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Department of Pharmacy, King’s College London, Franklin-Wilkins Building, 150 Stamford Street, London SE1 9NH, UK .......................................................... 26
1. A Retrospective Audit Reviewing Continuous Vancomycin Dosing in Neonates
Holloway, M – East Kent Hospitals University NHS Foundation Trust

Introduction
In neonates, an indication for vancomycin is the treatment of coagulase negative staphylococcus (CoNS) blood stream infections, or infections of indwelling central IV lines. Vancomycin has a narrow therapeutic index with a target range for continuous infusions of 15–25mg/L. The current vancomycin dosing regimen has 12 possible starting doses dependant on corrected gestational age.

This aim of this audit is to review and determine the suitability of the current dosing regimen.

Objectives
To determine:
1. The time taken to reach therapeutic vancomycin levels (15-25mg/L)
2. The dose (mg/kg) required to reach therapeutic levels
3. The number of dose increases required to achieve therapeutic levels
4. The median number of blood samples taken per treatment course

Method
In the period of March 2015 – March 2017, 27 neonates received vancomycin infusions during admission at EKHUFT and met the criteria for audit. Vancomycin levels, in conjunction with patient notes were reviewed retrospectively for data collection. Ethics approval was not required as this was an audit of a current treatment protocol.

Results
10 patients (37%) reached therapeutic levels during the course of treatment. Of these 10 patients, 6 maintained therapeutic levels once reached. Therefore, only 22% of neonates achieved and maintained therapeutic levels during the course of treatment.

For those neonates that did achieve and maintain therapeutic levels, a median dose of 27.3mg/kg/day was required.

Conclusion/Recommendations
The results show that 78% of neonates did not receive treatment deemed to be efficacious, and hence the current continuous vancomycin infusion regime is not fit for purpose.

Recent published evidence for continuous vancomycin infusions in neonates showed therapeutic levels were achieved in 82% of samples following initiation of a dosing regimen simplified to four dose categories1. Taking into consideration the varying patient characteristics between EKHUFT and Patel et. al., and based on the median dose required for therapeutic levels, an adapted dosing regimen has been proposed for trial within EKHUFT:
Table 1: Proposed Continuous Vancomycin Infusion Regime for EKHUFT

<table>
<thead>
<tr>
<th>Serum Creatinine (μmol/L)</th>
<th>Corrected Gestational Age</th>
<th>Daily Dose for Continuous Infusion over 24 hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;40</td>
<td>≥40 Weeks</td>
<td>50mg/kg/day</td>
</tr>
<tr>
<td>&lt;40</td>
<td>&lt;40 weeks</td>
<td>30mg/kg/day</td>
</tr>
<tr>
<td>40-60</td>
<td>All</td>
<td>25mg/kg/day</td>
</tr>
<tr>
<td>&gt;60</td>
<td>All</td>
<td>20mg/kg/day</td>
</tr>
</tbody>
</table>

References:
2. Improving Timeliness of Medication Review in Patients with Acute Kidney Injury (AKI)

Louise Delany, AKI Lead Pharmacist

Background

The 2009 National Confidential Enquiry into Potential Outcome and Death (NCEPOD)\(^1\) report on AKI, found only 15% had medication altered to renal doses. The national AKI programme Think Kidneys\(^2\) advises that medicines optimisation is essential to reduce risk of AKI and NICE\(^3\) advises input from a pharmacist for patients with or at risk of AKI.

Objectives

- To develop an AKI specialist pharmacist role
- To improve timing of medication reviews in patients with an AKI

Method

A successful business case was presented and a specialist (Band 8a) pharmacist was appointed.

Prior to service modernisation, ward based pharmacists were responsible for medicine optimisation but were not tasked to prioritise patients with AKI and had not been provided standardised education.

On commencement in July 2016, the AKI pharmacist led a robust programme using QI methodology of education and training for all of the Trust's pharmacists. The AKI pharmacist forwarded daily lists to ward based pharmacists to allow them to rapidly identify AKI patients.

