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Oral Presentations

Behaviour Change

The effectiveness of digital health technologies to support surgical patients in changing health behaviours: a systematic review and narrative synthesis

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Introduction: Digital technologies (DTs) play an integral part in everyday life. Statistics estimate 78% of adults own a smartphone, 90% of people regularly access the internet at home, and 20% use wearable technologies such as fitness trackers[1]. This uptake has been echoed in healthcare with successful shifts towards DT integration to improve outcomes. DTs can aid diagnoses and improve clinician communication and information transfer across sectors[2]. For patients, DTs can enhance education, improve communication with clinicians, and empower shared decision-making and health behaviour change (HBC).[2] In surgical contexts, evidence has linked better health behaviours and physical-preparedness prior to surgery, with improved post-operative outcomes.[2] Specifically, improvements in a patient's weight, dietary intake, and physical activity levels have been associated with better tolerance of post-surgical treatment and long-term prevention of ill health.[2] At present, there are variable amounts of support available for elective surgical patients to make these beneficial HBCs. DTs (such as activity trackers and smartphone applications) present an innovative opportunity to engage patients as active partners in their care, whilst supporting HBC and potentially optimising surgical outcomes.[2]
Aim: To conduct a systematic review and narrative synthesis examining the effectiveness of DTs to support elective surgical patients in changing their health behaviours, specifically focusing on physical activity, weight, and dietary intake.
Methods: This review was conducted according to Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines and registered with PROSPERO: CRD42019127972. Medline, Embase, CINAHL, PsycInfo, Web of Science, and Scopus databases were searched in March 2019. Experimental studies evaluating a DT-based intervention for surgical patients were included, specifically focusing on three elective specialties (bariatric, cancer, and orthopaedic surgeries) where pharmacists can play an enhanced role in supporting and educating patients. Emergency/acute surgeries were excluded, and no limit on publication dates was applied. Joanna Briggs Critical Appraisal tools were used for quality/bias assessment.
Results: Seventeen studies from seven different countries, published between 2011 and 2019, were included. They focused on adult surgical patients undergoing bariatric (59%, $n = 10$), cancer (29%, $n = 5$), and orthopaedic surgery (12%, $n = 2$). We identified three key factors contributing to DT effectiveness in supporting HBC in elective surgical populations, specifically: intervention delivery, implementation, and theoretical-underpinning. e-Platforms demonstrated HBC ($P \leq 0.05$) in 75% of studies; however, this method may be superseded in the near future with increasing prevalence of wearable technologies and apps. HBCs were found in 100% of studies implementing DTs across the entire pre- and post-operative period, compared to 40% and 62.5% of those targeting only the pre-operative and post-operative periods, respectively. Eight studies included HBC theories in their design: 75% ($n = 6$) produced HBC ($P \leq 0.05$) relating to reduced weight regain, increased PA and improved diet.
Conclusion: Findings demonstrate that DTs effectively support HBC in elective surgical patients. Study size was a recognised limitation, where further research in larger populations may strengthen conclusions. By recognising factors contributing to DT effectiveness, these findings can support recommendations for elective surgical outcome improvement and further reiterate HBC to improve population health.

References

1. Smartphone usage among mobile phone users in the United Kingdom in 2018, Statista. 2018, Newcastle University.
2. Levett, D.Z., et al., Preparing the patient for surgery to improve outcomes. Anaesthesiol, 2016. 30(2):p.145–57.

Developing a community pharmacy-based reproductive health service for women in receipt of opiate substitution therapy: a qualitative exploration of pharmacists' views using the COM-B framework

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Introduction: Women who experience addiction, particularly to drugs such as heroin, with associated poor self-care and nutrition, can experience absence of menstruation, and temporary reduction in fertility gives rise to belief that they will not conceive. However, when stabilised on opiate substitution treatment (OST), with associated improved lifestyle and diet, fertility often returns. As ovulation precedes menstruation, this can be without knowledge of potential to conceive, creating vulnerability to unintended pregnancies. Community pharmacists undertake most daily supervision of OST consumption, recommended in early treatment[1]. This creates an opportunity to provide reproductive health services and advice early on when needed, taking advantage of daily contact. This study was undertaken to inform development of such an intervention.
Aim: To investigate pharmacists' perspectives on providing reproductive health services to women receiving OST.
Methods: Semi-structured interviews using a schedule based on COM-B and Theoretical Domains Framework (TDF)[2]. Participants were recruited via head offices (multiples) and Local Pharmaceutical Committees. Interviews were recorded and transcribed verbatim. Data analysis included deductive coding using TDF, collapsed into COM-B domains. Second stage inductive analysis comprised re-reading and reviewing deductive codes and identifying inductive themes.
Results: Twenty community pharmacists practising in London and South West England participated. Five inductive themes were identified: (1) Pharmacists' knowledge and experience of women's RH needs. Many participants had seen their female OST patients getting pregnant, both planned and unplanned. Most described not having enough knowledge about the relationship between OST and fertility. (2) The trigger, the need and a structure: pharmacists' style of providing services. Data illustrate differences in automatic and reflective motivation of pharmacists, depending on whether participants saw the service as one to provide proactively and opportunistically, or in response to a trigger. Participants described their need for "*something to hook on*" e.g. the patient initiating the subject, illustrated by participant 2: *'a lot of the information we provide in the pharmacies is opportunistic it would be kind of where you have a patient asking you or it might come up- a patient not sure, or when we do an emergency hormone contraception supply…"*. Confidence and beliefs about capabilities were identified as important. Emotions of the pharmacist and stigmatisation of patients were also central influences. (3) Pharmacists' perception of the relationship between them and the women. Pharmacists believed that having a good rapport/relationship with women on OST was key in determining whether individuals would engage in a pharmacy-based reproductive health intervention. (4) Social influences. Participants said they probably wouldn't approach the subject of reproductive health when a woman is accompanied e.g. by children or partners. Some felt providing or advertising such services may have a negative effect on business. (5) Privacy and funding. This comprised environmental factors that influenced or were perceived to influence provision of reproductive health advice to women on OST. Most are not unique to OST patients, with the exception of security, safety and use of the consultation room.
Conclusions: Community pharmacists could be well placed to provide women receiving OST with reproductive health advice and support. The COM-B system/TDF helped identify factors to inform design of the service and training, including barriers to be considered. This study is limited in that those who volunteered may have more positive views than others.

References

1. Clinical Guidelines on Drug Misuse and Dependence Update 2017 Independent Expert Working Group (2017) Drug misuse and dependence: UK guidelines on clinical management. London: Department of Health.
2. A guide to using the Theoretical Domains Framework of behaviour change to investigate implementation problems. Atkins et al. Implementation Science (2017) 12:77.

A consensus study to characterise the behaviour change techniques of a practitioner behaviour change intervention for deprescribing in the hospital setting

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Introduction: Deprescribing medicines where the potential for harm outweighs the benefits is not routine practice in hospital[1]. The hospital deprescribing implementation framework provides 44 behaviour change techniques (BCTs) to address the four barriers and one enabler (Table 1) prioritised by geriatricians and pharmacists for hospital deprescribing interventions[2]. BCTs should be selected from the framework by the target audience to develop an intervention according to contextual factors and the APEASE criteria (affordability, practicability, effectiveness, acceptability, safety and equitability).
Aim: This study aimed to support geriatricians and pharmacists to select BCTs from the hospital deprescribing implementation framework for an intervention in the English hospital context.
Methods: A panel of geriatricians and pharmacists was convened to participate in a consensus study comprising of the following two-stages: Stage 1: Initial voting round (online survey). Stage 2: Face-to-face nominal group technique. The panel selected BCTs from the hospital deprescribing implementation framework according to whether

they met the APEASE criteria for the English hospital context in stage 1. A consensus threshold was set of ≥ 80% agreement that a BCT met all of the APEASE criteria and a partial consensus threshold of ≥ 80% agreement across at least three of the criteria. Stage 2 involved the panel participating in one nominal group technique cycle (silent generation, round robin, clarification, voting and discussion) per BCT that achieved partial consensus from stage 1 in order to accept or reject. The panel was then asked to characterise all accepted BCTs from stages 1 and 2 in terms of how they may be operationalised in the English hospital context.

Results: Four geriatricians and five pharmacists were recruited to the expert panel representing five English hospitals. Three BCTs achieved consensus in stage 1 and were automatically accepted for the intervention. A further three BCTs achieved partial consensus in stage 1, of which two reached consensus at stage 2 and were accepted for the intervention. The panel failed to reach consensus to include a BCT to address the enabler of 'incentivising deprescribing'. Instead, the panel proposed addressing the enabler by "measuring, reporting and sharing levels of deprescribing between wards or hospitals", which aligns with the BCT 'social comparison'.

The six characterised behaviour change techniques to address the four barriers and one enabler prioritised for deprescribing are presented in table 1.

Conclusion: Selection of BCTs by the target audience for intervention development is feasible. Behaviour change interventions targeting geriatricians' and pharmacists' deprescribing behaviour in the English hospital context should include the six characterised BCTs. These provide an evidence-base for supporting routine deprescribing in hospital. The dose, frequency and mode of delivery of the BCTs will require modelling and feasibility testing prior to larger scale testing.

References

1. Scott S, Clark A, Farrow C, May H, Patel M, Twigg MJ, et al. Deprescribing admission medication at a UK teaching hospital; a report on quantity and nature of activity. Int J Clin Pharm. 2018;
2. Scott S, Twigg MJ, Clark A, Farrow C, May H, Patel M, et al. Development of a hospital Deprescribing Implementation Framework: A focus group study with geriatricians and Pharmacists. Age Ageing. 2019;

Table 1. Six Behaviour Change Techniques selected and characterised for operationalisation in a hospital deprescribing intervention

Behaviour Change Technique	Characterisation
Misconception that patients and carers are resistant to deprescribing (barrier)	
Social comparison*	Draw attention to practitioners through weekly departmental bulletins who are successfully deprescribing by navigating any challenges of patients and carer resistance to deprescribing
Pharmacists' negative beliefs about deprescribing consequences (barrier)	
Salience of consequences*	Emphasise the benefits of deprescribing and harmful consequences of failing to deprescribe in terms which will resonate with pharmacists e.g. a 30 minute online training session training session
Pros and cons*	Advise pharmacists to list and compare the advantages and disadvantages of actively supporting deprescribing of inappropriate medication e.g. a 30 minute online training session training session
Pharmacists' working patterns limits capacity to support deprescribing (barrier)	
Restructure the physical environment**	Pharmacists to attend short multi-disciplinary team meeting e.g. 30 minute geriatrician board rounds to enable them to actively support deprescribing
Deprescribing is not a hospital priority (barrier)	
Action planning**	A senior geriatrician and pharmacist to engage with senior managers such as the medical and nursing directors to develop an organisational-level action plan. The action plan is to comprise of setting deprescribing as a high organisational priority goal and specifying locally relevant steps to achieving the goal and specifying who is responsible within the organisation for contributing towards the goal.
Incentivising deprescribing (enabler)	
Social comparison**	Measuring, reporting and sharing the proportion of patients screened for deprescribing opportunities between hospital wards, hospitals and regions.

*Behaviour change technique achieved consensus to accept in the intervention at stage 1.
**Behaviour change technique achieved consensus to accept in the intervention at stage 2.

Innovation in Community Pharmacy

Does an NHS test and treat service in communities pharmacy promote health-seeking behaviour change? A quantitative study

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Introduction: The first NHS funded Sore Throat "Test and Treat" (STTT) was introduced in selected community pharmacies in one nation in the United Kingdom (UK) in November 2018. Patients ≥6 years old with acute sore throat self-presenting to a participating pharmacy could receive a clinical examination by a pharmacist who had completed extra training, an immediate Point-of-Care Test (POCT) if the threshold clinical scoring criteria were met, and a supply of antibiotics under a Patient Group Direction if the POCT was positive. One of the main aims of the new service was to change patient health-seeking behaviour towards visiting their pharmacist instead of their GP, hence better utilising pharmacist skills and freeing up GP time for more complex and urgent medical issues, in line with principles of Prudent Healthcare.
Aims: To determine patient satisfaction with the new STTT service and explore whether it influenced patient health-seeking behaviour.
Method: A short, self-administered patient experience survey was developed in collaboration with members of the public, including a mix of closed and open questions. The survey was distributed to all patients who had completed a consultation, regardless of the outcome, between November 2018 and May 2019. A pre-paid envelope was supplied for return of the completed surveys and a link to online submission was provided. All data from completed surveys were entered in Jisc Online Surveys® and exported to Excel® for descriptive statistics. Free-text comments were imported in Word® and deductive thematic analysis was used in relation to access and future intentions.
Results: A total of 510 completed surveys were received by the end of the data collection period (510/2750 consultations, response rate 18.5%). Of all patients, 67.3% (n = 343) tried to see a GP before going to the pharmacy. Deductive analysis of free-text comments revealed two themes: convenience and accessibility, and perceived value of the service. Patients discussed accessibility of the pharmacist, reduced waiting times in relation to attending a GP appointment, increased understanding of the difference between bacterial and viral infections, and how the structure of STTT reassured them about their condition. Overall patient satisfaction was 99.2%. A total of 98.8% of patients (n = 504) stated that next time they had a sore throat they would return to the pharmacy instead of going to the GP, indicating a shift in health-seeking behaviour in relation sore throat symptoms.
Conclusion: A key factor in supporting the Welsh Government to deliver their vision for "A Healthier Wales" is to work closely with community pharmacists and ensure that services in primary care are safely rebalanced to create capacity for GPs to manage more complex conditions and patients that would otherwise would need to be under hospital care[1]. This study evaluated patient acceptability with a service that was introduced in Wales to support transfer of uncomplicated sore throat management to community pharmacies. Data from patient satisfaction surveys revealed high patient acceptability of the pilot STTT service and evidence of a shift in health-seeking behaviour. These results, coupled with results from a study exploring pharmacists' acceptability of the service, suggest that potential benefits include providing an alternative, preferred pathway for patients with sore throat[2]. As the response rate was quite low, feedback obtained may not be representative of some patient subgroups.

References

1. Welsh Government. Prudent Healthcare Securing Health and Well-being for Future Generations. 2016. http://www.prudenthealthcare.org.uk/wp-content/uploads/2016/02/Securing-Health-and-Wellbeing-for-Future-Generations1.pdf
2. Mantzourani E, Hicks R, Evans A, Williams E, Way C, Deslandes R. Community Pharmacist Views On The Early Stages Of Implementation Of A Pathfinder Sore Throat Test And Treat Service In Wales: An Exploratory Study. Integrated Pharmacy Research and Practice. 2019 https://doi.org/10.2147/iprp.s225333

A qualitative exploration of young peoples', pharmacists' and contract managers' perceptions of the community pharmacy chlamydia screening service

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Introduction: Chlamydia is the most common sexually transmitted infection in the UK particularly among young people. If not treated, it increases the risk of transmission and serious health consequences including infertility in both sexes. To reduce these risks, many community

pharmacies provide free chlamydia screening for young people. In 2018, screening activity among this age group was lower than previous years, and less than 1% were screened in pharmacies compared to other settings[1]. The reasons why uptake is low in pharmacies are unclear.
Aim: To investigate why community pharmacy screening activity is low, this study aims to understand the factors that influence uptake of screening by exploring the views of young people, pharmacists, and sexual health contract managers.
Methods: Semi-structured interviews were conducted with young people including service users, pharmacists, and contract managers who assign the service to pharmacies. Information leaflets were provided to 40 youth club members aged 16–24. Participants were then recruited using quota sampling (see Table 1) and interviewed at the clubs. The topic guide covered knowledge of chlamydia and associated risks and thoughts about the pharmacy screening method. Using thematic analysis, audio-recorded responses were transcribed and coded in NVivo Ver11 to produce themes, then re-coded under constructs of the Health Belief Model and findings compared.

Table 1. The sample variables for interviewing young people.

	Sample size: n = 30 **Ages: 16–24**
Sample variables	At least 20% of men and 20% of women have been previously tested for an STI
At least 20% of men and 20% of women have used a pharmacy sexual health service including chlamydia testing	
At least two participants representing each age from 16–24 interviewed	

There were 102 pharmacists and 2 contract managers invited to take part in the study by post. Stratified sampling was used to recruit the participants who were then interviewed at work or over-the-telephone depending on preference. The topic guide for both participant groups broadly covered constructs of the Normalization Process Theory Model[2] to identify the factors required for integration of the screening service into routine work.
Results: Interviews were conducted with 25 young people, 22 pharmacists and 2 contract managers as key informants. Among young people, concerns regarding privacy and feeling judged when requesting a chlamydia kit were perceived barriers 'Don't make it feel like there's a massive elephant in the room.' Pharmacists suggested further training needs to deliver a more young people-friendly service to maximise cognitive participation 'Training is a bit more...required on how to talk to youngsters... they sometimes don't know how to talk to somebody about what's happened to them'. All three participant groups believed that the accessible location and opening hours of pharmacies made them ideal for screening, but that the service required greater promotion.
Conclusion: This is the first study to explore the perceptions of all three stakeholders on the pharmacy chlamydia screening service. However, the views of pharmacy support staff about screening were not explored due to time limitation. Findings and proposed recommendations will be disseminated to local decision-makers and pharmacy committees to inform practice. Future work will involve designing a framework with policy makers to maximise service delivery.

References

1. PHE Sexually transmitted infections and screening for chlamydia in England, 2018, published 7/06/19.
2. May C, Finch, T. Implementing, Embedding, and Integrating Practices: An Outline of Normalization Process Theory. Sociology. 2009;43(3):535–554.

GP2Pharmacy: a quantitative evaluation of a novel locally commissioned community pharmacy referral service in South Tyneside

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Introduction: General practice is seeing increased demand for rapid access appointments and higher patient expectations. The NHS Long Term Plan suggests a need to better utilise the skills, experience and knowledge of community pharmacists in order to relieve some of the pressure on prescribers in primary care.[1] GP2Pharmacy is an innovative service, which utilises PGDs (including antibiotics for urinary tract infections and tonsillitis) alongside an existing minor ailments scheme. Additional clinical skills training was provided for pharmacists providing the service. There were 8000 appointments available in the initial pilot. Patients contact their practice as normal where reception staff can book fixed time appointments for suitable patients with their local pharmacist.
Aim: To evaluate the GP2Pharmacy service via analysis of quantitative consultation data, specifically in reference to the provision of prescription only medicines via PGDs and patient feedback questionnaire responses.
Methods: All GP2Pharmacy consultations are recorded on PharmOutcomes and South Tyneside CCG provided access to anonymised consultation and patient feedback questionnaire data at 3 months and 6 months into the pilot. Data were statistically analysed using SPSS V25; particular attention was given to variables (including patient age, referring surgery and presenting complaint) affecting the outcome and evaluation of the

consultation, using chi-squared tests. Any questionnaire free text comments were qualitatively explored for insight.
Results: In the first six months of the service, 741 patients were referred to one of the community pharmacies enrolled in the service (n = 24) to provide advice (15%), treatment with an over-the-counter product (47%) or same day referral back to the GP (14%). Six patients were referred to urgent care. A PGD medication was provided in 21% of consultations, including 79 patients for nitrofurantoin, 37 patients for fusidic acid and ten patients for phenoxymethylpenicillin.. Of patients accessing the service, 24% were under 13 and 12% were over 65 years of age. Reception staff referred 96% of patients.

