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# Posters
## Practice research

## 0021
## How do pharmacists and nurses learn to prescribe – a qualitative study

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### Focal points

- The aim of this study was to explore the prescribing-related experiences of secondary care pharmacists and nurses on the independent prescribing course.
- Students were continuously reflecting on their knowledge and skills by actively implementing new knowledge to practice.
- There is a need to engage prescribing skills in a more integrated approach into the workplace environment during the period of learning to prescribe.

### Introduction

Assessment of individual competencies, established through competency-based education (CBE) underpins the independent prescribing (IP) course. The theory of expertise model (TEM), developed to assess the literature on medical students learning to prescribe, proposes individuals deliberately engage their knowledge, skills and attitudes within a social context [(1)]. This method is used to develop expertise through an integration of prescribing skills, rather than individually assessing competencies. Non-medical prescribing literature reports concerns on the diagnostic and physical examination skills of pharmacists, and pharmacological knowledge of nurses. In order to understand why there are such reports, we aimed to explore the experience and learning processes of pharmacists and nurses learning to prescribe.

### Methods

Universities offering the IP course were approached to recruit pharmacist and nurse students working in secondary care (ethical approval granted). Five nurses and three pharmacists took part in the study between January 2014 and April 2015. Students were asked to record audio diaries of their prescribing-related experiences and take part in qualitative interviews. These were audio taped, transcribed verbatim and analysed using constructivist grounded theory.

### Results

Preliminary results show that the input of new knowledge or experience leads students to reflect on their existing knowledge and experience. Most new information that could be applied and used in the context of prescribing was found to be useful, such as consultation models. Students found new information interesting because they were able to apply it to practice. Experience was therefore seen as more influential than theory. Some students found theory, regardless of experience, difficult to grasp. Reflecting on past knowledge or experience was voiced when students became aware of their insufficient knowledge. Students facilitated the transfer of learning to practice by continuously applying new knowledge during their period of learning to prescribe (PLP). Self-perceived insufficient pharmacology knowledge was a recurrent theme amongst nurses, which they associated with their nursing degree. Pharmacists relied on doctors to diagnose and undertake physical examinations due to their job role. Nurses briefly described the lack of incentive to prescribe as unfair and that they were under no obligation to prescribe if in doubt. Nevertheless, a desire to make the patient their first concern was a recurring theme within the students' accounts. The feeling of responsibility and lack of confidence with autonomy was stressed when reflecting on both differential diagnosis and prescribing.

### Discussion

Students were continuously reflecting on their knowledge, skills and attitudes in an integrated manner, situated in a social context during their PLP. However, the prescribing course needs to encourage the development of expertise using a framework such as the TEM. This will help allow the process of learning to prescribe to be more integrated and contextualised rather than focus on the assessment of individual, separate competencies. Students were mainly aware of their insufficient knowledge when new information was learnt, implying that they may be unconsciously or consciously incompetent. If the TEM reflects non-medical prescribing also, a stronger foundation in sound scientific knowledge is required to improve skills and strengthen attitudes within context. This could help facilitate a smoother transition from experienced healthcare professional to prescriber. A small sample size and imbalanced representation of nurses and pharmacists are the main limitations of this study.

### References

1. McLellan L, Tully MP, Dornan T. How could undergraduate education prepare new graduates to be safer prescribers? *British journal of clinical pharmacology* 2012;74(4):605–13.

## 0022
## The effects of computer-aided clinical decision support systems on antibiotic prescribing in secondary care: a systematic review

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### Focal points

- A systematic review of international literature on clinical decision support was directed at antibiotic prescribing in secondary care.
- Clinical decision support improved antibiotic prescribing in hospitals by reducing duration of treatment, defined daily dose (DDD) requirements and curtailing costs allocated to hospital antibiotics expenditure.
- Clinical decision support systems have the potential to optimise antibiotic prescribing in secondary care though more detail of optimal system arrangements are needed.

### Introduction

Antibiotic selection is a dynamically complex therapeutic process because of the potential long-term impact on antimicrobial resistance, patient safety, quality of care and cost[1]. Health information technology in the form of clinical decision support (CDS) presents as a promising solution to optimise antibiotic prescribing across different health care settings. CDS systems come in many formats including computerised physician order entry (CPOE), electronic prescribing (e-Rx) and computerised clinical decision support system (CDSS). There is however little consensus on the configuration of CDS or on the ultimate outcomes from its use. The aim of this study was to perform a systematic review of the international literature published on CDS systems used to support the use of antibiotics in secondary care and to perform meta-synthesis on data outputs.

### Methods

A systematic literature search was conducted in November 2014 using eight electronic databases including MEDLINE, EMBASE, PUBMED, Web of Science, CINAHL, Cochrane Library, HMIC, and PsycINFO. The search was conducted using a strategy based upon combinations of the following terms: (Electronic prescribing) OR (Clinical decision support) AND (antibiotic or antibacterial or antimicrobial) AND (hospital or secondary care or inpatient). The reference sections of all retrieved articles were also searched for additional relevant articles. Editorials, letters, case reports and non-English language articles were excluded. Data extraction was conducted by two investigators independently (with conflicts resolved by a third researcher) and consisted of data on study design, quality, participant characteristics, interventions, outcomes and main findings.

### Results

Thirty-eight studies were identified matching the inclusion criteria, which described a wide range of quantitative and qualitative assessments of CDS outcomes. Meta-synthesis of sub-groups highlighted 23 studies describing the four most common outcome measures used, which were the appropriateness of antibiotic treatment (11 studies – all showing more appropriate prescribing), defined daily doses (DDDs – 7 studies), cost of antibiotic treatment (6 studies – all demonstrated reduced costs) and duration of antibiotic treatment (4 studies – all showed reduced therapy duration). Five of these studies examined more than one outcome measure.

Of the 7 studies quantifying DDDs prescribed, six demonstrated a reduction in DDDs but one indicated that use of CDS resulted in increased antibiotic DDD use.

The remaining 15 studies identified in the review described a diverse range of 14 other outcome measures (e.g. length of patient stay, compliance with guidelines).

### Discussion

Clinical decision support systems have been shown in this systematic review to have the potential to improve antibiotic prescribing in secondary care as measured by robust outcome measures. However, given that the majority of studies identified in this review were conducted in the USA or Australia, it is difficult to generalise the results to a UK setting. Further studies should to be conducted in order to evaluate patient specific outcomes such as mortality and also to determine which clinical decision support system characteristics are likely to maximise prescriber adoption and satisfaction.

### References

1. Shebl NA, Franklin BD, Barber N. Clinical decision support systems and antibiotic use. *Pharm World Sci* 2007;29:342–9.

## 0023
## An investigation of communication and the medicines management systems when care home residents are discharged from hospital

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### Focal points

- Care home residents are at high risk from medication errors following transitions in care.
- Transfer of medicines information is perceived to be suboptimal by care home staff, and at discharge medicines are not provided in the format used by care homes.
- Medication supply systems and transfer of information should be tailored to the care home, for example, by

providing monitored dosage systems and medication administration records.

## Introduction

Care home residents are at high risk from medication errors, particularly when they have a hospital admission[1]. The medicines management systems and communication between the hospital and care home can significantly impact error rates; however, little is known about the systems and processes that are in place in this context. The aim was to investigate care home staff perceptions of medication errors and communication about medicines when residents have a hospital admission.

## Methods

A care home staff questionnaire was sent by post in March-April 2014 to a convenience sample of 208 care homes for older people (104 nursing ± residential, 104 residential). Homes were identified by searching the Care Quality Commission website for homes in one city and this was expanded to surrounding towns until a sampling frame of >200 homes was achieved; this was deemed to be a reasonable sample frame to receive a meaningful number of replies. The questionnaire was developed by pharmacy students using relevant literature and face validity was agreed with the supervisor. The questionnaire comprised of closed and open questions relating to medication errors, the communication of medicines information, medicines delivery systems, and the processes to manage residents' medicines post-discharge. Care home staff's satisfaction with information provided by the hospitals was assessed using a 10 point numerical rating scale (1 = completely unsatisfied, 10 = completely satisfied). Ethical approval was obtained from the University of XXXX ethics committee.

## Results

61/208 (29.3%) questionnaires were returned (36 residential, 8 nursing, 17 nursing+residential). The size of home varied considerably from 3 to 129 residents (median 28; IQR 17–39). Monitored dosage systems (MDS) were used in 59/61 (96.7%) homes. However, following discharge, the hospital provided medicines in MDS for only 2/61 (3.3%) homes. The median satisfaction score for communication with hospitals was 5 (range 1–8; IQR 4–7). Common medication errors reported by the care home staff included omissions and errors in dose, formulation and quantity. Contributing factors to errors were identified as being incomplete and/or illegible discharge prescriptions and a lack of information when medicines had changed. Suggestions to improve communication included improving the quality of discharge prescriptions, providing medicines administration records (MAR charts) and using email. Several homes also highlighted a desire for a face-to-face or telephone handover from nursing or pharmacy staff to discuss changes in medicines. There was significant variability in the way care home staff described how they reconciled medicines post-discharge.

## Discussion

Satisfaction with communication with hospitals about medicines following discharge was relatively low. It was striking that whilst the vast majority of homes used MDS, hospitals dispensed discharge medication in non-MDS and did not provide MAR charts; in combination with illegible/incomplete discharge prescriptions, this has the potential to increase the risk of errors and can also lead to medicines being wasted. Limitations of the study include convenience sampling in one geographical area and a relatively low response rate. Ideally, hospitals should dispense discharge medication in the home's preferred delivery system and provide MAR charts. Hospitals should ensure discharge information is legible and ideally provided electronically to homes and community pharmacies. Pharmacists should also consider how they can facilitate medicines reconciliation when care home residents are (re)admitted to the home as suggested by NICE guidance[2].

## References

1. Barber ND, Alldred DP, Raynor DK et al. The Care Homes Use of Medicines Study: Prevalence, causes and potential harm of medication errors in care homes for older people. *Qual Saf Healthcare* 2009;18:341–46.
2. National Institute for Health and Care Excellence (NICE), 2014. Managing medicines in care homes SC1. www.nice.org.uk

# 0024
# An evaluation of the Global Pharmacy Workforce Highlighting Pharmacy Human Resource challenges for Countries in the Gulf Cooperation Council (GCC)

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## Focal points

- Research aim: to explore comparisons in the pharmacy profession in the GCC region with other WHO regions in relation to: availability, accessibility, acceptability.
- Availability in the GCC Region was comparable to all other WHO regions except the African region.
- Accessibility in the GCC region was significantly lower than the American, the Eastern Mediterranean, and the European regions and was significantly higher than the African region,
- Acceptability in the GCC region was significantly lower than the American, the European, and South East Asian regions, and was significantly higher than the African region.

## Introduction

Less is known about the pharmacy workforce in the gulf countries. There has been a rapid development in pharmacy education in the Gulf region. Significant changes in pharmacy practice have occurred as a result of the establishment of new pharmacy schools, and an increasing number of pharmacy graduates who have started to replace expatriates (1).

## Research aims

To explore comparisons in the pharmacy profession in the GCC region with other WHO regions in relation to availability, accessibility, acceptability.

## Methods

The 2012 Global Pharmacy Workforce Report provided data on pharmacy workforce and pharmacy education from 80 countries. This research project is a continuous work and aimed at providing data on pharmacy workforce and pharmacy education in six GCC countries. Data was collected using the FIP Global Pharmacy Workforce Questionnaire, which is a validated tool, and conducted on a country-by-country basis. Country-level data was provided by the Ministries of Health and key education bodies in each country. The questionnaire gathered information about the number of pharmacies and pharmacy workforce in different sectors, data on pharmacy education, and information about pharmacy workforces planning. Ethics committee approval was not needed. For the comparative analysis, data from the 2012 FIP Global Pharmacy Workforce Report was used. Countries were categorised by WHO regions categorisation. The WHO conceptual framework (availability, accessibility, acceptability) was used to compare pharmacy in the GCC region with other WHO regions. Mann-Whitney test was used for the analysis.

## Results

Availability in pharmacy or the density of pharmacists in the GCC region (Median = 5.588) was significantly higher than the African region (Median = 0.220), U = 0.0001, z = –3.274, $P = 0.0001$, r = –0.732. **Accessibility** in pharmacy or the density of community pharmacies in the GCC region (Median = 1.328) was significantly higher than the African region (Median = 0.277), U = 10, z = –2.871, $P = 0.002$, r = –0.598, it was significantly lower than the American region (Median = 2.287), U = 5, z = –2.361 $P = 0.041$, r = –0.06, the Eastern Mediterranean (Median = 3.317), U = 3, z = $-P = 0.03$, r = –0.66, and the European region (Median = 2.538), U = 22, z = –2.361 $P = 0.008$, r = –0.41. **Acceptability** of pharmacy or the density of female pharmacy workforce in the GCC region (Median = 2.443) was significantly higher than the African region (Median = 0.055), U = 0.0001, z = –3.242, $P = 0.0001$, r = –0.743, and lower than the American region (Median = 5.593), U = 1, z = –2.402, $P = 0.016$, r = –0.759, the European region (Median = 6.440), U = , z = –2.249, $P = 0.013$, r = –0.459 and the South East Asian region (Median = 0.096), U = 0.0001, z = –2.236, $P = 0.036$, r = –0.790.

## Discussion

The findings indicated that **availability** in pharmacy or the density of pharmacists in the GCC region was comparable to all other WHO regions expect the African region. **Accessibility** or the density of community pharmacies in GCC region was significantly lower than the American, the Eastern Mediterranean, and the European regions and was significantly higher than the African region. These findings resulted from the public perceptions of the community pharmacy as supermarket as well as the fact that community pharmacy is not considered as a secondary healthcare facility in GCC countries. **Acceptability** or the density of female pharmacy workforce in the GCC region was significantly lower than the American, the European, and the South East Asian regions, and was significantly higher than the African region. Some cultural social and religious factors have limited participation of females in the workforce. **This research limitations include:** the number of the participant countries varied between WHO regions. Low response rates from some regions including SE Asia, Eastern Mediterranean might have resulted in inaccurate representation of the regions. The survey was lengthy and required information to be obtained from several organisations, which might have been a reason for the low response rate.

## References

1. AL-HAIDARI, K. M. & AL-JAZAIRI, A. S. Establishment of a national pharmacy practice residency program in Saudi Arabia. *American Journal of Health-System Pharmacy* 2010;67:1467–70.

# 0025
# The impact of Electronic Prescribing Systems on the incidence of prescribing errors within in-patients settings: a systematic review

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## Focal points

- The systematic review aimed to evaluate the effects electronic prescribing systems on the incidence of prescribing errors among hospitalised patients.
- Error analysis indicated that the use of e-prescribing systems introduced different types of prescribing error.
- E-prescribing systems are effective tools in reducing the incidence of prescribing errors in hospitalised patients but it is vital that future research adopts more rigorous designs and standardised definitions of prescribing error.

## Introduction

Medication errors are a major concern in health care organisations internationally: these can be associated with dispensing, administration and in particular prescribing. Their occurrence is common within secondary care[1] presenting as a significant challenge to healthcare providers and a potential threat to patient safety. A recent systematic review of the prevalence, incidence, and nature of prescribing errors in hospital inpatients revealed that the median error rates were 7 % of medication orders, 52 errors per 100 admissions, and 24 errors per 1,000 patient days[2]. Moreover, the errors that do not result in injury to patients can lead to an additional work and/or increase the cost of patients' care. Using information technology in prescribing was one of the proposed strategies to reduce

prescribing errors and improve patients' safety. The present research focused on the impact of electronic prescribing on the incidence and nature of prescribing errors. The aim of this systematic review was to evaluate the effects electronic prescribing systems on the incidence of prescribing errors among hospitalised patients.

## Methods

A systematic literature search was conducted in November 2014 using eight electronic databases including CINAHL, EMBASE, ASSIA, HMIC, PsycINFO, MEDLINE, Web of Science and Cochrane library. Two investigators conducted data extraction independently (with conflicts resolved by a third researcher).

Eligible studies included those evaluating prescribing errors using electronic prescribing systems conducted in hospital inpatient settings, studies evaluating pre and post implementation of e-prescribing system or comparative investigations (handwritten vs e-prescribing) and studies evaluating the numbers, frequency or rates of prescribing errors arising from medical or non-medical prescribing. The reference sections of all retrieved articles were also searched for additional relevant articles. Studies detecting prescribing errors on paper-based systems, those conducted in primary care, emergency department, and ambulatory care or aged care settings were excluded. Non-English literature as well as editorial, personal opinion and letters were also excluded.

## Results

Thirty-nine studies met the inclusion criteria. Most studies (85%) were conducted at a single hospital site. A range of study designs was used to detect prescribing errors of which 54% were of a prospective design. 59% (23/39) of the studies examined adult patients, 31% (12/39) involved paediatric patients and 10% (4/39) screened both populations. The majority of studies (85%, 33/39) demonstrated a significant reduction on the incidence of prescribing errors associated with the use of electronic prescribing systems however, 15% (6/39) showed an increased rate or no effects on the incidence of prescribing errors. Analysis of the errors encountered in the study outputs, indicated that the use of e-prescribing systems introduced different types of error (e.g. selection errors from a drop down menu or orders duplication) compared to those found when operating conventional paper based prescribing.

## Discussion

The present study indicated that electronic prescribing systems generally are effective tools in reducing the incidence of prescribing errors in hospitalised patients thus improving patient safety. This review found that a wide range of electronic prescribing systems with differing features was used in the study outputs. Importantly, a lack of standardised definition and severity scales for prescribing errors was also encountered. Since different study designs (e.g. prospective or retrospective) and methods of error detection (e.g. observation or incidence reports) yield different results it is vital that future research adopts more rigorous designs and standardised definitions of prescribing error.

## References

1. Dornan T, Ashcroft D, Heathfield H, *et al*. An indepth investigation into causes of prescribing errors by foundation trainees in relation to their medical education. EQUIP study. Final report to the General Medical Council. University of Manchester. 2009.
2. Lewis PJ, Dornan T, Taylor D, et al. Prevalence, incidence and nature of prescribing errors in hospital inpatients: a systematic review. *Drug Saf* 2009;32:379–89.

# 0026
# The application and reliability testing of a derived disease-specific tolerability assessment tool for the use of Botulinum Toxin in hyperhidrosis

## Focal Points

- HDSS is a popular tool, used by patients to rate the severity of their hyperhydrosis. It was developed by Allergan (manufacturers of botulinum toxin) but has never been fully validated. Dermatologists at the hospital prefer to use the Dermatology Life Quality Index (DLQI), a more comprehensive questionnaire.
- The aims of this study were to derive a reliable method to translate DLQI scores to HDSS and use this new tool to assess the proportion of patients treated with BTX who met local eligibility criteria.
- The degree of compliance with the TAP eligibility criteria was 71%, from both the derived HDSS scores and the independent note review.

## Introduction

Botulinum Toxin (BTX) is licensed for intradermal treatment of severe hyperhidrosis of the axillae unresponsive to topical antiperspirant or other antihydrotics. The hospital where this study was carried out is a tertiary referral centre for hyperhidrosis and has used BTX for 10 years.

The dermatology department and local commissioners and local commissioners have agreed a treatment access pathway (TAP) which specifies the circumstances under which treatment for hyperhidrosis will be funded. The TAP specifies the use of a disease-specific tool determining eligibility for BTX treatment, the Hyperhidrosis Disease Severity Score (HDSS). HDSS is a 4-point scale on which the patient rates the tolerability of their sweating and impact on their daily activities[1]. Patients must a report a score of 3 or 4 to be treated with BTX.

HDSS is not used at this hospital. Prior to initiation of treatment with BTX, the Dermatology Life Quality Index (DLQI) questionnaire[2] is administered. This requires patients to assess the impact of their disease on their life by answering ten questions. The final summated score can range from 0 to 30.

The aim of this study was to develop and test a tool to translate DLQI scores to HDSS, to satisfy the TAP requirements.

## Methods

The DLQI scale was empirically mapped onto the HDSS in such a way that the majority of responses for each question should be at the equivalent HDSS level with no more than four responses at the higher level (see table 1). Each patient's DLQI

score was then translated to the equivalent HDSS. The percentage of patients with a derived HDSS score of 3 or 4 was calculated.

A second pharmacist, blinded to the DLQI results, independently reviewed clinical information in the patients' records to assign "patient-reported" HDSS scores. This score and the derived HDSS were compared using Cohen's kappa test of agreement. A kappa above 0.60 indicates substantial agreement. Ethics approval was not required for this study, in line with organisational guidelines.

## Results

**Table 1** Results from translating DLQI scores and information in patient records to HDSS Kappa = 0.71 ($p < 0.0001$)

| DLQI score range | HDSS score | Proportion of pts with this score when DLQI translated | Proportion of pts allocated this score using note review |
|---|---|---|---|
| 25–30 | 4 | 9 | 11 |
| 15–24 | 3 | 13 | 11 |
| 5–14 | 2 | 8 | 9 |
| 0–4 | 1 | 1 | 0 |
| % with HDSS of 3 and 4 | | 71% (22/31) | 71% (22/31) |

## Discussion

The developed tool provided HDSS scores with a high level of agreement with independent clinical judgement. It is therefore a quick and effective method for converting DLQI scores into the format required by our commissioners. Dermatologists can continue to use DLQI which is a more comprehensive scale than HDSS.

Future work includes the development and full validation of a tool which meets the needs of patients, clinicians and commissioners.

## References

1. Kowalski JW *et al*. Validity and reliability of the Hyperhidrosis Disease Severity Scale (HDSS). *Presented at the American Academy of Dermatology 62nd Annual Meeting*; 2004 Feb 610:731–6.
2. Finlay A Y, Khan G K. Dermatology Life Quality Index (DLQI): A simple practical measure for routine clinical use. *Clinical and Experimental Dermatology* 1994; 19: 210–216.

Abstract 0026 added on 26 November 2015, after online publication.

# 0027
# The role of social media to promote integrated care: a mixed method approach

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## Focal points

- The role of social media to support healthcare professions has recently been demonstrated via WeCommunities on Twitter i.e. WePharmacists, WeNurses and WeDocs.
- The aim of this project was to evaluate the potential of using social media to promote integrated care via a multidisciplinary patient case discussion.
- The discussion received 691 tweets [(1)] in a one hour span, involving pharmacists, nurses, doctors, students etc and was well received by participants, who believed the case encouraged new avenues for multidisciplinary (MD) collaboration.

## Introduction

The role of Social Media (SoMe) in professional enhancement has been observed across several SoMe platforms. The Twitter 'WeCommunities' have been established for healthcare professionals (HCPs) for that purpose: WePharmacists (WePh), WeDocs and WeNurses. These online communities host regular (usually weekly) chats discussing various topics integral to the profession. As the concept of integrated care is a key focus for all professions and highlighted in several government reports, including the Royal Pharmaceutical Society (RPS) 'Now or Never' Report. The aim of this project was to explore the potential role of SoMe in promoting integrated care.

## Methods

This project comprised of 3 phases (Table 1):

**Table 1**

| | |
|---|---|
| Phase 1 (P1) | Multidisciplinary (MD) design of a COPD case |
| Phase 2 (P2) | Simultaneous hosting of the MD COPD Case Study on WeDocs, WeNurses and WePharmacists |
| Phase 3 (P3) | Survey of participants in MD Case Study |

P1 involved a MD collaboration between pharmacists (3), nurses (2) and doctors (1) to design a COPD case study. The case was designed to highlight the various health care professionals (HCPs) needed in the care of a COPD patient. P2 was the online MD patient case discussion that was simultaneously co-hosted by WePh, WeNurses and WeDocs. The case was released as several 'screens, showing the case developing. Each development required the participants to provide recommendations, opinions and arguments. P3 was an online-based questionnaire to survey case study participants. The questionnaire consisted of 24 questions, based around several themes such as views about the case study, IPE experiences, views about the Centre for the Advancement of IPE (CAIPE), and exploring establishing an IPE forum for practicing professionals. These themes were based around the IPE WePharmacists chat discussion held in June 2014, and themes identified from participants of the IPE chat. Ethics committee approval was obtained.

## Results

The design of the MD COPD case included questions on treatment recommendations, adverse effects, mental health, social care issues, electronic cigarettes, telehealth etc. The case study was hosted on 17/02/15, from 8:00–9:00pm, with 75 contributors, 691 tweets reaching 3,106,551 tweeters.[(1,2)] The first

author was facilitating the discussion. 31 respondents completed the questionnaire. Overall the MD case was well received by participants with 87% (n = 27) indicating the case promoted MD collaboration; 97% (n = 30) agreed to use SoMe again to get involved in future MD case studies. Only 32% (n = 10) had ever attended interprofessional education (IPE) sessions in their undergraduate studies. Only 4 participants had heard of CAIPE (Centre for the Advancement of IPE). 77% (n = 24) expressed interest in a continuous professional IPE forum.

## Discussion

Several recommendations and areas were highlighted from this project: (1) **Integrated Care:** IPE is an important gateway for MD approach towards integrated care. This will help in optimising patient care. (2) **MD Case Study:** received positive feedback and highlighted other HCP roles. The case study attracted various HCPs including physiotherapists, nurses and doctors, pharmacists and HCP students. (3) **Social Media:** This project demonstrates Twitter® as a potential tool to encourage IPE and collaboration amongst health-related professions, in an effort to promote integrated care.

## References

1. WeCommunities. *MDT COPD Case Study: Meet John – Chat Details*. [Online]. Available from: http://www.wecommunities.org/tweet-chats/chat-details/418 [Accessed 26 March 2015]
2. WeCommunities. *Interprofessional Education – Dream or Reality? Chat Details* [Online]. Available from: http://www.wecommunities.org/tweet-chats/old-chat-details/289 [Accessed 26 March 2015]

# 0028
# Community pharmacy service for drug misusers in Scotland: trends in service delivery over two decades

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## Focal points

- A fourth national survey of all community pharmacies over two decades aimed to document changes in service delivery and the involvement of pharmacy in managing drug misusers.
- Analysis of survey data over time indicated significantly higher attitudes and an increasing trend in provision of needle exchange, and dispensing for drug misuse.
- Involvement in naloxone provision and pharmacy prescribing in substance misuse is still in its infancy and could be developed further.

## Introduction

In 1995, 2000 and 2006, surveys were conducted of all community pharmacies in Scotland to chart service provision for drug misusers.[1] Since 2006 there have been several changes that may have influenced the level and nature of pharmacy services. These include 1) a new Drug Strategy emphasising recovery [2] 2) a national 'take home naloxone' programme to reduce Scotland's high incidence of drug-related deaths and 3) pharmacist prescribing. The survey aimed to quantify pharmacy substance misuse service provision and compare with previous surveys. Specific objectives were to describe:

1. pharmacists' attitudes towards drug misusers and pharmacy services for drug misusers;
2. levels of dispensing opiate replacement treatment, needle exchange and naloxone provision;
3. specialist training;
4. pharmacist prescriber activity.

## Methods

The same questionnaire was used as previously with amendments to reflect recent developments, specifically, pharmacists' involvement in naloxone supply and pharmacist prescribing. The updated questionnaire was sent to the 'Pharmacist in charge' in all registered community pharmacies in Scotland (n = 1,246), with a covering letter, postage paid return envelope and an identifiable postcard to allow non-responders to be followed up. Two reminders were sent to non-responders. A third reminder was made by telephone, additionally offering pharmacists the option of responding to a shorter questionnaire by phone. Descriptive statistics were calculated in SPSS. Comparisons across years were conducted on a population level using chi-square tests for significance for categorical variables and ANOVA for attitude scores. The project was approved by the College Ethical Review Board (CERB/2014/3/1040).

## Results

A 57% (n = 709) response was achieved from postal questionnaires and a further 18.8% (n = 164) by telephone giving a response rate of 70% (n = 873) for core variables. Pharmacists' attitudes towards drug misusers and services for drug misusers improved as demonstrated through significantly higher attitude scores compared to 2006 ($p < 0.001$). There has been a significant increase in the proportion of pharmacies providing a syringe/needle exchange service; 17.8% (n = 155) compared to 12.5% (2006), 9.7% (2000) and 8.6% (1995) ($p < 0.001$). Involvement in dispensing for drug misuse increased significantly to 92.0% (n = 803) from 82.6% (2006), 73.3% (2000) and 58.9% (1995) ($p < 0.001$). Methadone was dispensed by 88.5% (n = 773), and 83% (n = 725) supervised methadone consumption. The number of individuals dispensed methadone increased to 16,406 from 12,400 (2006) and buprenorphine to 1,770 from 190 (2006). Training levels in drug misuse increased to 74.5% (n = 524) from 69% (2006), 66.8% (2000) and 31.7% (1995). A third of respondents are involved in the naloxone programme in some capacity, mostly through dispensing naloxone on request (33.9%, n = 296), with 7.4% (n = 66) providing training on naloxone administration. Eighty-two respondents were qualified supplementary or independent prescribers (11.5%) but only nine prescribed methadone and five prescribed buprenorphine.

## Discussion

Community pharmacy in Scotland has continued with an upward trend of involvement in service provision for drug misusers and attitudes have continued to improve. Involvement in the naloxone programme is currently limited so could be developed further. Prescribing activity in substance misuse is still very low and could be considered as an area of potential development.

## References

1. Matheson C., Bond CM., Tinelli M., (2007) Community Pharmacy harm reduction services for drug misusers: national service delivery and professional attitudes over a decade in Scotland. *Journal of Public Health*;29:350–57.
2. Scottish Government (2008), *The Road to Recovery: A new Approach to Tackling Scotland's Drug Problem*. Edinburgh: Scottish Government.

# 0029
# The role of group work in the development of pharmacy students' intercultural capability and values

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## Focal points

- To evaluate the role of pedagogy in the development of intercultural values in pharmacy undergraduates.
- Group work was a significant factor in promoting, but possibly also hindering, intercultural capability.
- Carefully planned and managed group learning can have an important role in development of intercultural values.

## Introduction

As graduates and professional pharmacists, pharmacy student will serve a diverse population of patients and work in multi-professional, multi-skilled and multi-cultural teams. The aim of this research therefore was to explore the extent to which pedagogy and, in particular, group work, might contribute to the development of more intercultural professional and personal values. This was done by taking a 'capability approach'[1] both to evaluating the extent to which students develop interculturally during their degree years and to planning curricular spaces that might foster such values.

## Methods

Semi-structured interviews were conducted (with University ethics approval) with 44 home and international pharmacy undergraduate students, through volunteer sampling, which explored their experiences and perceptions of an international educational environment. The 'capability approach' was employed to frame and evaluate the development of students' intercultural values. This approach, developed to think about dimensions of social justice, promotes individuals' 'capabilities' – which are opportunities or choices – to be, to do and to achieve what they themselves consider to be of value. An intercultural capability set that identifies the key attributes of being interculturally-aware was formulated. It was constructed iteratively by first drawing up a set which was theoretically[1,2] – and empirically-informed from pilot interview data,, then testing and modifying it against initial interview data. The four final overarching capabilities (each encompassing a number of attributes) are: *Social Relations and Participation*; *Respect, Dignity and Recognition*; *Mind and Imagination* and *Enquiry and Reflection*. The interview data was analysed for evidence of capability (or lack of capability) against the capability set.

## Results

Group work could impact positively on the development of intercultural capabilities, through promoting agency, mutual learning and sharing. It provided a valuable space in which students could develop capabilities for their future professional and personal lives. Firstly it forced students out of comfort groups and into conversation with others, enabling the capability of *Social Relations and Participation*, which proved foundational in paving the way to development of other capabilities. Secondly, students learnt to work with others, which they saw as part of training for their careers and lives. This required capabilities of *Respect, Dignity and Recognition* and *Mind and Imagination* in particular, to enable them to be challenged but to recognise difference and the value in working with each other. When group work functioned badly, opportunities for intercultural interactions were not only missed, but unresolved differences led to tensions, exclusion and dissatisfaction, with the creation or reinforcement of cultural and national group views and stereotypes. The absence of capability in some students acted to stifle agency and capability in others.

## Discussion

Group working can act to support or hinder intercultural capability. The creation of a curricular space which provided the opportunity for collaboration and exchange, for some students had a profound and positive effect upon the development of their personal and professional outlook and values. Conversely, the alienation and ill-will caused through negative experiences can affect students' attitudes for their future careers and lives. It is apparent that there are immense benefits to be gained, but also that careful management of multicultural collaborative working is required, in order to create a system of greater equity and create a safe and meaningful environment in which students can develop greater mutual understanding and more cosmopolitan selves as they graduate and enter the profession of pharmacy.

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## 0030
## The role of a personal tutor in pharmacy undergraduate education

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### Focal points

- This study aimed to explore how undergraduate pharmacy students and pharmacy tutors define and implement a tutor support system and the perceived need for such a system
- Pharmacy students and tutors recognise the need for a tutor support system in undergraduate education and identified that to be successful this needs to be a partnership between an academic member of staff and the student
- This study demonstrates the perceived need for students to have access to tutor support throughout their undergraduate studies but recognises that time and accessibility of the tutor are the main barriers

### Introduction

It is recognised that the transition between school and higher education has its challenges. Students often find the shift to independent adult learning difficult and with this change often involving a move away from the traditional support networks that family and home offer, the challenge of support is one which has long been recognised. In an effort to address this, staff involved in the MPharm course at Robert Gordon University are allocated a role as personal tutor and support named students throughout their time at the university. More recently, this role has become further formalised with the introduction of a Personal Development Plan for students to complete and discuss with their tutors once each semester. This study aimed to explore how undergraduate pharmacy students and pharmacy tutors define and implement a tutor support system and the perceived need for such a system.

### Methods

Invitations to participate in semi-structured, audio-recorded interviews were distributed via email to all fourth year undergraduate pharmacy students (n = 126) and all staff (n = 30) involved in supporting students in the MPharm course. Participants were asked to complete a structured activity defining what they saw as being a 'good' and a 'bad' tutor and this was used as the basis of the interviews. The coordinator of the personal tutor system was also invited to participate in an interview. Ethical approval was granted by the School of Pharmacy and Life Sciences at Robert Gordon University

### Results

A total of thirteen interviews were conducted with 6 undergraduate pharmacy students, 6 staff members and the personal tutor coordinator in December 2014. Participants identified important aspects of a successful tutor system including tutor accessibility, tutor encouragement and enthusiasm relating to utilisation of the system, effective communication from the tutor and tutee, access to both academic and personal support and tutee engagement. Participants suggested that these factors were not always central to student and staff experiences. Additional influences included perceived time constraints, lack of understanding of individual needs, unclear definition of roles and a scarcity of systems to provide feedback.

### Discussion

In line with other studies [1,2], it was found that an effective tutor support system is of benefit to students and requires input from both tutors and students. It is suggested that a partnership approach was of most benefit to both parties and the study recommended that further guidance was provided to support this approach. As with other studies, this study demonstrated the ongoing need for support, both for academic matters and for personal issues which may arise during undergraduate education and the personal tutor system was considered integral to the student experience.

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## 0031
## A narrative literature review of medication-related clinical decision support: what issues are pertinent to its future development?

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### Focal points

- A narrative literature review was carried out to summarise some of the recent and important developments of Clinical Decision Support (CDS) functionality and make recommendations to inform future development.
- Tiering alerts, maintaining accurate records, incorporating patient specific parameters, system configuration and human factors design principles have been associated with improved alert acceptance and CDS effectiveness.
- Future research should concentrate on improving the sensitivity and specificity of CDS alerts.

## Introduction

Medication errors represent a significant burden of patient harm and can occur at various stages between prescribing and administering medicines. Health information technologies, such as Electronic Prescribing and Medicines Administration (EPMA) and Clinical Decision Support (CDS), may be used to reduce the likelihood of these errors occurring. CDS delivers automated guidance and support to clinicians at the point of prescribing, through the use of electronic alerts or disease-specific order sets and templates. Basic CDS can provide drug-drug interaction (DDI) checks, drug allergy checks, dosing guidance, duplicate therapy checks and formulary decision support.[1] CDS has been associated with improved patient safety, improved standards of care and reduced healthcare costs.[2] The aim of this literature review was to review the recent literature of CDS functionality and reflect upon the issues pertinent to its future development.

## Methods

We searched for papers in Medline (Ovid) and Embase (Ovid). We included various MeSH terms and key words such as 'clinical decision support', 'electronic prescribing', and terms relevant to the five basic CDS functionalities published between 2007 to 2014, to provide an update to a previous literature review published in 2007[1]. We included all publication types, all types of order entry system and all clinical settings. Only English language papers were selected for further review. Reference lists, papers from world leading experts, known for their strong record of publishing in the area and the 'other citing articles' function were also used to identify additional articles. Titles and abstracts were initially screened followed by the full text. One reviewer assessed publications and outlined recent advancements for each of the CDS functionalities, before describing issues considered important for them all. Ethical approval was not required.

## Results

A total of 896 articles were identified, across each of the five areas, of which 184 were considered relevant (DDI checks: 78, drug allergy checks: 20, Drug dose support: 55, Drug duplication: 11, Drug formulary support: 20). A total of 156 full text articles and 28 abstracts were included. The success of CDS depends on users finding alerts valuable and acting on the information received. Including more patient-specific parameters to improve alert sensitivity and specificity, and application of human factors design principles is important across all domains. Assigning a severity level to DDI alerts has been shown to improve alert acceptance. Maintenance of accurate records and cross-sensitivity checks are central to the production of appropriate drug-allergy checks. Patient specific parameters should be utilised to improve the appropriateness of drug-dosage support; furthermore, suggested doses should be appropriately rounded to facilitate administration. How the CDS system is configured is important for drug-duplication checks to avoid potentially exposing the patient to toxic drug levels. The knowledge base(s) for drug-formulary alerts must be accurate and reviewed regularly in order to produce relevant alerts and encourage formulary adherence.

## Discussion

CDS is still undergoing development. The implementation of automation in healthcare has surged in recent years and this is likely to continue. Human-factors design principles and improving alert specificity are important and future research should contribute to this area. Such advancements are important for system developers during the design stage and for end-users of the system who require better functionality and usability to improve patient care and reduce the likelihood of alert fatigue. Limitations to this study include not conducting a full systematic review, only one reviewer carried out the literature search and not limiting the search to peer reviewed publications.

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# 0032
# Dispensing appropriate polypharmacy to older people in primary care: a qualitative, theory-based study of community pharmacists' perceptions and experiences

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## Focal points

- In developing interventions to improve appropriate polypharmacy in older people, it is recommended that researchers adopt a theory-based approach and involve key stakeholders (e.g. healthcare professionals).
- Semi-structured interviews were conducted with community pharmacists using the theoretical domains framework of behaviour change to identify domains that acted as barriers or facilitators to dispensing appropriate polypharmacy to older people.
- The four theoretical domains identified as potentially influencing the dispensing of appropriate polypharmacy will be mapped to behaviour change techniques as the active components of an intervention to improve appropriate polypharmacy in older people in primary care.

## Introduction

Balancing the prescribing of 'many' and 'too many' medications in older populations with multimorbidity is an ever

increasing challenge. Appropriate polypharmacy refers to the prescribing for individuals with complex and/or multiple conditions where medicine use has been optimised and prescribing aligns with best evidence. Evidence to support the effectiveness of interventions to improve appropriate polypharmacy in older people is weak.[1] It is recommended that development of future interventions adopt a theory-based approach and involve key stakeholders, such as healthcare professionals (HCPs).[1] Theory-based qualitative interviews using the Theoretical Domains Framework (TDF) can be used to identify mediators (i.e. barriers, facilitators) of behaviour change in HCPs' clinical practice.[2] This study aimed to explore community pharmacists' dispensing practices for older patients receiving polypharmacy and to identify key theoretical domains that affected the dispensing of appropriate polypharmacy. The study forms part of a research project seeking to develop an intervention to improve appropriate polypharmacy in older people in primary care. This will involve mapping theoretical domains to an established taxonomy of behaviour change techniques (BCTs). Selected BCTs will form the basis of any proposed intervention.