Prescription kardexes were modified to include an AKI section, allowing patients with an AKI to be rapidly identified which was instrumental for the Trust to achieve its AKI CQUIN 2016/17.

Result

A target of 70% of patients being reviewed within 24 hours of alert has been added to the pharmacy departmental Key Performance Indicator. This has been consistently exceeded since October 2016 in comparison to 14% when measured using Advancing Quality Alliance (Aqua) criteria (Graph 1).

Medicine review by ward based pharmacists has resulted in improved medicine optimisation and therefore vitally contributed to the reduction in length of stay of 2.2 days for AKI patients in 2017/18 compared to 2014/15.
Graph 1. Percentage of patients with AKI review within 24 hours of alert being circulated to ward pharmacists.

Take Home Message
We have demonstrated that with a specialist pharmacist role and a package of resources and tools, we can make a positive impact on medicines management and improve patient safety in patients with AKI.

References

Ethics approval was not required for this entry.
Intervention fidelity within a clinical study (MedBridge study) on comprehensive medication reviews in hospitalised patients
Cam H & Kempen T, Uppsala University Hospital, Uppsala, Sweden

MedBridge, a cluster-randomised cross-over trial was started in February 2017 at Uppsala University Hospital and Gavle Hospital in Sweden. The aim of MedBridge is to study the effects of hospital-initiated comprehensive medication reviews, including active follow-up, on elderly patients’ healthcare utilisation compared to 1) usual care and 2) solely hospital based reviews. It is highly recommended to perform process evaluations within trials to support the interpretation of the study results and provide a deeper understanding of its integration in daily practice. Therefore, we performed this first sub-study as part of a larger process evaluation within the MedBridge study.

To evaluate the intervention fidelity within the first study period of the MedBridge study, specifically addressing intervention delivery in Uppsala and Gavle and protocol adherence in Uppsala.

Data for this study was collected during the first MedBridge study period in Uppsala and Gavle. Patient data and data on identified discrepancies in the medication lists, identified drug-related problems (DRPs) and pharmacist proposals as a result of the medication reviews were obtained from the patients’ electronic medical records.

No ethics approval was considered necessary since only participants already included in the MedBridge study, which has received ethical approval by the Swedish Central Ethical Review Board, were included.

Intervention delivery: Seventy-five medication reviews were analysed, see Table 1. A mean of 3,0 ± 2,8 DRPs/patient was detected in Uppsala and 1,4 ± 1,5 DRPs/patient in Gavle. The acceptance rates of pharmacist proposals were 75 % and 64 %.

Protocol adherence: Eighty-seven eligible patients were screened. Medication reconciliation upon admission and comprehensive medication review were performed in 97 % of all the intervention patients.

This study shows a high overall intervention fidelity in the first study period. This study provides valuable information about the performance of the current MedBridge study.

References:
**Table 1.** Intervention delivery analysis of performed medication reviews.

<table>
<thead>
<tr>
<th>Outcome measures</th>
<th>Uppsala hospital (n=39)</th>
<th>Gavle hospital (n=36)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total discrepancies (n)</td>
<td>71</td>
<td>80</td>
</tr>
<tr>
<td>Discrepancies/review (n ± SD)</td>
<td>1.8 ± 3.0</td>
<td>2.2 ± 2.3</td>
</tr>
<tr>
<td>- Correction rate (%)</td>
<td>92</td>
<td>88</td>
</tr>
<tr>
<td>Total DRPs (n)</td>
<td>116</td>
<td>49</td>
</tr>
<tr>
<td>DRPs/review (n ± SD)</td>
<td>3.0 ± 2.8</td>
<td>1.4 ± 1.5</td>
</tr>
<tr>
<td>Total proposals (n)</td>
<td>118</td>
<td>87</td>
</tr>
<tr>
<td>- Acceptance rate (%)</td>
<td>75</td>
<td>64</td>
</tr>
</tbody>
</table>

SD: standard deviation
4. Effect of an Electronic Mandatory Field for Venous Thromboembolism (VTE) Prophylaxis in Critical Care and De Facto Implementation of that Clinical Decision: A Before and After Study
Nerone, G., Whiteside, J., Marcelo, C., Patel P., The Harley Street Clinic (THSC), London.