Further analysis highlighted that the range of presenting complaints did not fully utilise the wide range of PGDs available under the service, for example, aciclovir for shingles. Furthermore, over half of all PGD referrals came from just two surgeries out of 14 registered for the service ($P \leq 0.001$, Cramér's V = 0.243).

The feedback from patients highlighted the benefits of increased and quicker access to a healthcare professional. Negative comments included booking an appointment and locum pharmacists not having an adequate understanding of the service.
Conclusion: While this analysis highlights the potential viability of extended minor ailment schemes, with many patients highlighting the benefits of easier access to required medications through their community pharmacist, there was an underuse of available appointments and specifically those that require provision of prescription only medications via a PGD. The quantitative approach utilised within this research meant some emerging themes could not be explored fully. A qualitative strand is currently underway to further explore facilitators and barriers to the service with key stakeholders.

Reference

1. Reducing pressure in general practice; NHS England; https://www.england.nhs.uk/gp/gpfv/workload/releasing-pressure/ [Accessed online 11/04/2019].

Opioid Use

Examining trends in opioid prescribing burden using an oral morphine equivalence measure in a primary care population: a retrospective, cross-sectional study of primary care prescribing data

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Introduction: Opioid prescribing has risen considerably in the UK over the last 20 years [1] and with it, comes increased risks to population health[2]. Opioid dose is an indicator of potential harm, but understanding the burden of different opioid medicines can be hampered by the numerous doses, strengths and products available.
Aims: The study aimed to describe trends in prescribing of opioid analgesics for non-cancer pain across Wales between 2005–2015, using an oral morphine equivalent dose (OMED) measure to compare dose burden between drugs.
Methods: The Secure Anonymised Information Linkage databank (SAIL) was searched using validated NHS read-codes to identify prescriptions for oral and transdermal opioid medicines issued in Primary Care Practices in Wales between 2005–2015. A proxy-measure for OMED was developed, due to the lack of data for prescription directions and quantity normally required to calculate OMED. The devised measure allocated OMED based on the strength of each product prescribed. The OMED was multiplied by the recommended daily dose (Medicines.org) and the number of prescriptions issued each year to determine annual totals for each drug. Data were measured in repeated, annual cross-sections and adjusted for population. Statistical analysis used Kruskal-Wallis H tests, as data were not normally distributed.
Results: Just over 23.5million prescriptions from 345 Primary Care General Practices were included in the analysis. Total annual OMED doubled from 37,662,65 mg to 76,428,768 mg in the 11 years examined.

Overall, 71% of the opioid burden between 2005–2015 was due to 3 drugs; codeine (35%), tramadol (22%) and morphine (14%). There was a statistically significant difference ($P < 0.001$, H = 73.5, η^2=0.8) between the groups of drugs examined. Large increases in OMED were noted for morphine (Table 1) in particular.

Table 1. Daily oral morphine equivalent dose (milligrams) issued on prescription, given as annual totals and adjusted to population, stratified by drug

	Total daily oral morphine equivalent dose (mg) prescribed			
Year	**Codeine**	**Morphine**	**Tramadol**	**Total all opioids**
2005	13743115	3293220	7865695	37662651
2015	25593382	17047800	14252335	76428768
Percentage change (%) 2005–2015	86.2	417.7	81.2	102.9
	Total daily oral morphine equivalent dose (mg) per 1000 population			
2005	5916	1422	3397	16266
2015	10581	7063	5905	31665
Rate change (%) 2005–2015	78.8	396.6	73.8	94.7
	Oral morphine equivalent dose per prescription issued (mg)			

Table 1. (Continued)

Year	Total daily oral morphine equivalent dose (mg) prescribed			
	Codeine	Morphine	Tramadol	Total all opioids
2005	17	86	36	23
2015	19	68	38	32
Percentage change (%) 2005–2015	16.2	−20.6	5.7	35.5

Conclusion: Large increases in OMED burden were observed over the 11 years studied. The patterns in prescribing, in particular the drugs responsible for the main burden are different to those described in England.[1] Although the proxy OMED measure is an estimate, the trends described are an accurate reflection of prescribing in Wales and give a new insight into the burden on the population. Future work is needed to better understand the reasons for such large increases in opioid prescribing and the differences between Wales and the rest of the United Kingdom.

References

1. Curtis HJ, Croker R, Walker AJ, Richards GC, Quinlan J, Goldacre B. 2019. Opioid prescribing trends and geographical variation in England, 1998–2018: a retrospective database study. *The Lancet. Psychiatry*, 6(2), pp.140–150.
2. Taylor S, Annand F, Burkinshaw P, Greaves F, Kelleher M, Knight J, Perkins C, Tran A, White M, Marsden J. Dependence and withdrawal associated with some prescribed medicines: an evidence review. Public Health England, London. 2019.

Community pharmacists' role in preventing Opioid Substitution Therapy-related deaths: a national survey of English community pharmacists

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Introduction: Community pharmacists (CP) dispense the majority of Opioid Substitution Therapy (OST) prescriptions in England, and also provide related services, such as Supervised Consumption (SC), Needle & Syringe Programmes (NSP) and Take Home Naloxone (THN). Opioid overdose deaths have increased dramatically in many high-income countries in recent years. Many of these deaths include those who inject illicit drugs, so may access NSP and people currently or recently in treatment for their addiction. Evidences suggest OST reduces both overdose and overall mortality but more needs to be done to prevent these deaths. UK guidance describes pharmacy practice to reduce overdose but the extent to which such guidance is implemented is questionable[1].

Aim: To describe CPs' self-reported adherence to guidelines for preventing overdose deaths.

Methods: A cross-sectional quantitative telephone survey was undertaken with CPs in England. A random stratified sampling technique was adapted to get representative sample from 6% of registered pharmacy premises. Information was sent to the participants in advance by post and verbal consent was taken before the survey was administered by phone. The questionnaire was developed based on published literature and was piloted before use. Eligibility criteria were set as those who provided any OST service. The survey was administered between January and May 2019. SPSS 25 software was used for data management and analysis. Data were subjected to descriptive analysis[1].

Results: A total of 253/750 responses (34%) were received of which 56% ($n = 142$) were male. Based on the eligibility, where known, the response rate was 39% ($n = 253/657$). Over three-quarter (77%, $n = 194$) received formal training to deliver OST services however only 40% ($n = 102$) were asked to provide any evidence of training. The provision of NSP (18%, $n = 45$) and THN (1.6%, $n = 4$) services were poor. A significant proportion (21%, $n = 54$) reported to never counsel patients about overdose risks. Only half (50%, $n = 126$) counselled at the initiation stage and a third (32%, $n = 81$) did so when there was a change in dose/circumstances. The majority (63%, $n = 160$) did not ensure patients have access to naloxone to treat accidental opioid overdose. While all pharmacists (100%, $n = 253$) checked prescriptions for legal correctness; one-fifth (19%, $n = 48$) did not always establish its clinical appropriateness. Almost all CPs consulted the prescriber (97%, $n = 245$) when three or more consecutive doses have been missed but only two-thirds (62%, $n = 157$) withheld dose from intoxicated patients.

Conclusion: Guidance which is pertinent to legal aspects (e.g. prescription legality) is more closely adhered to than those requiring knowledge and professional judgement (e.g. clinical assessment, withholding dose). OST patients are more likely to suffer overdose fatality during initiation and abstinence stage, the lack of overdose counselling in these critical stages, therefore, is an area of immediate concern. The 'mechanics of delivering the service' forms the central premise of the current practice and the notion of 'preventing overdose death' is peripheral. Pharmacists' education on overdose prevention, their motivation to intervene in risk situations, improving access to NSP and THN in pharmacies all needs attention. Nonparticipation of

two large multiple chains in the survey is one of the limitations of this research.

Reference

1. Department of Health and Social Care. *Drug misuse and dependence: UK guidelines on clinical management*. Available from: https://www.gov.uk/government/publications/drug-misuse-and-dependence-uk-guidelines-on-clinical-management [Accessed on 3rd Oct 2019].

A theory and evidence-based health service model for tapering opioids in chronic non-cancer pain: a realist review

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Introduction: Numerous interventions have been developed to address opioid overuse for chronic non-cancer pain. A 2017 systematic review identified several effective interventions for tapering long-term opioids yet limited progress has been made with successfully integrating these into routine healthcare practice[1]. This lack of adoption may be due to limited understanding of the barriers and enablers to practitioners delivering these interventions in the real-world environment. Realist methodology combines theory with research and practice evidence to understand the mechanisms by which intervention components exert their effect. This understanding enables effective components to be translated from the trial to the real-world environment whilst maintaining efficacy.
Aim: To understand from the practitioner perspective, what elements of opioid tapering interventions work.
Methods: The theoretical domains framework underpinned the realist review; it comprises 14 domains each representing barriers and enablers to practitioners implementing a behaviour. For each domain, we formulated programme theories regarding the requirements for a healthcare professional to effectively taper opioids. We refined these through discussion with a stakeholder panel of eight primary and secondary care pharmacists and doctors. We identified relevant published literature from the 2017 systematic review of interventions for tapering long-term opioid therapy[1]. We combined these data with a semi-structured survey of stakeholders involved in intervention implementation in England. We tested the resulting programme theories with the published literature and survey data. We iteratively refined the programme theories to include only those supported by the evidence and combined this final set of theories into one (mid-range theory) which was presented to the stakeholder panel for any further refinement.
Results: From 56 published and 16 implemented interventions representing primary care, hospital, specialist pain facilities and the prison service, doctors were most frequently involved in delivering opioid tapering interventions whilst pharmacists were often the drivers of establishing tapering interventions. Of the nine programme theories generated after initial stakeholder panel refinement, seven were supported by the evidence to generate the final mid-range theory. The overarching enabler to practitioners engaging with an opioid tapering programme is presence of a clear expectation that opioid tapering is their responsibility. This may be achieved in a variety of ways including incentivisation. Practitioners are further enabled by programmes incorporating information about the consequences of excess opioid use and guidelines on how to taper; these were often prepared by pharmacists. Programmes should further enable practitioners by equipping them with appropriate knowledge and skills to initiate tapering discussions and navigate the patient pathway. All members of the healthcare system should adopt a consistent approach to opioid tapering. Providing access for patients to comprehensive education, appropriate levels of psychological and physical support addresses patient-related barriers to tapering.
Conclusions: Inferences are limited by the survey data being derived only from one country, however, through combining with the peer-reviewed literature representing numerous countries, we have greater confidence in the likely transferability of findings. Healthcare organisations commissioning opioid tapering programmes should therefore ensure that all components of the mid-range theory are addressed. Characterisation of each component should be determined by individual health systems according to existing structures and resources.

Reference

1. Frank, J. W., et al. (2017). Patient Outcomes in Dose Reduction or Discontinuation of Long-Term Opioid Therapy: A Systematic Review. Ann Intern Med 167(3): 181–191.

Polypharmacy

A qualitative study to refine a theory-based intervention to improve appropriate polypharmacy in older people in primary care

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Introduction: Polypharmacy is considered 'one of the most pressing prescribing challenges'[1] and is often viewed negatively. Appropriate polypharmacy acknowledges multiple medications may be required for older people (≥65 years) with multimorbidity, emphasises the need to ensure that prescribing is evidence-based and potential drug interactions are avoided. Members of the research team have previously developed an intervention to improve appropriate polypharmacy, using the Theoretical Domains Framework (TDF). The intervention includes a video demonstrating how to promote appropriate polypharmacy during a typical general practitioner (GP) consultation with an older patient and a patient recall process. Preliminary testing was completed in two general practices in Northern Ireland (NI)[2]. The next stage of the research will test the intervention in a larger pilot cluster randomised controlled trial (cRCT) across NI and the Republic of Ireland (ROI).
Aim: To refine the existing intervention prior to implementation in a pilot cRCT in both jurisdictions to account for possible differences in context and practice in ROI.
Methods: A purposive sample of 12 general practices in the six border counties of ROI (Cavan, Donegal, Leitrim, Louth, Monaghan, Sligo) were recruited. Semi-structured interviews were conducted with recruited GPs who were asked for their views on the intervention. Questions related to the video content, recall process, mode of delivery, and required changes for the ROI context. Interviews were audio-recorded and transcribed verbatim; an in-depth familiarisation process was undertaken (repeated reading and listening to interviews). Transcripts were analysed by content analysis using a framework approach to identify key themes. The emergent coding scheme was reviewed, agreed and the main themes were developed into a framework matrix.
Results: Interviews were conducted with 13 GPs in 12 practices, across five counties. Key themes identified were: clinical scenario used in the video, engagement with and length of video, potential enablers and barriers to intervention implementation. GPs were positive about the intervention and thought it *'would probably fit into most practices'* and that the video '*was concise and useful'*. Some concerns were noted about time constraints ('*obviously if you had more time, we would be much more thorough about things'*) and a lack of resources (*'at this moment in time the resources are difficult'*). Minor suggestions to the video component included '*some up to date medical evidence-based medicine'* and *'tools you can use to perform medication reviews'*. GPs suggested small additions to the intervention, including a staff information sheet and a patient recruitment poster.
Conclusions: Using a theoretical basis for development, this study follows recommendations by the Medical Research Council in the development of complex interventions, enhancing the rigour of the study. However, not all counties were represented and the views expressed are not generalisable. However, findings from this study have enabled refinements to be made to an existing intervention to account for contextual differences between ROI and NI practices. The refined intervention package will be used in the larger cross-border pilot cRCT.

References

1. Payne RA, Avery AJ. Polypharmacy: one of the greatest prescribing challenges in general practice. Br J Gen Pract. 2011; 61(583):83–84.
2. Cadogan CA, Ryan C, Gormley GJ, Francis JJ, Passmore P, Kerse N, Hughes C. A feasibility study of a theory-based intervention to improve appropriate polypharmacy for older people in primary care. Pilot and Feasibility Stud. 2018; 4:23.

Exploring the nursing practice surrounding co-administration of multiple medicines in intensive care units

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Introduction: Intensive care unit (ICU) patients are usually prescribed multiple intravenous infusions, which

sometimes exceed the number of available venous access sites. To ensure administration, medicines can be co-administered through the same lumen of a venous catheter using a Y-site connector. This increases the chances of combining incompatible medicines that can present in the form of precipitates and lead to catheter occlusion and occurrence of potentially fatal venous embolism which can compromise patient care[1]. Therefore, it is important that compatibility is assessed prior to co-administration.

Aim: To explore the practice of medicine co-administration and how medicine compatibility is assessed amongst ICU nurses.

Methods: A cross-sectional survey was conducted among ICU nurses across 22 hospitals in England between February 2019 and August 2019 through the use of an online questionnaire. The questionnaire was developed to investigate the process of co-administration, how compatibility is assessed in practice and how nurses manage co-administration challenges. Using eight ICU nurses across two hospitals, the questionnaire was validated using content validity. The final questionnaire consisted of 23 items (open and closed questions) and was distributed via email. Data were analysed using descriptive statistics.

Results: An estimate of 899 nurses received the questionnaire, and a total of 297 nurses responded (estimated response rate of 33%). The average content validity for the questionnaire had value of 0.82 revealing a high level of agreement. The majority (84.2%; $n = 277$) of the nurses worked in adult ICUs with 44.8% having over 10 years' professional experience in ICUs. Most nurses (94%; $n = 278$) combine medicines down the same lumen and 70.9% ($n = 197$) use a Y-site connector to facilitate co-administration. Of those who use a Y-site connector, 81.7% ($n = 161$) reported co-administering two medicine combinations, 26.9% ($n = 53$) three combinations and 7.6% ($n = 15$) four combinations. Before co-administering medicines, 99.3% ($n = 276$) of nurses checked for medicine compatibility. The resources used to check compatibility include cross table compatibility charts, experience, drug monographs, Trissel's Handbook of Injectable Drugs, MEDUSA – injectable medicines guide, pharmacists, colleagues and the British National Formulary (BNF). However, 69.4% ($n = 206$) of nurses felt that these resources have limited compatibility information for commonly used medicines in ICU, with the compatibility chart ranking as the most preferred resource (66.7%, $n = 198$) because it was quick to use. Trissel's was least used with some nurses never having heard of it. In the absence of compatibility data, co-administration was avoided by 69.9% ($n = 206$) of nurses. However, to ensure that patients still received their medication most nurses either prioritised infusions or requested additional venous access.

Conclusions: A limitation of this study is that we did not obtain an even distribution of responses across England meaning that findings are not as generalisable. The use of a national questionnaire has helped identify that co-administration of medicines is common practice and that there is a need for compatibility data that is relevant to current clinical practice. Since nurses prefer to use a quick reference compatibility guide, organisations should direct more attention towards updating such resources on a regular basis to reflect medicine use within ICUs.

Reference

1. Benlabed M, Perez M, Gaudy R, Genay S, Lannoy D, Barthélémy C, Odou P, Lebuffe G, Décaudin B (2018) Clinical implications of intravenous drug incompatibilities in critically ill patients. Anaesth Crit Care Pain Med. https://doi.org/10.1016/j.accpm.2018.04.003

An exploration of the 'medicines work' of people living with complex polypharmacy regimes in very remote and rural Scotland: keeping the patient at the centre

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Introduction: With an aging population there are increasing numbers of people who are self-managing multiple morbidities, their healthcare and often complex medication regimes (polypharmacy). The more conditions a person has the more medications they are likely to be prescribed. Medications can interact creating side-effects and more medications are then prescribed for those interactions resulting in increased 'medicines work'[1]. The risk of medication-related problems increases with each drug prescribed and those with more conditions may experience more treatment burden and lower quality of life. People with multiple morbidities receiving complex polypharmacy regimes (10 + medicines) are often elderly and frail.

Yet the work for patients in self-managing their complex polypharmacy has yet to receive sociological attention. The 'medicines work' of self-managing complex polypharmacy is needed to better understand how the burden impacts on patients' everyday life, their agency and capacity to self-manage, the resources and support networks they utilise, strategies for (un)intentional non-adherence and (non-) compliance[1]. Novelty and inclusivity are added to the research by seeking the voices and experience of very remote and rural patients resident on Scotland's smaller islands.

Aim: The aim of this study was to explore the experiences of very remote and rural patients polypharmacy regimes in self-managing their 'medicines work' using Burden of Treatment theory.
Methods: Qualitative research using self-reporting longitudinal diaries with follow-up in-depth face-to-face interviews[2] was conducted with patients resident in outlying islands of Orkney. Fully informed consent was gained with permission to audio-record interviews. Diaries and interviews were based on Burden of Treatment Theory (BTT) which focuses on Capacity (*Agency, Relationality, Control, Opportunities);* Expressing capacity (*Functional performance, Social skill, Social capital, Structural resilience);* Patient work (*Sensemaking, Cognitive participation, Collective action*, *Reflexive monitoring*). The diaries, issued in advance, were designed to capture patients' prescribed medications, daily regime, (non-)adherence and (non-)compliance, support with medications and daily 'medicines work' over one week. The semi-structured interviews explored in more depth factors which impact their medication regime, access to healthcare and quality of life including 'medicines work'.
Results: NHS Orkney staff screened GP-held patient records to identify island residents on 10 + medications. Of the 12 patients identified, 11 consented to take part and were mailed longitudinal diaries. These were completed by most patient participants ($n = 9$). Two cited difficulty in writing up their diaries due to a stroke ($n = 1$) or rheumatoid arthritis ($n = 1$). Challenges of data collection were experienced as participants were resident on the islands of Hoy ($n = 8$) and Westray ($n = 4$). Most were male ($n = 8$); ages ranged 54 to 81 years. Remote island living was not viewed as a disadvantage as patients spoke positively of their healthcare experience (access to GP, Nurse Practitioner, repeat medications) and quality of life despite the 'medicines work'.
Discussion: Early analysis of the data collected from this small sample reflects the qualitative themes of the counter the expected 'medicines work' load and age of patients managing polypharmacy in very remote and rural Scotland. Further analysis and comparison with the literature are underway.

