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Oral Abstracts - Shaping Tomorrow's Practitioners Today

General Practice placements for hospital trainee pharmacists: Evaluation of learning support tools and outcomes

Meb Walji[1], Maria Christou[2], Hannah Kinsey[2], Rina Matala[2], Gill Shelton[3], Mohamed Jawad Dungersi[1], David Wright[2]

[1]*North West Anglia NHS Trust - Peterborough City Hospital, Peterborough, United Kingdom*

[2]*University Of East Anglia, Norwich, United Kingdom*

[3]*Cambridge University Hospitals, Cambridge, United Kingdom*

Background: General Practice pharmacy is fast becoming one of the career options for registered pharmacists in the United Kingdom (UK) (NHS England, 2016). Accordingly, there is a need to embed relevant training opportunities in the initial education of pharmacists, to prepare the future workforce for new expanding roles in General Practice. This study seeks to evaluate trainee pharmacists' perspectives on a novel flexible placement model in General Practice.

Objectives: To determine the usefulness of newly developed educational support tools and evaluate trainees' perspectives of their learning experiences in General Practice

Methodology: Hospital trainees in Cambridgeshire, UK were placed in different General Practices for either four or eight weeks during 2017 and 2018. All trainees followed a structured training programme which met regulatory requirements (General Pharmaceutical Council, 2018). Learning was guided and supported via a workbook and on-line resources. Stakeholder meetings with the trainee pharmacists were conducted on completion of their placements and the data thematically analysed (Braun & Clarke, 2006).

Results: Trainee feedback indicated that the learning support tools provided were useful but needed to incorporate more guidance relating to 'entrustable' activities, supervision and indemnity. Identified individualised benefits included: increased confidence in communicating with patients and greater understanding of holistic patient care across different settings. There was diversity in terms of the quality of trainees' learning experiences, achievement of competences and level of integration within general practice teams.

Discussion: Structured placements in General Practice have clear benefits for individual trainee pharmacists, patients and the pharmacy profession. Further development is needed to optimise educational support tools and standardise the quality of learning in this environment.

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"More effort and more time": Considerations for pharmacy involvement in workplace inter-professional education programmes

Marisa Hodgkinson[1], Fiona Kent[1,2], Katrina Nankervis[1,3], Christina Johnson[1,2], Julie Baulch[2], Terry Haines[2]

[1]*Monash Health, Clayton, Australia*

[2]*Monash University, Clayton, Australia*

[3]*Deakin University, Burwood, Australia*

Background: Health professionals need to work collaboratively in inter-professional teams to provide safe and effective patient-centred healthcare. Workplace inter-professional education (IPE) contributes to inter-professional team development. Decisions about 'what' and 'how' IPE can be embedded in the workplace are required (CIHC, 2010; WHO, 2010).

Objectives: To identify existing workplace IPE activities and explore clinicians' perspectives of opportunities and challenges for designing and delivering workplace IPE programmes.

Methodology: A qualitative study of IPE activities in a large teaching healthcare network was undertaken. An IPE activity was defined as a structured education activity that combined pre- or post-registration learners from different professions to facilitate learning between professions. Clinicians involved in the design/delivery of

X. Name - presenting author

IPE activities participated in a semi-structured interview to discuss their existing programmes and perspectives of opportunities/challenges facing future work. Interviews were audiotaped, transcribed and thematically analysed.

Results: Fifteen clinicians were interviewed, representing medicine, nursing, occupational therapy, pharmacy, physiotherapy, psychology, social work and speech pathology, with 21 IPE activities identified. IPE activities involving pharmacy included: orientation; medication safety/prescribing, anticoagulation, antimicrobial stewardship and allergies/adverse drug reactions (ADRs) workshops; and allergies/ADRs and delirium/dementia online training modules. Three themes were identified to inform future work: clinician factors (time, engagement, teaching skills); organisational factors (logistics, culture, leadership, funding, space/equipment); and IPE considerations (justification, education design/delivery, consultation).

Discussion: There was evidence of embedded workplace IPE activities. Clinician, organisational and IPE factors should be considered for workplace IPE to be developed and sustained. Leadership, education skills, dedicated education roles/portfolios, collaborative design/delivery and education resources were also success factors.

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Mindfulness training for pharmacy undergraduate students in University College Cork (UCC) – quantitative results of a mixed methods study

Michelle O'Driscoll, Stephen Byrne, Sharon Lambert, Laura Sahm

University College Cork, College Road, Cork, Ireland

Background: Stress negatively impacts upon physical and mental health, with pharmacy students demonstrating higher levels of stress than the general population (Beck *et al.*, 1997; Misra & Castillo, 2004; Marshall *et al.*, 2008; Gallagher *et al.*, 2014). Mindfulness may be a suitable way to improve students' mood and overall wellbeing, in order to cope with the stress of their degree and future careers.

Objectives: To determine the quantitative effects of a mindfulness course on pharmacy students' mood, stress, burnout, empathy and mindfulness levels.

Methodology: Undergraduate pharmacy students of UCC were invited to take part in this study during the 2016/2017 academic year. Participants were assigned alphabetically by surname to either an intervention or control group. The intervention group were given a mindfulness course of four two-hour sessions, while the control group received usual education. Demographics and validated quantitative measures were collected at baseline and post-intervention. .

Results: Ninety-nine students participated (66% female, 91% Irish). There were no significant differences between groups at baseline. At follow-up, the intervention group had a higher mood score than the control ($p<0.005$) and scored better in the observing ($p=0.01$) and describing ($p=0.01$) facets of mindfulness. Stress, professional efficacy, exhaustion and cynicism levels were maintained in the intervention group, while they dis-improved in the control group. However, these findings did not reach statistical significance ($p=0.06$, 0.24, 0.19, 0.23 respectively).

Discussion: This study has shown that a mindfulness course can significantly improve pharmacy students' mood and mindfulness levels, while measures of stress, burnout and empathy demonstrated improvements which trended towards significance. These results warrant further investigation with longer courses, and regular daily home practice, in order to provide pharmacy students with a well-rounded education and skillset.

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Using scholarly approaches to enhance inter-professional feedback practices for junior doctor prescribing

Jenna Turkington[1,2], Christy Noble[2,3,4], Brooke Bullock[1,4], Peter Donovan[1,2], Ian Coombes[1,2]

[1]*Royal Brisbane And Women's Hospital, Herston, Australia*

[2]*University of Queensland, Brisbane, Australia*

[3]*Griffith University, Gold Coast, Australia*

[4]*Medical Education Unit and Allied Health, Gold Coast Health, Gold Coast, Australia*

Background: There is considerable diversity in research methods designed to improve junior doctor prescribing *e.g.* patient safety focus. The consequence is that interventions may be designed without considering important and relevant literature such as learning and feedback. This means that opportunities for pharmacists to improve prescribing may be missed or dismissed without adequate theorising or evidence.

Objectives: To present an innovative methodological approach to evaluating and developing junior doctor prescribing performance by supporting learning through evidence-based feedback processes.

Methodology: Using a multi-faceted educational approach, junior doctors are invited to self-assess their performance using a competency tool. The self-assessment is triangulated with the ward-based pharmacist competency assessment and modified National Inpatient Medication Chart (NIMC) audit findings using a minimum of 30 medication orders per prescriber. The findings from this assessment process are analysed and incorporated into a one-on-one pharmacist or pharmacologist feedback session with the junior doctor. The principles of learner-centred feedback (Boud & Molloy, 2013) are incorporated into the feedback approach including supporting the junior doctor to develop capabilities to operate as judges of their own learning and prescribing performance.

Results: The methods have been used in two sites. The process has engaged junior doctors, ward pharmacists, pharmacologists and medical educators. Interim findings suggest that junior doctors felt that it was a positive learning experience and which supports and augments their prescribing learning and improves prescribing practices.

Discussion: The experience of using an innovative methodological approach, informed by learning and feedback literature, contributes to improve prescribing by creating a positive feedback atmosphere focussed on learning and development rather than critiquing.

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Lessons for a smooth integration into general practice

Barbara Moore, Sandhaya (Sandy) Bhawan

Te Awakairangi Health Network, Lower Hutt 5040, New Zealand

Background: In 2016, a new model of care was introduced to general practice in the Hutt Valley. Reflecting international and national models, non-dispensing clinical pharmacists were integrated into three practice teams to provide a complementary skill set focussed on medicine optimisation (Jorgensen *et al.*, 2013; CPPE, 2016).

Objectives: The primary objective was to support GPs and wider clinical staff to minimise medicine-related risk; to optimise patient health outcomes through the quality use of medicines, and to support practice system enhancements through quality improvement audits.

Methodology: Three practices were chosen as concept practices, based on their patient demographics, willingness to participate, and the ability to provide up to 20 hours/week 'desk-space' for the pharmacist.

Results: Experience confirms the following factors as critical to successful collaboration:

- Allowing the pharmacist time in the practice to establish relationships and trust
- Appreciating that the concept is primarily an investment in quality improvement, which also has potential for reducing costs across the health system
- Having a nominated GP Clinical Lead
- Permitting the pharmacist full access to patient health records.
- Acknowledging that appropriately skilled, experienced pharmacists are a prerequisite
- Understanding that each practice has unique characteristics, priorities and patient demographics that must matched to the pharmacist skills/competency

Discussion: Collaboration, trust and relationships take time to build. After 12 months, practice staff were asked what value they thought the pharmacist added: "Initially surprised at how much we utilised her skills, onto wondering how we managed without!" "Realised the importance of a clinical pharmacist only once she started working with us."

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Embedding a multi-professional learning approach to enhance the clinical decision making skills of trainee pharmacists in the UK

Mohamed Jawad Dungersi[1], Maria Christou[2], Gemma May[2], Jane Charsley[4], Patricia Edwards[3]

[1]*University Of East Anglia, Norwich, United Kingdom*

[2]*North West Anglia NHS Trust - Peterborough City Hospital, Peterborough, United Kingdom*

[3]*Luton & Dunstable University Hospital, Luton, United Kingdom*

[4]*Bedford Hospital, Bedford, United Kingdom*

Background: Hospital trainee pharmacists in the United Kingdom (UK) normally develop their clinical decision making skills by accompanying qualified pharmacists on ward visits and their learning is mainly pharmacy-led. One of the expectations of a new Quality Framework implemented by Health Education England (HEE) (HEE, 2017) is for work-based educators to promote multi-professional learning approaches for the benefit of patients. This study investigates the feasibility and outcomes of a novel approach designed to enhance the clinical decision making skills of trainee pharmacists in a multi-professional environment that promotes a culture of joint learning.

Objectives: To assess attainment of learning outcomes for trainee pharmacists in a multi-professional patient-facing environment and to evaluate their and other learner groups' perspectives on their learning experiences

Methodology: Hospital trainee pharmacists in the east of England received three clinical scenarios were asked to interact with medical students, junior doctors or specialist nurses prior to making a clinical decision on appropriate treatment choice. Fifteen trainees at four different hospitals had a follow-up session with a facilitator who evaluated the quality of their answers and addressed further learning needs. Qualitative methods, including questionnaires and stakeholder meetings, were used to evaluate perspectives and the data were thematically analysed (Braun & Clarke, 2006).

Results: Trainee pharmacists felt that the directed multi-professional learning approach helped them integrate better within healthcare teams on wards and also enhanced their clinical decision making skills. Other learner groups felt that they benefited from the interaction.

Discussion: Supported multi-professional learning sessions within the workplace, produce confident clinical pharmacists better prepared for expanding prescribing and patient-facing roles (Lord Carter of Coles, 2016).

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Does CPD encourage professional competence?

Wendy Thompson, Lisa Nissen, Esther T.M. Lau, Jose Manuel Serrano Santos

Queensland University Of Technology, Brisbane, Australia

Background: In Australia continuing professional development (CPD) aims to maintain professional competence and CPD planning aims to focus learning on the gaps identified against the competency standards (PBA, 2015 ; PSA, 2016). Intrinsic motivation to learn has been associated with more positive educational outcomes (Mylrea *et al*, 2017). Currently there's little evidence of how CPD impacts learning.

Objectives: To identify what factors motivate pharmacists to do CPD and investigate the use of CPD planning.

Methodology: An online questionnaire which contained Likert scaled and open questions was disseminated via professional newsletters and targeted registered pharmacists in Australia to explore the two objectives in this study.

Results: Motivation to do CPD relied upon a number of factors, such as to fulfil registration requirements, where 93% (n=218/235) agreed this was a motivating factor. There was 69% (n=163/235) who agreed carrying out CPD satisfied their need for learning. There were 41% (n=95/233) who agreed they did not plan CPD and 47% (n=111/234) who agreed that CPD planning did not address gaps in their competency to practice.

Discussion: This research has identified that CPD is partly driven by external requirements which could indicate that learning is not optimal and more of a tick box exercise. Some have questioned whether CPD processes facilitate competency to practice, with many believing that they do not encourage the best type of learning or the right kind of motivation to learn (Schafheutle *et al*., 2013; Tran *et al*., 2014). Work is still needed in the profession to explain the benefits of the framework and to ensure that ongoing learning maintains competence.

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Developing a transition programme: Supporting pharmacists to practise safely in new care settings

Elizabeth Ward[1], Catherine Duggan[1], Ian Bates[2]

[1]*Royal Pharmaceutical Society Of Great Britain, London, United Kingdom*

[2]*University College London School of Pharmacy, London, United Kingdom*

Background: The challenges faced by the health service in Great Britain are unprecedented. Pharmacists must be supported to adapt their core roles and responsibilities in order to take on new roles and meet the emerging needs of patients (Royal Pharmaceutical Society [RPS], 2015a). RPS Transition Programmes aim to support established pharmacists to practise safely in new care settings.

Objectives: To develop a quality, 100 day Transition Programme structure, to support pharmacists in being confident and competent to manage common scenarios encountered in new care environments. A Knowledge and Capability Guide (KCG) is to be developed to structure the programme.

Methodology: A multi-sector expert panel provided consensus agreement of core programme elements and a process for KCG development. KCGs are developed through clinical expert panel review of RPS Professional Curricula (RPS, 2018a) and Frameworks (RPS, 2013a; RPS, 2013b). Consensus formation is used to identify the relevant knowledge and skills required to manage the most common clinical scenarios in the relevant area of practice.

Results: The programme comprises a KCG, self-directed learning resources, expert-moderated peer discussions of case studies aligned to the emergent KCG and a peer network to share practice. Assessment is aligned to the RPS Roadmap to Advanced Practice recommendations for Transforming the Workforce (RPS, 2016a). Periodic self and peer assessment design (formative) of the KCG is conducted with workplace based Tutors (RPS, 2015b). Final summative assessment design is aligned to RPS Faculty Record of Expert Professional Practice requirements (RPS, 2016b).

Discussion: Pharmacists transitioning to different areas of practice should have access to relevant training to support this change (RPS, 2018b) RPS Transition Programmes aim to provide structured support, thus enabling pharmacists to be competent and confident to deliver safe and effective care regardless of the care setting.

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Exploring pharmacy interns' and clinical educators' experience of university intern programmes

Brigid McInerney, Angelina Lim, Gina Arora, Kay Stewart, Kirsten Galbraith, Michelle Vienet

Monash University, Parkville, Australia

Background: The Intern Foundation Programme (IFP) is an innovative new programme for pharmacy interns designed to recognise, support and enhance workplace learning, and is completed alongside the Intern Training Programme (ITP). The IFP integrates academic theory into application in the workplace through university-workplace partnerships and involves credentialing of Clinical Educators (CEs) based on fulfilling their role as a CE as well as the completion of formalised training.

Objectives: To explore pharmacy interns' and clinical educators' experience of the University Intern Programmes, the ITP and IFP.

Methodology: All CEs and interns involved in the first year of the IFP in 2016 were invited to participate in two separate one hour focus groups in June 2017 to discuss their experience. Both focus groups were moderated by an external staff member not associated with either intern programme, who had experience in qualitative research.

Results: A total of 6 CEs and 7 interns attended the focus groups. Both groups reported that the IFP complemented the ITP and enabled more structured supervision. The workplace learning plan and standardised rubrics/checklists assisted with more consistent training for CEs and feedback for interns. Interns particularly valued the opportunity to undertake a research project as part of the IFP curriculum and felt this aspect of the IFP contributed to up-skilling them in preparation for practice, and enhanced their learning.

Discussion: CEs and interns expressed both intern programmes to be manageable and the addition of the IFP to be valuable as part of improving intern development.

We are all patient-centred now, aren't we? Lessons from new pharmacy graduates

Judith Burrows[1,2], Gloria Dall'Alba[2], Adam La Caze[1]

[1]School of Pharmacy, The University Of Queensland, Brisbane, Australia

[2]School of Education, The University of Queensland, Brisbane, Australia

Background: Providing patient-centred care is central to modern health care. However, the meaning of the term for pharmacists remains unclear.

Objectives: This qualitative, longitudinal study explored the meaning and development of patient-centredness in the practice of pharmacy graduates.

Methodology: Every six months for two years, 12 recent pharmacy graduates in community and hospital practice, were observed at work, and interviewed. Observation notes and transcribed interviews were analysed using principles of hermeneutic phenomenology to explicate the meaning and interpret the lived experience of new graduates at work, with a focus on patient-centredness.

Results: These graduates initially understood and enacted patient-centredness in pharmacy practice in a range of ways. For some, medicines and tasks were the frame of reference. Patients were viewed as source and recipient of information, allowing graduates to complete a series of required tasks to ensure medicines were safe and appropriate. For others, patients featured more centrally, where completing the required tasks was necessary to achieve a broader goal, of providing individualised care to optimise health outcomes from medicines. Initial understanding of patient-centredness remained largely unchanged for most participants, despite the passage of time, experience gained and feedback received. However, for one graduate, a transformation in understanding of patient-centredness resulted in a noticeable change in practice and subsequent development.

Discussion: These findings highlight the need for educators to take into account the influence on practice development, of how patient-centredness is understood, to enable pharmacists to fulfil their mandate to be patient-centred clinicians.

The perspectives of South African community pharmacists on their knowledge and training regarding complementary and alternative medicines

Yasmeen Thandar[1], Julia Botha[2], Anisa Mosam[2]

[1]Durban University Of Technology, Durban, South Africa

[2]University of KwaZulu-Natal, Durban, South Africa

Background: The diverse use of complementary and alternative medicines (CAM) is common practice amongst patients globally (MacLennan *et al*., 2004; Peltzer, 2009; Zuzak *et al*., 2013; EFCAM, 2014). Pharmacies generate a high turnover from CAM products and pharmacists are likely the patients' first source of information (Gqaleni *et al*., 2007).

Objectives: To explore the experiences, competencies and perspectives on education/training surrounding CAM amongst community pharmacists in Durban, South Africa (SA).

Methodology: Following ethical approval from University of KwaZulu-Natal, a cross-sectional study was

conducted in 2016 amongst 82 randomly selected community pharmacists (52% response rate). Questionnaires comprising questions on knowledge, practices and perspectives on education/training around CAM were distributed electronically and physically. Stata 13.0 was used for data analysis.

Results: Many pharmacists (43%), although reportedly not familiar with various products, did recommend CAM. More than half (51%) reported that patients often require their advise surrounding CAM, but 54% admitted not being confident discussing it.

Majority (92%) had never had CAM training. Most do not access journals (90%) or the internet (80%) for CAM information. Congress attendees (82%) reported that CAM was not discussed in congresses. An overwhelming 94% declared that CAM education would make them better practitioners and emphasized the necessity for inclusion in undergraduate curricula and continuing education programmes.

Discussion: Deficient knowledge, lack of confidence to help patients make appropriate choices, but a desire to learn were key findings. SA universities curricula do not incorporate CAM, reinforcing a dire need for inclusion. This together with continuing education programmes would equip pharmacists to advise patients confidently on the evidence-base of CAMs sold in pharmacies, ultimately leading to better treatment outcomes.

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SHPA Residency: creating a future 'fit-for-purpose' workforce

Andrew Matthews[1], Peter Fowler[2], Ian Coombes[3], Cameron Phillips[4], Dan Guidone[5], Cathy Martin[6], Arduino Mangoni[7], Christopher Freeman[8], Vasilios Sotiropoulos[9], Sachin Ramnani[1]

[1]The Society of Hospital Pharmacists Of Australia, Collingwood, Australia

[2]Pharmacy Department, Launceston General Hospital, Launceston, Australia

[3]Pharmacy Department, Royal Brisbane and Women's Hospital, Brisbane, Australia,

[4]SA Pharmacy, Adelaide, Australia

[5]Alfred Health, Melbourne, Australia

[6]Hunter New England Local Health District, Newcastle, Australia

[7]Flinders University/Flinders Medical Centre, Adelaide, Australia

[8]School of Pharmacy, University of Queensland, Brisbane, Australia

[9]National Australian Pharmacy Students' Association, Sydney, Australia

Background: In 2017, The Society of Hospital Pharmacists of Australia (SHPA) launched the first-ever national hospital pharmacy residency programme in Australia. SHPA Residency is a structured, formalised, supported and accredited professional development programme for foundation-level pharmacists. It is designed to support pharmacist practice towards competence and performance aligned with the Advanced Pharmacy Practice Framework for Australia at Transition Level (APPFSC, 2016)

Objectives: Consistent with International Pharmaceutical Federation (FIP) Workforce Development Goal 2 (FIP, 2016), SHPA's objective was to create a workplace based experiential training programme that supports post-registration foundation development.

Methodology: A Residency Programme Project Steering Committee was established in 2016. The Steering Committee provides strategic direction and expert advice and approved key programme resources such as accreditation standards, evaluation and assessment requirements, the competency framework, and accreditation application forms. Sites seeking to implement SHPA Residency via accreditation against the SHPA Accreditation Standards submitted a comprehensive online audit of their capacity and capability to conduct a residency programme. The Steering Committee ratified the accreditation of those programmes deemed to comply with the Standards.