Introduction
Admission to critical care puts patients at high risk of venous thromboembolism (VTE). Incidence of deep vein thrombosis has been described to be as high as 50% if no intervention is made, and pulmonary thromboembolism has been described as the third highest cause of death after day 1 of admission to critical care. Critical care patients may also be at high risk for bleeding secondary to coagulation defects, thrombocytopenia, renal function impairment and critical perfusion, as well as due to invasive procedures. A standard assessment is not always applicable and there may be a mismatch in the formal assessment made and the action taken. Recording of pharmacists’ contributions to clinical care on Intervene™ identified this disparity. To supplement formal assessment, a simple mandatory field ‘Is VTE prophylaxis indicated?’ was implemented on the electronic admission form, followed by a section to add comment.

Objective(s)
To assess the impact of a simple electronic mandatory field for documentation of VTE indication on admission to critical care
To assess de facto implementation of the clinical decision made, i.e. VTE prophylaxis prescribed, or not prescribed.

Method
Intensive care national audit and research centre (ICNARC) data was used to identify patients admitted over a period of 3 months prior to intervention (n = 208) and 3 months following the intervention (n=187). The notes and electronic prescription charts were reviewed retrospectively by one of the resident medical officers together with a clinical pharmacist.
The governance committee confirmed that ethical approval was not required as the study was an evaluation of service improvement.

Results
A significant increase in the documentation for VTE prophylaxis on admission to critical care was observed (52% increased to 100%, p <0.01) and de facto implementation of that decision (75% increased to 91% p <0.01), as outlined in Table 1.
**Table 1.** Documentation of indication for VTE prophylaxis and de facto implementation pre and post introduction of an electronic mandatory field.

<table>
<thead>
<tr>
<th></th>
<th>Prior to intervention (N = 208)</th>
<th>Post intervention (N = 187)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Documentation on admission by medical team about VTE prophylaxis</td>
<td>108/100 52%</td>
<td>187/0 100%</td>
<td>P &lt; .01</td>
</tr>
<tr>
<td>De facto implementation of clinical decision</td>
<td>81/27 75%</td>
<td>170/27 91%</td>
<td>P &lt; .01</td>
</tr>
</tbody>
</table>

Fisher’s Exact Test as cells have counts <5

**Conclusion**

Introduction of a VTE prophylaxis mandatory field on the electronic medical admission form was a simple, low-cost intervention which was not only effective in improving documentation of decisions regarding VTE prophylaxis on admission (52% cf. 100%, p <0.01), but also increased *de facto* implementation of those decisions (75% cf. 91%, p <0.01).

**References**

Introduction:
In July 2016 NHSE circulated a letter regarding Commissioning for Value and antiretroviral drug switches. The letter noted that “These switches have been identified as not needing to recall patients to clinic or to introduce additional monitoring arrangements unless clinically indicated or the patient requires further support”. However the e-GFR decreases after starting cobicistat and checking at 4/52 is recommended.

Methods:
Patients suitable for antiretroviral drug switches were identified by pharmacy, a total of 52 patients (57% of our cohort). A review of the outcomes up to February 2017 was undertaken.

Results:
Thirteen patients switched successfully from Kivexa® to generic abacavir/lamivudine. Sixteen switched from Atripla® to Truvada®/efavirenz (TVD/EFV). Of these, three switched back due to side effects and two due to increased pill burden. In one case 4 months of drugs, costing £1384, were wasted. Three patients did not tolerate Rezolsta® (AKI & tiredness). There were ten extra visits for safety bloods. The first prescription for the switches for all regimens was for two months to minimise waste. Additional staff time was required to generate the prescriptions, and the additional deliveries cost £1215 to date, see table 1.