References

1. Demain S, Gonçalves A-C, Areia C, Oliveira R, Marcos AJ, Marques A, et al. Living with, managing and minimising treatment burden in long term conditions: a systematic review of qualitative research. PLoS One. 2015;10.
2. Bowling, Ann (2014) Research methods in health: investigating health and health services. 4th Edition, Maidenhead, GB. McGraw Hill; Open University Press, 536 pp.

Influences on Prescribing

The relationship between first-line therapy in Parkinson's disease patients and social deprivation status, does a delay in PD diagnosis mediate this relationship?

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Introduction: Some UK studies have found a significantly lower incidence of Parkinson's disease (PD) in the most socially deprived areas[1]. This led to the hypothesis that those who reside in socially deprived areas may be more likely to experience delays in a PD diagnosis[1]. Levodopa is the mainstay therapy in managing PD motor symptoms. However, due to the motor side effects, including levodopa-induced dyskinesia, some clinicians delay levodopa treatment and initiate levodopa sparing strategies such as monoamine oxidase B (MAO-B) inhibitors[2] that do not display such side effects.
Aim: To examine the effect of social deprivation on PD incidence rates and to identify any differences in prescribing decision making with respect to initiating levodopa therapy vs MAO-B inhibitors in areas of different social deprivation. Our hypothesis is that if a higher social deprivation status is associated with a lower PD incidence rate, and also associated with a high rate of initiating levodopa as first-line therapy, this could be because patients who live in areas with higher levels of social deprivation are more likely to experience delayed PD diagnosis.
Methods: We conducted a population-based study of residents in Wales, UK, aged 40 years or older and newly treated with PD medications between 2000 and 2016, using the Secure Anonymised Information Linkage (SAIL) Databank. Patient characteristics, comorbidities, and first-line therapy were extracted. The social deprivation status was classified according to the Welsh Index of Multiple Deprivation (WIMD) 2011 scale (quintile 1 – most deprived, up to quintile 5 – least deprived). The annual incidence of PD was estimated using the Read codes for PD diagnosis. Poisson regression was used to estimate the incidence rate ratio (IRR) across the study period. A series of logistic regressions were run to determine the effect of WIMD quintile on first-line therapy choice. Other variables including sex, comorbidities, and previous medications history were controlled for.
Results: After analysing 16,693,205 single person-years during 2000–2016, the incidence rate of PD was

significantly lower in the most deprived quintile compared to the least deprived quintile (IRR = 0.82, 95% CI 0.77–0.87). Patients who lived in the least deprived quintile area were 22.1% less likely to be prescribed levodopa compared to patients from the most deprived quintile area (P-value = 0.007). Conversely, patients who lived in the least deprived quintile area were 98.8% more likely to be prescribed MAO-B inhibitors ($P < 0.0001$).

Conclusions: Given that MAO-B inhibitors are often used as initial therapy to spare patients from the motor side effects of levodopa, individuals with lower socioeconomic status may be diagnosed later in their disease, in which case the prescriber may commence treatment with levodopa as the disease has progressed. This interpretation is reinforced by the fact that the incidence of PD was significantly lower in the most deprived areas, which may be due to delayed diagnosis. Given their accessibility, pharmacists could play a role in identifying early signs and symptoms of PD in socioeconomically deprived area. Further research exploring this unwarranted variation in care and how it may be addressed is needed.

References

1. Horsfall L, Petersen I, Walters K, Schrag A. Time trends in incidence of Parkinson's disease diagnosis in UK primary care. J Neurol. 2013;260(5):1351–1357.
2. Schapira AH, Obeso J. Timing of treatment initiation in Parkinson's disease: a need for reappraisal? Annals of Neurology. 2006 Mar;59(3):559–62.

What influences the uptake of prescribing guidelines in UK general practice? A qualitative study

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Introduction: Despite the increasing medicines' budget and widespread availability of evidence-based guidelines to inform the rational use of medicines, considerable variation exists in guideline uptake and application by clinicians [1]. The range of health professionals who prescribe in general practice may contribute to this variation. Recent NHS policy supports pharmacists' inclusion in general practice teams. Pharmacists' professional skills are viewed by some as suited to fostering an evidence-based and patient-centred approach to prescribing [2]. To develop strategies which reduce variation and promote evidence-based prescribing, there is firstly a need to identify the key determinants of current prescribing behaviour.

Aim: This study investigated influences on prescribing in general practice. The objectives were to: (1) Explore determinants of prescribing behaviour from prescribers' perspectives. (2) Explore the use/influence of National Institute of Health and Care Excellence (NICE) and other guidelines on prescribing. (3) Explore the role and potential of general practice-based pharmacists (PBPs) to promote evidence-based prescribing.

Methods: Semi-structured qualitative telephone interviews and focus groups were conducted with: (i) general practice-based prescribers: General Practitioners (GPs), nurses and PBPs (ii) key informants: individuals working in national, regional and local roles, with responsibility for influencing, measuring and monitoring general practice prescribing. A target sample matrix was developed to reflect a range of participants, including prescribers from various professional backgrounds and diverse general practice characteristics, and key informants working in assorted NHS roles. Recruitment was through local and regional contacts and snowball sampling. Interviews and focus groups were audio-recorded and transcribed verbatim. Data collection took place between November 2018 and April 2019. Data saturation was considered to be achieved when the sample matrix was complete and no new themes were identified. Thematic data analysis was used to identify themes about the influences on prescribing and the PBP's role.

Results: Interviews were completed with 17 prescribers (GPs ($n = 6$), pharmacists ($n = 6$), nurses ($n = 5$)) and six key informants. One focus group was conducted with five key informants. Although prescribers and key informants stated that guidelines fundamentally influence prescribing, they also identified competing influences including the prescriber's professional background and experience, demographic profiles of patient populations and attitudes of individual patients. Media portrayals of medicines and public opinion were identified as substantial influences. Prescribers identified practice-level influences, e.g. attitudes towards shared learning. Key informants emphasised the impact of NHS organisational policies and availability of services on prescribing practice. These individuals also highlighted underlying problems (e.g. polypharmacy) as well as 'medicines optimisation' principles (e.g. safe prescribing) developed to address these issues. Both samples identified the contribution made by PBPs to medicines expertise and knowledge and mentioned variation in PBPs' practice roles. Prescribers' views were mixed about how much PBPs' may influence prescribing in the future. Key informants were concerned about support and career progression for PBPs.

Conclusions: Prescribing in the general practices represented in this study (mostly larger, with lower deprivation levels) is influenced by factors which compete with guidelines. This qualitative research study did not quantify the relative importance of these factors. Strategies to promote evidence-based prescribing should reflect these influences on prescribers in varied

practice settings and take account of the expanding range of professionals with prescribing roles in general practice.

References

1. Ewbank L, Sullivan K, McKenna H, Omojomolo D. The rising cost of medicines to the NHS: what's the story? : The King's Fund; 2018 [Available from: https://www.kingsfund.org.uk/publications/rising-cost-medicines-nhs.
2. Barnett NL. Opportunities for collaboration between pharmacists and clinical pharmacologists to support medicines optimisation in the UK. British journal of clinical pharmacology. 2019.

Attitudes and perceptions of professionals to anticoagulation: warfarin versus novel/direct oral anticoagulants

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Introduction: The National Institute for Health and Care Excellence (NICE) recommended direct oral anticoagulants (DOACs) for a variety of indications as equal alternatives to warfarin, and stated that the patient's values and preferences should be used to guide choice of agent in a shared decision making process[1]. However, uptake of DOACs had been patchy and slow across the UK[2]. Identifying the perceived barriers to using DOACs could help to develop strategies to overcome these and enable their use where appropriate.
Aim: The study aimed to investigate the attitudes and perceptions of professionals towards oral anticoagulation, and the choice between warfarin and the DOACs.
Methods: One-to-one semi-structured interviews were conducted between May and July 2018. Participants were recruited using snowball and convenience sampling, across four NHS trusts and one Clinical Commissioning Group. Inclusion criteria were that participants should be either a hospital pharmacist, general practitioner, or cardiology or care of the elderly registrar or consultant, and involved in the initiation of oral anticoagulation. A topic guide was used to aid the interview process; this included questions regarding the participant's role in prescribing anticoagulation, how they felt about the choices of oral anticoagulants, how they discussed this with patients, any concerns they had regarding DOACs, and if and how they used any materials to aid in shared decision making. Interviews were transcribed verbatim and analysed using framework analysis.
Results: Thirteen interviews were carried out, lasting between 17 and 48 minutes, with an average length of 32 minutes. Table 1 shows participant characteristics. Current practice was found to be moving through a period of change, with a shift towards preference for DOACs, especially for patients with non-valvular atrial fibrillation (AF). The main themes identified were (1) an overarching theme of change, (2) barriers and facilitators to appropriate use of oral anticoagulants, (3) professional-related factors affecting drug choice and (4) perceptions of the shared decision making process. Many professionals have a preferred DOAC which they use, but the reasons for preference vary. Perceived advantages of DOACs included a beneficial overall clinical effect in treating certain indications from evolving trial data, convenience due to reduced monitoring, and ability to use certain DOACs in compliance aids. Tools to aid the shared decision making process were not widely used, and there was a perception that shared decision making was not comprehensively approached.

Table 1. Participant characteristics

Role and specialty	Number of participants
Consultant – cardiology	1 male, 1 female
Registrar – cardiology	1 male, 1 female
Consultant – stroke	1 male, 1 female
Consultant – care of the elderly	1 male, 1 female
GP	1 male
Hospital pharmacist	3 male, 1 female

Conclusions: The landscape with regards to oral anticoagulation options was found to be in a period of change, and there appeared to be a move towards a preference for DOACs over warfarin. As the prescribing of oral anticoagulants is changing towards greater numbers of patients prescribed DOACs, there is a need to review the provision of anticoagulation services. One limitation in this study is that most participants were professionals from secondary care, with only one participant in primary care. Another limitation is that participants tended to mainly prescribe anticoagulation for AF, however attitudes and perceptions towards use of DOACs in other indications may differ.

References

1. National Institute for Health and Care Excellence. Anticoagulants, including non-vitamin K antagonist oral anticoagulants (NOACs). Key therapeutic topic [KTT16]. 2016. Available at: https://www.nice.org.uk/advice/ktt16 [accessed 27/08/2019]
2. Association of the British Pharmaceutical Industry Stroke in Atrial Fibrillation Initiative. NOACs: Innovation in anticoagulation – Optimising the prevention of AF-related stroke. 2014. Available at: http://www.abpi.org.uk/publications/noacs-innovation-in-anticoagulation/ [accessed 27/08/2019]

Older People

The design of patient centric drug products to improve adherence and acceptance in older people – a qualitative interview study

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Introduction: Elderly patients represent a very heterogeneous patient population and are the major user group of multiple prescribed medicines. Age-related changes mean that this population can encounter barriers towards taking medicines orally. Taking into account these changes during drug development can lead to a patient centric drug product that provides patients with the best overall benefit to risk profile[1]. Further work is needed to identify how the physical characteristics of drug products can be optimised to ensure optimum patient adherence and acceptance.
Aim: To understand the key issues faced by older people and family/informal carers when using/administering oral solid dosage forms from the perspectives of all those involved in an individual's therapy.
Methods: Purposeful sampling was used to identify older people (aged 65 or above taking at least one oral solid dosage form), their informal carers and health/social care professionals with experience of working with older people. Older people and their carers unable to speak English or lacking capacity to consent were excluded. The study was advertised on recruitment websites (including Join Dementia Research and People in Research), within care homes, and also via NHS organisations (including NHS Dudley CCG, University Hospitals of North Midlands NHS Trust and NHS Southern Derbyshire CCG). The study made use of placebo tablets to provide participants with a point of reference to help communicate their ideas. Interviews were audio recorded and transcribed verbatim. Thematic analysis was used to analyse the data[2].
Results: A total of 52 interviews were conducted: 18 older people, 7 informal carers and 27 health/social care professionals. All interviews were analysed together in order to examine the relationship between different participant groups. Key themes included: the impact of formulation characteristics on the medication-taking process; the current role of health/social care professionals when providing patient centric products and how this role can be improved. Formulation characteristics had a significant impact on medication identification, handling, swallowability and overall adherence. 6 mm round tablets were more difficult to swallow and challenging to handle; *"These are the Codeine Phos, and I shoot those all over."* Limited knowledge of these characteristics when prescribing and dispensing restricted the role of healthcare professionals in this area. They did, however, highlight the potential for improved involvement via increased collaboration with carers and by actively enquiring about difficulties. Due to the qualitative nature of this study, the extent to which results can be generalised to the wider older adult population is limited. However, the study has key implications for the future role of healthcare professionals in the provision of patient centric drug products.
Conclusion: Drug manufacturers should consider physical attributes during drug development to ensure optimum patient adherence and reduce the potential for medication errors. Future work taking into account the views of the industry on this topic will help to further inform the development of patient centric drug products for older people. However, in order to ensure these are then prescribed and dispensed appropriately, the role of health and social care professionals must further be defined and explored.

References

1. Stegemann S., Ternik RL., Onder G., Khan MA., van Riet-Nales DA. Defining Patient Centric Pharmaceutical Drug Product Design. Aaps Journal. 2016;18(5):1047–55.
2. Braun V, Clarke V. Using thematic analysis in psychology. Qualitative Research in Psychology. 2006;3 (2):77–101.

Factors affecting physician implementation of hospital pharmacists' medication appropriateness recommendations in older adults

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Introduction: Pharmacists' recommendations to physicians concerning medication appropriateness significantly reduce potentially inappropriate prescribing, adverse drug reactions, and medication-related readmissions in hospitalised older adults. Intervention studies with a high proportion of prescribing recommendations implemented are more likely to result in better patient outcomes than those with lower rates of implementation, which typically result in non-significant differences in patient outcomes. Reasons for non-implementation of pharmacist recommendations must be identified and

overcome in order to improve the delivery of pharmacist interventions in the interests of patient safety and improved patient outcomes.
Aim: The aim of this study was to explore the views of pharmacists and physicians to identify the key factors affecting physician implementation of pharmacists' medication appropriateness recommendations in hospitalised older adults.
Methods: Semi-structured face-to-face interviews based on the Theoretical Domains Framework (TDF)[1] were conducted with hospital pharmacists and physicians who provided care to older adults in two acute university teaching hospitals in the Republic of Ireland between August 2018 and August 2019. Participants were purposively sampled based on years of post-qualification experience, and were recruited via email, text message, or face to face at their place of work using a combination of convenience sampling and snowballing. The interviewer had no previous relationship or established rapport with any of the interviewees prior to study commencement. Interviews were audio-recorded and transcribed verbatim. Content analysis was employed to identify the key themes and predominant TDF domains that influence physician implementation of pharmacist recommendations.
Results: Interviews were conducted with 6 pharmacists and 8 physicians, with an average interview length of 33 minutes. Five key factors were found to affect physician implementation of pharmacist recommendations: i) Clinical relevance and complexity of the recommendation: recommendations of higher priority and those that do not require complex decision-making are implemented more readily. ii) Inter-professional communication: recommendations provided verbally, particularly those communicated face to face with confidence and assertiveness, are more likely to be implemented than written recommendations. iii) Physician role and identity: the grade, specialty, and personality of the physician significantly affect implementation. iv) Knowing each other and developing trusting relationships: previous acquaintance and the development of inter-professional trust and rapport greatly facilitate recommendation implementation. v) Hospital environment: organisational issues such as documentation in the patient notes, having the opportunity to intervene, and the clinical pharmacy model all affect implementation.
Conclusion: This is the first study to evaluate the underlying behavioural determinants affecting physician implementation of pharmacist recommendations concerning medication appropriateness in older adults. The utilisation of the TDF in formulating the topic guides and analysing the transcripts revealed additional themes that would otherwise not have been identified. However, acknowledging that participants were recruited from just two Irish hospitals and that different clinical pharmacy models exist, the key factors affecting recommendation implementation identified in this study may not be transferable to all hospital settings. Nevertheless, the study findings will likely aid in the development of theoretically informed interventions with increased physician implementation of pharmacist recommendations, aiming for significant improvements in both medication appropriateness and clinical outcomes for hospitalised older adults.

Reference

1. Cane J, O'Connor D, Michie S. Validation of the theoretical domains framework for use in behaviour change and implementation research. Implement Sci. 2012; 7: 37.

Service evaluation of the Medicines Optimisation in Older People (MOOP) service for frail older patients in the acute care setting

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Introduction: Frailty is a geriatric syndrome in which physiological systems have decreased reserve and resistance against stressors[1]. Frail older people in acute care who are taking multiple medicines (polypharmacy) are at increased risk of potentially inappropriate prescribing (PIP). A consultant/specialist pharmacist-led medicines optimisation service (Medicines Optimisation in Older People [MOOP]) has demonstrated improved prescribing appropriateness and medication cost savings in intermediate care in Northern Ireland[2]. This model has been adapted for frail patients and is currently being rolled out to patients admitted to a frailty ward in one hospital in Northern Ireland.
Aim: To evaluate the impact of the MOOP model on outcomes for frail older people admitted to the acute care setting.
Method: The following data were extracted from a database of routinely collected data for patients enrolled into this service from 1st May 2019 onwards: demographics; NHS resource utilisation; length of stay; frailty score; falls data; medication data; number of medications prescribed. Medication Appropriateness Index (MAI), AntiCholinergic Cognitive Burden (ACB) score, Anticholinergic Effect on Cognition (AEC) score and falls risk were calculated. Based on these baseline parameters, individualised pharmaceutical care plans were implemented. Clinical interventions were graded using the Eadon criteria and cost savings were estimated using the ScHARR model. Statistical analysis was undertaken using SPSS; the Wilcoxon signed ranks test was used

($P \leq 0.05$ considered significant). The Hospital Trust Innovation, Research and Development team confirmed that ethical approval was not required, as this was a service evaluation.
Results: Data collection is ongoing. Seventy-two patients were recruited into the service as of mid-September 2019, aged between 71–98 years (mean age 85.0 ± 6.1 years), the majority (77.8%) were female, 56.9% were admitted with a history of falls or because of falls, and 22.2% of patients had fragility. Most patients (84.7%) had mild to severe frailty (Clinical Frailty Scale 5–7). Almost all (97.2%) had polypharmacy, and about half (48.6%) had two frailty syndromes (polypharmacy, immobility, incontinence, delirium/cognition issues, falls). The most common combination of frailty syndromes (27.8%) was polypharmacy, falls and delirium. Of 380 interventions made after medication review; 71.3% were assessed as having an Eadon grade of 4 or more, indicating that these interventions were significant and resulted in improved care standards. A total cost saving of £54,467–£115,926 was made as a result of these interventions. As shown in Table 1, specialist pharmacist-led medicines optimisation resulted in a significant reduction in median scores for MAI, ACB, AEC, falls risk, total number of drugs and number of drugs associated with falls.