Results: Thirty hospital pharmacy programmes were accredited to implement SHPA Residency in 2017. Twenty-nine programmes were active by July; the final first-wave provisionally accredited programme begun in November. Overall 108 residents registered in this first-ever intake.

Discussion: A variety of initiatives were executed to support sites and staff implement SHPA Residency. Site visits, a Residency Symposium with workshops focused on preceptor skill development, a discussion forum for shared ideas and tools, and multi-source feedback reports (online mini-PAT), assisted in SHPA achieving a successful first year.

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Discussion: Use of a novel online tool improved student recall of antimicrobial knowledge in ST and MT testing. Expansion of these platforms may be a useful adjunct for enhancing knowledge retention.

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Does voluntary use of an asynchronous tool for learning antimicrobials (ATLAS) improve student recall of antimicrobial knowledge?

Conan Macdougall

The University Of California San Francisco School Of Pharmacy, San Francisco, USA.

Background: Retrieval practice (self-testing) is effective for promoting knowledge retention but is under-utilised by learners (Karpicke *et al.*, 2009; Roediger & Butler, 2011)

Objectives: To determine the impact of the voluntary use of a novel interactive practice tool (ATLAS) on tests of recall of antimicrobial spectrum of activity.

Methodology: We created an online platform to allow learners to complete exercises on spectrum of activity for beta-lactams using a cognitive scaffolding approach (MacDougall, 2017).The platform incorporated feedback and suggestions for further study. We encouraged, but did not require, its use among pharmacy students (N=117) in a pharmacology unit. Student use patterns were correlated to short-term (ST, ~two weeks) and medium term (MT, ~three months) performance.

Results: Eighty-six percent of eligible students accessed the ATLAS platform for a total of 456 uses. Any ATLAS use was associated with higher ST exam performance (16.9% increase over no use, $p<0.001$). The effect was attenuated but still statistically significant after adjustment for student cumulative GPA, and demonstrated a dose-response relationship (0.7% per use, $p=0.005$). Results were similar when excluding "cramming" uses (access <24 hours before ST exam). Performance gains were strongest for students with lower cumulative GPA ($p<0.001$ for interaction). For MT performance, frequency of non-cram use was associated with improvement in scores (0.7% per use, $p=0.04$) but not after adjustment for GPA ($p=0.06$).

Use of a virtual pharmacy simulation (MyDispense) for teaching dispensing skills in first year pharmacy students

Vivienne Mak, Keenan Beaumont, Keith Sewell, Tina Brock, Marian Costelloe

Faculty Of Pharmacy And Pharmaceutical Sciences, Monash University, Parkville, Australia

Background: Facilitating access to medicines, currently through dispensing, is a core component of the patient care process for pharmacists. Errors can occur anytime during dispensing and the consequences of these can result in poor patient outcomes. Common dispensing errors are wrong medicine, form, strength, quantity, or incorrect directions on labels (James *et al.*, 2009). MyDispense is a pharmacy simulation developed by Monash to build competence and confidence in medicine dispensing while working in the safety of a virtual environment.

Objectives: To determine the completion and accuracy rates of dispensing exercises in first year pharmacy students using MyDispense.

Methodology: We allocated a total of 65 voluntary prescription exercises comprising a total of 97 medicines to 179 students in the first year of the Monash pharmacy course. The MyDispense system tracked completion and accuracy of submissions.

Results: There were 7,723 first attempts of the exercises. Overall, 10,597 exercises were completed (including resets) and 13,154 labels were created. Of these labels, 99.3% had the correct medication, 99.7% had the correct patient and 96.8% had the correct medicine quantity. 63% of students who scored >95% on their subsequent dispensing assessment completed a total of 7,000 exercises prior to the assessment.

Discussion: MyDispense allowed students to practise dispensing medicines in an environment where it is safe

to make mistakes and learn from these. Students valued this opportunity and engaged voluntarily with the supportive learning environment. Both completion and accuracy rates were high. Additional study can determine the impact of this dispensing simulation on error rates in the community.

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Prescription-checking skills: There's an app for that!

Esther Lau, Yasmin Antwertinger

Queensland University Of Technology, Brisbane, Australia

Background: Practice makes perfect, and prescription-checking skills is one of these. The mechanics of dispensing a prescription involves developing speed and accuracy in checking the prescription against the dispensing label, against the selected product, and ensuring all three match up. So, how do we fit in hours of practise in an already jam-packed curriculum? Can students be motivated to work through the phases of skill mastery, and begin their journey of life-long learning using the conventions of gaming?

Objectives: Investigate if a mobile prescription-checking app engages and motivates students to practice prescription-checking skills, and improve their confidence.

Methodology: Data were collected from students and pharmacy educators through surveys and focus groups. They were asked about their perceived usefulness of the app in developing their prescription-checking skills and confidence.

Results: The app was well received by both students and educators. The majority of the students indicated they would use the app again and that their confidence in checking scripts had improved. The platform was also more accessible than their standard unit learning management system. Pharmacy educators also saw value in the app particularly since it enabled more time in class to practise other pharmacist skills *e.g.* communication, as opposed to the mechanics of prescription checking.

Discussion: Gamification and mobile apps are useful for self-directed practice of skills. Using such strategies to engage students in a novel, flexible and authentic way helps motivate students to work through phases of skill mastery, and take ownership of their own learning.

Swipe Right: A novel approach to junior doctor orientation at Auckland District Health Board

Sian Dawson, Ziyen Lam, Natasha Bell, Maya Patel, Shameel Hussein, Ashwin Choy, Steve Drackett, Anita Singh, Liz Fagan, Sarah Wang

Auckland District Health Board, Auckland, New Zealand

Background: In November 2017, Auckland Distrct Health Board (ADHB) introduced a new format for Post-Graduate Year 1 (PGY1) doctor orientation. Pharmacy was allocated a three minute presentation and a display stand at an EXPO. This prompted a review of the format and content of our orientation material.

Objectives: To develop an orientation for PGY1s which focused on delivering key messages in an efficient way.

Methodology: A working group of ten pharmacists generated ideas through a brain-storming exercise, and agreed on the format of the orientation. Views of the 2016 PGY1 cohort were sought via an on-line survey to inform content development.

Results: During their two day orientation, PGY1s didn't want to be overwhelmed with information. They wanted to know where to find prescribing support resources and who to ask for advice. A three minute video (Lam, 2018) based on the dating app Tinder, was designed to deliver this information in a fun way. A final message encouraged the PGY1s to 'Swipe Right' and meet up with the pharmacy team at the EXPO. During this, pharmacists engaged directly with PGY1s, providing them with a personalised Pharmacy Information leaflet containing ward pharmacist contact details, and links to prescribing resources.

Discussion: Pharmacists have a key role to play in supporting newly qualified doctors to prescribe safely (RCP, 2017), with the orientation period an important starting point. We used a humorous approach to grab their attention and deliver this message. Audience response suggests it was well received, and PGY1s have continued to engage with their ward pharmacist, establishing good working relationships.

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Pharmacy Simulator: An interactive computer-based community pharmacy simulation programme for undergraduate, post-graduate, and continued education

Kenneth Lee[1], Bryan Etherington[2], Tristan Ling[2], Mackenzie Williams[2], Ivan Bindoff[2]

[1]*University of Western Australia, Crawley, Australia*

[2]*University of Tasmania, Hobart, Australia*

Background: In this era of rapid information creation, we need to continue to pursue avenues that engage learners and support effective learning. Simulation has been used as a method to support learning, and various features have been identified to support effective learning (Issenberg *et al.*, 2005): providing feedback, repetitive practice, providing a range of difficulty levels, and providing a controlled environment. 'Pharmacy Simulator' is a computer-based simulation programme that has the functionality to support all of the aforementioned features; however, its applications and user satisfaction need to be explored.

Objectives: To explore pharmacists and pharmacy students' experiences with using Pharmacy Simulator as an experiential learning tool, and the applications of Pharmacy Simulator in pharmacy practice education.

Methodology: Study 1 (Objective 1) used a pre-post intervention design with pharmacists and pharmacy students to explore the use of Pharmacy Simulator in three violence scenarios. Study 2 (Objective 2) gathered qualitative feedback from potential users including pharmacists, pharmacy organisations, pharmacy students, and universities to explore potential applications.

Results: Overall, participants were in favour of using Pharmacy Simulator as a learning tool in the context of violence simulation, and perceived the programme to have positive effects on confidence to practice. Participants suggested Pharmacy Simulator could be used as an engaging and interactive way to support continued education, as well as a flexible supplementary resource to support undergraduate and post-graduate education.

Discussion: Results suggest Pharmacy Simulator to be an engaging and suitable tool in pharmacy education across the continuum of learning.

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Big data for students and curricula: Creating an educational research registry to facilitate student support, curricular innovation, and scholarship

Tina Brock, Paul White, Daniel Malone, Ian Larson

Monash University Faculty Of Pharmacy & Pharmaceutical Sciences, Parkville, Australia

Background: Large data sets that can be mined to reveal associations have become an important part of contemporary science. In education, routine data collected for various purposes can be aggregated to create 'big data' models to support decision making at the individual and programmatic levels (Biemiller, 2017). If properly registered, these data can also be aggregated and disseminated externally to influence wider change.

Objectives: To create a registry of ethically-sourced educational data that could be used by educational leaders to describe and predict educational outcomes at the individual and programmatic levels.

Methodology: We identified key educational data points regularly used for local quality improvement initiatives from a variety of electronic sources - *e.g.*, learning management system, audience response systems, electronic testing software, simulation technologies, electronic portfolios, special consideration system, *etc.* - and applied to our campus ethics committee to create an opt-out research registry.

Results: We received permission to create a registry supported by annual discussion with students about its use. Academics continue to seek ethics approval for scholarly projects, but the registry reduces the need to obtain individual consent for each approved project.

Discussion: An educational research registry can support programmatic improvement as well as scholarship in education. We are currently using this registry as an early warning system for students at risk and to support curricular enhancement.

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Why implement a structured competency and portfolio of impact based, performance development programme when an OSCE will do?

Ian Coombes[1,2], Karen Whitfield[1,2], Andrew Hale[1,2]

[1]*Pharmacy Department, Royal Brisbane And Womens Hospital, Woolloongabba, Australia*

[2]*School of Pharmacy, University of Queensland, Brisbane, Australia*

Background: In 2017 the Society of Hospital Pharmacists of Australia implemented a Foundation Residency programme to formalise departments' competency based, workforce education training and development.

Objectives: To explore the pharmacists' perceptions of a structured residency programme, to identify what did and did not contribute to individuals' development

Methodology: Four pharmacists presented their portfolios to a panel of six senior pharmacists. Following presentations, structured feedback was sought from residents, about the process of using a portfolio to evaluate competence and opportunity for development.

Results: Residents, whilst initially feeling the objectives of continual evaluation and feedback, together with a reflective portfolio onerous, in hindsight found much of the work could be completed as part of their daily role. Residents' perceptions were mixed regarding the value of competency-based performance development tools such as direct observations of performance (Clin CAT), mini Clinical examination, case-based discussions and multi-source feedback. However, all saw the value for self and peer evaluation as well as receiving feedback to assist in a continual development plan. Residents felt that an exam such as a simulated Objective Structured Competency Examination (OSCE) would be of less value than a portfolio evaluation. "Why use scenarios when we are being evaluated with real patients in real workplaces?"

Discussion: The first year of running the residency allowed a quality assurance of local workforce development processes. Feedback identified that a portfolio using evidence from the work place was more desirable than an oral exam, to evaluate what pharmacists 'do' rather than show what they 'could do'.

The impact of a longitudinal professional development portfolio in an internationally-trained Pharm.D. degree programme

Jodie Malhotra, Kari Franson, Shaun Gleason

University Of Colorado Denver, Aurora, USA.

Background: Our internationally-trained Pharm.D. (ITPD) degree programme requires students to demonstrate competency in educational goals and to meet plans to advance pharmacy practice in their home countries. Since professional needs of each country vary it is important to individualise student learning experiences to address these needs.

Objectives: To design and implement a longitudinal professional development portfolio to address students' individual and home country educational and practice needs, assess pharmacy educational competencies and document skill application.

Methodology: The ITPD longitudinal professional development portfolio evaluates student performance and achievement in the: 1) school of pharmacy's educational outcomes, 2) ACPE-required Introductory Pharmacy Practice Experience skills, 3) International Pharmaceutical Federation's Global Competency Framework competencies, and 4) expansion of pharmacy services to meet healthcare in their home country. Students use the portfolio to document specific skills, assignments and other activities required in course work, with accompanying written reflection on how each activity demonstrated achievement. Students' longitudinal portfolio content is assessed through rubric-guided review of submitted activities and reflections. Portfolios are reviewed after completion of the didactic section of the curriculum and prior to graduation.

Results: Students are able to successfully document activities in the four evaluation areas. The portfolio has documented students' plans to expand patient-centred care. One example is a student's plan to implement patient-centred care in a community pharmacy.

Discussion: Implementing the longitudinal professional development portfolio into our ITPD curriculum addresses both the local practice needs of our international pharmacists, while also meeting our accreditation and programme educational goals.

Effect of changing from closed-book to formulary-allowed examinations for final year pharmacy students

Daniel Malone, Jennifer Short, Elizabeth Yuriev, Carl Kirkpatrick

Faculty of Pharmacy and Pharmaceutical Sciences, Monash University, Parkville, Australia

Background: Allowing students' information to be taken into a written examination produces a number of benefits, including decreasing student anxiety (Eilertsen & Valdermo,2000) and less emphasis on rote learning (Feller, 1994). Final year pharmacy students were allowed a copy of the Australian Medicines Handbook (AMH) in their second semester written examinations.

Objectives: To determine whether allowing use of AMH during examination modified students' learning behaviour and learning outcomes, and to investigate student perceptions on having the AMH as a resource in examinations.

Methodology: Student performance and examination difficulty (as measured by assessment of examination questions as 'high' or 'low' according to Bloom's taxonomy) was compared with first semester units (no AMH allowed in examinations). Students were asked to complete a survey on their study and examination habits.

Results: Study approach and reported time-on-task hours did not differ between semester 1 and 2, but more time was spent studying with an AMH in semester 2. Despite examinations in semester 2 having a greater proportion of questions rated higher on Bloom's taxonomy than semester 1 examinations, no difference in performance on examinations between semester 1 and 2 was shown. Qualitative analysis of student comments revealed students preferred having the AMH allowed in examinations compared to having closed book examinations, and the majority (72%) agreed that having the AMH in examinations allowed them to pay more attention to higher-level skills such as analysis and evaluation.

Discussion: When students are allowed an AMH in examinations, they performed as well on more difficult examinations, and student perceptions were generally positive.

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ClinCAT - National utilisation of a competency assessment tool for Australian pharmacists

Kylee Hayward, Julia Hruz, Sally Ridgers

The Society Of Hospital Pharmacists Of Australia, Collingwood, Australia

Background: The Society of Hospital Pharmacists of Australia (SHPA) has developed and implemented a national competency assessment tool, the ClinCAT (SHPA, 2013). Its development was informed by the United Kingdom (UK) General Level Framework, the SHPA Standards of Practice for Clinical Pharmacy Services, the Australian Pharmaceutical Advisory Committee guidelines and the National Competency Standards Framework for Pharmacists in Australia. The tool is designed to support peer review of clinical activities and to assist pharmacists to identify their learning needs.

Objectives: To provide training for pharmacists in the use of the ClinCAT to enable national utilisation of the tool.

Methodology: To facilitate national uptake of ClinCAT, SHPA developed a two-day interactive workshop for prospective evaluators. This was piloted in two states in 2010, then rolled out nationally. Key elements of the workshop include feedback training, structured role plays, change management and workplace implementation. Three workplace based assessments undertaken following the workshop complete the training. Revalidation as an evaluator is required after five years.

Results: Fifty ClinCAT training workshops have been offered in all states throughout Australia since 2010. To date 565 pharmacists have attended the workshops with 345 completing the post-workshop steps to become a credentialed evaluator. ClinCAT evaluators are located at over 100 hospitals and health services across Australia. Regular ClinCAT evaluations are a required part of the SHPA Pharmacy Residency programme and pharmacy masters programmes at a number of Australian universities.

Discussion: ClinCAT has been integrated into practice in the majority of hospitals and health services in Australia.

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Poster presentations are effective continuous assessment activities to foster integrated learning by undergraduate pharmacy students

John J. Keating

School Of Pharmacy, University College Cork, Cork, Ireland

Background: Posters are effective media of communicating information visually. To foster pharmacy student teamwork, communication and presentation skills, and to facilitate integrated learning, a highly successful, drug-themed, team poster continuous assessment element was introduced within the third year of the University College Cork (UCC) M.Pharm. curriculum.

Objectives: To enable pharmacy students to communicate, in an integrated manner, through the medium of an A0, portrait-orientated poster, the chemistry, formulation, pharmacology, and clinical pharmacy of a specific drug. To foster student teamwork, communication and presentation skills and empower student expression of their multiple intelligences (Gardner & Hatch, 1989). To develop student skills in lifelong learning with emphasis on the integration of knowledge.

Methodology: Module PF3009 (Gastrointestinal, Hepatic and Endocrine Systems) pharmacy students were divided into four-membered teams, assigned a PF3009-related drug and provided with poster design training. Teamwork training included a visual thinking strategy exercise. Teams were given eight weeks to plan, develop and produce their posters.

Poster team and team member grades were generated as follows:

- Team grades by assessors (mostly UCC Pharmacy School staff and postgraduate students) during a session analogous to a scientific conference based on (a) the design and content of the team posters, and (b) the team-assessor engagement.
- Individual team member grades were student-generated through Comprehensive Assessment of Team Member Effectiveness [CATME] (CATME, 2014), a teamwork feedback e-tool.

Results/Discussion: Team posters are a surprisingly effective means of encouraging pharmacy students to integrate knowledge. The exercise is mappable to an advanced rung of Harden's Integration Ladder (Harden, 2000) and to many competencies of the Pharmaceutical Society of Ireland Core Competency Framework for Pharmacists (PSI, 2013).

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Exploring the acceptability and value of an online teaching module to prepare for Objective Structured Clinical Examinations

Angelina Lim[1,], Suzanne Caliph[1,], Nilushi Karunaratne[1], Shaun Lee[2], Vivienne Mak[1], Simon Bell[1], Keith Sewell[1], Tina Brock[1]

[1]Monash University, Parkville, Australia

[2]Monash University, Malaysia, Malaysia

Background: Objective Structured Clinical Examinations (OSCEs) allow for assessing both clinical knowledge and communication skills through simulated case scenarios (Zayyan, 2011). We have historically scheduled live practice sessions to prepare for OSCEs which are logistically challenging and costly in staff time. We hypothesised that we could achieve similar outcomes with an online simulation module.

Objectives: To develop, pilot, and evaluate an online teaching simulation module for OSCEs.

Methodology: We recorded 20 online scenarios using a fixed question guide using Articulate Storyline™ and delivered them via Moodle (our online learning system). We piloted the module with final year Bachelor of Pharmacy students at our Parkville and Malaysia campuses. Following implementation we held focus groups to gather student feedback.

Results: One hundred and ninety-three out of one hundred and ninety-five students from Parkville and all 40 students from Malaysia completed at least one of the online cases. On average, each case was attempted by 81% of students; many cases were attempted multiple times. Overall OSCE scores were comparable to previous years. Students remarked the online module taught them how to target their questioning, keep to time limit, and was a less daunting approach in situations of knowledge gaps (avoided embarrassment that can come with live practice). They appreciated that the online cases were readily available and they could practice multiple times from any location. Despite these advantages, students preferred having a live practice.

Discussion: The online teaching module was successful in preparing students for the OSCE but additional work is required to help them feel more comfortable substituting this method for live practice.

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Views and experiences of the first cohorts of New Zealand Pharmacy Accuracy Checking Technicians

Sian Dawson[1], John Shaw[2], Vicky Chae[2], Tarryn Davey[2], Mahvish Iqbal[2], Kyung Mi (Suri) Kwen[2], Jeremy Lee[2], Jennie Liu[2]

[1]*Auckland District Health Board, Auckland, New Zealand*

[2]*School of Pharmacy, University of Auckland, Auckland, New Zealand*

Background: The role of Pharmacy Accuracy Checking Technicians (PACTs), certified to undertake the final accuracy check of dispensed items, was introduced in New Zealand (NZ) in 2015 (PSNZ, 2017). We explored the views and experiences of the first two cohorts of PACTs in order to inform the development of the role.

Objectives: The study investigated motivation, job satisfaction, career aspirations and ongoing learning needs of NZ PACTs, and explored enablers and barriers to implementation.

Methodology: This was a qualitative study using semi-structured interviews with results thematically analysed using NVivo 11 software.

Results: Of 29 eligible technicians, 15 participated in the study. A desire to further their career and release pharmacists to spend more time with patients was a key motivator. All reported an increase in job satisfaction, and for some, the added responsibility encouraged further career aspiration. A supportive manager and the comprehensive training programme, especially the 1000 item checking log, were considered essential to successful implementation of the role. Any resistance from pharmacists was overcome when they realised the benefits of the role in practice.

Discussion: NZ Pharmacy technicians are motivated to develop as PACTs, not only for personal job satisfaction but also for the benefit of the profession. Pharmacists have a key role to play by supporting the initiative and adapting work practices. The rigorous 1000 item checking is a crucial part of the training as it gives PACTs confidence and confirmation of their ability. The increased recognition and responsibility of the role brings the issue of technician registration into sharper focus.