<table>
<thead>
<tr>
<th>Reasons for failed switches</th>
<th>Rezolsta®</th>
<th>TVD/EFV</th>
</tr>
</thead>
<tbody>
<tr>
<td>CNS side effects</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Diarrhoea</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Tiredness</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Acute kidney injury</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Adherence issues</td>
<td></td>
<td>2</td>
</tr>
</tbody>
</table>

Table 1: Reasons for failed switches and costs incurred

Discussion:
Switches from Atripla® to Truvada®/efavirenz and from Protease Inhibitor (PI)/ritonavir to PI/cobicistat involved additional costs in terms of staff time, delivery charges and drug wastage. In December 2016, we decided to halt the switches to PI/cobicistat, as it was felt that the cost savings were insufficient to compensate for the additional workload, and also it might be a challenge to switch patients back to two drugs when generic darunavir and atazanavir become available.

(Ethics approval was not required because it was an audit project)
6. Documentation of interventions by clinical pharmacists at the University Hospital of Leipzig

1 Maria Mantziri, National and Kapodistrian University of Athens, Athens
2 Dr. rer. Nat. Roberto Frontini, University Hospital of Leipzig, Leipzig

Ethics approval was not required for this project.

Introduction
The contribution of the clinical pharmacist to patient care through identification of drug-related problems, intervention and preventive measures, is essential. Review of medication during hospitalization can reduce errors or ambiguity of the therapeutic plan, while providing significant economic benefits to the hospital, as well. [1, 2] Meticulous and comprehensive documentation of the daily work of hospital pharmacists is a means of securing and promoting this role.[3]

Objectives
To evaluate the entire intervention process in the University Hospital of Leipzig, optimize it by constructive comments and most importantly, to enhance uniformity in the electronic documentation procedure.

Methods
Data were collected in two phases.

Substitution: The written replacement of home medication with equivalent hospital medication by the clinical pharmacist, who may also add notes and suggestions regarding the therapy on a medication history form. Ten pharmacists performed substitution independently for six patients.

Documentation: Ten patient cases were selected on ward visits and eight pharmacists independently performed the documentation of each case in a Microsoft® Access Database. The data was then exported to Excel spreadsheets for the evaluation of the relevant fields.

Results
The results were presented to the pharmacy director and the team of clinical pharmacists at the hospital. Renally impaired and surgical patient visits included a high number of interventions, especially when they featured long-term antimicrobial therapy, as seen in cases No. 6, No.9 and No.10 in Chart 1.
Discussion
The most interesting points of each case prompted discussion, during which helpful feedback was given and prospective goals were set. Among others, the establishment of clearer guidelines regarding the term Medication Error, Maximum Daily Dose recommendation, preoperative adjustments of classes such as anticoagulant and anti-diabetic agents, use of Database entries following a common philosophy and familiarization of the newest members of the clinical team with the correct documentation process.

References:
Jessica Bland, Pharmacy Undergraduate. School of Pharmacy, Newcastle University
Anthony Young, Lead Pharmacist, Ewan Maule, Deputy Chief Pharmacist – Northumberland Tyne and Wear NHS Foundation Trust
Laura Lindsey, Lecturer in Pharmacy Practice School of Pharmacy Newcastle University

Background

Northumberland, Tyne and Wear NHS Foundation Trust provides mental health services across North East England. The pharmacy department dispenses approx. 1400 MDS each month. In October 2017, the Trust purchased an Omnicell VBM 200F automated dispensing system for dispensing MDS.

Objectives

The aim of the study was to assess the impact of the Omnicell VBM 200F on medication dispensing accuracy, and pharmacy productivity.

Method

Routinely collected data between April 2017 and December 2017 was used. The analysis focused on data about errors associated with non-automated dispensing, errors associated with automation, human errors associated with automation and dispensed prescription data.