Table 1. Median scores for ACB, AEC, MAI, falls risk, total number of drugs, and number of drugs associated with fall before and after clinical pharmacist review.

Median score	ACB score	AEC score	MAI score	Falls risk	Total number of drugs	Number of drugs associated with falls
Before MOOP review	2	1	15.5	8	12	5.5
After MOOP review	1	0	4	5	10	5
p-value (Wilcoxon Signed Rank Test)	p <0.001	p <0.001	p <0.001	p <0.001	p <0.001	p <0.001

Conclusion: These preliminary results demonstrate that the MOOP service contributes to safer and more appropriate prescribing for frail older people in acute care as well as demonstrating medication cost savings. The strength of this study lies in the combination of different clinical parameters to evaluate prescribing appropriateness. It is limited by being performed in a single ward in one hospital.

References

1. Clegg A, Young J, Lliffe S, Rikket MO, Rockwood K. Frailty in Older People. Lancet. 2013;381 (9868):752–62.
2. Miller R, Darcy C, Friel A. Consultant pharmacist case management of older people in intermediate care: a new innovative model Article. Eur J Pers Cent Healthc. 2016;4(1):46–52.

Pharmacist Prescribing

Clinical supervision for nurse and pharmacist independent prescribers: a Delphi study

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Introduction: Previous research by the authors found that the clinical supervision of nurse (NIP) and pharmacist (PIP) independent prescribers in primary care in Wales was variable. Most clinical supervision was informal in structure and, in some cases, ad-hoc. Findings suggested that formal clinical supervision is preferred yet is not readily available. Exploring the perception of the ideal purpose, content and structure of clinical supervision is imperative to creating a usable model to improve the quality of clinical supervision.
Aim: To identify if there is consensus amongst NIPs and PIPs on the purpose, content and structure of effective clinical supervision and, if so, on what parameters there is agreement.
Methods: A two-phase E-Delphi survey was conducted using the platform Online Surveys with an expert panel of primary care NIPs and PIPs. The inclusion criteria were: a UK qualified NIP or PIP, currently employed in a primary care prescribing role without necessarily prescribing, NHS employed or NHS contracted and working in Wales. Participants who participated in the first phase of this research were initially approached. They were identified by NHS gatekeepers (nurse and pharmacist prescribing leads) across the seven Welsh Health Boards. Social media was used to recruit other participants that met the expert panel criteria. The descriptors used in the survey were informed by earlier qualitative research. The surveys included quantitative ratings and open text comments. All survey responses were anonymised with consent implied by return of the survey. The survey consisted of two rounds. Findings were analysed using descriptive statistics for quantitative findings and content analysis for open text responses. Interquartile ranges (IQR) were used for determining the level of consensus with an IQR < 1 defined as consensus, an IQR between 1–2 was reviewed and an IQR > 2 defined as no consensus.
Results: 22 participants (15 pharmacists and seven nurses) were recruited from all seven Welsh Health Boards. 22 responded to round one (100%), 16/22 (73%) responded to round two. The descriptors were divided into three categories: purpose, content and structure. Of the 16 descriptors in round 1, eight met consensus (and not included in round two). Round two had eight descriptors and consensus was met on four. An example of a descriptor that met consensus under each category is listed in table 1. Findings

suggested that clinical supervision should be available at whatever level the supervisee feels is appropriate. Participant findings also suggested that the purpose, content and structure of clinical supervision should not reinforce a supervisor dominant structure.

Table 1. Examples of descriptors

Purpose	*"The purpose of clinical supervision is to support me in my clinical practice"*
Content	*"Reflection on clinical practice should be a key part of clinical supervision"*
Structure	*"There needs to be flexible guidance for clinical supervision sessions so independent prescribers can to access appropriate support for their needs"*

Conclusion: This is the first study to identify the level of consensus amongst NIPs and PIPs on what is required for effective clinical supervision. This study was limited by the small number of participants and that it was conducted solely in Wales. The findings will inform a model of clinical supervision to support an inclusive and supportive clinical supervision session which is both flexible and user-friendly to suit the diversity of prescribers in primary care. Future work will explore stakeholders' views on the clinical supervision model so it can be used in practice.

Independent pharmacist prescribers' views of their role as prescribers in primary care settings in Wales

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Introduction: Since 2015, the number of independent pharmacist prescribers (IPPs) in primary care in Wales has increased greatly. This is due to the implementation of the Primary Care Plan in Wales [1] and primary care clusters [2], which aimed to train more non-medical healthcare professionals, including pharmacists, as independent prescribers. This initiative hoped to increase patients' access to treatment, improve primary care services, and relieve pressure on General Practitioners (GPs). The views of IPPs regarding their role as prescribers in primary care in Wales are important to inform future developments and to understand this advancement within pharmacy practice. No other research has previously been undertaken on to investigate the role of IPPs in primary care in Wales.
Aim: To describe the role of independent pharmacist prescribers working within primary care in Wales and to explore their views on how their role is embedded in primary care.
Methods: Semi-structured telephone interviews were conducted with IPPs working in primary care settings from all seven health boards (HB) in Wales. Ethical approval was obtained from the Cardiff School of Pharmacy and Pharmaceutical Sciences. Purposive sampling was used to recruit all the participants who met the inclusion criteria of this study. An invitation email, participant information sheet and consent form were sent to potential participants by gatekeepers. These were directors of independent pharmacist prescribing courses, pharmacist leads in each HB, local primary care pharmacist leads and the Pharmacists in Practice: All Wales Community of Practice (PIPCOP) event director in Wales. Written consent was obtained from participants. Interviews were audio-recorded and transcribed ad verbatim. Thereafter, thematic analysis was used to analyse the data.
Results: Interviews were conducted with 10 IPPs, which lasted between 33 and 78 minutes. Six themes emerged from the data, including their role as an independent prescriber, change in the role over time, satisfaction in the role, perceived benefits of the role, and the facilitators and barriers to the role. All participants perceived their role as prescribers positively. However, some reported the topic of indemnity as a barrier and they required more clarity in terms of what they are covered to prescribe and to do. Conflicting views were reported about working within more than one general practice as some perceived it positively as it increased their experience and scope of practice. Whereas, others perceived it as a barrier as they thought that it lacks the continuity of practice and found it difficult to build new relationships with other healthcare professionals.
Conclusion: This study is the first qualitative study to explore the views of IPPs regarding their prescribing role in primary care in Wales. It revealed important themes that could be relevant to all IPPs working in the primary care sector across the UK. A study limitation is that interviews were conducted over the telephone, which lacks the face-to-face communication that could help in building a rapport with participants in order to obtain more details. Future work should focus on exploring views of the stakeholders who work with IPPs regarding their role as prescribers.

References

1. Our plan for a primary care service for Wales up to March 2018. Available at: http://www.cpwales.org.uk/getattachment/.
2. Inquiry into Primary Care: Clusters. Available at: http://www.assembly.wales/laid%20documents/cr-ld11226/cr-ld11226-e.pdf.

Community pharmacists' experiences of undertaking an IP qualification – a qualitative analysis

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Introduction: Non-medical prescribing began in the United Kingdom with the launch of the Supplementary Prescribing qualification in 2003, followed by the addition of

the Independent Prescribing qualification in 2006[1]. Since the introduction of these qualifications, uptake amongst community pharmacists has been relatively low as highlighted by the General Pharmaceutical Council (GPhC) Registrant Survey in 2013[2]. As the demands and strains placed upon the national healthcare system to provide timely and efficient care increases, the need for independent prescribers within the community sector is increasing, in order to reduce the strain on other prescribing healthcare professionals. Previous studies have not addressed why community pharmacist enrolment on independent prescribing courses is disproportionately low compared to pharmacists from other sectors.
Aim: To examine community pharmacists' experiences of undertaking an Independent Prescribing qualification at a UK university and the perceived barriers and facilitators to their studies.
Methods: A qualitative approach to data collection was adopted through semi-structured interviews with pharmacists either currently studying on or recently completed the Independent Prescribing qualification. Twenty-eight potential participants were identified from programme records with purposive sampling to select only pharmacists from a community pharmacy background, and invited to interview. Interviews were conducted in person at a venue chosen by the interviewee or over the phone if more convenient to them and audio recorded. Recordings were transcribed verbatim and analysed using NVivo 11 software to code data and explore emerging themes.
Results: Interviews took place with ten pharmacists. Three main themes emerged from the analysis of the transcribed interviews: A desire for career progression versus a clear element of self-doubt in their ability to succeed, financial barriers to study and career progression, lack of opportunities to use the qualification. The experiences of the community pharmacists interviewed were generally positive with the main driving force to enrolment being the desire to further their knowledge and advance their careers *"The IP course was always one I wanted to do and it was a kind of a natural progression from everything I've done to further myself"*. Barriers to their studies included lack of confidence and financial issues arising from time away from work to attend university and the compulsory hours with their designated medical practitioner *"So, there's financial barriers for community pharmacists...having time out of work to go and study at university and then spend the time having ninety hours' worth of supervised training"*. Lack of opportunities to use the independent prescribing qualification within community pharmacy is forcing pharmacists to work spilt sector or leave community pharmacy altogether *"To be honest, then I didn't see really a way that I would use it in community pharmacy"*. Suggestions to improve the independent prescribing course at the university included increasing training on the diagnostic element of consultations as community pharmacists found this area challenging and the utilisation of pharmacist independent prescribers during the teaching of the course.
Conclusions: This study specifically explored community pharmacists' experiences of undertaking an IP qualification at a UK university. Themes that emerged have the potential to help educators better understand the reasons why uptake amongst community pharmacists has been historically low and how this can be addressed The research was limited by the relatively small sample size of students from one university, and therefore these findings cannot be said to be representative of community pharmacists around the UK.

References

1. Pharmacyregulation.org. (2019) Pharmacist independent prescriber | General Pharmaceutical Council. [online] Available at: https://www.pharmacyregulation.org/education/pharmacist-independent-prescriber
2. Phelps, A. et al. (2013) GPhC Registrant survey. Prepared for the General Pharmaceutical Council. London: NatCen. Available at: https://www.pharmacyregulation.org/registrant-survey-2013.

Wellbeing and Community Pharmacy

The current and potential role of community pharmacy in asset-based approaches to health and wellbeing: a qualitative study

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Introduction: Health assets can be conceptualised as collective resources, including relational, social, environmental, and physical facets that foster the welfare of individuals and communities.

Asset-based approaches aim to improve wellbeing, protect against ill-health, and reduce health inequalities by capitalising upon existing assets, strengths, and resources of individuals and communities, as opposed to focusing upon needs and deficits. Asset-based approaches are increasingly used as a basis for public health initiatives and as a framework to support the transformation of health and social care services[1]. To date, there has been scant consideration of the potential role for community pharmacy.
Aim: To explore the current and potential role of community pharmacy in asset-based approaches.
Methods: Participants included community pharmacy practitioners and project leads, and public health policy and strategic leads from across the UK. Participants were recruited purposefully through local networks and social media for qualitative semi-structured telephone interviews

between June and October 2019. Transcripts were analysed inductively using simultaneous inductive open coding and deductive coding using Theory of Change[2].
Results: Fifteen participants were interviewed. Pharmacy participants conceptualised their current and potential involvement in asset-based approaches at the level of working with individuals or communities. On an individual level, asset-based approaches were understood as the adoption of increasingly person-centred and strength-based approaches towards consultations with patients and customers. At a community level, asset-based working was seen as the 'contribution' that pharmacies made, or could make, to the communities in which they were situated beyond current standard commissioned services. This contribution was often aligned with the notion of strengthening social capital and non-medicalised approaches to enhancing individual and public wellbeing. The adoption of asset-based approaches was felt to have reciprocal benefits for individuals, communities, the pharmacy workforce, and the pharmacy profession. There was limited evidence of a systemic adoption of asset-based working within the pharmacy sector. The changing landscape of community pharmacy practice and shift towards patient-facing clinical roles was felt to offer expanded relational opportunities to engage and collaborate with individuals, communities, and other stakeholders. The adoption of asset-based approaches was challenged or enabled by a number of factors including the availability of protected time and resources, workplace and organisational culture/values, strategic leadership, commissioning, funding arrangements, and lack of community pharmacy presence within primary care networks. Interviewees suggested opportunities to support integration, including further development of 'healthy living pharmacies', resources to support pharmacy teams to develop collaborative relationships with other organisations/sectors, greater access to and inclusion in local asset maps/directories, and a programme of enabling funding. Further exploration of community pharmacies' potential involvement in non-medicalised approaches to improving wellbeing, including social prescribing, were also suggested.
Conclusions: Whilst small-scale, this is the first study to explore asset-based approaches within the context of community pharmacy. The study provides valuable insights into the potential for community pharmacy to support the health and wellbeing of individuals and communities and play a more central role in the reduction of health inequalities, by incorporating and contributing to asset-based approaches in their localities.

References

1. Rippon, S. & Hopkins, T. (2015) Head, hands and heart: asset-based approaches in health care. London: The Health Foundation.
2. Rippon, S. & South, J. (2017) Promoting Asset Based Approaches for Health and Wellbeing. Exploring a Theory of Change and Challenges in Evaluation. Leeds: Leeds Beckett.

A UK-Japan comparative qualitative study on pharmacists' experiences about health and wellbeing hub functions in community pharmacy – preliminary analysis

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Introduction: Japan and the United Kingdom (UK) face significant healthcare challenges due to an ageing population. Both governments are keen to promote community pharmacies (CPs) as health and wellbeing hubs. In Japan, 'community-based integrated care systems' have been implemented focusing on the prevention in community, embedding CPs as 'Health Support Pharmacies (HSP)'[1]. The UK has nationalised the 'Healthy Living Pharmacy (HLP)' scheme, aiming to better use CP for improving public health and redress health inequalities[2]. The aims of both HSP and HLP are similar; however, their approaches differ in terms of service delivery.
Aim: The study aim was to explore and compare lived experiences of pharmacists in the delivery of the HSP in Japan or HLP in the UK, to inform further improvement of public health services in both countries.
Methods: Semi-structured interviews were conducted in Japan and the UK with pharmacists working either in HSP or HLP. The ethical approval was obtained from the Research Ethics Committees of the University. Purposive sampling was applied to reach registered pharmacists working in HLP/HSP that have obtained HLP/HSP accreditation, via professional networks, targeting 15 participants from each country, or until data saturation was reached. An interview schedule was developed by NA and face validated in the research team, including career background, pharmacy-staffing, engagement with and impact of HSP or HLP, challenges of service delivery, and further improvement. The interviews were conducted in Japanese and English, as appropriate. Consent was obtained from all participants before interviews. Interviews were audio-recoded and transcribed verbatim. Transcribed Japanese interviews were translated into English using forward-backward translation method. Transcribed data were analysed thematically.
Results: 16 interviews in Japan were conducted in July and August 2018, and 15 interviews in the UK between April and August 2019. Five themes emerged regarding challenges in HSP/HLP provision; understanding concepts of schemes, training, awareness of services and pharmacist's role, sustainability of services, and access to services and information. Of the five themes, 'sustainability of services' was strongly concerned both in Japan and UK. Further, five themes emerged for further improvements in HSP/

HLP including; professional development, raising awareness of services and pharmacist's role, securing resources, systems and regulations, and innovation. Opinions related to 'securing resources' theme have significant difference between Japan and UK, as HSP in Japan is not linked with remuneration and requires extra funding. Whilst the UK also struggle securing funding, although overall service quality associated remuneration was addressed.
Conclusion: This is the first study to compare pharmacists' experiences in health and wellbeing functions of CP in the UK and Japan. Different service requirements and delivery between HSP and HLP limit the interpretation of direct comparison of pharmacists' experiences. However, the study indicates varying experiences under the common themes, according to their levels of implementation and understanding of services of individual pharmacists and pharmacies in each setting. Future work includes developing recommendations to each country from their experiences of different approaches towards health and wellbeing hub functions in CP.

References

1. Ministry of Health, L.a.W., *2035 Japan Vision: Health Care*. 2015, Ministry of Health, Labour and Welfare: Tokyo.
2. Holden, M., *Introducing the Healthy Living Pharmacy*. SelfCare, 2015. 6(2): p. 21–25.

The design and delivery of a community pharmacy-based positive psychology intervention: a feasibility study

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Introduction: Community pharmacy (CP) has been recognised as providing an appropriate setting for public health interventions. With recent policies focusing on enhancing the health and well-being of the population in Wales[1,2], this research applies positive psychology (PP) to the design of a well-being intervention. The goal of PP is to redirect attention away from pathology, disease and weaknesses towards the study of human flourishing. This study is part of a larger programme of research to design and test the implementation of a pharmacy-based well-being service.
Aim: To explore the views of key informants and stakeholders on the feasibility of implementing a positive psychology intervention (PPI) in a CP setting.
Methods: The Medical Research Council (MRC) framework for complex interventions was used as the basis for the study design. This paper focuses on Phase 2, 'Feasibility and Piloting'. Phase 1 involved modelling of the intervention based on theory and several iterations to develop the PPI (Table 1) to be tested in one independent CP in a deprived area of South Wales.

Table 1. Summary of the design of the PPI

Timeframe	Type of Session	Structure	Title of Deliverer
Six weekly sessions plus one follow-up over a total eight weeks	One to one, 30–45 minutes in length	Seven one-to-one Sessions plus diary to be completed 3 days a week	Wellbeing Facilitator

A semi-structured interview schedule was designed to capture participants' views about the PPI, covering seven broad areas. Key informants were approached due to their in-depth knowledge of healthcare, public health or community pharmacy systems in Wales. Stakeholders were either staff members at the CP study site, general practitioners or well-being professionals working within the local community. Interviews were audio-recorded, transcribed verbatim and analysed using a combination of framework and thematic analysis.
Results: Fifteen semi-structured interviews were conducted (seven key informants; eight stakeholders). Seven overarching themes emerged from the data. These were (n = number of sub-themes) related to: 1) Intervention design (n = 6; overall impression, views on diary, session duration, concepts, timeframe, one to one consultation), 2) Title of the wellbeing facilitator (n = 2; overall impression, suggestions), 3) Identifying the target population, with suggestions, 4) Recruitment (n = 4; community, community pharmacy, self-referral, mixed-referral), 5) Factors to support implementation (n = 4; evaluation process, wellbeing facilitator, community pharmacy, participant), 6) Challenges to implementation (n = 3; participant, wellbeing facilitator, community pharmacy) and 7) Impact of the intervention (n = 3; community wellbeing, community healthcare services, community pharmacy).
Conclusions: Overall, the feedback from the interviewees was positive and the findings supported the use of a CP-based setting for implementing a PPI with the appropriate infrastructure in place. The findings from this phase will be utilised to inform the design and delivery of the PPI, with further feasibility testing within Phase 3 of the MRC framework. The study setting is limited to one independent CP which may not be representative of all pharmacies in Wales, however, these preliminary findings can be used to support future research.