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Visual Thinking Strategies - using art to support the development of critical thinking in pharmacy technicians

Kim Brackley[1], Trudi Aspden[2], Lynne Petersen[2]

[1]*Auckland District Health Board, Auckland, New Zealand*

[2]*University of Auckland, Auckland, New Zealand*

Background: Visual Thinking Strategies (VTS) (Housen, 1983; Yenawine, 2013) facilitates aesthetic development and has been found to support the development and transfer of critical thinking beyond the original learning context (Housen & DeSantis, 1983). Hospital pharmacy technicians' (HPTs) roles are shifting towards incorporating more complex and patient-centred activities. Auckland District Health Board has been exploring the potential of applying VTS to develop the observational and critical thinking skills and competencies of HPTs to support this role transition.

Objectives: To evaluate changes in the observational and critical thinking competencies of HPTs participating in a series of VTS sessions and their ability to apply these skills to key daily work tasks.

Methodology: A pilot prospective, non-randomised study exploring critical thinking and observational competency development in participating HPT using analysis of a series of writing samples and surveys completed by participants and their managers pre- and post-delivery of a series of 12 VTS sessions in 2016-17.

Results: Preliminary review and qualitative analysis of 13 participants' writing samples indicates the development of observational and critical thinking competencies. Analysis of survey data indicates the acceptability to participants of VTS in HPT continuing professional development sessions.

Discussion: In depth analysis of all the data collected in the research project is currently underway. However, our results to date indicate that VTS can support the development of observational and critical thinking competencies in hospital pharmacy technicians. These competencies have the potential to assist pharmacy technicians to extend their current practice into more complex, patient facing roles. This will have benefits to patients, pharmacists, administrators and technicians.

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How can intra-professional working between pharmacists and pharmacy technicians be enhanced to optimise the delivery of patient-centred care?

Melanie Boughen[1]

[1]*University Of East Anglia, Norwich, United Kingdom*

Background: Pharmacists and pharmacy technicians frequently work together in a variety of settings to deliver pharmaceutical care (Doucette *et al.*, 2012; Houle *et al.*, 2014; Bradley *et al.*, 2016; Lea *et al.*, 2016; Patterson *et al.*, 2017). Investigating this intra-professional relationship and how it can be enhanced could be used to optimise the delivery of pharmacy services and patient-centred care.

Objectives: To identify barriers and enablers to intra-professional working, and from this, describe strategies to optimise the delivery of patient-centred care.

Methodology: An integrative literature review was undertaken using CINAHL, EMBASE, Scopus and Science Direct databases with search terms and synonyms of pharmacy service, pharmacist, pharmacy technician, intra-professional. The search was limited to English language peer-reviewed full papers from 2011. Titles, abstract and papers were screened with only those considering skill mix and team working selected for final analysis. References for selected papers were hand searched. Thematic analysis was performed.

Results: Two hundred and eighty-nine papers were identified, 53 were duplicates and 30 abstracts met the inclusion criteria. Seven papers were selected for review with a further four identified from references. Five papers were United Kingdom (UK) based, three New Zealand, two USA and one Canada.

Enablers were: Leadership training regarding effective delegation and use of skill mix and recognition of pharmacy technician competence and abilities

Barriers were pharmacists not understanding pharmacy technicians' roles, responsibilities and their accountability

Discussion: The limited amount of research available on the topic suggests that to optimise the delivery of pharmacy services, pharmacists need training to understand foundation and extended roles which can be competently undertaken by pharmacy technicians and leadership training to manage effective delegation in order to optimise skill mix.

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Creating an online continuing professional development platform for pharmacists and pharmacy technicians in the United States

Jennifer Baumgartner, Dimitra Travlos, Michael Rouse

University 1Accreditation Council for Pharmacy Education, Chicago, USA.

Background: As pharmacy practice continues to evolve to meet changing healthcare needs, the role for self-directed lifelong learning (SDLLL) remains critical to enhance the competence required by pharmacy practitioners to provide high quality care. The Accreditation Council for Pharmacy Education (ACPE) has been the lead organisation advocating for adoption and implementation of continuing professional development (CPD) as a self-directed, ongoing, systematic, outcomes-focused approach to lifelong learning in pharmacy practice in the United States (US) (ACPE, 2015; Rouse, 2004; Rouse *et al.*, 2017).

Objectives: Based on recommendations from an October 2015 stakeholder conference and in collaboration with the National Association of Boards of Pharmacy (NABP), ACPE is developing an online platform to support lifelong learning and competency throughout the career of pharmacists and pharmacy technicians.

Methodology: Through enhancements of CPE Monitor®, a continuing pharmacy education (CPE) tracking service, the platform will account for accredited CPE as well other CPD activities undertaken in order to maintain and enhance competencies in areas relevant to professional responsibilities. The platform will be based on the components of the CPD cycle (REFLECT, PLAN, LEARN, EVALUATE and APPLY) and provide a record of SDLLL that can be shared with employers, regulators, accreditors, etc.

Results: The platform will be made available in April 2018 to US-licensed pharmacists and pharmacy technicians. Early results to be shared following initial launch.

Discussion: ACPE anticipates the platform will aid professionals to engage in all components of CPD cycle, demonstrate currency of professional competencies, document application of learning to improve practice, fulfil employment and/or regulatory obligations, and satisfy credentialing requirements. Accreditation Council for Pharmacy Education, Chicago, USA.

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Identifying gaps in intern pharmacist continuing professional development reflections

Brindha Kshirsagar, Michelle Vienet, Kirstie Galbraith, Tina Brock

Monash University, Melbourne, Australia

Background: The Pharmacy Board of Australia (PharmBA) requires interns to engage in continuing professional development (CPD) as a commitment to lifelong learning and development in practice (PharmBA, 2015). The PharmBA further states, "self-reflection…is essential to developing and refining skills."(PharmBA, 2017). In the Monash University Intern Training Programme (ITP), interns are required to reflect on each completed CPD activity by identifying their most important learning points and application to practice. In addition, they are expected to describe any remaining gaps in their knowledge and how they plan to address these gaps. Anecdotal experience suggests that an area for pharmacy intern improvement is in these written reflections.

Objectives: To identify gaps in intern pharmacist CPD reflections, and to propose strategies for improvement.

Methodology: Following ethics approval, intern pharmacists were recruited. An audit was conducted on a selection of intern pharmacist CPD reflections at the commencement of their internship. A rubric was developed to determine how well the interns reflected on a specific CPD activity. Two pharmacists, with expertise in assessing reflective writing, reviewed the CPD reflections against the rubric. Inter-rater reliability was assessed.

Results: Sixty-six interns consented to be involved. The CPD reflection was completed early in the internship. Identified gaps will be described, and strategies for improvement proposed.

Discussion: Description of gaps in intern pharmacist CPD reflections enabled strategies for improvement to be developed. These will be implemented and evaluated in a future project.

Improvement science - a key skill for pharmacists in the 21st century?

Sandhaya (Sandy) Bhawan

Pharmac, Wellington, New Zealand

Background: The Health Quality & Safety Commission (HQSC) in New Zealand is increasing its focus on primary care services, aged residential care and disability services. The Commission's primary care programme aims to increase quality improvement capability and in 2017, the Commission called for expressions of interest for the Whakakotahi Primary Care Improvement Challenge. Te Awakairangi Health Network (a Hutt Valley Primary Health Organisation) partnered with Hutt Union Community & Health Service - a very high needs general practice in the Hutt Valley, and submitted an application seeking to improve diabetes care and services to its population. Almost 50% of the practice population with Type 2 diabetes had an HbA1c >64mmol/mol. This project was selected as one of three nationally and was co-led by the practice based clinical pharmacist.

Objectives: To reduce the average HbA1c in all patients with diabetes by 10% by 31 December 2017.

Methodology: The general practice was supported by the Commission to undertake learning and application using the Institute of Healthcare model for improvement and consisted of the following steps:

Forming the Team including: setting aims; establishing measures; selecting changes; testing changes; implementing changes; spreading changes.

Results: The results achieved across a range of established measures for the project indicated that a positive difference had occurred. Evidence for special cause variation was seen, meaning that the improvements seen were statistically significant. One of the key reasons of success was attributed to the leadership of the pharmacist.

Discussion: The presentation will highlight the value of a pharmacist to quality improvement projects in the general practice setting both as a clinical leader and as a member of the team. The presentation will also give a chance for the audience to reflect on the inclusion of improvement science as part of the learning for pharmacists.

Evaluating continuing professional development needs of pharmacist prescribers in New Zealand

Adele Print, John Shaw

University Of Auckland, Auckland , New Zealand

Background: New Zealand (NZ) pharmacists working in a collaborative setting have been able to prescribe medicines since 2013. This role expansion is a significant development for the profession with the potential to enhance patient care. Continuing professional development (CPD) is essential to support safe and effective prescribing competence (Stewart *et al*., 2009; Winstanley, 2009; Weglicki *et al*., 2015).

Objectives: To explore pharmacist prescribers' and pharmacy stakeholders' views of CPD needs and barriers for the pharmacist prescribing role.

Methodology: An online survey was distributed to 23 pharmacists who had or were completing the post-graduate prescribing training. Quantitative analysis of survey data was undertaken using Qualtrics. Qualitative semi-structured interviews were conducted with six pharmacy organisations and the transcripts were coded using NVivo (v.10). Thematic analysis of transcribed interviews was completed using a general inductive approach.

Results: Pharmacist prescribers wanted more CPD support from pharmacy organisations, and 94% agreed that CPD provision could be improved. Barriers included availability of appropriate CPD, funding and time. Inter-professional learning was the most useful CPD activity. Clinical decision making, communication skills and patient assessment were priority areas for ongoing development of prescribing competence. Stakeholders were largely unaware of pharmacist prescriber CPD needs and did not perceive their organisation to be responsible for providing CPD. The small cohort of pharmacist prescribers was a barrier to providing targeted affordable CPD. Both pharmacist prescribers and stakeholders suggested collaborative, inter-professional approaches to address identified barriers.

Discussion: Pharmacist prescribers' views on their CPD needs and barriers differed markedly from stakeholder perceptions. The small sample size means findings may not be representative once more pharmacists become prescribers.

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Defining clinical decision-making by advanced pharmacy practitioners

Megan Anakin, Daniel Wright, Stephen Duffull

University of Otago, Dunedin, New Zealand

Background: In the 21st century, pharmacy as a profession is undergoing a profound change. Pharmacists can no longer rely on clinical checks and filling prescriptions to remain their sole professional duties. Pharmacists are moving into roles that require them to perform advanced services such as prescribing and medicines review. How pharmacists are making decisions in these new roles is largely unknown.

Objectives: To identify the components of clinical decision-making provided by advanced pharmacy practitioners.

Methodology: Interview data were collected from 17 pharmacists as they described the decisions they made when they provided advanced clinical services. The data were analysed thematically using a general inductive approach and a philosophical framework (Duffull *et al.*, 2018).

Results: Participants described clinical decision-making as a flexibly coordinated series of cognitive skills that could be categorised according to three bioethical orientations (non-maleficent, co-beneficent, and secondary beneficent). Participants expressed a preference for clinical decision-making that involved a non-maleficent orientation. They were less comfortable providing services that required beneficent orientations because of the increased levels of accountability and responsibility that were required.

Discussion: Findings from this study provide an initial description of the clinical decision-making process used by pharmacists who provide advanced services. Findings can also be used to understand how the clinical decision-making process differs according to the type of service provided and to identify the cognitive skills that need to be developed to provide each service. Implications for education include a proposed teaching model for clinical decision-making.

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A framework for enhanced pharmacist roles in primary care

John Jackson, Bianca Levkovich, Carl Kirkpatrick

Monash University, Parkville, Australia

Background: Pharmacists are educated in the provision of numerous non-dispensing professional functions however their sustained implementation in primary care in a way that has significant impact has been limited.

Objectives: To improve the quality and effectiveness of pharmacist services by facilitating uptake of roles that provide patient and system benefits while enhancing professional satisfaction.

Methodology: In excess of 50 non-dispensing professional functions performed by pharmacists in primary care were identified from the literature. The functions were grouped thematically and translated into enhanced roles equating to positions of employment. Application of selection criteria led to nine enhanced roles being chosen for assessment by a stakeholder workshop. Standardised statements were prepared for the nine roles and the workshop determined four as potentially providing the greatest benefit within an Australian context. Referencing work in other health professions, a seven-element framework for facilitating implementation of these and other enhanced pharmacist roles in primary care were developed.

Results: The four roles are: general practice pharmacist; residential aged care pharmacist; medication adherence pharmacist; community and home care pharmacist. The framework presents key aspects of the following elements: practice context; role requirements and responsibilities; organisational structure and function; facilitation of introduction; clinical governance; support parameters; monitoring and evaluation.

Discussion: Application of the framework will provide consumers, regulators and funders a heightened level of assurance that enhanced roles, selected on the basis of need and benefit, can be introduced using an accountable process. Pharmacists will have increased opportunity to apply their knowledge and skills in a sustainable manner.

How was your paediatric placement? Feedback from participants over two years

Heidi Wong, Elizabeth Anderson, Jason Wang

Lady Cilento Children's Hospital Pharmacy, South Brisbane, Australia

Background: The Lady Cilento Children's Hospital (LCCH) Pharmacy Department offers tertiary paediatric experiential placements to university students, pharmacy interns working in adult-based facilities, and pharmacists caring for paediatric patients in non-metropolitan hospitals. The primary aim is to provide a comprehensive overview of paediatric medicines management; highlighting its differences to adult practice and familiarising participants with best practice guidelines and resources (Stupans *et al.*, 2011)

Objectives: To review placements offered by LCCH Pharmacy in 2016 -17, evaluate the perceived relevance, format and value of the placements, and determine whether participants have an improved understanding of paediatrics

Methodology: Placement participants were asked to complete evaluation forms at the end of their placements. Their roles, placement durations and feedback were entered into an Excel spreadsheet. Quantitative data were presented using descriptive statistics while free-text comments were reviewed to identify common themes.

Results: In 2016-2017, a total of 63 paediatric placements were provided with an average duration of 20.3 days (students), 4.64 days (interns) and 3.67 days (pharmacists). One hundred percent of respondents strongly agreed or agreed that the placement was valuable, relevant, practical and of suitable format, and reported an improved understanding of paediatrics upon completion of placements. Key learning themes identified included 'children are not small adults', individualising the approach to patients, providing family-centred care, and the paediatric pharmacist's role.

Discussion: The placements were reported as valuable and relevant. Participants were able to describe many features of paediatric medicines management in their comments. These placements may benefit paediatric patients presenting to other healthcare facilities.

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Simple reflection and feedback models: Experiences of first year students and their academic coaches

Andreia Bruno[1], Kirstie Galbraith[1], Tina Brock[1], Anisha Chohan[2], Jennifer Short[1]

[1]Monash University, Melbourne, Australia

[2]UCL School of Pharmacy, London, United Kingdom

Background: Skill development for pharmacists-in-training is crucial for employability at registration. Implementation of a new pharmacy curriculum with a strong focus on skill development is underway. Core skills targeted are: problem solving, oral and written communication, empathy, reflective practice, integrity, teamwork, and inquiry. Evidence suggests reflective thinking may be associated with improved clinical decision making (Tsingos *et al*., 2015).

Objectives: To describe implementation and evaluation of a skills coaching programme, incorporating reflective writing and structured feedback.

Methodology: Early in the course, we taught first year pharmacy students a modified Gibbs' approach for reflection (Gibbs, 1988), using prompts: 'What?'; 'So What?' and 'Now what?'. Prior to fortnightly coaching sessions with an assigned academic skills coach, students submitted reflections and evidence in the form of personalised learning plans (PLPs) via their e-portfolio. Skills coaches provided structured feedback *via* the e-portfolio, using 'Keep, Start, Stop'. We obtained ethics approval from students and skills coaches for analysis of PLPs and feedback survey responses..

Results: Fifty-four consenting students (31%) submitted 326 PLPs in first semester, and 269 in second semester. The use of Gibbs' framework increased from 30% in first semester to 75% in second semester. PLPs receiving feedback reduced from 88% to 81% over this time, however structured feedback increased from 29% to 75%. Students and coaches most highly valued the opportunity to work consistently with their group.

Discussion: We successfully implemented a skills coaching programme, incorporating PLPs structured with simple reflection and feedback models; students and coaches demonstrated improved engagement.

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Transition to a successful career: Pharmacy students reflecting on placement feedback

Jose Manuel Serrano Santos[1], Steven Weier[2], Yasmin Antwertinger[1], Esther Lau[1], Ingrid Larkin[3], Erin O'Connor[4]

[1]School of Clinical Sciences, Queensland University of Technology, Brisbane, Australia

[2]School of Biomedical Sciences, Queensland University of Technology, Brisbane, Australia

Business School, Queensland University of Technology, Brisbane, Australia

[4]School of Psychology and Counselling, Queensland University of Technology, Brisbane, Australia

Background: Feedback is an important part of the learning experience of pharmacy students when complemented with a reflective practice approach and growth mind-set. Preceptors and students often differ in expectations of feedback. Students may not recognise feedback when it is given or they may not know how to seek it, rendering the feedback to be meaningless in terms of the students' growth and learning experience.

Objectives: The aim of this project is to explore the impact of a post-placement workshop, on how students at Queensland University of Technology (QUT) recognise, seek and respond to feedback.

Methodology: A post-placement face-to-face workshop about feedback and resilience was developed. Data were collected from students through surveys pre- and post-workshop. Descriptive statistics and thematic analysis was used to analyse the data, to compare the influence of the workshop on student perception and understanding of feedback, and resilience in coping with negative feedback.

Results: The majority of students (85%) found that the workshop provided them with opportunities to think about feedback, and tools to learn from and act on feedback. Those students in early years of their studies found the workshop more helpful than those ones in their last year at university.

Discussion: This pilot study provided valuable insight on the value of augmenting student perceptions of feedback and resilience. While the intention of the post-practicum workshop was to contextualise student development, and consolidate student understanding of their experiences and learning while on practicum, the workshop provided awareness for feedback, reflection and growth of mind-set skills for the students.

Implementation of a health literacy Entrustable Professional Activity for second year pharmacists-in-training on experiential placement

Kirstie Galbraith[1], Tina Brock[1], Greg Duncan[2], Safeera Hussainy[1], Vivienne Mak[1], Yan Yan Yeap[1]

[1]*Faculty of Pharmacy and Pharmaceutical Sciences, Monash University, Parkville, Australia*

[2]*Eastern Health Clinical School, Monash University, Box Hill, Australia*

Background: Pharmacy programmes in Australia are required to include experiential placements in their curricula (APC, 2015). We introduced a programme of early and enhanced placements focusing on students adding value to the workplace. Entrustable Professional Activities (EPAs) are tasks which can be carried out unsupervised by a learner who has demonstrated the required competence (ten Cate, 2013). Through discussions with health services leaders, we identified the topic of health literacy as a key area where trained students could add value.

Objectives: To describe development and implementation of a health literacy EPA for a second year Student Experiential Placement (StEP).

Methodology: We defined a health literacy task, formatted learning components in the Discover, Explore, Apply, Reflect (DEAR) model, and developed assessment required to credential students prior to placement. We consulted health services leaders to reach agreement regarding numbers and clinical areas where the task could be implemented.

Results: Health literacy instruction to students occurs in the first two weeks of semester with credentialing in week three, and concurrent sharing of information and a video of the task with all experiential sites. We have allocated 172 students to ten health services with each student participating in three days of site-based activity. Feedback during planning suggests challenges in capacity at experiential sites and some resistance to allowing students to work in the absence of direct close supervision.

Discussion: We will report on implementation of a health literacy EPA in a second year StEPs programme reflecting on engagement with experiential sites and student and site experiences.

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Experiences in defining Entrustable Professional Activities to drive the learning of undergraduate pharmacy students

Hesham Al-Sallami[1], Megan Anakin[2],Alesha Smith[1], Aynsley Peterson[1], Stephen Duffull[1]

[1]*School of Pharmacy, University of Otago, Dunedin, New Zealand*

[2]*School of Medicine, University of Otago, Dunedin, New Zealand*

Background: Entrustable Professional Activities (EPAs) are discrete tasks or responsibilities that a trainee is entrusted to complete and document with appropriate supervision (ten Cate, 2013). EPAs (*e.g.* dispensing or treatment of a minor ailment) link directly to a work-based assessment framework and allow for a natural continuation of learning in pharmacy from an undergraduate student to an intern to a pharmacist. EPAs also map to learning outcomes, and therefore to professional competencies.

Objectives: To define EPAs appropriate for pharmacy undergraduate education.

Methodology: A group of core and elective EPAs were identified using interviews with pharmacists, a survey of pharmacy services, and the pharmacy services stipulated by the Pharmaceutical Society and Pharmacy Council of New Zealand. For each EPA, one of five levels of attainment was assigned; where level 1 was 'observation only' and level 5 'supervision provided by the student to more junior students'.

Results: Nineteen core EPAs were defined. An example of a core EPA is dispensing which was assigned an attainment level of 4 (defined as 'execution with post-hoc supervision'). Twenty-two elective EPAs were identified and were all assigned an attainment level of 1 or 2. An example is anticoagulation monitoring.

Discussion: EPAs are used extensively in medical education but not yet in pharmacy undergraduate programmes. They are a useful tool in the teaching and assessment of pharmacy services and professional competencies.