## Methods

A purposive sample of community pharmacists (urban, rural) from each Health and Social Care Trust area (n = 5) in Northern Ireland was recruited. Semi-structured interviews were conducted with recruited pharmacists using a TDF-based topic guide. The topic guide (piloted with two pharmacists) explored pharmacists' views on the term 'polypharmacy'. Questions covering 12 theoretical domains were used to explore pharmacists' perceptions of barriers and facilitators to dispensing appropriate polypharmacy to older people. A clinical scenario of inappropriate polypharmacy was included to stimulate discussion. Data were recorded and transcribed verbatim. Transcripts were independently checked for accuracy. Following data saturation, data analysis involved both the framework method and content analysis. Ethical approval was granted by the Office of Research Ethics Committees Northern Ireland.

## Results

Fifteen pharmacists were interviewed. Pharmacists' definitions of the term 'polypharmacy' typically referred to the prescribing of multiple medicines. 'Knowledge', 'Skills' and 'Beliefs about capabilities' were identified as key theoretical domains that facilitated the dispensing of appropriate polypharmacy to older patients. For example, pharmacists' professional confidence in reviewing medications and identifying clinical issues enabled them to suggest changes to prescribers. Time and work environment pressures were the main barriers that prevented pharmacists from dispensing appropriate polypharmacy to older patients ('Environmental context and resources' domain).

## Discussion

This study shows that pharmacists believe that their knowledge, skills and professional confidence enables them to dispense appropriate polypharmacy to older people. However, time and work environmental pressures are currently preventing pharmacists from routinely engaging with patients and prescribers in implementing changes to existing prescriptions to ensure dispensing of appropriate polypharmacy. Future work will involve mapping key domains to BCTs. For example, 'Prompts/cues' could be used as a BCT to encourage pharmacists to perform routine medication reviews with older patients within the constraints of the existing work environment. The findings will be integrated with other project components (semi-structured interviews of general practitioners, patient focus groups) to develop an intervention to assist HCPs in achieving appropriate polypharmacy in older people in primary care. [This work was supported by The Dunhill Medical Trust – grant number: R298/0513].]

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# 0033
# Associations with the new oral anticoagulants: cross-sectional analysis of prescribing and factors of association in the primary care setting

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## Focal points

- Greater understanding of factors influencing new oral anticoagulant (NOACs) prescribing is required given their widening use in the clinical arena.
- Both NOAC and vitamin K antagonist (VKA) anticoagulant prescribing demonstrated a strong association with atrial fibrillation (AF) practice prevalence, a Quality and Outcomes Framework (QOF) clinical indicator, suggesting good stroke prevention management.
- Enabling better funding for NOAC prescribing and research into their use in the increasingly older population may further optimise stroke prevention management.
- Available antidotes would increase confidence in prescribing, especially for the older patient.

## Introduction

Factors such as age, socio-demographic influences and disease prevalence have been linked to health outcomes and their influence on new oral anticoagulant prescribing has not been well studied in the UK. This study aimed to examine

socio-demographic and economic factors of interest which might influence prescribing. Study objectives included an examination of prescribing variations for both classes of anticoagulants and a focus on investigating any associations between the anticoagulant classes and the factors outlined above.

## Methods

Oral anticoagulant prescription data from 2012 and 2013 was analysed as the outcome measure. The number of defined daily doses (DDDs) was used as a 'count' of prescribing at the practice level. Raw electronic prescribing data (ePact) for 132 English practices was provided, in Excel format, by a University Medicines Optimisation Department, via the NHS Business Services Authority. Ethics approval was not required since no patient-identifiable data was used. Additional covariate data was obtained from the National General Practice Profiles (www.apho.org.uk) including AF practice prevalence (% practice population), Index of Multiple Deprivation (IMD) scores, Practice ONS rurality indicator, and age-groups 65–74 and 75–84 years (% practice population). The rurality indicator was refined into either urban or rural location. Datasets were constructed in Excel for the count data and the covariates. The dependent variables (prescribing 'counts' for both VKAs and NOACs were compared with the covariates (practice characteristics) for any association. Statistical analyses were conducted with StatsDirect v2.8.0 and Poisson multiple regressions were used to investigate the link between practice characteristics and the outcome.

## Results

Overall, prescribing of NOACs was small compared to the VKAs. NOAC prescribing was negligible in 2012 and increased tenfold in 2013. The Poisson multiple regression models showed AF prevalence to be the strongest predictor of prescribing but this was confounded by the covariates, age-group 75–84 years and GP location. VKA prescribing (2012–13) was reduced in the presence of confounders GP location and age-group 75–84 years (VKAs-2012, IRR* = 1.79 [CI 95% 1.79–1.80], VKAs-2013, IRR = 1.88 [CI 95% 1.87–1.89]). NOAC prescribing in 2012 showed the association with AF prevalence to be negligible in the presence of rural location and age-group 75–84 years (NOACs-2012, IRR = 0.97 [CI 95% 0.92–1.04]). In 2013 NOAC prescribing associated with AF prevalence was confounded only by age-group 75–84 years. In this association the prescribing was reduced (NOACs-2013, IRR = 1.42 [CI 95% 1.40–1.45]). Any associations with deprivation appeared negligible in the study.

## Discussion

Influences on oral anticoagulant prescribing appear multifactorial. Presence of older age (75–84 years) reduced the likelihood of prescribing in AF, particularly for NOACs in 2013. Concerns over bleeding risks, for which the elderly have increased risk, and lack of antidotes are possible explanations. GP location may have influenced anticoagulant choice, an explanation being the need and accessibility to routine monitoring services. Other external influences such as national guidance and GP/patient opinion cannot be discounted. Investigating associations with deprivation using more precise methodology such as a Geographical Information Systems model would be valuable.[1] The study's limitations include its ecological nature and exclusion of known predictors such as gender, ethnicity and stroke risk scores.[2]

*IRR = Incident Rate Ratio

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# 0034
# Self-selection of medicines: perceptions of pharmacy customers

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## Focal points

- A questionnaire was used to investigate pharmacy customers perceptions of the self-selection of over-the-counter medicines.
- 45% of respondents wanted to read about or handle a medicine before purchasing and for pharmacy medicines one-quarter wanted to do this before speaking with pharmacy staff.
- These results suggest that currently consumer demand for self-selection of pharmacy medicines is low.

## Introduction

Self-medication is defined by the World Health Organisation as 'the selection and use of medicines by individuals to treat self-recognised illnesses or symptoms.' The GPhC has suggested that, in the future, pharmacy medicines may be available for self-selection providing appropriate safeguards are in place.[1] The Royal Pharmaceutical Society have raised safety concerns that the public may not have sufficient knowledge to make an informed choice.[2] This study investigated the perceptions of self-selection of over-the-counter medicines.

## Methods

A questionnaire was designed with reference to the literature by academics in discussions with local pharmacies, the Local Pharmaceutical Committee and Local Professional Network; and subsequently tested for face and content validity with those stakeholders and pharmacy project students. Data were collected from customers across 31 community pharmacies

over four weeks (16 February to 15 March 2015). Pharmacy customers over 18 years were approached explaining the study and requesting their consent to participate. The data for this study were collected as part of a wider questionnaire investigating customers' perceptions of community pharmacy services and included questions relating to self-selection of medicines. Data were entered into PharmOutcomes® and 30% were verified for accuracy. Data analysis using SPSS 22 consisted of frequency counts with percentages. The study was reviewed and approved by the University's School of Pharmacy Research Ethics committee.

### Results

7154 questionnaires were completed; response rate 49%, 4419 females (62%) and 2725 aged 18–49 years (38%). Approximately 50% of customers reported they preferred to manage their own health needs (n = 3352; 47%) and a similar proportion would go to their doctor only when they really had to (n = 3681; 52%). When asked about purchasing any medicine in a pharmacy, 1357 (22%) and 1448 (23%) respondents claimed that they would always or mostly want to read about or handle a medicine before purchasing. When a medicine was behind the pharmacy counter, approximately one-quarter of the respondents would always (n = 698; 11%) or mostly (n = 923; 15%) want to look at the packaging before speaking to the pharmacy staff. When customers knew which medicine they wanted to buy, the majority felt they were asked 'about the right amount of questions' (n = 5194, 83%) with only a small number reporting being asked too few (n = 218, 3%) or too many (n = 238, 4%). Similar proportions of respondents also felt they were asked the right amount, too few and too many questions when they asked for advice about symptoms (n = 5206, 84%; n = 178, 3%; n = 138, 2% respectively).

### Discussion

Around half of customers want to handle a medicine before they purchase the medicine and for pharmacy medicines around a quarter would like to look at the medicine packaging before speaking with pharmacy staff. The majority of customers felt they were asked the right number of questions to ensure the suitability of the medicine irrespective of whether they asked for a medicine by name or about symptoms. Customers who completed the survey were not necessarily purchasing a medicine on the visit when they completed the questionnaire so these results may be subject to recall bias. In conclusion, customers did not express a strong desire to review pharmacy medicine packaging prior to discussion with pharmacy staff suggesting that currently consumer demand for self-selection of pharmacy medicines is low.

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## 0035
## Discharge Medicines Use Reviews (dMURs): should community pharmacists be trying harder to identify patients who could benefit?

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### Focal points

- This study aimed to explore the impact of secondary care initiatives to promote dMURs on their provision
- Data, obtained from 123 (44%) community pharmacists (CPs) within 8 clinical commissioning groups (CCGs), indicated that secondary care promotion of the service has not lead to an increase in the proportion of pharmacists providing dMURs in the surrounding catchment area
- Suitable patients were identified using a range of methods; opportunistically (47%) and responding to requests from the patient (22%), GP (17%) and Hospital (7%)

### Introduction

Medication errors frequently occur on transfer of care. In 2014 a survey indicated that 53% of CPs had never performed a dMUR.[1] The main barrier to provision was reported to be CPs not knowing which patients were eligible. The objectives for this repeat survey were to see if provision had improved in an area where increased secondary care promotion of the service had taken place, and to find out how pharmacists who provided dMURs identified their patients.

### Method

279 CPs within 8 CCGs were asked by letter to participate in a telephone interview. The structured interview, which was based on a previous study[1], took less than 10 minutes to complete and explored whether the CP had ever performed a dMUR, and if so how patients had been identified. Data was analysed descriptively. Chi-squared test was used to assess differences between CPs awareness of secondary care initiatives or their locality (CCG) and their provision of dMURs, (SPSS v22). Responses to open questions were noted, and analysed using a thematic approach. University ethics approval was obtained.

### Results

CPs in 140 pharmacies (50%) agreed to take part but only 123 (44%) completed the interview. Of these, 69 (54%) had never

conducted a dMUR. Pharmacists who had carried out a dMUR reported a diverse range of methods to identify the eligibility of the last person they had recruited for this service (Table 1). 22 (18%) pharmacists were aware of secondary care initiatives to improve uptake of dMURs, the majority of these describing the increased awareness of patients. No relationship between the awareness of such initiatives and provision of the dMUR service was observed ($p < 0.05$). The promotion of the dMUR service at one hospital site had no observable impact on the number of CPs providing dMURs in its catchment area ($p < 0.05$).

**Table 1** How community pharmacists (CPs) identified their last patient for discharge medicine use reviews (dMUR) (n = 54)

| How need was identified | Frequency (%) |
|---|---|
| The patient mentioned they had been discharged from hospital in conversation with the CP/pharmacy staff | 9 (17) |
| GP requested a dMUR | 9 (17) |
| Hospital sent electronic discharge notification to CP | 4 (7) |
| An issue arose that was explored by the CP leading to the dMUR e.g. patient confused about medicines, or changes to medicines | 16 (30) |
| The patient came to the pharmacy with their discharge summary/ approached CP for dMUR | 12 (22) |
| The CP aware that the patient had been in hospital; mechanism not specified | 4 (7) |

## Discussion

The proportion of CPs providing dMURs has not increased over the last year in the area of study. The use of leaflets and stickers by a hospital site to promote this service concurs with earlier research that this is insufficient to encourage most patients to access a dMUR.[2] However the data, albeit limited by the low response rate and self-reporting of CPs own behaviours, does indicate that some patients are requesting this service, and there is some communication between GPs and hospital staff to support dMURs. Training counter staff to routinely ask whether a patient has been discharged from hospital when receiving prescriptions could identify this patient cohort and enable the service to be offered.

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# 0036
# A cross-sectional survey of medication adherence behaviour in patients after percutaneous coronary intervention

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## Focal points

- To investigate medication adherence behaviour in patients who had undergone Percutaneous Coronary Intervention (PCI) using the Morisky Scale (MMAS) and Theoretical Domains Framework (TDF).
- The majority of patients had poor adherence despite ongoing pain.
- TDF behavioural statements indicated agreement for most domains but less agreement in the 'knowledge', 'beliefs of consequences' and 'emotional' domains.
- There is a need to develop strategies that target these domains in order to improve adherence in this patient group.

## Introduction

World Health Organisation data evidence that medication adherence rates for long-term conditions is around 50%. Cruden et al demonstrated that patients delay filling their first prescription for clopidogrel after coronary stenting.[1] Furthermore, patients' medication beliefs may adversely impact adherence post-PCI.[2] The aim of this study was to investigate medication adherence behaviour in patients post PCI.

## Methods

A questionnaire was developed and tested by a panel of expert practitioners and researchers then piloted. It included: demographics (8 items), health related quality of life (SF8, 8 items); adherence (Morisky, 8 items); attitudinal statements relating to medication taking behaviours (developed from Theoretical Domains Framework (TDF), 19 items). The questionnaire was mailed to all 526 patients on the PCI database at <<??>> Hospital, <<??>>; up to two reminders were sent. Data were entered into SPSS version 21.0 and analysed using descriptive statistics. This study was approved by the Ethics Panel of the [state University] and the NHS.

## Results

The overall response rate was 62.7% (330/526) with five returned undelivered giving an adjusted response rate of 61.8% (325/526). Mean age was 66.9 years (SD 10.94), majority were male (262, 80.6%). In the last 4 weeks the majority (208, 64%) rated their health as good, very good or excellent; 113, 34.8% had moderate, severe or very severe pain. Chest pain/discomfort was reported by 138, 42.5% of

all respondents. Morisky adherence scores rated 136, 41.8% as high (score = 8/8), 125, 38.4% moderate (6 to <8) and 58, 17.8% low (<6). Around two fifths 135, (41.5%) indicated used a compliance aid. Table 1 shows the responses to key behaviour statements.

**Table 1** Responses to behavioural statements relating to medicine taking

| Attitudinal statements (TDF domains*) | Strongly agree/agree % (n) | Unsure % (n) | Disagree/ strongly disagree % (n) |
|---|---|---|---|
| **I know how to get the best from my medicines (K)** | **75.2 (239)** | 23.0 (73) | 1.9 (6) |
| I am able to take and use my medicines as prescribed (S) | **98.4 (317)** | 0.6 (2) | 0.9 (3) |
| **I am taking and using my medicines as intended by the doctors (BCa)** | **97.2 (312)** | 1.9 (6) | 0.9 (3) |
| Taking and using my medicines is very difficult (BCa) | 5.7 (18) | 2.2 (7) | **92.1 (292)** |
| **If I take or use my medicines as prescribed then my health will improve (Bco)** | **74.6 (235)** | 21.3 (67) | 4.1 (13) |
| If I don't take my medicines as prescribed something bad may happen (BCo) | **74.0 (236)** | 18.2 (58) | 7.9 (11) |
| **Taking and using my medicines fits in with my daily activities (En)** | **94.4 (302)** | 3.4 (11) | 2.2 (7) |
| Most people think that I should take and use my medicines as prescribed (SI) | **96.9 (310)** | 2.5 (8) | 0.6 (2) |
| **I feel sad about having to take and use so many medicines (Em)** | 44.5 (142) | 11.9 (38) | 43.6 (139) |

*TDF domains: K = knowledge, S = skills, BCa = Beliefs & capabilities, BCo = Beliefs & consequences, En = environmental, SI = social influences, Em = emotional.

## Discussion

The majority of patients had moderate/low medication adherence despite ongoing pain. Responses to behavioural statements indicate strong agreement for most but less agreement in the 'knowledge', 'beliefs of consequences' and 'emotional' domains. It included all patients, over 2 years, post PCI, had a good response hence representative of this group and used validated scales and the TDF. Responses, however, were all self-reported with potential for recall and social desirability biases. There is a need to consider how to improve adherence with strategies targeting identified TDF domains.

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# 0037
# Perception of female staff on menopause and its management within a university setting in Malaysia

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## Focal points

- Hormonal replacement therapy (HRT) has a prominent role in the management of menopause but has recently received much negative press.
- This study aimed to investigate perception of women in a developing country towards menopause and its management.
- Perception towards menopause was generally positive; all 50 participants believed that menopausal women could still lead normal lives. Perception towards HRT was less positive; only 25 participants (50%) believed that HRT was safe even when prescribed by a doctor.
- Pharmacists did not seem to play a major role as providers of information about menopause or its management. This highlights a possible role for pharmacists in improving the management of menopause.

## Introduction

HRT has been the therapeutic standard for alleviating menopause-related symptoms. Despite this, the public remain apprehensive about its long-term use, particularly due to recent studies associating its use with increased health risks[1,2]. Perception is fundamental to menopause management as it affects women's health seeking behaviours. Menopause is a private and sensitive topic in Malaysia and research in this area is scarce. This study aimed to investigate the current perception of menopause and its management in Malaysia.

## Methods

This cross-sectional, observational study recruited 50 female staff at the University of Nottingham Malaysia Campus. Staff from health-science related departments was excluded to minimise bias. Ethical approval was secured from the Science & Engineering Research Ethics Committee of the university prior to data collection. Potential respondents were approached in their work-place by convenience sampling. Participants who consented were asked to complete a structured self-administered questionnaire. Data was analysed using descriptive statistics.

## Results

Of the 50 participants, the mean (standard deviation) age was 41.8 (5.7) years, of whom 22 (44%) were academic staff and 43 (86%) had tertiary level education. Five participants

(10%) were post-menopausal but none reported the use of HRT. Thirty-four participants (68%) cited the internet as a source of information regarding menopause and its management, but only 4 participants (8%) identified pharmacists as a source of information. All the participants (100%) agreed that menopausal women can still live normal lives; 48 (96%) agreed that women can still look as attractive as before menopause. In contrast, 34 participants (68%) believed that women should tolerate menopausal symptoms as menopause was regarded as a natural aging process. Furthermore, 21 participants (42%) believed that lifestyle modification was the only method to relieve menopausal symptoms, while 11 (22%) agreed that women should only use traditional medicines to relieve menopausal symptoms. Only 25 participants (50%) believed that HRT was safe for use even if prescribed by a doctor.

## Discussion

Perception towards menopause was generally positive. However, there was a tendency to believe that women should tolerate menopausal symptoms. Whilst this demonstrates a resilient attitude towards menopausal symptoms, it may also deter individuals from seeking treatment. This may explain the lack of use of HRT even among post-menopausal women in this study. Many women upheld traditional beliefs and practices, including the use of either lifestyle modification or traditional medicines to manage menopausal symptoms. The negative perception towards HRT is exemplified by the fact that only 50% of the participants considered HRT as safe even when prescribed by a doctor. The high number of participants with tertiary level education may account for the high proportion that appeared to doubt the opinion of their doctors. Pharmacists did not play a major role as a provider of information on menopause or its management. This highlights a possible role for pharmacists in educating women. Further studies are needed to investigate the feasibility of this approach to improve the management of menopause.

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# 0038
# The views of community pharmacists' on continuing professional development (CPD)

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## Focal points

- The aim of the research was to explore the views and opinions of community pharmacists on CPD.
- The majority of pharmacists expressed positive views towards the reasons for doing CPD but were dissatisfied with the recording and review process.
- The study raises issues on the online recording system for CPD records and the content of feedback provided which may be of interest to the General Pharmaceutical Council's (GPhC) review of CPD.

## Introduction

Continuing Professional Development (CPD) became a compulsory requirement for pharmacists registered in Great Britain in March 2009 following high profile cases of negligence, such as the Bristol Royal Infirmary and Shipman inquiries. Pharmacists are required to submit their records to the GPhC approximately once every five years and receive feedback on their records following submission. The majority of pharmacists have now submitted their CPD for review and little is known about their views on this. The aim of the study was to explore the views and opinions of community pharmacists on CPD. The main objectives of the study were to identify perceived barriers to CPD and find strategies for overcoming them; to explore the usefulness of the feedback provided by the GPhC and to explore views on the processes of recording CPD.

## Methods

A qualitative design was used to explore the views of community pharmacists on CPD. An interview guide was designed, consisting of open questions producing qualitative data. The study adopted a cross-sectional, descriptive research design. Semi-structured face to face interviews were conducted. A purposive randomised sample was sought using the cluster-sampling technique. A total of ten community pharmacists were interviewed to encourage a wider range of pharmacists within the time limits. Four pharmacists worked for national chain pharmacies whilst two worked for supermarket chains. The remainder worked for independent pharmacies. Prior to each interview, pharmacists provided their consent to participate in the study. Interviews were audio-recorded and transcribed verbatim. Transcriptions were analysed using thematic framework analysis. Ethical approval was obtained prior to beginning research.

## Results

Five key themes were identified using thematic analysis: (1) impact of CPD, (2) perceived barriers, (3) usefulness of CPD methods, (4) recording online and (5) feedback from GPhC.

Lack of time was a key barrier preventing participation of CPD. Consequently, pharmacists drew on the possibility of allocated time. This is illustrated by the following quotation: 'Just generally pharmacists need protected time . . .' (Pharmacist A6). A common response from the majority of pharmacists, particularly older pharmacists, was the repetitive nature of the online system used to record CPD. This is shown by the following quotation: 'It is repetitive . . . a lot of the questions you sort of waffle through them because it's the same answer' (Pharmacist A3). Pharmacists also had negative views on the feedback provided by the GPhC on their CPD records: 'It didn't feel personal to me it felt very generic' (Pharmacist A1).

## Discussion

Time was found to be a recurring barrier, supporting existing literature[1]. The concept of allocated time has been discussed in previous research[2] but thought to be an unlikely strategy adopted by the majority of workplaces. Pharmacists who had been qualified the longest had negative views of the online system, possibly due to a generational gap in the use of technology. Due to the small sample size and specific population group, the findings are not generalisable across the whole of the pharmacy profession. This research highlights key aspects which need addressing such as the feedback provided to registrants and the online system used to record CPD. Future work should discover whether pharmacists working within different sectors express similar views to the community pharmacists who took part in this study.

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# 0039
# How can community pharmacists contribute to sensible drinking within the community?

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## Focal points

- The aim of the study was to determine pharmacists views and opinions regarding the effectiveness of alcohol interventions and screening tools, as well assessing pharmacists existing knowledge.
- The study found a significant increase in alcohol knowledge after the video intervention, with MCQ scores increasing from 3.64/10 to 8.18/10
- Overall study findings suggest that screening tools and interventions are perceived to be effective however there is a lack of confidence and knowledge in implementing alcohol services within the community.

## Introduction

With trends in drinking patterns over the years increasing exponentially, alcohol consumption globally is becoming of concern. In comparison to other European countries, the United Kingdom has been showing signs of excessive alcohol consumption, thereby increasing burden upon the National Health Service (NHS). With alcohol being an avoidable risk factor for disease and health consequences, the need for pharmacists to contribute to sensible drinking is becoming increasingly important, being at the heart of every community. Therefore the provision of opportunistic screening by pharmacists, using screening tools i.e. The Alcohol Use Disorders Identification Test Consumption (AUDIT-C) and Fast Alcohol Consumption Test (FAST) has deemed to be a more cost effective method to identify misuse. Brief Intervention (BI) is a new service aimed to motivate individuals to reduce their alcohol consumption. Studies suggest pharmacists perceive screening tools and BI's to be ineffective due to lack of patient acceptance. Furthermore, studies have indicated that pharmacists are not confident in utilising screening tools and providing advice due to inadequate knowledge, with research suggesting training being the most effective way to tackle this issue.[1] The aim of the study was to determine pharmacists views and perceptions of alcohol screening tools and BI as well assessing pharmacists alcohol knowledge to determine further improvements.

## Methods

Pharmacists from two diverse demographic areas, Southall (N = 50) and Gloucestershire (N = 50) were randomly selected resulting to a total of 100 pharmacists being sampled. An online survey, comprising of the following components: (1) alcohol screening tools and BI questionnaire to gain pharmacist perceptions, (2) 10 Multiple Choice Questions (MCQ) questions to assess knowledge, (3) A 2-minute intervention video encompassing of government guidelines, side effects, unit calculations and health implications (4) An MCQ retest to ascertain a knowledge improvement, was designed and distributed via email to complete. Following this, pharmacists from each area (N = 5 per area) were contacted to participate in a semi structured interview, where their views regarding the video intervention and contribution to alcohol awareness within the community was discussed. All ethical approval was obtained for this study.

## Results

The overall response rate for the study was 55% (N = 55). 36.3% (N = 20) of the respondents stating that the AUDIT-C and FAST screening tools were 'very effective' when implemented in the community. However, suggestions for improvements included using a more simplified tool and more training to improve confidence approaching customers. Overall 70% (N = 38) of the respondents correctly answered the statements regarding BI concepts highlighting that pharmacists are aware of the service however are not confident in implementing the service due to barriers such inadequate training and lack of time. Furthermore, the unpaired t test showed a statistical significance, ($p < 0.05$) highlighting the effectiveness of the video intervention. A significant difference in MCQ test results before and after the video intervention were observed, average scores increasing from 3.64/10 (SD +/− 1.71) to 8.18/10 (SD

+/– 0.55). Moreover, interviewee responses evaluated using thematic analysis, highlighted the video intervention to be an engaging technique to refresh memory regarding alcohol units and calculations.

## Discussion

The study findings suggests, that although pharmacists perceive both screening tools and BI to be effective, there is a lack of confidence and knowledge in implementing services due to inadequate training. This is reflected through an increase in MCQ test results after the intervention, suggesting training does increase pharmacists alcohol knowledge. Key themes from interviewees also highlight training to be essential in building confidence. A follow up test may need to conducted to see if knowledge has been retained after training. Overall findings suggest that training is essential to allow pharmacists to feel confident screening for alcohol misuse and providing opportunistic alcohol advice.

## Reference

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# 0040
# Specialists or specialising generalists: a grounded theory study of the role of the clinical pharmacist in neuroscience

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## Focal points

- Pharmacists practicing in neuroscience experience tension in identifying themselves as specialist practitioners within a neuroscience service, while remaining more generalist practitioners within a pharmacy service.
- Pharmacists utilise different forms of knowledge to underpin clinical decision making and there can be barriers to gaining this knowledge in clinical practice.
- Pharmacists identify the importance of integration within neuroscience multidisciplinary teams.
- Ways to support clinical pharmacists in neuroscience need to be explored; potential solutions include learning communities, multidisciplinary learning events, and enhanced roles for pharmacy technicians.

## Introduction

It is estimated 10 million people in the United Kingdom (UK) live with a neurological condition[1]. When excluding stroke and headache syndromes, a much smaller figure remains which encompasses a broad array of often rare and orphan conditions being treated by neurological services that are concentrated within a relatively small number of secondary and tertiary centres. There is a paucity of literature around pharmaceutical care in neurological services, particularly within the UK hospital setting; this finding is mirrored by the omission of a role for specialist clinical pharmacists when examining relevant national guidance around neurological disease. Against a professional momentum for specialism within clinical pharmacy, an exploratory study was undertaken to understand how pharmacists practicing within neuroscience define and develop their specialist role.

## Methods

A qualitative research approach was undertaken, using interpretive inquiry through the constructivist grounded theory method developed by Kathy Charmaz[2]. Data were principally generated by unstructured telephone interviews with fourteen hospital pharmacists practicing in neuroscience The pharmacists were given information about the study and written consent was taken for participation. Ethical approval was obtained for the project and appropriate NHS research permissions were given to conduct the research interviews. Verbatim interview transcripts were coded and compared to identify emerging processes that were explored further in subsequent interviews. This iterative process continued until no newly relevant processes were identified and a grounded theory had been developed.

## Results

The grounded theory for pharmacy practice within neuroscience comprises of three processes which are listed below and summarise the key findings:

1. Acquiring and utilising knowledge in practice. Pharmacists utilise different forms of clinical knowledge – theoretical, experiential and situational knowledge. There can be barriers to gaining experiential and situational knowledge. Pharmacists identify strengths in their breadth of clinical knowledge and holistic consideration of patients' drug therapy.
2. Gatekeeping access to drug therapies. Pharmacists act as barriers to, but also act to expedite and secure access to drug therapy. Considerations of organizational rules, patient safety and drug cost underpin these processes.
3. Integrating into the neuroscience service. Pharmacists act as an organizational nexus between pharmacy and neuroscience services. Pharmacists identify the importance in practice of forming working relationships within neuroscience services, underpinned by trust and opportunities to display their role.

Within each of the processes a tension was identified between specialist and generalist pharmacy practice. This tension was conceptualised within the grounded theory as a core process of 'Maintaining an overview of drug therapy'.

## Discussion

The findings raise an interesting debate about where the strength of clinical pharmacy lies within acute neurological services – as highly specialist practitioners focusing on specific drug therapies or as practitioners who are able to contextualise highly specialised treatments within patients' co-morbidities and concomitant drug therapies. The study highlighted how mutual learning takes place between pharma-

cists and other healthcare professionals of neuroscience services, suggesting potential benefits from multidisciplinary learning approaches. There are challenges to providing learning opportunities to practitioners within what is a small, yet emerging clinical pharmacy specialism in which pharmacists often practice in isolation to other specialist peers.

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2. Charmaz K. *Constructing Grounded Theory: A Practical Guide Through Qualitative Analysis*. Los Angeles: Sage, 2006.

## 0041
## An investigation of final year pharmacy students' use and views on over-the-counter medicines: a questionnaire study

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### Focal points

- The aim was to investigate final year students' use and views on over-the-counter (OTC) medicines.
- The majority reported using OTC medicines; safety was important during personal and professional decision-making and while students valued evidence of effectiveness, many were prepared to recommend unproven products in practice.
- More work is required to ensure that evidence of effectiveness is routinely considered in tandem with safety.

### Introduction

Ascertaining pharmacy students' use and opinions on OTC medicines is important, given that they are the pharmacists of the future. There is scarce research investigating student opinions in this area, particularly in Northern Ireland. Moreover, doing such work complements other studies involving pre-registration and qualified pharmacists[1] and enables comparisons to be made. The aim was to investigate final year pharmacy students' use and views on OTC medicines.

### Methods

Following ethical approval [provided by Queen's University Belfast (QUB) School of Pharmacy] and piloting (n = 10 postgraduate pharmacists), all final year pharmacy undergraduate students at QUB (n = 155) were invited to participate in a self-completed questionnaire (n = 20 questions) containing four sections. Section A addressed personal use and factors affecting personal product selection of OTC medicines, Section B focussed on safety and evidence of effectiveness in relation to decision-making in practice, Section C addressed deregulations and product licences and Section D gathered non-identifiable demographic information. The questionnaire was developed with reference to the literature; the response rate was maximised by having a reasonably short questionnaire with the majority of questions in closed-question format (responses measured using a 5-point Likert scale), and distributing it manually at an obligatory class (there was only one distribution) following comprehensive teaching of the subject material. Descriptive statistics and non-parametric tests were used for data analyses (comparisons done on male and female student responses and those with community practice experience versus no experience) with $p < 0.05$ set *a priori* as significant.

### Results

A response rate of 99.4% (154/155) was obtained [(41.3%) 64/155 male, (58.7%) 91/155 females]. Almost every student (153/155) reported using OTC medicines with 44.5% (69/155) using them on average once a month. The most common type of medicine used was analgesics. The top three factors influencing personal product selection were: perceived effectiveness, perceived safety of the medicine, and ease of taking/using (mean scores of 4.76, 4.07 and 4.07 out of 5, respectively). Females were more likely to be influenced by advertising than males ($p = 0.037$). The majority [96.1% (147/153)] were in agreement that safety was the over-riding concern when dealing with OTC consultations. While most [(96.1%) 149/155] 'Strongly Agreed' or 'Agreed' that using an evidence-based approach during OTC consultations improved the quality of patient care, 68.0% (104/153)'Strongly Agreed' or 'Agreed' that they would be prepared to sell an OTC product that lacks evidence of effectiveness, provided it would not cause harm. Females were more likely than males to consider it an ethical dilemma to provide OTC medicines that lacked a robust evidence-base [73.3% (66/90) versus 55.6% (35/63), respectively; $p = 0.023$]. The two deregulations that students were most likely to recommend in practice were chloramphenicol (greater for students with community pharmacy experience than not; $p = 0.032$) and amorolfine.

### Discussion

Safety was a key priority during personal and professional decision-making. While students recognised the importance of evidence of effectiveness, many were still prepared to recommend products lacking a robust evidence-base.[2] This study was conducted at one time point and the data was self-reported but the findings do echo previous work conducted with pharmacists.[1] Given that these students had recently received training, and yet held favourable views on products lacking evidence and unproven remedies, educational bodies may need to develop strategies to ensure evidence of effectiveness is a fundamental consideration of future practice.

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## 0042
## The prescribing of anticoagulants and aspirin in patients with atrial fibrillation (AF): a North-West England multi-practice review

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### Focal points

- Evaluation of the extent to which antithrombotic prescribing follows current recommended practice.
- 17.9% of AF patients are still prescribed aspirin monotherapy, despite changes in the guidelines.
- High compliance with the guidelines was observed for AF patients considered at high risk of stroke.
- Increased potential for the prescribing of newer oral anticoagulants (NOACs) in AF, particularly amongst patients whom warfarin is contraindicated/declined.

### Introduction

Aspirin is no longer recommended as part of stroke prevention therapy in patients with AF[1]. Despite changes in the guidelines for the management of AF, aspirin is currently overprescribed for thromboprophylaxis. The aim of this research was to evaluate the current prescribing of antithrombotics in a North-West locality for patients with AF. In addition, to further assess how this prescribing conforms to local and national guidelines.

### Methods

Data was collected across a patient population of 83,530 registered at13 medical practices, comprising a complete locality using the medical information systems in each surgery. The research team utilised Egton Medical Information System (EMIS) within each practice, permitting continuity of data exportation. This project focussed on registered patients with AF during December 2014. Thromboprophylactic drug therapy was found for patients, including $CHADS_2$ scores, indications for aspirin and the presence of anticoagulant contraindication/declination. Collated data was analysed using Microsoft Excel.

### Results

958 (68.6%) patients with AF in the locality were prescribed OAC. Of the remaining 439 (31.4%) patients not receiving anticoagulation, 250 (17.9%) were prescribed aspirin monotherapy and 189 (13.5%) received no antithrombotic. The vast majority of patients receiving OAC were prescribed warfarin (89.4%, n = 856). Other prescribed anticoagulation included the NOACs: apixaban (3.7%, n = 35), dabigatran (3.9%, n = 37) and rivaroxaban (2.8%, n = 27). Interestingly, 3 patients (0.3%) were still being prescribed acenocoumarol in the locality. 39 (2.8%) patients with AF received OAC and concomitant aspirin, most commonly in the presence of unstable coronary artery disease (CAD). Considerable variation in stroke prevention therapy was observed between the 13 medical practices. It was found that 635 (74.4%) patients considered at high risk of stroke received OAC. Anticoagulation was either contraindicated or declined in 156 (18.3%) patients at high risk of stroke, whilst the remaining 63 (7.4%) high risk patients did not receive appropriate thromboprophylaxis.

### Discussion

Previously, aspirin was prescribed for stroke prophylaxis in low and moderate risk patients. NICE updated their guidance in 2014, stating aspirin monotherapy should no longer be offered solely for stroke prevention[1]. This research found 17.9% of AF patients in the locality were prescribed aspirin monotherapy. Patients often received aspirin for stroke prophylaxis, contrary to guidance. However, many of these were initiated on aspirin pre-2012, prior to recent updates in the guidelines and reviewing these patients would be considered appropriate. Patients were often prescribed aspirin for alternative indications, such as cardiovascular risk factors, myocardial infarction or CAD. Observing patients at high risk of stroke, high compliance was demonstrated with the guidelines. 635 (74.4%) high risk patients were anticoagulated, whilst anticoagulation was contraindicated/declined in 156 (18.3%) patients. Warfarin was often declined due to unwanted INR monitoring, interactions and other risks commonly associated with warfarin. The guidance states NOACs could be considered in such patients, involving informed discussion of the risks/benefits comparative to vitamin K antagonists. Reviewing these patients and offering NOACs where appropriate could potentially increase the number of patients receiving thromboprophylaxis. The remaining 63 (7.4%) high risk patients did not receive OAC as per guidance and require medication review.

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## 0043
## Are there different outcomes from pharmacy minor ailment service consultations in and out-of-hours? An analysis of data from the *Choose Pharmacy* service

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### Focal points

- A high proportion of GP out-of-hours service consultations are taken up dealing with minor ailments.

**Table 1** The association between consultation characteristics and outcomes conducted out-of-hours

| | In-hours (%) (n = 2508) | Out-of-hours (%) (n = 368) | OR | Adjusted OR | 95% CI | *p* value |
|---|---|---|---|---|---|---|
| Rural area | 1469 (58.57) | 304 (82.61) | 3.36 | 3.30[a] | 2.49 to 4.37 | <0.001 |
| Male patient | 836 (33.33) | 163 (44.29) | 1.59 | 1.52[b] | 1.22 to 1.91 | <0.001 |
| Referral to other healthcare provider | 102 (4.07) | 5 (1.36) | 0.32 | – | 0.13 to 0.80 | 0.015 |
| Medicine supplied | 2422 (93.59) | 361 (98.10) | 1.83 | – | 0.84 to 3.99 | 0.128 |

a. Adjusted for gender.b. Adjusted for rural urban classification.

- The aim of this study was to examine differences in the characteristics and outcomes of pharmacy minor ailment consultations in and out-of-hours.
- Whilst the type of ailments presenting at pharmacies in and out-of-hours were similar, differences were observed in consultation characteristics and outcomes.
- Pharmacy out-of-hours consultations were more prevalent in rural areas and more likely to be dealt with by the supply of medicines.

## Introduction

It is estimated that up to 18% of general practitioner (GP) workload is taken up dealing with minor ailments[1]. There is evidence that the proportion of these consultations related to minor ailments is similar[2]. Because many pharmacies are open during the out-of-hours period there is potential for them to alleviate pressure on out-of-hours services, there is however little published evidence comparing minor ailment consultations in and out-of-hours.

## Methods

Data were obtained for all consultations taking place through the 32 pharmacies providing the *Choose Pharmacy* service in the two pathfinder sites in Wales. Consultation data was provided from an online application developed to facilitate patient registration and record consultations. Consultations were categorised as in or out-of-hours. Out-of-hours was defined as being after 6pm on weekdays, weekends and bank holidays. Pharmacies were categorised as rural or urban according to ONS Rural-Urban Classifications. Consultation outcomes were summarised according to whether a patient was referred or provided a medicine. The most common ailments and the age of service users were described. Stata v.13 was used to conduct multivariate logistic regression analyses comparing the characteristics and outcomes of in and out-of-hours consultations and to adjust for known confounders. Ethical approval was not required.

## Results

There were 2876 consultations between September 2013 and February 2015. Of these 368 (12.8%) were out-of-hours, the majority took place on Saturdays (213, 57.9%), only 5 consultations (1.5%) were on a Sunday. There was similarity in the ailments presenting in and out-of-hours; the top three ailments (hayfever, conjunctivitis and headlice) represented 51.1% and 50.0% of all consultations in and out-of-hours respectively. The mean age of patients using the service out-of-hours was higher than those using it in-hours (41.6 v 28.9 years).