References

1. Future Generations Commissioner for Wales. (2017). Annual Report 2017–2018. https://futuregenerations.wales/wp-content/uploads/2017/02/Draft-Strategic-Plan-ENG-1.pdf (Retrieved 26 July 2019)

2 Welsh Pharmaceutical Committee. (2019). Pharmacy: Delivering a Healthier Wales. https://www.rpharms.com/recognition/all-our-campaigns/pharmacy-delivering-a-healthier-wales (Retrieved 30 September 2019).

Co-designing Interventions

Co-design of a new community pharmacy delivered text message intervention with patients and professionals to support medicines adherence

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Introduction: It is estimated that 30%–50% of patients do not take medicines as prescribed. Medication taking can be described as a behaviour, at which behaviour change techniques (BCTs) could be applied. Text messages have been highlighted as a potential tool to support medicines adherence and could incorporate BCTs to support this. A face-to-face component may also be required alongside digital communication to address wider barriers to medicines taking. This support has been previously been delivered by community pharmacists in services such as medicines use reviews. It is important that stakeholders and intended recipients of new interventions are involved in any design process.
Aim: To co-design a personalised two-way automated text messaging intervention combined with a community pharmacy consultation to support medication adherence.
Methods: A human-centred design (HCD) approach was used[1]. Six prototypes were developed based on a systematic review. Three of these were presented to patients, including a personalisation questionnaire, patient information leaflet and video of an introduction to the intervention in a community pharmacy. A further two prototypes were presented to professionals including two diagrammatic representations, one of how the questionnaire would personalise the text message intervention and a second which suggested how the intervention could be integrated into existing care pathways. Both groups were also shown a video of a consultation incorporating the intervention with a community pharmacist. Nominal group technique was used as a framework to gather feedback for the co-design process. This used focus groups with patients and professionals to generate

Table 1. Highest ranked statements for each of the prototypes tested

Prototype	Highest ranked 'liked' statements	Highest ranked 'change 'statements
Video of consultation with community pharmacist	A clear explanation of the service being offered	Add in a more formal written consent process; make sure that timing of medication taking is captured and checked
Video of introduction to the intervention at pharmacy counter	Right information given to allow the patient to make a decision	Patient should be offered help to complete the questionnaire if they need it
Personalisation questionnaire	Easy to read and understand; clear layout	Ask whether medication reminders is something the patient would benefit from
Patient information leaflet	Easy to read and understand	Add information on how long it will take to respond to messages
Diagram suggesting text message intervention components linked to personalisation questionnaire	The patient self-care emphasis which encourages patients to take responsibility	Create layers of messages, with more negatively framed messages being reserved for those with persistent non-adherence
Diagram of how intervention could be integrated into existing care pathways	Community pharmacy led service	Confirm individual monitoring targets for patients with GP practice prior to using home monitoring

statements about the prototypes; items that participants liked and items that they felt needed to be changed. These were summarized and formulated into a ranking questionnaire which was then sent out to all participants either on paper or online.
Results: Nine patients and 21 healthcare professionals (pharmacists, nurses, general practitioners) were included in the co-design process across five focus groups. 17 participants also took part in the ranking exercise. The design concept was positively received by all participants. A summary of the highest ranked statements can be found in Table 1. There was agreement that a pharmacy setting and a review by a pharmacist was desirable by both patients and professionals. Changes suggested by patients also included ensuring that recipients understood that communication was automated during the consultation. Professionals additionally liked the range BCTs included in the intervention, especially the support for habit formation. However, they felt uncomfortable with the use of more negatively framed BCTs and wanted more support included for patients to use home monitoring equipment. Changes highlighted as part of the co-design process have now been incorporated into a final design which is undergoing 'live' prototyping as part of the next cycle of the HCD process.
Conclusions: HCD methods were effective for supporting a co-design process to assess initial acceptability of a new behavioural intervention to support medicines adherence. Other researchers may also find HCD methods helpful as for co-production of interventions with patients and professionals. The intervention ultimately will also require testing for effectiveness using a clinical trial design.

Reference

1. IDEO. The Field Guide To Human-Centered Design. 2014. https://doi.org/10.1007/s13398-014-0173-7.2.

The development of pictograms to illustrate women's experiences with adjuvant hormone therapy for breast cancer

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Introduction: Breast cancer is the most common type of cancer diagnosed in the UK, accounting for 30.8% of all malignant female cancer registrations in 2016 (1). The treatment includes the use of long-term endocrine therapy in hormone receptor (HR) positive cases, which account for two thirds of all breast cancer diagnoses. Despite its importance research has shown a reluctance by some women to fully adhere to such long-term treatment (2). The author conducted a grounded theory (GT) synthesis to integrate data from existing qualitative studies about women's adherence to hormonal treatment in breast cancer to develop an in-depth explanatory model of medication experiences in this condition. Afterwards, the author conducted a GT based interview study with women who have been taking hormone therapy following a breast cancer diagnosis. The results combined from both studies led to the development of an all encapsulating GT with three main categories; 1) The treatment of breast cancer: prescription of a long-term drug; 2) The treatment of breast cancer: adhering to the long-term treatment; 3) The treatment of breast cancer: stopping the long-term treatment. These categories were represented using complex tables but needed to be simplified if they were to help patients in the future.
Aim: To develop the GT categories into a set of three pictograms and validate these with survivors.
Methods: The pictograms were developed by the author in consultation with their supervisor. Essentially, each of the main categories was represented by one overall pictogram showing the patient journey with a series of small labelled drawings. The pictograms were validated for accuracy and meaning by an independent group of researchers ($n = 10$) who acted as reviewers by completing a content validity questionnaire. The Content Validity Index (CVI) was the proportion of researchers who agreed that the labelled drawing represented a detailed description given alongside it (taken from the original GT model). After making revisions that were acceptable to the 10 reviewers, the finalized pictograms were discussed with breast cancer survivors ($n = 12$) whose responses were obtained in interviews. They were asked, for example, if the pictograms encapsulated their own experiences.
Results: Of the 76 labelled drawings, 13 had an CVI < 0.8 and were therefore modified. The finalized versions elicited positive responses from the survivors, with all 12 reporting that their own experiences were captured well by the pictograms. For example, "I think that sums it up very well and actually it's helped me to tell you more about my treatment cycle" and "Year. That is me to a tee. That's quite scary. Yeah, that is quite scary." This gave the respondents some comfort that they were not alone in experiencing difficulties with their treatment.
Conclusion: The developed pictograms were found to be helpful by breast cancer survivors and therefore have the potential be useful when communicating with new patients as they embark on hormonal treatment for breast cancer. Future research should assess the applicability of these pictograms in a clinical setting, which is yet to be tested and is a weakness of the current work.

References

1. Cancer registration statistics, England – Office for National Statistics [Internet]. [cited 2019 May 16].

2. Spring LM, Gupta A, Reynolds KL, Gadd MA, Ellisen LW, Isakoff SJ, et al. Neoadjuvant Endocrine Therapy for Estrogen Receptor–Positive Breast Cancer: A Systematic Review and Meta-analysis. JAMA Oncol. 2016 Nov 1;2(11):1477–86.

Early Careers

Multi-sector pre-registration training: qualitative analysis of pre-registration trainees' perceptions of a pre-registration training programme in academia and community pharmacy

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Introduction: Multi-sector pre-registration training is continually evolving and has become a popular choice for trainees[1]. In 2013 the University of Sunderland developed a novel pre-registration training programme in collaboration with a regional community pharmacy. Since that time fourteen trainees have successfully completed the training but no formal evaluation has been previously conducted. This study explores the experiences of pharmacists having undergone such training.

Aim: To explore retrospective perceptions of registered pharmacists towards their experiences of pre-registration training across academia and community pharmacy and to understand the benefits and limitations of such training. A focus was also placed on establishing trainees' self-perceptions of preparedness to practice after undergoing this training.

Methods: A purposive sample of registered pharmacists ($n = 12$) who undertook a pre-registration training programme in academia and community pharmacy between 2013 and 2019 participated in one to one semi-structured interviews. A recruitment email with details of the study was sent to potential participants ($n = 14$) who had completed the training programme during the specified timeline. Consent was obtained from participants prior to interview. The topic guide was designed by the project team to explore the positive and negative experiences of the training programme and perceptions of the participants' preparedness to practice. Interviews were conducted over the telephone by an independent researcher. Interviews were audio recorded, transcribed verbatim and thematic analysis was conducted using a framework approach.

Results: Thematic analysis highlighted three key themes with a range of sub-themes (see Table 1).

Table 1. Results of thematic analysis

Theme	Sub-theme
Supervision	Wide exposure to pharmacists from different practice backgrounds was identified as an influencing factor that helped the trainees develop
Continuous feedback from these supervisors enabled increased reflection and professional development	
Self-confidence	Participants discussed the responsibility they felt to help others learn and how that encouraged their own personal progression
The self-imposed pressure to impress academic staff and integrate into an academic team served to enable a higher level of personal development	
Participants perceived an increased preparedness to practice in comparison to their peers in single sector training	
Meeting demands	Communication barriers between the different sites led to participants feeling 'caught in between' the two
Balancing the requests and expectations of different training sites was also highlighted as an additional pressure not experienced in single sector training	

A high level of maturity in participants' responses was also identified by researchers, potentially attributable to an obvious self-motivation to improve and achieve.

Conclusion: Stakeholders involved in pre-registration training and delivery of pharmacy education may find the results of this study informative and could potentially use the findings to influence development of further future multi-sector pre-registration training programmes involving academia. Multi-sector pre-registration training has been explored previously across hospital pharmacy, community pharmacy and general practice[2], but there is a paucity of evidence regarding training in academia. The participants in this study perceived their training experience as being extremely positive with all participants stating they would encourage others to undertake similar training. The participants in this study had been selected as suitable trainees for a multi-sector post based on academic ability and personal attributes so were by default likely to be highly motivated individuals.

References

1. Health Education England (2018). Evaluation Report – Applicant preferencing of prospective training programmes in the National Preregistration Pharmacist Recruitment Scheme for England and Wales. Available @ https://www.hee.nhs.uk/sites/default/files/documents/National%20Pre-reg%20Pharmacist%20Recruitment%20Preferencing%20Evaluation%20Report.pdf
2. Wales Centre for Pharmacy Professional Education (2017). Evaluating a multi-sector pre-registration training programme in North Wales: perceptions of pre-registration pharmacists and their tutors. Available @ http://www.nwssp.wales.nhs.uk/sitesplus/documents/1178/abstract_for_integrated_pre-reg_pharmacists_posts_final1.pdf

Understanding the transition experiences of foundation (early career) pharmacists within Great Britain (GB)

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Introduction: There is growing consensus internationally that healthcare professionals should not be trained for specific jobs, but to be flexible and adaptable. This approach will enable pharmacists to better respond to and meet the complex pharmaceutical care needs of patients and the public[1]. Structured developmental pathways underpinned by evidence-based frameworks can facilitate the creation of a safe and effective pharmacist workforce that can better respond to future healthcare challenges. Development programmes for foundation pharmacists (FPs) at postgraduate level are still being refined, and no unified model for all pharmacy sectors exists. There is a need to understand how pharmacists develop and progress in their careers and professional practice, in particular their transition experiences, where evidence is limited.
Aim: To explore the professional development transition experiences of FPs undergoing structured work-based training.
Methods: A purposive sample of FPs working across community and hospital pharmacy within GB were recruited. Details of the study were shared on professional networks, social media and through gatekeepers. A topic guide was developed and piloted with 5 FPs. Semi-structured telephone interviews were conducted with 11 FPs, which lasted between 30 and 80 minutes. The interviews were audio-recorded, transcribed verbatim, coded using a grounded approach and thematically analysed using a constant comparison method[2], in NVivo® v12.
Results: The emerging themes were: individual development outcomes; organisational challenges to development; and a need for additional support. Participants reported positive changes in their confidence and clinical knowledge, which were attributed to a structured training programme and a supportive environment "*there's an aura of supporting you to do what you want to do*". However, there was a sense from some FPs that these improvements also developed over time with experience "*in hindsight [the programme] has helped me, but I don't think it would be any different if I completed it or not*". A lack of time, excessive workload and inadequate support and feedback were reported as barriers to professional development. Furthermore, participants recognised the importance of learning and continual development and its contribution to patient care "*from a patient point of view, I think I'd rather be seen by someone who has [completed training] than not*". There was acknowledgement that further support for development at postgraduate level is required, including support from experienced colleagues, and guidance from pharmacy organisations.
Conclusions: To the best of our knowledge this is the first qualitative study exploring the transition experiences of FPs undergoing structured work-based training. Preliminary findings suggest FPs benefit can be better supported with challenges of transition. It is important to recognise that the findings of the study may not generalisable due to the small sample size. This study is part of a wider project; findings will be triangulated with findings from a knowledge acquisition study to build a picture of developmental pathways and transitions for FPs. This will enable policy makers, training providers, and educational bodies to develop programmes to support the transformation of a pharmacist workforce equipped for the future.

References

1. World Health Organization. Preparing a health care workforce for the 21st century: The challenge of chronic conditions. Geneva; 2015.
2. Glaser BG, Strauss AL. The Discovery of Grounded Theory: Strategies for Qualitative Research. New Jersey: AldineTransaction; 1967.

Safety in Prescribing

Facilitating patient safety: key barriers and facilitators to prescribing error reporting and learning across primary care

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Introduction: There are well-established benefits from reporting medication errors and identifying patterns to help prevent future harm. In the UK, prescribing errors originating from general practice and other community services are often identified and rectified within community pharmacy. Organisational structures within NHS primary care mean that boundaries between these independent organisations may act as barriers to error reporting and associated learning.
Aim: To identify key facilitators and barriers to cross-organisational prescribing error reporting and learning across primary care and to explore the role of community pharmacy within this.
Methods: Qualitative semi-structured face-to-face and telephone interviews were conducted with a purposive sample of pharmacists, prescribers and other key stakeholders from across North East England. Interviews explored: facilitators and barriers to prescribing error reporting in primary care; the influence of decision-making processes and healthcare context; and the role of community pharmacy in optimising prescribing error reporting and learning. Data collection and analysis were underpinned by the Theoretical Domains Framework (TDF)[1]. Framework analysis[2] was used for coding and charting the data with the assistance of NVivo software (V12).
Results: Interviews included perspectives from primary care prescribers (n = 11), pharmacists (n = 12) and other key stakeholders (n = 12). Findings highlight how decision-making processes, practices and beliefs around prescribing error reporting differ significantly across and within different primary care organisations resulting in variability in reporting and potential gaps in knowledge. Emergent themes were mapped to the TDF. Social influences, environmental context and resources (e.g. organisational cultures, local leadership and relationships, heterogeneous regulatory and reporting processes and systems, and beliefs about ownership, accountability and responsibility) play a key role in the opportunities and motivation to report prescribing errors. For example, within general practice, approaches to risk management were mainly described within "significant event" and quality improvement paradigms. In community pharmacy, the focus was on checking and rectifying errors (rather than reporting) along with a clear distinction between the reporting processes associated with dispensing and prescribing errors. Beliefs about consequences of reporting also influenced reporting behaviour (e.g. stigma and blame; compliance with regulatory and contractual frameworks; medico-legal issues; impact on working relationships; and availability of feedback and learning potential). Constraints on the ability to report included: the ease of use of reporting systems; conflicting workload pressures; and varied individual interpretations of terminology, procedural knowledge, potential significance and wider learning potential associated with different types of prescribing errors.
Conclusion: There seems to be a lack of clarity and consistency across primary care in relation to beliefs about whose responsibility it is to report prescribing errors, which errors should be reported, how, when and to where. There was some acknowledgment of a potential increased role for community pharmacy in the identification of wider prescribing error patterns. Our findings suggest that feedback and learning need to have a local focus, be perceived to have positive and significant potential to change practice, and be tailored appropriately to each setting. Further research is required to help identify consensus on how best to facilitate cross-organisational knowledge sharing, learning and prescribing quality improvement.

References

1. Atkins L, Francis J, Islam R, et al. (2017) A guide to using the Theoretical Domains Framework of behaviour change to investigate implementation problems. Implement Science 12: 77.
2. Ritchie J and Spencer L. (1994) Qualitative data analysis for applied policy research. In: Bryman A and Burgess RG (Eds) Analyzing qualitative data. 173–194.

Exploring the role of community pharmacists in deprescribing

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Introduction: Deprescribing is the planned and supervised process of stopping or reducing the dose of a medicine that might be causing harm or no longer providing benefit. This idea has gathering interest over the past decade due to growing concerns about the overuse of medications and patient outcomes. As the primary prescribers for most patients, physicians are the logical health care practitioner to champion deprescribing. Pharmacists scope of practice focuses on managing medication therapy, therefore they may also contribute to the deprescribing process.
Aim: The aim of the study is to explore how community pharmacists in Ireland are involved in the deprescribing process and to inform the design of interventions that could enhance community pharmacists' roles in deprescribing.
Methods: We used an explorative qualitative study design, using semi-structured interviews with pharmacists based in the community in the Mid-West of Ireland. Community pharmacists were recruited through purposive sampling to represent urban and rural settings, years of experience and position as pharmacist owner/manager or staff. We selected pharmacists who varied with respect to important characteristics to allow for comparison of data across different contexts and participant characteristics to enhance understanding as well as increase transferability of the findings.

The interviews were conducted by phone, audio-recorded and transcribed. Ethics approval for this study has been received from University of Limerick Research Ethics Committee (Education and Health Sciences). Thematic analysis was carried out. Codes with common features were grouped together as emerging themes, before being assigned to overarching themes, describing the phenomenon underlying the study.
Results: A total of 10 community pharmacists participated in semi-structured interviews. The themes identified include medication review and reconciliation, relationship with local GPs, remuneration, access to the patient's medical file, experience of pharmacist, defined scope of practice and workload. Medication reconciliation and medication information, and education were considered positive roles for a pharmacist to perform and within their scope of practice. Pharmacists reported being proactively engaged in these roles and how medication reviews can occasionally involve recommending deprescribing. The relationship with the GP was viewed by interviewees as both a facilitator and a barrier to pharmacist participation in deprescribing. Several pharmacists in rural settings reported having limited capacity to undertake new services. The introduction of some form of remuneration for pharmacist medication reviews or deprescribing services was collectively reported by interviewees as an incentive for involvement.
Conclusion: This study highlights that deprescribing linked to medication review is within the scope of practice of community pharmacists and there is potential for community pharmacists to become more involved in this area. Facilitators and barriers to integrating the service into current community pharmacies were identified, including lack of remuneration, which reflected health system and policy barriers frequently reported in the literature in other jurisdictions. The importance of collaborative relationships with local GPs was also identified. The small number of participants and the purposive sampling from one geographic area may be a limitation of the study. These findings may contribute to the development of deprescribing services in primary care involving community pharmacists.