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Development and validation of a framework for evaluating competency in medication supply

Hayley Croft[1], Conor Gilligan[1], Rohan Rasiah[2], Tracy Levett-Jones[3], Jennifer Schneider[1]

[1]University Of Newcastle , Callaghan 2308, Australia,

[2]Western Australian Centre for Rural Health, University of Western Australia , Australia

[3]University of Technology Sydney, Sydney, Australia

Background: Effective medication consultation and dispensing by pharmacists is essential in ensuring patient safety (Croft *et al*., 2017a). With the progressive development of standards of practice, and public demand for assurance of health professional competency, there is an increasing need for reliable and valid tools for pharmacist competency assessment, but there is a lack of adequate evidence for such assessments (Ryall *et al*., 2016; Koster *et al*., 2017)

Objectives: The purpose of this study is to develop and test a conceptual framework for evaluating the professional competence of pharmacy students in clinical decision making during the review and supply of medications.

Methodology: Key components of clinical reasoning during medication supply were identified through a think aloud study with pharmacists (Cook *et al*., 2015) and compiled to form an initial simulation based assessment framework. Validation of the framework is being undertaken with undergraduate pharmacy students participating in a simulation of a typical patient-pharmacist encounter in a community pharmacy. Expert raters' assessments will be analysed using non-parametric statistical analysis to determine the validity and reliability of the framework as an assessment tool (Croft *et al*., 2017b).

Results: The framework consists of 24 items grouped into five domains for assessment of pharmacy students using both observation and post-simulation discussion. We will present the results of the validation study involving a minimum of ten expert assessors from a range of pharmacy schools. Identified assessors are pharmacists with expertise in workplace based assessment, registration examination and undergraduate pharmacy teaching and learning.

Discussion: This research project will provide a structure for medicine dispensing, allowing assessment of pharmacist competency in safe and appropriate medication supply

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Professional identity development: From pharmacy student to the practice

Martina Mylrea, Beverley Glass

James Cook University, Townsville, Australia

Background: Professionalism is pivotal to the practice of pharmacy, with the development of professional identity, key to professionalism (Cruess *et al*., 2014; Nobel *et al*., 2014). Evidence of effective pedagogical approaches for developing professionalism in pharmacy students is however lacking. Recently, Self-determination Theory (SDT) (Deci & Ryan, 2002), a theory which purports that highly autonomous behaviours and identity development are reliant upon support for individual competence, relatedness and autonomy, has been suggested as an appropriate theoretical basis for professional identity development (Mylrea *et al*., 2017). This study describes the development of a novel Professional Identity Programme (PIP) based on SDT.

Objectives: To develop a PIP, for the first two years of an undergraduate pharmacy programme and to measure student autonomy and identity before and after the programme.

Methodology: SDT was used to inform the instructional design of a series of workshops, integrated into the B.Pharm. curriculum. A mixed methodology employed the development of a survey instrument to assess levels of autonomy and identity amongst the participating students, (Mylrea *et al*., 2018) and focus groups explored participant perceptions of the PIP.

Results: One hundred percent of the participants felt that they gained a greater understanding of the importance of professionalism and 84% felt that the PIP "improved my sense of professional identity". Survey instruments revealed a statistically significant increase in student autonomy after completing the programme (U=421, Z=-2.5, p=0.012).

Discussion: The PIP represents a longitudinal, early intervention, theory-based approach to professionalism for pharmacy students. This study is novel in its use of SDT to develop professional identity. Going forward, the model has potential for application in the internship and continuing professional development.

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Development of a standardised patient-centred care model for teaching second year pharmacy students

Rochelle Gellatly[1], Steven Walker[1,2], Vivienne Mak[1]

[1]Monash University, Parkville, Australia

[2]Austin Hospital, Heidelberg, Australia

Background: Globally, professional bodies have created standardised processes for approaching patient care. Adoption of these in practice has resulted in fewer medication errors and improved overall outcomes. Although some countries have extended these practice models into the undergraduate educational space, this was not the case at our Faculty. Concomitant with a new curriculum design, we sought to harmonise our teaching by creating a holistic model for approaching clinical decision-making (Gonyeau *et al.*, 2017).

Objectives: To describe the development and piloting of the Monash Model of Care (MMOC) for use by second year pharmacy students.

Methodology: We reviewed existing frameworks endorsed by professional bodies in Australia and other countries. We identified common elements of these models and validated these with Australian preceptors in community and hospital practice. After refinement, we developed a MMOC template to guide educators and clinicians in formatting their case-based instruction (eg, preparatory materials, lectures, workshops) and assessments in a standardised manner. We then trialled the MMOC with visiting undergraduate pharmacy students (n = 8) to simulate the intended target audience (CPA, 2013; JCPP, 2014; PSA, 2017).

Results: The final MMOC includes seven elements illustrating the CARE acronym; Connect & Collaborate, Assess & Apply, Recommend, Educate and Ensure monitoring & follow up. Feedback from pilot students suggests that the model is a useful framework for addressing medication-related problems in patients. Early feedback from academics and practitioners confirms that the template is feasible for design of instructional materials across units.

Discussion: After comprehensive development and piloting of the MMOC, we intend to expand its use throughout our course.

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Are pharmacy students' motivations for learning fit for 21st century practice?

James Green, Carlo Marra

University Of Otago, Dunedin, New Zealand

Background: Continuing professional development requires pharmacists to engage in life-long learning, including up-skilling for advanced pharmacy services. It is therefore important for pharmacy education to attract students who are engaged with the learning process. One popular framework for understanding this is Achievement Goals. Are students motivated by internal standards (either striving for mastery or avoiding failure); or how they perform relative to others (striving to beat others or avoiding failure)?

Objectives: To determine whether students entering the Otago pharmacy programme have different achievement goals from students studying other subjects; and between students who apply only for pharmacy, versus those who apply for multiple health professional courses.

Methodology: All second year students at the University of Otago were invited to take an online questionnaire containing the Achievement Goals Questionnaire – Revised, along with demographic variables.

Results: Five hundred, sixty-five students (97 pharmacy, 465 non-pharmacy) completed the survey, from an estimated 3536 invited (16% response rate). Relative to non-pharmacy students, pharmacy students were more

motivated by achieving mastery, $p=0.001$, $d=-0.31$ [-0.53, -0.09]. Students who applied for multiple health professional courses were more highly motivated by avoiding failure against their internal standards ('mastery avoidance') than students choosing pharmacy, $p=0.003$, $d=0.54$ [0.12, 0.97].

Discussion: Overall, pharmacy students had a higher focus on mastery, which is favourable for lifelong learning. We will continue to follow this cohort to determine whether this has an effect on future role engagement.

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What gets measured gets gone: Let's move beyond measuring participation!

Michael Rouse[1], Arijana Meštrović[2]

[1]*Accreditation Council For Pharmacy Education (acpe), Chicago, USA.*

[2]*PharmaExpert, Zagreb, Croatia*

Background: Models to assure continuing competence of healthcare professionals differ between countries. While several countries have introduced a Continuing Professional Development (CPD) model, mandatory participation in continuing education (CE) remains the most pervasive model (Dorman & Miller, 2011; Tran *et al*., 2014).

Objectives: The primary objectives of CE are maintenance and enhancement of competence of the learner/practitioner and improvement in patient care, yet few systems evaluate such achievement.

Methodology: When mandatory CE was pervasively introduced for United States (U.S.) pharmacists in the 1970's, it was a proxy for competence and envisioned as a temporary measure until better systems to meaningfully assess competence could be developed. More than 40 years later, the model is still in place, and indications are that it will not change soon. Mandatory CE, however, only evaluates CE outcomes at the lowest level, namely participation. The limitations and disadvantages of such a model have been clearly demonstrated and the Institute of Medicine (USA) has called for change (FIP, 2014; Mestrovic & Rouse, 2015).

Results: The session will describe the SMART Pharmacy Programme, a collaborative initiative of ACPE and PharmaExpert, which was developed for the Turkish Pharmacists Association, and which has subsequently been launched in several other countries.

Discussion: Based on the CPD model and incorporating globally adopted tools, frameworks and concepts, the Program holds participating pharmacists accountable for improvement in their competence and quality of services delivered (currently, both by self-assessment) and documented improvement in patient care, thereby evaluating outcomes at the third, fourth and fifth levels.

Past, present and future: Inter-professional undergraduate unit design for a multi-discipline first year cohort

Marea Patounas, Esther Lau, Lisa Nissen

Queensland University Of Technology (QUT), Faculty of Health, School of Clinical Sciences, Brisbane, Australia

Background: Inter-professional learning and collaboration is critical for all health discipline students as a foundation towards future clinical practice, where safe and effective healthcare provision is paramount.

Objectives: To design and develop an inter-professional undergraduate subject with a core focus on health professional roles, inter-professional learning (IPL), the Australian health system, and patient-centred care.

Methodology: An inter-professional undergraduate subject was developed with core topics applicable to future health practitioners. A patient case-based focus was a key design requirement for paramedicine, paramedicine/ nursing, podiatry, pharmacy, and medical radiation sciences students.

Results: Subject launch was in 2014 (Davies *et al*., 2015) with ongoing improvements implemented including moving from discipline-specific to multi-discipline workshops facilitated by staff from various health disciplines (2015), and collaborative learning spaces (2016). The main assessment item, 'the Health Team Challenge' was a case-based scenario that required students to follow a team-based approach to patient-centred care. It also examined the various health professional roles required to support the patient's needs through the health system.

Discussion: IPL is important for collaborative practice and achieving optimal patient outcomes (IM, 2015) and the QUT Faculty of Health considers the IPL subject to be essential training for future health professionals. Some students appear ambivalent about the subject, unaware it will support their future practice as an effective member of the healthcare team. Ongoing improvement will focus

on enhancing student knowledge around the Australian health system, the roles of health professionals, and the need for collaborative practice to support the patient journey across care transitions.

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Developing South African health professions educators for the 21st century

Carmen Oltmann

Rhodes University, Grahamstown, South Africa

Background: Fourteen representatives of ten universities offering Health Professions (HP) education formed a collaborative research group to identify areas for improvement in HP education required locally. This is a multi-phase project with phase 1 described in this presentation.

Objectives: To identify the key attributes and competencies HP graduates should possess upon graduation to meet the South African healthcare needs of the 21st century.

Methodology: A literature search of papers published since January 2015 was undertaken to identify key attributes and competencies expected of HP graduates. Following ethical approval ten HP stakeholders were interviewed asking their opinions of key attributes and competencies. This led to the construction of two rounds of Delphi questionnaires - which were disseminated amongst health professionals in various disciplines in South Africa.

Results: The first Delphi questionnaire was developed following analysis of 143 relevant articles and stakeholder interviews. Two hundred and thirty-seven health professionals participated in round 1 of the Delphi, and 53 in round 2. Key attributes and competencies were categorised into three groups: nice to have, desirable, and essential.

Discussion: Essential key attributes and competencies in HP graduates included: demonstration of critical thinking (91%), with a moral conscience (91%), and resilience (75%); practice that was evidence informed (75%); ethical (98%), inter-professional (80%), a commitment to reporting and recording (89%), and practicing effectively in a team (81%). Further phases will involve identifying attributes and competencies required by HP educators to achieve the necessary education outcomes, describing current faculty development programmes, and making recommendations for enhancing faculty development.

Inter-professional learning to support inter-professional care

Kari Franson

University Of Colorado Skaggs School Of Pharmacy, Aurora, USA.

Background: FIP Workforce Development Goal 8 calls for education to support pharmacists working with others in the healthcare team. The competencies necessary to meet this goal are numerous and vary depending on the country's practice environment. Yet, the competency of teamwork is often included in inter-professional frameworks (Kirkpatrick & Kirkpatrick, 1994; WHO, 2010; IEC, 2011).

Objectives: Create an inter-professional educational programme that develops and assesses teamwork which has the potential to impact local care.

Methodology: The University of Colorado created a longitudinal curriculum to develop and assess students' teamwork abilities at all levels of the Kirkpatrick Evaluation Model: reaction and attitude modification; knowledge and skill acquisition; behavioural change, and change in organisational practice.

Results: Of the 615 students responding to the end of course survey, only 6.8% of pharmacy students reported any dissatisfaction with the teamwork and collaboration education. One hundred percent of students were able to apply teamwork knowledge in written assessments. One hundred percent of students successfully applied teamwork skills in high fidelity simulations. One hundred percent of pharmacy students working in an inter-professional clinic were trusted by other healthcare professionals. Cross-campus examples include the initiation of 1) an inter-professional student-run free clinic; 2) an extracurricular public health competition with inter-professional teams, and 3) the initiation of an inter-professional team-based quality and safety programme in the university hospital.

Discussion: University of Colorado has created a new normal: A culture in which campus efforts in health care provision are inter-professional from the beginning.

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Collaborative competency development in pharmacy undergraduates through Visual Thinking Strategies

Trudi Aspden, Lynne Petersen

University Of Auckland, School Of Pharmacy, Auckland, New Zealand

Background: Visual Thinking Strategies (VTS) uses small group facilitated sessions to explore visual art (Housen, 1983). It has been used to support the development of generic competencies relevant to health professionals (Jasani & Saks, 2013; Moorrman & Hensel, 2016) which are increasingly seen as critical within inter-professional teams providing person-centred healthcare. In 2016, the B.Pharm. programme, University of Auckland, implemented VTS sessions and associated learning activities at Part II. At the end of 2017, students were surveyed to determine their perceptions of the value of VTS sessions.

Objectives: The overarching aim was to evaluate pertinent aspects of the introduction of VTS within Part II of the B.Pharm. programme. A key objective of the evaluation was to determine the perceived benefits of these VTS sessions and activities to students within placements and other professional pharmacy practice settings.

Methodology: A cross-sectional study using a whole-of-cohort anonymous online reflective questionnaire.

Results: Fifty-six percent (98/174) of students agreed to participate in the evaluation. Likert scale statements and free text responses indicated that most responding students perceived a range of benefits from attending the VTS sessions. Benefits directly relating to effective teamwork in the workplace included capabilities such as active listening, responding to questions/problems with no immediately obvious answer and a greater confidence when speaking.

Discussion: The development of collaborative skills and attitudes, linked by students to VTS sessions, has potential to enhance performance in group work across the B.Pharm. programme. Future research could explore the transfer of these competencies to students' emerging pharmacy practices with patients and other health professionals.

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GATES: An online step-wise Blackboard tool to develop student collaborative teamwork competencies

Judith Singleton[1,2], Johanna Kenyon[1,2,3]

[1]*Queensland University of Technology (QUT), Australia*

[2]*Institute of Health and Biomedical Innovation, Australia*

[3]*University of Sydney, Australia*

Background: Interdisciplinary collaboration and communication are vital health graduate capabilities required for future professional pathways. However, students report problems with domineering team members, 'hitchhikers', non-cohesive strategies and divergent views, (Freeman, 1996; Oakley *et al*., 2004) leading to de-motivation, conflict and poor learning outcomes (Scott-Ladd & Chan, 2008; Burdett & Hastie, 2009). An online Blackboard® tool incorporating five strategic 'gates' (Team structure, Communication, Leadership, Situation monitoring, and Mutual support) was designed to support the social processes required for team cohesion in students doing group assessments.

Objectives: To determine if the GATES 2.0 tool supported student group work collaborations and improved the group work experience.

Methodology: GATES was embedded in the Blackboard sites of six QUT health units (courses) which had a group assessment task in 2017. Participants comprised six academics and 721 students. Data collection involved the completion of two online surveys – at the beginning and end of the semester. Both demographic and qualitative data were collected.

Results: Students believed the tool improved group communication, organisation, and time management through development of action plans. However, GATES did not help resolve conflicts in a few groups, particularly those dealing with 'hitchhikers' and members producing poor quality work. Academics reported little need for facilitation of student groups and three reported less student emails regarding group issues.

Discussion: There was evidence to support the use of the tool, however more resources need to be added to help students deal with group conflict. The tool would be more effective if the unit coordinators incorporated its use in tutorial activities so that it is not seen simply as an extra activity.

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Activities and personality characteristics of prescribing pharmacists

Linda Bryant, Penny Clarke, Leanne Te Karu

Phoenix Consulting Pharmacists, Wellington, New Zealand

Background: There are 17 prescribing pharmacists registered in New Zealand. Eight of the prescribing pharmacists are working in hospital settings and nine in primary care. The uptake of the prescribing pharmacist role has been slow and the prescribing role(s), particularly in primary care, are not well defined. They have developed in an organic manner, depending on the different environment for the pharmacists. In an environment that requires justification of services and a focus on outcomes, it is essential that we establish the benefit of pharmacist prescribers.

Objectives: To determine the activities being undertaken by prescribing pharmacists in primary care that could provide a unique contribution to patient care, and to explore the personality characteristics of these pharmacists.

Methodology: A two to four day detailed activity log was provided by four prescribing pharmacists to identify the specifics of what prescribing pharmacists do. To explore the characteristics required for prescribing pharmacists, a short perceptions survey was undertaken

Results: The roles of the prescribing pharmacists were diverse, and activities variable. As well as the clinics for direct care for people with long term and/or complex conditions, the pharmacists were utilised as a resource for general practitioners, nurses and other health care providers. The characteristics demonstrated were adaptability and the ability to make clinical decisions in areas of uncertainty, focusing on individualisation of therapy and the need for clinical decision making.

Discussion: With non-medical prescribers increasing it is essential that we develop and demonstrate roles for pharmacist prescribers that contribute unique benefits. A starting point is exploring the activities that are currently undertaken, and the characteristics required to fulfil the roles. This is preliminary information on which to build further research.

Advancing pharmacist practice through new career pathways

Jan Ridd, Himali Kaniyal, Rhyan Stanley

Pharmaceutical Society of Australia, Deakin West, Australia

Background: The Pharmaceutical Society of Australia (PSA) is recognised by the Australian government as the peak body representing Australia's 30,000 pharmacists working in all sectors and locations. PSA is committed to improving Australia's health through excellence in pharmacist care. PSA is leading new career pathway development in Australia through advocacy, education and support along the practice continuum to support advancing pharmacist practice.

Objectives: To pioneer new career pathways for pharmacists with supporting education and practice support to address skills gaps and meet emerging training needs of Australian pharmacists as they move into expanded and innovative practice roles.

Methodology: Collaboration with government, peak bodies, non-government organisations, industry and the pharmacy workforce. Highlighting the benefits of expanded pharmacist roles to government and advocating for remuneration to support these services. Developing and delivering tailored practice support and education informed by practising pharmacists.

Results: Establishment of leadership groups to provide expert advice on education and support opportunities - in progress. Supporting pharmacists along the practice continuum through mapping of education and development of implementation support and advice on evidence accumulation - in progress. Development and delivery of Tranche 2 Pharmacy Trial Programmes (PTP) - NACCHO and Asthma trials - in progress.

Discussion: Australia's ageing population requires a health workforce that is enabled and capable. PSA is delivering new career pathways for Australian pharmacists in the health system to support this. Reflection on results will include: content mapping along practice continuum; training programme uptake and preparedness for practice; leadership group participation

Continuing professional development: Pharmacists' evolving roles and changing needs

Theresa Schindel[1], Nese Yuksel[1], Rene Breault[1], Jason Daniels[2], Stanley Varnhagen[2], Christine Hughes[1]

[1]*Faculty of Pharmacy and Pharmaceutical Sciences, University of Alberta, Edmonton, Canada*

[2]*Faculty of Extension, University of Alberta, Edmonton, Canada*

Background: Continuing professional development (CPD) fosters advancement in knowledge and skills that support changes in practice (MacKinnon *et al.*, 2017; Rouse *et al.*, 2017). Research suggests that pharmacists perceive the need for additional training to take on expanded roles (Jorgenson *et al.*, 2011). However, the types of professional development and preferred learning methods are unclear.

Objectives: To identify professional learning needs and preferences to support changing roles in practice.

Methodology: A mixed-methods approach was used (Schindel *et al.*, 2017). Learning needs and perceptions of pharmacists' roles were examined in five focus groups of pharmacists and pharmacy students. This was followed by a web-based survey of 416 Albertan pharmacists to determine the knowledge, experience, and confidence required to engage in professional activities, preferred learning methods, and professional development needed to support current and future roles.

Results: Learning needs related to changes in pharmacists' roles. A high proportion of pharmacists reported training needs in the areas of physical assessment, interpreting laboratory tests, and making decisions about complex drug therapy. Community pharmacists and those with bachelor degrees were more likely to indicate a need for additional training in various patient care skills. Pharmacists reported a preference for learning with peers and learning at work within teams. They viewed credentialing and certification as mechanisms to build knowledge, confidence, and relationships with other health care professionals.

Discussion: The results point to CPD as encompassing learning in practice, with peers, and in the workplace (Austin *et al.*, 2005; Tan *et al.*, 2010). Addressing specific needs of pharmacists through work-based CPD is more likely to support them in adopting new roles and further advancing change in practice.

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SHPA's Specialty Practice – A novel opportunity for learning

Suzanne Newman

The Society of Hospital Pharmacists of Australia, Collingwood, Australia

Background: The Society of Hospital Pharmacists of Australia's (SHPA's) Specialty Practice enables the organisation to engage members with specific expertise to deliver core SHPA activities: practice standards, advocacy and education. In 2016, SHPA recognised the existing Committee of Specialty Practice model needed improvements to enhance members' access to experts and support practitioner development in specialty practice areas.

Objectives: To design a specialty practice model that: supports practitioner development regardless of career stage, expertise or practice setting; allows members to access the collective expertise in a specialty; provides an online portal for targeted resources and continuing professional development (CPD) and complements SHPA's formal CPD and mentoring offerings.

Methodology: SHPA identified three discrete tiers of Specialty Practice engagement with distinct roles and opportunities across 26 specialties. We developed eligibility criteria and a procedure for joining each tier, additionally we employed an IT platform that facilitated member engagement with peers and experts.