Out-of-hours consultations were over three times more likely to take place in rural than urban areas and over 50% more likely to be with males than females. There was evidence that out-of-hours consultations were 68% less likely to result in referral to another healthcare provider and more likely to result in a medicine being provided, although this did not reach statistical significance (Table 1).

## Discussion

Whilst the ailments presenting at pharmacies in and out-of-hours were similar, men were more likely to present out-of rather than in-hours. The higher prevalence of consultations in rural areas, lower referral rate and higher rate of medicines being supplied out-of-hours suggest that pharmacies providing minor ailment consultations in the out-of-hours period face different challenges, one explanation could be the reduced availability of alternative health services out-of-hours although further research is required to confirm this.

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# 0044
# Pharmacist views on organisational characteristics that affect clinical productivity in English community pharmacies

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## Focal points

- Pharmacists' perceptions of how organisational characteristics influence clinical productivity (service quantity and quality) in English community pharmacies were explored.
- A number of different organisational factors were described as either helping or hindering clinical productivity including staffing and skill-mix, and organisational culture.
- Understanding the mechanisms by which clinical productivity can be maximised will support role expansion of community pharmacies for improved patient outcomes.

## Introduction

Organisational characteristics, such as pharmacy ownership, staffing and skill-mix, vary across community pharmacy organisations and create diverse practice settings. National Health Service (NHS) pharmaceutical service provision in England also varies across community pharmacy organisations[1] and may depend upon organisational configuration.[2] Part of a large, mixed-methods National Institute of Health Research funded study, this paper aims to explore community pharmacists' perceptions of the mechanisms by which different organisational characteristics might influence clinical productivity, defined in terms of both quantity (volume and range) and quality of service provision. National Research Ethics Service approval was obtained [13/WM/0137].

## Methods

Semi-structured face-to-face and telephone interviews (lasting 30–80 minutes), were conducted with 25 community pharmacists between October 2014 and January 2015. Interviewees were drawn from a stratified (by pharmacy type and study area) random sample of pharmacies (n = 39) across nine demographically diverse areas of England who had previously participated in a survey and had agreed to distribute a patient questionnaire as part of the wider study. The topic guide, informed by the literature and pharmacy survey, asked about the quality and quantity of service provision, how that was influenced by different organisational factors, how clinical productivity had changed and might be maximised, and ways of measuring and monitoring clinical productivity. A list of organisational factors was sent to interviewees in advance to promote discussion. The interviews were audio-recorded, transcribed verbatim and analysed in NVIVO 10 using a thematic framework approach.

## Results

Ten interviewees worked for large multiples/supermarkets; eight for small/medium chains; seven for independents. Variation in clinical productivity was reported between and within pharmacies. Interviewees reported being able to deliver a high volume and range of high quality services when staffing levels were maximised and skill-mix was fully utilised. This was further supported by the presence of a trusted team, enabling effective delegation. Whilst volume of work and competing demands were often mentioned as barriers to clinical productivity, second pharmacists and/or accuracy checking technicians were perceived as important facilitators, enabling pharmacists to spend more time with patients and deliver additional services. The role, values and priorities of pharmacy management were considered influential, with some organisations showing a target-focussed culture aimed at maximising service quantity. Conversely, cultures that focussed on skill-mix, team development and extended staffing models were considered to enable delivery of both service quantity and quality. Prescription collection and off-site dispensing services were perceived as examples of effective ways to manage workload, particularly where technology and positive relationships with the GP practice supported this. Some interviewees highlighted how the gatekeeping function served by GP practice staff could either help or hinder clinical productivity.

## Discussion

This research has identified several organisational characteristics that pharmacists perceive affect clinical productivity. Depending on the organisational culture within individual pharmacies, these characteristics affected clinical productivity either positively, by creating time and space for pharmacists' clinical roles, or by placing constraints on practitioners' time and effective delivery. It is important to understand how organisational characteristics affect clinical productivity, so that the mechanisms that enable higher quality service delivery can be better understood and utilised to further support role expansion of community pharmacies for improved patient outcomes.

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## 0045
## Exploration of the potential role of social media and microblogging in pharmacy education

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### Focal points

- To determine student and academic views of incorporating social media into undergraduate pharmacy education.
- Microblogging may be useful for summing up key points and asking questions.
- Students considered a Facebook® page regulated by academics may be beneficial for discussion
- Most students embrace social media, but some academics consider it too 'unprofessional'.

### Introduction

This project explores technology enhanced learning, focusing on social media and microblogging (communication restricted to 140 characters). The effect of microblogging on communication between pharmacy students and academics is explored, to determine whether it might help or hinder discussion, and exchange of ideas. Social media is largely untested in UK pharmacy education, despite being recognised within professional guidance[1], a recently published opinion[2] and indirectly in educational standards.

### Methods

A literature review was conducted using search terms like 'social media' and 'pharmacy', via databases like Medline and Google Scholar. This identified topics for consideration by a focus group including six 3rd year pharmacy students, to gauge student opinion on the use of social media and microblogging in education. The focus group was audio recorded and transcribed verbatim. Thematic analysis was used to identify themes, and survey questions developed from these. A questionnaire was developed in SurveyMonkey® (SurveyMonkey Inc.) and sent by email to 850 students (all four years) and 73 academics in the School of Pharmacy. Results were exported to Microsoft Excel™ to be analysed thematically and via a comparison between student and academic opinion. Ethics approval was given by the School of Pharmacy Ethics Committee.

### Results

The following results summarise the main findings from both the focus group and questionnaire.

The surveys achieved a 15.8% response rate from students, and a 28.8% response rate from academics. 130 students (97%) and 12 academics (57%) indicated that they used social media.

79 students (59%) and 11 academics (56%) agreed a microblog live feed could be useful for raising comments and questions in lectures. Survey respondents reported that anonymity could help students to ask questions, supported by one focus group participant stating '*it does take confidence putting your hand up in a room of 200 people*' [Male 1]. 115 students (86%) were unlikely to raise their hand in a lecture. But, students suggested that an anonymous system could result in misuse of the technology. Microblogging may be best employed in smaller group sizes, like workshops, a finding supported by academics (n = 15, 72%) although students were equivocal (n = 70, 52%). Students from the focus group and questionnaire reported that the 140 character limit of microblogging could be limiting and inconvenient. When asked to rank potential uses of microblogging, 'summing up of key points' was ranked first by students (n = 60, 45%) and academics (n = 10, 50%) and 'asking questions' was ranked second by students (n = 54, 40%) and academics (n = 8, 39%). A Facebook® page regulated by academics was considered useful for delivering module content and discussion by students (n = 80, 60%). Only 4 academics (19%) agreed, preferring to use the University Virtual Learning Environment, with one academic stating *'I much prefer using the University's supported platforms . . . feels more professional.'*

### Discussion

The results suggest that social media could potentially be introduced to pharmacy education, and microblogging may be useful for summing up key points and asking questions. Students considered a Facebook® page regulated by academics may be beneficial for answering questions, but effects of group size and the concern that social media is considered 'unprofessional' by some academics needs to be addressed. Limitations of this project include the low response rate to the survey and that this was conducted in one School of Pharmacy.

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## 0046
## The burden of brokerage: patients at the centre of their medicines management networks after hospital discharge

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### Focal points

- This research aimed to develop a better understanding of how patients experience medicines management

services after hospital discharge using Social Network Analysis.
- Patients perceived their medicines networks (their professional and personal medicines contacts) to be poorly connected and they perceived themselves as connecting up their own networks.
- Many patients perceived a burden in organising medicines management services.

## Introduction

Patients are at heightened risk from their medicines at care transfers and there is evidence that patients perceive a lack of co-ordination between their healthcare providers after they have been discharged from hospital.[1] This research aimed to understand how patients experience the organisation of medicines management services after hospital discharge and the roles that others play in managing their medicines.

## Methods

A mixed-methods Social Network Analysis of interviews with cardiology patients (n = 60) approximately six weeks after hospital discharge from two NHS Trusts in England explored patients' perceptions of their personal and professional medicines interactions. A series of name generator questions and associated probes and prompts were used to identify those playing medicines management roles and explore patients' perceptions of contact between those people. A hierarchical network mapping tool was used during interviews to map patients 'networks' (the set of people with a medicines management role) and the value of each person to patients. Interviews lasted up to one hour, were audio recorded and transcribed verbatim. Patients' networks were constructed and measures were calculated to determine the extent to which the patient acted as a broker – or a go-between – between others in their networks. The number of weak network components (the number of sets of unconnected people) were also measured. Qualitative interview data were analysed thematically. NHS ethics committee approval was granted.

## Results

Overall, patients recorded a mean network of 6.44 (SD 2.71) professional and personal network contacts. A quarter of the sample (15) perceived no connections between any of those network members. On average women perceived slightly denser (more connected) networks than men. The mean number of ties between network members was 5.28 (SD 9.26). Patients' networks had a mean normalised brokerage calculation of 0.88 (SD 0.15), indicting they largely perceived themselves in a 'go-between' role. On average there were 4.48 (SD 1.64) weak components (unconnected sets of people) in each patients' ego network; 74.7% (SD 20.6) of patients' ego networks comprised weak components. In interviews most patients reported perceiving low levels of contact between professionals in their networks. Some made distinctions between sharing information electronically and active spoken and/or written communication about them and their health. Patients perceived cardiac rehabilitation nurses to actively communicate with others, such as hospital doctors and GPs. Some patients described frustration at the lack of continuity in their care team. They particularly perceived poor continuity in their contact with a GP. These patients perceived a burden in updating their healthcare professional network members about their health condition and treatment.

## Discussion

Overall, patients described very loosely connected networks and perceived themselves as playing a strong broker role linking their medicines management network members. Other research has described patients and HCPs experiencing poor care continuity after hospital discharge.[2] That patients perceive a lack of connectivity amongst members of their medicines networks once they have left hospital may add to the burden they experience in managing their treatment and their health condition.

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# 0047
# Topical delivery of gabapentin (GabaGel™) for neuropathic pain: a 'proof of concept' study

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## Focal points

- Some patients cannot tolerate oral gabapentin for neuropathic pain due to significant central side effects
- Topical gabapentin, an NHS Pharmaceutical unlicensed 'special', has been used as a treatment alternative
- Significant reduction in pain scores after treatment were demonstrated (n = 23) with no reported side effects
- Topical gabapentin is an alternative treatment option for refractory, focal, peripheral neuropathic pain

## Introduction

Some patients cannot tolerate oral gabapentin for neuropathic pain due to significant side effects such as nausea or dizziness. Topical gabapentin, a pharmaceutical 'special', is used as a treatment alternative in chronic pain clinics[1]. Profes-

sional opinion, locally and nationally, indicate that this product meets immediate clinical need however there is lack of robust evidence to support safety, efficacy and quality. We performed a local retrospective observational study to assess efficacy and safety of 6% w/w gabapentin gel, manufactured by a local NHS pharmacy manufacturing unit, for the treatment of peripheral neuropathic pain conditions. The wider collaborative research group also explored mechanisms of action using human tissue and animal studies and quality aspects of formulation development. We present here a 'proof of concept' study to investigate safety and efficacy of topical gabapentin for a variety of peripheral neuropathic pain conditions.

## Methods

We present a single centre, retrospective, observational study (n = 23) where pain scores pre and post treatment were assessed using the British Pain Inventory numeric rating scale (BPI NRS) where 0 = no pain and 10 = maximal pain. Patients attended monthly assessment clinics where pain scores were routinely recorded in medical notes. Ethics and governance approvals were obtained to collect data from the notes of consecutive consenting patients (n = 25) being treated with topical gabapentin for refractory, focal peripheral neuropathic pain. A clinically significant reduction in pain score was deemed to be 2[2]. The case mix included post herpetic neuralgia (PHN), painful diabetic peripheral neuropathy (PDPN), chronic post surgical pain (CPSP), complex regional pain syndrome (CRPS) and vulvodynia. Patient treatment regimens followed local neuropathic pain guidelines. Patients were only treated with topical gabapentin if proven refractory or suffering intolerable side effects to standard regimens.

## Results

Data analysis demonstrates statistically and clinically significant reduction in pain scores after one month treatment (n = 20) with remaining patients (n = 3) reporting unaltered pain scores. Pain scores at baseline and one month after treatment changed from 8.2 (SD 1.5) to 5.6 (SD 1.6), $p < 0.001$. Post process analysis of results with Wilcoxon signed rank test also indicated a strong tendency for the pain score to decrease after 1 month (–0.988). Individual patients reported between 30–80% pain relief (BPI NRS) after treatment. All patients with vulvodynia (4/4), PDPN (1/1) and 2/3 patients with PHN responded positively to topical gabapentin. Patients with pain reduction at one month showed similar improvements at 6 months. Individual analysis of symptoms from each case indicated the gel was effective for burning pain, autonomic hyperactivity and post surgical neuropathic pain and was ineffective for dysaesthesias. However this study is limited by small sample size and absence of specific neuropathic pain measures. No side effects were reported.

## Discussion

Our study suggests that topical delivery of gabapentin can elicit a therapeutic response. A reduction in any experienced central side effects and a lower delivery dose were observed when compared to oral delivery. Topical gabapentin resulted in rapid improvement of symptoms (<1 month) when compared to the gradual titration required with oral administration (<8 weeks), with the associated patient and institution benefits. Results support anecdotal evidence that topical gabapentin is safe and efficacious for use in refractory focal peripheral neuropathic pain. Further randomised controlled trials are required to validate these findings.

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# 0048
# Preventing hospital admissions: evaluation of the Pharmacy Reablement Service

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## Focal points

- This evaluation sought to determine whether a structured domiciliary community pharmacist review was associated with changes in numbers of admissions, hospital bed days, and deaths.
- Community pharmacist review, as part of a reablement service, was associated with statistically significantly fewer admissions, hospital bed days and 30-day readmissions.
- Structured domiciliary visits by community pharmacists, targeted to patients at high risk of medication-related problems, are likely to help patients stay out of hospital.

## Introduction

As part of a wider reablement service, the Isle of Wight offered the pharmacy reablement service (PRS) to help prevent medication-related readmissions to hospital between 2011 and 2014. Social services identified patients vulnerable to readmission and referred them to the hospital pharmacy team for assessment of adherence problems. Patients with adherence problems were referred to community pharmacists for support following discharge to home. Community pharmacists conducted domiciliary medicines use reviews, removed discontinued medicines, and arranged services for future supply of medicines. All patients received a hospital assessment but, due to difficulties in delivering a domiciliary service, not all received a community pharmacy review. This

evaluation aimed to determine whether domiciliary community pharmacist review was associated with fewer hospital admissions.

## Methods

Pseudonymised data (identified by hospital number) from 2011 to 2014, detailing the activity undertaken by community pharmacists within the PRS, were linked to patient data (age, gender, primary diagnosis for reablement admission, number of admissions, bed days, and 30-day readmissions) in Excel 2007. Patients were retrospectively grouped into hospital assessment only (HAO) or assessment and community pharmacist review (CPR). Demographic data were summarised using descriptive statistics.

Baseline and post-intervention data were calculated; number of: hospital admissions/patient/year, bed days/patient/year, 30-day readmissions, and deaths. The change from baseline to post-PRS was calculated for number/patient/year of admissions and bed days. Demographic data, baseline data and change from baseline to post-PRS for the HAO and CPR groups were compared using t-test (continuous data) and Pearson's chi square (categorical data). Chi square was used to compare deaths and 30-days readmissions between the HAO and CPR groups.

Ethical approval was not required for this service evaluation.

## Results

435 patients were referred for CPR; hospital data was available for 433 patients. 208/435 (48%;95%CI 43,53) patients received a CPR; 182/208 (88%;95%CI 82,91) CPR hospital numbers were linked to hospital statistics data.

Demographics: Patients referred to the PRS had a median age of 81 years (minimum 36 years, maximum 99 years) and a broad range of primary diagnoses; 60% were female.

Baseline: Patients had a median of 1.0 (interquartile range (IQR) 1.0) admissions/year, 13.8 (IQR 18.0) bed days/year, and 0.5 (IQR 0.5) 30-day readmissions/year in the two years pre-reablement. Comparison of the HAO and CPR groups showed no statistically significant differences in baseline or demographic characteristics.

Effect of CPR: Compared to HAO, CPR was associated with greater reductions from baseline in admissions (–1.5 admissions/patient/year, $p = 0.003$) and hospital bed days (–11.6 days/patient/year, $p = 0.006$). There were fewer 30-day readmissions (odds ratio (OR) 0.45, $p = 0.004$) and deaths within 1 year of reablement (OR 0.72, $p = 0.156$) in the CPR group compared to the HAO group. These differences were statistically significant for all measures except deaths.

## Discussion

Receiving a domiciliary community pharmacist review as part of a reablement service was associated with patients at high risk of medicines-related problems experiencing statistically significantly fewer numbers of admissions, 30-day readmissions and bed days compared to patients receiving hospital assessment only. This is a retrospective evaluation, patients were not pre-assigned to a treatment or control arm, therefore it is possible that streaming of more unwell patients into the HAO group may explain some of the differences observed in hospital usage.

# 0049
# Medicines use review (MUR) activity in English community pharmacies: associations with pharmacy type and population need

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## Focal points

- Variation in current provision of medicines use reviews (MURs) nationally was investigated to determine associations with pharmacy type and population need.
- Dispensing volume and organisational type showed a strong positive association with MUR activity, whereas local population prevalences of chronic morbidities were negatively associated with numbers of MUR conducted.
- Despite the introduction of target groups for MURs, a mismatch remains between population need and service provision.

## Introduction

Medicines use reviews (MURs) were introduced in 2005. Early evidence suggested that MUR provision by pharmacy chains was almost double that of independents (<6 stores) and negatively associated with population prevalence of limiting long term illness and deprivation.[1] In 2011, three target groups were introduced for MURs (high risk medicines, post-discharge and respiratory disease) to which 50% of all MURs were to be directed. One further target group (cardiovascular disease) was introduced in 2015. One aim of this National Institute of Health Research funded study (National Research Ethics Service approval [13/WM/0137]) was to investigate current variation in MUR provision by community pharmacies and whether early associations with organisational type and population need persisted.

## Methods

Pharmacy-level dispensing and MUR activity data for all community pharmacies in England for the financial year 2012/13 (n = 11,033) were obtained from the NHS Business Services Authority, linked by postcode to lower super output area sociodemographic data, and anonymised. An ordered logistic regression of number of MURs conducted/year (categorised as: <13, 13–180, 181–365, >365 per annum) was run against: pharmacy type (independent (<6 stores), small (6–25 stores), medium (26–200 stores) chain, large multiple (>200 stores),

supermarket); items dispensed (logarithmic scale); Index of Multiple Deprivation (IMD) score; % population aged 0–4; % population aged 75+; and prevalence of cardiovascular disease (CHD), mental health problems (MH), depression, asthma.

## Results

Following data linkage and cleaning, a full set of data was available for 9,955 pharmacies. The two variables most strongly associated with MUR activity (pseudo $R^2 = 0.15$) were dispensing volume (odds ratio (OR) = 11.0[9.3,12.9]) and pharmacy type: all pharmacy types conducted more MURs than independents (OR for small chains = 4.4[3.8,5.1], medium chains = 4.9[4.3,5.7], multiples = 11.5[10.4,12.7], supermarkets = 11.6[10.1,13.4]). Local prevalence of CHD (OR = 0.76[0.71,0.82]), MH (OR = 0.74[0.57,0.95]), depression (OR = 0.94[0.90,0.97]) and asthma (OR = 0.86[0.79,0.94]) were all negatively associated with MUR activity. IMD score and age group prevalence were not obviously associated with MUR activity.

## Discussion

Pharmacy type and dispensing volume remain the strongest determinants of MUR activity. A separate analysis of the organisational factors associated with MUR activity suggested that having an accuracy checker may help pharmacies deliver more MURs[2] but there is still the possibility that the higher numbers conducted in multiples may be due to organisational pressure to meet targets.[1] Despite the introduction of targeted MURs, this new analysis suggests that there still appears to be a mismatch between MUR provision and local population need. This may be due to financial incentives to meet (yet not exceed) the 400 MURs/year target outweighing professional incentives to meet the needs of the local population. It is possible that the recent introduction of a further target group for MURs may help redress this. However, further research is required to better understand the organisational drivers of not only the volume of services provided by community pharmacies but also their associated quality in terms of outcomes for customers and patients.

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# 0050
# The prescribing of Metoclopramide and Domperidone in Ellesmere Port and Neston with reference to the NICE guidance

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## Focal points

- A summary and overview of the prescribing trends of metoclopramide and domperidone across North West England.
- Consideration of prescribing against NICE guidelines and the impact on the long term health of the population prescribed the medication.
- Alternative anti-emetics available for long term use and the potential to reduce the likelihood of side effects

## Introduction

Both metoclopramide and domperidone are effective anti-emetics and are used predominantly in the treatment of nausea and vomiting. Both are motility stimulants which stimulate gastric emptying and small intestine transit, this is referred to as a pro-kinetic action, therefore both metoclopramide and domperidone can be referred to as pro-kinetic agents; this stimulatory effect is utilised in the treatment of various gastro-intestinal disorders.

Due to metoclopramide's mechanism of action, long term use may lead to unwanted side effects including short-term extrapyramidal disorders. The risk of serious side effects associated with metoclopramide was noted in the safety bulletin in August 2013 following a European Medicine's Agency (EMA) review which suggested that metoclopramide should only be prescribed for short-term use, a maximum of five days.

Early in 2014, an EMA review on the safety and effectiveness of domperidone concluded that it is associated with potentially life threatening cardiac side effects and should not be used in patients with cardiovascular complications; it restricted the use of domperidone to the treatment of nausea and vomiting. Further action was taken in September 2014 when the MHRA announced that domperidone would no longer be available to purchase in a pharmacy and would only be available on prescription, with its licenced indication restricted to nausea and vomiting only.

## Methods

A retrospective consideration of the prevalence of prescribing of these medicines over 2 years was carried out to establish pre and post announcement activity. The data for this project was collected across a patient population of 83530 registered at 12 GP surgeries, which encompassed the whole locality of the CCG. The data was collected using the surgery's patient medical information system, using a standardised data collection sheet.

## Results

531 patients (0.64% of the population) were prescribed metoclopramide during the 12 month period, and 1373 patients (1.64% of the population) were prescribed domperidone during the 24 month period. Of the 309 patients prescribed metoclopramide for acute conditions, only 4% was in accordance to NICE guidelines (maximum treatment duration of five days). It was found that only 27% of patients were prescribed domperidone within its licensed indication after September 4th 2014. 87.4% of patients who were taking metoclopramide were initiated treatment in a primary healthcare setting, 11.4% in secondary care and 1.2% in out of hours, compared to those who were taking domperidone, 81.7% were initiated in a primary healthcare setting, 17.6% in secondary care and 0.5% in out of hours.

## Discussion

In view of recent guidelines regarding metoclopramide's safety, there was 16% chronically prescribed metoclopramide, putting the patient population at great risk of developing neurological side effects.

In light of the safety issues regarding domperidone, and its classification change post September 4th 2014, prescribers should have changed their prescribing patterns in accordance to new guidance. Across the 24 month period only 28% of patients were prescribed domperidone for nausea and vomiting with the largest percentage of domperidone prescribing (55%) seen in the symptomatic control of gastro intestinal problems, now an off-licence indication.

From the withdrawal of cisapride to metoclopramide and domperidone's safety issues, it seems all pro-kinetic agents have severe side effects which could impact upon patient health. There are currently no other licenced pro-kinetic drugs on the UK market. It has been suggested that all patients on long-term domperidone treatment should have their treatment reviewed, with a possibility of a withdrawal trial. And if there is a need for treatments with metoclopramide or domperidone it should be at the lowest possible dose (10mg three times daily) for the shortest possible duration.

# 0051
# Use of antipsychotics in mental health secondary care setting versus primary care: results from two post-marketing safety studies

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## Focal points

- An adhoc analysis used observational post-marketing study data on use of an atypical antipsychotic collected for a Specialist Cohort Event Monitoring (SCEM) secondary care study and separately for a Modified Prescription-Event Monitoring (MPEM) primary care study conducted concurrently to explore the potential of selection bias in studies conducted using primary care data sources.
- SCEM patients had a higher prevalence than M-PEM patients of pre-existing depression, extrapyramidal symptoms (EPS), diabetes and antipsychotic use which are independent risk factors for known adverse events.
- These findings suggest that selection bias may exist which may impact on generalisability of results from primary-care post-marketing studies to all treated patient, thus there is a need for surveillance in secondary care

## Introduction

MPEM provides post-marketing safety surveillance of patients newly treated with new medicines in primary care. Generalisability of results may be limited from excluding patients with complex baseline characteristics (underlying/concurrent disease, medications) exclusively managed in hospital. SCEM applies event-monitoring within secondary care. [1] A risk management plan of quetiapine extended release (XL) had a need to describe use & monitor long-term (12+ months) and short term (12 weeks) safety in primary and mental-health care setting, respectively. An MPEM study monitored for known risks (e.g. metabolic effects) and safety signals in patients of all indications. A SCEM study monitored early-onset events during titration and at higher doses (>600mg) in Schizophrenia & Bipolar disorder (BD) adults (>18 years); a comparator (quetiapine Immediate Release (IR)) was included to explore any influence of the new formulation on safety (ENCEPP Study 5412). This adhoc analysis aimed to explore the potential of bias by comparing MPEM and SCEM data on patient baseline characteristics.

## Methods

Both studies used an observational cohort design. For the MPEM study, ethical approval was not required.[2] MPEM

data used for analysis were derived from dispensed prescriptions Sept 2008-Feb 2013 and from medical records collected retrospectively via questionnaires sent to general practitioners 12+ months after each patient started treatment. For the SCEM study, ethical approval was granted Jun 2009 and included patients for whom the decision to treat was made by psychiatrists Dec2009-Dec2012. SCEM data were derived from hospital medical records collected retrospectively via questionnaires completed by psychiatrists 12+ weeks after each patient started treatment. Descriptive statistics & Odds Ratios (OR) +95%Confidence Intervals (CI)-exact method) were calculated.

## Results

The SCEM XL cohort (646) included 258 (39.9%) with Schizophrenia, and 345 (53.4%) with BD. The MPEM cohort (13276) included 2362 (17.8%) adults with Schizophrenia, 3820 (28.6%) with BD. In Schizophrenia, SCEM patients were significantly more likely than MPEM patients to be <30 yrs old [84 vs 488; OR 1.6 (1.2, 2.2)], have a history of: depression [152 vs 446; OR 6.2 (4.8, 8.1)], EPS [ 46 vs 103; OR 4.8 (3.2, 7.0)] and prior antipsychotic use [175 vs 779; OR 4.2 (3.2, 5.6)]; recent (<28 days prior to starting XL) prior IR use was less likely [18 vs 632; OR 0.2 (0.1, 0.3)]. In those with BD, SCEM patients were more likely than MPEM patients to have a history of: depression [258 vs 1344; OR 5.4 (4.2, 7.0)], EPS [34 vs 66; OR 6.2 (3.9, 9.7)], diabetes [ 37 vs 168; OR 2.6 (1.7, 3.8)] and antipsychotic use [182 vs 772; OR 4.4 (3.5, 5.5)],recent IR use was less likely [17 vs 985; OR 0.2 (0.1, 0.2)].

## Discussion

In this analysis, SCEM patients had a higher prevalence than MPEM patients of depression, EPS, diabetes and antipsychotic use which are risk factors for some known adverse events. Considerations include differences in: the data available within medical records; prescribing guidelines; method of identifying patients; and overlap of the study populations. These findings suggest that selection bias may exist which may affect generalisability of results from primary-care based studies to all treated patients, thus there is a need for surveillance in secondary care.

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# 0052
# Simulation – friend or foe? An investigation into student perceptions of clinical simulation as a teaching method for pharmacy undergraduate education

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## Focal points

- New integrated 5-year undergraduate MPharm programmes are on the horizon and use of clinical simulation in UK pharmacy education is an emerging theme[1].
- Pharmacist roles are evolving; such as the extension to pharmacists' clinical skills in managing long-term conditions called for by the Royal College of General Practice (RCGP) and Royal Pharmaceutical Society (RPS).
- The study found patient focussed simulation is an appropriate way of learning communication skills (100%) of respondents and drug counselling (99%) of respondents.
- 93% of respondents stated the simulation workshop were a more useful way of learning compared to lectures.

## Introduction

Simulation has been used in medical, nursing and dental education for at least the last 50 years. The use of clinical simulation in UK pharmacy education is an emerging theme[1]. MPharm courses offer students limited opportunities to meet real patients and participate in work-based environments when compared with other degree programmes for healthcare professions. Simulation in nursing education is acknowledged to assist in the creation of a learning environment which contributes to development of knowledge, skills, safety and confidence[2]. Few MPharm courses include a strong element of interaction with real/expert and simulated patients, in simulated environments, in order to develop competence and confidence in communication and decision making. Formative opportunities to practice these skills and receive support and feedback are essential and could form a significant part of the MPharm. This investigation sought to identify answers to the following questions:

- What are student self-reported experiences of simulation workshops?
- What effect does simulation have on pharmacy students' understanding of the role of the pharmacist?
- How do students rate clinical simulation when compared to other teaching methods?

## Methods

A mixed method approach was used in order to identify the principal themes using more than one technique, with perceptions analysed using a qualitative approach. Triangulation of focus group themes was undertaken by means of an exit questionnaire (total population sampling) following student participation in compulsory simulation workshops. Focus

group and interviews were recorded digitally and transcribed by the researcher before thematic review of transcripts was undertaken using validated qualitative technique of thematic analysis (TA), as this is scoping research. The exit questionnaire was based on those used in similar studies, and piloted in 2009. Additional questions were added for reliability (test-retest) following the pilot. Questionnaire results were obtained following each workshop (at least 1 per academic year). Focus groups were run in the pilot year, 2009–2010 academic year to establish principal themes, and again in 2013–2014 academic year for triangulation. University Bioscience Research Ethics Committee approval was granted for this study.

## Results

394 questionnaires over a 4 year period, 8 x focus groups consisting of between 6 and 10 students and $2 \times 1 - 2 - 1$ interviews were undertaken. Preliminary analysis was undertaken using NVIVO and standard statistical software.

**Table 1** Summary of key benefits and issues identified from the simulation workshops

| | |
|---|---|
| Respondents felt that | The workshops were challenging and stressful |
| Their own skills were improved as a result of the simulation workshops | |
| It was good to see real life simulated and to meet simulated patients | In some cases waiting time to meet real patients was excessive |
| The session offered a chance to practice health promotion activities | Pre workshop lecture not detailed enough |
| The session allowed group / teamwork development | Pre workshop lecture too detailed |
| The session allowed us to put taught material into perspective | Reflection and debrief not useful |
| The session allowed us to learn a lot about hospital pharmacy | |
| Simulation helped prepare me for placements | |

## Quantitative data findings

77% of respondents stated a simulation workshop was a useful way of learning compared to normal workshops and 93% would like more simulation sessions of this type. One respondent stated 'It puts theoretical knowledge into practice and enables you to learn by experience and participation which makes it more enjoyable' with 93% of respondents stating the simulation workshop was a more useful way of learning compared to lectures.

## Discussion

The preliminary findings of this study support the established literature that simulation assists in the development of a number of skills including development of knowledge, skills and confidence. Some students responded that transition shock was reduced, in that they felt prepared and less distracted on their placements because they were aware of the noises and likely distractions and could focus on the task itself.

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2. Norman J. Systematic Review of the literature on simulation in nursing education. *ABNF Journal* 2012 Spring 2012;23(2):24–8. PubMed PMID: 75292183.

# 0053
# Customer views of pharmacy public health services and the impact of Healthy Living Pharmacy status: can we detect differences?

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## Focal points

- Can a customer survey show differences in perceptions of public health services among users of different pharmacies, particularly Healthy Living Pharmacies?
- Healthy Living Pharmacy users had greater awareness of public health services, particularly in the pharmacy they used, than users of other pharmacies, but staff were perceived as equally proactive.
- Differences in awareness of services can be detected among users of different pharmacies using a customer survey.

## Introduction

Awareness of pharmacy-based public health services is generally low,[1] but little work has compared user awareness between different pharmacies. Healthy Living Pharmacies (HLP) proactively promote public health services, thus awareness of services may be greater among customers of these pharmacies. This study aimed to develop and pilot a questionnaire to determine pharmacy customer perceptions of pharmacy public health services.

## Methods

A questionnaire was developed from a previously validated instrument.[2] It contained mostly closed questions covering: awareness and use of pharmacy-based public health services; experience of the pharmacy where the customer was recruited; and demographic details, including lifestyle risk factors. Cognitive interviews were undertaken with 6 pharmacy users prior to piloting to refine the questionnaire.

Questionnaires were distributed by hand to a maximum of 200 sequential customers visiting each of a convenience sample of eight community pharmacies over two weeks in January 2015, with an envelope for return to researchers. Pharmacies included five at different stages of HLP implementation. Data were analysed in SPSS, using Chi-squared tests to assess differences between users of HLP and other pharmacies. University ethical approval was obtained.

## Results

The response rate was 220 (15.7%; 1400 distributed); 147 (66.8%) were from customers of HLP pharmacies; 56.8% were female, 54.2% were aged 65 or over and respondents used a median of 3 regular medicines. Only 15 (7.0%) were current smokers, but 23 (14.6%) were at increasing or higher risk from alcohol (assessed via AUDIT-C tool), 119 (65.0%) were overweight/obese, 36 (16.8%) took no exercise and 121 (56.3%) had low fruit/vegetable intake.

Awareness/use of pharmacy services was highest for smoking cessation support (157; 71.4%), flu vaccinations (136; 70.1%) and emergency contraception (119; 54.7%), with fewer aware of advice on weight loss (101; 45.9%), sensible drinking (78; 42.4%), healthy diet (89; 40.4%) and exercise (52; 23.7%). Users of pharmacies designated as HLP were more likely than those using other pharmacies to be aware of or have received advice on healthy diet (52.4% vs 36.9%) and exercise (33.9% vs 16.9%) ($p < 0.05$), but there were no differences for other services. More users of HLP pharmacies were also aware of weight management services being offered in that pharmacy (24.8% vs 11.9%; $p < 0.05$), again with no differences for other services.

Most customers trusted the pharmacist (187; 86.2%) and their staff (165; 76.7%) to keep information confidential, and felt the pharmacist (157; 72.7%) and staff (164; 76.6%) were easy to talk to. However less than two-thirds felt the pharmacy they visited had somewhere they would feel comfortable talking about sensitive problems (133; 62.1%), but this was higher among HLP customers (67.6% vs 51.4%) ($p < 0.05$). Only 124 (58.2%) respondents felt staff were proactive in offering health advice, with little difference between HLP and other pharmacy users (59.2% vs 56.3%).

## Discussion

Although the response rate was low, the questionnaire successfully gathered data from pharmacy customers with potential to use such services and identified differences in awareness of some aspects of service provision. It may prove useful for comparing HLPs to other pharmacies. Our findings suggest that customers of HLPs are more aware of some pharmacy-based public health services, but that pharmacy staff are not perceived to differ in their proactivity in promoting these.

## References

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# 0054
# The use of community pharmacies in Northwest England: an observational study

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## Focal points

- Observation studies of pharmacy footfall are rare – this abstract describes the frequency and characteristics of activities undertaken in five diverse community pharmacies
- Whilst the primary activity linked to footfall in these community pharmacies was dispensing, some pharmacies were showing significant activity in nationally- and locally-commissioned services
- Younger women, and older people of both genders, remain significant groups of pharmacy users and services need to be responsive to their needs

## Introduction

There are few studies of community pharmacy footfall and activity in the existing literature, especially by direct observation. Pharmacies in England have the ability to provide a range of services and products since the changes to their contractual framework in 2005. Recent reviews have confirmed that delivering advanced and enhanced services alongside core dispensing roles has increased community pharmacy workload[1,2]. Whilst dispensing of prescriptions is routinely reported as the dominant work activity[1,2], there are limited data concerning non-dispensing activities. Examining customer use of pharmacies through footfall data allows measurement of the extent to which these activities contribute to the overall activities of a pharmacy. This observation study aimed to describe the frequency and characteristics of interactions at the counter between pharmacy staff and customers.

## Methods

This work formed part of a wider study of the provision of alcohol services from community pharmacies. A market researcher used a checklist to directly observe all interactions between pharmacy staff and customers at the counter at days and times that covered most of the weekly opening hours of each of five pharmacies across the Northwest of England. These 5 pharmacies volunteered from the wider study cohort of 11, which had been purposively selected to maximise diversity in terms of ownership and location, across an area of significant deprivation. Observation checklist points included service/s accessed; staff participants (e.g. pharmacist, counter assistant) in each consultation, and gender/age of each visitor to meet the study aim. The checklist was validated with the project team, and a minor amendment made by one of the

market researchers after the first observation period. Institutional ethical approval was obtained for the study.

## Results

Collecting a prescription was the predominant activity for customers when visiting the pharmacy (75.8%; n = 2,501). Retail sales of non-medicine products (14.2%; n = 468) and of non-prescription medicines (9.3%; n = 307) were also common. A significant minority of customers sought advice (4.8%; n = 158) or accessed a service (4.4%; n = 144). When the incidence of different activities was calculated as a percentage of the pharmacy's overall activity (Table 1), dispensing prescriptions showed variation from 49.1% (PH5) to 79.9% (PH4) of in-pharmacy activity and other activities also varied. Among adults aged <45 years, female: male customer visits were 2:1, changing to almost 1:1 for those aged 45 plus. Pain relief medication (74/307; 24%) and cold and flu remedies (53/307; 17%) were the most commonly purchased types of over-the-counter (OTC) medicines. Approximately two-thirds (62.6%; n = 2,078) of the interactions observed at the counter were between a customer and a Medicines Counter Assistant.

**Table 1** Footfall at each pharmacy over the observation period by service/s accessed as a percentage of the pharmacy's overall activity (n = 3,651; some customers accessed multiple services)

| Service | PH1 % (n = 333) | PH2 % (n = 1,180) | PH3 % (n = 1,002) | PH4 % (n = 753) | PH5 % (n = 383) |
|---|---|---|---|---|---|
| Dispensing a prescription | 70.9 | 69.2 | 65.8 | 79.9 | 49.1 |
| Non-medicine sale | 7.5 | 11.2 | 19.3 | 7.8 | 15.4 |
| Non-prescription medicine sale | 8.7 | 10.4 | 6.1 | 3.2 | 18.5 |
| Seeking Advice | 6.6 | 5.3 | 2.3 | 4.4 | 4.4 |
| Using a Pharmacy Service | 3.3 | 2.4 | 4.1 | 3.3 | 9.9 |
| Other | 3.0 | 1.5 | 2.5 | 1.3 | 2.6 |

## Discussion

Dispensing was the primary activity across the diverse range of pharmacies, but use of other pharmacy services and self-care activities was notable.