Results

<table>
<thead>
<tr>
<th>Process</th>
<th>No of MDS dispensed</th>
<th>Error rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>MDS filling prior to automation (Apr - Oct 2017)</td>
<td>7617</td>
<td>0.44%</td>
</tr>
<tr>
<td>Automated MDS filling (Oct - Dec 2017)</td>
<td>2691</td>
<td>0%</td>
</tr>
</tbody>
</table>

Conclusion

Automating the dispensing of MDS reduced the frequency of errors, therefore, reducing the risk of harm for patients. Automation reduced the time taken to dispense MDS by 90%. Thus pharmacy staff spend more time in clinical roles which much further improves patient safety [1]. Manual processes are still required to support the automated process and as such, carries an inherent risk (observed at 0.28%). Consequently, automation cannot be seen in isolation.

References

8. Investigating dose banding of adult intravenous systemic anti-cancer therapy
Hannah Miller, Stockport NHS Foundation Trust, Manchester

Introduction
Adult intravenous systemic anti-cancer therapy (SACT) encompasses a variety of drugs used to treat both haematological and oncological disease. Doses are calculated on an individual patient basis. However, in May 2016, National standardised dose bands were published by NHS England, and clinicians encouraged to prescribe using this basis.

There are multiple benefits to the uptake of this scheme including: reduction on expenditure, outsourcing of production, reduced patient waiting times and improved pharmacy work-flow.

Ethics approval was not required.

Aim
To review if SACT used on the outpatient chemotherapy unit (OPCU) are appropriately dose banded, at the time of prescribing, and by whom.

Objectives
Identify 20 patients receiving SACT.
Evaluate if SACT were dose banded appropriately.
Determine who dose banded the SACT and at what stage (prescribing or clinically checking).

Method
Data collection was performed retrospectively over a 12 day period. Patients prescribed SACT were identified and dose banding status recorded. Patient notes and electronic drug charts were examined daily (Monday to Friday) and the relevant data collected. Data were compared against set standards to determine if appropriate dose banding was completed.

Results
95% of patients received SACT in line with NHS England standardised dose banding tables, resulting in achievement of the CQUIN target.
Discussion
The CQUIN was achieved due to appropriate dose banding on clinically checking by a pharmacist, or initial accurate pharmacist prescribing. Only 14% of SACT prescribed by a doctor was appropriately dose banded. Speculation suggests that this came down to two main factors: lack of education about CQUIN targets, and lack of consultant time to amend initial pre-calculated doses based on body surface area.

To improve dose banding of SACT all practitioners should receive re-training on the dose banding initiative and current Trust policy.

References:


Adnet T1,2, Groo AC1, Le Pluart L3, Picard C4, Davis A1, Corvaisier S1, Demissy E1, Since M1, Rochais C1, Dallemande P1 and Malzert-Fréon A1
1 CERMN, UniCaen, Caen, France; 2 Service pharmacie, CHU, Caen, France; 3 LCMT, UMR CNRS 6507, EnsiCaen UniCaen, Caen, France; 4 URCOM, Université du Havre, Le Havre, France

Introduction:
Alzheimer’s disease is a neurological disorder where conventional treatment strategies fail to cross the blood–brain barrier (BBB). Nanotechnological treatment allow going through this barrier. The present study aimed at developing and characterizing an innovative composite formulation based on a thermosensitive gel enabling sustained delivery via liposomes of an active pharmaceutical ingredient (API) of potential interest for Alzheimer’s disease after nasal administration (1). Indeed, interestingly, this API was shown to be a selective inhibitor of the butyrylcholinesterase but presents a low permeability through BBB model.

Objectives:
The present formulation aimed at targeting the brain by countering the BBB.

Methods:
Osmolarity and gelation temperature ($T_{sol-gel}$) of formulations, defined in a ternary diagram, were investigated by rheometry and visual determination. API-loaded liposomes were prepared by the thin film hydration method (2). Various parameters such as lipid ratio, concentration and lipid to drug ratio were investigated to obtain acceptable entrapment efficiency (EE). Properties of formulations were evaluated in terms of granulometry, zeta potential, and EE after purification step on a Sephadex™column.