Results: In the new model, launched June 2017, members eagerly engaged with their peers from other hospitals, regions, and settings, and tapped into the collective expertise. More than 1700 members (35%) are enrolled in at least one Specialty Practice stream, and numbers continue to grow. Anecdotally, members have sought and received advice directly related to patient care, research, policy and procedures.

Discussion: The new Specialty Practice model complements SHPA's formal CPD and mentoring programmes with an informal, member-led approach that connects members to virtual colleagues. The online forum facilitates passive and active learning, assisting members to understand gaps in practice and thus their CPD needs; providing a novel opportunity for learning.

Progress towards FIP Workforce Development Goals (Professional Development cluster): Where are we and where do we go from here?

Lina Bader[1], Kirstie Galbraith[2], Ian Bates[3], Ralph Altiere[4], Tina Brock[2], Nilhan Uzman[1], Ian Larson[2]

[1]*FIP Education (FIPEd), International Pharmaceutical Federation, The Hague, Netherlands*

[2]*Faculty of Pharmacy and Pharmaceutical Sciences, Monash University, Melbourne, Australia*

[3]*School of Pharmacy, University College London, London, United Kingdom*

[4]*Skaggs School of Pharmacy and Pharmaceutical Sciences, University of Colorado Denver, Denver, USA.*

Background: In 2016 the International Pharmaceutical Federation (FIP) adopted 13 global transformative Pharmaceutical Workforce Development Goals (PWDGs), across three clusters. To facilitate implementation of PWDGs, FIP Education (FIPEd) sought to measure the alignment of national development projects with the WDGs and better understand relevant national policies and mechanisms.

Objectives: 1) To identify and share examples of national-level research, development and evaluation strategies aligned with the PWDGs in the Professional Development cluster (PWDGs 4-8); 2) To provide stakeholders with guidance on how they can align their strategies with these PDWGs; 3) To catalyse needs-based planning, and support the development of future strategic actions

Methodology: A global call for case studies was conducted by FIPEd and sent to all FIP member organisations and FIPEd contact lists between April and June 2017. Reminders were sent twice.

Results: Twenty-three submissions were received from 21 countries. Collected case studies provided a global snapshot of how the PWDGs are aligned with national strategies on pharmaceutical education. Strategies were reported across all PWDGs, however the extent of global mapping varied across the goals (FIP, 2017).

Discussion: Countries were able to map their current strategies, projects and initiatives demonstrates with the WDGs, showing that the goals are measurable. While progress towards achieving the PWDGs varied greatly across countries, all countries who contributed case studies - regardless of economic status - reported some degree of alignment indicating that implementation of the PWDGs is feasible and adaptable to local needs.

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Preceptor development programme for clinical pharmacist at Children's Cancer Hospital Egypt (57357)

Jodie Malhotra, Joseph Saseen, Toral Patel

University Of Colorado Denver, Aurora, USA.

Background: Children's Cancer Hospital Egypt (CCHE) and University of Colorado Skaggs School of Pharmacy and Pharmaceutical Sciences (SSPPS) partnered to create a Pharm.D. programme offered by CCHE. The didactic curriculum will be administered by SSPPS via distance-based education. The experiential aspects of the curriculum, including objective structured clinical examinations (OSCEs), introductory pharmacy practice experiences (IPPEs), and advanced pharmacy practice experiences (APPEs), will be administered by CCHE. CCHE clinical pharmacists will serve as preceptors for IPPEs and APPEs and facilitators OSCEs. To ensure that the CCHE clinical pharmacists are prepared to serve in these roles, three CU faculty members conducted a live, five-day preceptor development programme at CCHE.

Objectives: To train clinical pharmacy preceptors and facilitators for a new collaborative Pharm.D. programme in Egypt

Methodology: The preceptor development programme consisted of five half-day sessions facilitated by CU faculty members with extensive experience in precepting and preceptor development. Daily sessions incorporated didactic lectures, active learning, video case-discussions, and reflection. Learners completed pre-work, daily homework assignments, and a case-based final examination. At the completion of the course, all learners had an individual preceptor development plan including short-term and long-term goals, and a rotation syllabus.

Results: In September 2017, twenty-two clinical pharmacists participated in the preceptor development programme at CCHE. The average score on the final examination for the programme was 80.86%.

Discussion: This international preceptor development programme was designed to provide CCHE clinical pharmacists with the knowledge, skills and abilities necessary to precept Pharm.D. students in a new collaborative Pharm.D. programme.

The disconnect between the Communities of Practice (CoP) learning theory and educational practices in the Pharm.D. programme at Qatar University

Banan Mukhalalati

Qatar University, Doha, Qatar

Background: Qatar is undergoing a remarkable escalation in economic status, focusing on improving healthcare and education. Graduating qualified clinical pharmacists who contribute to the healthcare workforce require curriculum reform initiatives that continuously improve the accredited Pharm.D. programme at Qatar University (QU) (Wilbur *et al*., 2015). Integrating pharmacy education with pharmacy practice through the implementation of the Communities of Practice (CoP) social theory of learning, as proposed by Austin and Duncan-Hewitt in 2005, was not well adopted (Noble *et al*., 2011). However, there is scope to consider the CoP theory as a framework for the continued development of pharmacy education (Waterfield, 2011).

Objectives: Examine the evidence of implementing the CoP learning theories in the QU Pharm.D. programme.

Methodology: A case study research (Yin, 2014) is conducted to develop a CoP theory-informed framework and to use this framework as a theoretical instrument to analyse the QU Pharm.D. programme.

Results: The research sheds light on the nature of the disconnect between the CoP theory and the educational practices in the QU Pharm.D. programme, indicating that the disconnect is at the 'implicit disconnect' level, which means that some elements of the CoP framework were implicitly evident. This explains the challenges faced in the programme and the associated consequences for the learning experiences of the students.

Discussion: The significance of the full and explicit implementation of learning theory in the design and application of educational practices calls for the better integration of academic, practice, accreditation, and governmental sector efforts in pharmacy education reform initiatives.

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Educator development and quality assurance: Design and evaluation of a pharmacist tutor training programme for enhanced links with pharmacy practice

Gillian Knott[1], Linda Crane[2], Ian Heslop[1], Beverley Glass[1]

[1]James Cook University, Townsville, Australia

[2]Bond University, Gold Coast , Australia

Background: The involvement of practising pharmacists as sessional tutors provides a number of benefits for a pharmacy programme, including their unique role in bridging the theory-practice gap and ensuring the currency and relevance of the pharmacy curriculum. However, their lack of training and support has been highlighted over recent years (Knott *et al*., 2015).

Objectives: To design and evaluate a pharmacy-specific tutor training programme for pharmacist tutors at James Cook University, based on their needs.

Methodology: A needs analysis study involving key stakeholders was conducted which informed the design of the tutor training programme. The programme was evaluated in terms of tutor confidence and competence using two post-training self-evaluation surveys. Descriptive statistics and qualitative thematic analysis were used to analyse the survey data.

Results: The training programme was very well received, with 83% of tutors agreeing that the programme was relevant to their current needs. Tutors also reported improvements in both confidence and competence in all areas, particularly in assessment and marking skills. Other benefits highlighted by tutors included better role clarification, improved teaching consistency and the acknowledgement of tutors as an integral part of the pharmacy programme.

Discussion: The contribution of sessional staff such as pharmacist tutors at universities has long been under-recognised and undervalued (Ryan *et al*., 2013). This training programme has not only improved tutor confidence and competence but has also facilitated improved communication and networking between academic staff and practising pharmacists. This has the potential to strengthen the link between academia and pharmacy practice and support a seamless transition from university to the workplace.

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Using pharmacists' baseline perceptions and knowledge to guide the implementation of Pharmacy Preceptor Training (PPT) at an acute-care hospital

Zhe Han[1,2], Yen Yen Tan[2], Jie Wen Phang[2], Zhining Goh[2]

[1]*National University Of Singapore, Singapore*

[2]*Ng Teng Fong General Hospital, Singapore*

Background: Pharmacists serve as preceptors and take on a significant role in training new practitioners (Weitzel *et al.*, 2012).

Objectives: We sought to assess baseline perceptions of precepting and knowledge of the four preceptor roles (ASHP, 2017) among our pharmacists, and to evaluate their experiences with a Pharmacy Preceptor Training (PPT) session implemented at our hospital.

Methodology: A baseline survey to assess perceptions and knowledge was conducted. A PPT session aimed at defining expectations, explaining and illustrating four preceptor roles was developed and piloted. Participants completed a post-session evaluation.

Results: Forty-two pharmacists completed the baseline survey. Most had less than three years of precepting experience (83%). Pharmacists were enthusiastic about precepting (52%) and believed in its importance (98%). However, many were unaware of the four preceptor roles (76%) and lacked confidence in their precepting skills. Only 24% believed they were good preceptors and 34% felt prepared to precept. As compared to inpatient, more outpatient pharmacists reported inadequate precepting time (90% vs 54%, p=0.043) and believed that preceptees underperform often due to their own failure to learn (60% vs 23%, p=0.035). All participants at our PPT session gained new insights and planned to utilise at least one preceptor role in future precepting. Most participants were interested in more PPT (94%). In-person discussions and role plays were believed to be most useful (81%).

Discussion: Pharmacists recognise the importance of good precepting and would like to enhance their precepting skills. Institutions may develop their own PPT programme to address specific learning needs of their pharmacist preceptors.

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Enhancing the intern pharmacist experience through preceptor development and support

Michelle Vienet, Gina Arora, Kirstie Galbraith, Angelina Lim, Brigid McInerney

Monash University, Parkville, Australia

Background: Australian pharmacy graduates must undertake an internship with an approved preceptor and practice site prior to registering as a pharmacist. Preceptors should be adequately prepared for the role; training is recommended (PBA, 2017). To ensure currency, review of preceptor skills should take place (VSG, 2015). To assist preceptors, a university successfully developed and implemented as a pilot, an extensive preceptor support package. A brief overview of this has been previously reported (Vienet *et al.*, 2017).

Objectives: To describe initiatives undertaken by a university to further enhance the intern pharmacist experience through preceptor development and support following pilot of a preceptor support offering.

Methodology: Feedback was sought from key stakeholders, including interns and preceptors, following pilot of a preceptor support offering. Opportunities to further enhance the intern pharmacist experience were identified and included:

Extending free online clinical educator training for preceptors to include all pharmacists involved in supervising the University's intern pharmacists and undergraduate students undertaking experiential learning.

Developing a formal process for preceptors to review and maintain currency of clinical supervision skills and eligibility for re-credentialing as Clinical Educators (CEs).

Free face-to-face skill enhancement training for CEs.

Results: During 2016/2017, one hundred and forty-nine pharmacists completed the online CE training and became credentialed. Resourcing for the online training programme doubled to meet increased demand. A formal re-credentialing process for CEs was developed. Sixteen CEs undertook face-to-face skill enhancement training.

Discussion: Further initiatives have been developed by the University to enhance the intern pharmacist experience through ongoing preceptor development and support.

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Identifying gaps in intern competencies to inform scaffolding for pharmacy students: Bridging from undergraduate to post-graduate

Michelle Vienet, Tina Brock, Kirstie Galbraith, Dan Malone

Monash University, Parkville, Australia

Background: In Australia, to register as a pharmacist, pharmacy degree graduates must complete a one year internship under the supervision of an approved preceptor and must complete a competency based accredited training programme (PBA, 2017).

Objectives: To describe how identification of gaps by intern pharmacists, in readily achieving the competencies required for initial registration as a pharmacist (PSA, 2016), has enabled scaffolding to be implemented in pharmacy education across the undergraduate and intern years to future proof graduates for contemporary practice.

Methodology: Recurring gaps in knowledge, skills or attributes of intern pharmacists were identified anecdotally and through assessment by intern training programme staff and preceptors. This information was used to inform the content and methods of undergraduate and intern curricular programmes.

Results: Identified gaps in competencies in some students required for initial registration as a pharmacist included: integrity, oral and written communication, reflective practice, compounding, problem solving and inquiry. Scaffolding was then embedded into the undergraduate and intern programmes to assist students achieve the competencies required for future practice as a pharmacist.

Discussion: Identification of gaps in intern pharmacists' competencies for independent practice has enabled scaffolding to be developed and implemented in undergraduate and intern pharmacy education to future proof practitioners for practice

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Evaluating a multi-sector pre-registration training programme in North Wales: Perceptions of pre-registration pharmacists and their tutors

Laura Doyle, Margaret Allan, Bethan Broad

Wcppe, Cardiff, United Kingdom

Background: Six pre-registration pharmacists (pre-reg) were trained through a multi-sector programme during 2016-17 whereby they were exposed to hospital, community and primary care pharmacy environments. This programme is the first of its kind in Wales. The aim was to evaluate the multi-sector programme.

Objectives: To obtain stakeholder opinions towards preparedness for day one pharmacy practice as well as their perceptions towards other training programmes.

Methodology: Semi-structured 1-2-1 interviews and focus groups were undertaken. A broad topic guide with prompts and probes was designed and used to explore participant demographic details, experiences of/supervising pre-registration training and opinions towards respective pre-registration training programmes. Interviews were conducted at month six and ten, these were audio recorded, transcribed *verbatim* and thematically analysed.

Results: Twenty-two participants were interviewed (six integrated pre-reg, five tutors, six hospital pre-reg and five community pre-reg) at the six-month time point. All but three participants were followed up at ten-months. All Interviewees, including those on traditional programmes expressed overwhelmingly positive views towards the multi-sector programme. Its perceived benefits include producing 'rounded' pharmacists with an ability to work in more than one sector upon registration, improving confidence in communicating and allowing them to take ownership of their training year.

Discussion: This study provides an insight into the perceptions of multi-sector pre-reg and their tutors as well as comparisons with others on a traditional hospital or community pharmacy only programme. Participants were able to reflect upon the knowledge, skills, attitudes and values developed as part of the multi-sector programme and suggestions for improvement.

Utilising an innovative confidence tier marking grid to boost trainee pharmacists' clinical decision making skills

Paul McDermott[1], Mohamed Jawad Dungersi[2], Maria Christou[1]

[1]University Of East Anglia, Norwich, United Kingdom

[2]North West Anglia NHS Trust - Peterborough City Hospital, Peterborough, United Kingdom

Background: The registration assessment for United Kingdom (UK) trainee pharmacists (GPhC, 2018) includes clinical scenario-based multiple choice questions (MCQs) where trainees need the confidence to select the most appropriate treatment option quickly. This study utilised a novel MCQ format in which confidence assessment is implicit in the answering process (students were never formally asked to report their confidence). This methodology was used for a series of formative clinical pharmacy MCQ assessments with the aim of gradually increasing trainee confidence in clinical decision making.

Objectives: To monitor trainees' progress by tracking their scores and levels of confidence in sequential formative assessments and evaluate their perceptions of the benefits of this innovative approach.

Methodology: A confidence tier MCQ format was developed and used to score trainees performance at a series of scenario-based clinical MCQ tests. Trainees received individual feedback on their test scores and clinical confidence for each question. Quantitative analysis of scores and answer strategies were used to determine how well calibrated trainee confidence is with clinical knowledge. Qualitative analysis was used to assess trainees' opinions of this process.

Results: Analyses of data to-date indicates that individual trainees are performing better at confidence-based formative assessments as the year progresses. They also report that the tests are helpful in terms of improving their clinical decision making skills and boosting their overall confidence. Cumulative quantitative and qualitative data will be presented demonstrating end-of-year outcomes.

Discussion: Trainee's confidence in regulatory summative assessments, that involve accurate clinical decision making, can be enhanced by using a novel confidence tier MCQ format.

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Facilitating and recognising practice research by intern pharmacists

Brigid Mcinerney, Kirstie Galbraith, Michelle Vienet, Angelina Lim

Monash University, Parkville, Australia

Background: The National Competency Standards Framework for Pharmacists in Australia 2016 (PSA, 2016) describes the expectation that all registered pharmacists participate in research. The Monash University Intern Foundation Programme (IFP) includes a requirement for interns to undertake a research or case based project with a view to enhance research skills in foundation practice.

Objectives: To describe how the Monash University IFP supports intern pharmacists to participate in practice research.

Methodology: As part of the IFP curriculum, interns undertake research skills training including: online research modules, test your learning questions, project topic and proposal submissions, and a poster presentation with a two-three minute oral presentation. Supervision and guidance is provided regularly by IFP staff at site visits and remotely, in addition to support they receive from their work based Clinical Educator. Interns are encouraged and supported to submit their work to professional conferences and for publication. Interns were asked to provide written feedback on various aspects of the programme, including the project specifically.

Results: Over 2016-2017, 103 interns successfully completed a project in IFP. In 2016, 89% of interns 'agreed' or 'strongly agreed' that the IFP helped them develop their research skills. In 2017, this figure rose to 96%. In 2016 and 2017 respectively, 83% and 100% of IFP interns found the IFP project assessment 'useful' or 'very useful' for enhancing their learning.

Discussion: Strategies implemented by Monash University IFP to facilitate and recognise practice research by intern pharmacists has been well received and assisted interns to develop research skills for ongoing practice.

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The significance of student-led research and undergraduate journals: A review

Vasilios Sotiropoulos, Matthew Perry

National Australian Pharmacy Students Association, Melbourne, Australia

Background: Australian pharmacy schools offer undergraduate research opportunities through integrated honours streams. Currently, there is no student-led, peer-reviewed journal in pharmacy, which exist in other disciplines.

Objectives: We aimed to evaluate the benefits of undergraduate journals with a roadmap for research mentorship, improving academic writing and professional development.

Methodology: A systematic search strategy was implemented, using OvidSP, Google Scholar, PsychINFO and Scopus. Articles published in English and accessible directly from the database were assessed for review. Additionally, a Google search using the phrase 'Current Student-led Journals' to identify current journals.

Results: Twelve articles were retrieved and included in this review. Of these, five articles (Ware & Burns, 2008; Bahnassi, 2015; Alamri, 2016; Harirforoosh & Stewart, 2016; Al-Busaidi *et al.*, 2017) found benefits for both student research and faculty academics. The common themes centred on encouraging collaborative learning with clinical and non-clinical academics and other student colleagues, refining formal written and communications skills, developing competence and familiarity with research processes and post-graduate employability.

Discussion: The successes of current undergraduate journals highlight the important roles these play in professional development of future healthcare professionals. Undergraduate journals provide students an outcome to their research experiences which may often go unpublished. The transferable skills developed during research are highly valued by prospective employers, and can strengthen curricula vitae for employment. Recognising this, the National Australian Pharmacy Students' Association have launched a peer-reviewed journal to provide the same opportunities to Australian pharmacy students.

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Poster Abstracts: Shaping Tomorrow's Practitioners Today

400: Impact of continuous professional pharmacy development at Hamad Medical Corporation, Qatar

Dania Alkhiyami, Sara Mahmoud, Palli Abdulroaf, Rasha Al Anany

Hamad Medical Corporation, Doha, Qatar

Background: In a changing and increasingly complex profession, lifelong learning is essential for pharmacists and pharmacy technicians. The Continuous Pharmacy Professional Development Office (CPPD) at Hamad Medical Corporation (HMC) is keen on providing efficient continuous professional development (CPD) opportunities that serves the concept of professional development for pharmacy professionals in Qatar (Rouse, 2004; Wilbur, 2010; FIP, 2014).

Objectives: Being accredited by Qatar Council of Healthcare Practitioners and the American Council Pharmacy Education (ACPE), HMC is seeking to measure the impact of CPD on knowledge and daily practice of pharmacy professionals.

Methodology: A cross-sectional survey was developed based on literature review. Participants were pharmacists and pharmacy technicians currently practicing at HMC hospitals in Qatar. The survey consisted of a total of 13 questions which assessed quality of educational activities, impact of the CPD process and attitudes towards the implemented programme.

Results: A total of 126 responses were collected, 80% were pharmacist and 20% were pharmacy technicians. The majority of the respondents agreed that CPD has positively impacted their knowledge (81%), increased their confidence and performance in daily practice (75%) and has encouraged them to pursue further learning opportunities (79%). In addition, many suggested to provide more application based activities such as workshops. Both pharmacists and pharmacy technicians perceived lack of time, and accessibility as major barriers of the CPPD programme at HMC.

Discussion: Pharmacists and pharmacy technicians have positive attitudes towards the CPPD programme in HMC. Currently, the CPPD Office has implemented a plan to overcome the current and anticipated barriers to CPD.

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Online continuous education sources to develop pharmacists' knowledge and skills: An integrative review

Hani Abdelaziz, Dania Alkhiyami, Sara Mahmoud, Adham Mohamed, Rasha Al Anany

Hamad Medical Corporation, Doha, Qatar

Background: Pharmacists are an essential part of the healthcare system. Given the dynamicity of the field, Continuous Education (CE) is required in high demand to maintain proficiency. Current barriers to face-to-face education directed learners towards e-learning. However, evidence shows that there is variation in the quality of those activities (Mazmanian *et al*., 2009; McConnell *et al*., 2010; Hisashige, 2013)

Objectives: This study was conducted to identify, evaluate and provide a list of high quality Internet Based Continuous Education (IBCE) programmes. This report is an attempt to provide a universal guide for pharmacists around the globe seeking continuous pharmacy education in multiple specialties.

Methodology: The study group adopted two search methodologies to find and evaluate different CE learning programmes. The search method was divided into two categories; emails sent to professionals in prestigious universities and academic centres around the world and extensive online search. The collected sources were evaluated by two or more independent pharmacy experts based on several criteria.