## References

1. Hassell K et al. Workload in community pharmacies in the UK and its impact on patient safety and pharmacists' well-being: a review of the evidence. *Health Soc Care Community* 2011; 19: 561–75.
2. Lea VM et al. Workload and its impact on community pharmacists' job satisfaction and stress: a review of the literature. *Int J Pharm Pract* 2012; 20: 259–71

# 0055
# An exploration of key stakeholders' perspectives on the implementation of ehealth policy in community pharmacy in Scotland

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## Focal points

- Policy-driven uptake of ehealth in community pharmacy in Scotland consistently focuses on implementation, patient-care, education and training and information governance
- Findings demonstrate optimistic, realistic and visionary perspectives of aspirational, policy-driven implementation of ehealth in community pharmacy in Scotland
- Implications of the study include insight into key stakeholders perspectives on the impact of ehealth implementation for pharmacy practice

## Introduction

Scotland's eHealth Strategy[1] promotes the use of information technology to, 'improve communications across the healthcare team' which aligns with the Quality Strategy in placing the 'focus on outcomes and real benefits delivered rather than technologies.' The more recently published 2020 Workforce Vision[2] envisages, 'making more and better use of technology and facilities to increase access to services and improve efficiency' which was reinforced by the Prescription for Excellence and the Review of NHS Pharmaceutical Care of Patients in the Community in Scotland. Policies are supportive of ehealth in facilitating collaborative health and social care in providing integrated, person-centred, patient care enabling community pharmacy to offer extended and accessible services. This research aimed to explore and describe key stakeholders' perspectives on the implementation of ehealth policy in community pharmacy in Scotland.

## Methods

Invitations to participate were emailed to a convenience sample of key stakeholders in pharmacy in Scotland using contact details in the public domain plus snowballing. The email included a link to an online consent form with information sheet and interview schedule attached. Questions covered four areas identified from policy documents: implementation, patient care, education and training, information governance. Questions were positively-framed to demonstrate intention: 'how well'; 'facilitators and drivers'; 'best support'; 'particularly useful' were refined and piloted with academic colleagues. Semi-structured telephone interviews were audio-recorded and transcribed verbatim with transcripts made available for participants to review. Five-step thematic analysis of

the transcripts included: familiarisation, initial coding, then searching for, reviewing and defining themes. Ethical approval was granted by Robert Gordon University plus NHS Research & Development permission Scotland-wide.

### Results

Thirty interviews lasting up to 35 minutes were conducted between November 2014 and March 2015. Participants included NHS Directors and Assistant Directors of Pharmacy (n = 12), Information Technology Leads (n = 5) and Community Pharmacy Champions (n = 5), Scottish Government (n = 2) and pharmacy group representatives (n = 4) plus managing directors of pharmacy multiples (n = 2). Eleven of the 14 Scottish health boards were represented. Analysis indicates both optimism in the potential of ehealth and realism around logistical and human factors around change. A recurrent theme was 'access': the need for at least read access to a shared, single patient health record; with access levels described as appropriate to each health and social care professional, while lack of a single, cross-platform login remains unresolved. Another theme of 'capacity': included the upskilling of the pharmacy team recognising different individual learning styles; also, new ways of working to release capacity from the dispensing process to promote patient-facing roles. The topic of information governance raised as many questions as answers: many mentioned data protection, code of ethics or NHS contract while one noted 'everybody ticks the boxes but actually do they understand what they're ticking?' Given the opportunity to introduce one ehealth technology tomorrow, most mentioned the single, shared health record while others would welcome truly electronic transfer of prescriptions, mobile technologies/devices, greater wi-fi coverage/access and clinical mailboxes.

### Discussion

These findings represent unique insight into policy-driven progress with the implementation of ehealth in community pharmacy in Scotland. Although not all health boards were represented, key stakeholders perspectives on the implications for practice of access, capacity and information governance relate directly to safe, effective patient-centred care; education and training needs; and staff-patient perceptions of appropriate information governance.

### Acknowledgements

The research team wish to thank all participants and gratefully acknowledge Morven McGuigan, Kea Scott, Michael Smith and Carole Wong for their role in data collection.

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## 0056
## Transition to independent practice for novice community pharmacists: how do challenges associated with transition influence practitioner performance?

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### Focal points

- The absence of research into the challenges faced by novice community pharmacists at transition led to a narrative review of the challenges faced by other 'general' practitioners, (doctors and nurses) being undertaken.
- Three elements influenced novice performance at transition: personal experiences, the workplace setting, and social experiences in the workplace.
- Novice community pharmacists may benefit from targeted support interventions, to mitigate the effects of challenges encountered at transition to practice.

### Introduction

When they transition into independent practice, novice practitioners working in the public sector (doctors and nurses) are supported with formal [professional regulator-endorsed] interventions, such as continued supervision, shadowing, mentorship, preceptorship or tiered acquisition of responsibility. Support for novice community pharmacists however, is variable and determined by their private sector employer. Moreover, novice community pharmacists take on full professional responsibility when entering registered practice and are expected to lead teams, manage competing demands and work in isolation from professional peers. There is limited evidence available about the challenges of this transition and its impact on performance. This study therefore presents insights from studies of the transition of novice doctors and nurses and considers their relevance for community pharmacy.

### Methods

A systematic search in MEDLINE, EMBASE, CINAHL, PsycINFO, IPA and Science Direct was performed for peer-reviewed evidence relating to the transition of novice pharmacists, doctors and nurses into registered practice. Keywords/synonyms were searched in four domains: newly-qualified, healthcare professional (including pharmacist, doctor, physician and nurse); transition; and performance (English language, between 1990–2015). Reference lists of included articles were searched. Transition was defined as entry to and up to three years of registered practice (with professional accountability), following a [minimum] three-year degree programme. No ethical approval was required.

### Results

Twenty-four papers reporting findings from qualitative, quantitative and mixed methods studies using cross-sectional or

longitudinal designs were identified, 18 from nursing, six from medicine but none from community pharmacy. Challenges to transition were categorised by how they influenced transition experiences, and effects on performance. Analysis suggests transition is influenced by three interlinked elements; 'personal experiences,' 'social experiences of the workplace' and 'characteristics of the workplace setting.' 'Personal experiences' referred to emotional/cognitive responses such as fear/stress or frustration from job demands or negative interactions with colleagues and was more prevalent in the nursing literature. Negative experiences lowered self-confidence, prevented learning, and hindered professional identity development and assimilation into the workplace. **'**Social experiences,' (in all but one article) referred to the influence of professional socialisation on novices' behaviours/actions. Novices felt immense pressure to 'fit in' with organisational culture and adopted hierarchical expectations or norms, in order to gain professional acceptance and support for learning(1). Positive 'social experiences' were associated with successful transition. 'Characteristics of the workplace setting' such as staffing, shift patterns and workload type/volume influenced the availability of support, and whether novices sought help or consolidated learning through reflection. Despite differences in how elements influenced transition, the performance of novice doctors and nurses was similarly affected. Both groups reported uncertainty and difficulties with critical thinking, applying/integrating knowledge, professional judgement and decision making, resulting in 'task-centred' rather than 'patient-centred' care. Novices reported concealing gaps in knowledge/technical skill and knowingly performing tasks they did not feel competent to do, which hindered learning, jeopardized service delivery and had negative implications for patient safety.

## Discussion

The public sector has recognised how challenges may adversely influence practitioner performance and patient care at transition, and addressed this with supportive interventions. Novice community pharmacists are likely to face similar challenges yet may be less well supported than public sector practitioners, and may benefit from targeted interventions to mitigate the effects of such challenges.

## References

1. Tallentire VR, Smith SE, Wylde K, Cameron HS. Are medical graduates ready to face the challenges of Foundation training? *Postgrad Med J.* 2011;87:590–5.

# 0057
# Changes to MPharm Students' use and views of social media

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## Focal points

- This work aimed to compare pharmacy students' use and views of social media with a 2012 study, to evaluate any changes in usage and attitudes, as well as determining how parameters such as gender influences these.
- Students appeared to be more aware of their expectations online, with fewer reports of professional transgressions. Significant differences between the attitudes of males and females still exist.
- Educational and professional bodies should be aware of student attitudes to social media and tailor training accordingly.

## Introduction

Social media's popularity has made it an integral part of societal interaction. However, its use is not without controversy given privacy and safety concerns, and the potential impact upon professional reputations. As pharmacy students will be expected to exhibit the same professional conduct when they graduate, it is important to investigate students' awareness of, and compliance with, these standards, enforced through the student Code of Conduct[1]. This study aimed to determine how students' use and views of social media have changed over the past three years since the original study was performed, while also determining the influence of gender on responses.

## Methods

An online validated (piloted, assessed for face validity and published) questionnaire from a previous (2012) study[2] was used, with one additional demographic question added. It consisted of four sections; questions (n = 22) gathered information about social media use, online privacy and profiles, professionalism and demographics (no identifiable information). Following ethical approval, all MPharm undergraduates at Queen's University Belfast were invited by email to participate. Fourteen days were allowed for completion, with two reminder emails sent to non-respondents 7 and 11 days after original invitation. A draw to win a core textbook was used as incentive to maximise the response. Descriptive statistics and non-parametric tests were used to analyse results, with $p < 0.05$ set *a priori* as the level of significance.

## Results

The response rate was 60% (313/521); 31.9% (100/313) males and 68.1% (213/313) females. In 2015, 96.8% (303/313) used social media, a 5% increase from 2012 (91.8%, 346/377). Compared to the 2012 study, more students now believed they had been made aware of online professional expectations

during the MPharm degree (89.1% vs. 71.0%; $p < 0.001$). Similarly, fewer students now (27.1% vs 46.2%; $p < 0.001$) admitted to posting content they would not want future employers or teachers to see. Students in 2015 were more inclined to believe that employers' use of social media is fair, compared to that reported in 2012 (35.1% vs. 27%; $p < 0.001$). Only 3% (9/303) of students in the 2015 study who were aware of privacy settings chose not to use them, compared to 7% (25/346) in 2012. Males were more likely than females to believe they should not be held to the same professional standards both online, and on university placements (21% vs. 6.1%; $p = 0.007$), similar to the 2012 results (17.9% vs. 12.5%). Males were also more likely to agree that it is acceptable to post patient information online (7% vs 1.4%; $p = 0.001$), similar to the 2012 result (2.7% vs. 0.4%).

## Discussion

The vast majority of students continue to use social media. As fewer students report posting material they would not want employers to see, it may be that students are now more aware of the potential impact on their future careers. This coincides with an increased acceptance of employers' use of social media to search for job applicants. Gender differences are still apparent, having not changed considerably since the 2012 study. These differences should be further addressed in future social media guidelines to ensure unprofessional conduct is targeted. Results will also provide regulatory bodies with awareness of attitudes of the student population, allowing training to be tailored to those student groups exhibiting high risk behaviours.

## References

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# 0058
# The redistribution of patient returned prescription medicines: what's stopping us?

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## Focal points

- The aim of the study was to determine whether a consensus could be reached between pharmacists on barriers and potential solutions perceived towards the redistribution of medicines.
- Consensus was achieved on 7 barrier and 7 solution statements towards the redistribution of medicines.
- Notably, consensus was not reached that tampering or the potential for medicines to be stored in inappropriately humid or warm conditions posed barriers to the redistribution of medicines.

## Introduction

In the UK, medicines returned unused to pharmacies cannot be supplied (or redistributed) to other patients. This position is based on the widely held view that the quality and safety of returned medicines cannot be guaranteed as they may be tampered with or stored incorrectly. Some authors have, however, suggested that 'newer' packaging technologies may allow for the identification of returned medicines unsuitable for redistribution.[1,2] Given the potential environmental and financial benefits, in both primary and secondary care, that redistributing medicines could bring, the aim of the present study was to investigate whether or not consensus could be achieved between pharmacists (PHs) on barriers and solutions they perceive towards the redistribution of medicines (ROM).

## Methods

A mixed methods study involving two phases was conducted: (1) qualitative interviews with nurses, doctors and PHs from primary and secondary care were conducted to generate statements for (2) a two-round Delphi study comprised of a panel of practicing PHs. The focus of this paper is phase two. The project was deemed service evaluation and hence ethical approval was not required. Analysis of interview transcripts led to the generation of 37 statements (26 statements containing barriers towards the ROM and 11 containing solutions). The panel were asked to rate the degree to which they agreed (or disagreed) with each statement. The consensus level for statements was defined *a priori* as an interquartile range of 1 or less. Questionnaires were distributed via email with a two week deadline. The panel was recruited via an email invite forwarded to all hospital (n = 70) and primary care PHs (n = 11) and community pharmacies (n = 77) in the Health Board. Originally, the panel was to include doctors and nurses, however difficulty in recruiting panellists from these groups led to a PH only panel.

## Results

Two rounds were completed by 17 out of the 18 PHs (hospital PHs = 6, primary care PHs = 5, community PHs = 6) who indicated that they would participate in the panel. Consensus was achieved for 7 barrier and 7 solution statements. Barrier statements achieving consensus included the need for liability protection for individual PHs 'correctly' redistributing medicines and the need for guidance from the professional regulator on redistribution. Solution statements achieving consensus included the need for extensive public engagement and education to accompany redistribution and the need for tamper evident seals and temperature sensitive smart labels to be included as part of a redistribution scheme.

### Discussion

Consensus was reached between PHs on several barriers and solutions towards the ROM. However, the restriction of the study to one Health Board and one professional group limits the degree to which the findings can be generalised. Notably, consensus was not reached that tampering or the potential for medicines to be stored inappropriately posed barriers to redistribution. While this may be due to the willingness of some PHs to accept newer packaging technologies as potential enablers to redistribution, PHs would need evidence of the robustness of these solutions to be confident to redistribute medicines. Further work focusing on whether combinations of packaging technologies can be validated to verify the safety and quality of returned medicines is needed to inform a wider debate on the ROM among the pharmacy professions.

### References

1. Mackridge AJ, Marriott JF. Returned medicines: waste or a wasted opportunity? *J Public Health* 2007; 29:258–262.
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## 0059
## Pharmacy Education South London (PESL): lessons to be learnt

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### Focal points

- To evaluate South London pharmacy learning events in order to optimise future delivery
- Participants less than 25 years old favoured workshop based learning, whereas those over 55 favoured lecture based learning
- CPD is the key driver for attendance at learning events
- Although events are rated highly more work needs to be done to ensure application of learning into practice

### Introduction

Pharmacy Education South London (PESL) was formed in April 2014 for the provision of education and training for pharmacy professionals, bringing together multiple providers, including Local Practice Forums (LPFs) and The Centre for Pharmacy Postgraduate Education (CPPE).[1] South London contains 620 community pharmacies and ten NHS Hospital Trusts across 12 boroughs. By co-producing educational events and running multiple events on the same topic across South London the ambition was to appeal to a wider population and streamline the educational provision available. Topics were run multiple times. Some were lecture based and others were workshop based.

### Methods

A questionnaire based evaluation form was designed. Ethical approval was given for this study by a Higher Education Institute ethics committee. During the period of May to November 2014, 37 events were held; 9 workshops on dementia and 9 workshops on inhalation techniques, plus 9 lectures on hypertension and 10 lectures on NOACs. Attendance at all events was voluntary with participants being able to attend any or all of interest. The evaluation form was given out for completion at the end of each event. Responses were transposed into Excel for data evaluation. Chi squared test was used to test for statistical significance.

### Results

641 participants attended PESL events during May to November 2014. Nearly all the participants (93.6%, n = 600) returned their evaluation form, although not all were fully completed. 286 participants attended a workshop and 314 participants attended a lecture. The demographic data showed that 34.5% (n = 207) of the participants were males and 57% (n = 393) were females. There was a statistically significant correlations between age and format of learning attended ($P < 0.001$) with those over 55 preferring to attend lectures and those under 25 preferring to attend workshops. However, no such correlation existed with gender. 57.3% (n = 344) of participants agreed fully that the event increased their understanding of the topics, although only 38.5% (n = 231) stated that it would change their practice. Nevertheless, 57.8% (n = 347) would complete a continuing professional development (CPD) cycle after the event.

### Discussion

There is currently limited research into learning preferences of pharmacists and other members of the pharmacy team. These initial findings show a need for a blended approach to learning to appeal to all ages and learning preference with clear strategy for implementation into practice. Future work needs to be done to explore those findings on a wider scale.

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## 0060
## Evaluating the support needs of newly qualified pharmacists

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### Focal points

- To evaluate the awareness and engagement of newly qualified (NQ) pharmacists in available educational support
- 67% of the NQ surveyed were aware of the Royal Pharmaceutical Society (RPS) mentoring scheme and 73% would like a mentor

- 56% of the NQ surveyed were aware of the RPS Foundation Programme
- The RPS Foundation Programme and RPS mentoring scheme should be promoted to support pharmacists in their initial stage of registration

## Introduction

The initial education of pharmacy professionals is regulated by the General Pharmaceutical Council (GPhC). Pharmacists must continue their educational development after registering to develop their core knowledge beyond their initial pharmacy education. This is self-driven as it is vital that knowledge is kept up to date. It is common for pharmacists to experience difficult and challenging experiences as a newly qualified (NQ) healthcare professional. NQ is defined as a pharmacist working within the first year of registration. It is reasonable to expect NQ pharmacists to be competent but not experts. Therefore, the first few years of qualifying are vital for developing a personal pattern of working safely and independently.[1] The RPS has support tools available in the form of their Foundation Programme[2] and mentoring scheme. The aim of this study was to evaluate the awareness and engagement of NQ pharmacists in available education support.

## Methods

A triangulation method was used which included a structured survey questionnaire and follow up interviews. The questionnaire consisted of 17 questions in three sections exploring awareness of available education support resources, training undertaken since qualification and demographics. The interview consisted of open questions exploring the NQ pharmacist's experiences and opinions around the subject. Purposive sampling was used where all pharmacists (n = 100) who showed an interest in a NQ support event held by the 6 Local Practice Forums in London were invited to take part. The questionnaire was set up online with automated data analysis. Follow up interviews to further explore facilitators and barriers for engagement in educational support were held with 10 participants who gave consent to take part. The study was approved by a Higher Education Institute ethics committee.

## Results

52 responses were received giving a response rate of 52%. 95% (n = 49) of the NQ pharmacists surveyed were aware of the Centre for Pharmacy Postgraduate Education (CPPE), 71% (n = 37) were aware of Local Practice Forums and 56% (n = 29) were aware of RPS Foundation Framework Programme. The majority would like a mentor (73%, n = 38) and were aware of the mentoring scheme that the RPS offers (67%, n = 35). The reasons given for not wanting mentors by 27% (n = 14) included no time, not wanting someone to check up on them, not being sure how it would work while working full time or workload. 77% (n = 40) of NQ pharmacists have participated in educational activity since registration with 82% (n = 31) stating their main reason for attendance being continuing professional development (CPD). Time and workload were the main barriers for non-attendance of educational sessions.

## Discussion

A great number of NQ pharmacists were interested in educational support but an increase in promotion and awareness is needed. The majority of NQ pharmacists said that CPD motivated them to attend educational support. Time due to working hours and personal commitments were barriers to attendance at support events. A great number of NQ pharmacists indicated mentorship as the type of support needed for their development. Hence the RPS mentoring scheme needs to be further promoted. It must be emphasised that these findings are based on a limited sample size and hence further work needs to be done to explore these themes on a larger scale.

## References

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2. O'Sullivan, M. Introducing the framework on which you can build your pharmacy career. *The Pharmaceutical Journal* 2014; 292:73

# 0061
# Stakeholders' views of a remote telepharmacy service: views of pharmacists and residents prior to service implementation

## Christine M Bond, Frances Notman and Jackie Inch on behalf of the Telepharmacy Project Team

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## Focal points

- The objective of this study was to explore the views, and identify the concerns, of pharmacists and local residents towards a proposed remote pharmacy service
- There was general interest and support for the service, but many logistical issues were raised including privacy and resource implications
- The findings were used to inform the specification for the remote service

## Introduction

Many remote areas have limited access to community pharmacy services such as: advice on healthcare, purchase of over-the-counter medicines, medicine advice, or new pharmacy services such as the minor ailment service. Technology is advancing and provides opportunities to deliver healthcare to remote and rural communities in non-traditional ways such as tele-medicine[1]. A pilot of the provision of community pharmacy services from a hub pharmacy to a remote area using video-linkage technology, integrated within a medicines

supply robot is ongoing. This study aimed to examine the baseline views of the local residents and Grampian pharmacists regarding the perceived need, acceptability, and potential issues that might arise from a tele-pharmacy service, prior to implementing the service. The study was approved by the North of Scotland Research Ethics Committee.

## Methods

Two focus groups were held, one with local pharmacists in an NHS/University education centre and one with local residents at the remote site Practising community pharmacists in the area of the hub pharmacy/ the remote site were identified, using the local pharmacy contractors' list and a purposive sample (to include urban, rural and suburban pharmacies and a mix of independents, large and small multiples) was invited, via telephone, to a focus group. A health board representative was also invited to attend. A random stratified sample of 48 local residents was sampled from the electoral role to avoid gender bias and received postal invitation packs (letter, participant information leaflet, consent form). Topic guides were developed based on the literature[2] and to address the study objectives. For the pharmacists' focus group, areas explored were: views regarding remote supervision, perceived acceptability of the tele-pharmacy service, facilitators/barriers, and personal involvement in the service. Core areas explored in the resident focus group included: current use of pharmacies, perceived need for a tele-pharmacy service and facilitators/barriers to using such a service. They were digitally recorded, transcribed and analysed thematically. Themes were identified independently agreed by two authors then agreed by the third. Transcripts and thematic analysis were validated within the research team.

## Results

Four community pharmacists and a health board pharmacist, and four local residents participated in the pharmacist and resident's focus groups respectively. Preliminary findings suggest residents' satisfaction with the current pharmacy service provision, particularly specifying the delivery of prescriptions to the remote site. They recognised the benefits of the proposed service for the elderly and those with limited transport access. They were concerned that using the service could mean a change from their regular pharmacy and also highlighted the need for the Minor Ailment Service to be included, but had reservations regarding confidentiality with others services e.g. Emergency Hormonal Contraception and Nicotine Replacement Therapy. Pharmacists acknowledged the benefits of providing pharmacy services for rural communities. They highlighted resource implications and confidentiality as the main barriers to this proposed service provision.

## Discussion

Despite the small sample size a wide range of relevant issues were identified, with commonality across the two groups. These have informed the specification and implementation of the new service. Further qualitative and quantitative research will be undertaken with local pharmacy staff and residents to explore actual experiences of the service during and after completion of the pilot.

## References

1. King, Lotus S. Remote Pharmacy: it's closer than you think. *The Pharmaceutical Journal* 2014; 293: 11–13.
2. Porteous T, Bond C. Novel provision of pharmacy services to a deprived area: a pharmaceutical needs assessment. *International Journal of Pharmacy Practice* 2003; 11(1): 47–54.

# 0062
# An evaluation of pharmacy customer views of services that should be available from community pharmacy

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## Focal points

- Customer attitudes towards pharmacy services were investigated using questionnaires
- Most customers reported a desire for services beyond the traditional medicines remit of pharmacy with a substantial proportion willing to pay for such services
- There are opportunities for pharmacies to expand their portfolio of activity.

## Introduction

The Now or Never report demanded pharmacists in the community to step away from the dispensing role and provide more high quality patient-centred services.[1] Whilst many new services have been suggested, there is little evidence about patient desire for such services. The aim of this study was to assess which services community pharmacy customers had recently used, which they would like pharmacies to provide and which, if any, they would be willing to pay for.

## Methods

A questionnaire was designed with reference to the literature by academics in discussions with local pharmacies, the Local Pharmaceutical Committee and Local Professional Network; and subsequently tested for face and content validity with those stakeholders and pharmacy project students. Questionnaires were administered to pharmacy customers aged over 18 years in 31 pharmacies including independents, supermarkets and multiples. 82 fourth year pharmacy students collected data over a four week period and inputted data into PharmOutcomes® and 30% were verified for accuracy by another student. The questionnaire included questions asking customers to select from lists of services those which they had received and felt pharmacy should offer. The data were exported to SPSS version 22 for analysis which consisted frequency counts with percentages and chi-squared tests to inves-

tigate associations between willingness to pay and age. The study was reviewed and approved by the University's School of Pharmacy Research Ethics committee.

## Results

7154 questionnaires were completed (49% response), 62% were female and 38% were aged under 50 years. The most common reasons for visiting the pharmacy in the last three months were collecting prescription medicines (n = 6200, 87%), purchasing non-prescription medicines (n = 3847, 54%) and for advice about medicines (n = 1923, 27%).

Customers thought pharmacies should provide repeat prescription management (n = 4933, 69%), support for minor ailments (n = 4450, 62%), flu vaccination, (n = 4355, 61%), medicines review (n = 4193, 59%), smoking cessation (n = 4015, 56%), and travel vaccinations (n = 3975, 56%). There was least support for substance misuse services (n = 2797, 39%), alcohol screening (n = 2245, 31%) and home visits (n = 2062, 29%).

With regard to willingness to pay for services, customers stated that they would be willing to pay for travel vaccinations (n = 2213, 31%), flu vaccinations (n = 1955, 27%), health and wellbeing checks (n = 1335, 19%), screening for health conditions (n = 1171, 16%), weight management services (n = 1071, 15%), and monitoring of medical conditions (n = 1070, 15%). However despite the option not being presented almost a third of customers stated that they would not be willing to pay for any pharmacy services (n = 2086, 29%). Those aged 50 years and over were more likely to state they would not pay for any services compared with those aged under 50, 33% compared with 22% ($\chi^2 = 82.899$, $p < 0.001$).

## Discussion

Whilst the most frequently cited services were within the more traditional remit of the pharmacist, there was broad support for newer services such as vaccinations. Fewer than 50% of those who thought the services should be provided were willing to pay for them. This study has shown, similar to other previous studies, that the majority of customers visit pharmacies to collect prescriptions medicines and purchase non-prescription medicines rather than for advice. This study was conducted with customers visiting the pharmacy who may be more positive towards pharmacy services than the general public. The findings would suggest that there is appetite amongst consumers for more pharmacy services, some of whom would be willing to pay.

## Reference

1. Smith, J, Picton C, Dayan M. *Now or Never: Shaping pharmacy for the future. The Report of the Commission on future models of care delivered through pharmacy*. London: Royal Pharmaceutical Society; 2013.

# 0063
# Curricula reform in pharmacy education: lessons to be learned from medical education

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## Focal points

- Pharmacy education is undergoing curricula change to address developments in pharmacists' roles, but little is known about the best and most effective approach for curricula reform
- The aim of this research was to identify peer-reviewed evidence on the impact of curricula change in the medical profession, which underwent reform some twenty years ago
- Lessons that can be learned from curricula reform in medical education include (i) developing a blended teaching and learning strategy to ensure adequate coverage of knowledge, and (ii) ensuring that an evaluation strategy to establish whether intended learning outcomes of reform have been achieved is embedded in proposals for reform.

## Introduction

Internationally, the role of pharmacists is undergoing transformation, with pharmacists increasingly providing more clinical services. Some evidence exists that, whilst adequately prepared for certain tasks (e.g. dispensing and recommending over-the-counter medication), graduates are less prepared for making decisions, managing people and applying prior learning to new situations. To address this, the General Pharmaceutical Council (GPhC) published revised educational standards in 2011, which led to pharmacy schools reforming their curricula. However, little is known about the best or most effective approach to curricular reform. As UK medical schools identified shortcomings in their graduates' preparedness for practice and underwent similar curricula change twenty years ago, this abstract aims to identify evidence on the impact of curricula change on medical graduates, and to highlight lessons for pharmacy.

## Methods

PubMed, Embase and Education datasets were searched to identify peer-reviewed research published 1990–2014, relating to preparedness for practice of medical graduates in the UK and impact of curricular change. Search terms included 'preparedness' and 'readiness.' Items retrieved during searches were initially assessed by the first author on the basis of abstract content or full paper, with equivocal items discussed by the team until a consensus reached. Ethics approval was not required.

## Results

Twenty-six items were retrieved, of which, ten were identified as relevant to this review. Three studies were qualitative,

providing in-depth insights; seven studies were primarily quantitative; all gathered data retrospectively following graduates' entry to the workplace. All investigated perceived preparedness for practice in relation to undergraduate intended learning outcomes. Six studies investigated perceived preparedness for practice from graduate's perspectives; three compared graduates and their supervisor's perspectives and one focused on supervisors alone. Two studies reported that graduates from traditional lecture-based courses felt inadequately prepared for practice, particularly for the practical aspects of their role. Graduates from problem-based learning (PBL) courses felt better prepared to deal with uncertainty (three studies), knowing their limitations (two studies), asserting rights for support (one study), as well as being prepared to communicate effectively and work within teams (two studies). However, in two studies, PBL graduates, and their supervisors, suggested that graduates' knowledge of disease development was poorer than traditional course graduates, but supervisors felt that their basic knowledge was adequate for the level that pre-registration house officers work at (one study).

### Discussion

Whilst lacking in pharmacy, there is evidence of the impact of curricula reform on medical graduates' preparedness for practice, with changes to delivery of teaching and learning such as PBL found to address many shortcomings. However, given evidence that, approaches such as PBL may compromise learning of underpinning knowledge, a blended teaching and learning approach is likely to be important to ensure adequacy of knowledge coverage. Evidence from medicine demonstrates the value of investigating perceived preparedness for practice to establish whether intended learning outcomes of reform have been achieved. Comparing perceptions of graduates and pre-registration tutors of preparedness for practice, before and after graduates enter the work place, would provide much needed evidence of what it happening in pharmacy.

## 0064
## A systematic review of the effectiveness outcomes and adverse events associated with long-term opioid therapy for patients with chronic non-cancer pain

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### Focal points

- This review aimed to summarise the effectiveness outcomes and adverse events of long-term opioid therapy in chronic non-cancer pain in cohort and case-control studies to supplement the paucity of evidence in randomised controlled trials.
- It was found that long-term opioid therapy for chronic non-cancer pain may provide some benefit but also increases the risks of adverse events.
- However, the findings of this study were inconclusive due to the lack of high-quality, low risk of bias, cohort and case-control studies.

### Introduction

The use of long-term opioid therapy (LTOT) for the treatment of chronic non-cancer pain (CNCP) has increased in recent decades despite a lack of evidence supporting its effectiveness and safety[1]. Researchers have suggested that results from observational studies could complement those from randomised controlled trials to build a stronger evidence base[1]. This study summarised the outcomes (effectiveness and adverse events) of LTOT in CNCP in cohort and case-control studies, defined and quantified LTOT and its outcomes in CNCP, evaluated the differences in outcomes between long-term and short-term opioid therapy for CNCP, and summarised the covariates that influence the outcomes of LTOT in CNCP.

### Methods

MEDLINE (1946-Feb 2015) (via Ovid), Embase (1980-Feb 2015) (via Ovid) and Pubmed were searched for relevant studies using structured search strategies. Search terms included opioids, pain, cohort and case-control studies. Only fully published, English language, cohort or case-control studies that involved adult human participants who were treated for CNCP with non-parenteral opioids for ≥90 days and which reported pain, physical functioning, quality of life, depression, fractures/falls, mortality, constipation or immunosuppression outcomes were included. A pre-determined data extraction form was used to extract the outcome data. A narrative synthesis approach was used to synthesise the extracted data. Quality and risk of bias of studies were assessed using the *GRACE checklist*[2] and *Tools to assess risk of bias in cohort and case-control studies* respectively. Ethical approval was not needed.

### Results

After removing duplicates, 3765 records were identified from the electronic database searches. A pre-determined study selection form was used to screen the titles and abstracts. 40 studies were included in the review. There were 39 cohort studies and 1 case-control study. Only 8 studies clearly defined 'long-term' opioid therapy. However, there was no consistent definition of LTOT among the included studies. Only 14 studies had adequate quality and reasonably low risk of bias (i.e. studies with better overall quality). These studies with better overall quality suggest that LTOT is associated with improvement in patient self-reported pain scores, poorer physical functioning outcomes, improvement in only certain elements of quality of life, greater risk of developing depression, a trend towards greater risk of fractures compared to no opioid use but lower risk of fractures compared to shorter duration of opioid use, higher risk of all-cause mortality, increased incidences of constipation with increasing duration

of opioid use and no increased risk of infections. However, due to paucity of studies with high overall quality, these findings were inconclusive. There was also insufficient evidence to determine differences in outcomes between long-term and short-term opioid therapy. Only 10 studies adjusted for covariates.

### Discussion

The findings suggest that LTOT for CNCP may provide some benefit but also increases risk to some adverse events. However, these findings were inconclusive due to the lack of high-quality, low risk of bias cohort and case-control studies. The use of LTOT in CNCP should be evaluated on a case-by-case basis and employed with close monitoring of patients. For future research, more high-quality studies on the effectiveness outcomes and adverse events of LTOT are needed. To ensure better quality, studies should clearly define and report LTOT and its outcomes, and account for covariates where necessary.

### References

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2. Dreyer NA, Velentgas P, Westrich K, Dubois R. The GRACE checklist for rating the quality of observational studies of comparative effectiveness: a tale of hope and caution. *J Manag Care Spec Pharm.* 2014;20(3):301–8.

## 0065
## Laxative medication prescribing trends and costs in a CCG locality in NW England

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### Focal points

- An investigation into increased laxative costs and prescribing trends in a CCG locality in NW England.
- There has been an increase of 27.3% in cost to the NHS as well as 30% increase in osmotic laxative prescriptions between 2013 and 2015.
- Patients within this CCG locality may be receiving different classes of laxatives for treatment, which may constitute an inequality of care.

### Introduction

Constipation is arguably the most common gastrointestinal disorder in the United Kingdom. In 2010, 15.9 million prescriptions for laxative medications were dispensed in community pharmacies throughout England, at a cost of £70.6 million. As prices of medication increase, there is a need to monitor costs and prescribing trends of general practitioners to ensure optimal cost management as well as adherence to recommended treatment guidelines. This study will aim to identify trends in laxative prescribing and costs to the NHS regarding laxative medications in a CCG locality in NW England.

### Methods

Data was collected from 13 surgeries comprising of 87,830 patients registered at a NHS General Practitioner (GP) practice within the Ellesmere Port and Neston area of the Western Cheshire Clinical Commissioning Group (CCG). A team of researchers visited each surgery and collected data by extracting information via the Egton Medical Information System (EMIS) under the supervision and direction of respective surgery practice managers. Searches collected data on patients issued laxative medications to be compared between January 1, 2013 and December 31st, 2014. Surgery records were statistically analysed using t-tests via excel software for the number of patients prescribed laxative medications, age, gender, medication type, frequency and cost of therapy. Ethics approval was not required.

### Results

Analysis of all data was compared from the years 2013 and 2015. A significant increase of 4.1% in the total number of patients prescribed laxative medication ($P = 0.0002$) was identified, as well as a rising percentage of laxative medication cost (27.3%, $P = 0.0002$). Further analysis in cost of laxative medication prescribing indicated increases in bulk forming (5.1%, $P = 0.4230$), stimulant (59.2%, $P = 0.0003$), and osmotic (14.0%, $P = 0.0083$) laxatives; only the latter two being significant. Increases of prescribed senna (11.7%, $P = 0.2586$), docusate (14.7%, $P = 0.4284$), and macrogol (30%, $P = 0.5396$) were also identified but cannot be regarded as significant within this population. Within the osmotic laxative class a 57.9% increase in proprietary Laxido® was observed in comparison to macrogol and Movicol® ($P = 0.0002$) reflecting the cost efficiencies introduced by the CCG.

### Discussion

Insignificant variations in patient age were established in this study. However, large and significant variations in laxative prescribing types and costs were discovered. This large variation over a relatively small period of time is an area of concern with respect to overall NHS cost. The increase may be due to multiple factors such as the £9.81 increase in the price of senna 7.5mg [60 tablets] as of February 2014. Increased prescription numbers for senna and macrogol (11.7% and 30% respectively) between the years 2013 and 2015 may indicate a switch from first line bulk-forming laxative type prescribing by GP's in this CCG. Changes in prescribing habits may reflect clinical or commercial pressures; it may be necessary to review the local guidelines to ensure that the one does not contradict the other.

## 0066
## Evaluation of prescription dosage instructions for solid oral dosage medicines contained on English electronic prescriptions

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### Focal points

- This study sought to identify issues relating to the suitability of the dosage instructions, written by the prescriber on Electronic Prescription Service – Release 2 (EPSR2) prescriptions generated by general practitioners and practice nurses, for incorporating onto the dispensing label within the community pharmacy
- Solid oral dosage forms formed the majority (82.1%; n = 3758/4579) of EPSR2 prescribed items reviewed; 40%(n = 1501/3758) of the dispensing labels for these required editing in the pharmacy to improve dose clarity.
- There is an urgent patient safety need to establish a standardised format of written dosage instruction for use on electronic prescribing systems, especially in relation to inclusion on EPSR2 prescriptions

### Introduction

To maximise safety and benefit from their prescribed medicines patients rely on receiving understandable dosage instructions on dispensing labels. Release 2 of the English Electronic Prescription Service (EPSR2) enables the electronic transfer of prescriptions between prescribers and pharmacies. With the advent of electronic prescribing, dispensing labels for prescribed items are generated directly from the details contained in the (EPSR2) prescription thus removing the need for pharmacy staff to type these. Current practice is for pharmacies to print the prescription as a paper version, known as the 'dispensing token', against which the dispensed item is checked; this step is likely to disappear in the future. Legal requirements for the label include directions for use of a prescribed product as specified by the prescriber. The pharmacist will interpret these and using professional judgement 'optimise dispensing labels' and 'include such particulars, of the same kind' thus ensuring the patient receives appropriate information.[1] This study sought to explore whether, and to what extent, the dosage instructions received via EPSR2 would produce a dispensing label without the need for intervention by pharmacy staff.

### Methods

Pharmacies with an established EPSR2 service, known to the chief investigator, were recruited. Data were collected on every item dispensed at each pharmacy against EPSR2 printed dispensing tokens during a four week period or from at least 1000 items. Details of dosage instructions were transcribed by final year MPharm students onto an electronic spreadsheet; checks were performed for accuracy of transcribed details on every tenth entry. Dosage instructions were reviewed against the style and syntax in exemplar labels as published by the National Patient Safety Agency (NPSA)[2] since no national standard was available. Coding was undertaken with respect to the degree of variation from the exemplar content utilising a scale ranging from 'no intervention necessary' through to the 'need to re-write the instructions in whole or part'. University ethics committee approval was granted.

### Results

A total of five community pharmacies participated; data collected relates to 4579 items prescribed by 69 General Practitioners. The vast majority of prescribed items (3758; 82.1%) were for solid oral dosage forms (non-dispersible tablets, capsules and caplets).

A total of 39.9% (n = 1501) of prescriptions contained dosage instructions which were identified as requiring intervention; 25.2% (947) items were identified as requiring to be edited in the pharmacy to improve quality and clarity whilst an extensive re-write was recommended for 14.7% (554). Of these the instruction 'as directed' was present in 108 (2.9%) items and 77(2.0%) were prescribed with instructions containing Latin dose abbreviations.

### Discussion

There is an urgent patient safety need to establish a standardised format for written dosage instruction for inclusion on EPSR2 prescriptions and for this to be conveyed to those responsible for the generation of these to reduce the need for unnecessary pharmacy intervention. This should include the removal of Latin abbreviated instructions from GP prescribing system 'drop down' lists. The move towards paperless prescribing will result in dispensing being undertaken from labels removing the current safety check against the original paper prescription. Interventions to amend standard dosage instructions will adversely impact pharmacy productivity and workload, possibly reducing pharmacist availability for verbal instruction.

### References

1. Human Medicines Regulations 2012 Regulation 258 and Schedule 25 Part 1
2. *NPSA Design for patient safety: A guide to the design of dispensed medicines*. Edition 1, 2007

## 0067
## Pharmacist views of providing public health services

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### Focal points

- This study aimed to determine reasons for pharmacists providing public health services.

- The most frequently cited reasons for providing public health services were professional responsibility, patient and personal satisfaction.
- Pharmacist showed positive views towards public health services and involvement in future delivery of these.

## Introduction

Recent changes to the structure of the NHS in England (April 2013) have resulted in the abolition of Primary Care Trusts (PCTs) and local public health functions being moved to local government. The transition from PCT to alternative commissioning mechanisms presented an opportunity to seek the general views of pharmacists on the provision of public health services. The aims of this study were to obtain views of community pharmacists in England on providing public health services, and assess whether these differed depending on the pharmacy ownership, their role and the location of the pharmacy in areas of high or low levels of commissioned pharmacy-based public health services.