Results:
At the issue of assays, a mixture composed of Poloxamer 407/Poloxamer 188 (15/1%, w/w) was selected, being compatible with intranasal administration in terms of $T_{sol-gel}$ and with the olfactory mucosa (280 ± 20 mOsmol, pH 6). Mucoadhesion studies showed that in situ gel formulations present good natural mucoadhesive characteristics that could be increased in presence of liposomes within the gel. Such a composite formulation enables a delayed and complete release of the API as determined from kinetic release studies performed in nasal simulated fluid.

Discussion / Conclusion:
From that, successful formulation of a promising API-loaded liposomes in a thermosensitive hydrogel for nasal delivery was realized and will be soon the object of further biological evaluation.
References:

Keywords:
Nanomedicine, Nasal administration, Thermosensitive gel, Alzheimer's disease
10. Impact of statins treatment on peripheral neuropathy associated with type 2 diabetes mellitus: Cross-sectional (observational) study

Abdulmohsen Assiri¹, Sary Salih², Ahmad Akl³, Khalid Alyahya⁴

¹ Senior pharmacist, Prince Sultan Military Medical City (PSMMC), SA. ²Consultant of internal medicine, Armed Forces Hospital Southern Region, SA. ³Consultant of endocrinology and diabetes, Armed Forces Hospital Southern Region, SA. ⁴Consultant clinical pharmacist, Prince Sultan Military Medical City (PSMMC), SA

Background:
A review of the existing literature has revealed a lack of consensus with regards to the impact that statins have on peripheral neuropathy in diabetes. [1-4]

Objectives:
Investigate the extent to which statins is related to peripheral neuropathy in type 2 diabetics (T2DM).

Method:
Cross-sectional study was conducted with 399 T2DM patients during their visit to diabetic clinics at a tertiary hospital in Saudi Arabia. Haemoglobin A1c, blood pressure and the lipid profile of included patients were controlled. Patients who had peripheral neuropathy caused by other illnesses or medications were excluded. Each patient completed a one-time peripheral neuropathy assessment using a validated Michigan Neuropathy Screening Instrument (MNSI).[5] Statin usage was reviewed using the hospital's system.

Results:
There was a significant association between statin therapy and peripheral neuropathy (prevalence rate ratio of 1.29; 95% CI, 1.26 â€“ 1.35; p = 0.001) in T2DM patients. Statin significantly increases MNSI score in a time-dependant manner in patients who have T2DM for more than 5, 10 and 15 years. In these cases, the MNSI score increased from 1.81 point Â± 0.27 to 3.06 point Â± 0.5; from 2.93 points Â± 0.55 to 5.1 points Â± 0.35; and from 3.53 point Â± 0.45 to 5.54 point Â± 0.26, respectively. Statin-induced peripheral neuropathy showed a dose-dependent effect when high-intensity doses significantly shifted up the MNSI scores in all time durations, including after 5 years and before 20 years of T2DM duration.

Conclusion:
Statin therapy in T2DM patients may considerably increase the risk of peripheral neuropathy in a dose-dependant manner. Healthcare professionals should be aware of the possible role of these drugs in peripheral neuropathy. This observational study gives a preliminary insight into the association between statin and peripheral neuropathy in diabetic patients. However, more randomised clinical trials are required as supplemental confirmatory studies.

References:


11. A service evaluation of foundation trainee doctors’ prescribing education in an acute hospital
Williamson J, St Helens & Knowsley Teaching Hospitals NHS Trust, Whiston, UK
Lloyd M, St Helens & Knowsley Teaching Hospitals NHS Trust, Whiston, UK
Watmough S, Edge Hill University, Ormskirk, UK
Bennett N, St Helens & Knowsley Teaching Hospitals NHS Trust, Whiston, UK

Introduction/Background/Context
Prescribing is a complex and error prone activity with error rates higher in foundation grade doctors.\(^1\) Postgraduate prescribing education is variable with enhanced training and education from pharmacists desirable.\(^3\) An understanding of foundation trainee views on their prescribing education could inform curriculum redesign and future prescribing interventions.