Results: Six thousand emails were sent with 10% response rate. Hundreds of websites and CE sources were identified either through email or web search. A total of 136 CE sources were identified as high quality educational sources. These were categorised into: professional and specialty organisations, universities, education-focused websites, and certificate programmes.

Discussion: This is the first report and database of its kind directed towards global pharmacists to enhance professional development.

Train the Trainer - incorporating intra-professional learning (IPL): Trainer perceptions and impact on practice

Melanie Boughen, Rina Matala

University Of East Anglia, Norwich, United Kingdom

Background: The University of East Anglia delivers a Train the Trainer course which is open to anyone with the responsibility of training in the east of England hospitals to pharmacy staff. Learners are taught in intra-professional groups (Horsburgh *et al*., 2001; Barr & Norrie, 2010; Barwell, 2013).

Objectives: To identify learners' perceptions of intra-professional learning (IPL) and how this type of learning has impacted on their practice.

Methodology: A three-part evaluation questionnaire was developed. The questions covered participants' perceptions of IPL pre-, during and post-course and its impact on their practice. Questionnaires were handed to participants from the October/November 2017 cohort (n=23) and they were asked to return them to the School of Pharmacy. All questionnaires were anonymous.

Results: Twenty three (100%) questionnaires were returned (pharmacists, n=14; pharmacy technicians, n=8; pharmacy assistant n=1).

- Pre-course, 19 (83%) of participants believed that IPL would "lead to better patient care and outcomes"

- Perceptions of "foster mutual respect of each other's professional identity" and "Improved my communication skills" increased by 5% from pre-course to during study

- An increase of 21% was seen between pre- and post-study agreement that IPL "helped me to understand other healthcare professionals' roles"

- Twenty one (91%) agreed that IPL had a "positive impact on my practice".

Discussion: These results suggest the majority of participants believe that there has been a positive impact on their practice as a result of IPL and that understanding other healthcare professional roles through IPL may have contributed to this. However, in some categories participants pre-conception results indicated a more positive ideal than the post course outcomes they experienced.

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How to enable an inclusive learning environment

Angela Brennan, Matthew Shaw

Centre For Pharmacy Postgraduate Education, University of Manchester, United Kingdom

Background: Here at the Centre for Pharmacy Postgraduate Education (CPPE) we are committed to providing exceptional continuous professional development (CPD) opportunities for the pharmacy workforce in England (Shuck & Phillips, 1999; Hall, 2016; Conkar *et al.*, 2018).

Methodology: In a climate of increased time pressures on the profession and rapidly changing technology how do we ensure that all our learners are catered for within our portfolio? Traditionally our portfolio was paper-based - sending out workshop booklets and printed learning materials. This approach is now outdated as costs are high and provides an inflexible way of presenting learning. As innovators in pharmacy learning, CPPE are always looking at ways to harness new technology and streamline our production processes. To keep up to date with our learners changing needs we have developed a new, inclusive and interactive learning environment called 'gateway pages'.

Results: These pages allow us to group a variety of learning materials on a particular topic so that all types of learner can find something of interest to them. The material on our gateway pages is varied and can be presented in many different forms, such as e-learning, e-lectures, video learning, paper-based materials, quizzes and external signposting.

Discussion: This allows the learner to access a variety of different resources through a single portal and give us the flexibility to update the material very quickly, so content is always relevant and up to date

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Evaluation of Mental Health First Aid skills in an Australian university population

Rhonda Clifford, Deena Asshorian, Kirsty-Lee Albrecht, Casey Baxter, Erin Giftakis, Jayden Greenwell-Barnden, Tricia Wylde

University Of Western Australia, Crawley, Australia

Background: University students have high rates of mental health problems; however, most delay or fail to seek help. Tertiary settings can offer educational programmes to increase mental health literacy and in turn increase numbers of students seeking help for their problems. This study aimed to explore students' and staffs' knowledge of mental health issues, confidence to intervene and application of skills following Mental Health First Aid (MHFA) training.

Methods: Students and staff at an Australian university who had attended MHFA training in the previous 24 months were invited to complete a four-part online questionnaire to assess their mental health literacy, confidence and skills application. Part 1 included demographics, Part 2 and 3 assessed literacy and confidence using previously validated questions. The 'application of skills' questionnaire (Part 4) was developed and validated by a team of experts and students on campus.

Results: Of the 566 eligible participants, 107 (19%) completed the questionnaire. The majority (65%) had applied their skills to someone in need, with the highest number applying it to students. Notably, of those who had applied their skills 23 participants (33%) had applied them in a crisis situation, the most common being panic attacks followed by suicidal thoughts. Although most (98%) applied their skills in a face-to-face capacity, 53% also reported assisting someone via electronic mediums and social media. The mean score for the literacy test was considered high, 12/16 (SD 1.7) for students and 13/16 (SD 2.5) for staff. The majority (94%) reported more confidence in providing support following training.

Conclusion: This study demonstrated that MHFA training offered to students and staff on a university campus can lead to increased knowledge, raise confidence to intervene and real-life application of skills to assist a student or friend in need. This could potentially impact students' long-term health and career outcomes..

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Ethics! How do pharmacy interns make decisions?

Laetitia Hattingh, Denise Hope, Michelle King, Elizabeth George

Griffith University, Southport, Australia

Background: Pharmacy's professional standing and integrity require a foundation of ethical practice to facilitate quality patient care (Parker *et al.*, 2008). Community pharmacists are increasingly confronted with ethical dilemmas as patient-centred healthcare is increasing in importance (Rapport *et al.*, 2010). Pharmacists should follow structured processes to guide their decision making.

Objectives: To explore the reasoning and processes followed by pharmacy interns to inform their decisions and actions when confronted with ethical dilemmas.

Methodology: A survey to 1) evaluate resources used and processes followed to solve ethical dilemmas; 2) assess the frequency of ethical scenarios involving privacy in practices.

Results: Thirty-four of 36 (94.4%) Pharmacy Guild interns invited to participate completed surveys at two training workshops (August and November 2017): 15 (44.1%) male and 19 (55.9%) female. Codes of Ethics and Conduct were rated by 10/33 (29.4%) as the most relevant resources consulted, followed by consulting co-workers 9/33 (26.5%). Regarding frequency of privacy scenarios, 14/34 (41.2%) and 10/34 (29.4%) indicated staff members would weekly or fortnightly sort through prescriptions on a counter in view of other consumers and 18/34 (52.9%) indicated that collected medicines were visible to other consumers on a daily basis.

Discussion: The study provided insight into the resources used by interns with almost a third relying on co-workers to guide their decision making processes. This highlights the need to emphasise appropriate use of other relevant resources and to follow a structured reasoning process when confronted with ethical dilemmas. Privacy challenges experienced in community pharmacies emphasised gaps in staff knowledge about confidentiality requirements and protecting patient information.

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Meeting education and development needs for residents and preceptors within the SHPA Pharmacy Residency Programme

Kylee Hayward, Andrew Matthews, Julia Hruz, Sally Ridgers

The Society Of Hospital Pharmacists Of Australia, Collingwood, Australia

Background: The Society of Hospital Pharmacists of Australia (SHPA) implemented a structured, formalised, supported and accredited national residency programme for foundation-level hospital pharmacists in 2017. The SHPA Residency is a two-year professional development programme of workplace experiential learning integrated with defined educational support.

Objectives: To design a national education package to meet the needs of the SHPA Residency Programme.

Methodology: Each hospital's submission for accreditation for SHPA Residency, included information on the needs of each site to implement residency. This data, along with consultation with the Residency Programme Project Steering Committee identified development needs for residents, and for programme preceptors. A national education package was therefore designed including: A three-day clinical seminar tailored for residents and other practitioners at foundation-level; Additional SHPA ClinCAT evaluator training workshops; A Residency Symposium (targeting existing and potential residency preceptors and programme leaders); A focussed practitioner development stream at Medicines Management 2017, SHPA's National Conference.

Results: Seventy-eight out of 110 residents attended the clinical seminar; 62 preceptors and programme leaders attended the Residency Symposium; 95% overall satisfaction was reported by attendees at the conference stream.

Discussion: Across 30 accredited residency sites, in metropolitan, regional and rural locations, there was inconsistency in base clinical supervision and training. The SHPA Residency Accreditation Standards included mandatory requirements for residency programme leaders and trained ClinCAT evaluators, but requirements for rotational preceptors is less defined. The education package supported sites to develop these more inexperienced preceptors. The clinical seminar for residents was further enhanced throughout the year in response to resident feedback.

Teaching students about research – a practical group approach

Therese Kairuz, Irene Munro, Fran Baker

University Of Newcastle, Newcastle, Australia

Background: Recent changes to the National Competency Standards Framework for Pharmacists in Australia from the 2010 to 2016 (PSA, 2016) version encouraged the design of integrated projects for final year pharmacy students of a new B.Pharm. (Hons) programme.

Objectives: To use an integrated group work approach (Davis, 2009) to research pre-diabetes using the AUSDRISK screening tool (AUSDRISK, 2010) among final-year students who chose to do a group project and/or did not qualify for an individual project.

Methodology: Using a group work approach, students self-selected into small groups (maximum four). Each group chose one of six topics which were aligned with pre-diabetes. Standard university procedures were followed with respect to course outline, learning objectives and assessment items. Students received formal training in database searching and statistical analysis. Half (two/four) and three-quarters of the assessment items required group work in semester 1 and 2 respectively, and other items were assessed individually.

Results: Twenty-one of 37 final year students enrolled in the courses. Assessment items included an individual and two group oral presentations, an individual and a group literature review, an individual statistical assignment and an individual research report. Grades ranged from Higher Distinction (1/21), Distinction (16/21), Credit (3/21) to 1 Pass (mean 78.58%; SD=6.10%).

Discussion: Participation in the presentations exposed students to various aspects of data associated with pre-diabetes research, namely anthropometrics, diet, exercise, prescription medications, supplements and medical conditions. The six topics permitted students to 'participate in research' and 'research and synthesise...' (2016 Competency Standards); future projects will attempt to 'integrate evidence into practice'.

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The mapping of pharmacy competency frameworks to M.Pharm. curriculum themes through the medium of posters

John J. Keating[1], Laura J. Sahm[1], William Joynes[2], Sima Purohit[2]

[1]School Of Pharmacy, University College Cork, Ireland

[2]Department of Pharmacy and Pharmacology, University of Bath, United Kingdom

Background: The Pharmaceutical Society of Ireland (PSI) Core Competency Framework (CCF) (PSI, 2013) is the cornerstone of the PSI's programme to reform/inform training and education of undergraduate and practising Irish pharmacists.

Design, content and pedagogical approaches within the University College Cork (UCC) M.Pharm. programme has been heavily influenced and extensively mapped to all CCF behaviours.

M.Pharm. students and faculty encounter challenges recognising where pharmacy themes such as patient safety and diabetes are located and taught across the curriculum and how they link to CCF behaviours.

Objectives: Develop visually appealing, informative and systematically designed posters which map UCC M.Pharm. curriculum themes in a hierarchical manner to academic years, modules, modular activities and, ultimately, the CCF (Zelenitsky *et al.*, 2014; Holmes *et al.*, 2018).

Methodology: Data on curriculum components relevant to three M.Pharm. themes - patient safety, antimicrobials and diabetes - were collected by interviewing module coordinators and analysing Blackboard® Virtual Learning Environment modular content. Following data collection, landscape-orientated, A0 posters (one poster per theme), were designed to illustrate how each theme maps to the CCF via associated activities within modules. Posters were critiqued on their design, content and usefulness through five focus groups composed of M.Pharm. student year groups and pharmacy faculty. Thematic analysis of focus group data was subsequently performed.

Results: Theme-mapped posters are intuitively straightforward to navigate, user-friendly and aid student and faculty navigation of theme mapping to a competency framework.

Discussion: Analysis of focus group data has further indicated that the chosen poster design is readily adaptable to map competency frameworks to other aspects of M.Pharm. modules, themes, curriculum content and pedagogical approaches.

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Enhancing eye care through inter-professional collaboration - a joint pharmacist/optometrist initiative

Rosemary Killeen[1], Nardine Nakhla[1], Sarah de Waal[1], Felicia Pantazi[2], Lacey Haines[3], Sarah MacIver[3], Sruthi Srinivasan[4], Alisa Sivak[4], Karen Walsh[4]

[1]*University Of Waterloo School of Pharmacy, Kitchener, Canada*

[2]*University of Waterloo Centre for Extended Learning, Waterloo, Canada*

[3]*University of Waterloo School of Optometry and Vision Science, Waterloo, Canada*

[4]*Centre for Ocular Research and Education, Waterloo, Canada*

Background: In North America, collaboration between pharmacists and optometrists is inconsistent, despite a significant overlap in presenting patients.

Objectives: A team of optometrists and pharmacists from the University of Waterloo (UW) developed an interactive online continuing education programme to facilitate inter-professional collaboration between the two groups, while highlighting their unique and overlapping spheres of knowledge.

Methodology: Four online multimedia modules were produced for pharmacists, optometrists and optometric assistants. Content was identified based on emerging issues in optometry and previously published pharmacist needs assessments (Kebodeaux *et al.*, 2012). The Canadian Inter-professional Health Collaborative National Competency Framework (CIHC, 2010) was applied to three content areas of common interest - red eye and complications in contact lens wearers, management of dry eye disease, and contact lens systems. Clinical insights from practitioner reviewers were included, as were enhancements to instructional design elements implemented in inter-professional programmes previously produced by UW School of Pharmacy and Centre for Extended Learning (Pantazi & Killeen, 2016). Pre-launch usability testing was conducted with the two main audience groups.

Results: The completed programme encompasses four hours of content including profession-specific perspectives; knowledge and competencies related to ocular needs and treatment options for several conditions; profession-specific roles in addressing patient needs and opportunities for communication, collaboration and referral. The programme has been submitted for accreditation to pharmacist and optometrist organisations.

Discussion: An inter-professional approach to continuing professional development can produce a credible programme appealing to multiple health profession groups, allowing them to maintain competence in their respective disciplines while learning about the latest clinical content.

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I need a better way to tell my story! New publication options for educational scholarship

Robin Zavod[1], Spencer Harpe[1], Michael Peeters[2], Cherie Lucas[3], Kristin Janke[4]

[1]*Midwestern University, Downers Grove, USA.*

[2]*University of Toledo, Toledo, USA.*

[3]*University of Technology Sydney, Ultimo, Australia*

[4]*University of Minnesota College of Pharmacy, Minneapolis, USA.*

Background: Pharmacy educators within higher education, professional organisations, regulatory authorities, and accreditation bodies strive to advance the content and methods of educating pharmacy professionals. Simultaneously, pharmacy publications must support evidence dissemination to inform decision-making that improves educational programming and curricula (Richlin, 2001; Cook *et al.*, 2008; Norman, 2017)

Objectives: 1) examine publication practices in other disciplines responsive to forms and phases of scholarly inquiry in education, 2) design article types that embrace the continuum of inquiry from preliminary problem identification and idea formulation, through describing, testing, and evaluating interventions, and into improving and reflecting on teaching experiences.

Methodology: Over three years, Currents in Pharmacy Teaching and Learning (Elsevier) engaged eight working groups of editorial board members and external scholars in reviews of publication options in health professions education and literature on the structure, quality, and utility of manuscripts. New or revised article types, including guidelines for authors and reviewers, were developed.

Results: A family of articles was created to enhance expectations and guidelines for original research, reviews, commentaries, and letter to the editor, as well as eight distinctly new article types and a scholarly blog (*i.e.* CPTL Pulses). These article types highlight important topics (*e.g.*, LEADeR Reports, Inter-professional Education [IPE] Reports) and preliminary to advanced phases of inquiry (*e.g.*, Experiences in Teaching and Learning, Quality Improvement, Wisdom of Experience).

Discussion: A variety of publication options supports prospective authors in sharing early experiences with educational advancements. The family of articles promotes the development of scholarly lines of inquiry that include progressively more sophisticated education-related questions and rigorous methodologies.

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Bilateral learning through the International Pharmaceutical Federation (FIP), PharmaBridge programme

Jodie Malhotra, Kari Franson

University Of Colorado Denver, Aurora, USA.

Background: Across the world, there is considerable variability in educational and healthcare practices. Sharing information and experience about pharmacy education and services should enhance global pharmacy care. Immersion training through the International Pharmaceutical Federation (FIP) PharmaBridge (Wang, 2011) programme allow participants to learn new practices and provide insights to host institutions.

Objectives: To identify best practices for participation in the PharmaBridge programme.

Methodology: Visiting practitioners and local hosts participating in PharmaBridge programme at the University of Colorado were asked to complete surveys or submit comments about their experience.

Results: Examples of pharmacy experiences that visiting practitioners found to be most valuable include: counselling, point of care testing, medication therapy management, medication and patient safety procedures and mechanisms to improve drug distribution. Examples of local host learning include: benefits and challenges to other healthcare systems, varying roles of international practitioners, differences policy and regulation internationally. Practitioners and hosts believe that host institutions need to ensure the visiting pharmacist can focus on learning by following best practices (*e.g.* orientation sessions, cultural sensitivity training, *etc*.) to provide a smooth transition. Both learners and hosts believe that participating in PharmaBridge programme advances clinical practice worldwide.

Discussion: The results of this evaluation can be used to provide institutions and individuals with best practices to help visiting pharmacists' transition into the local healthcare and education systems.

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The radical humanitarian: Global health training programme for pharmacists and nurses

Jodie Malhotra

University Of Colorado Denver, Aurora, USA

Background: Humanitarian need around the world is growing dramatically with increasing frequency and severity. Pharmacists and nurses play critical roles in improving humanitarian response. Yet, there is a paucity of formalised training in humanitarian assistance (HA) and global health (GH) for pharmacists and nurses (Cranmer *et al*., 2014; Hassali *et al*., 2016; Mowafi *et al*., 2016).

Objectives: Create and deliver innovative, interactive training to prepare pharmacists and nurses for critical roles in advancing care and service during humanitarian and global health response.

Methodology: University of Colorado Skaggs School of Pharmacy and College of Nursing partnered with emBOLDen Alliances, a global nonprofit with 65+ years of hands-on HA and GH experience, on a three-day training workshop targeting pharmacists, nurses, and students passionate about global humanitarianism. Content featured core competencies such as principles/architecture of HA, ethics, logistics/team management, and field-readiness skills (assessments, cultural sensitivity, best practices).

Results: Thirty-two participants (14 pharmacy, 16 nursing, two others) attended the training. All participants felt the training met their educational needs. Eighty-two percent of attendees would recommend this programme to a colleague. Participant's HA and GH knowledge/skills improved with the training (78%, 81% "very little"/"none" before, 96%, 87% "quite a bit"/"very solid" after; HA, GH respectively). Ninety-three percent felt this training was better or much better than other training they have attended.

Discussion: This innovative training engaged, prepared, and provided practice. Given the rapidly evolving landscapes of humanitarian emergencies, crises readiness and response, and contextual factors such as climate change, this programme is leading the way forward for holistic integration of pharmacists and nurses into HA and GH.

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Predictors of pharmacist involvement in advanced pharmacy services

Dhanya Hariharan Nair, James Green, Carlo Marra

University Of Otago, Dunedin, New Zealand

Background: As their patient care role evolves, pharmacists are performing new activities, including medicines management, screening for chronic illness, treatment for chronic conditions, primary care services, and vaccination. However, the adoption of advanced pharmacy services into the practice is still low.

Objectives: To understand what characteristics of pharmacy graduates are associated with intention to provide advanced pharmacy services in the future.

Methodology: The 2017 graduates from the University of Otago invited to participate in a web-based survey that included potential predictors of involvement in advanced pharmacy services: (1) The Achievement Goals Questionnaire (Revised) - whether they were motivated by internal standards or their performance relative to others; (2) How they scored on the five-factor model of personality (openness, conscientiousness, extraversion, agreeable-ness, neuroticism); (3) Whether they preferred to make decisions based on rational deliberative processes, or experiential intuitive processes; (4) General Self Efficacy; (5) Their sense of belonging in the pharmacy profession; (6) Demographic variables related to the student and their internship site.

Results: Eighty-four complete responses were received (64% response rate). Analyses are underway to determine what predicts intention to engage in advanced pharmacy services.

Discussion: Understanding which graduates are likely to go on to provide advanced pharmacy services is important for planning within the profession. We will follow up with this cohort after their internship, and again after one year in practice.

Assessment of educational needs and development of preceptor development programme for health professional education programmes in Qatar - 'Practice Educators Academy'

Banan Mukhalalati

Qatar University, Doha, Qatar

Background: Experiential training is a fundamental component of any healthcare professional education programme, including pharmacy. The quality of student learning is influenced by the competence of preceptors who mentor students in the practice. Hence, the impact of planning and implementing professional development programmes for preceptors is worth investing times and resources (Tofade *et al.*, 2015).

Objectives: 1. Assess the educational needs of preceptors in the Health Cluster (HC) (Colleges of Pharmacy, Medicine, and Health Sciences) at Qatar University (QU); 2. Develop an educational professional development programme, 'Clinician Educator Academy' to enhance preceptors' teaching skills.

Methodology: A case study (Yin, 2014) was conducted to describe the educational needs of preceptors, and develop the 'Clinician Educator Academy'. The data were collected using document analysis, focus groups, and interviews with all stakeholders. Thematic analysis was used to analyse the data.

Results: Major themes about the perceptions of stakeholders about preceptors' educational needs were identified, and about the educational roles of preceptors. The identified themes and an extensive literature review were used to develop the 'Clinician Educator Academy' programme by an assigned task-force, which was led by members from the College of Education, and includes members from the HC, the practice, the Ministry of Health, and selected preceptors.