## Methods

Postal questionnaire distributed in 2012 to all 778 pharmacies in a stratified random sample of 16 PCTs, selected from all 147 in England which submitted an annual return of NHS pharmaceutical services indicating public health services were commissioned. The questionnaire was developed from interviews with community pharmacists and covered: service delivery, reasons for public health service delivery, views on the future role of pharmacy in public health. Pharmacy addresses were obtained from NHS Choices website. One postal reminder and one telephone call were used to increase response rate.

University ethics approval was obtained. Data were analysed using SPSS v20. Differences between sub-groups were assessed using chi-squared tests taking $p < 0.05$ as statistically significant.

## Results

Overall response rate was 26.5% (n = 206), range 15.1% to 35.9% between PCTs; 62% of respondents worked in multiples. Over 90% provided health promotion (190), signposting (199), waste medicines disposal (199), medicines use reviews (183) and new medicines service (185), while over 60% provided smoking cessation (127), blood pressure monitoring (127) and supervised drug consumption (118).

The most frequently cited reasons for providing public health services were: professional responsibility (151; 76.6%), patient satisfaction (147; 74.6%) and personal satisfaction (131; 66.5%), the latter more frequently by respondents in independents than multiples (75.3% vs 61.3%; $p = 0.03$). Requests from patients/the public was cited by a third (66; 33.5%), while only 46 (23.4%) selected profit margin and (28; 14.2%) bonus payments. Pressure from head office was cited by 62, 57 of whom worked in multiples ($p < 0.001$ compared to independent ownership).

148 respondents (75.1%) agreed/strongly agreed that public health services were vital for their pharmacy's business, 150 (72.1%) that they would focus on public health services more if public demand increased, 126 (64.0%) that services were based on local population needs and 106 (53.5%) disagreed/strongly disagreed that they did not focus on public health services because dispensing volume was more important.

Moreover 44.8% of respondents (90) were looking forward to public health services being the main focus of their work, 54.2% (110) that profit from these services would in future be more important than profit from dispensing and 79.2% (160) that their role in providing these services would increase. Pharmacy ownership, personal role and number of PCT-commissioned services reported to the NHS did not influence these views.

## Discussion

Although limited by a low response rate, pharmacists had positive views about pharmacy public health services in future, despite the uncertainty at the time of the survey resulting from imminent changes to commissioning. While there was some evidence that pharmacy ownership affected reasons for providing public health services, it did not affect overall views. Pharmacists appear motivated to provide services for professional reasons, including patient need, which is important for the success of these services.

# 0068
# Community pharmacists' dispensing accuracy checking habits

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## Focal points

- Self-checking of dispensed medicines is often undertaken by community pharmacists; to what extent does this practice occur, and what are the stated reasons?
- 51.7% of pharmacists reported that they do not always have their own dispensing checked by another person.
- Lack of staff and busyness were the two main reasons cited for undertaking self-checking.
- Pharmacists may be more likely to seek an independent accuracy check on medicines perceived as 'high risk.'

## Introduction

In the community pharmacy setting, for every 10,000 items dispensed it is estimated 22 near misses (errors which do not reach patients) and four errors (which do reach patients) occur.[1] Over 1 billion prescriptions were dispensed in England in 2013/14, equating to around 400,000 errors. Research indicates that undertaking a second, independent accuracy check on dispensed medicines can significantly reduce risk of error.[2] Observational studies as part of an ongoing PhD showed pharmacists commonly undertaking final accuracy checks on medicines they had dispensed themselves ('self-checking'). The aim of this study was to explore the extent and scope of this practice by community pharmacists in England.

## Method

A questionnaire to gather information on pharmacists' working practices was developed based upon an extensive literature review and results from an observational study. University ethics approval was granted. Questionnaires were posted to a stratified random sample of 2500 community pharmacies in England with reminders sent to non-responders on two occasions (addresses were provided by the General Pharmaceutical Council for the purposes of research). Data collection took place between November 2011 and January 2012. Statistical analysis was undertaken using SPSS, v 22. Responses to open questions were coded thematically according to the reasons given for self-checking.

## Results

A total of 921 usable questionnaires were returned, giving a response rate of 36.8%. Over half of respondents (51.7%;n = 467/908) indicated they engaged in self-checking. A free text question which requested reasons for adopting this practice attracted 246 responses; the most frequently reported reasons are displayed in Table 1. Mean participant age and years registered as a pharmacist were 40.5 and 17.7 years, respectively. Additional demographics are provided in tables 2 and 3.

**Table 1** Reasons given for undertaking 'self-checking'

| Reason | Percent (%) |
|---|---|
| Lack of staff | 64.6 |
| Too busy | 17.1 |
| Patient waiting for prescription | 2.4 |
| No concerns over self-checking practice – happy to do it | 4.1 |
| Other | 11.8 |

**Table 2** Respondents' roles

| Role | Percent (%) |
|---|---|
| Superintendent | 8.1 |
| Manager/sole pharmacist | 61.1 |
| Second pharmacist | 4.0 |
| Relief pharmacist | 6.5 |
| Locum pharmacist | 12.2 |
| Multiple roles | 8.1 |

**Table 3** Respondents'

| Employment status | Percent (%) |
|---|---|
| Owner | 14.6 |
| Employee | 68.3 |
| Self-employed | 14.7 |
| Multiple statuses | 2.4 |

Responses coded as 'other' included staff issues such as training and competency. This was corroborated by chi-squared testing against another question which sought information on staff competence. Perceived lack of experienced staff was associated with increased likelihood of self-checking ($\chi^2 = 24.1$;df = 1;p = <0.0001). Reduced staff availability due to dispensing medicines into dosette boxes was an issue: '. . . *often my dispensing technician is dispensing the [care] homes while I do PCS/walk-ins.*' Some took the opportunity to highlight the need for independent checks on what they perceived as 'high risk' medicines: *'Always ensure certain things are checked, CDs [controlled drugs], insulin, methotrexate.'* Whilst many pharmacists recognised self-checking as 'bad practice' some described employing mental breaks between first and second checks to reduce risk of error: *'. . . I put it on the side, do something else and come back to it again – check again then hand it out.'*

## Discussion

A large proportion of community pharmacists report engaging in self-checking practices. Lack of experienced support staff is a major factor which prevents some pharmacists from obtaining an independent check on dispensed medicines. It is interesting that pharmacists recognise that self-checking can increase the risk of dispensing errors and thus adopt different strategies to accuracy check when an additional independent check is not available or with medicines they perceive as "high risk" (such as controlled drugs). Future qualitative research may prove useful in helping to develop a greater understanding of the reasons for self-checking and work towards ways of reducing its use.

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# 0069
# A cross sectional survey of convenience and access to prescribed medicines and pharmaceutical care in older people resident in the Scottish Highlands

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## Focal points

- This was a survey of those ≥60 years, resident within NHS Highland, on experiences of convenience and access to prescribed medicines and pharmaceutical care
- While most found access to GP and pharmacy services convenient, there appeared to be a lack of pharmaceutical care
- Most patients collected their own medicines, always using the same pharmacy yet around half never saw a pharmacist

## Introduction

NHS Highland is the largest geographical health board in the United Kingdom, representing 41% of the land mass of Scot-

land but <10% of the population. One quarter lives in 'urban areas' (settlements ≥10,000) compared to almost three quarters of the Scottish population. Moreover, 40% live in 'remote rural' locations (settlements <3,000 with a drive time of over 30minutes to a settlement ≥10,000). A cross-sectional survey of those ≥18 years resident within NHS Highland identified that while 88.5% of those receiving prescribed medicines considered the source convenient, almost a fifth of older people disagreed.[1] The aim of this research was to explore further experiences of convenience and access to prescribed medicines and pharmaceutical care in older people of the Scottish Highlands.

## Methods

A questionnaire was developed, tested for face and content validity, and piloted. The final version comprised five sections: access and convenience to GP and pharmacy services (10 items); dispensing and collection of prescribed medicines (13 items); attitudinal statements (12 items); quality of life (SF8, 8 items); and demographics (12 items). The questionnaire was mailed to a random sample of 2000 members of the general public (aged ≥60 years) resident within NHS Highland; up to two reminders were sent to non-respondents at 2-weekly intervals. This study was approved by the Ethics Panel of [state University].

## Results

One thousand and thirty-nine questionnaires were received (77 returned undelivered, adjusted response rate 54.9%). The majority (88.9%, 925) were ≥75 years (88.9%, 925), just under half (40.1%, 417) were living along and one third (34.2%, 355) described their health as fair, poor, very poor. The median distance to travel to access GP services was 2 miles (IQR 1–5, maximum 40) with almost all (89.1%, 926) reporting this convenient, compared to 1.5 miles (IQR 0.75–6, maximum 100) for pharmacy and almost all (84.3%, 876) reporting this convenient. The majority (88.6%, 921) were regularly prescribed medicines (median 4, IQR 3–7, max 27). Of these, 82.0% (755) used the same community pharmacy, 1.2% (11) different pharmacies and 16.3% (150) dispensing doctors. Almost three quarters (70.9%, 653) collected their medicines themselves. Just over half (53.7%, 495) reported that their GP spoke to them about their prescribed medicines to see if they were getting the best from them or still needed them every month, every 2 months or every time seen. Of those receiving medicines from the same pharmacy, half (48.3%, 445) stated that they 'didn't see a pharmacist'. One fifth of respondents (21.4%, 198) strongly agreed/agreed/unsure that 'I feel it is a burden to others to help me get my prescribed medicines' and one tenth (11.2%, 103) strongly agreed/agreed/unsure that 'I sometimes worry about getting my prescribed medicines'.

## Discussion

This research identified that almost all respondents felt that their access to GP and pharmacy services was convenient. Most collected their own medicines, always using the same pharmacy yet around half claimed never to see a pharmacist. While these findings are based on self reports and additionally may lack generalisability, there is an opportunity to enhance integrated working and pharmaceutical care for these patients. This is in line with 'Prescription for Excellence', which articulates an integrated, multidisciplinary approach to optimising pharmaceutical care for each patient and notes the complexities of care in remote rural areas.[2]

## Acknowledgements

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# 0070
# What is the working relationship between practice pharmacists and general practitioners?

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## Focal points

- A study involving four Clinical Commissioning Groups (CCGs) to establish the working relationship between practice pharmacists (PPs) and general practitioners (GPs).
- GPs welcomed an expansion in the role of PPs to include chronic disease management.
- A national strategy is required to facilitate the growth and integration of PPs into general practice.

## Introduction

The practice pharmacist's role has developed over the last 20 years. During this time National Health Service (NHS) structure, patient demographics, technologies and fiscal policy have changed, resulting in increasing pressure on primary care. GP workforce shortages have resulted in an emerging national agenda to employ more pharmacists in GP practices.[(1)] The aim of this study, part of a larger volume of work, was to explore the working relationship between PPs and the GPs post the 2013 NHS changes.

## Methods

Individual semi-structured interviews were conducted with eight GPs and four Heads of Medicines Management

(HoMMs) from the four CCGs; focus groups were not considered as an option for these two groups due to workload. Nineteen PPs (not necessarily working for the GP participants) attended four focus groups specific to each CCG. Purposive sampling ensured that the participants had experience of the working relationship between GPs and PPs. The semi-structured interviews and topic guides were specific to each participant group but included related questions to allow triangulation. Ethics committee approval was obtained from Keele University and the NHS (IRAS).

### Results

Emergent themes included (i) PP roles, (ii) culture change, and (iii) training.

(i) PPs felt that, overall, their current role was poorly defined. A key role was to make savings linked to national and local schemes. Participants saw this as a risk to the sustainability of the service since savings may get harder to realize over time, while PP costs remain fixed. Some GPs felt that changes to GP income made it less likely that they would consider the direct employment of a PP, although others had recently discussed this option within their own teams. The management of the PP Teams through the CCG meant that the PPs followed the CCG agenda and that there was little time remaining to support individual practice issues. GPs expressed a need and desire for a wider role for PPs in relation to chronic disease management to help with the increasing workload in primary care. PPs wanted more patient contact and to be more involved in the GP practice agenda.

(ii) Both professions recognized a reluctance to change as a barrier to further expansion of PPs into GP practices. GPs felt that they could be protective of their role. These cultural barriers were surmountable and outweighed by the potential benefits of further input from PPs. PPs expressed a lack of recognition and understanding of their role both within and outside the pharmacy profession.

(iii) GPs felt that PPs were, overall, adequately equipped for their current role. They suggested that some further training in consultation skills could enhance the PP/patient relationship, and that additional training may be required if PPs were to treat more chronic diseases. PPs expressed a lack of targeted training.

### Discussion

There is evidence of improved patient care resulting from PPs working with GPs. PPs are usually commissioned by the CCGs with some funding provided from prescribing budgets. A national strategy is required to facilitate the growth of PPs in general practice that secures financially viable service models, defines the PP role more clearly and level of training required.

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1. NHS Alliance, Royal Pharmaceutical Society. Pharmacists and general practice: A practical and timely part of solving the primary care workload and workforce crisis. 2014 Oct p. 1–7.

## 0071
## *'They have a far bigger role in the interdisciplinary team than I appreciated.'* Medical undergraduates' views following their first interprofessional education (IPE) session with pharmacy students at Cardiff University

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### Focal points

- This study aimed to investigate the opinions of medical students following a therapeutics and prescribing interprofessional education (IPE) session with pharmacy undergraduates.
- IPE was valuable in that medical students had learnt a more structured approach to medicines history taking and learned about effective use of the BNF from their pharmacy partner.
- Medical students understood more about pharmacists' knowledge and roles as a result of this IPE.

### Introduction

IPE can help develop a mutual understanding of the roles and values of health professionals by improving team working and potentially patient care.[1,2] Previous qualitative studies have explored the views of pharmacy students and facilitators of IPE therapeutics and prescribing sessions, but not those of medical student participants. This study aimed to investigate the opinions of medical students following a therapeutics/prescribing IPE session in which they were paired with a pharmacy undergraduate, and to obtain their views one year after participation in that session.

### Methods

Following approval from Cardiff University ethics committee, medical students were invited to participate using non-probability sampling (convenience, purposive and snowballing). A topic guide was developed following a literature review and analysis of the materials used in academic year 2013/2014 IPE sessions, and was piloted. The topic guide included preparedness for, and content of, sessions and utility and reflections post session, including benefits and suggestions for improvement. In early 2015 semi-structured one-to-one interviews were audio-recorded with consent, transcribed *ad verbatim* and analysed inductively using thematic analysis. Short excerpts from the materials used in the sessions were used as prompts if needed.

### Results

Eighteen subjects were interviewed regarding their third year IPE session. Themes (with subthemes) identified were:

(a) value of IPE sessions including cases used (interesting, relevant and challenging cases; student-student interaction in pairs), (b) learning with and from a pharmacy student during the session (increased awareness of pharmacy and pharmacist knowledge and roles; learning from a pharmacy student approach to problem-solving and medicines history taking; increased knowledge of the BNF), (c) suggestions for change for future sessions (refinement of pre-session preparation; smaller cohort sizes would be more beneficial; further IPE welcomed), (d) medics applying what they had learnt from their pharmacy partner to their own context/practice (structured medicines history taking) and (e) pharmacy students benefitting from observing the medical approach (in that medical students were more focussed on the patient-rather than medicines- and asked more on diagnoses and investigations). Although suggestions for future refinements were made, cases were identified as appropriate for both professions. Examples of benefits to medical students included,

- '*I think it improves relationships with other members of a health care team that allows you to see, you know, what their roles are and benefits patients care if you can work together.'*
- *'I think I would like to think that I could, sort of, see where they were coming from. If a problem arose I wouldn't be so sort of closed to their thoughts on a problem. I'd respect their input.'*
- *'I think the best thing probably was encouraging communication between two different, sort of, professions and I think it's really nice to, sort of, break down barriers now because it is a problem, communication. So I think that was what worked really well.'*

## Discussion

Over one year on, medical students were still able to recall the value of these sessions and what they had learned from their pharmacy partner. Cardiff Schools of Medicine and Pharmacy and Pharmaceutical Sciences are building on the success of the IPE by arranging further sessions in smaller groups and making minor refinements to the pre-session information. Medical students recognised and welcomed learning with, from and about pharmacy from their pharmacy partner.

## References

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2. Cottrell N, Mellor R, Moran M. "Just working in a team was a great experience . . ." Student perspectives on the learning experiences of an interprofessional education program. *J Interprof Care* 2013;27: 292–297.

# 0072
# A qualitative follow-up study of the perspectives of community pharmacy staff on Healthy Living Pharmacies

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## Focal points

- This follow up study aimed to explore Healthy Living Pharmacy (HLP) staff perspectives on their pharmacy being a HLP and whether their perspectives appeared to have changed a year later
- HLP staff appeared to remain strongly enthusiastic about the initiative over time, despite ongoing challenges, and customer awareness of the initiative appeared to have increased
- These findings suggest that the initiative may have long term sustainability

## Introduction

The HLP initiative appears to have improved public access to health and wellbeing services from community pharmacies.[1] However, few studies have explored HLP staff perspectives on the initiative and studies have not reported how staff perceive the initiative to have fared over a longer period of time. This follow up study aimed to explore HLP staff perspectives on their pharmacy being a HLP and whether their perspectives about the initiative appeared to have changed a year later.

## Methods

A qualitative approach was adopted on the basis of being well-suited to exploring the range and depth of participants' perspectives.[2] Following institutional ethical approval, in-depth digitally recorded interviews were conducted with 18 staff (9 pharmacists, 8 HLCs and 1 technician) from HLPs in Staffordshire. Follow-up interviews were conducted with 9 of them one year later (6 Pharmacists & 3 HLCs). The other 9 were lost to follow up. The sample included participants from HLPs of different types (e.g. independents and branches of multiple chains) and locations to represent a broad range of views. Participants were recruited by sending an invitation letter to HLPs followed by telephone contact. The initial interview guide was developed from the objectives of the study. Key topics included reasons for becoming a HLP and experiences of providing public health services from a HLP. Follow up interviews focused on changes in perspectives since the initial interview. Interviews were transcribed verbatim and analysed using framework analysis (this was checked by the second author).[2]

## Results

Reported reasons for pharmacies becoming HLPs were business-related, professional standing-related (i.e. 'changing people's perceptions that you're not just a retail store', or altruistic. All initial interview participants seemed very enthusiastic

about the HLP initiative and follow-up interview participants appeared to remain strongly enthusiastic. Participants reported continuing to provide services introduced around the time of the initial interview and some participants reported planning additional services. In the initial interviews customers' feedback was reported as generally positive, although most customers were reported to have appeared unaware of the pharmacy's HLP status, but in the follow up interviews most participants reported greater customer awareness. Two participants said that 'customer footfall' for health advice had increased since the initial interview, whilst others reported increased uptake of health promotional materials. Participants often attributed increased customer awareness to banners or displays in the pharmacy that they had not had at the time of the initial interview, whereas those who did not report increased customer awareness tended not to have prominently displayed their HLP status. Participants continued to report better working relationships with other local health professionals and organisations, but ongoing difficulties included time constraints, increased workload and lack of funding.

### Discussion

The findings suggest that HLP staff may be likely to remain strongly enthusiastic about the initiative over time, despite ongoing challenges, and that customer awareness is likely to increase. Whilst the participants' views might be particularly positive, these findings align with local anecdotal reports and suggest that the initiative may have long term sustainability.

### References

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2. Pope C, Ziebland S, Mays N. Qualitative research in healthcare: Analysing qualitative data. *British Medical Journal* 2000;320: 114–16.

## 0073
## A NHS Trust review into the professional development needs and professional organisation membership of a registered pharmacist workforce

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### Focal points

- Identify professional development needs and level of engagement with professional membership bodies including the Royal Pharmaceutical Society (RPS) and support provided by them.
- A high response rate of >70% of the workforce at a multi-site pharmacy NHS department gives support for generalizability of results.
- Lack of awareness of support tools and a perception of high membership fee accounted for the majority of respondent's reasoning for not joining the RPS.
- There are professional development needs across a hospital pharmacist workforce, which professional organisations such as the RPS have a potential role to support more directly.

### Introduction

The development and training of the pharmacy workforce is a professional and statutory requirement. The Royal Pharmaceutical Society (RPS) has defined professional standards for hospital pharmacists to be given opportunities through which to receive support in education and development.[1] However, we need to move beyond a 'minimum standard' culture towards the provision of quality care to patients as outlined recently by the London Pharmacy Workforce Group (LPWG).[2] It is consequently essential to consider the level of support registered pharmacists are receiving from within the workplace and from professional organisations, and to identify and address professional development needs.

### Methods

An online questionnaire was developed with questions based on review by a panel comprising pharmacists of different levels of experience (including RPS members and non-members). The survey was piloted across 20 pharmacists of the department between Banding 6 to 8b (as per AFC) and comments were reviewed. The revised questionnaire was circulated across all registered pharmacists over a four-week timeframe, issuing reminders periodically. Analysis was conducted by descriptive and comparative statistical method. Ethics approval was not required.

### Results

A response rate of >70% (n = 96) was achieved, based on the most current listing of registered pharmacists within the Trust, of which 71% of the workforce indicated they require more learning and development support. Results from the spread of membership to professional bodies showed the highest percentage of 43.8% to RPS, 21.9% to UKCPA and 13.5% to other organisations. Of the 55 respondents who are members of a professional organisation, 62% (n = 34) reported a need for further support in development. A total of 41 respondents were not members of a professional organisation, 82% (n = 34) reported a need for further support and of these a significant proportion reported interest in becoming RPS and RPS Faculty members. Reasons exploring why respondents are not members of the RPS specifically are illustrated in Table 1. The findings demonstrate that those who are not members of professional leadership organisations indicated greater needs for development support ($chi^2$ 5.1, p = 0.024).

**Table 1** Reasons respondents are not members of the RPS

| Reasons for not being an RPS member | Number of responses (Total: n = 41) | Percentage of respondents* |
|---|---|---|
| Membership Fee | 19 | 70.4% |
| Feel they would benefit from being a member | 14 | 51.9% |
| Not fully aware of support RPS provide | 7 | 25.9% |
| NHS organisation provides support needed | 1 | 3.7% |

*Total percentage of responses will be >100% due to multiple responses.

## Discussion

Lack of awareness of the benefits of RPS membership were demonstrated as the primary reasons for pharmacist professionals not becoming a members of the professional organisation. Of interest, only a single respondent felt the NHS Trust provides the professional support needed, highlighting the need for professional membership organisations to meet the needs of the pharmacy workforce. The results furthermore explore awareness of the RPS resources available from membership and aspects in which RPS members have felt how there development needs have been supported. Strategies to address support needs have been identified with the potential to be accessible across a wider domain, which can be done collaboratively with support from professional organisation bodies for example by facilitating accreditation and implementation of training resources, providing means for NHS Trusts to deliver sustainable support and training.

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# 0074
# Interprofessional education in the schools of pharmacy in the UK – current status

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## Focal points

- Interprofessional Education (IPE) is included in the curriculum of most UK Universities
- There is variability in professions collaborating, methods of teaching and assessment
- Further work on evaluation of IPE sessions is required

## Introduction

Interprofessional Education (IPE) is a collaborative teaching and learning approach to develop healthcare students as future interprofessional team members endorsed by the World Health Organization.[1] In the United Kingdom (UK), all regulatory bodies for health care professions include working as part of a multi-professional team as essential for future development of their members although the General Pharmaceutical Council (GPhC) is the only regulatory body to have IPE as a requirement in undergraduate education and training.

The aim of this survey was to establish the status of IPE at UK Schools of Pharmacy (SoP): to identify best practice methods of teaching; topics included in IPE; evaluation and assessment of IPE activities. Findings will be used to inform future IPE developments at our institution.

## Methods

Key staff, involved in or responsible for, IPE were identified by contacting each UK SoP. A semi-structured questionnaire/interview guide was composed to establish existing IPE activities, methods of assessment and the professions involved at each university. No ethics approval was required as project had character of a service evaluation. Data confidentiality was maintained. The key person for IPE at each SoP was contacted either by email or phone.

## Results

Twenty-nine GB and NI universities are currently provisionally or fully accredited by the GPhC to offer an MPharm degree. Responses were received from 25 institutions of which 22 had incorporated IPE into their curriculum: the remaining three had plans for IPE sessions. The total number of IPE sessions varied from none to one week in each academic year. Not all SoP included IPE in the curriculum for all years: it was present in more than one year in all but one SoP. The most common topics covered in IPE sessions, irrespective of methods of teaching, were ethical dilemmas, clinical scenarios with high risk drugs and cases involving pain management. Table 1 demonstrates that the majority of universities used mixed methods of teaching including lectures, small group workshops, simulation, experiential learning and on-line sessions Seventeen SoP collaborated with one or two other healthcare professions while five universities involved ten or more professions including medical, nursing, social work and health science students. Methods of teaching were associated with the physical distance between the institutions involved. Where the distance was greatest (over 50 miles), IPE was delivered only by on-line interaction while institutions co-located in either the same campus or city were able to bring students together for lectures and workshops.

Formal assessment of IPE does not appear to be widely established. Only five universities had a summative assessment of IPE. The remaining 17 universities based the assessment on

**Table 1** Method of teaching for IPE per academic year

| Methods of teaching | | | | | | | |
|---|---|---|---|---|---|---|---|
| **SoP providing IPE (∧)** | | **Small group workshop** | **On-line** | **Experiential learning** | **Lectures** | **Simulation** | **Mix of methods (*)** |
| | 1st Year | 4 | 6 | | 2 | | 8 |
| | 2nd Year | 3 | 7 | | 2 | | 5 |
| | 3rd Year | 2 | 6 | 2 | | 2 | 6 |
| | 4th Year | 6 | 4 | 2 | | 2 | 5 |

(*) A mix between the different methods of teaching e.g. often associated with an introductory lecture followed by online group work.(∧) Total number exceed the SoP providing IPE per year as some provided more than one form for IPE per academic year

attendance and portfolio or CPD entries. The majority of universities included student evaluation of IPE sessions using questionnaires.

## Discussion

There is variability in delivery of IPE and barriers to implementing IPE exist including overcrowded curricula of the health professions involved and physical distance between schools making face-to-face sessions challenging. Several schools have embedded technology into their methods of teaching, using online tutorials and group work as part of IPE. Curriculum design, content, teaching approaches, learner interaction and assessment differed between universities often due to collaborators available. Our institution will learn from other schools experiences and adapt best practice to local opportunities.

## References

1. Centre for the advancement of interprofessional education (CAIPE) 2002. Available via

# 0075
# Exploring the perceptions and experiences of people who use and those that provide a shared care clozapine service

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## Focal points

- Explore the perceptions and experiences of people receiving/delivering shared-care clozapine to better understand its effectiveness and acceptability using interpretative phenomenological analysis (IPA).
- Four super-ordinate themes of Clozapine Process, The Sharing of Care, The Provision of Care and Multi-professional Relationships were identified.
- Shared-care clozapine assisted CSU's to take ownership of their health and develop independence through changing relationships with HCPs.

## Introduction

Government policy[1,2] emphasises that care should be driven by patients, there should be choice in how patients obtain their care, and care should be individualised and recovery focused to improve patients' independence.

Clozapine clinics, managed by secondary care pharmacy departments, are commonly used to undertake FBC monitoring and supply clozapine to patients in the community. A clozapine shared-care service is an alternative option, where FBC monitoring and clozapine is obtained from the GP and community pharmacy; who are supported by secondary care mental health colleagues. No qualitative research on shared-care clozapine has been previously undertaken. The aim of this study was to explore the perceptions and experiences of people receiving/delivering this service to better understand its effectiveness and acceptability.

## Methods

Semi-structured interviews and focus group methodology were used to explore perceptions and experiences of clozapine service users (CSU), general practitioners (GPs); community psychiatric nurses (CPNs), social workers (SWs), community and hospital pharmacy staff and responsible clinicians (RCs). Ethical approval was granted in July 2013. Eligible CSUs, RCs and community pharmacists were identified via the DMS website. GPs were identified from CSU electronic notes and hospital pharmacy participants were identified by the dispensary manager. Due to the distribution of shared care CSUs across CMHTs, all CMHT's were targeted for CPN and SW recruitment. All potential participants received an invitation, with CSUs being invited by their care team. Interviews and focus groups were audio recorded and transcribed verbatim. A phenomenological analytical approach was adopted using IPA.

## Results

38 participants were recruited; including 32 healthcare professionals (HCPs) and 6 CSU's (14 interviews and 6 homogenous focus groups). All participant groups were similarly represented in number. Transcripts were analysed within and across participant groups using an iterative process, resulting in four shared superordinate themes: Clozapine Process, The Sharing of Care, The Provision of Care and Multi-professional Relationships.

All participants perceived clozapine as different to other antipsychotics because of the process of supply and its effi-

cacy on symptoms. All participants agreed that provision of care for physical health was just as important as mental health. CSUs valued being part of the community, responsible for their own medicines and improved relationships with primary care HCPs. The experience of shared-care clozapine and the CSU/HCP relationship in Forensics was person-centred and aimed to support CSU independence and holistic care. In contrast, the General Adults experience of shared care was process driven rather person-centred, creating angst and distress for the HCPs involved. Improved communication processes enabled HCPs to feel valued and included within the MDT. Variation in implementation and integration of shared care into everyday practice was noted between Forensics and General Adult.

## Discussion

Mapping relationships against a conceptual framework provides insight into the characteristics that facilitate it to be person-centred. Relationships are strongly influenced by their contexts; therefore to replicate the more person-centred relationship, the successful change mechanisms need to be identified together with how they can be triggered and sustained. Using the Normalisation Process Theory framework assists the identification of facilitators and barriers to implementation and integration of shared care in different contexts. Limitations of this study included: identification of participants relied on the DMS website and the electronic medical notes being up-to-date; and more forensic than general adult CSUs participated in the study.

## References

1. Department of Health. No Health Without Mental Health: a cross government outcomes strategy, 2011
2. Department of Health. Equity and Excellence: liberating the NHS, 2010

# 0076
# Evaluation of community pharmacy customers' views of the seasonal influenza vaccination and community pharmacy vaccine services

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## Focal points

- A survey of pharmacy customers investigated influenza vaccination and community pharmacy vaccination services
- Three-quarters of NHS eligible customers had received influenza vaccination primarily because they had been told to by the NHS/doctor or due to existing poor health
- Customers reported location preference to receive vaccines (12 % pharmacy, 31% no preference) suggests pharmacy-based vaccination services would be acceptable to the public

## Introduction

The national influenza immunisation programme, offers vaccination to those in specific risk groups, with aim to alleviate NHS winter pressures and unwanted hospital admissions.[1] Since 2012, the programme has failed to achieve the uptake target. General practitioners (GPs) are the main providers of the vaccine but recently community pharmacy has offered this service. The pharmacy-based service aims to enhance the current service by improving access to and choice for the vaccination service.[2] The aim of this research was to investigate customers' views of vaccination provision by community pharmacies.

## Methods

A questionnaire was designed with reference to the literature by academics in discussion with local pharmacies and tested for face and content validity with those pharmacies and pharmacy project students. Data were gathered as part of a wider survey of community pharmacy services and included questions about vaccination provision. Pharmacy customers aged over 18 years were approached to participate by 82 students across 31 pharmacies during 4 weeks (16 February to 14 March 2015). Data were entered into PharmOutcomes®, 30% checked for accuracy, and exported to SPSS 22 for analysis which consisted of frequency counts with percentages. The study was reviewed and approved by the University's School of Pharmacy Research Ethics committee.

## Results

7154 customers participated in the survey (49% response, 62% female, 38% under 50 years). 63% (n = 4480) were eligible to receive an NHS vaccine of whom 74% had done so (n = 3184) or were planning to (n = 114). The main reasons given by this group taking up the vaccine were the NHS/their doctor told them to (n = 1662, 50%), or existing poor health (n = 1398, 42%). Not seeing the need (n = 485, 41%), concerns about side effects (n = 207 18%) and previous bad experience (n = 178, 15%) were reasons cited for not being vaccinated by those who chose not to be despite being eligible (n = 1171, 26%).

Among those who were not eligible for NHS vaccination (n = 2459, 34%), 17% reported they had received it (n = 316) or planned to (n = 97). Reasons given for doing so were their own health (n = 93, 23%) followed by work (paid or voluntary) told them to (n = 87, 21%). Not seeing the need (n = 1450, 73%) was the main reason for not arranging a private vaccination, however some stated they did not want to pay (n = 183, 9%), had side effect concerns (n = 159, 8%) or didn't know it was available (n = 125, 6%).

When asked about services, a large proportion (n = 4355, 61%) felt that pharmacies should provide influenza vaccinations and travel vaccines (n = 3975, 56%). Half reported preferring to receive vaccines at their GP surgery (n = 3620, 51%), one-third had no preference (n = 2179, 31%) and 12% preferred the pharmacy (n = 834).

## Discussion

Concern about health was a significant driver for influenza vaccination both for those eligible and not eligible for the NHS

service. Reasons for not taking up the vaccine amongst eligible customers were primarily that they did not see any need, although they shared concerns about side-effects with those who were not eligible. Respondents were community pharmacy customers and may have both more interested in their health and have a more positive view of pharmacy than the general population. There is potential to reduce burden on general practice given that two-fifths of customers may be willing to receive vaccines in community pharmacies.

### References

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2. Anderson C, Thornley T. "It's easier in pharmacy": why some patients prefer to pay for flu jabs rather than use the National Health Service. *BMC Health Services Research* 2014; 14:35.

## 0077
## Perceptions and experiences of women who have ever stopped taking aromatase inhibitors

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### Focal points

- The objective was to understand the perceptions and experiences of women who have ever stopped taking aromatase inhibitors (AIs).
- Joint pain was the most common side effect experienced.
- Previously taking AIs reduced the odds of women currently taking an AI.
- Interventions targeting the management of side effects (SEs) and providing support for women who switch AIs are needed.

### Introduction

Breast cancer has the highest global prevalence, with over three million cases reported in Western Europe in 2008[1]. In women with hormone receptor positive breast cancer, adjuvant hormonal therapy (AHT) decreases recurrence and increases disease-free survival when used for at least five years. However, SEs, lack of communication with health care professionals and length of therapy are common reasons for non-persistence with AIs[2]. This study investigated the perceptions and experiences of women who have ever stopped taking AIs.

### Methods

A cross-sectional online survey was developed and piloted with college staff (N = 12) and female acquaintances (N = 4). An online survey was utilized due to convenience and reduced data entry processes and errors. The survey comprised of questions on demographics, AI experiences and standardised measures including SF-12 and confidence with doctor. Women with hormone receptor positive breast cancer who received AI therapy and were seen at the University of Michigan Cancer Centre between 1st September 2009 and 28th February 2014 were eligible. A total of 1,350 women met the criteria and 600 women were randomly selected to receive an invitation letter with the survey URL web-link. A reminder letter to non-respondents was sent two weeks after initial contact. For this analysis, only respondents who had previously stopped an AI (identified by survey data) were included. Pearson's chi-squared test and t-test were used to determine relationships between the dependent and independent variables ($p < 0.05$). Multivariate logistic regressions were used to predict: (1) why women stop taking an AI and (2) why women continue taking an AI (persistence). Free-text descriptions were analysed by thematic analysis to supplement the quantitative findings. Ethics approval was obtained from the University of Michigan Institutional Review Board.

### Results

Of the 282 completed surveys (48.0% response rate), 136 women (48.2%) had ever stopped an AI and were included in this analysis. Women were predominantly white (N = 123/136, 90.4%), 60–69.9 years old (N = 59/136, 43.4%) and retired (N = 75/136, 55.1%). More than half of the women (N = 78/136, 57.4%) were currently taking an AI and some women (N = 43/136, 31.6%) previously stopped more than one AI. Women stopped their AI in 77.2% of the cases due to SEs, of which, 46.6% were due to joint pain. Women who had previously taken another AHT (i.e. not an AI) had a 95.0% less likelihood of stopping their AHT due to SEs compared to women who were taking anastrozole (OR: 0.05; 95% CI: 0.01–0.25). Women with a higher physical health score were significantly less likely to stop their AHT due to SEs compared to women with a lower physical health score (OR: 0.93, 95% CI: 0.87–0.99). Three key themes emerged including faith in healthcare and AI treatment, mental and physical SEs leading to lower quality of life and coping with SEs.

### Discussion

Side effects and previously taking more than one AI were associated with non-persistence. Having support for women who switch AIs is important and may be achieved by interventions such as New Medicine Service. Furthermore, cognitive behavioural therapy (CBT) may be integrated as part of AI treatment to help women think and engage in behaviours that help them manage SEs to help reduce the impact on their quality of life. Recall bias may exist because women were asked to share details about medications that may have been stopped up to four years ago.

### References

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## 0078
## Pharmacists from three sectors work together to reduce emergency admissions

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### Focal points

- Can improved pharmaceutical transfer of care via a multi-sector approach reduce emergency admissions?
- A pathway bridging three sectors of pharmacy- hospital, primary care and community pharmacy was created for high risk patients on discharge.
- Analysis of SUS data showed a reduction of emergency admissions and A&E attendances, with annual cost savings of over £390,000.

### Introduction

It is reported that between 5 and 17% of admissions for older people are related to medicines[1]. Between 30 and 70% of patients have either an error or an unintentional change to their medicines when their care is transferred[2]. With the objective of reducing medicine related emergency admissions, a referral pathway was created between Croydon University Hospital, Croydon Clinical Commissioning Group (CCG) and local community pharmacies for high risk patients on discharge, pump primed using a CQUIN* for secondary care.

### Methods

High risk patients were identified by hospital pharmacists/technicians during medicines reconciliation or at point of discharge during medication counselling. Patients deemed to be high risk were those with clinical or adherence concerns, high risk medicines, polypharmacy, large number of medication changes during admission or respiratory admissions prescribed inhalers.

The patients identified by the hospital team were referred to primary care pharmacists at Croydon CCG who liaised with GPs, community pharmacists, hospital staff and other healthcare professionals as necessary to highlight issues and facilitate transfer of seamless pharmaceutical care across the interface. They addressed any clinical issues, made recommendations to GPs to optimise therapy, ensuring changes to medicines were implemented on the GP clinical system and medicines reconciled.

Patients with adherence concerns or problems with inhalers were referred onward to their community pharmacist for a MUR or a domiciliary visit (a service supported by the Better Care Fund) where changes to medication could be explained, old medication removed and patients assessed for adherence support or inhaler technique.

The level of involvement was individualised in each case, dependent upon the issues highlighted by the hospital pharmacist, the complexity of the patient's condition and medication regimes, and input from other teams involved.

The primary care pharmacists facilitated joint domiciliary visits with community pharmacists and specialist nurses to provide consistent messages for the patient and better working relationships between healthcare professionals.

To investigate impact on A&E attendances and emergency admissions, longitudinal analysis of SUS data (Secondary Users Service data obtained from Trusts) for the patients referred via this pathway was completed, comparing activity for the six months before and after the discharge referral**. Ethics committee approval was not needed.

### Results

From August 2013 – July 2014, data for 216 patients referred via this pathway was analysed. Results showed:

- reduction of 184 A&E attendances
- reduction of 155 emergency admission episodes
- reduction of 968 emergency admission bed days
- cost avoidance due to emergency admissions = £365,500 (average cost of emergency admission: £2,300)
- cost avoidance due to A&E attendances = £27,600 (average cost of an A&E attendance: £150)

### Discussion

These results demonstrate the value that pharmacists can add to the urgent care agenda. This referral pathway, built across the pharmacy interface, reduced emergency admissions and A&E attendances and generated significant cost savings. The service was well received by patients and carers, this feedback will be formally evaluated going forward. The pathway bridged three sectors of the pharmacy profession from hospital pharmacists, across the interface through primary care pharmacists, to community pharmacists. Each sector of the pharmacy profession was able to play its unique part in ensuring safe transfer of care, gaining an understanding of the issues faced in other sectors, as well as generating positive outcomes for patients and the NHS.