Technology

Impact of an electronic health record on task time distribution in a neonatal intensive care unit: a mixed methods study

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Introduction: The Maternal and Newborn Clinical Management System (MN-CMS) project has introduced an Electronic Health Record (EHR) to four Irish maternity hospitals, with implementations planned for the remaining fifteen units. The transition from paper-based to electronic records represents a significant change in workflow for healthcare professionals (HCPs). Previous studies indicate that HCPs are concerned that EHRs may decrease time for patient care by increasing time spent on documentation and medication-related tasks[1].
Aim: To determine the impact of an EHR on task time distribution in a Neonatal Intensive Care Unit (NICU); to determine the impact of the EHR on frequency of contact with the 'patient zone' and frequency of interruptions to tasks; and to explore HCPs perceptions of the EHR.
Methods: A mixed-methods, pre-post, time and motion study in a 39-bedded tertiary level NICU was conducted. Convenience sampling was used to recruit nurses and doctors working in the NICU. Data were collected by two independent observers in 8-week blocks, before and after implementation of the EHR. An electronic data collection tool was used to collate time spent on pre-validated tasks related to direct care, professional communication, reviewing of charts, documentation, and medication-related tasks (2). Interruptions to tasks and frequency of contact with the patient zone were also quantified. Statistical significance was assessed using two-sample proportion tests, two-sample t-tests, and two-sample Wilcoxon rank-sum tests. A Bonferroni correction set significance at $P \leq 0.0025$. Qualitative data pertaining to participants' thoughts on the EHR were collected via survey and summarised using descriptive statistics. Qualitative and quantitative data were triangulated where appropriate.
Results: Forty-six NICU nurses and 17 paediatric registrars were recruited over both phases, with 169.23 hours data collected. There were non-significant changes in the proportions of time spent by nurses on all tasks. Doctors' proportion of time spent on professional communication increased from 15.4% to 26.0% ($P < 0.001$).). Significant increases to median task times were seen for both doctors and nurses. Frequency of interruptions to tasks decreased post-implementation ($P < 0.001$), as did frequency of contact with the patient zone ($P < 0.001$). The overall positive perceptions of the EHR identified in phase 1 did not change significantly post-implementation, but usability issues were identified by individuals. ICC values >0.80 were observed for each task category, indicating good inter-rater reliability.
Conclusion: This was the first time and motion study to quantify the impact of this EHR on NICU task time distribution. Importantly, the EHR did not redistribute time towards documentation and medication-related tasks. Perceptions of the EHR remain largely positive 15 months' post-implementation. Strengths of the study include the pre-post design and validated data collection tool. Limitations include the use of two data collectors, although good inter-rater reliability was observed. NICU-specific findings may not be generalisable beyond

this setting. Findings have implications for future iterations of MN-CMS by establishing a baseline for evaluation. Recommendations include ongoing training and support for clinical staff, and engagement with system users to address usability issues and ensure quality of care.

References

1. Baysari M, Richardson L, Zheng WY, Westbrook J. Implementation of electronic medication management systems in hospitals: a literature scan. Sydney: ACSQHC; 2016.
2. Westbrook JI, Li L, Georgiou A, Paoloni R, Cullen J. Impact of an electronic medication management system on hospital doctors' and nurses' work: a controlled pre-post, time and motion study. J Am Med Inform Assoc. 2013;20(6):1150–8.

Improving the discharge medicines review service in Wales: learning from the comparison of technology-supported UK transfer of care systems

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Introduction: In 2011, the Welsh Government implemented the Discharge Medicines Review (DMR) service to reduce the risks associated with transfer of care. The DMR initially involved paper transmission of discharge information to community pharmacy with a follow-up adherence support service, updated in 2015 to allow electronic transmission of discharge information[1]. Other localities in the UK have developed their own technology-supported transfer of care systems: Refer-to-Pharmacy (RTP), PharmOutcomes and Help for Harry (HFH)[2].
Aim: To compare and contrast UK technology-supported transfer of care systems in order to highlight areas of good practice that can be used to recommend improvements for the DMR service.
Methods: A generic qualitative methodology was applied with semi-structured interviews, utilising an interview guide informed by literature. Purposive sampling identified four participants for their role in the development and implementation of their respective transfer of care[2]. Audio recordings were transcribed *ad verbatim* and analysed deductively utilising thematic analysis.
Results: Three interviews were undertaken including key informants for DMR, RTP and PharmOutcomes.

Deductive analysis of the data revealed three broad themes: implementation, system attributes and stakeholder engagement. Aspects of implementation such as the collaboration with local professional organisations were the same across the systems. In contrast, only RTP utilised a pre-determined marketing strategy involving speaker circuits, publications and newsletters. System attributes, such as the level of IT integration were different across the systems, with DMR being the most integrated hence saving stakeholder time and allowing full data extraction. RTP and PharmOutcomes notified community pharmacists of patient admission and discharge whereas DMR only notified on patient discharge.

In terms of stakeholder engagement, RTP provided automated routine electronic feedback to hospital pharmacists about the outcomes of the referrals and hospital pharmacy staff using PharmOutcomes held semi-regular meetings with hospital pharmacists to discuss high-level outcomes from referrals. DMR provides no regular feedback to hospital pharmacists. Additionally, RTP and PharmOutcomes keep community pharmacists accountable for referrals by accessing a list of non-actioned referrals and following them up. RTP is the only system to keep hospital pharmacists accountable through staff-led meetings to discuss why eligible patients weren't referred. No new themes emerged from subsequent inductive analysis of the data.
Conclusion: The results suggest that while all systems have the same aim, they have different methods of implementation and provision. Good practice highlighted in this study that could be integrated into the DMR system includes marketing strategies to advertise the DMR and its benefits, increased accountability of stakeholders in relation to referrals, integration of patient admission notifications to community pharmacists and providing feedback to hospitals after a DMR, in line with evidence from the 2014 service evaluation[1]. The use of key informant semi-structured interviews gathered a deep description of each transfer of care system which was not found in literature. Results have limited generalisability since only UK systems were studied.

References

1. Hodson K, James D, Smith M, Turnbull L. Evaluation of the DIscharge Medicines Review Service [Internet]. 2014 [cited 2018 Dec 10]. Available from: http://www.cpwales.org.uk/Contract-support-and-IT/Advanced-Services/Discharge-Medicines-Review-(DMR)/Evaluation-of-the-DMR-Service/Evaluation-of-the-DMR-service.aspx
2. Royal Pharmaceutical Society. Hospital referral to community pharmacy: An innovators' toolkit to support the NHS in England [Internet]. 2014 [cited 2018 Nov 12]. Available from: http://www.rpharms.com/promoting-pharmacy-pdfs/moc-report-full.pdf

General Practice Pharmacy

Community pharmacists' experiences with, views of, and attitudes towards, general practice-based pharmacists: a cross-sectional survey study

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Introduction: Regional five-year pilot schemes have been introduced in the United Kingdom to embed pharmacists in general practices. In Northern Ireland (NI), it is anticipated there will be 300 whole time equivalent practice-based pharmacists (PBPs) in post by 2020/21[1]. Whilst the evidence-base relating to PBP implementation is growing, little is known about key stakeholders' perspectives of the PBP role, and particularly those of community pharmacists.
Aim: To determine the nature and frequency of professional contact between community pharmacists and PBPs, and to explore community pharmacists' attitudes towards and views of PBPs.
Methods: A questionnaire was mailed on two occasions during February and March 2019, to all community pharmacies in NI ($n = 531$). The questionnaire was developed following a literature review and comprised four sections. Section A collected sociodemographic data about respondents and the community pharmacies in which they worked. Section B determined the frequency, methods, and nature of contact that community pharmacists had with local PBPs. Section C explored community pharmacists' attitudes towards collaboration with PBPs, using an adapted version of the Attitudes Towards Collaboration Instrument for Pharmacists (ATCI-P)[2]. Section D explored community pharmacists' views about the PBP role. Responses were coded and entered into SPSS v22. Descriptive analyses were used where appropriate, and responses to open-ended questions were analysed thematically. Ethical approval was obtained for this study.
Results: Two hundred and twenty-two community pharmacists (41.8%) responded. The majority (68.5%, $n = 152$) were employee pharmacists and had been practising as a pharmacist, on average, for 16.2 (±SD 11.9) years. Nearly all respondents (98.2%, $n = 218$) had been in contact with a local PBP, with most (63.1%, $n = 140$) in contact at least three times a week. A small proportion of respondents (9.9%, $n = 22$) reported difficulty in making contact with PBPs. Common reasons for contact related to prescription queries or amendments to prescriptions, unavailability of medications, and queries related to hospital discharge. Whilst community pharmacists displayed largely positive attitudes towards collaboration with PBPs, 32.9% of respondents ($n = 73$) showed disagreement or ambivalence to the statement '*my role and the PBP's role in patient care are clear*'. Many respondents agreed/strongly agreed that PBPs could provide a better link to general practice for community pharmacists (84.2%, $n = 187$) and that the introduction of the PBP role could have a positive impact on patient outcomes (81.5%, $n = 181$). However, a large proportion of respondents (85.5%, $n = 190$) showed disagreement or ambivalence with the statement '*patients understand the difference between community pharmacists and PBPs*'.
Conclusion: This study has revealed that community pharmacists are in frequent contact with PBPs about a range of medication-related issues. Whilst there appeared to be evidence of positive collaboration between community pharmacists and PBPs, recognition of individual roles was less clear which may impact upon the successful integration of PBP within general practice and primary care. The effect of non-response bias may limit the generalisability of the findings to the wider community pharmacist population in NI. Further work to explore patients' understanding and views of pharmacist roles in primary care is needed to corroborate community pharmacists' concerns.

References

1. Strategic Leadership Group for Pharmacy. Practice-based pharmacists' statement. 2016. (Online) Available at: https://www.health-ni.gov.uk/sites/default/files/publications/health/practice-based-pharmacists.pdf (Accessed 03 Oct 2019).
2. Van C, Costa D, Abbott P, Mitchell B, Krass I. Community pharmacist attitudes towards collaboration with general practitioners: development and validation of a measure and a model. BMC Health Serv Res. 2012; 12: 320.

An Evaluation of a transition training programme for pharmacists working in GP settings

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Introduction: With an ageing population, increase in chronic illness, complexity of medication and polypharmacy, general practice surgeries struggle to meet the health demands of today's society[1]. This situation is exacerbated by a GP recruitment crisis. One approach to alleviate such pressures and ensure the provision of appropriate patient care is the integration of pharmacists into the primary care skill-mix in GP settings. Evidence from Scotland shows that this can

free-up GP time and improve patient safety[2]. However, there is no research into this role across Wales. Health Education and Improvement Wales (HEIW) devised a new training programme to support pharmacists to transition into the GP setting. The 12-month programme is centred on a competency-based framework developed in partnership with the Royal Pharmaceutical Society. Participants are supported by an experienced GP pharmacist tutor for guidance and competence assessment.
Aim: To ensure best patient care, pharmacists require sufficient, relevant training for this GP practice-based role. This study aimed to evaluate the new transition training programme in Wales, reporting on whether it adequately prepares pharmacists to show competence for GP-based roles, programme strengths and limitations and areas for development.
Method: Telephone interviews and focus groups were conducted with all ten pharmacists enrolled on the Welsh pilot programme (tutees) and their tutors. One-to-one telephone interviews were held with tutees midway through the transition programme and focus groups with tutees and tutors towards the end of the programme. All conversations were recorded and transcribed. Data were coded in NVivo and analysed thematically.
Results: Five key themes were identified: pharmacists' motives for working in GP settings and pursuing the transition programme, learning and development needs of tutees, experiences of the transition programme, suggestions for programme improvements, and future prospects. Tutees joined the programme with varied previous experience; several with prior experience of the general practice environment. Pharmacists chose to make this transition for a variety of reasons, including to further utilise their clinical skills and to work more sociable hours. Tutees commonly desired to develop their clinical and consultation skills, and more broadly, their confidence and competence around working in this different setting. The most valued element of the programme was the tutor support, and tutees particularly appreciated their tutor visiting them in their own practice. Both tutees and tutors felt it was important that the programme could be tailored to match individual needs of pharmacists, particularly given their varied prior experience and existing skills. A flexible approach was welcomed and deemed essential. In terms of the future, tutees were looking to follow a number of different career directions; several intended to pursue the independent prescriber qualification to further enhance their role and contribution to patient care.
Conclusion: Although this study is based on self-report and does not include formal performance assessments or observation of practice, the programme appears to successfully support pharmacist transition to working in GP settings. It enables them to evidence their competence for this role. The tutor-tutee relationship is central in supporting pharmacist development and achieving role competencies.

References

1. Stone, M.C. and Williams, H.C. Clinical Pharmacists in General Practice: Value for Patients and the Practice of a New Role. British Journal of General Practice. 2015;65(635):262–263.
2. Torjesen, I. Practice Based Pharmacists Free up Five Hours of GP Time a Week. BMJ. 2018;362.

Evaluating community pharmacists' perspectives of collaborative working with GPs: a focus group study

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Introduction: Inter-professional collaboration is defined as "when multiple health workers from different professional backgrounds work together with patients, families, carers (caregivers), and communities to deliver the highest quality of care"[1]. Recent NHS strategy promotes the collaborative working of GPs and Community Pharmacists, however historically, GP and Pharmacist collaborations have been sparse, and barriers to collaborative working have been widely reported in literature. A novel project was designed to facilitate collaborative working between GPs and Community Pharmacists, including an evaluation to explore this further. The project included: dedicated time to observe each other's practices, leadership training and a quality improvement project.
Aim: To evaluate Community Pharmacists perspectives of collaborative working with GPs using a focus group (FG) informed by a conceptual model of collaboration.
Methods: Following the six-month project, the GP-Community Pharmacist project participants ($N = 10$) were invited via email to participate in a multidisciplinary FG, using a pre-designed guide, informed by Bradley et al. (2012) model of collaboration as the data collection tool. Seven themes were covered[2]: locality, service provision, trust, knowing each other, communication, professional roles and professional respect. The FG was designed to explore partner collaboration and shared understanding of collaborative working within the GP-Community Pharmacist project, thus it was decided to conduct this in a multidisciplinary fashion. Data were audio recorded and analysed using thematic analysis.
Results: Four GP-community pharmacist pairs participated in the FG. Themes related to barriers to collaborative working were identified: Communication, IT, Cost, Time, Insight to Professional Role, Trust and Mutual Dependency and Education. Pharmacists discussed problems that could inform future education on collaborative working; e.g. '*one of the biggest barriers would be changing mind-sets*.' Pharmacists also discussed

their trust in GPs as being inherent, '*the trust is always there. Its inherent otherwise, we wouldn't be where we are at the moment*.' Pharmacists reported *'I didn't know what it looked like from the GP side*,' and '*I didn't know that they had all these extra bits they had to do*,' highlighting lack of '*Insight to Professional Role* [of a GP]' as a reason for joining the project. Positive feelings about how collaborations have strengthened throughout this project were reported by pharmacists, e.g. '*I have a better appreciation of the challenges that the doctors face*' and '*it did break a lot of barriers because we've started to communicate with the Practice Managers and the GPs a lot more*.' *Conclusion*: FG results highlight that this project, through facilitating collaborative practice has: improved both pharmacists' knowledge and insight of the role of a GP, highlighted that pharmacists feel they have trusting relationships with GPs and also shown that through close collaboration, effective communication is improved. Pharmacists reported improved positivity towards future inter-professional working. This study also identified barriers to collaboration which require further exploration. This was a small-scale study, thus future studies evaluating GP and pharmacist collaborative working using larger sample sizes should be conducted. Study results should be utilised to inform future studies to develop data collection tools exploring the stages of collaborative working of HCPs.

References

1. World Health Organization. Framework for action on inter-professional education & collaborative practice. Geneva: World Health Organization. http://apps.who.int/iris/bitstream/10665/70185/1/WHO_HRH_HPN_10.3_eng.pdf. Published 2010. Accessed on 20/09/2019.
2. Bradley, F., Ashcroft, D., Noyce, P. (2012). Integration and differentiation: A conceptual model of general practitioner and community pharmacist collaboration. *Research in Social and Administrative Pharmacy*. 8; 36–46.

A worldwide view of collaboration models involving community pharmacists and general practitioners: a systematic literature review

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Introduction: Collaborative patient-centred working between healthcare professionals within the British National Health Service (NHS) is one of its core strategic values. The recently published NHS Long Term Plan[1] specifically encourages better integration of community pharmacists (CPs) within primary care teams due to their skillset and regular engagement with patients; this has come as a result of workforce shortages and financial pressures on general practitioners (GPs) and urgent care. Whilst pharmacists are currently being integrated into general practices as "practice-based pharmacists", insight is needed regarding optimising collaborative working between CPs and GPs. Thus, a systematic review (PROSPERO: CRD42018087846) was undertaken.

Aim: To describe existing collaborative models in primary care that involve CPs and GPs in terms of their drivers, purpose, impact on stakeholders (CPs, GPs and patients) and evaluation, and to explore the extent to which existing models align with seven published conceptual models.

Methods: Full papers were included of primary empirical research on collaborative working that involved CPs and GPs. Standard systematic review methods were adopted[2]. Electronic databases were searched including: *Embase, MEDLINE, CINAHL Complete, Web of Science Core Collection* (on 14–15/03/2018; no restrictions were applied, e.g. language). Included studies' reference lists were screened for additional references. Validated risk-of-bias tools were used where appropriate; when that was not possible, risk of bias was presented using a narrative summary. Identified models were aligned to conceptual models with regard to model characteristics (e.g. setting) and success determinants (e.g. clear responsibilities for each collaborator involved).

Results: Following 19,036 database hits (up to 15/03/2018), data limitation was applied for the period 01/01/2009 until 15/03/2018 generating 1,955 hits. In total, 43 papers (37 studies) were included in a narrative synthesis (Figure 1). The included studies were quantitative (29/43), qualitative (7/43) or mixed methods (7/43). Whilst many studies investigated existing collaborations, many involved the research teams in a key role as initiators/coordinators of the service (33/43). Included papers mainly focused on evaluating collaborative services (29/43) rather than specifically exploring a model's characteristics and how they influenced its performance (2/43 and 11/43, respectively). CPs' effectiveness as team members varied in terms of clinical, process and financial outcomes. The identified models were categorised into five main groups. The most common factors of successful models included the CP collecting patient information, discussion with healthcare professional(s) to produce a care plan/report (with/without patient involvement), and patient follow-up by the CP/GP.

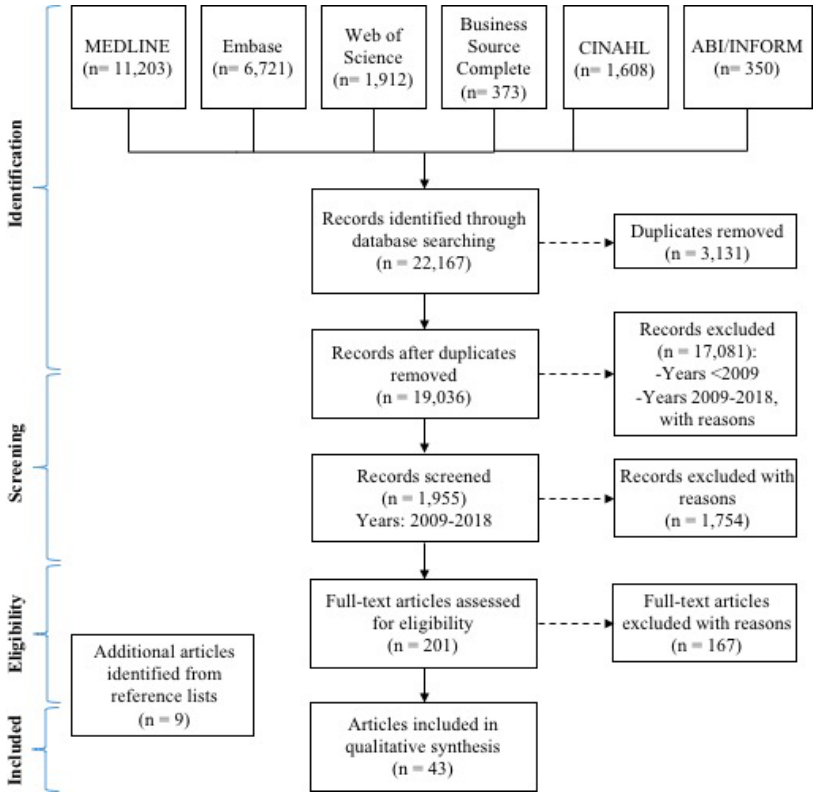

Figure 1. Adapted PRISMA flowchart[2]

Analysis of the identified models' purpose, drivers, CPs' location, clarity on responsibilities and communication reflected characteristics of the seven existing conceptual models.