Objectives
To evaluate the opinions of foundation year trainee doctors’ on their prescribing education.

Method
Self-administered questionnaires were distributed to Foundation year 1 (FY1) and 2 (FY2) doctors, combining 5-point Likert-scale and open-ended statements. Agreement scores were calculated for statements on prescribing inductions, ongoing prescribing education, prescribing confidence, assessment and feedback, and pharmacist involvement in prescribing education. Qualitative statements were analysed thematically.

Results
Forty-nine participants responded with 31 FY1 doctors and 18 FY2 doctors completing the survey, an overall response rate of 54%. Sample responses are presented in table 1. In general terms, trainees agreed that they received prescribing education and would welcome more education from pharmacists. Trainees felt confident prescribing in all areas except for pregnancy, breast feeding, paediatrics and liver impairment. Trainees agreed that additional teaching is needed, especially for adverse drug reactions, narrow index medications and drug interactions. Trainees believed that education should be more practical, with local ward-based inductions and further feedback on their prescribing from pharmacists.

Table 1: Participant responses for a selection of survey questions

<table>
<thead>
<tr>
<th>Question</th>
<th>Overall Median Response</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Safe prescribing induction</strong></td>
<td></td>
</tr>
<tr>
<td>I received a local prescribing induction to each ward area from pharmacy</td>
<td>Disagree</td>
</tr>
<tr>
<td>I believe that a local ward-based prescribing induction from pharmacy</td>
<td>Agree</td>
</tr>
<tr>
<td>would be useful</td>
<td></td>
</tr>
<tr>
<td>I believe that current foundation training on prescribing needs improving</td>
<td>Agree</td>
</tr>
<tr>
<td><strong>Prescribing education</strong></td>
<td></td>
</tr>
<tr>
<td>I believe that the current foundation training on prescribing is adequate</td>
<td>Neither agree or disagree</td>
</tr>
<tr>
<td><strong>Audit and feedback</strong></td>
<td></td>
</tr>
</tbody>
</table>
I would like more feedback on my prescribing from pharmacists

**Agree**

**Delivery of prescribing education**

| I would like more ward based prescribing education by the ward pharmacist | Agree |
| I would like more lectures from pharmacy on prescribing education | Agree |
| I would like more practical prescribing teaching from pharmacy | Agree |

**Discussion/Conclusion**

Foundation trainees feel confident prescribing in most situations but would welcome more prescribing education from pharmacists, echoing reports elsewhere.\(^4\) The results suggest that a more social and experiential approach to prescribing pedagogy would be valued, supported by enhanced feedback and ward-based teaching. These findings can be used to reform and optimize any pharmacist-led prescribing education and patient safety, and providing tantalizing avenues for further research enquiry.

**Ethical approval**

Ethical approval was obtained from Liverpool John Moores University. The project was registered with the hospital audit department.

**References**


12. Pharmacy Technician Involvement in Medicines Administration – A Review of Current Literature
Woodward, J. (The University of Manchester, North West Boroughs Healthcare NHS Foundation Trust) & Keers, R.N. (The University of Manchester, Greater Manchester Mental Health NHS Foundation Trust)

Introduction
The development and expansion of clinical pharmacy services within secondary care is high on the government agenda. The utilisation of pharmacy technicians (PTs) to administer medicines has been mentioned, albeit briefly, in national guidelines and documents\(^1, 2, 3\). However, despite there being interest in such roles amongst NHS organisations due to pressures on nursing staff, who may spend up to 40% of their working day administering medicines\(^4\), the development and implementation of such roles is not widespread.

Objective(s)
The objectives were to critically examine the breadth and quality of evidence describing PT involvement in medicines administration, to explore common themes arising from the research and to inform future research in this area.