*CQUIN or 'Commissioning for Quality and Innovation' is a payment framework which enables commissioners to reward excellence by linking a proportion of Trust income to achievement of local quality improvement goals.

**The number of A&E attendances and emergency admission episodes, including length of admission (bed days), was counted for each patient for the six months before and after the referral. The difference in number of A&E episodes, emergency admission episodes and bed days between each six month period was calculated and these differences were summed for all patients showing overall reductions in all three. The cost avoidance was calculated by multiplying the average cost of an emergency admission or A&E attendance (obtained from local data of all patients in the CCG for the same time period) by the overall reductions seen.

## References

1. N Barber, J Parsons, S Clifford, R Darracott, R Horne. Patients' problems with new medication for chronic conditions. *Qual Saf Health Care* 2004; 13: 172–175
2. Royal Pharmaceutical Society: Keeping patients safe when they transfer between care providers – getting the medicines right: Good practice guidance for healthcare professions, July 2011


# 0079
# Role substitution and extended scope of practice (ESP) in pharmacy: a policy analysis of the risks and opportunities of skill mix


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## Focal points

- This paper aims to review the evidence for extending the scope of practice (ESP) of pharmacy technicians (PTs)
- Following a database search (PubMed, CINAHL, BNI, IPA, HMIC) for literature published 1990–2015, policy analysis methodology was used to evaluate the evidence
- Little evidence of extended scope of practice (ESP) was found, although there was some suggestion it can reduce costs and improve efficiency; moreover, PTs were more likely to be viewed as a risk in community than in hospital pharmacy
- Community pharmacy may benefit from learning about ESP in other settings to mitigate these risks

## Introduction

Delivery of high quality, patient-focussed services in pharmacy requires effective skill mix. Yet uncertainties about competencies, responsibility and accountability may restrict skill mix innovation, particularly in community pharmacy where the roles of pharmacy technician (PTs) – the most appropriately trained group to take on additional tasks and responsibilities – lack clarity.[1,2] While recognising the risks to patients of, for example, PTs providing a clinical check, evidence is emerging that opportunities for appropriately trained and qualified PTs to extend their scope of practice exist.[1] In light of this, we used policy analysis methodology to review the literature on extending the scope of practice (ESP) of PTs, involving either the extension of PTs' existing role or the substitution of pharmacists with PTs.

## Methods

Policy analysis methodology involves five stages: state the problem, define the context, search for evidence, apply evaluative criteria, and weigh the outcomes. For stage one, government policy related to health service delivery was examined; stage two considered pharmacy workforce evidence; stage three involved a database search (PubMed, CINAHL, BNI, IPA, HMIC) of literature published 1990 to 2015 using terms including pharm* skill mix; labour substitution; technician. In applying evaluative criteria (stage four) abstracts were screened and full papers (where relevant) retrieved, with contentious items discussed by the team; in stage five, evidence from studies of labour substitution, case studies and attitudes to ESP was weighed and synthesized. Ethics approval was not required.

## Results

In stage one, the problem was defined as the need for an evidence-base linking improved efficiency and health outcomes to healthcare delivery that maximises workforce resources. The pharmacy workforce evidence (stage two) suggests efficiency savings if tasks are performed by the lowest unit cost worker, and resource allocation could be maximised if pharmacists and PTs are used at maximum professional capacity. The evidence for substitution of pharmacists with PTs / ESP for PTs (stage three, four and five) was primarily provided by descriptive, small-scale studies conducted in the hospital setting and the United States. Some of these studies reported reduced costs and improved efficiency (typically using measures of workload, dispensing costs or medication costs). In community pharmacy, much of the evidence on ESP related to attitudes of pharmacists and support staff (including PTs) to reconfigured roles, and suggests pharmacists are reluctant to adopt ESP for PTs while they are keen to take on new and extended roles themselves. However, many studies were small scale or considered the hypothetical safety of PTs taking on ESP roles, making it difficult to determine the actual risks and opportunities of ESP.

## Discussion

Given much of the evidence is based on small-scale, descriptive studies where the research design prevents generalisation to other settings, it is difficult to determine the risks and opportunities of ESP in pharmacy. Although it appears that PTs undertake enhanced roles in an effective and safe way in hospital, in community pharmacy barriers to implementing labour substitution exist, questioning the viability of role-substitution in this setting. Yet community pharmacy may benefit from learning about skill mix models used in the hospital setting.


## References

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2. Jee S, Willis S, Pritchard A, Schafheutle E. The Quality of Pharmacy Technician Education and Training. A Report to the General Pharmaceutical Council. The University of Manchester, 2014

## 0080
## What impact does the type of leadership style, or mixes of styles, have upon team dynamics and performance in a final year undergraduate community pharmacy business simulation?

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### Focal points

- This study aimed to observe leadership styles present in final year MPharm students competing in a business simulation pilot. Leadership styles and their impact were established using observations and semi-structured interviews
- Three of the six participants demonstrated a variety of leadership styles, with a democratic style yielding the best performance
- This work would suggest that students may need support and coaching to identify leadership styles in order for them to maximise performance during the simulation

### Introduction

The Pharmacy Leadership and Management (PLM) module aims to integrate learning from across the MPharm course and apply it in a simulated environment where students run a pharmacy business, focusing on creativity and innovation in delivering services and dealing with queries. Goleman defines six distinct leadership styles, a framework that is used throughout the world of business to maximise performance[1]. The six styles (coercive, authoritative, affiliative, democratic, pacesetting and coaching) are defined by certain emotional intelligence competencies. The aim of this research was to identify which styles participants present in the pilot, if at all, and their impact on team dynamics and performance.

### Methods

All of the six participants from one of the two competing teams were observed through participant and non-participant observation, with details of tasks and discussions between individuals recorded onto a standardised pro-forma, over a total of seven simulation days. Semi-structured interviews were conducted with five of the six participants to explore the leadership styles present in the group, focusing on team dynamics. Interviews lasted between 2 and 23 minutes. Interviews were audio recorded, transcribed verbatim and analysed thematically. The study was reviewed by the University of Nottingham School of Pharmacy Research Ethics committee and given a favourable opinion.

### Results

Participant 1, 2, and 3 were the leaders observed in the team as they exhibited intuitiveness, effective communication and lead tasks from the front. Participant 1 and 3 displayed initiative, as they were observed to act quickly in organising participants to get tasks completed. Participant 1 and 2 routinely asked the opinions of others, a democratic leadership trait, whilst displaying an effort to build relationships, an affiliative leadership trait. This made participants 1 and 2 more approachable, with one participant reporting *'. . . I'd rather approach participant 1 or 2 first . . .'* with regards to new ideas. Participants reported of participant 3's direct approach, a coercive leadership trait, and that they preferred working alongside the democratic leadership of participant 1 and 2. Coaching behaviours were routinely observed; participants 1, 2, 3 and 5 gave feedback. Participant 4 reported *'nasty'* feedback from participant 3, a view also noted by others. Further, feedback delivery from participant 3 towards the end of the simulation changed and was appreciated as it was *'more constructive in nature and helps me better'*. However, feedback from participant 3 was reported as very detailed, as noted by participant 5 and 6. As indicated by the competition scoring system, performance was better in tasks led by a more democratic leader (participant 1 or 2) compared to tasks led by the more coercive leader (participant 3).

### Discussion

The democratic, coercive, affiliative, and coaching styles were observed, whilst the pace-setting and authoritative styles were not exhibited. The team appeared to perform better in democratic leader led tasks compared to coercive leader or other leadership style led tasks. This was a small-scale ethnographic study and further work is needed to see if all leadership styles are exhibited by student groups and the impact of these on performance. This work would suggest that students may need support and coaching to identify and manage leadership styles in order for them to maximise performance during the simulation.

### References

1. Goleman D. Leadership that gets results. *Harvard Business Review* 2000;78(2):78–93.

# Quality improvement and evaluation

## 0081
## Spot the difference – a quality improvement initiative and audit to improve medication adherence post cataract surgery

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### Focal points

- The aims of the initiative were to reduce medication risk, improve adherence and patient understanding of medication post cataract surgery.

- The audit questions scored above 90% and addressed 4 key principles[1].
- This initiative demonstrates how medicines optimisation can be used to enhance medication safety and improve patient understanding of medication.

## Introduction

Medication to take out (TTO) provision after cataract surgery is a key part of the patient's integrated care pathway (ICP). Medication safety and adherence to medication all link in to the medication optimisation agenda[1,2]. Given this, together with patient feedback, a quality improvement initiative for post cataract surgery TTO medication began. The aims of the initiative were:1. Reduce medication risk- preventing wrong identification and missed/ inappropriate dose administration of medication by patients. 2. Improve adherence and patient understanding of medication prescribed post cataract surgery.

## Methods

No ethics committee approval was required. The area of focus for improvement was the labelling of medication and information provision- how could this be improved so that patients can read and understand the information post cataract surgery? A system of coloured dots for each eye drop was introduced and these were positioned both on the bottle and box of the product whilst still retaining the usual dispensing label. Large printed information sheets were also provided; which corresponded to each coloured dot and contained the drug name, what the drug is for and how often to use it. There was also a helpline number in case of any enquiries. Once the changes were implemented, an audit was carried out. The target population was every patient that underwent elective cataract surgery. These patients were given a questionnaire to self complete pre discharge but were under no obligation to complete it. 100 questionnaires were completed (n = 100).

## Results

The following results were obtained – 1. I know how much and how often I am supposed to use my eye drops:100% agreed (100 patients) 2. I know what each eye drop is for: 100% agreed (100 patients) 3. The colour coded bottles help me to identify the eye drops: 100% agreed (100 patients) 4. The large printed sheets: a. Help me to identify how many times I am supposed to use each drop: 98% agreed (98 patients) b. Make the medication information less confusing: 96% agreed (96 patients) 5. The colour coded bottles and large printed sheets help make the medication process easier: 92% agreed (92 patients). The results were analysed in order to identify if they addressed the 4 principles in the medicines optimisation guidance[1].

## Discussion

The results met the 4 principles[1] and this quality improvement initiative demonstrates how medicines optimisation can be used to enhance medication safety and improve patient understanding of medication. The results have demonstrated that patients: 1. Know how to use the eye drops.2. Know what each drop is for.3. Know when to use each drop.4. Can easily identify the eye drops.5. Found the information less confusing.6. Found the medication process easier overall. The limitations of the initiative were: (a) Only a small proportion of patients that passed through the service completed the questionnaire (100 patients, 15%) (b) The improvements are unlikely to benefit colour blind or visually impaired patients (c) The changes do not guarantee 100% adherence to medication. A larger re-audit would address point a, however point b could only be rectified upon further adaptation to the dispensing process and would require further consideration. Challenges remain within the speciality of ophthalmic medication; however this initiative forms the basis of a starting point which can be adapted by other organisations to suit their local needs.

## References

1. Royal Pharmaceutical Society Of Great Britain. Medicines Optimisation: Helping patients to make the most of medicines. Good practise guidance for healthcare professionals in England, May 2013.
2. National Institute for Health and Clinical Excellence (NICE), Medicines optimisation: The safe and effective use of medicines to enable the best possible outcomes (NCG5), March 2015.

# 0082
# Assessing the impact of implementing quality improvement measures on antimicrobial stewardship (AMS) at a district general hospital

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## Focal points

- To improve antimicrobial prescribing, it is recommended that NHS organisations implement a robust AMS programme
- Baseline point prevalence audit (PPS) in 2010 was used as a foundation for implementation of key quality improvement measures aimed at improving antimicrobial use within the trust
- Results over a five year period show an improvement from 7% to 81% for documentation of indication on drug charts and from 32% to 64% for documentation of duration. A multifaceted AMS approach, along with infection prevention and control measures coincided with significant reduction in clostridium difficile over 5 years.

## Introduction

The national antimicrobial stewardship toolkit: Start Smart then Focus[1] recommends that for all antimicrobial prescriptions indication and duration should be documented. Baseline PPS in October 2010 was used as a foundation for implementation of key quality improvements within the trust. The aim of the pro-

gramme is to assess the impact of implementing quality improvement measures on antimicrobial stewardship at the trust.

## Methods

Key quality improvements for AMS included: Development and implementation of an antimicrobial management code (March 2011); production of a pocket guide for common infections (July 2011); dedicated section for antimicrobials on drug chart (August 2011); competency assessment on antimicrobial prescribing for all prescribers (September 2011); in person training of all FY1 and FY2 doctors and monthly audit of the antimicrobial management code (September 2012). In July 2014, an antimicrobial app was introduced to the Trust.

Each year in October, the PPS audit was carried out over one day for all patients on antibiotics. The data collected includes documentation of indication and duration, compliance with guidelines and review of antibiotics. The data was analysed using Microsoft Excel. The yearly results was presented at the Trust's Grand Round and at each directorate/divisional meeting along with a written and published action plan.

## Results

The results of the PPS audit from 2010 to 2014 are shown in Table 1

**Table 1** Results of key indicators from the Trust's Antimicrobial Management code

| | 2010 | 2011 | 2012 | 2013 | 2014 |
|---|---|---|---|---|---|
| Number of charts seen | 649 | 868 | 660 | 803 | 829 |
| Number of antimicrobials prescribed | 378 | 409 | 327 | 315 | 445 |
| % of patients on antimicrobials | 34 | 32 | 37 | 39 | 43 |
| % of prescriptions with indication documented on drug chart | 7 | 53 | 73 | 73 | 81 |
| % of prescriptions with duration documented | 32 | 51 | 64 | 67 | 64 |
| % of prescriptions with duration < 8 days | 78 | 72 | 93 | 89 | 95 |
| Number of Clostridium difficile cases | 110 | 65 | 59 | 24 | 33 |

To date the app has been downloaded 2000 times and accessed 6000 times.

## Discussion

The results over the last five years have shown that audit, sharing of results and a robust strategy of change can lead to significant change in practice. Documentation of indication and duration, total duration of the course of antibiotics and compliance to antibiotic guidelines have all improved since 2010 as have the number of Clostridium difficile cases in the Trust.

## Limitations

Two limitations of the study include the phased approach to introducing the interventions over the years. Also the use of a one day audit point prevalence audit, however this is a recognised methodology for antimicrobial stewardship audits.

## References

1. Public Health England. Antimicrobial stewardship: Start smart – then focus. 2011 https://www.gov.uk/government/publications/antimicrobial-stewardship-start-smart-then-focus. (Updated 2015) Date accessed – 25 March 2015

# 0083
# Implementation of a pharmacy self-care scheme to prevent patients attending general practice within a majority South-Asian population

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## Focal points

- To determine whether a locally commissioned pharmacy self-care scheme, Pharmacy First, can prevent patients attending general practice within a majority south-Asian population
- A high number of consultations were delivered through community pharmacies releasing approximately 900 hours GP time for an average cost of £6.68 per consultation (cost includes service fee plus medication cost including VAT)
- Pharmacy First is a low cost service which can prevent patients attending general practice within a majority South-Asian population.

## Introduction

Approximately 30% of consultations within general practice are for minor ailments, of which, approximately 60% can be treated by a community pharmacist. Pharmacy schemes can provide a suitable alternative to GP consultation and decrease re-consultation rates in GP practices.[1] South-Asian populations are more likely to frequently attend GP practices than other populations.[2] Several studies demonstrate the success of self-care schemes in the general population, but there are limited studies which evaluate these schemes in areas with high ethnic minorities. This evaluation examined whether Pharmacy First prevented patients attending their GP within a Clinical Commissioning Group (CCG) with majority South-Asian population.

## Methods

Pharmacy First was commissioned in January 2014 by an inner-city CCG to promote self-care and improve access to GP appointments. Patients who presented at the pharmacy were given advice, provided printed information and, if necessary, supplied medication from a defined formulary to manage their presenting complaint. Medication was supplied free of charge to those exempt from prescription charges. Details of the consultation were recorded on PharmOutcomes® (a data capture software) including age, ethnicity, presenting complaint, medi-

cation supplied and action taken by the patient had the service not been available. All data inputted were evaluated from January to September 2014 to determine the patient demographic, consultation details and number of GP appointments/hours released. Data were extracted into Excel® and reported using descriptive statistics. Ethical approval was not needed as this was deemed service evaluation.

## Results

Thirty-seven community pharmacies within the CCG conducted 6015 consultations for patients registered with 27 GP practices. The range of consultations per pharmacy varied from six to 490 (median 119, IQR 30–251). The majority of patients described themselves as Asian/Asian-British, Pakistani (78.3%, 4710/6015); the next highest ethnic category being Asian/Asian-British, Bangladeshi (4.5%, 272/6015). 47.4% (2852/6015) of the patients seen were less than 10 years old; the majority of those being under 5 years old (30.9%, 1857/6015). Most patients (93.6%, 5631/6015) stated they would have used the GP had they not accessed the scheme. Assuming the average GP consultation is 10 minutes, this released 938.5 hours practice time across 27 practices (median 29.6 hours, IQR 10.6–46.0 hours).

The symptomatic relief of viral symptoms with or without a cough was the most common presenting complaint. 95.3% (1856/1948) patients were treated in the pharmacy and did not require any onward referral to other services. Only 29 (1.5%) patients were referred urgently to either the GP or NHS 111. The remainder were referred to the GP for non-urgent appointments (3.2%, 62/1948). The average drug cost per patient was £2.18 and average cost per item was £1.51. Including the service fee of £4.50, this gives an average consultation cost per patient of £6.68 (including VAT).

## Discussion

Pharmacy First can prevent patients attending general practice in an area with a majority South-Asian population. A high number of consultations were delivered through community pharmacies releasing approximately 900 hours GP time for an average cost of £6.68 per consultation compared with an average GP cost of £36.[2] The findings for this service are in line with findings from other minor ailment schemes.[2] Further work is required to determine patient and staff experience of using the scheme.

## References

1. Scaife B1, Gill P, Heywood P, Neal R. Socio-economic characteristics of adult frequent attenders in general practice: secondary analysis of data. *Fam Pract.* 2000 Aug;17(4):298–304.
2. Paudyal V, Watson MC, Sach T, Porteous T, Bond CM, Wright DJ, Cleland J, Barton G, Holland R. Are pharmacy-based minor ailment schemes a substitute for other service providers? A systematic review. *Br J Gen Pract.* 2013;63(612):e472–81.

# 0084
# Documentation of patients' weight during their hospital admission

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## Focal points

- An audit was conducted to measure the prevalence of patients with their weight documented during their hospital admission, with a particular focus on patients prescribed 'weight-sensitive drugs'.
- Overall 549 (72%) of 762 patients had their weight documented during their hospital admission and 402 (75%) of 536 patients prescribed a weight-sensitive drug had their weight documented.
- The majority of patients had their weight documented, particularly if they were prescribed a weight sensitive drug, although room for improvement remains.

## Introduction

Knowledge of a patient's weight is essential when prescribing drugs that are dosed based on bodyweight. These 'weight-sensitive drugs' include drugs with a narrow therapeutic window such as heparins and aminoglycoside antibiotics. It was not known to what extent patients' weights were documented within our hospital trust or whether this represented a patient safety risk. Our objectives were to measure the prevalence of patients who had their weight documented within 24 hours of admission and at least once during their inpatient stay. Additionally we wanted to compare weight documentation for patients prescribed weight-sensitive drugs versus those not prescribed such drugs.

## Methods

An audit approach was used, with audit standards derived from National Institute for Health and Care Excellence (NICE)[1] guidelines and local hospital policy: 100% of patients should have their weight documented within 24 hours of admission and 100% should have their weight documented at least once since their admission. Adult inpatients were included; those on intensive care units or admitted for less than 24 hours were excluded. A data collection tool was developed and piloted prior to data collection. Data were obtained from two sources: 1) paper drug chart and 2) a risk-assessment booklet completed by nurses, both of which were located at the patient's bedside. Details of documented weight and any weight-sensitive drugs were recorded. Data were summarised descriptively and a chi-squared test with Yates's correction used to test for a difference between the prevalence of documented weight for patients prescribed and not prescribed weight-sensitive drugs. The audit was approved locally.

## Results

Data were collected from 762 patients on 51 wards across three hospitals within the trust over a two week period in April 2014.

Data collected from the risk-assessment booklet indicated that weight was documented for 309 (41%) patients within 24 hours of admission and for 359 (47%) at least once during admission. Data from drug charts indicated that 278 (37%) patients had their weight documented at some point during their admission. Overall, 549 (72%) patients had their weight documented in one or other source during their admission, although only 88 (16%) had their weight documented in both. There were 536 patients prescribed at least one weight-sensitive drug. Of these, 402 (75%; 95% confidence interval 71–79%) had their weight documented, compared to 147 (66%; 95% confidence interval 60–72%) of the other 223 patients not prescribed a weight-sensitive drug ($p = 0.014$). The most common weight-sensitive drugs prescribed without a documented weight were amikacin, gentamicin and treatment doses of tinzaparin.

### Discussion

While the large sample size was representative of the trust, findings were potentially limited by data not being collected from additional sources such as medical notes. Findings were encouraging in that the majority of patients had their weight documented, particularly if they were prescribed a weight-sensitive drug, which is crucial for accurate drug dose calculation. However 25% of patients prescribed weight sensitive drugs had no weight documented, with important patient safety implications. An electronic patient record system is now being introduced in the trust; a repeat audit will be conducted following its implementation as it will be important to consider how this may affect practice around weight documentation.

### References

1. National Institute for Health and Care Excellence 2006. Nutrition support in adults: Oral nutrition support, enteral tube feeding and parenteral nutrition [Online]. Available from: http://www.nice.org.uk/nicemedia/live/10978/29981/29981.pdf [Accessed 14/05/2014].

## 0085
## Medicines adherence – an audit to determine if patients are involved at the time when their drugs are being changed on the hospital ward

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### Focal points

- An audit to determine if hospital patients were told about drug changes as these were made on wards found that over half the patients were not informed, including all non-English speaking patients seen.
- Where patients had been told of drug changes, the majority wanted these changes explained in more detail
- 10% of patients passively accepted drugs changes made by doctors and did not want them explained or preferred that drug changes be discussed with their carer(s) or family instead
- Hospital pharmacists must carefully assess individual needs when counselling patients about drug changes

### Introduction

NICE Clinical Guideline Number 76[1] states that healthcare professionals should 'offer all patients the opportunity to be involved in making decisions about prescribed medicines.' This statement is the basis of the present audit whose aim was to examine if patients were being consulted whilst on the ward about any changes to their regular medication. The audit standard was the full involvement of all patients. Where this standard was not being met this study also aimed to investigate patient views about their lack of involvement in changes to their medicines.

### Methods

A 4 week audit was carried out by 3 members of pharmacy staff on 4 hospital wards, namely; cardiology, respiratory, orthopaedics and care of the elderly. The audit involved patients (with no documented cognitive impairment) where ward pharmacists had identified changes made to regular medication. Once verbal consent to participate in the audit had been obtained, a questionnaire was used to record patient demographics (including ability to communicate in English) and patients were asked:

- Are you aware of the drug changes that have been made while you have been hospital?
- Who explained the changes to you?
- Would you like to be provided with more information?

### Results

26 out of 50 of hospital patients (52%) were not informed about changes made to their medication at the time these were made and this included all 8 patients seen in the study who were unable to speak English (5 South Asian and 3 Eastern European) and who felt completely ignored. They proposed that their English speaking family members should be told about drug changes. While 16 out of these 26 patients felt that they should have been informed, the remaining 10 patients did not want any explanation. They preferred that drug changes be discussed with their carer(s). Where patients had been told of drug changes, the majority (16 out of 24) wanted these changes explained in more detail and said that drug changes had been mentioned rather than explained. Doctors had mentioned drug changes to 12 patients and nurses to 7 patients. Pharmacists had only explained changes to 4 patients (8% of the total study population). One patient did not remember who had told him or what was said. Only 7 patients felt fully briefed about their medication.

### Discussion

This audit has prompted increased attention by pharmacists to patients with drug changes as many may not know that their

drugs have altered and need to be informed. Other patients who are aware will, nevertheless, want to learn about the reasons for changes in more detail. While not all patients feel confident about discussing drug changes, the majority of patients feel that changes should be fully explained and pharmacists can check that this has happened. Pharmacists counselling patients about drug changes must carefully assess their individual needs. In particular, they must ensure that those unable to speak English are not overlooked and they should consider involving relatives/carers where patients find the prospect of discussing medicines daunting.

### References

1. National Institute for Health and Clinical Excellence (NICE). Medicines Adherence: Involving patients in decisions about prescribed medicines and supporting adherence. CG76. London, 2009: NICE.

## 0086
## Informing community pharmacists by fax about medication changes made in hospital

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### Focal points

- Patients had no reluctance to their discharge letters being faxed to their community pharmacy; all consented.
- Identifying the patient's regular pharmacy proved possible for 97% but faxing discharge letters was time consuming and was abandoned in one third of cases due to continued failure of fax transmission.
- A less time consuming mechanism of sending information to community pharmacists and the benefits resulting from them receiving of discharge information both require investigation.

### Introduction

If patients' medicines are changed during their hospital stay, unintended discrepancies may occur post-discharge. While patient safety is improved when community pharmacists receive discharge information,[1] they are not routinely made aware of changes to medication made in hospital. The aims of this study were i) to assess acceptability to patients of sending discharge information by fax to their community pharmacist, ii) measure the feasibility of identifying patients' regular community pharmacy, and iii) to quantify the additional tasks required of hospital pharmacy staff and the time taken to carry them out.

### Methods

The study (a service development not requiring ethical approval) was conducted in one Yorkshire NHS Trust over a 7-week period. Medication histories on a 30 bed cardiology ward were recorded and where possible, patients' usual community pharmacy identified. Verbal consent to send the paper copy of their discharge letter to their community pharmacy was sought from patients whose regular medication had changed. A record was made of consent rates and of the practicalities of achieving successful fax transmissions. All local pharmacies were informed by the LPC about the study aims and expected such faxes. Patients outside the study area, day cases, overnight stays and patients without capacity to consent were excluded.

### Results

From 363 cardiology patients seen, 32 (8.8%) previously took no medicines and had no regular pharmacy. The regular community pharmacy was identified in 320 of the remaining 331 patients (96.6%). All patients consented to have their hospital discharge letter sent to their pharmacy but it was not possible to inform community pharmacists about all patients as data was not captured at weekends or on public holidays. 55 cases were missed in this way. 49 patients seen at admission had not been discharged when the study ended, 10 patients died, 19 patients were transferred to different wards or hospitals. Two discharge letters containing sensitive information were not faxed. Ultimately 165 discharge letters were sent to 77 different community pharmacies (115 faxed, 50 posted). From 115 successful fax attempts 82 were transmitted on the first attempt (mean 4.4 minutes for a typical 5 page fax including cover sheet) while 33 had to be resent because, where phone and fax numbers were identical, the receiving pharmacy did not switch to fax when called. Fifty letters (30.3%) had to be posted (3 minutes per letter) because of continued failure to transmit the fax. Drugs remained unchanged in 20 patients (5.5%).

### Discussion

Sending discharge letters to the community pharmacy was acceptable to patients and almost all pharmacies were identifiable. However, faxing discharge letters proved frustrating and time consuming. The study quantified hospital pharmacy staff time in preparing and sending faxes but not in identifying patients' pharmacies. UK literature on this topic is sparse; the mean time spent by hospital pharmacists in a Welsh study was 12.98 minutes[2]. The workload involved in faxing or posting discharge letters was unsustainable. A less outdated and ideally paperless mechanism of sending information to community pharmacists needs to be developed. The present study did not examine the potential patient safety benefits resulting from transmission of discharge information and community pharmacist views about the value of such information require investigation.

### References:

1. Royal Pharmaceutical Society (2014). http://www.rpharms.com/support-pdfs/3649—rps—hospital-toolkit-brochure-web.pdf
2. Alam MF et al. (2014) Evaluation of the discharge medicines review service. Welsh Institute for Health & Social Care.

## 0087
## Exeter cluster pharmacy service evaluation demonstrates hospital admission avoidance

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### Focal points

- The Exeter cluster pharmacy service provides a domiciliary medicines optimisation service aiming to reduce harm from medicines, prevent hospital admissions and enable patients to manage their medicines safely at home.
- Service evaluation was carried out to inform future commissioning plans.
- The service has a positive impact on patient safety: risks for patients are reduced and a significant number of hospital admissions and their associated costs are avoided.
- The evaluation supports the need to ensure proactive pharmaceutical care is available to the frail elderly to optimise medicines use and prevent admissions to hospital.

### Introduction

The Exeter cluster pharmacy team is based within an integrated community health and social care team, providing a citywide domiciliary pharmacy service. It consists of three pharmacists (1.8wte) and two technicians (0.8wte). The service aims to optimise medication for frail elderly patients at risk of medicines related harm, reducing harm and preventing hospital admission. It provides level 3 clinical medication review, medicines reconciliation and advice in the home. The majority of referrals come from GPs and the community health and social care team. The aim of this project was to evaluate the current service to inform future commissioning plans. Ethics committee approval was not needed.

### Method

Activity data, recorded on the trust's internal database, was analysed both retrospectively (Feb-July 2014) and prospectively (Sept-Dec 2014). Data included details of referral type and source, patient contacts made, subsequent interventions and outcomes. The prospective analysis collected additional detailed information about patient demographics, clinical activity and outcomes. Potential admissions avoided were recorded and the resulting data independently validated using NPSA and RiO risk assessment tools. Patient and professional stakeholder surveys were also undertaken.

### Results

Over the nine month combined data analysis period, 346 patients were referred to the cluster pharmacy service, resulting in 599 patient contacts. 58% of patients referred were aged 80 years old or over. Prospective data analysis showed that 79% of patients were unable to visit their GP surgery or community pharmacy for a medication review at the time of referral (n = 112). Patients were pharmaceutically complex: 54% were prescribed ten or more medicines and 85% had an impairment affecting their ability to manage medicines. Cluster pharmacy input resulted in medication changes for 57% of patients. 79% of proposed medication changes were accepted by GPs and a further 12% accepted with modifications. Patient and professional stakeholders rated the service positively, with the quality of the service being rated positively by 100% of patients.

Risk of harm from medicines in the prospective data analysis was shown to be high or extremely high in 76% of patients at referral, reducing to 21% at final contact (assessed using the NPSA risk scoring tool). The retrospective and prospective analyses demonstrated admission avoidance as a result of 53 patient contacts (n = 441) and 27 contacts (n = 118) respectively. Extrapolating this over a year gives an average of 108 admissions avoided. This equates to a cost saving of £240,000 per year, based on an admission cost of £2230 for patients aged 65 or above at the local acute trust.

### Discussion

The Exeter cluster pharmacy team provides patient-centred care to vulnerable older adults with complex and changing medicines management needs. The service is well regarded by patients and professional stakeholders and is integrated into the wider community health and social care team. The service has a positive impact on patient safety: risks for patients are reduced and a significant number of hospital admissions and their associated costs are avoided. The evaluation supports the need to ensure proactive pharmaceutical care is available to the frail elderly to optimise medicines use and prevent hospital admissions.

## 0088
## The impact of an extended clinical pharmacy service for an acute medical receiving unit at the weekend

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### Focal points

- To identify if there is a clinical role for the pharmacist at the weekend within the acute receiving units.
- The pharmacist contributed significantly to accurate medicines reconciliation and to safe and accurate prescribing of medicines on admission and discharge.
- There is a clear role for a clinical pharmacy service to the acute medical receiving unit on Saturday and Sunday

### Introduction

The Scottish Government has identified the need for sustainable 7 day services in the delivery of health care and recognised

the potential contribution of pharmacists.[1] Also a recent working party of the Royal Pharmaceutical Society has identified that pharmacy service should be available to patients 7 days a week.[2] The clinical pharmacy service on the Medical Receiving Unit, Glasgow Royal Infirmary is an integral part of the service for patients acutely admitted. The pharmacists verify or complete medicine reconciliation and identify medication related issues likely to impact on care. This service is provided Monday to Friday but not at the weekend. The aim of the project was to quantify and characterise the contribution of the pharmacy team to patient care for newly admitted medical patients at the weekend.

## Methods

In total 8 pharmacists participated in providing a service over 8 weekend days, providing 3 whole time equivalent per day. A structured data collection form was developed and validated by 3 experienced clinical pharmacists. This form was completed for each patient encountered at the weekend. Data was collected on: the number of medicines reconciliation completed and verified, the number and type of contributions resulting from review of the medicine charts and the number and type of contributions from discharge prescriptions. Each issue that resulted in a change of prescription was assigned a potential clinical significance on 5 point scale (1 being of no clinical significance to 5 life threatening). A sample was independently verified by a team of 5 experienced clinical pharmacists.

## Results

In total data for 375 patients were recorded as reviewed, equivalent to 47 patients per day.

Pharmacists verified 176 medicines reconciliations completed by medical staff. In addition pharmacists completed medicine reconciliation and documented the drug history for a further 113 patients.

Of the 176 medicines reconciliation verified by the pharmacist, discrepancies were noted in 93 of the forms (53%) of which omission (140 medicines) was the most common.

In total 293 prescriptions on medicine chart were reviewed resulting in 427 recorded issues, of which 248 (58%) resulted in a change of prescription. The most commonly categorised issues were medicine omission (40%) and the need for dose adjustment. (29%). The significance of 14 changes (5%) were assessed as serious, in that the contribution potentially prevented serious adverse event or therapeutic failure likely to extend patient stay.

59 discharge prescriptions were reviewed for discharge which resulted in identification of 39 issues requiring a change in prescription. The presence of the pharmacist resulted in 50 requests for additional information or advice. In total each pharmacist recorded 52 issues to be acted upon in each 6 hour shift.

## Discussion

The data clearly indicates that the pharmacist at the weekend has an impact on medication reconciliation ensuring accuracy of initial prescribing. In addition the pharmacist reviews prescribing and identifies issues that contribute significantly to the care of the patient. A weekday only service potentially delays pharmacy review by up to 3 days which can result in unverified or uncompleted medicines reconciliation, suboptimal prescribing and errors.

## References

1. Scottish Government. *Sustainability and seven day service task force*. Available from: http://www.gov.scot/Publications/2015/03/7764 (accessed May 2015)
2. Royal Pharmaceutical Society. *Seven day services in hospital pharmacy: giving patients the care they deserve*. Available from: http://www.rpharms.com/support-pdfs/rps-seven-day-report.pdf (accessed March 2015)

# 0089
# Impact of clinical pharmacist surgical discharge facilitator on LOS

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## Focal points

- Clinical Pharmacist Surgical Discharge Facilitator post developed to reduce length of stay (LOS) and improve flow.
- Reduction in LOS (0.6 bed days compared to 0.1) over 1 year by introduction of post.
- Potential cost-avoidance of £126k at base hospital and additional 504 bed days released could allow 67 additional cases to be undertaken per year.

## Introduction

Between the financial year of 2012 and 2013 there were 34,174 cardiac operations performed across England and Wales.[1] The trust is facing mounting pressure to improve efficiency of inpatient flow to address capacity needs. The position of 'clinical pharmacist, surgical discharge facilitator' was developed to improve patient flow, care and experience; the aim is to determine the safety and efficacy of this new role and impact within the multidisciplinary team.

## Methods

A pathway to define post cardiac surgical care was developed and ratified by the board of surgeons, aiming to achieve a LOS of 5 days for patients undergoing elective procedures. The clinical pharmacist surgical discharge facilitator post was attached to 2 cardiothoracic consultants, attending ward rounds and undertaking advanced roles, ensuring discharge plans were being addressed early in the patient's stay. LOS and readmission data were collected throughout the course of the project and analysed on excel 2010 using statistical and trend functions. The combined average LOS for the 2 cardiothoracic consultants affiliated with the post was plotted on a graph and compared to the combined average LOS for all other cardiothoracic surgeons, 1 year prior to and post initiation of

the post. As a crude marker of cost savings, we multiplied the average reduction in bed days (0.6 days) to the total annual activity (840) and priced an average bed day at £250. Ethics approval was not required.

## Results

There were 840 cardiac surgical procedures between the months of January to December 2013, of which 286 were conducted by 2 consultants affiliated with the post. Average LOS across all consultants was 10.9 days. When data is adjusted and analysed for patients being discharged between days 4–14 (to eliminate outliers that skew data not due to this post), this reduced to 7.8 days. The average adjusted LOS for the 2 consultants affiliated with the post was 8.1 days in 2012 versus 7.5 days one year after the post was started (an average reduction of 0.6 bed days). In comparison, LOS reduced by 0.1 bed days in the same period in the control group. Additionally the post improved the proportion of elective patients discharged within 5 days compared to those under the care of the other cardiac surgeons, 23% vs 15% respectively. Reduction in LOS translates to a potential cost-avoidance of £126k, and potentially releases 504 bed days with potential to undertake an additional 67 cases per year (assuming an average LOS of 7.5 days).

## Discussion

To determine whether this enhanced role or reducing LOS was adversely affecting patient safety, emergency readmission rates were analysed. There was no difference in readmission rates between study and control groups suggesting that decreasing the LOS in the study group did not adversely affect patient safety. The potential increased capacity could allow for fewer cancellations and ensure patients are being treated within 18 weeks from referral, preventing fines that may incur. The main limitation of this study was the use of retrospective data collected by the coding team, the accuracy of which being dependent on the quality of discharge summaries. With improvements in efficiency and financial benefits shown, we would advocate other trusts invest in discharge facilitators with pharmacists able to demonstrate improvements.

## References

1. *The Society for Cardiothoracic Surgery in Great Britain & Ireland*. Blue Book Online. Available at http://bluebook.scts.org/ [Accessed 23 February 2015]

# 0090
# Optimising medicine administration in care homes: opportunities for pharmacists?

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## Focal points

- This study aimed to identify difficulties experienced by nurses when administering medicines in care homes and strategies used to overcome them, using an ethnographic approach (observations).
- It was observed that nurses spent a significant proportion of their day undertaking medicine administration, and difficulties that led to time inefficiencies e.g. residents refused to consume all or some medicines were overcome with strategies such as administering medicines covertly in food or drink.
- The nature of observed medicine administration difficulties and strategies used to overcome them indicate that nurses could benefit from greater pharmaceutical input into medicine administration processes.

## Introduction

Community pharmacists in the UK play a central role in the medicine management of older persons living in care homes (CHs). CH staff use pharmacy-prepared medicine organisers or pharmacy-dispensed original medicine packaging to administer large volumes of medicines to residents. However, there is limited published research that has ethnographically explored how medicine administration is conducted in CHs. Research of this nature could inform quality improvement of pharmacy-supplied medicine services. This study aimed to identify difficulties experienced by nurses when administering medicines in CHs and strategies used to overcome them.

## Methods

This presentation reports on observations conducted as part of a larger, mixed methods study (conducted from October 2014 to March 2015). It involved a pharmacist researcher spending 3–4 days at five purposively sampled CHs in Greater London. The qualitative component involved observing nurses administer medicines during the breakfast, lunch and dinner medicine administration rounds (an ethnographic approach). The researcher aimed to observe 230 solid, oral medicine doses administered per CH (this determined the visit duration at each CH). University ethics committee approval was obtained.

## Results

26 nurses were observed during 44 medicine administration rounds. It was observed that nurses spent a significant

proportion of their day undertaking medicine administration. Often, medicine administration did not occur time efficiently because residents required lengthy periods of time to consume medicines, or they refused to consume all or some medicines. Nurses employed various strategies to overcome these difficulties including: repeatedly re-visiting the resident to retry administration; crushing medicines; administering medicines covertly in food or drink; and asking a staff carer to administer the medicine. Observed consequences of time inefficient medicine administration included minimal time gaps between administration rounds and non-adherence to administration instructions of time- or food-sensitive medicines.