Conclusions: This review identified key features of CP-GP collaborations worldwide. A limitation of this review was that despite standardised data extraction, not all studies presented every element in each model, which was outlined in the research objectives (e.g. drivers). Further research on current collaborative working between CPs and GPs in primary care is required to provide evidence-based recommendations for daily practice and policy on improving the flow of primary care services through successful CP-GP collaborations, while maintaining pharmacy resources within the community.

References

1 NHS, 2019. *The NHS Long Term Plan*. England. Available from: https://www.longtermplan.nhs.uk/wp-content/uploads/2019/01/nhs-long-term-plan.pdf [Accessed 13/02/2019]

2 Moher, D., Liberati, A., Tetzlaff, J., Altman, D. and Group, T.P., 2009. *Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement*. PLoS Med, 6(7), p.e1000097.

Patient Safety

Using patient-held information about medicines to enhance patient safety: a mixed methods study

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Introduction: Poor transfer of information about medicines across healthcare settings has been identified as a major cause of medication errors.[1] Many patients who take medication carry patient-held information about medicines ('PHIMed'). However, it is not known how PHIMed is used to improve patient safety, nor what its key features are.

Aim: To identify how PHIMed is used to support patient safety, key features that support this, and barriers and facilitators to its use.

Methods: We used a mixed-methods design comprising two focus groups with patients and carers, 16 semi-structured interviews with healthcare professionals, 60 semi-structured interviews with PHIMed users, a quantitative features analysis of PHIMed solutions available in the UK, and usability testing of four PHIMed tools. We used purposive sampling to recruit participants through our personal and professional networks, a clinical research network and support groups. We searched the literature, app stores and data collected from participants to identify PHIMed solutions available in the UK. Findings were triangulated using thematic analysis, with Distributed Cognition for Teamwork (DiCoT) models[2] used as sensitising concepts. Lay members of our advisory group contributed to data analysis alongside researchers.
Results: We identified a wide range of mechanisms through which PHIMed improved patient safety. These included: creating connectivity between disjointed care settings, enhancing situation awareness (‘*Hang on, I am on this as well. Is it ok to be on [them] together?’)*, enabling patients to check they were being given the correct medication, ease of communication during consultations, acting as an *aide-memoire* for patients during appointments, empowering patients to understand more about their own medicines, reminding the patient to take their medicines, and reminders to reorder. Different PHIMed tools met different needs. However, of 103 tools examined (61 digital, 42 paper-based), none met the core needs of all users that had been identified from the data. A key barrier to PHIMed use was lack of patient and carer awareness that healthcare information systems can be fragmented, which meant that they had not identified a need for PHIMed *(‘I always assumed the hospitals would know [what medicines I was taking]*’). PHIMed use was facilitated by encouragement from healthcare professionals.
Conclusions: This is the first in-depth study of a wide range of PHIMed solutions. We considered contextual factors relating to the use of PHIMed as well as the tools themselves. Other strengths of the study are our relatively large and varied sample for qualitative work, our mixed methods design and our strong patient and public involvement. The study was limited to one geographical area at one point in time. However, the main findings are likely to be relevant across settings. Our findings suggest that PHIMed can contribute to the reduction of medication-related risk. Interventions are needed to raise awareness of the role of PHIMed in enhancing patient safety. Such interventions should empower patients to identify a method that suits them best from a range of options, avoiding a ‘one size fits all’ approach.

References

1. Kwan JL, Lo L, Sampson M, Shojania KG. Medication reconciliation during transitions of care as a patient safety strategy: a systematic review. Ann Intern Med 2013;158(5 Pt 2):397–403.
2. Blandford A, Furniss D. DiCoT. A Methodology for Applying Distributed Cognition to the Design of Teamworking Systems. Proceedings of the 12th international conference on Interactive Systems 2005;5:26–38.

A qualitative exploration of the strengths and weaknesses of Jordan’s pharmacovigilance system

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Introduction: Pharmacovigilance (PV) plays a vital role in ensuring medicines’ safety. Although PV is generally well established in developed nations, it remains largely underdeveloped in the Arab World. In an initiative to unify PV practice across the Arab World, the ‘guideline on good PV practices (GPVP) for Arab countries’ was created by the League of Arab States’ Higher Technical Committee for Medicines[1]. Four years have since passed, yet little is known about how countries in the region have implemented the guideline. A better understanding of the strengths and weaknesses of the more developed systems within the Arab World will improve policy development and implementation in lesser developed ones.
Aim: As part of a wider programme to inform the implementation of the GPVP for Arab countries in Arab countries with nascent pharmacovigilance systems; this study aimed to identify the main strengths and weaknesses of the PV system in Jordan, an Arab country which has a well-established national PV centre (NPVC) as part of its drug regulatory authority.
Methods: Semi-structured face-to-face interviews were conducted with individuals involved in the implementation of the PV policy in the Jordan Food and Drug Administration (JFDA), regional PV centres, and pharmaceutical companies operating in the country. Following JFDA and university ethics committee approval, purposive and snowball sampling was used to recruit eligible participants, who were emailed study details via a gatekeeper at the JFDA. Interviews were audio-recorded with written consent, transcribed verbatim, and analysed using thematic framework analysis.
Results: Sixteen participants were interviewed: five from the JFDA, two from regional PV centres, and nine from pharmaceutical companies. The major perceived strengths of Jordan’s PV system can be grouped into three main themes: 1) the NPVC, (2) the country’s PV policy and guideline, and (3) other general factors. In terms of the NPVC, this included its early establishment and membership in the WHO Programme for International Drug Monitoring (PIDM). Regarding the country’s PV policy, examples were its use of the Arab and EU GPVP guidelines as a basis, feasibility in terms of

implementation, and domestic focus. With respect to other general factors, these included the presence of regional PV centres covering the entire country as well as increasing awareness levels amongst reporters regarding PV. The perceived weaknesses centred on five themes: (i) reporting-related issues, (ii) lack of resources, (iii) NPVC deficiencies, (iv) regional PV centres' issues, and (v) pharmaceutical companies-related issues. One example of reporting-related issues was under-reporting. Lack of resources included both human and financial. NPVC deficiencies included its lack of independence from the JFDA, and its staff's lack of continuous training. Examples of regional PV centres' issues were lack of interconnectivity and autonomy. Finally, with respect to pharmaceutical company-related issues, these included the absence of a dedicated PV department and personnel.

Conclusions: This study offers detailed insights into the strengths and weaknesses of Jordan's PV system, which will provide valuable insights for other Arab countries with nascent PV systems to design or improve their PV systems. Future work will involve exploring the strengths and weaknesses in two other Arab countries with less well-developed PV systems than Jordan's in order to compare and contrast the differences between the three countries. This will facilitate making recommendations for the development of a more robust PV system in Arab World countries with nascent PV systems.

Reference

1. League of Arab States. Guideline on good pharmacovigilance practice (GVP) for Arab countries. Cairo: League of Arab States; 2014.

Defining a medicines related serious incident – an E-Delphi study

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Introduction: Serious Incidents (SIs), are defined as adverse events which causes considerable harm to patients, families, carers and staff, include never events, and/or events that have a negative impact on the reputation and ability of an organisation to deliver effective and quality healthcare service. Government requires a detailed investigation to be undertaken of all SIs occurring within the National Health Service (NHS) and hold organisations accountable for implementing actions to address identified concerns. Between 2017/18, approximately 2660 medication safety incidents were reported by NHS Wales to the UK National Reporting and Learning System[1]. Based on the SI definition and extrapolation of patient harm data, approximately 110 medicines related SI reports were anticipated that year. However, only three medication-related SIs were reported during the year. This under-reporting may be attributed to a poor understanding of the SI definition and lack of explicit guidance on medication incidents constituting a SI. This study aimed to develop a practitioner-led consensus definition of a medicines related SI to inform policy and practice.

Method: Consensus was determined through use of a three-staged electronic-Delphi technique. An anonymous survey was distributed by e-mail to an international panel of 107 practitioners (physicians, surgeons, pharmacists, nurses and risk managers). Participants were asked to rate the extent to which they agreed with the general definition of a SI and 30 clinical scenarios representing a medicine-related SI. Clinical scenarios encompassed a range of medication incident types (e.g. prescribing, dispensing, preparation, administration and monitoring errors), different medication, level of patient harm and preventability. Participants were asked to rate agreement on a 5-point Likert scale from strongly disagree to strongly agree. Consensus was defined as 80% agreement.

Results: Responses were obtained from 22% (23/107), 70% (16/23) and 69% (11/16) of respondents in each round respectively. Consensus was achieved for the current SI definition. The panel were in agreements that the SI definition should also include: adverse events with the potential to cause permanent harm or death; involve deliberate harm; result in reproductive toxicity; involve medicines subject to a Government patient safety alert/notice; are attributable to a medical device; result in overdose of a prescribed/unprescribed medication (regardless of the medication involved); administration to the incorrect patient; involve lack or inappropriate monitoring of medication and the prescribing and/or administration of a medication to which the patient has a known allergy.

Discussion: Despite the low response rate to the initial survey, the general SI definition was considered applicable to medicines related SIs by international experts. However, an expanded list of incident types that constitute a medicine-related SI was developed. It is proposed that use of this revised and explicit definition of a medicine-related SI would facilitate reporting and learning from medication incidents at an organisational and national level, thereby safeguarding patient safety and ensuring excellence in clinical care. However, the application of the definition in practice was not evaluated. Further work is needed to validate and test the definition for user acceptability through application to real-life situations occurring in clinical practice.

Reference

1. Welsh Government. Data workbooks and explorer tool based on incidents reported to the National Reporting and Learning System (NRLS). (2018). https://www.gov.wales [accessed 23rd August 2018]

Adverse drug reactions in UK primary care consultations: a retrospective cohort study to evaluate impact on appointments and treatment discontinuation

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Introduction: Adverse drug reactions (ADRs) are directly cause morbidity, hospitalization and mortality. Patient concerns about ADRs are associated with treatment non-adherence and escalation and healthcare seeking, further increasing the burden of illness on patients. Pharmacists have a key role in informing patients about adverse effects and supporting them to make decisions about treatment. No study has explored the overall burden of ADRs in UK general practice.
Aim: To quantify the prevalence of ADR-related consultations in UK primary care and impact on primary care appointments and treatment discontinuation.
Methods: We conducted a retrospective cohort study using routinely collected data from UK primary care practices participating in the Clinical Practice Research Datalink (CPRD). As per CPRD procedures, Independent Scientific Advisory Committee approval was sought prior to accessing anonymised patient-level data Patients prescribed at least one medication who discussed an ADR in a consultation in 2014 were identified and they were followed up until the end of 2015. We compared their rates of subsequent consultations and treatment discontinuation in 2015 to those of matched controls (by age, gender, practice and whether they had a GP consultation within 3 months of the case's ADR-related consultation) who had no ADR-related consultation using zero-inflated Poisson regression. We calculated the incidence rate ratios (IRR) and the 95% confidence intervals to compare consultation rates between the ADR and control groups.
Results: In 2014, 96,865 patients, equivalent to 3% of all patients had at least one ADR-related consultation. Of these, 96,087 were matched to 190,977 controls (up to 2 controls per case) who had no ADR-related consultation. Women were more likely to have an ADR-related consultation than men (65% vs 35%). There was a 33.1% increase in consultation rate for 2015 (IRR 1.331, 95% CI 1.329 to 1.333) in the ADR group compared with the control group with a median number of consultations per patient of 33 (interquartile range (IQR), 19–52) in the ADR group and 20 (IQR, 11–34) in the control group. Treatment discontinuation in 2015 was higher in patients with an ADR-related consultation in 2014, than patients without an ADR-related consultation. For example, 10.1% patients with an ADR-related consultation in 2014 discontinued aspirin in the following year, whereas only 6.5% of controls did so.
Conclusion: ADRs place a significant burden on UK primary care and UK patients, with 3% of patients having ADR-related consultations, equivalent to approximately 1.57 million people per year. These patients subsequently have increased rates of treatment discontinuation and consultations in primary care, suggesting that they may have poorer disease management or unmet needs. This study has limitations including: 1) many ADRs may not be discussed by patients with primary care providers or recorded in the CPRD meaning that these findings will not represent the full picture of ADRs in UK primary care; 2) we only took a 'snapshot' of follow-up consultations and discontinuation in 2015 and so it is likely that additional discontinuations and consultations may have occurred, and 3) it is not possible to draw a causal link between ADR-related consultations and these outcomes. However, our results highlight that there may be missed opportunities to reduce healthcare utilization, patient morbidity and treatment discontinuation during ADR-related consultations in UK primary care. It is not known whether the recent focus on practice-based pharmacists will address this need.

Undergraduate Education

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

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Introduction: Longitudinal clinical placements are defined as involving "a regular, recurrent placement in the same setting with the same supervisor over a period of time". The underlying mechanism promoting learning is "continuity" in its varying forms of patient, supervisor and longitudinal exposure. Longitudinal placements have been reported to promote learning by establishing more opportunities for connection with patients ("continuity of care"), integrating knowledge, skills and attitudes across science and practice ("continuity of curriculum") and enhancing supervision, role modelling and mentoring ("continuity of supervision")[1]. The longitudinal community pharmacy placement (LCPP) in the institution was designed for second year students to attend the same community pharmacy site for a half day each week for 12 weeks.

Aim: This study sought to answer the question: Does an early longitudinal community practice placement for pharmacy students promote learning by establishing more opportunities for connection with patients, curriculum integration and professional engagement?
Methods: This was an explanatory mixed methods study. Data for the quantitative before and after study were collected using a validated tool called the Student Pharmacist Inventory of Professional Engagement (S-PIPE)[2] and the questionnaire, also contained questions related to connection with patients and curriculum integration. Qualitative semi-structured interviews, focussed on continuity of care, curriculum and supervision, with students, supervisors and practice-educators were conducted following the 12-week longitudinal placement. The interviews focused on continuity of care, curriculum and supervision and were thematically analysed.
Results: 78% ($n = 47/60$) students completed the questionnaire. Significant increases in the sum scores for professional engagement (S-PIPE) and sub-scores for belonging, meaningful experience and connectedness were recorded post-placement. Some increases were recorded relating to connection with patients. The majority of students agreed that the placement helped them to contextualise and apply knowledge learned from modules. 13 students and 12 pharmacists were interviewed. Most participants described the placement supporting curriculum integration, considering the suggested learning activities very useful to promote integration of module content and practice. Continuity of care was not as widely discussed as some pharmacists had seen this as more of an observational placements and students saying they did not get the chance to speak to patients. However, some pharmacists allowed their students to serve customers and practice patient counselling, which from a student lens was very useful, particularly when they built relationships with patients they saw recurrently. Pharmacists and students felt that the longitudinal nature of the placement promoted building a professional working relationship over time. However, some pharmacists were not there on a number of student placement days, limiting the opportunity to build a relationship and students felt that days where locums were working were less beneficial.
Conclusions: The LCPP promotes professional engagement through role modelling, professional working relationships and repeated supervisor interactions. Curriculum integration is promoted through learning activities, and the longitudinal nature of the placement allowed for opportunities to link to modules being studied at the same time and for linking to more modules. Patient-centred beliefs are promoted but issues including not seeing interaction to completion and inconsistences in level of interaction with patients, depending on placement. Possible issues to be addressed include reviewing the 3 hours' duration of the day and more guidance on the expected level of interaction with patients.

References

1. Thistlethwaite J, Bartle E, Chong A, Dick M, King D, Mahoney S et al. A review of longitudinal community and hospital placements in medical education: BEME Guide No. 26. Medical Teacher. 2013;35(8):e1340–e1364.
2. Aronson B, Janke K. Measuring a state of mind indicative of thriving using the Student Pharmacist Inventory of Professional Engagement (S-PIPE). Research in Social and Administrative Pharmacy. 2018;14(7):678–685.

Pharmacy Longitudinal Clerkship (PLC): a pilot placement developing MPharm students' clinical skills for patient-centred care through general practice integration in remote and rural settings

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Introduction: Research in older people in remote and rural (R&R) areas shows a lack of access to pharmacy services[1] but pharmacists offer value in R&R General Practices.[2] Undergraduate R&R Longitudinal Integrated Clerkships exist in medicine courses and a pilot R&R Pharmacy Longitudinal Clerkship (PLC) was supported by the Scottish Government and NHS Education for Scotland to enhance student clinical skills for patient-centred care (PCC) and help recruitment issues. Enhancing PCC through experiential learning and clinical skills development supports a 5 Year integrated MPharm.
Aim: To identify, characterise and quantify the structures and processes for a PLC and explore the outcomes arising including the views and experiences of all participants.
Method: The 11-week PLC was based in GP practices in the NHS Highland Board area. Mixed methods were used for data generation. Information on structures and processes was systematically gathered throughout the project. The outcomes were explored through qualitative methods using semi-structured interviews with participating students and GP tutors. Informed written consent was obtained from all participants. An interview schedule was developed and piloted using the Theoretical Domains Framework (TDF). Interviews were audio-recorded, transcribed verbatim and analysed using thematic analysis.
Results: Structures (resources) and processes required for a PLC were identified and included; overarching learning outcomes, training timetable induction and support tutorials, quantification of funding required for student travel and accommodation and GP Practice contracts and

payment, requirements for and cost of clinical equipment 'Kit Bag' for each student, robust processes for student recruitment, liaison and communication with GP practices, and student attendance monitoring and support. Interviews evaluating outcomes have been carried out with 2 students that completed the pilot PLC to-date and the 2 linked GP tutors. Emerging themes from students include; greater understanding of PCC and application of knowledge and skills: *"I did use my knowledge quite a lot and it does get you thinking 'cause they're real patients"[SP1], "it's totally different with a real life patient"[SP2]*, increased confidence and optimism: *"I feel like I've just become more and more confident"*[SP1], *"I do know that I can solve problems"*[SP2], *"I feel more prepared for what's coming"*[SP2] and excitement for being a pharmacist: *"excited to start pre-reg and actually be a pharmacist"* [SP1]. For GP tutors, themes included Issues/challenges/differences – supporting pharmacy v medical students, positive experiences and personal development, concerns and need for enhanced 'clinical' preparation.

