training provides peer support for assessors, the opportunity to critically review and improve assessment practice and has the potential to help assessors improve their competence and confidence. Further work is recommended to explore assessor competence and confidence in more detail.

Reference:

Academy of Medical Royal Colleges, 2016. Improving Assessment: Further Guidance and Recommendations, 9

83. Preparation for practice: final year pharmacy students' reflections on their MPharm

Authors: S. C. Willis, S. Ajmal, S. Ashraf, J. G. Barry, J. Brocklebank, A. Dempster, J. Dobbs, A. Hashmi, S. Haughey, E. Okang, H. Parmar, O. Salami, J. Seasman, V. Silkstone

Institutions: University of Manchester, Queen's University Belfast

Background: MPharm students' experiences of teaching and learning have previously been shown to predict their perceived preparedness for practice, with variation in perceived preparedness reported when analysed at the level of school of pharmacy attended (Willis et al., 2009). In the study reported here we sought to investigate final year students' perceived preparedness for practice in the context of recent reforms to standards for the initial education and training of pharmacists.

Aims: To determine final year MPharm students' perceived preparedness for the attributes and values associated with performance and training outcomes important for effective clinical practice.

Method: A questionnaire was distributed to five cohorts of final year MPharm students based at United Kingdom (UK) schools of pharmacy. Twenty-five statements related to the values and attributes of effective clinical practice derived from the Professional Attributes Framework (Health Education England, 2016) were used to capture students' views on the impact of their MPharm on preparing them for practice. Descriptive and inferential statistics were used to analyse the data.

Results: Response rates varied between 47-92% with a total of 353 students completing the questionnaire. Participants were most likely to be female (64%), to agree that they were prepared in relation to the clinical knowledge required for practice (98.3%), for effective communication (96%), and to provide patient-centred care (94.6%); fewer felt prepared to take on leadership roles (80.3%) or to remain calm under pressure (80.5%). Significant differences in perceived preparedness were found for 12 of the 25 statements when analysed at the level of pharmacy school attended.

Conclusion: Ensuring pharmacy graduates are prepared for practice is a fundamental role of educators; given variation in undergraduates' perceptions of extent to which their MPharm has prepared them, future research should focus on determining whether, longitudinally, such differences are important for effective clinical practice.

References

Willis, S.C., Hassell, K., Seston, E.M. and Hann, M., 2009. Using learning outcomes for undergraduate pharmacy education to assess final-year students' perceptions of their preparedness for pharmacy practice. *International Journal of Pharmacy Practice*, 17(6), pp.351-358.

Health Education England, 2016. Pre-registration Pharmacist Professional Attributes Framework (PAF), www.hee.nhs.uk (accessed 06/03/2019)



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