## Discussion

The pharmacist researcher observed difficulties experienced by nurses when administering medicines, including lengthy periods of time for administration. Strategies nurses used to overcome these difficulties (e.g. crushing medicines and administration in food or drink) could benefit from an understanding of pharmaceutical principles. These findings will inform potential strategies to address observed medicine administration difficulties, for example: undertaking medicine reviews to identify opportunities for de-prescribing; using alternative formulations for prescribed medicines e.g. liquids, crushable forms or patches; regularly reviewing and communicating individual residents' medicine administration preferences; ensuring widespread awareness of medicines with important time, food and crushing sensitivities; and undertaking education on how to administer medicines with food or drink to ensure they are consumed in their entirety and their pharmacological effects are not impaired. Pharmacists have a role in improving care in CHs.[1] Future research could explore how pharmacists can support CH medicine administration processes, in terms of difficulties nurses experience and strategies to overcome them.

## References

1. Royal Pharmaceutical Society. *Pharmacists improving care in care homes*. Great Britain: Royal Pharmaceutical Society, 2014.

# 0091
# Reviewing the continued need for pharmacotherapy in the treatment of urinary incontinence

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## Focal points

- Trial stop of medication to treat urinary incontinence to determine continued need for treatment
- Out of 70 of the patients asked to trial a stop in treatment ~73% remained stopped after an eight week period
- An estimated annual saving of £14,542 was achieved for the practice involved

## Introduction

Urinary incontinence (UI) is a common symptom that can be caused by one or more underlying conditions. It has a wide range of severity and symptoms and patients can often find it very distressing, socially disruptive and embarrassing to discuss[1].

Antimuscarinics are frequently initiated in primary care to treat UI and patients often remain on these long term without regular review for continued need. National Institute for Health Care and Excellence Clinical Guidelines 171 (NICE CG171) recommend annual review in primary care (or every 6 months if over 75 years). They do not give any guidance as to how this should be done.

## Methods

A search was carried out on the medical practices' clinical system using it's reporting function to identify patients prescribed antimuscarinics to treat UI in the last year:

Each patient was individually reviewed using their clinical notes; the patient was not contacted as part of the review process.

Patients excluded during the review process include:

- Treatment less than 1yr (or less than 6 months if over 75yrs)
- Attending continence clinic or consultant input
- Parkinson's, Multiple Sclerosis or spinal cord injury
- Stroke, dementia, Alzheimer's – exclusion depended on severity of condition and if incontinence was associated.
- Life circumstance that deemed a change inappropriate

The remaining patients were sent a letter asking them to stop their medication. Their medication was removed from their repeat list to ensure the patient had to make contact with a prescriber/pharmacist before another prescription was issued. Ethics committee approval was not required.

## Results

The search identified 210 patients in this practice currently using antimuscarinics. After the exclusions were applied 70 patients remained and were contacted to ask them to stop their medication.

Following a period of eight weeks 51 patients (almost 73%) had remained stopped, 2 had been switched to an alternative antimuscarinic as they had reported that they were still symptomatic on their original medication, 8 patients were unwilling to stop as they felt they still required these and 9 patients tried to stop but found their symptoms returned so were restarted. Patient satisfaction with this review was not analysed.

The cost of prescribing these medications on a daily basis for 12 months was worked out for each patient. These were then totalled and for the 51 patients that remained stopped this generated an estimated saving of £14,542 for the practice prescribing budget.

## Discussion

This review confirms the need for regular review of antimuscarinincs to treat UI. Almost 73% of patients asked to stop had remained stopped after an 8 week period which indicates that their symptoms may have resolved and that they no

longer required treatment. This supports NICE guidance and the reality that treatment need not always be lifelong.

The results were collated following an 8 week period – additional patients may have been restarted after this period. Also the savings generated can only be estimated and rely on the assumption that these patients would continue to take their medication regularly for the next 12 months.

This review can be used in primary care to facilitate the reduction in unnecessary prescribing of the antimuscarinics in the treatment of UI benefiting the patient whilst also achieving savings to the primary care prescribing budget.

## References

1. National Institute of Health and Care Excellence. 2013. Urinary incontinence in women CG 171 [online] http://guidance.nice.org.uk/CG171

# 0092
# Pharmacist independent prescribing – a rapid review of the evidence

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## Focal points

- Pharmacist independent prescribers (PIPs) prescribe for a wide range of therapeutic conditions.
- Dedicated time, funding, good communication, strong professional relationships, and access to clinical records are important factors for successful pharmacist independent prescribing.
- Pharmacist independent prescribing can lead to improvements in patient safety and service efficiency.

## Introduction

The Second Crown Report[1] proposed extending prescribing rights for health professionals and in 2001 the Health and Social Care Act provided the legal basis for this to happen. The first PIP qualified in 2007 and by 2013 there were approximately 3000 pharmacist prescribers in Great Britain, (approximately 7% pharmacist workforce).[2]

The aim was to explore; the settings and clinical areas where PIPs work; enablers and barriers to pharmacist independent prescribing; and whether PIPs improve service quality and capacity.

## Methods

A systematic search of Embase, AMED, HMIC, Medline PsycINFO and Cochrane databases identified studies published in peer-reviewed journals from January 2006 to January 2015. The search terms pharmac$ and independent prescrib$ were combined using Boolean operators. Further references were identified via the UK Clinical Pharmacists Association conference abstracts webpages and the Royal Pharmaceutical Society online Pharmacist Prescribing Discussion Group. Original research papers, service evaluations and systematic reviews written in English, and relevant to the provision of healthcare in the UK were included. Papers concerned with the development or evaluation of PIP courses were excluded. Ethical approval was not required.

## Results

Thirty-eight relevant publications were identified. These included workforce surveys, qualitative research papers and service evaluations undertaken in Great Britain, across a range of settings and clinical specialities.

- Two-thirds (61%) pharmacist prescribers work in hospital and 13% in community pharmacy. A third (30%) work in primary care. Some work in more than one sector.[2]
- One national survey found hospital PIPs equally divided between those prescribing on wards and in out-patients.
- PIPs prescribe for; infections, pain management, cardiovascular disease, hypertension, anticoagulation, respiratory disease, diabetes, mental health, rheumatology, orthopaedics, osteoporosis, surgery, total parenteral nutrition, medicines reconciliation, medical admissions, care of the elderly, minor ailments, oncology, palliative care, renal disease, dermatology, substance misuse, travel medicine, influenza vaccination, sexual health, gastroenterology, neurology, clinical trials, ophthalmology, HIV and immunology (35 references).
- Services funded by the NHS were more likely to involve prescribing antibiotics and/or treating long-term conditions. Non-NHS services focused on acute conditions, travel prophylaxis and influenza vaccination
- Factors facilitating PIP include; support from colleagues, having appropriate clinical knowledge and experience, dedicated time and funding for the service, good communication, a 'good relationship' between the PIP and doctor and access to shared records (4 references).
- Barriers to implementation are; lack of time or funding, limited opportunities, the need for a second clinical check prior to dispensing, inadequate access to medical records, difficulty accessing patients, and lack of support for PIP from other health professionals (10 references).
- Benefits of PIP include; reduction in prescribing errors, optimisation of medicines including more patients achieving clinical targets, reduced admissions/readmissions/ referrals to other services, and pharmaceutical care issues being resolved more quickly in A&E or following admission. PIPs also reduced length of stay for surgical patients, reduced delays in hospital discharge and freed up medical time (19 references).

## Discussion

This review provides a broad overview of PIP activity, and factors supporting and hindering PIP rather than exploring specific aspects of PIP in detail. Weaknesses include limited evidence from primary care and in relation to cost effectiveness. In all settings service planners need to understand the

facilitators and barriers to successful implementation if patients and the NHS are to truly benefit from the opportunities for service redesign and improved patient care PIP offers.

## References

1. Department of Health. *Review of prescribing, supply and administration of medicines (the Crown Report)*. London: DoH; 1999.
2. Phelps A et al. *GPhC Registrant survey 2013*. Prepared for the General Pharmaceutical Council. London: NatCen; 2014

# 0093
# The added value of a patient consultation with an academic pharmacist: evaluating an innovative learning session for final year pharmacy students at Cardiff University

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## Focal points

- This study aimed to evaluate a novel small group teaching session with a pharmacist academic patient.
- Student (n = 103) and staff (n = 4) feedback indicated the sessions were valuable.
- Although contact time for the academic was high (18 hours), the value of the sessions justifies this session continuing.

## Introduction

Schools of pharmacy in Great Britain are using a range of innovative approaches to increase opportunities for MPharm students to interact with patients. In 2015, for the first time, Cardiff School of Pharmacy & Pharmaceutical Sciences introduced a session for MPharm students in their last semester at university. An academic pharmacist was the patient in a series of 30 minute consultations with groups of three or four students (36 sessions in total). Prior to the session students were provided with a list of regular, repeat medication (name, form, strength and dose frequency). During the consultation students undertook the patient's medicines history (where issues relating to repeat and non-repeat medicines arose) and to measure and record blood pressure and pulse. Four of these sessions were reviewed by academic colleagues. The aim was to evaluate student and peer (staff) feedback on these patient consultation sessions.

## Methods

In March 20015, once all the consultations had taken place, students were asked to anonymously complete a standard teaching evaluation form (see Results) in a lecture theatre. They were also asked to identify if a number of specified issues had arisen during the consultation (see Results), to identify the most valuable aspects of the session and suggestions for improvement, and to provide any additional comments. Staff observers (n = 4) were asked for their comments. The school ethics committee indicated that ethics approval was not required.

## Results

A total of 103/124 completed forms were returned by students (83%). Mean responses to a series of standard Likert questions about the lecturer/session used by the school were as follows (with 5 being the maximum score): spoke clearly (4.9), good at explaining things (4.9), made subject interesting (4.9), enthusiastic (4.9), intellectually stimulating (4.7), relevant (4.8), maintained interest throughout (4.8) and teaching aids added to value of session (4.9). The overall mean score was 4.9/5. Students identified the following as constituting part of the consultation: consent (100%), confidentiality (100%), feedback on improving asking patients questions (100%), medicines-history taking (100%), patient adherence (99%), monitoring for efficacy/side-effects (99%), risks of cutting tablets (99%), off-label use and informing patient (98%), dose adjustment in response to side-effects/efficacy (98%), when to discuss drug-drug interactions with patient/prescriber (97%) and identification of meaningful CPD from patient consultations (95%). The most valuable elements included useful preparation for OSCEs, being able to talk to a real patient who was informed about their medicines, knowledge of off-label use, the patient's tailoring of medication in response to efficacy/side-effects, realistic consultation, small groups allowing participation of all and receiving honest, helpful, constructive feedback. Suggestions for change (very few students) were sessions should be one-to-one and there should be more of these consultations during the MPharm degree. Staff feedback included identification of clear learning outcomes building on previous learning, alignment of learning with assessment (OSCE), student engagement and enjoyment, relevance to pharmacy and the safe but realistic learning environment. Staff questioned the sustainability of sessions as 18hours of staff contact time was required.

## Discussion

Student and staff feedback indicated the session was valuable in several ways. For example, high teaching evaluation scores, benefits of consultation (including explanation and feedback to students in real time) plus specific issues covered in relation to the patient and his medication. The lecturer/patient concerned will continue with sessions as benefits significantly outweigh the 18hours staff contact time.

## 0094
# How should we communicate potential medication errors to patients in primary care? Findings from four workshops with members of the public

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### Focal points

- Fictional case-based development workshops were used to explore the views of 34 members of the public on the feasibility and appropriateness of different methods which general practices could use to communicate potential medication errors to patients, with the aim of informing future primary care medication safety research.
- Participant's preferred face-to-face discussion of potential medication errors over written correspondence, as this allows personalised discussions tailored to individual circumstances; the role of patient information leaflets describing the nature and possible consequences of specific errors was limited to supporting verbal consultations.
- Future research should explore how clinicians could tailor these potentially sensitive discussions in practice.

### Introduction

The landmark PINCER trial demonstrated reductions in medication errors following collaborative efforts between pharmacists and general practitioners (GPs) to act on data generated by an electronic medication safety dashboard.[1] However, the way in which errors were communicated to patients was not explored in this trial, and subsequent medication safety dashboard development work highlights the need to engage patients when optimising medication safety in primary care.[2] The aim of this project was to use workshops to explore the views of the public regarding the appropriateness of methods which could be used by general practices to communicate potential medication errors to affected patients, with the aim of informing the design of a subsequent research study.

### Methods

Members of the public were invited to participate in 1 of 4 2-hour workshops held during January 2015 in Manchester and Scaynes Hill in Sussex (two per location). Members of the public from the Greater Manchester and Sussex areas were recruited using electronic posters, social media and project team contact networks according to a convenience sampling approach, and were aware that data would be collected for future research purposes. Project team members attached to each workshop group used a written guide to explore different methods of communicating potential medication errors between patients, GPs and pharmacists. Fictional case-based written materials and real patient information leaflets (PILs) for medicines were provided to facilitate discussions, and hand-written project team notes were analysed thematically. This project was designed to inform future prescribing safety research; ethical approval was not required.

### Results

In total, 34 members of the public attended the 4 workshops. Emerging themes clustered around 4 main areas: understanding, sensitivity, responsibility and improvement. Participants understood the concept of what medication errors were and welcomed disclosure from general practice, but were mindful of potential consequences to both patients and clinicians (e.g. litigation, emotional support). Learning about a potential medication error was seen to be a possibly serious and emotive event for patients; thus, face-to-face discussions with clinicians were favoured over written correspondence as this gave greater scope for patients to ask questions and clinicians to tailor potentially sensitive discussions according to local circumstances. Whilst PILs were seen to be useful supporting materials to consultations, participants did not think they could replace face-to-face discussions. Nonetheless, participants made recommendations for the visual representation of risk (e.g. appropriate use of pictograms) and leaflet structure/style (e.g. use patient questions to deliver content). Some groups also felt that written descriptions of potential medication incidents should focus on positive improvement messages rather than using negative terms like 'error' or 'mistake'.

### Discussion

Public workshops revealed that written communications from general practice about medication errors are not viewed as acceptable substitutes for face-to-face conversations with primary care clinicians, but could feature as supportive tools. As errors may be raised and discussed between stakeholders in different ways, future research should seek to understand these consultations in practice, with a view to generating training recommendations.

### References

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2. Keers RN, et al. Improving medication safety in primary care: developing a stakeholder-centred electronic prescribing safety indicator dashboard. Presented at Prescribing and Research in Medicines Management (PRIMM) 26th Annual Scientific Meeting, 2015, London UK.

# 0095
# Understanding the type of queries and interventions made within a community pharmacy for patients with cognitive impairment and the related resource required

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## Focal points

- To determine the type of interventions made within community pharmacy for patients who have cognitive impairment, plus the time and resource required to resolve these interventions.
- The total time spent resolving issues equated to 181.6 hours per year with a substantial number of queries from patients needing clarification about their medication.
- Further work is required to understand the resource implications of the growing population of patients with cognitive impairment.

## Introduction

Many patients need support when taking their medication, especially those who are easily confused or who have cognitive impairment. There is increasing work which looks at the impact of patients with cognitive impairment and dementia on health care services.[1] However, there is no work investigating the impact of these patients within community pharmacy. This audit investigates whether relevant information was recorded each time an intervention was made for patients with cognitive impairment, identifies the number and type of interventions made and records the time spent resolving issues.

## Methods

Within the pharmacy each patient who received a monitored dosage system (MDS) had a pre-existing individual patient record card in addition to their electronic patient medication record. These record cards were routinely used to record information regarding the patient's medication plus all interventions made by pharmacy staff. A separate intervention form was developed for the study to record interventions for patients not on a MDS, which included the same information. Patients were included if they received an MDS and/or they had a diagnosis of dementia. All patient medication record cards and intervention forms were reviewed to identify interventions made within a 6 week period between October 2014 and December 2015. Each intervention was audited against organisational policy for recording interventions to determine whether any details were omitted. This included the patient details, date of intervention, person to whom intervention was discussed, person making the intervention, job role of staff member making the intervention and action required. The interventions were also thematically analysed by the investigator to identify types of intervention recorded, then each type of intervention quantified. The total time spent working on the intervention was also measured and recorded by the member of staff making the intervention. Ethical approval was not needed as this was deemed audit and service improvement.

## Results

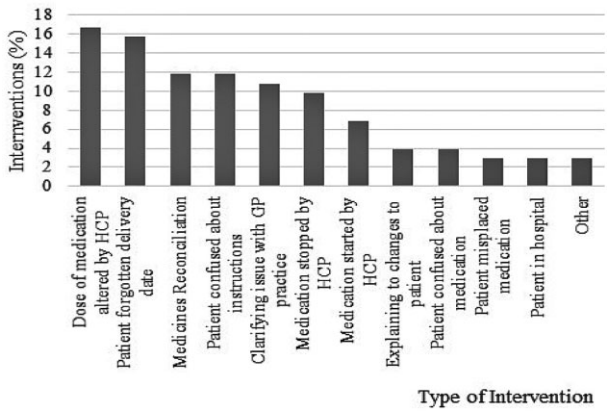


**Figure 1** Type of intervention

During the audit period 102 interventions were made; mean 17 interventions per week. Patient details and intervention were always documented. The recording of the name and job role of the person making the intervention was 89% (91/102) and 77% (78/102) respectively. The outcome/action taken was recorded on 88% (90/102) of occasions. Least recorded was the person with whom the intervention was discussed (55%, 56/102). These omissions occurred on the patient record cards rather than the intervention records made for non-MDS patients as the intervention form prompted the completion. The commonest intervention was dose alterations (16.7%, 17/102), followed by patient confusion about delivery dates (15.7%, 16/102) (see fig 1). Most interventions were made by a technician (87.2%, 89/102). The total amount of time spent by staff resolving interventions for MDS patients was 975 minutes and non-MDS patients 282 minutes; total 1257 minutes over 6 weeks. This equates to 10894 minutes per year (181.6 hours) or approximately $^1/_2$ a day per week.

## Discussion

Patients with cognitive impairment need substantial time and input from community pharmacy staff to help them to optimise their medication. Improvement recording the detail of the interventions is needed to ensure a clear audit trail of interventions made. Further work is required to understand the applicability to other community pharmacies and resource implications of the growing population for patients with cognitive impairment.

## References

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# 0096
# Evaluation of a pharmacist-managed inpatient anticoagulant prescribing service to a cardiac surgical ward


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## Focal points

- Prescribing anticoagulation requires additional care over many other treatments and accurate documentation is essential[1].
- There is support for greater use of pharmacists to prescribe outpatient anticoagulation and some have suggested this should be extended to inpatients[2].
- This service evaluation evaluated whether an inpatient pharmacist anticoagulant prescribing service (PAPS) was equivalent to standard care in terms of patient outcomes and quality of documentation.
- Documentation of warfarin prescribing was significantly more complete for PAPS patients and the service was shown to be non-inferior to standard care in both efficacy and patient safety, with PAPS patients spending more time in therapeutic range and more being discharged within therapeutic range.

## Introduction

Anticoagulant therapy is key to preventing compilations that may arise in patients undergoing cardiac surgery. Safe and effective warfarin use depends on achieving and maintaining the patient's international normalised ratio (INR) within target range. This study evaluated whether a pharmacist anticoagulant prescribing service (PAPS) provided by a pharmacist prescriber, experienced in outpatient warfarin prescribing, improves patient outcomes and documentation in comparison to standard care, provided by speciality registrars, on a cardiac surgical ward.

## Method

This single-centre observation study was conducted in a large NHS teaching hospital trust in Northern Ireland and comprised two workstreams. Workstream 1 involved audit of anticoagulant prescribing before and after implementation of PAPS. Workstream 2 involved a multidisciplinary team survey exploring acceptability of PAPS. Time spent in therapeutic range was calculated using the Rosendaal method and documentation was audited against NPSA recommendations[1]. Institutional ethical approval was obtained. Chi-squared ($\chi^2$) or fisher exact tests were used for comparisons between study groups or for categorical variables and student's t-test was used for continuous variables.

## Results

43 consecutive patients received standard care (May – July 2014) and 33 consecutive patients received the PAPS intervention (August – October 2014). Demographic and clinical characteristics of patients were comparable between groups. PAPS patients were moderately more likely than those in standard care to be in therapeutic range at point of discharge (68.0% vs. 56.8%, $\chi^2$; $p = 0.373$) and spent longer in therapeutic range during their hospital stay (24.4% vs. 17.2%, student's t-test; $p = 0.169$). Time to achieve therapeutic INR was comparable for both groups; however, PAPS patients were less likely to experience discharge delays from non-therapeutic INR (16.0% vs. 40.5%, $\chi^2$; $p = 0.023$). On discharge, completeness of warfarin documentation was significantly better for PAPS patients compared to standard care (96.6% vs. 76.4%, student's t-test; $p < 0.001$). No meaningful difference was observed between the groups for adverse outcomes experienced during the study period (7/43; 16.3% vs. 5/33; 15.2% respectively).

29 of 40 staff surveys were returned, (72.5% response rate). 4 responses were from Consultants, 7 from Registrars, 4 from F2 Doctors, 4 from Pharmacy Staff and 10 from Nursing Staff. The multidisciplinary team were positive about PAPS and pharmacist prescribers were perceived by as the second (behind speciality registrars) most appropriate group to prescribe warfarin. PAPS was perceived by many to increase continuity of care (82.7%) and improve patient safety (72.9%). However, there was some hesitation in transferring prescribing responsibility to PAPS, with 57.1% (n = 7) of speciality registrars indicating PAPS encroached onto doctor's territory.

## Discussion

This study provides further evidence, in terms of improved documentation and non-inferior clinical outcomes, to support extending prescribing pharmacists' roles to warfarin prescribing in an inpatient cardiac surgical setting. In addition, the data suggest possible improvements in clinical management (time in range, in-range at discharge and reduced discharge delays), but owing to the small scale of the study, it was not possible to demonstrate statistical significance except for a reduction in delayed discharges and further work is needed to confirm the impact.


## References

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2. Baglin T, Cousins D, Keeling D, *et al*. Recommendations from the British Committee for Standards in Haematology and National Patient Safety Agency. *British Journal of Haematology* 2006;136,26–29


Reference added on 20 November 2015, after the online publication.

## 0097
## Using an e-Portfolio in pre-registration pharmacist training: a trainee and educational supervisor evaluation

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### Focal points

- The experiences of trainees and educational supervisors using a pre-registration pharmacist e-Portfolio were evaluated.
- Results indicated that the e-Portfolio enables easy tracking of trainee progress and that it facilitates more timely formative feedback.
- Overall, findings suggested that the e-Portfolio is a first step towards a more trainee-centred, self-directed and autonomous learning experience.

### Introduction

In August 2014, an e-Portfolio was implemented for compulsory use by 60 NHS Trust employed pre-registration trainee pharmacists and their educational supervisors (ES) across NHS South of England (Kent, Surrey, Sussex, Hampshire and Isle of Wight). Its introduction was intended to facilitate better accessibility, flexibility, transparency and ease of use [1]. The aim of this study was to evaluate trainee and ES experiences of using the e-Portfolio, in order to inform the direction of future developments.

### Methods

Two online evaluation surveys were produced and distributed at approximately 6-months into the pre-registration training year. The survey was developed in an iterative manner, with draft questions circulated and feedback obtained. The questionnaire was scripted, quality checked and a final draft prepared for use in a pilot survey, undertaken by a small number of 'super-users' from both user groups. Written feedback was obtained before finalising the questionnaire for use. The final survey contained 21 questions, answered using a 5-point Likert scale, across the user experience domains of technical, training and support. The surveys also explored the perceived impact of the e-Portfolio on the pre-registration training experience and the impact of the e-Portfolio on the ES role. Responses were collected from both groups over a 1-month period between 30 January and 28 February 2015. The survey link was distributed to trainees and ES using email invitation. Respondents remained individually anonymous; however demographic data were requested when completing the surveys. Ethical approval was not required as this was a service evaluation.

### Results

Returned surveys from pre-registration pharmacists yielded a 76% response rate (46/60), and of the 64 ES contacted, 70% completed (45/64). The results indicated a positive overall response to the e-Portfolio, with 90% of trainees agreeing that it facilitates effective submission and assessment of evidence. Trainees indicated that the e-Portfolio had helped them to become better acquainted with the GPhC performance standards and the pre-registration programme objectives (89%) and agreed that it enabled them to keep track of progress and reflect on weaker areas (85%). Nearly two-thirds of trainee respondents (63%) found the e-Portfolio valuable for evaluating and reflecting on their learning processes, however 47% expressed their disagreement that it had helped them become more effective and independent learners. A common view amongst ES (93%) was that it is helpful for them to be able to access the e-Portfolio at any time. 62% of ES reported an improvement to workload and workflow in terms of reviewing and assessing trainee evidence, with 66% agreement that it facilitated more timely formative feedback.

### Discussion

The most important limitation of this evaluation study lies in the fact that the trainees had no experience of using a paper-based portfolio for comparison; therefore many of the positive findings in respect of the e-Portfolio may also be true of a non-electronic version. Notwithstanding these limitations, the results suggest that the introduction of this e-Portfolio has been successful in providing an effective system for submission, assessment and feedback on evidence mapped to GPhC performance standards. The results also indicate that trainees find the pre-registration pharmacist e-Portfolio particularly useful as a tool to document and track achievement of standards but not as a tool for reflection on their personal accomplishments and learning processes. Although the e-Portfolio is a first step towards a more learner-centred and self-directed learning experience, there is abundant room for further progress in utilising the platform to its fullest potential, allowing trainees to expand the modes through which they learn and can demonstrate independent learning throughout their pre-registration training year.

### Reference

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## 0098
## Medicine Sick Day Rules cards: a safe and effective tool to improve medicines safety in NHS Highland

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### Focal points

- The aim of this patient safety initiative is to increase patient awareness of medicine sick day rules.

- This evaluation found that Medicine Sick Day Rules cards are safe, effective and valued by professionals.
- It concludes that Medicine Sick Day Rules cards are a useful tool for pharmacists to improve medicines safety.

## Introduction

The aim of this safety initiative was to increase patient awareness of 'medicine sick day rules'. These are rules about stopping certain medicines temporarily during a dehydrating illness. Continuing to take these medicines when dehydrated increases the risk of significant adverse outcomes such as acute kidney injury. These rules are contained in national guidelines[1] aimed at health professionals but patients are less aware of the rules. Given how frequently many of the targeted medicines are prescribed, this is a significant risk. A Medicine Sick Day Rules card – a credit-card sized patient information card – was developed (right). The rules were extracted from guidelines.[1] The wording and format of the card was drafted by a pharmacist; with input from patients, pharmacists and consultants. Community pharmacists led the distribution of cards to patients when dispensing repeat medicines. Cards were also distributed by: community pharmacists during Chronic Medication Service reviews; hospital pharmacists on discharge; prescribers on initiating medicines; and by all health professionals during medication reviews.

## Methods

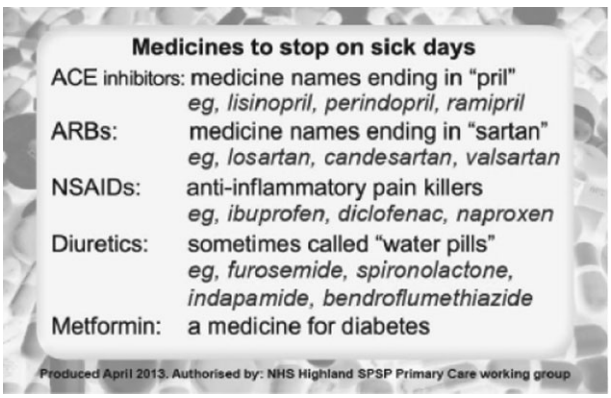
A two-part service evaluation was designed. Part one involved a survey monkey questionnaire emailed to all NHS Highland-employed staff. It comprised 5 quantitative questions and a section for comments. Participation was voluntary. In part two, hospital admissions were monitored for acute kidney failure, a significant adverse outcome of taking listed medicines when dehydrated. Heart failure admissions were monitored to assess the risk of not re-starting medicines.

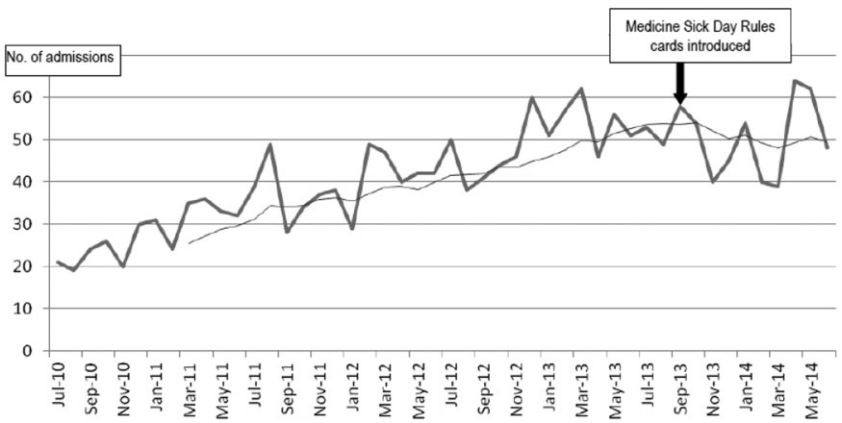
## Results

Of 317 responses to the staff survey, 99% understood the messages behind the cards, 74% had received a supply of cards for distribution and 71% had supplied cards to patients. Staff comments included:

- 'Really useful cards to hand out to patients who all seem to like them – easy to read and put somewhere handy.'
- 'This was a simple initiative which potentially could have great benefits. Most of the patients I gave the cards to had no idea that there could be an issue with serious consequences if they carried on taking these medicines when dehydrated.'
- 'Cards are a great resource to explain the sick rules, and we have certainly had two or three patients who have had acute medical admissions with acute kidney injury with diarrhoea and vomiting illnesses who were on ACE inhibitors.'

Hospital admissions data were collected for 9 months. The graph (previous page) shows admissions for acute kidney failure, with a 9-month moving average line. The graph shows a small fall in admissions since the cards were introduced, set against a trend of increasing admissions in previous years,



indicating that the cards are effective. No increase in admissions for heart failure was observed, indicating that the cards are safe.

## Discussion

Pharmacists have an essential role in ensuring patients can use medicines safely. The NHS Highland Medicine Sick Day Rules cards are a safe, effective and useful tool to support safer user of medicines. This initiative has gained UK-wide interest. The cards are being rolled out across NHS Scotland in June 2015. Salford CCG is testing an exact replica of the card for potential use in NHS England. Limitations to this evaluation are: participation in the survey was voluntary and self-selecting; hospital admissions data are limited to 9 months which may be too short to draw definite conclusions.

## References

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# 0099
# The impact of an electronic prescribing system on pharmacy interventions and contribution to patient safety

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## Focal points

- The implementation of Electronic Prescribing and Medicines Administration system (EPMA) has a significant impact on the number and type of Pharmacy interventions.
- Prescribing interventions decreased from 48.7% to 38.4% after the implementation of EPMA.
- The quality of prescribing in particular regarding legibility is increased with EPMA implementation.
- EPMA may increase pharmacists' involvement in direct patient care and save documentation time.

## Introduction

Prescribing errors are one of the most frequent medication errors significantly affecting patient's safety, which have been reported in 1 in 12 hospital prescriptions.[1] Hospital Pharmacists play a fundamental role in reducing risk of prescribing errors, in addition, Electronic Prescribing has also been suggested to help minimising potential medication errors.[2] This study aimed to investigate the impact of implementing an Electronic Prescribing and Medicines Administration (EPMA) system on Pharmacy interventions in reducing prescribing errors and their contribution to patient safety in a hospital setting.

## Methods

This retrospective study was conducted in March 2015 in a UK teaching hospital. Pharmacy contributions to patient care, collected over a period of one week as part of the annual pharmacy intervention audit for the years 2010 and 2014 (before and after the implementation of EPMA) were reviewed. Interventions made on prescribing errors were filtered and analysed for the two years, with only those made using EPMA analysed for the year 2014. Description statistics were used to present the proportions and difference of proportions between 2010 and 2014 for subtypes associated with prescribing interventions, including type and location of pharmacy staff, stage of care, prescribers, types of prescribing intervention, priority medications, significance and outcomes of the Pharmacy contribution. Chi-squared tests were performed to test the significance of the results. All data were analysed using Microsoft Excel® 2007. Ethics approval was not required for this audit.

## Results

A total of 1947 and 1193 Pharmacy interventions were recorded in the year 2010 and 2014, respectively. Of which, the proportion of prescribing interventions reduced from 48.7% (n = 948) in 2010 to 38.4% (n = 458) in 2014, demonstrating a significant decrease (10.3%, $p < 0.001$). In addition, the proportions of the following subtypes of prescription interventions were found to be significantly different between 2010 and 2014:

| Number of prescribing interventions (%) | 2010 (n = 948) | 2014 (n = 458) | Difference in proportion |
|---|---|---|---|
| Inpatient care | 736 (77.6%) | 301 (65.7%) | −11.9% ($p < 0.001$) |
| At discharge | 137 (14.5%) | 143 (31.2%) | +16.8% ($p < 0.001$) |
| Inpatient prescription illegibility | 126 (13.3%) | 1 (0.2%) | −13.1% ($p < 0.001$) |
| Major prescribing interventions | 57 (6%) | 14 (3.1%) | −3% ($p = 0.02$) |
| Pharmacy interventions accepted by prescribers | 350 (36.9%) | 310 (67.7%) | +30.8% ($p < 0.001$) |

## Discussion

The implementation of EPMA showed a significant reduction in pharmacy interventions, in particular prescribing interventions, which may signify an improvement in the quality of prescribing; allowing pharmacists to focus their activities towards direct patient care and reduce time spent on modifying prescription documentation. In particular a significant decrease in prescribing illegibility and increase in prescriber acceptance is notable. The overall reduction in pharmacy interventions may indicate the benefit of electronic prescribing in the safe and effective prescribing and use of medicines. However, further research is needed to measure the number and type of prescribing errors occurring alongside the pharmacy interventions, enabling a wider understanding of the impact of EPMA on the role and behaviour of Pharmacists and Prescribers using this system.

## References

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# 0100
# Transition from professional silos to interprofessional collaboration, are pharmacy students interested? A cross-sectional attitudinal study in a Nigerian University


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## Focal points

- Professional silos is the bane of IPL, are pharmacy students interested in interprofessional education?
- Pharmacy professionals are self-sufficient, 55.3%, but IPL can improve interprofessional relationship (86.5%).
- Inclusion of IPL in pharmacy school curricula may eradicate professional silos.

## Introduction

Interprofessional learning (IPL) promotes collaborative practices and improves quality of care[1] but the existence of professional silos, a self-centered approach to professional education and practice, prevents collaboration among health professionals, hampering patient care and health outcomes[1]. This study was aimed at assessing pharmacy students' attitudes towards IPL and collaboration.

## Methods

A cross-sectional study conducted at the University of Ibadan between July and August 2014 involving all consented undergraduate pharmacy students, aged 16 years and above, from the first to the fourth (final) professional year. Participants completed a self-administered questionnaire using the validated Readiness for Interprofessional Learning Scale (RIPLS) and Interdisciplinary Education Perception Scale and Subscale (IEPSS)[2] The IEPSS evaluate attitudes about team collaboration for the students' own profession while RIPLS assess students' own attitude towards IPL. Both scales have four subscales as described in Table 1. Mean and percentage scores were calculated for the items under each subscale (Table 1). The study was approved by the Ethics Committee.

## Results

Two hundred and sixty-six students (85.26%) participated in the study. Their mean age was $17 \pm 2.53$ years with females having higher proportion 150 (56.39%) than males. Pharmacy students showed positive attitude to IPL and agreed that it is necessary to improve interprofessional relationships 230 (86.47%), collaborations 221 (83.08%), communication skills 223 (83.84%) and patient care 246 (92.48%). Despite these positive attitudes, tendencies towards professional silos were displayed when students agreed that pharmacy professionals are self-sufficient 147 (55.26%), have higher status 42 (15.79%) and need to acquire more knowledge than other health professionals 121 (45.49%). Table 1 shows the average percentage scores for students personal (RIPLS) and professional (IEPSS) attitudes to collaboration and IPL respectively.

## Discussion

The need for integrated professional health care in improving outcomes calls for interprofessional education of health professionals to foster seamless future collaborations[1]. Since the pharmacy students are interested in interprofessional collaboration, inclusion of IPL in the pharmacy school curricula may be the panacea to eradicate professional silos attitude noticed among these students.


## References

1. Long T, Dann S, Wolff ML, Brienza RS. Moving from silos to teamwork: integration of interprofessional trainees into a medical home model. *J Interprof Care.* 2014;28(5):473–4.


**Table 1** Summary of scores for pharmacy students' attitudinal responses to RIPLS and IEPSS (n = 266)

| Summary of attitudinal responses | Number of items in each subscale | Avrg. min – avrg. max possible score | Mean score (SD) | Average percentage score |
|---|---|---|---|---|
| **RIPLS subscales** | | | | |
| Teamwork and collaboration | 9 | 9–45 | 37.16 (5.83) | 82.58% |
| Negative professional identity | 3 | 3–15 | 12.04 (2.25) | 80.27% |
| Positive professional identity | 4 | 4–20 | 16.20 (2.61) | 81.00% |
| Roles and responsibility | 3 | 3–15 | 7.75 (2.16) | 51.67% |
| **IEPSS subscales** | | | | |
| Competency and autonomy | 8 | 8–48 | 36.70 (6.35) | 76.46% |
| Perceived need for cooperation | 2 | 2–12 | 8.49 (1.62) | 70.75% |
| Perception of actual cooperation | 5 | 5–30 | 22.30 (4.47) | 74.33% |
| Understanding of others' values | 3 | 3–18 | 12.48 (2.39) | 69.33% |

Avrg. – average, Min – minimum, Max – maximum, Average percentage score = (mean score) x (100) /Average maximum possible score.

2. Lie DA, Fung CC, Trial J, Lohenry Kevin. A comparison of two scales for assessing health professional students' attitude towards interprofessional learning. *Med Educ Online*. 2013;18:21885.

## 0101
## Inhaler technique knowledge, and training provided by healthcare professionals to respiratory in-patients: a service evaluation

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### Focal points

- Inhaler education provided by healthcare professionals (HCP) at a large teaching trust was evaluated
- HCPs showed significantly worse knowledge of inhaler technique than patients (59% vs 75%; $p < 0.01$).
- 39 (39%) of HCPs had received inhaler technique training in the previous year. Only one patient (1%) was educated on inhaler technique while in hospital.
- Inhaler technique training for all clinical staff, and the provision of a formal patient education programme was identified to improve the number and quality of patient education

### Introduction

Respiratory diseases, including COPD and asthma, affect up to one person in five in the UK. Many will be prescribed inhaled medication to aid with disease control. Patient confusion regarding how to best use inhaler devices has led to worsening of respiratory diseases and exacerbations.(1) One of the reasons for sub-optimal inhaler use is because of poor understanding and lack of teaching of these devices by HCPs. The admission of a patient to secondary care, due to an exacerbation of respiratory disease, is an opportunity for HCPs to refresh the inhaler knowledge of their patients.(2) At this Trust, there is no formal service for teaching inhaler technique to patients; furthermore there is no training programme to ensure the HCPs are competent to do so. This service evaluation aimed to benchmark the knowledge of inhaler technique by healthcare professionals, and the education patients receive while an in-patient at a large teaching hospital.