Discussion: The research facilitates building a critical mass of healthcare professional educators, who are trained as healthcare providers, and professionally developed as educators. The developed capacity serves the needs of Qatar in order to achieve Qatar National Vision 2030 and ultimately the Pharmaceutical Workforce Development Goals.

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Exploring inter-professional collaboration and learning within an undergraduate multi-disciplinary School of Clinical Sciences - paramedicine, podiatry, pharmacy, medical radiation sciences

Daniel Thompson, Marea Patounas, Esther Lau, Lisa Nissen

Queensland University Of Technology (QUT), Faculty of Health, School of Clinical Sciences, Brisbane, Australia

Background: Inter-professional learning is a popular strategy for encouraging inter-professional collaboration amongst students from different disciplines of study (McFadyen *et al.*, 2010; Williams & Teese, 2016). However, the optimal time to introduce this style of learning *i.e.* early vs later years in the programme of study, has frequently been debated (Williams *et al.*, 2012). For health students, it was considered that a core foundational subject about professional clinical practice would be opportune to introduce students to inter-professional learning and collaboration.

Objectives: The aim was to investigate first-year undergraduate student attitudes toward inter-professional learning and collaboration following an inter-professional 'Foundations of Clinical Practice' subject.

Methodology: Students were invited to respond to an online survey, which was a modified Readiness for Inter-professional Learning Scale (RIPLS) at the start of semester (week 1) before any teaching, and at the end of semester (week 13).

Results: The majority of students agreed that team working skills were vital for all healthcare students, there was a consistent trend towards a decline in student attitude toward inter-professional learning and collaboration as measured by RIPLS.

Discussion: It is not unusual to see a trend toward a decline in student attitudes toward inter-professional learning and collaboration immediately upon completion of the subject. This decline is only temporary, and attitudes actually increase after time (McFadyen *et al.*, 2010). This may be because students require time to reflect and consolidate their learning experience as they progress through their studies and gain more appreciation about their individual discipline's role as an individual healthcare practitioner, and as part of an interdisciplinary team.

Substance misuse and addictions: What do schools of pharmacy teach?

Janie Sheridan[1], Polina Bespalova[1], William Chong[1], Ji Sun Lee[1], Stefan Romic[1], Erica Ting[1], David Newcombe[2]

[1]School of Pharmacy, the University Of Auckland, Auckland, New Zealand

[2]School of Population Health, the University of Auckland, Auckland, New Zealand

Background: Substance misuse and addiction can result in negative health, social and societal consequences (WHO, 2014; WHO 2017; UNODC, 2017). Pharmacists play an increasingly important role in the provision of services such as needle exchange, opioid substitution therapy (OST) and nicotine replacement therapy.

Objectives: To explore what schools of pharmacy currently teach about substance misuse and addiction, and to identify barriers to providing substance misuse education.

Methodology: The study used an anonymous, online questionnaire emailed to 199 key people of pharmacy schools/colleges in the USA, United Kingdom (UK), Canada, Australia and Republic of Ireland. The questionnaire comprised nine domains encompassing demographic parameters of each university/college, skills and concepts, opinions on substance misuse teaching and different types of substances including alcohol, tobacco, opioids and medical marijuana.

Results: All respondents (n=43) strongly agreed that substance misuse/addiction should be a compulsory part of pharmacy programmes. Almost all pharmacy schools included smoking/tobacco, opioids and alcohol in their programmes. Medical marijuana was covered by three-fifths of schools. Addictions curricula were mainly focused on knowledge based content while skills such as screening and brief interventions were not covered as comprehensively. Over one-quarter of responding schools offered inter-professional learning opportunities, and all but three responding schools offered experiential learning opportunities, mainly as optional components. The main

barriers to providing substance misuse education were time constraints and lack of qualified teaching staff.

Discussion: Whilst substance misuse/addictions was covered to some extent in all schools, there are significant areas for expansion and improvement in skills training, and experiential opportunities.

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Maximising placement opportunities: Facilitating inter-professional supervision to build placement capacity and support inter-professional learning

Maree Simpson[1], Kristy Robson[2], Kay Skinner[3], Narelle Patton[4]

[1]School Of Biomedical Sciences, Charles Sturt University, Orange, Australia

[2]School of Community Health, Thurgoona, Australia

[3]School of Community Health, Orange, Australia

[4]Faculty of Science, Thurgoona, Australia

Background: The Health Workforce Australia National Clinical Supervision Competency Resource (2014) determined that with increasing numbers of allied health students being educated, increasing numbers of placements are needed to prepare them for the provision of inter-professional care. Collaborative healthcare is underpinned by inter-professional education (Buring *et al.*, 2009; Brownie *et al.*, 2014) however, a lack of agreement in establishing common competencies across allied health professions has been highlighted as a significant obstacle to inter-professional placements (Thistlewaite *et al.,* 2014).

Objectives: This project establishes commonalities in core competencies across allied health professions, then explores clinical supervisors' perceptions of assessing students from other allied health professions to identify the barriers to implementation of inter professional assessment. The final aim is development of an inter-professional assessment form and training package to support capacity building in inter-professional assessment.

Methodology: A mixed method design is employed across three phases. Phase 1 identifies the common competencies across allied health and generates the inter-professional assessment form. Phase 2 establishes the barriers and enablers to inter-professional assessment by utilising qualitative semi-structured focus groups. Lastly Phase 3 integrates the results of the first two phases by developing and piloting a training package to support inter-professional shared supervision.

Results: The common competencies, interprofessional assessment form, barriers and enablers to interprofessional shared supervision will be presented.

Discussion: Through building inter-professional supervision capacity amongst allied health clinical supervisors, this project will facilitate the availability of inter-professional placements and contribute to their sustainability especially in rural and remote areas.

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Self-assessment of re-registration pharmacist trainees educational supervisors against General Pharmaceutical Tutor guidelines

Nicola Tyers[1], Ms Trudy Ong[2], Mrs Alice Conway[2]

[1]The Pharmacy Training Company , London, United Kingdom

[2]School of Pharmacy Brighton University , Brighton, United Kingdom

Background: Pre-registration pharmacist trainees tutors or Educational Supervisors (ES) could assess themselves through a self-assessment approach against areas outlined by the General Pharmaceutical Council (GPhC) Tutor Guidance (GPhC, 2014).

Objectives: To develop a self-assessment tool (SAT); to ascertain areas of Tutor guidelines where enhanced support is needed, and to evaluate SAT satisfaction.

Methodology: The SAT used the GPhC Tutor Guidance to construct questions and was developed based on the Centre for Pharmacy Post-graduate Education Declaration of Competence model (CPPE, 2015). It was piloted and

distributed electronically by SurveyMonkey® to ESs in South East Acute Hospital Trusts. Results were quantitatively evaluated. The study received ethics approval

Results: Response rate 27 (49%) ESs representing 12 Acute Trusts. Twenty-seven (100%) ESs assessed themselves competent with GPhC Tutor Core requirements of monitoring and reviewing trainee progress, and providing regular, constructive feedback. Two main areas of ES development were identified 14 (54%) were unsure of mentoring principles and applying them in the context of being a role model to their trainee, 13 (50%) identified uncertainty to assess their trainees holistically. Fifteen (58%) supported the SAT to other ESs.

Discussion: SAT was recommended to be formally introduced to ES training and aid ES annual appraisals. It has been embedded into Health Education London and the South East Tutor/Educational Supervisor training course for pre-registration trainee training with modules to support previous identified themes. Future work includes its evaluation by ES of other trainees and using self-assessment in other healthcare professions.

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Implementation and evaluation of a vancomycin education package for pharmacists - A pilot programme

Mika Varitimos, Andrew Hale, Amy Legg

1RBWH, Herston, Australia

Background: Changes to vancomycin dosing recommendations have led to patient safety concerns. Ideally positioned to facilitate quality vancomycin use, it has been suggested that standardised training for pharmacists on vancomycin management would improve pharmacist confidence, ensure consistent implementation of these recommendations and improve patient safety (Philips *et al.*, 2016; Bond *et a*l., 2017).

Objectives: To obtain pharmacist feedback from a pilot of a vancomycin education programme and evaluate this for feasibility of expansion to a department and statewide level. To compare the confidence of pharmacists in their ability to manage vancomycin prior to, and after completion of, the training package

Methodology: Five pharmacists were randomly selected to undertake the pilot. Self-reflection surveys were completed by participants pre- and post-programme to assess their confidence using a 5-point Likert scale across selected domains of vancomycin use. The programme included pre-readings, a voice-over-powerpoint, a multiple-choice test and a face-to-face case session. Free-text feedback was obtained for each component and thematic analysis was undertaken.

Results: Overall, mean self-assessed confidence levels of pharmacists improved 1.3 points (2.9 pre-programme vs 4.2 post-programme) on a 5-point Likert scale across all vancomycin domains. Largest improvements in confidence were noted for obtaining the first level, subsequent dosing and continuous infusions. Obesity and administration rates were the lowest-scoring domains. Overall, pharmacists provided positive feedback across the educational components and found the programme useful to their clinical practice.

Discussion: This pilot intervention was well-received by pharmacists. Areas for programme development include information on vancomycin use in obesity and administration rates. Whilst clinical impact remains to be shown, this programme represents a useful tool in teaching quality vancomycin use and increasing pharmacist confidence.

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Effectiveness of pharmacy CPD programme: Pharmacists perspective in Hamad Medical Corporation (HMC), Qatar

Palli Valappila Abdul Rouf, Moza Al-Hail, Rasha   Al Anany, Wessam Mohammed El Kassem, Binny Thomas, Dania Ihssan Alkhiyami, Sara Fouad Mahmoud

Hamad Medical Corporation, Doha, Qatar

Background: Pharmacy continuing professional development (CPD) programme at Hamad Medical Corporation (HMC) was recently (2015/2016) accredited by both national (Qatar Council of Healthcare Professional Accreditation) and international (ACPE) bodies to provide educational activities to more than 700 pharmacists across 12 different HMC hospitals (Schostak *et al*., 2010).

Objectives: To evaluate the effectiveness of our pharmacy CPD programme.

Methodology: A cross-sectional survey design was adopted for this study. An online questionnaire composed of nine questions exploring professional experience, attendance, effectiveness and barriers towards CPD programme, was sent to all the pharmacists. Responses were anonymous. Main outcomes were; contributors, determinants, barriers and impact of CPD.

Results: Response rate was 13.6% (95/700), majority had professional experience between five - ten years (35%), while 27% had < five years. Eighty percent reported attending both group and self-directed educational activities. Determinant of CPD needs were: collecting CPD points (80%), departmental requirement (78.7%), knowledge/skills (77.8%) and the least was formal needs assessment (51%). Most impacted factors were: knowledge acquisition (92%), improve confidence (90%) and 24% said CPD is not to the mark. Mainstay learning methods were; experience (98%) and reading (84%) and most frequent contributors to CPD were Internet resources (91%) and HMC CPD programme (82%). Barriers were: lack of time (81%) and cost of participation (55%)

Discussion: Although, our CPD programme is effective for pharmacists in acquiring knowledge and to fulfil licensure requirements, still there is a lot of room to improve our CPD programme in terms of its process, including needs assessment, quality, CPD flexibility to fit pharmacist's schedule and review of fee structure for educational activities.

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Needs assessment for PGY1 preceptors' professional development: A cross sectional study

Sara Mahmoud, Dania Al Khiyami, Rasha Al Anany, Hani Abdelaziz, Wessam Al Kassem, Moza Al Hail

Hamad Medical Corporation, Doha, Qatar

Background: To ensure excellence in experiential programmes, it is important to invest in preceptors' professional development. As per the current evidence, there isn't enough data or well-constructed guides to aid professional development for residency preceptors (Fuller *et al*., 2013)

Objectives: This survey was conducted to measure the competency of PGY1 pharmacy residency preceptors in Hamad Medical Corporation, Qatar, which is ASHP accredited.

Methodology: A comprehensive literature review was conducted and translated to a preceptor development assessment rubric. The rubric was then depicted in the form of a survey to measure the confidence and proficiency of preceptors. The survey consisted of 16 questions focusing on: being a pharmacy role model, teaching skills and models, communication, professionalism, research and others.

Results: Preceptors showed high confidence in being pharmacy role models and being able to motivate residents. However, there was a deficiency in being able to transition between different teaching models such as coaching and facilitating. Preceptors reported that they require improvement in teaching management skills, time management and critical conversation.

Discussion: On a global level, preceptor development requires significant improvement especially for pharmacy residency programmes. In Hamad Medical Corporation, there are multiple areas for improvement such as: teaching strategies, writing feedback and presentation skill.

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An examination of the factors influencing the performance and success of graduate entry pharmacy students

Suzanne Caliph, Paul White, Ian Larson, Carl Kirkpatrick

Monash University, Parkville, Australia

Background: Monash Faculty of Pharmacy and Pharmaceutical Sciences currently admits graduates with a minimum 70% grade average in a relevant science degree into the third year of the pharmacy course following completion of bridging unit. As we prepare for graduate entry into a new curriculum, we were keen to determine what aspects of their prior work were most predictive of success in pharmacy (Allen, 2016).

Objectives: To examine the relationship between prior relevant subjects, performance in the bridging unit, and performance in the pharmacy course for graduate entry students.

Methodology: We performed retrospective analysis of data from three cohorts of graduate-entry students (2014 to 2016). We compared their weighed average mark (WAM), prior relevant subjects, summer unit grades and also examined the influence of gender and previous university attended by the students.

Results: A total of 141 students have enrolled in the course via graduate entry. Ninety percent of top 10% and 60% of bottom 10% completed students were graduates of the two highest ranking universities in the state. Both top 10% and bottom 10% groups had completed a relevant science degree with physiology or pharmacology or both. The proportion that had done both physiology and pharmacology was higher in the group of students that had completed the course than in the group that discontinued. A positive relationship was seen between performances in graduate entry pharmacy course (WAM) and summer bridging unit and its pre-learning materials.

Discussion: Predictors of success for graduate entry students are complex, with previous physiology and pharmacology units being only partially predictive.

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Preparing for the stresses and strains of the 21st century

Kay Dunkley[1], Colin Chapman[2], Sally Wilson[3], David Wilson[3]

[1]Pharmacists' Support Service, Parkville, Australia

[2]Monash University, Parkville, Australia

[3]Master Research, Templestowe, Australia

Methodology: A national online survey on the stress and wellbeing of pharmacists, intern pharmacists and pharmacy students was conducted in late 2016 to early 2017. This survey showed that members of the pharmacy workforce report more perceived stress than currently reported for the Australian population as a whole. Those in the workforce aged under 30 years of age and/or those with ten years or less experience in the pharmacy workforce have a higher level of perceived stress than older and more experienced pharmacists. This group also reports greater dissatisfaction with their workplaces (Chapman *et al.*, 2017)

Results: The most commonly used and effective coping strategies used by the pharmacy workforce to deal with stress-related issues in the workplace were identified in the survey, however, many do not have coping strategies in place. Job security issues were a major barrier to seeking help.

Discussion: The poster will describe the experiences of participants related to their stress and wellbeing and how they cope with this as reported in the National Stress and Wellbeing Survey. The ways to better prepare and manage stress-related situations will be explored.

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A case study: Implementing a student in difficulty pathway to support post-graduate workplace-based training

Amareen Kamboh, Kat Hall

University Of Reading, Reading, United Kingdom

Background: The University of Reading (UoR) provides workplace-based foundation training aligned to the 'Foundation Pharmacy Framework' and independent prescribing for pharmacists and nurses aligned to 'A Competency Framework for All Prescribers'. Recent research of workplace-based learning has shown that student needs are changing, which could be attributed to "generational concepts that require consideration to appropriately support individuals as they begin their professional careers" (Jones *et al*., 2015). UoR students are not commissioned therefore have no Deanery support systems. Following increased numbers of students in difficulty (SiD), a project to review current processes commenced.

Objectives: To identify local indicators of SiD and equip workplaces to collaboratively support students with the University.

Methodology: Existing Deanery models were researched and compared to University procedures to create a pathway. Stakeholders representing UoR, workplaces and students were consulted; their comments were incorporated into a final pathway.

Results: Stakeholders noted workplace pressures made it harder to maintain a work-study-life balance. They identified the need for a framework to support early intervention, and consistent support mechanisms to create commitment to an action plan focussed on progression, attainment and/or pastoral care. An adapted Deanery model was utilised; a handbook, rating matrix and action plan template were formalised alongside additional support materials.

Discussion: The pathway has been implemented successfully for 18 months, supporting students with long-term illnesses, changing family responsibilities and difficulties meeting academic standards; all students formally entered on the pathway have successfully completed the assessments aligned to their action plan. Stakeholders report increased satisfaction following implementation of the new pathway.

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From stress to wellness: Building a toolbox of techniques to support Australian pharmacists at work

Kylee Hayward, Julia Hruz, Sally Ridgers

The Society Of Hospital Pharmacists Of Australia, Collingwood, Australia

Background: Currently over 30 000 pharmacists and interns practice in Australia (PBA, 2017). Recent research by Monash University, Master Research Australasia and the Pharmacist's Support Service (PSS) found pharmacists were more stressed compared to the rest of the Australian population (60% vs.32%) (Haggan, 2017). When surveyed approximately 10% of pharmacists stated they either "never" or "almost never" had confidence in their ability to handle personal problems. This highlights the mounting pressure on Australian pharmacists across care settings and the need for pharmacists to develop skills to identify and manage stressors. The Society of Hospital Pharmacists of Australia (SHPA) is a membership organisation that represents, advocates and supports pharmacists working in hospitals and clinical settings throughout Australia.

Objectives: To provide a toolbox to Australian pharmacists for managing stressors to support wellbeing, facilitated by (SHPA).

Methodology: Bi-monthly Wellness at Work webinar series was developed, providing exposure to diverse resources available to develop skills in identifying and managing stressors to promote wellbeing. Workshops in 'Mental Health First Aid' to increase knowledge, recognition, management and prevention of mental health issues. 'Difficult Conversations' workshops targeting pharmacists at different career stages to develop confidence in and minimise stress associated with such conversations. 'Mentoring Programme' based on one-to-one connects to empower pharmacists to build their confidence, sharpen focus and dismantle barriers.

Results: Strong registration and member feedback. Series commences 6/2/18; results pending.

Discussion: SHPA have developed a range of new and improved initiatives and services to support the wellness of the Australian pharmacy workforce.

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Fostering integrated learning within an M.Pharm. curriculum through the medium of pharmacy student team posters

John J. Keating

School Of Pharmacy, University College Cork, Ireland

Background: Posters are effective media of communicating information visually. To nurture pharmacy student teamwork, communication and presentation skills, and to facilitate integrated learning, a highly successful, drug-themed, team poster continuous assessment element was introduced within the third year of the University College Cork (UCC) M.Pharm. curriculum. This poster displays the drug-themed posters (n=16) produced by students during the 2017/2018 academic year.

Objectives: To enable pharmacy students to communicate, in an integrated manner, through the medium of an A0 portrait-orientated poster, the chemistry, formulation, pharmacology, and clinical pharmacy of a specific drug; foster student teamwork and presentation skills; empower student expression of their multiple intelligences (Gardner & Hatch, 1989), and develop student knowledge integration skills relevant to lifelong learning.

Methodology: Module PF3009 (Gastrointestinal, Hepatic and Endocrine Systems) students were divided into four-membered teams, assigned a PF3009-related drug and provided with poster design training. Teamwork training included a visual thinking strategy exercise. Teams were given eight weeks to produce their posters.

Poster team and individual grades were generated as follows: Team grades by assessors (UCC Pharmacy School staff and post-graduate students) during a session analogous to a scientific conference based on (a) the design and content of the team posters; and (b) the team-assessor engagement; Individual team member grades were student-generated through CATME, a teamwork feedback e-tool.

Results: Team posters are a surprisingly effective means of encouraging pharmacy students to integrate knowledge.

Discussion: The exercise is mappable to an advanced rung of Harden's Integration Ladder (Harden, 2000) and to many competencies of the Pharmaceutical Society of Ireland Core Competency Framework (PSI, 2013).

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Pharmacist perspectives on a novel longitudinal ward-based programme for trainee hospital pharmacists

Hannah Kinsey, Jeremy Sokhi, Maria Christou, David Wright

University Of East Anglia, Norwich, United Kingdom

Background: The roles of hospital pharmacists are expanding. At least 80% of a pharmacist's time should be spent in patient-facing roles (Lord Carter of Coles, 2016). Current training consists of short block-rotations that may not equip pharmacists for enhanced roles. A longitudinal ward-based placement for trainee hospital pharmacists may provide an opportunity to better equip pharmacists for these roles.

Objectives: Explore pharmacists' perspectives on the design of a longitudinal ward placement for trainee hospital pharmacists

Methodology: Key stakeholders; Chief Hospital Pharmacists (CHPs) and Newly Qualified Hospital Pharmacists (NQHPs) were recruited using convenience sampling. One focus group with CHPs (n=4) and two focus groups with NQHPs (n=13) were audio recorded, transcribed *verbatim* and thematically analysed (Braun & Clarke, 2006).

Results: Thematic analysis is ongoing. Emergent findings have revealed a series of enablers and barriers to introducing a longitudinal ward placement. Enablers include: current training insufficient, acceptance into the ward team, interpersonal skills. Barriers include: current training sufficient, control, unsuitable activities. There was a disparity in views between the NQHPs and CHPs with respect to the identified barriers and enablers.

Discussion: CHPs perceived the longitudinal placement threatened a loss of control over training, whereas NQHPs acknowledged longitudinal placements would facilitate better integration into ward teams. There may be a gap in awareness of training needs for those entering the profession between those who are newly qualified and those in positions of leadership. Due to small numbers of participants, not all themes in relation to this topic may have been captured. Self-selection bias may have also affected data collected.