Method
A search employing systematic principles was performed. EMBASE, Medline, CINAHL and HMIC databases were searched using key terms including: “pharmacy technician” AND drug OR medicine* AND administration OR round. A further internet ‘Google’ search was conducted for grey literature. As this project was a literature review, ethical approval was not required.

Results
19 primary research papers and 4 review papers from across the USA and UK were included in the review, spanning 5 decades. The majority were observational, single-site, case study or service evaluation level projects. Technician roles involved both undertaking and supporting medicines administration. Evaluations of cost-effectiveness and safety implications were undertaken in some studies but were generally inconclusive and of limited quality. The impact on patient experience remains largely unexplored. There is also an ongoing professional debate in the literature about the suitability of PTs to undertake a medicines administration role and the overall acceptability of this as a service development.

Discussion/Conclusion
Evidence for PT involvement in medicines administration relating to safety, cost-effectiveness and patient satisfaction is currently limited. Further research is required into the feasibility, acceptability and effectiveness of such services.

References
Background
There is currently no consensus on which Key Performance Indicators (KPIs) should be used to measure clinical pharmacy services (cpKPIs). Meaningful performance measurement is important to demonstrate the value of hospital pharmacy services and improve patient care.

Objectives
To review and propose local cpKPIs to demonstrate the value of hospital pharmacy services to deliver patient care.

Method
A literature review was conducted reviewing KPIs for hospital pharmacy services. A focus group was held with 12 senior pharmacists within a large teaching hospital. The focus group comprised presentation of summary of the literature review and discussion of ten proposed cpKPIs, which were ranked (essential, potential or future). The challenges of data collection were considered and potential solutions identified. No ethics approval required.

Results
Ten cpKPIs were proposed, seven agreed as valuable metrics, two already reported annually and one was disregarded. Of the seven cpKPIs, four ranked as essential, one ranked as possible for future data collection and one was decided to be collected periodically to allow more detail to be analysed. All participants agreed collection of cpKPIs should be incorporated into daily handover via existing electronic systems and linked to the pharmacy quality improvement strategy. It was agreed to concentrate on cpKPIs classed as ‘essential’

Conclusions
A set of cpKPIs was approved and development of the eWhiteboard for data collection, as part of the daily clinical pharmacy handover was agreed.

References

14. Learning disability: User perspective on practice and the Centre of Pharmacy Postgraduate Education learning disabilities training package

Hannah F. Williams, Barry Jubraj, Matthew Shaw, Emma Anderson
Department of Pharmacy, King’s College London, Franklin-Wilkins Building, 150 Stamford Street, London SE1 9NH, UK

Introduction:
Over 250000 people in England have a learning disability, which results in poorer access to medicines and longer term health problems \[1,2\]. The Centre of Postgraduate Education (CPPE) developed a learning resource to support pharmacy professionals in engaging with this population \[3\]. The key to a consultation with this patient cohort is effective communication \[4\].

Objectives:
To explore the early use of the CPPE learning disabilities training package and consulting those with a learning disability among a selected cohort of pharmacy professionals.

Method:
An online/hard copy qualitative and quantitative survey was designed, piloted and distributed to four predetermined cohorts identified through local networks. Ethics approval was granted.

Results:
Across the four cohorts, responses were received from 101 participants. Almost half of the group had used the package, but few felt confident to pass this learning on to their colleagues through a training session. Respondents admitted to having challenges when consulting those with a learning disability, including communication, checking understanding and the appropriate action to take when the carer was not present, for example in secondary care.

Conclusion:
The findings from this group was that although there was recognition that pharmacy professionals find consulting those with a learning disability to be challenging, this insight did not engage them with accessing and completing this learning programme. From a professional perspective, there is a need for a level of responsibility to be taken to improve one’s skill set and to educate the rest of the pharmacy team where possible. According to this local evaluation, pharmacy professionals experience challenges when consulting those with a learning disability. The package seemed to provide useful tools to develop consultation skills for these challenges, and many respondents engaged in a number of activities within the programme. This study had a small pre-determined cohort, limiting its generalisability.

References