### Methods

Inhaler technique scores of HCPs and patients were measured as a percentage of steps completed correctly, as per the Patient Information Leaflet (PIL) for each inhaler device. Placebo devices of the most commonly used inhalers in the hospital were used: pMDI, Turbohaler, Handihaler and Easi-breathe. In addition, patients were asked if they had been educated on inhaler technique during their in-patient stay, or if not, when the last education session occurred. HCPs were asked when they had been trained on inhaler technique. A total of 100 patients and 100 HCPs were randomly selected and evaluated from eight respiratory and non-respiratory wards over a four week period. HCP included: pharmacists, pharmacy technicians, doctors, nurses and physiotherapists. Ethical approval was not required as this was a service evaluation.

### Results

The patients scored significantly higher overall on inhaler technique than the HCPs (75% vs 59%; $p < 0.01$) using the Mann-Whitney U test. Of the HCPs, the pharmacy staff scored the best with 77%: vs Doctors 54% ($p = 0.038$); vs nurses 61% ($p = 0.129$); vs physiotherapists 31% ($p = 0.031$) using the Mann-Whitney U test. With regards to most recent inhaler training, 39% of HCPs had received training in the last year (50% pharmacy staff; 31% doctors and 39% nurses). HCPs who had received more recent training were able to demonstrate better inhaler technique (Spearman's correlation coefficient = –0.387; $p < 0.01$). Only one patient had been shown how to use their inhaler while in hospital.

### Discussion

HCPs scored poorly on inhaler technique due to the lack of recent training in the hospital. HCPs must be competent in the techniques required for different inhalers to provide an education service and this contributed to only one patient being educated whilst an in-patient. The pharmacy staff demonstrated a significantly better knowledge of inhaler technique than any of the other HCPs; they are ideally placed to educate both patients and HCPs. The patients were able to demonstrate better inhaler technique than the HCPs, but there is still room for improvement in order to reduce worsening of respiratory diseases. Inhaler technique training for all clinical staff, and the provision of a formal patient education programme led by the pharmacy team were identified to improve the number and quality of patient education. The main limitation of this service evaluation was that patients and HCPs were asked to recall the last training they received, which is subject to bias and memory recall.

### References

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## 0102
# A quality improvement project to improve the standard of documentation for the administration of 'when required' medication in a care home setting

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### Focal points

- A quality improvement (QI) approach using Plan-Do-Study-Act (PDSA) cycles which resulted in improvements to the documentation for the administration of 'when required' medication in a care home.
- The intervention resulted in the development and testing of colour-coded stickers outlining the steps that should be taken prior to the administration of three 'when required' medicines to be used in the personal multi-disciplinary records of patients.
- Care home staff provided positive feedback on the use of the stickers which supported the review of medication use as evidenced by the identification of a patient who needed GP referral. The Care Inspectorate acknowledged the use of the stickers addressed identified concerns about standards of documentation.

### Introduction

Comprehensive and standardised documentation supports the systematic monitoring and review of medication use. Care homes must document a wide range of interventions in accordance with National Care Standards[1]. This includes the specific steps followed prior to administration of 'when required' medication. The Care Inspectorate have identified that poor and ambiguous documentation is commonplace in many care homes across Scotland[2]. Record keeping for 'when required' medication was highlighted as inadequate in one local care home's Care Inspectorate report. This QI project aimed to provide an intervention to address this concern.

### Methods

The team undertook training in QI methodology via the Institute for Healthcare Improvement (IHI) Open School Practicum on: The Fundamentals of Improvement; The Model for Improvement; and Measuring for Improvement. Plan-Do-Study-Act (PDSA) cycles were used to design and test colour-coded stickers for three 'when required' medicines: paracetamol; senna; and lorazepam. Verbal feedback on content and design was sought from key stakeholders. All data was recorded using IHI PDSA worksheets for testing change. Each individual PDSA cycle was analysed by comparing the results with the outcome predicted in the planning stage and reflection on what was learned. Process, outcome and balancing measures were identified and a run chart maintained during data collection allowing the impact of modifications to be determined. Process measures included completion of all five sections of the sticker; balancing measures addressed time and workload impact; and the outcome measure was whether the intervention was acceptable to the Care Inspectorate.

### Results

The stickers were designed and modified three times based on feedback from four key stakeholders: care home manager; care home specialist pharmacist; and two NHS Grampian care home pharmacy technicians. Five PDSA cycles were undertaken which identified improvements including: the design, colour, font and layout of the stickers; recording of side effects and indications; and adapting the senna sticker to cover all laxatives. Over a two week period three lorazepam, seven paracetamol and zero laxative stickers were used. Stakeholder feedback included: 'conspicuous presence within the patient record'; 'systematic layout'; 'saves time and effort'; 'allows for straightforward review of medication use'. This was evidenced when the intervention identified one patient who needed GP referral due to regular 'when required' paracetamol. Positive feedback was also received from the Care Inspectorate pharmacy advisor: 'an important reminder in a patient's care that several actions must be carried out and recorded'.

### Discussion

The improvement intervention produced a positive effect on the standard of documentation used to record the administration of 'when required' medication. The care home manager was enthusiastic about the use of the stickers and also recommended the approach be used in the other care homes within their group. The Care Inspectorate pharmacy advisor acknowledged that the intervention was addressing the concerns about the standard of documentation. Plans are in place to follow up the use of the stickers in the care home with a view to incorporating them into the documentation of other care homes in NHS Grampian.

### References

(1) Scottish Government. *National Care Standards: Care Homes for Older People*. Edinburgh: The Scottish Government; 2007

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## 0103
## A quality improvement project to develop a patient information resource on warfarin

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### Focal points

- A quality improvement (QI) approach, which resulted in the design and development of a person-centred reference resource for patients taking warfarin oral anticoagulation therapy.
- The intervention resulted in the development and prototype testing of a warfarin 'concertina' card.
- Feedback from patients and patient representative organisations was very positive in that they found the card useful. Feedback from various healthcare professionals involved in patient safety and health literacy was also positive and provided further suggestions for improvement.

### Introduction

Warfarin is considered to be a 'high risk' medicine which is 'likely to cause significant harm to the patient, even when used as intended'[(1)]. Patients understanding and knowledge of warfarin therapy has an important impact on anticoagulation control[(2)]. It is therefore important to ensure the patient fully understands their treatment plan in order to improve safety, and reduce the risk of harm. The aim of this project was to create a person-centred reference resource with a view to reducing harm through highlighting the essential points of information within existing guidance regarding patient understanding of warfarin.

### Methods

The team undertook training in QI methodology via the Institute for Healthcare Improvement (IHI) Open School Practicum. Plan-Do-Study-Act (PDSA) cycles were used to design and test a resource for patients taking warfarin to complement the existing National Patient Safety Agency (NPSA) 'Oral Anticoagulant Therapy' booklet. Hospital patients were selected and recruited by a senior hospital pharmacist. Patients' views on the existing NPSA booklet were investigated using a semi-structured interview. The results were used to design a new warfarin resource which was assessed using a second patient semi-structured interview. In both interviews questions were based on purpose, relevance and usefulness of the resources. The final version of the new resource was sent to 11 patient representative groups and healthcare professionals with an interest in warfarin, patient safety and/or health literacy for further verbal/written feedback on content and design. All data was recorded using IHI PDSA worksheets for testing change. Each individual PDSA cycle was analysed by comparing the results with the outcome predicted in the planning stage and reflection on what was learned.

### Results

16 separate PDSA cycles were undertaken and 8 drafts of a warfarin 'concertina' card tested. A total of 21 patients were interviewed. Patients highlighted concerns with the NPSA booklet with multiple comments relating to the format and content: 'not very practical'; 'a lot of information which is off-putting and over-whelming'. Patient feedback on the new resource was positive and they felt it would be a useful portable addition to the NPSA booklet: 'useful to have side effects and symptoms in an easily accessible way'; 'appropriate information without being overwhelming'; 'all patients should carry something like this'. Feedback was received from 10 of the 11 patient groups and healthcare professionals. They provided suggestions to further improve the resource including formatting, use of pictures and symbols as opposed to text and fuller explanations of counselling points such as why patients should avoid cranberry and grapefruit products. One patient groups asked to use the content of the resource in some of their health information publications.

### Discussion

The improvement intervention produced a warfarin 'concertina' card resource that patients found to be a useful addition to current resources, which could improve patient understanding and safety in relation to warfarin. It was not possible within the project timescale to determine whether the resource would reduce patient harm. Plans are in place to further test the resource in NHS Grampian as part of a Scottish Patient Safety Programme initiative using process, outcome and balancing measures and to consider whether its use can reduce patient harm from warfarin.

### References

(1) NHS Patient Safety First, 2008. The 'How to Guide' for Reducing Harm from High Risk Medicines [online]. Available from: http://www.patientsafetyfirst.nhs.uk/ashx/Asset.ashx?path=/How-to-guides-2008-09-19/Medicines%201.1_17Sept08.pdf

(2) Fang, M. et al., 2006. Health literacy and anticoagulation-related outcomes among patients taking warfarin. *Journal of General Internal Medicine* 21(8),841–846.

## 0104
## Evaluating a proposed service development in the provision of patient medicines information in mental health

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### Focal points

- Evaluation of the provision of current medicines information services in a mental health trust

- Evaluation of the acceptability of a draft medicines information booklet to accompany patient discharge
- Patients desired medicines information tailored to their individual needs.
- An adaptation of the proposed medicines information booklet was thought to be beneficial by patients and HCPs.

## Introduction

A Care Quality Commission (CQC) inspection highlighted that patients did not receive necessary information regarding their treatment. This study aimed to evaluate the current provision of medicines information and whether the implementation of a medicines booklet would improve information delivery and service user satisfaction.

## Methods

Focus group and semi-structured interview methodology was used to explore participant perspectives and experiences of receiving and/or delivering medicines information. Participant groups included service users and healthcare professionals (HCPs)). Study participants were recruited via a gatekeeper using purposive sampling. All potential patients participants were/had been an inpatient on a mental health ward, and all staff members worked in a mental health trust. Inductive thematic analysis was used. As this was a service evaluation NRES was not required but the study was conducted using NRES principles.

## Results

Two focus groups and 6 interviews were completed; with a total of 22 participants. There were 10 inpatients, and 12 HCPs including; 4 occupational therapists; 2 ward nurses, 1 ward manager, 1 community psychiatric nurse, 2 psychiatrists and 2 pharmacists. Transcripts were analysed within and then across groups using an inductive and iterative process with validation and testing of coding in a group meeting to develop the final overarching coding framework, from which emerged 5 themes: medication, information, patient individuality, healthcare, and service development.

***Medication***
Staff participants believed they supplied stuffiest medicines information throughout an inpatient stay, however this was not the perception of patient participants:
*'We don't get any information about medicines here . . . not unless I ask for it'* (P8, FG1).
***Information*** Few patients were aware of community pharmacy services such as MURs or repeat prescription services they could access on discharge: *'I didn't know there was one'* (P2, FG2).
***Patient Individuality***
Patient participants valued involvement in their care:
*'They actually discussed it with me and have asked me for any ideas what I might think about them. It's kind of like a joint decision and I think that's really good.'* (P6, FG2)
***Healthcare*** Wider health and social care determinants also required addressing to ensure emotional wellbeing of the individual; for example, one patient said *'I've got kids and I don't see them'* (P2, FG1) and subsequently broke down in tears.
***Service Development***
Patient participants preferred the booklet at point of prescribing, not at discharge:
*'In the beginning would have been better than later'* (P2, FG1), but also felt it could fit with other discharge information.

## Discussion

This study demonstrated a need for a number of improvements in the delivery of patient medicines information; most importantly that information was tailored to individual needs. Secondly although the proposed medicines information booklet was widely supported by staff and patients, the content needed to include wider discharge information such as key personnel and contacts, endorsed internet information links and supporting education for staff discussing the booklet with patients. Importantly patients wanted the booklet at the point of prescribing to help them make sense of their medication rather than at discharge. Thirdly patients valued a shared decision making approach as it provided patients with a feeling of importance in and control over their own care. Finally clear strategies for signposting patients to community pharmacies need to be developed to help support people on and after their discharge into the community.

# 0105
# Utilising community pharmacy to increase uptake and accessibility to seasonal influenza vaccination

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## Focal points

- To evaluate the Community Pharmacy Seasonal Influenza Vaccination Service within one NHS region.
- A substantial number of patients both over and under 65 received an influenza vaccination for the first time from community pharmacy; a notable number stating that they would have remained unvaccinated if the vaccination had not been available from the pharmacy.
- Community Pharmacy is well-placed to opportunistically target patients for influenza vaccination; further work to explore the successes and barriers to delivery of the vaccination would be beneficial.

## Introduction

Influenza is an unpredictable and recurring winter pressure for the NHS which can be reduced through vaccination.[1] Increasing vaccine uptake in clinical risk groups is important to prevent complications and serious illness. Nationally, only half of patients in the under 65 clinical risk groups are being vacci-

nated.[1] Previous community pharmacy influenza vaccination programs have demonstrated that community pharmacy can contribute to increasing influenza vaccination uptake in all at-risk groups and that these schemes are widely accepted by patients.[2] This evaluation assessed the delivery of influenza vaccination through community pharmacy within one NHS region comprising 10 Clinical Commissioning Groups (CCGs).

## Methods

The Influenza Vaccination Service was introduced in October 2014 within 10 CCGs in one NHS region; the aim to increase influenza vaccination uptake in the under 65, 'at-risk' groups and offer choice to those 65 and over. Eligible patients were opportunistically targeted by pharmacy staff and offered the vaccination. Patients receiving the vaccination were given a satisfaction questionnaire, provided by NHS England. Consultation details were recorded on PharmOutcomes® (a data capture software) including ethnicity, at-risk group, time of vaccination, satisfaction with service and reasons for choosing pharmacy. All data inputted were evaluated from October 2014 to January 2015. Data were extracted into Excel® and reported using descriptive statistics. This was service evaluation therefore ethical approval was not necessary.

## Results

In total, 220 pharmacies agreed to deliver the service. Of these, 181 pharmacies delivered a total of 8046 influenza vaccinations. The number of vaccinations delivered per CCG varied from 333–1901; (mean 804.6, median 618). Most vaccines (4270), were for the 65 and over risk group and 3776 the under 65 at-risk groups. The range of vaccinations delivered per pharmacy varied from 1–353 (mean 44.5, median 33). The majority of patients vaccinated described themselves as White-British (89.7%, 7214/8046). The peak times of day for vaccination were mid-morning and mid-afternoon, with 620 vaccinations (7.7 %) being delivered on the weekend and 201(2.5%) consultations being out of hours on a weekday (before 8am or after 6pm); total 10.2%(821/8046) out of hours. The questionnaire was completed by 5663(70.3%) patients who were representative of the population vaccinated through the service. Of these, 16.8%(950/5663) indicated that they had not had the influenza vaccination previously. Of the 950 that had not had the vaccination previously, 641(67.5%) were under 65 and 309 (32.5%) were 65 or over. The service was well received by patients, with most stating that they would use pharmacy again (97.0%, 5494/5663) and recommend it to others (97.7%, 5532/5537); liking pharmacy for convenience and accessibility. Eight per cent of patients (460/5663) stated they would not have sought the vaccination had it not been available in community pharmacy.

## Discussion

Community Pharmacies are well-placed to target patients for influenza vaccination. This is highlighted by the number of patients accessing the service out of hours and receiving the vaccination for the first time. This work supports previous findings,[2] however, further work to explore the successes and barriers to delivery would be beneficial to inform next year's influenza vaccination campaign to increase the number of vaccinations administered and decrease the variation in between pharmacies.

## References

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2. Francis, M & Hinchliffe, A. Vaccination services through community pharmacy: a literature review. (2010) Accessed at http://www2.nphs.wales.nhs.uk on 23 February 2015.

# 0106
# Minimizing patient risk and improving efficiency in aseptic services with eDocumentation

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## Focal points

- Can implementation of eDocumentation systems in Aseptic Services improve patient safety and process efficiency?
- Use of eDocumentation creation in place of manual paper documentation systems results in a 66% reduction in risk to patient safety and a time saved of 55% relating to the documentation process
- Implementation of eDocumentation systems within Aseptic Services greatly reduce the risk of errors that can result in patient safety, whilst positively impacting on unit capacity.

## Introduction

Manual paper-based creation of worksheets and product labels within Aseptic Services carries inherent risks of human error, with potential for impact on patient safety[1]. To improve the documentation process the Royal Glamorgan Hospital implemented the Episys Ultimate software to create a method of electronic documentation creation (eDocumentation). Once this software had been implemented the department undertook a quality evaluation to assess the following

1) Can eDocumentation reduce the number of data entry steps required for label and worksheet creation when compared to manual paper-based systems?
2) Can eDocumentation systems reduce the number of data entry steps with a high risk to patient safety when compared to manual paper-based systems?
3) Does implementation of an eDocumentation system improve time efficiency in the documentation creation process when compared to manual paper-based systems?

## Methods

Evaluation was split into three stages and included all 15 products prepared within the Royal Glamorgan Hospital. No ethical approval was required.

**Stage 1:** The previous manual paper-based documentation system and the Episys documentation system were both process mapped to determine the number of separate actions or 'steps' required to produce a label and a worksheet for production. This was undertaken by following in-house SOP's for documentation production. The number of steps required for each product were recorded for comparison.
**Stage 2:** For each product, the process maps for the two systems were assessed by the aseptic service pharmacists and each step was scored using the NPSA risk matrix[2]. Each step scored as high risk to patient safety was recorded. The number of high risk steps for each process was compared.
**Stage 3:** For a single 4 week period, each product request received within the Aseptic Service unit had duplicate documentation created using the two documentation systems. For each product made the process was timed using a stopwatch and the results recorded. Any documentation created that contained errors were excluded from the study.

## Results

During the 4 week period there were 246 individual product requests for named-patients medications which translated to 630 individual products:

**Stage 1:** Episys electronic documentation creation system reduced the average number of data entry steps required from 10.88 steps/product to 6.64 steps/product.
**Stage 2:** eDocumentation creation using the Episys system reduced the number of data entry steps with the potential for high risk to patient safety from 2.58 steps/product to 0.76 steps/product.
**Stage 3:** Use of eDocumentation improved efficiency of the documentation process, improving efficiency by reducing the average time taken to produce a worksheet and label from 189 seconds/product to 100 seconds/product. This translated to a reduction in time required for documentation of approximately 8 hours/month.

## Discussion

Active implementation of an electronic documentation system, whereby data entry steps with a high risk to patient safety are targeted, can result in improvements to patient safety. This is achieved by automating those steps where patient safety is most at risk such as calculation of dose, formula, expiry and methodology. This type of system can also result in improvements in documentation creation efficiency. To summarise, eDocumentation systems within Aseptic services have the ability to improve patient safety, good manufacturing and documentation practise whilst positively impacting of the efficiency of Aseptic manufacture.

## References

1. NPSA. A risk matrix for risk managers. January 2008. Available from http://www.ukcpa.net/wp-content/uploads/2014/09/Lynette-James-Injectable-medicines-errors-FINAL-REPORT-July2014.pdf

# 0107
# Common side effects of commonly used medicines – what would pharmacists tell hospital inpatients?

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## Focal points

- The type of information on side effects of medication that inpatients should be told about is not well defined.
- A convenience sample of 27 pharmacists (plus two nurses) in the main corroborated a listing of common side effects for commonly used medicines as described on a nurse prompt.
- We have satisfied ourselves that the use of such a nurse prompt for commonly used medicines reflects those side effects that pharmacists would advise patients about and hence could be used as part of the discharge process.

## Introduction

When discharged from hospital, patients should have key knowledge about their medicines, including side effects. Inpatient surveys (local[1] and national[2]) have shown that some patients perceive they have not been provided with this information. Various factors may impinge on the delivery of medication information to an inpatient including the healthcare professional's (HCP) time, whether the HCP considers it their responsibility to impart such information, and the HCP's knowledge about commonly used medicines. Local work and a literature review has made us aware of concerns that nurses may not know which side effects of commonly used medicines they should describe to patients. Some hospitals use a prompt for nurses to refer to when giving advice on side effects. We wished to validate such a prompt, based on the BNF and developed in another hospital, by checking its content with pharmacists to ascertain if the listed side effects were appropriate.

## Methods

A convenience sample of attendees (29) at a Medicines Prescribing Centre (MPC) workshop in December 2014 (video-conferenced across 2 venues) were asked to imagine they were a hospital pharmacist seeing an inpatient commenced on two new medicines. As the hospital pharmacist they were going to talk to the patient about possible medication side effects and were asked to list, from memory, the 2 or 3 side effects they would advise the patient about. Five minutes was allowed for them to complete their list and no resources (e.g. BNF) were available to the respondents. MPC attendees are members of the MPC Associates programme which supports and promotes high quality, safe, cost-effective prescribing and medicines optimisation within local health economies. The vast majority are pharmacists and two are nurses (whose responses were not separated out). This is service development and ethics approval was not required.

**Table 1** Number of instances a side effect was listed by respondents

| PPI (n = 12) | | ACE-I (n = 12) | | Statin (n = 17) | | Tramadol (n = 17) | |
|---|---|---|---|---|---|---|---|
| upset stomach / nausea | 8 | cough | 12 | muscle pain | 17 | drowsiness* | 12 |
| diarrhoea | 6 | hypotension | 5 | GI symptoms | 8 | constipation | 8 |
| headache* | 4 | regular blood test* | 4 | interaction with grapefruit juice* | 4 | nausea | 8 |
| blood test needed* | 3 | Angioedema* | 1 | effects on liver | 3 | dizziness* | 5 |
| rebound acid reflux | 2 | ankle swelling* | 1 | new onset diabetes* | 2 | hallucinations | 3 |
| C. Diff with antibiotics* | 1 | avoid OTC ibuprofen* | 1 | nausea | 2 | confusion* | 3 |
| dizziness | 1 | nausea* | 1 | rash* | 1 | dependence* | 2 |
| feverish symptoms* | 1 | caution if dehydrated* | 1 | resp. allergy symptoms | 1 | dry mouth* | 1 |
| | | | | need for blood test* | 1 | headache* | 1 |
| | | | | headache | 1 | | |
| | | | | oropharyngeal problems | 1 | | |

## Results

There were 12 respondents at one venue who listed the side effects of a proton pump inhibitor (PPI) and an angiotensin converting enzyme inhibitor (ACE-I), and 17 at the second venue who listed the side effects of a statin and tramadol.

## Discussion

It is reassuring that in the main the side effects listed by the respondents correspond with those on the nurse prompt. Side effects on the prompt not described by the respondents include diarrhoea (statin), constipation (PPI), and skin rashes (ACE-I). In addition, some of the respondents' identified side effects not appearing on the prompt (those marked with *) though for some instances this is about drug monitoring or interaction rather than actual side effect. The provision of information about medication side effects to patients is an important element of the discharge process. This survey, though limited by a small sample size, has given us some reassurance that a brief prompt for nurses (rather than the nurse reading straight from the BNF or relying on their own knowledge) has potential in relation to its content.

## References

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2. Care Quality Commission. National results from the 2014 inpatient survey. CQC, Newcastle upon Tyne. May 2015. http://www.cqc.org.uk/content/inpatient-survey-2014

# 0108
# Transfer of care from hospital to community pharmacy – into action during Spring to Green

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## Focal points

- To assess transfer of care (ToC) activity if the clinical pharmacy team is able to refocus its work onto ward-based patient facing tasks.
- The number of monthly ToC increased three- to six-fold compared to previous months.
- Over a two week period in excess of 200 patients were approached for a ToC service that did not progress to completion.

## Introduction

Medication discrepancies may occur at transitions in care, especially for patients discharged from hospital. Targeted Medicines Use Review (tMUR) and New Medicines Service (NMS) offer an opportunity to encourage patients to attend community pharmacy for a post discharge medicines check-up, though it is recognised that the potential of community pharmacy to improve patient safety after hospital discharge is not being utilised.[1] For nearly two years our hospital pharmacy has supported the take up of this transfer of care (ToC) service by signposting patients to their community pharmacy after discharge. At admission, when medicines reconciliation is undertaken, the ToC service is explained to the patient and consent sought to fax their discharge medication details to their regular community pharmacy. As part of the fax, the community pharmacist is asked to fax back to the hospital what action, if any, has been taken (e.g. tMUR, NMS, advice given). Approximately 2000 patients are discharged monthly from the hospital but the clinical pharmacy team has struggled to achieve more than 50 ToC instances per month. Reasons for this are thought to be issues of time and motiva-

**Table 1** Number of instances where ToC was achieved and number of feedback forms received from community pharmacy

| | July14 | Aug14 | Sept14 | Oct14 | Nov14 | Dec14 | Jan15 | Feb15 | Mar15 |
|---|---|---|---|---|---|---|---|---|---|
| Number of patients with ToC | 21 | 18 | 44 | 40 | 49 | 21 | 28 | 141 | 55 |
| Number of community pharmacy returns (%) | 4 (19.0%) | 5 (27.8%) | 14 (31.8%) | 12 (30.0%) | 18 (36.7%) | 3 (14.3%) | 13 (46.4%) | 35 (24.8%) | 10 (18.2%) |

tion for the ward-based pharmacy team. 'Spring to Green' fortnight in February 2015 was an opportunity for the hospital to deliver services in an innovative manner aimed at improving the bed state and patient care.

## Methods

During this Spring to Green period, the pharmacy clinical team spent a much greater proportion of their time on the wards focusing on patient safety work, medicines reconciliation, and ToC. Any non-patient facing work (e.g. meetings) was cancelled and less manpower time was spent in the dispensary. As well as encouraging and recording the uptake of ToC, we also started to capture details on the number of patients who were unable to provide consent to ToC or who were asked but refused consent. This is quality improvement and evaluation and ethics committee approval was not needed.

## Results

The 'Spring to Green' fortnight and continuation of that model of pharmacy practice throughout all February substantially increased the number of information transfers to pharmacies compared to baseline data from previous months (see Table 1). During the main two weeks in February, a further 213 patients were approached for ToC but consent was not obtained. Reasons for ToC not progressing were varied and included the patient: declining the service (41%), suffering confusion/dementia (20%), registered to receive their medicines from a dispensing surgery (20%), being acutely ill (15%), not taking regular medication at discharge (4%).

## Discussion

We have shown that new ways of working for the clinical pharmacy team can increase the number of patients accessing our ToC process. How sustainable this model will be in the longer term is to be explored. Though the hospital pharmacy can increase its ToC output, we still have little documented evidence of the value of this service locally as the number of community pharmacy returns remains low. We do now have a better understanding of why some patients are not eligible for ToC.

## References

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# 0109
# Patient decision aids – a brief survey of general practitioners' views

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## Focal points

- To understand the views of general practitioners (GPs) on the use of patient decision aids (PDAs), which are seen as integral to the Medicines Optimisation agenda and shared decision making.
- Forty-seven (out of 57 GPs) expressed a mixture of positive and negative views on PDAs.
- Though some GPs already claim to use these tools, there are well recognised barriers to routine implementation of PDAs.

## Introduction

Shared decision-making (SDM) involves patients as active partners with the clinician in clarifying acceptable medical options and choosing a preferred course of care and treatment. SDM may require the use of patient decision aids (PDAs) – evidence-based tools that facilitate decision-making by describing the available options and their salient attributes. PDAs are intended to supplement or support the interaction between the person and their healthcare professional. Their use in clinical consultations has led to improvements in measures of the quality of treatment decisions for pharmacological preventive interventions. We set out to gain an understanding of GPs' views on the use of PDAs in day to day practice.

## Methods

Locality-based prescribing meetings are organised by the Clinical Commissioning Group prescribing team. Each surgery nominates a GP prescribing lead who attends these meetings and disseminates the learning within their practice. At the three locality meetings in 2014 GPs were asked to complete a brief anonymous questionnaire containing five questions seeking their views on, and their experience of, PDAs. This small survey consisted of a mixture of closed questions and questions that allowed for free-text comments. The survey followed on from an illustrative scenario depicting the use of the National Institute for Health and Care Excellence (NICE) Atrial Fibrillation PDA. This is quality improvement and evaluation and ethics committee approval was not needed.

## Results

The three meetings were attended by a total of 57 GPs, with 47 (82 per cent) completing the questionnaire. When asked how often they had used PDAs in the past 12 months, responses were evenly split between the 3 pre-determined answers of more than a handful (16, 34%), less than a handful (16, 34%), and not at all (15, 32%). Thirty-five (74%) GPs were aware of easily accessible PDAs, and 12 were not. Various examples were given by 34 of those GPs who said they were aware of PDAs. The three most frequently listed were the NICE Atrial Fibrillation PDA (17 responses), a PDA on lipid therapy (10), and the QRISK PDA (7). The elements of a PDA that the GPs like were the smiley faces pictogram; how risk / benefit can be quantified and illustrated; and using a PDA as a tool to allow patients to reflect during consultation and to reinforce verbal information given. Barriers to using PDAs are shown in the table below (respondents could tick all boxes that applied).

**Table 1** Number of instances a pre-determined barrier to using PDAs was identified

| | |
|---|---|
| Insufficient time in the typical consultation to use a PDA | 16 |
| I'm aware of PDAs but cannot easily locate them | 11 |
| PDAs are typically based on population averages and may not apply to the patient in front of me | 10 |
| I feel less than confident in being able to use them effectively with my patients | 4 |
| I don't think my typical patients want me to use a PDA | 4 |
| I don't have confidence in how the numbers are calculated to produce the PDA | 3 |
| I'm not aware of any that would be useful to me | 3 |
| Other | 4 |

## Discussion

Limitations of the study are acknowledged – the reliance of the survey on self-reporting and the relatively small number of GPs surveyed. However our results are similar to those previously reported i.e. reluctance to refer patients to such decision support tools is largely based on the scepticism of professionals that these tools add value, coupled with difficulties of incorporating the tools into existing workflows.[1]

## References

1. Wetzels R, Geest TA, Wensing M et al. GPs' views on involvement of older patients: an European qualitative study. *Patient Educ Couns* 2004;53(2):183–8.

# 0110
# Prescribing guideline adherence – initiation dosing of tinzaparin and warfarin in a hospital setting

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## Focal points

- Initiation dosing of warfarin and tinzaparin should be adjusted during treatment course to maximise the benefit and risk ratio.
- The adherence rate to guideline recommended initiation dosing of tinzaparin and warfarin is generally satisfactory with 70% and 91.4%, respectively.
- About 60% patients used tinzaparin for more than 5 days, and 5.7% of them did not discontinue tinzaparin at the guideline recommended time.
- All new anticoagulant users were given consultation.

## Introduction

Warfarin is the main oral anticoagulant for preventing or treating thromboembolism, such as deep vein thrombosis (DVT) and pulmonary embolism (PE). The national guideline has recommended that warfarin dosing should be adjusted by the monitoring of international normalisation ratio (INR) after the initiate dose (10 mg) due to its narrow therapeutic window.(1) Low molecular weight heparin (LMWH), such as tinzaparin is initiated with warfarin for 5 days (or discontinue 2 days after target INR is reached) to overcome the slow onset of warfarin's effect. Dose of LMWH is initiated based on body weight,(2) and the second dose is adjusted based on the administration time of the first dose. Patients should receive an appropriate consultation at initiating to ensure appropriate use of anticoagulants. However, it is unclear how the national guideline is followed locally. This audit aimed to evaluate whether the initiating dose of warfarin and tinzaparin for inpatients with DVT and PE was adherent to the guideline.(1)

## Methods

This study was conducted from February to March 2015 in small local hospital (19 wards) in UK using the national guidelines' recommendations (1,2) on initiation dosing as the criteria. All patients who were diagnosed with DVT or PE and initiated anticoagulants during the study period were included. Since all patients who received anticoagulants in the hospital had records documented in its anticoagulant clinic, therefore, individual patient's data were collected at the clinic from the date of initiating warfarin and tinzaparin by screening medical charts, discharged forms and laboratory test results from the hospital's computer system using a pre-designed data collection form. Patient information, baseline laboratory tests, INR

test, warfarin and tinzaparin dosing, patient counselling and discharge information were collected and presented in descriptive statistics. Proportion of patients whose initiating doses adherent to the guideline were reported. Ethics approval was not required for this evaluation.

## Results

Of the 70 patients included in this study, 45 (64.3%) were male, and 43 (61.4%) and 27 (38.6%) patients were diagnosed with DVT and PE, respectively. All included patients received a correct first initiation dose of warfarin and tinzaparin, and all received tinzaparin for at least 5 days. However, warfarin dosing was not adjusted according to INR in 21 (30.0%) patients, and the second tinzaparin dose was not adjusted correctly in 4 patients (5.7%). Overall, the adherence rate to initiation dosing guideline was 64.3% (n = 45).

| | Adherence | Non-adherence |
|---|---|---|
| **All patients (n = 70)** | | |
| Adjust dose of warfarin by INR (n = 70) | 49 (70.0%) | 21 (30.0%) |
| Adjust the 2nd dose of tinzaparin correctly (n = 70) | 64 (91.4%) | 6 (8.6%) |
| **Discontinued tinzaparin more than 2 days after the target INR reached** | | |
| Patients received tinzaparin for 5 day (n = 28) | 26 (37.1%) | 2 (2.9%) |
| Patients received tinzaparin for more than 5 day (n = 42) | 38 (54.3%) | 4 (5.7%) |

All patients received counselling when initiating anticoagulants except for three patients previously had received warfarin and one patient transferred to another hospital.

## Discussion

This short-term study found more than half of initiation dosing of anticoagulants prescribed to DVT and PE patients were adherent to prescribing guideline and all new anticoagulant users were given a consultation. Further research will need to explore the barriers to following dosing guideline and the associated clinical outcomes of those patients.

## References

1. National Institute for Health and Care Excellence. Support for commissioning: anticoagulation therapy, http://www.nice.org.uk/guidance/cmg49 (cited on 18/03/2015)
2. Scottish Intercollegiate Guidelines Network. Prevention and management of venous thromboembolism, a national clinical guidance, 122. 2010. http://sign.ac.uk/pdf/sign122.pdf (cited on 18/03/2015)

# 0111
# Do medicine use reviews benefit patients? A study of 121 patients having 3 successive MURS

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## Focal points

- This study investigates whether successive MURs are of benefit to patients.
- Successive MURs result in resolution in issues identified and an overall reduction in patients requiring interventions, suggesting that MURs are having a positive impact on patients.

## Introduction

Medicine Use Reviews (MUR) have been conducted by community pharmacists for ten years and have become an integral part of community pharmacy practice. MURs enable patients to ask questions about their prescribed medicines, learn how to effectively take their medicines and identify side-effects. Effective medicine use may potentially reduce drug wastage and assist with appropriate prescribing. The aim of this study was to see if patients derived benefits from MUR and the areas of most benefit.

## Methods

400 patients having MURs in a 1 year period were followed up to identify patients who had undergone consecutive yearly MURs for 3 years in a single pharmacy. Data for these patients was retrospectively collected on their 3 consecutive MURs. Data was collected on the 4 key MUR areas of patients' non-adherence, lack of understanding of their medicines, medicine wastage and side effects. Pharmacist interventions carried out were also recorded. The data was analysed to identify which MUR areas were most problematic and whether these areas changed with successive MURs. General trends in successive MURs were also observed.

Ethics committee approval was not needed for this study.

## Results

Out of 400 patients, 121 underwent 3 consecutive MURs over a 3-year period. There were 66 male and 55 female patients, with median age of 63 years (range 42–90 years). In year 1, a total of 53 issues were identified in 41/121 (34%) patients across the 4 key MUR areas. This reduced to 39 issues in 32/121 (26%) patients in year 2 and further decreased to 28 issues in 23/121 (19%) patients in year 3. In the 3-year period, side-effects experienced by patients was the commonest identified issue, accounting for 40 cases. Non-adherence occurred in 29 cases, lack of understanding in 26 cases and medicines wastage in 15 cases.

Looking at yearly trends, out of 18 patients who experienced side-effects from their medicines in year 1, 17 of these no longer had side effects from their medicines in year 2. In most cases this was due to a change in prescribed medicines as a result of pharmacists' interventions. However in year 2 a total of 13 patients

did still experience side-effects, 12 of which were different patients from the previous year. Similar results were found with non-adherence, with 16 patients found to be non-adherent with medication in year 1. Of these, only 2 had non-adherence in year 2 and again in year 3. However an additional 5 patients were non-adherent in year 2 and 4 further patients in year 3.

### Discussion

In this group of patients, issues were identified in a third of patients undergoing their first MUR. In patients having 3 consecutive yearly MURs, there is an overall reduction in the number of issues identified and a reduction in the number of patients requiring interventions. MURs were found to have a positive impact on patients, as issues identified in one year were mostly resolved by the following year. However, different issues were identified in patients in different years.

In conclusion, MURs make a difference to patients, but do still need to be repeated yearly in order to pick up newly presenting issues.

## 0112
## A Service Evaluation of Educational Outreach Campaigns delivered by Primary Care Pharmacists

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### Focal points

- A service evaluation of a long running educational outreach programme was conducted in order to establish if it continued to be useful and relevant in a CCG environment.
- Overall the clinicians regard the educational outreach campaigns as very useful.
- Many have changed the way in which they practise following the campaigns
- 70% of respondents were aware of patient information leaflets related to the campaign and wanted more online resources for future campaigns.

### Introduction

Educational outreach (also known as academic detailing) attempts to improve the decision making of physicians to improve the quality and cost-effectiveness of care. Principles include determining baseline knowledge through interviews, identifying specific educational and behavioural objectives, using unbiased information sources, encouraging participation and educational interactions of physicians and providing follow up visits to provide positive reinforcements of improvements.[1]

Standardised materials are produced by experts in prescribing principles and a steering group of physicians. Standardised materials include detail aids, posters, patient information leaflets and laminated handouts. Primary care pharmacists deliver the campaigns through face to face meetings with GP practices where discussions about the topic take place and information materials are used to deliver the essential messages. The primary care pharmacist delivering the campaign attends a training day prior to each campaign in order to develop the therapeutic and communication skills required for the campaign. Previous educational outreach campaigns have covered the topics of osteoporosis/fracture reduction, depression, cardiovascular disease, and diabetes.[2]

Educational outreach campaigns operated for 20 years in the health economy studied. The aim was to determine whether the service was still of value in a CCG environment and if so, whether it could be improved.

### Methods

A 27 point online questionnaire was created using Google forms which was then emailed to all of the GP practices belonging to the CCG. The questions consisted of yes/no answers, 5 point Likert scales to determine usefulness and open boxes with space for explanation. A small group interview with 7 practice based pharmacists took place using similar questions in order to generate ideas for ways to improve the campaigns.

### Results

33% of practices responded to the online questionnaire (15 GPs, 5 pharmacists, 2 nurses and a practice manager). The respondents attended an average of 1.8 meetings each year which lasted an average of 57 minutes long. All apart from one respondent said they were likely to change their practice following the campaigns and 60% were very likely to change. Respondents found the campaigns useful for updating on both NICE and local guidance, evidence base, drug safety and medicines optimisation. 57% found them very useful. Campaigns that respondents found most useful were on NOACS, osteoporosis, asthma and vitamin D. 70% of respondents were aware of the patient information leaflets produced specifically for past campaigns and 78% thought they would be useful for future campaigns, particularly if they were available online to print off for patients. Advance videos of the campaign presentations were requested by practice based pharmacists to help them prepare for meetings with educational outreach facilitators and GPs.

### Discussion

The educational outreach campaigns were popular with those who attended , who were likely to then change their prescribing habits. The responses rate, although low, is not unusual in a busy local health economy. The service has remained relevant through several changes in the organisation of primary care services. It would be helpful to conduct further studies to find a correlation between the campaign topic and the PACT data and number of referrals. Online resources such as patient information leaflets and a video of the campaign would be useful to improve accessibility.

### References

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Correction added on 26 November 2015, after online publication. Dr Simon White was added as author of this abstract.