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Building pharmacy and pharmacist careers across practice settings through leadership and management training

Dorothy Lucardie, Jan Ridd

Pharmaceutical Society Of Australia Ltd, Deakin, Australia

Background: The Pharmaceutical Society of Australia (PSA) is recognised by the Australian government as the peak body representing Australia's 30,000 pharmacists working in all sectors and locations. In 2004 the Victorian Pharmaceutical Society of Australia commenced the delivery of the VET (Vocational Education and Training) Diploma of Management to 20 pharmacists each year. With the unification of PSA in 2008, a national Registered Training Organisation was established in 2009 and the Diploma was offered online for the first time in 2010. In the ensuing eight years over 700 pharmacists Australia-wide have undertaken studies for the Diploma, customised for pharmacists and pharmacy staff, with many receiving government subsidies to support their training. Now the Diploma of Leadership and Management offered by the PSA is the "go to" qualification for pharmacists who are taking up supervisory and management positions across practice settings or aspire to become a pharmacy owner.

Objectives: This paper will report on evaluation research undertaken by the PSA in early 2018 that explores the impact of undertaking leadership and management studies on the individuals involved, their personal skills, their career aspirations and subsequently on the businesses they work for or own.

Methodology: Qualitative research methods are used to gather the participating individual's perspective through surveys and telephone interviews.

Results: The research is initially subjective, reporting the participating individual's perspective and contrasting this with the perspectives of their staff or colleagues.

Discussion: Reflection on the results will include comparison of different individual responses and grouping of common responses.

A reflective tool to enable student personal development during and after experiential placements

Efi Mantzourani[1], Cherie Lucas[2], Rhian Deslandes[1], Louise Hughes[1]

[1]Cardiff School of Pharmacy and Pharmaceutical Sciences, Cardiff, United Kingdom

[2]Graduate School of Health (Pharmacy), University of Technology Sydney, Sydney, Australia

Background: Reflective tools of minimal structure (Tsingos *et al*., 2014) do not support undergraduate pharmacy students, as novice reflectors, in their developmental journey towards strengthening their reflective skills and maximising learning from a range of experiential placements (Lucas & Mantzourani, 2017).

Objectives: To develop a stakeholder-informed, structured template, enabling students to reflect on traditional and non-traditional placements, of any duration.

Methodology: An action research project was launched, obtaining student, preceptor and assessor qualitative feedback on progressive versions of the reflective tool, underpinned by Mezirow's categories of reflection (Mezirow, 1991).

Results: A multi-phased approach over three years led to five iterations of the tool, shaped by feedback provided by 24 students in focus groups, two assessors and 13 preceptors in interviews. A total of 853 student reflective accounts were graded, to explore the utility of the final version towards supporting students. The number of critical reflectors increased from 6% to 62.9%.

Discussion: Reflective skills, even though not inherent, can be taught with appropriate support. The final tool developed and evaluated in this project provided tailored structure to encourage reflection on action, in a range of placement opportunities, regardless of type or duration. Additionally, it promoted reflection in action during placements later in the curriculum.

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Maximising strengths of international partnerships to form a collaborative Pharm.D. programme

Jodie Malhotra, Kari Franson

1University Of Colorado Denver, Aurora, USA.

Background: Worldwide the pharmacy profession is moving from being product-centred to patient-centred. Pharmacists are now providing patient education, promoting wellness, preventing disease, contributing to disease management, and providing direct patient care. As the role of a pharmacist advances, the education and training of pharmacists must also advance.

Objectives: Develop a Pharm.D. programme for practicing pharmacists offered collaboratively through an international partnership.

Methodology: In 2016, Children's Cancer Hospital Egypt (CCHE), a state of the art paediatric cancer hospital and leaders of clinical innovation in the region, and University of Colorado Skaggs School of Pharmacy and Pharmaceutical Sciences (SSPPS), nationally recognised for educational innovation and producing excellent pharmacists for over 100 years, entered into a memorandum of understanding. The two institutions partnered to create a Pharm.D. programme offered by CCHE in collaboration with SSPPS to provide baccalaureate-trained pharmacists with state-of-the-art didactic and clinical education. SSPPS faculty with experience in Pharm.D. programme design and implementation guided CCHE in the development of the mission, vision, outcomes, curriculum, policies, procedures, and administrative services for the Pharm.D. programme.

Results: The collaborative Pharm.D. is a two-year programme including 16 months for didactic courses and early experiential learning and 12 months for advanced experiential learning. Didactic content for the programme is offered remotely by SSPPS and experiential learning and assessment is provided by CCHE. The inaugural class is planned to begin in May 2018.

Discussion: Our innovative partnership has maximised the strengths of CCHE and SSPPS to form a Pharm.D. programme that addresses the need for the advancement of pharmacy education in Egypt.

Supporting hospital pre-registration trainee pharmacists in community pharmacy placements. The development, implementation and evaluation of an innovative training pack.

Rina Matala

University Of East Anglia, Norwich, United Kingdom

Background: Hospital pre-registration trainee pharmacists undertake short placements in community pharmacy to attain competence in a range of performance standards set by the General Pharmaceutical Council (GPhC). A training pack was developed in consultation with community pharmacists and current trainees. It was designed to cover core competencies relevant to community practice, which was supported by a self-evaluation tool (Stupans & Owen, 2009).

Objectives: To develop a structured, comprehensive training pack, implement a self-evaluation tool and training pack during placements and evaluate the need and value of the tool and training pack

Methodology: Two groups of trainees were recruited. Feedback was collected via piloted questionnaires and focus groups. Training pack supported (TPS) group - accessed the pack prior to and during placement. Non-supported (NTPS) group - no access to the pack throughout.

Results: TPS (n=28) believe the pack was a useful tool providing structure and covering a wide range of practice skills. NTPS (n=27) acknowledge that they would benefit from the pack due to the lack of structure during their placement.

Discussion: The comprehensive evaluation provides evidence for both need and value of the resources as part of quality pre-registration training during placements.

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Identifying essential non-academic attributes for non-dispensing clinical pharmacists in primary care

Barbara Moore

Te Awakairangi Health Network, Lower Hutt 5040, New Zealand

Background: As our population ages and the burden of long-term conditions such as diabetes, heart disease and dementia grows, more non-dispensing clinical pharmacists will be integrated into primary care healthcare teams. Pharmacists may need to define and develop these new roles for themselves, but because the roles and activities are different to community pharmacy, the skills and attributes required are not well defined (Hurwitz *et al*., 2013; CPPE, 2016; Saseen *et al*., 2017).

Objectives: Pharmacists working in direct patient-care roles within general practice not only require an enhanced level of clinical competency, but also have need of non-academic attributes or 'soft skills'. The objective was to identify the most important generic attributes required for these roles, which will then aid in matching appropriately qualified and experienced pharmacists with specific general practices.

Methodology: The approach to ascertaining key non-academic attributes was twofold: identify jurisdictions where non-dispensing clinical pharmacists have been integrated into primary care roles, then collate and compare the behavioural competencies and skills listed as essential for these roles.

Results: There is no consensus as to the most important non-academic attributes pharmacists will require, just as there is no consensus as to what the most important non-cognitive attributes are for doctors. However, there is agreement that the fundamental attributes include integrity, empathy, respect, effective communication, and cultural awareness.

Discussion: There is increasing recognition of the importance of the non-academic skills or 'soft skills' required to be a competent clinical pharmacist. They are as important as technical skills and enhance the way pharmacists communicate and relate to patients, colleagues, and peers. These attributes should also be considered alongside academic ability during the undergraduate pharmacy student selection process.

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Nature or nurture? The personality traits of Australian pharmacy students

Jason Waddell[1,2], Andrew Hale[1], Gregory Kyle[1], Lisa Nissen[1]

[1]Queensland University Of Technology, Brisbane, Australia

[2]Logan Hospital - Metro South Health, Meadowbrook, Australia

[3]Royal Brisbane and Women's Hospital - Metro North Hospital and Health Service, Herston, Australia

Background: Personality traits provide a unique way to understand barriers to change in the pharmacy profession (Rosenthal *et al*., 2010). A key question is whether pharmacists' personality traits change over time. This abstract reports preliminary results in an evaluation of the personality traits of Australian pharmacy students to answer this question.

Objectives: To evaluate the personality traits of Australian pharmacy students using the Big Five Inventory (BFI) (John *et al*., 2008). The BFI evaluates five dimensions of human personality: extraversion, agreeableness, conscientiousness, neuroticism and openness.

Methodology: An online cross-sectional survey was distributed to Australian pharmacy students in 2017. The survey collected demographic data and asked students to complete the 44-item BFI. The BFI scores were calculated as the mean +/- standard deviation as described by the tools authors (John *et al*., 2008). The study was approved by the Queensland University of Technology Human Research Ethics Committee.

Results: One hundred and thirteen pharmacy students completed the online survey. The average age of study participants was 21.7 years (SD 3.5) and 78.8% were female. Scores (out of five) for the BFI were as follows: for the trait of extraversion 3.18 (SD 0.77), for agreeableness 3.87 (SD 0.55), for conscientiousness 3.73 (SD 0.49), for neuroticism 2.96 (SD 0.70) and of openness 3.25 (SD 0.49).

Discussion: Compared to a study of Australian pharmacists, pharmacy students scored lower in the trait of extraversion, agreeableness, conscientiousness and openness and higher in the trait of neuroticism (Waddell *et al*., 2017). Future research to evaluate the nature of this relationship and how it impacts upon change in the pharmacy profession could provide useful information in how pharmacy students are educated and socialised in the profession.

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Home Medicines Reviews - exploring accredited pharmacists' work processes relating to time investment for health service delivery

Marea Patounas, Esther Lau, Lisa Nissen

Queensland University Of Technology (QUT), Faculty of Health, School of Clinical Sciences, Brisbane, Australia

Background: In healthcare, competency and lifelong learning is considered an essential aspect of safe practice. Little is known about the time required to perform Home Medicines Reviews (HMR) in Australia and the time invested in self-education as part of HMR work processes.

Objectives: To explore the HMR work processes of accredited pharmacists (APs) and the time required to perform HMRs in an Australian community.

Methodology: Focus groups and interviews were conducted to explore HMR work processes and time required to perform HMR. The sessions were transcribed *verbatim* and thematically analysed using Nvivo software.

Results: There were ten APs in focus groups and 15 AP participants in the interviews. Participants ranged from far north Queensland to western regional New South Wales. The majority spent an estimated four hours performing a HMR, and 1.5-2 hours preparing the HMR report for the patient's general practitioner. However, considerable time was invested in research and self-education by some participants with instances of "hours or even days". Most admitted enjoyment in this significant time expenditure and felt it was part of their health service responsibilities.

Discussion: A detailed account of APs' HMR work processes suggested willingness to invest considerable time towards self-education and self-improvement as part of practice. These findings offer insight regarding the time required to perform cognitive health services for patients with comorbidities and polypharmacy. Given the increasing prevalence of chronic disease (Caughey *et al*., 2008; WHO, 2015) further investigation of APs' work processes, motivation and reasons for the time taken to conduct HMRs is warranted.

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Navigating the path to digital literacy and telehealth with final year pharmacy students

Gregg Maynard[1], Maree Simpson[1], Rod Hill[2]

[1]*School Of Biomedical Sciences, Charles Sturt University, Orange, Australia*

[2]*School of Biomedical Sciences, Wagga Wagga, Australia*

Background: Within Australia and globally, telehealth has been implemented in hospital and community settings for its general ease of use and operability. The National Competency Standards Framework for Pharmacists in Australia 2016, highlights Standards 2.1, 2.2, 2.3 and 2.4 which encourage collaborative communication and management of patient issues for optimal health outcomes.

Objectives: To implement educational modalities to develop capabilities for telehealth and online collaborative case conferences in final year pharmacy students.

Methodology: Auto-ethnography, a qualitative methodology, was utilised as it explicitly links concepts from the literature to the narrated personal experience of the authors throughout the project.

The initiatives introduced were an academic social media platform (ucroo.com.au) and a wiki in Professional Pharmacy Practice, and a flipped classroom and a virtual classroom in Pharmacotherapeutics.

Results: UCROO was readily adopted by the students but there were issues with professional communication. A wiki was trialled, and with the subject convenor as a moderator, became professionally focussed and collaborative.

The flipped class was supported by interactive video teaching though students raised issues of teacher presence which was addressed by increasing the number of tutorials. The next phase used Adobe Connect to generate a single virtual classroom. Some technology issues and perceptions of equity of access were identified.

Discussion: Research has identified both 'flip endorsers' and 'resistors' (McNally *et al*., 2016) and this may apply also to a virtual classroom (Bowers & Kumar, 2015). Training in the pedagogy and technology is being implemented and additional lectures on TelePharmacy presented in 2018 to address this.

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The role of Australian pharmacists in natural and man-made disasters – can we do more?

Kaitlyn Porter[1,2], Judith Singleton[1,2], Vivienne Tippett[1,2], Lisa Nissen[1,2]

[1]*Queensland University Of Technology, Brisbane , Australia,*

[2]*Institute of Health and Biomedical Innovation (IHBI), Kelvin Grove, Australia*

Background: Communities are becoming more susceptible to the health impacts of disasters due to the ageing population and increasing prevalence of chronic diseases (Chan, 2017). Interruptions in the continuity of medication supply to patients can lead to exacerbations and life-threatening situations (Chan, 2017). Pharmacists have assumed a minor role in disasters in the supply and logistics of medications. Community and hospital pharmacists are unaware of their potential role in assisting their patients during disasters.

Objectives: To determine the opinion of the disaster health community on the role of pharmacists in disasters.

Methodology: An online survey was emailed to members of the Queensland University of Technology (QUT) Centre for Emergency and Disaster Management (CEDM). Questions were asked on disaster experience and opinions of pharmacists undertaking 11 roles found in literature. Data were analysed using SPSS® version 23 IBM software.

Results: There were 97 out of 446 surveys completed, giving a response rate of 21.7%. The majority of the respondents (49.5%) had experience in both disaster management and health professions. Most participants (89.5%) had responded to at least one disaster. The strong consensus was pharmacists do have a role in disasters aside from logistics (89.5%) and these roles are currently within their scope of practice (79.4%).

Discussion: Pharmacists have historically in Australia played a minor role in disasters, only using their skills in logistics and medication supply. This survey illustrates the wider disaster health community's acceptance of further utilisation of pharmacist's skills and knowledge into other clinical roles (prescribing continuing chronic disease medications, prescribing and administering vaccinations and educating the public).

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Developing evidence-led professional curricula for workforce development

Beth Ward[1], Helena Rosado[1], Ian Bates[2], Catherine Duggan[1]

[1]*Royal Pharmaceutical Society Of Great Britain, London, United Kingdom*

[2]*University College London School of Pharmacy, London, United Kingdom*

Background: There has been considerable variation in post-registration continuing pharmacy education (CPE) across Great Britain (GB). Following a career development review (MEE, 2012), the Royal Pharmaceutical Society and Specialist groups across GB set out to develop validated Professional Curricula to provide a more consistent approach to CPE provision and workforce development.

Objectives: To develop credible, validated and quality assured core and specialist professional curricula for all stages of pharmacy practice. These, used with professional development frameworks, outline the knowledge, skills, experiences and behaviours that pharmacists should work towards in all areas of practice.

Methodology: The process was iterative and conducted via expert panels, consensus formation, and curricula mapping. Sixteen specialist groups provided Expert Practice Curricula (EPC) for their speciality. Iteration and mapping was conducted using a relational database to track comparison and changes, producing an emergent Core Practice Curriculum. Expert panels provided tracked-consensus agreement of the common knowledge items (critical adjacencies between all specialisms), resulting in a knowledge-based curriculum for "generalist pharmacy practice" regardless of setting or area of practice. Non-redundant knowledge items were deemed as specialist, which alongside the Core set, constituted an accurate description of specialist practice.

Results: The merger of 16 EPC into a Core Curriculum produced 1150 knowledge items. Subsequently, 21 expert groups from 6 practice sectors reviewed these for validity. A further 3376 comments were received, with subsequent content modification and standardisation of language, resulting in 1384 core and specialist items.

Discussion: To deliver safe and effective care, pharmacists must develop generalist knowledge and skills alongside specialist expertise. Professional Curricula can be used by individuals and training providers to structure career development through standardisation of training and assessment.

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Multi-professional views on the training of pharmacists as Advanced Clinical Practitioners in urgent care centres

Stephen-Andrew Whyte[1], David Wright[2], Richard Adams[2], Jeanette Blacklock[2], Sanjiv Ahluwalia[2], Gail Fleming[2], Sarla Drayan[3]

[1]*Health Education England, London, United Kingdom*

[2]*The University of East Anglia, Norwich, United Kingdom*

[3]*Queens Hospital (Barking, Havering and Redbridge NHS Trust), London, United Kingdom*

Background: A Health Education England (HEE) report stated clinical pharmacists could positively impact Emergency Dept (ED) patient care and posed training requirement questions; suggesting up to 36% of ED attendees could be treated by Pharmacists (RPS, 2014; HEE, 2016).

Objectives: To obtain the views of trainee Advanced Clinical Practitioners (tACPs) and their multi-professional colleagues about role development and training of pharmacists as Advanced Clinical Practitioners (ACPs) by identifying and describing: tACP training needs; suitability and effectiveness of university and in-house training; roles and activities required and performed by pharmacist tACPs and their effect; facilitators and barriers.

Methodology: Three pharmacists were recruited as tACPs. Pharmacist tACPs attended one hour focus groups at three monthly intervals, using a topic guide of open questions about training, integration and roles. Medical and nursing staff attended 30 minute interviews. All sessions were transcribed then analysed thematically.

Results: tACPs and Urgent Care Centre (UCC) staff were supportive of the training of pharmacists as ACPs, but felt that roles upon qualification lacked clarity. Employers should recognise that pharmacists lack some basic skills already held by other members of the team.

Combined university-based teaching with practise on the job is an effective approach to training ACPs. After 12 months, confidence and competence of tACPs has improved and they now provide patient assessment, clinical reasoning and management under supervision.

Discussion: Results demonstrate support for training pharmacists as ACPs. Career planning and support for next steps will be required to ensure role clarity upon qualification of tACPs.

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Clinical decision-making for the 21st century pharmacist

Daniel Wright[1], Megan Anakin[2], Stephen Duffull[1]

[1]*School Of Pharmacy, University Of Otago, Dunedin, New Zealand*

[2]*School of Medicine, University of Otago, Dunedin, New Zealand*

Background: In the 21st century, pharmacists are increasingly required to provide leadership in therapeutic decision-making. Yet, pharmacists have been found to struggle with clinical decision-making, to be generally risk averse, and to lack confidence when dealing with ambiguous situations (Rosenthal *et al.*, 2010; Frankel & Austin, 2013). There is therefore a need for new instructional models to prepare pharmacists for contemporary and future practice.

Objectives: The aim of this work is to present an educational model of clinical decision-making applicable across pharmacy practice settings.

Methodology: The model was constructed by aligning three components; a philosophical framework for pharmacy practice (Duffull *et al.*, 2017); a cognitive model for clinical decision-making and task-driven models for clinical decision-making, drawn from teaching experience and published schemes.

Results: The model accounts for four major practice roles, defined by the bioethical principles of beneficence, co-beneficence, secondary beneficence, and, non-maleficence (Duffull *et al.*, 2017). The primary beneficent practitioner uses information gathering, clinical reasoning, and clinical judgment to enact a decision. A secondary or co-beneficent pharmacy practitioner will share elements of decision-making in differing degrees. They are distinguished by the ability to enact (co-beneficent) or simply influence (secondary) a decision. Often the non-maleficent pharmacist is primarily focused on risk mitigation and is therefore peripheral to the central decision-making process. This is expected to require quite different reasoning and judgement skills.

Discussion: The model provides a general structure for clinical decision-making across practice settings, with the flexibility to incorporate different cognitive processes and tasks. The model has utility for teaching clinical decision-making skills to undergraduate and postgraduate pharmacists.

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Pharmacy continuing professional development (CPD) accreditation: A successful grant application in HMC, Qatar

W. El-kassem, A. Rouf, M. Al Hail, R. El Enany

Hamad Medical Corporation

Background: Although, an informal continuing professional development (CPD) programme was already existing in Hamad Medical Corporation (HMC), Qatar, only in 2014, the corporate pharmacy department in HMC (more than 700 pharmacy staff), has taken an initiative to undertake a project reflecting the readiness of pharmacy CPD programme to seek accreditation from both national and international bodies. A grant application for the same was submitted that requires justifying the importance of project through an expression of Interest (EOI) form with six questions. Academic Heath System was the funding body for potential educational projects that impacts patient care and safety in HMC (Driesen *et al*., 2007; Wilbur, 2010).

Objectives: To evaluate the readiness of our pharmacy CPD programme and obtain both national and international accreditation.

Methodology: Submit the application that justifies project's benefits, impact, alignment with national strategy, gap analysis, dependencies, resources, budget consultation, and timeline for project delivery and finally applying for accreditation. A series of four presentations to the stakeholders reflecting projects impact in terms of; attracting, training and developing a highly educated, skilled and motivated workforce to support the delivery of world-class healthcare in the region.

Results: Successful grant application, project completion that lead to well established pharmacy CPD programme accredited by both national and international bodies (Qatar council for healthcare and ACPE accreditation). Developed "key performance indicators" such as; CPD programme satisfaction surveys, CPD activities attendance per year and others.

Discussion: A successful grant for such projects essentially depends on, expressing a systematic and realistic approach that reflects current organisational CPD status, and also ensuring that the estimated overall cost is precise for the proposed project.

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