Conclusion: The outcomes of this pilot, although limited by number of participants and settings, were extremely positive in terms of student and tutor experience and information has been garnered on requirements for resources and processes for future development. As a result, funding has been secured to extend it for five students to five GP practices each year for the next two years. Evaluation of outcomes will continue; further work will include longitudinal follow-up of students to determine the success of the programme in enabling students to progress to advanced level clinical practice in R&R settings.

References

1. Rushworth GF, Cunningham S, Pfleger S, Hall J, Stewart D. A cross-sectional survey of the access of older people in the Scottish Highlands to general medical practices, community pharmacies and prescription medicines. Research in Social and Administrative Pharmacy 2017; pii: S1551-7411 (16) 30400-4. https://doi.org/10.1016/j.sapharm.2017.01.002.
2. Stewart D, Anthony B, Morrison C, MacRae Y, Dixon L, Friel E, Yoong E, Cunningham S, MacLure K. (2017) Evaluating pharmacist input into the pharmaceutical care of patients in dispensing medical practices in remote and rural areas of Scotland. Family Practice 2017;34(4):491–499.

Pharmacy practice orientation: an investigation of final year students' career preferences

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Introduction: New models for pharmacy practice aim to increase pharmacy's contribution to patient outcomes. If pharmacy graduates are to adopt the patient-focused, clinical-service practice orientation underpinning these models an understanding of how practice orientation is shaped during undergraduate education is needed. While experiential learning exposes students to practice, in the context of limited curriculum opportunities, in this study, we investigate the extent to which practice experience contributes to pharmacy students' practice orientation and career preferences.

Aim: To identify final year pharmacy students' Professional Practice Orientation (PPO), and the association between this, practice experience, commitment to practice and career preferences.

Methods: Final year undergraduate pharmacy students from five MPharm programmes ($n = 465$) were invited to complete a survey capturing number of placements completed in hospital and community pharmacy during each year of their MPharm, career preference, commitment to practice, and Professional Practice Orientation (PPO). PPO was measured using an adapted validated tool assessing pharmacy service orientation[1]. In our study PPO was operationalised via three dimensions: orientation (preference for clinical vs business career); focus (patient vs medicine career preference) and future career pathway (alternative vs traditional career preference). Variation in PPO, calculated as the mean of the three scales, was investigated using t-tests and ANOVA; a lower PPO score indicated preference for a clinical rather than business career, a focus on the patient compared with the medicine, and an alternative career pathway compared with a traditional one; correlation between PPO and total number of MPharm practice placements was also investigated.

Results: Three hundred and fifty-two students completed the survey (75.7% response rate). Most students ($n = 351$; 99.4%) had at least one placement in both community and hospital pharmacy organised by their programme and many also self-organised a placement in hospital ($n = 118$) and community pharmacy ($n = 240$). Mean number of placements in community and hospital pharmacy varied significantly between the programmes ($P < 0.001$) (range 8–16 for both community and pharmacy placements). Mean PPO score was 12.36; no correlation with total community or pharmacy placements was found ($P > 0.05$), suggesting placements had not influenced respondents' practice orientation. Students with a preference for a community pharmacy career scored significantly higher than those with a preference for hospital pharmacy, indicating a practice orientation towards business, focused more on medicines than patients and following a traditional career pathway amongst this subgroup (mean 13.54 vs 10.95; $P < 0.001$); those strongly committed to practising pharmacy scored significantly lower than those whose commitment was weak (mean 11.93 vs. 13.37; $P = 0.002$).

Conclusion: While limited by the use of an adapted tool for measuring pharmacy practice orientation and lack of data capturing duration or content of practice experience, findings provide some insight into final year students' career preferences and orientation towards future practice. Noticeably, while new models for practice are organised around a concept of the patient as the 'social object' of pharmacy, respondents preferring a career in community pharmacy were more likely to have been orientated towards medicines and on business priorities, despite policy-makers' emphasis on the need for this sector to increasingly provide patient-centred, clinical services.

Reference

1. Clark BE, Mount JK. Pharmacy service orientation: a measure of organizational culture in pharmacy practice sites. Research in Social and Administrative Pharmacy. 2006; 2(1).

An evaluation of pharmacy student use and perceptions of lecture-capture podcasting

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Introduction: Blended learning is used by pharmacy schools in the UK, where didactic teaching is used alongside novel methods such as simulation. As students are frequently familiar with newer technology, many universities have also implemented lecture-capture podcasting (live video recording of slides with audio of lecturer narrative) as a tool to supplement learning. Emerging research suggests that it is popular[1] and that pharmacy students are well engaged[2]. A key advantage of podcasts is that they can be accessed at any time and played multiple times. However, there is mixed opinion on whether podcasting decreases engagement with lectures and its effect on academic performance. There is therefore a need to better understand how students use podcasts and their perceptions of them.
Aim: To investigate how pharmacy undergraduates engage with lecture capture podcasts to facilitate their learning and their perceptions of their usefulness.
Methods: A questionnaire was distributed to all pharmacy undergraduates at a university in the north of England. An information sheet was emailed a week before, with the questionnaire distributed during compulsory classes over a one-week period. Participants gave their consent by ticking a box on the front of the questionnaire. Questions explored frequency of access, how and when podcasts were used and perceptions on usefulness. A combination of closed questions to explore podcast use, and 10-point rating scales and free text comments to capture student perceptions were used. Data from completed questionnaires were entered onto Microsoft Excel; simple descriptive statistics were used to analyse the numerical data and a thematic analysis performed on comments provided.
Results: There were 441 questionnaires completed (response rate of 73%). Analysis of quantitative data revealed that the majority of students (249, 56.5%) watched full podcasts on a single occasion with fewer skipping to specific parts for a single clarification (74, 16.9%). Notably, reported podcast use was greater across all year groups for modules assessed by examination with access predominantly in the week following the lecture and before examinations. Analysis of respondent comments identified two themes around lecture attendance and study habits; podcasts helped students catch up on missed lectures and allowed them to revisit difficult content. However, some comments revealed behaviours of concern to educators; the need to capture lectures verbatim and justification to not attend lectures: *".. allows you to write up everything the lecturer says enabling you to never miss a single detail". "I mostly don't come to lectures because I know that I can access it via podcasts."*
Conclusion: This study achieved a good response rate and provided further insight into the varied ways in which undergraduates engage with podcasts. The study was limited to one university and so findings may not be generalisable, and student responses were not linked with assessment marks to explore effects on performance. The study was further limited by a lack of subgroup analysis (e.g. mature students), due to insufficient respondents. There is still scant evidence on the educational advantages of podcasts and how students should use them in order to improve assessment performance, which are important areas for future research.

References

1. Scutter S, Stupans I, Sawyer T, King, S. How do students use podcasts to support learning? Australasian Journal of Educational Technology. 2010; 26(2):180–191.
2. Pearce K, Scutter S. Podcasting of health sciences lectures: Benefits for students from a non-English speaking background. Australasian Journal of Educational Technology. 2010; 26(7):1028–1041.

Users' and Caregivers' Views

Caregivers' perspectives of pain assessment and management in people with advanced and end-stage dementia: a qualitative analysis of an online discussion forum

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Introduction: Pain assessment and management in advanced and end-stage dementia are challenging; in these stages of dementia, people are often unable to effectively communicate their pain, which increases the risk of under-assessment and under-treatment of pain in this vulnerable patient population[1]. Little is known about the experiences of informal caregivers (family members, friends) of people with advanced and end-stage dementia with regard to pain assessment and management.
Aim: The aim of this study was to investigate the experiences of informal caregivers of people with advanced and end-stage dementia with respect to pain assessment and management. Study objectives were to systematically search the discussion threads and posts of the online Talking Point discussion forum, hosted by the Alzheimer's Society for anyone affected by dementia, to explore the experiences of caregivers and family members of people with advanced dementia in assessment and management of pain nearing the end of life.
Method: Qualitative analysis of archived discussion threads and posts of the Talking Point online forum. All threads between 2005 and January 2019 were searched using combinations of the following search terms: 'pain', 'pain assessment', 'pain management', 'dementia', 'advanced dementia', 'severe dementia', 'pain relief', analgesia', 'end of life', 'morphine', 'fentanyl', 'syringe driver', 'paracetamol', 'codeine', 'diamorphine', 'buprenorphine', 'patch', 'oxycodone'. Brand names were searched: 'Oxynorm', 'Oxycontin', 'MST', 'Sevredol', 'Mezolar', 'Butec', 'Butrans'. Relevant threads were analysed thematically. The School of Pharmacy Ethics Committee granted ethical approval for the study and the Alzheimer's Society granted permission for use of archived discussions from the Talking Point website.
Results: The search yielded 118 posts made by 79 users within 53 threads, which spanned the full period of forum activity. Seven key themes emerged from data analysis: (1) the importance of being comfortable, pain free and dignified; (2) inadequate/inappropriate assessment and management of pain; (3) healthcare professional/family fears over 'strong' pain relief; (4) fighting or advocating for pain relief; (5) timely access to pain relief; (6) interactions/communication with healthcare professionals and other family members; and (7) emotional burden and impact on caregivers.
Conclusion: This is the first study to provide an insight into caregivers' experiences and perspectives of assessment and management of pain in end-stage dementia. It highlights the complexity and the difficulties encountered by caregivers in achieving adequate pain assessment and management in this vulnerable patient population. Further research into how expectations of caregivers can be met to ensure a comfortable, pain-free death is warranted. The strength of this study lies in the analysis of posts from an online discussion forum, which represents a large data source. Talking Point users were anonymous and the forum can be considered to be a large naturally occurring focus group; the risk of social desirability bias was therefore minimized. Limitations must be considered in interpreting the study findings; one website was analysed therefore generalizability or transferability to a wider population cannot be assumed.

Reference

1. De Witt Jansen B, Brazil K, Passmore P, Buchanan H, Maxwell D, McIlfatrick SJ, Morgan SM, Watson M, Parsons C. Evaluation of the impact of telementoring using ECHO© technology on healthcare professionals' knowledge and self-efficacy in assessing and managing pain for people with advanced dementia nearing the end of life. BMC Health Serv Res 2018;18:228.

A qualitative study exploring service users' experiences of NHS patient medicines helpline services

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Introduction: Patient medicines helpline services (PMHS) have been set up at some National Health Service (NHS) Trusts in the UK, with the aim of providing a medicines information service to recently discharged hospital patients and their carers. Seeking to understand the experiences of service users may result in improved healthcare services, and a recent systematic review highlighted that, to date, studies of PMHS have predominantly examined the views of service users using user satisfaction surveys[1]. However, survey studies have limitations, such as not enabling participants to provide information that is important to them, nor allowing participants to respond using their own words. Surveys are therefore not well suited to explore why and in what ways services are useful, nor how they could be improved. In order to achieve this, qualitative methods would be more appropriate.
Aim: In order to explore the benefits and potential limitations of PMHS, and thus develop recommendations for service improvement, the following research question

was to be addressed: What are patients' and carers' experiences of using an NHS PMHS?
Methods: Recruitment was conducted via seven NHS Trusts in England (four acute Trusts, one mental health Trust, one specialist Trust, and one community Trust). Invitations to participate were sent from Trusts to helpline enquirers who agreed to receive study information. Interested individuals contacted the research team to participate. Study materials (interview schedule, study information sheet) were reviewed by seven members of the public (recent patients and carers) prior to their use. The interview schedule primarily focused upon the enquiry reason, perceived helpfulness of the service, perceived ways to improve the service, perceived impact of the use of the service, and what would have been done had the PMHS not existed. Semi-structured interviews were conducted via telephone. Interviews were audio-recorded and transcribed verbatim. Transcripts were imported to NVivo (version 12) and analysed using thematic analysis[2].
Results: Forty service users participated in this study (patients = 33%, carers = 18%; female = 58%, male = 42%; White or White British = 95%, predominantly having used a PMHS from an acute NHS Trust, 95%). Two themes were generated from the analysis: *Timeliness*, and *Best-placed to help*. The findings illustrate how PMHS provide support during the uncertain transition of care period, when patients and carers often feel vulnerable because support is less available. Participants described how PMHS met their need for timely and easily accessible support and quick resolution of their queries. However, there was recognition that PMHS could be improved by being available during evenings and weekends, and also by increasing their promotion. PMHS were perceived as being best-placed to help to answer enquiries that arose from hospital care. Participants described feeling reassured from speaking to pharmacy professionals, and PMHS were perceived as the optimal service in terms of knowledge and expertise regarding questions about medicines.
Conclusions: This study highlights that PMHS are seen as a valuable means of accessing timely medicines-related support at a time when patients and carers may be feeling particularly vulnerable. However, PMHS could be improved by being available during evenings and weekends, and by increasing their promotion. We recommend that providers of PMHS consider whether this is achievable, in order to better meet the needs of service users.

References

1. Williams MJ, Jordan AL, Scott JA, Jones MD. A systematic review examining the effectiveness of medicines information services for patients and the general public. International Journal of Pharmacy Practice, 2019.
2. Braun V, Clarke V. Successful Qualitative Research. A Practical Guide for Beginners. London, UK: Sage Publications Ltd; 2013.

Perceptions of migraine and experiences of its management: a qualitative study using theoretical framework analysis

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Introduction: Migraines can have negative effects on many areas of a person's quality of life, such as social, work and family life. The physical impact on the individual can also result in negative feelings, such as depression. Migraine sufferers develop different coping strategies to manage their condition, which often include both pharmacological and non-pharmacological treatment. It is important that pharmacy professionals have a good understanding of how patients make decisions about what migraine treatments to take and when, in order to play an effective role in helping to manage their condition. A number of health psychology theories have been developed to understand human behaviour in response to illness, such as Leventhal's Common Sense – Self-Regulatory Model (CS-SRM)[1].
Aim: To explore individuals' experiences and perceptions of migraines and their treatment.
Methods: A qualitative methodology was adopted using one-to-one semi-structured interviews. An interview schedule was designed based on the five components of the CS-SRM[1] applied to migraines to capture perceptions of identity, cause, time-line, cure-control and consequences. Other open-ended questions related to experiences of migraines and its management. Inclusion criteria were individuals over 18 years whom had experienced at least one migraine in the last six months. Participants were recruited via snowball-sampling, starting with an email invitation to individuals known to the research team. Interviews were audio-recorded, transcribed verbatim and theoretical framework analysis was conducted, followed by thematic analysis for data that did not map onto the theory[2].
Results: Of the eleven participants interviewed, nine were females and ages ranged from 20 to 59 years. Nine were educated to degree level or above and five had a background in healthcare disciplines. Four overarching themes emerged from the data. Three themes mapped directly on to the CS-SRM. These were: 1) Emotional illness representations (two sub-themes a. Life-related and b. Disease-specific); 2) Cognitive illness representations (five sub-themes a. Identity, b. Cause, c. Timeline, d. Control/cure and e. Consequences); 3) Behaviour (two sub-themes a. Seeking advice and b. Medicine-taking). One further overarching theme emerged from the remaining data, 4) Attitude towards migraine (two sub-themes a. Treatment-related and b. Disease-related).
Conclusion: Theoretical framework analysis was successfully employed in this small-scale study, since participants' experiences and perceptions of migraines mapped on to all elements of the psychological theory utilised, the CS-SRM. The findings highlighted a number of different treatment-related and disease-specific issues, which influenced the

personal strategies adopted for managing migraines. Additionally, the emotional aspect of the condition was a strong feature of the interviews. These are all important considerations when consulting with patients who experience migraines. The study had a number of limitations due to the likelihood of sampling bias due to the method of recruitment and small number of interviews. However, these data provide a good basis for the next quantitative phase of the research, to design a questionnaire to capture the perceptions and experiences of a larger sample of migraine sufferers from a more diverse population.

References

1. Leventhal H, Meyer D & Nerenz D (1980). The common sense representation of illness danger. In Medical Psychology, Edited by: Rachman S. 27–30. New York, NY: Pergamon.
2. Gale N, Heath G, Cameron E et al (2013). Using the framework method for the analysis of qualitative data in multi-disciplinary health research. *BMC Medical Research Methodology*, 13, 117. https://doi.org/10.1186/1471-2288-13-117.

Web-based video consultations: are they acceptable to patients with Chronic Myeloid Leukaemia (CML)?

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Introduction: In recent years there has been a rise in offering web-based video consultations in the NHS and private healthcare. In 2015, the Independent Cancer Taskforce recommended a review of "how digital technologies might be used to drive improvements in patient experience"[1] for example by minimising the need for some patients to travel to appointments. CML is a chronic cancer and some patients are stable on long term treatment. Providing clinical tests were undertaken locally to their home, a video consultation could save such patients travelling to a specialist centre. The VOCAL study[2] is one of the few published studies on video consultations with cancer patients, using Skype to support a NHS hepato-pancreato-biliary cancer service. This paper identified a need to analyse the acceptability of this type of service.

Aim: To explore whether it would be acceptable to CML patients at a NHS tertiary cancer centre to have follow-up appointments using web-based video consultations and evaluate their experience.

Methods: A mixed methods study was undertaken using semi-structured interviews, focus groups and a questionnaire. Interviews were conducted with CML patients from the cancer centre, and focus groups with patients recruited across the UK with the aim of comparing views and experiences of patients across the wider CML population. Eligible interview participants were identified using purposeful sampling. Focus group participants were recruited through Bloodwise Ambassadors, CML Support and support groups via Facebook. The questionnaire was developed using questions from the National Cancer Patient Experience Survey (NCPES) and findings following a literature review, which also informed the focus group and interview topic guides. Written consent was received from patients before participation. The questionnaire was reviewed by a non-participating CML patient and all participants completed a paper version as part of the interview or focus group. Interviews and focus groups were audio-recorded and transcribed verbatim before undergoing thematic analysis.

Results: For two focus groups, $n = 8$ and interviews $n = 5$, Table 1 shows the common themes. All participants ($n = 13$) completed the questionnaire. Questions relating to education on side effects scored lower than the national average. However, the question about involvement in decisions about care and treatment, the focus group participants scored this at 86% and interview participants at 80% vs a national score of 77% in 2018.

Table 1. Common Qualitative Themes

Theme	Participant Quote
Standards of Care	"…they lost my blood five times…."" the lab should be certified, we need to be sure that they will send it within time"
Continuity of the team	"I would say the web based consultation, whatever it is, if it chopped around from different people all the time it really wouldn't be a good idea…"
Flexibility	"I don't think it has to be either or, I think that's of a hybrid, could probably work very well."
NHS Context	"I think a web based consultation would be perfectly acceptable, but only if the efficiencies are generated……"

Conclusion: The qualitative aspect of the study may have limited the number of participants however, it allowed for exploration in greater depth and themes to emerge to inform future studies on video consultation acceptability. The results suggest certain factors relating to patient experience need to be considered before launching such a service and acceptability varied depending on the management of these factors. However, most participants would be accepting of such a service if the NHS benefitted.

References

1. Independent Cancer Taskforce *Achieving world-class cancer outcomes: a strategy for England 2015–2020*. Cancer Research UK; 2015
2. Greenhalgh T, *et al*. Virtual online consultations: advantages and limitations (VOCAL) study. *BMJ Open*. [online] 2016; 6; e009388. [Accessed 30th March 2017]. Available: https://doi.org/10.1136/bmjopen-2015-009388