Developing a pharmacy service to your AMU

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Aims of the Session

- To provide the background in terms of medication related risk to patients.

- To highlight key areas where evidence suggests pharmacists have an impact on medication related risk & hospital data.

- To propose some suggested models of service

- To highlight the emerging roles of pharmacists in prescribing and medication review
Key Service Provisions for Pharmacy

- **Core Services**
  - Medicines reconciliation & medication review
  - Medication counselling
  - Medication supply

- **Extended services**
  - Independent prescribing
  - Weekend service
Key Service Provisions for Pharmacy

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- Extended services
  - Independent prescribing
  - Weekend service

Discharge facilitation & re-admission avoidance
Medicines Reconciliation – The Scale of the Problem

- The NPSA has reported the number of incidents of medication errors involving admission and discharge as 7070 with 2 fatalities and 30 that caused severe harm\(^{(1)}\) (figures from November 2003 and March 2007).

- Incidence rates of adverse drug events (ADEs) range from 2 to 7 per 100 admissions\(^{(2)}\).

- Up to 60% of patients will have at least 1 discrepancy in their admission medication history\(^{(3)}\).

- Over half (56%) of medication errors occur during the prescribing process\(^{(4)}\).

- Medication errors occur 46% of the time during transitions, admission, transfer or discharge from a clinical unit / hospital\(^{(5)}\).

Process of medicines reconciliation

**LEVEL 1**
Identifying the most accurate list of all current medications to create the best possible medication history (BPMH)

**LEVEL 2**
Comparing this list against the current list of medication and prescription; identifying and resolving any discrepancies and ensuring these changes are documented

- Updating the list as new medicines are prescribed to reflect all of the patient’s current medications
- Communicating the list to the next provider of care whenever the patient is transferred or discharged and providing the list to the patient at the time of discharge
Medicines Reconciliation (MR)

- Data from over 3000 reconciliation events suggests pharmacy led MR leads to an organisation / NHS cost avoidance of £106 per completed MR (range £63 - £148)\(^1\)

- Pharmacists are considered a cost effective intervention\(^2\)

- Pharmacist led medication review……..

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1) Dodds L - A collaborative evaluation of the outcomes of pharmacy-led medicines reconciliation in various care areas – June 2011
2) A systematic review of the effectiveness and cost effectiveness of interventions aimed at preventing medication error (medicines reconciliation) at hospital admission. The University of Sheffield, School of Health and Related Research (ScHARR)
STOPP within acute medicine…

• Staff Survey
  • <1/3 thought patients currently had adequate medication review
  • >90% agreed that patients would benefit from medication review
  • >80% agreed that medication review would reduce admissions due to falls and bleeding

• Admissions Pharmacists
  • Initiate medication review

• OPAL team Consultant/Registrars
  • Complete medication review
• To develop and use a medication review system based on the evidence based tool ("STOPP" – Screening Tool of Older Persons potentially inappropriate Prescriptions) for use with elderly patients across all sectors of care

• To increase knowledge and confidence amongst staff in carrying out medication review through awareness and education

• To provide patients with better information about their medicines
Interim Results

- April 2011 and March 2012
- 897 medication reviews completed
- Drug load - 8 medicines per patient

- 52% (n=462) medication changes
  - 27% (n=246) - medication stopped permanently
  - 27% (n=240) - medication stopped temporarily
  - 7% (n=63) - dose reduction

- Further funding for roll-out projects
  - Three sites, Falls clinic, Community, Care homes
Pharmacists and Quality Improvement

- The concept of *improvement science* recently emerged to provide a framework for research focused on healthcare improvement.
- Quality improvement and patient safety are imperative clinical targets supported by policy, patient advocacy, and healthcare professional group.
- BUT
- research to determine which improvement strategies are effective has been insufficient at best
Improving Compliance with Anti-infective prescribing Policy

- Patients under the medical admissions teams who had been prescribed one or more systemic anti-infectives were audited
- Pharmacists collected following data weekly
  - anti-infective(s) prescribed
  - indication(s) documented on either the patient’s drug
  - prescription chart or health records/medical notes
- Definition of compliance was developed requiring documentation of indication(s) and anti-infectives to match the anti-infective policy
- A series of interventions using the Plan-Do-Study-Act (PDSA) approach to monitor and improve compliance
- Three overlapping intervention phases were retrospectively identified
  - Awareness, education, and feedback
  - Weekly of results in the form of run charts distributed to medical teams
  - Engagement of multidisciplinary clinical management team

Improving Compliance with Anti-infective prescribing Policy

Improving Compliance with Anti-infective Prescribing Policy

• All anti-infective prescriptions **MUST** have a documented **indication** and **STOP** or **REVIEW** date on the drug chart or in the medical notes in order to comply with the Trust Policy

• Compliance with the policy is monitored, with the results emailed to the individual clinicians within the specialities involved, discussed at board meetings as a standing agenda item and cascaded through clinical and management teams

• Through a process of:
  • awareness,
  • feedback and
  • education

we hope to gain agreement and engagement of the MDT clinical teams

Figure 1: An example of Admissions compliance data at Charing Cross
Medication Supply

A 2009 study looking at medication omission errors on AMU highlighted\(^{(1)}\) (n=271)

- 20% had omitted doses
- 17% of all patients reviewed had at least one omitted dose.
- Most common reasons medicine unavailable (38%) and nil by mouth (32%)
- Omissions can lead to increased length of stay and increased morbidity

What about the weekend?

Pharmacist Counselling

– Good medication adherence is associated with positive health outcomes and lower mortality \(^{(1)}\)

– Research suggests pharmacist counselling improves adherence in poly-pharmacy and this is associated with reduced mortality \(^{(2)}\)

– A RCT of pharmacist counselling in 442 outpatients with chronic disease reduced mortality from 17% to 11% over 2 yrs \(^{(2)}\)

– Targeted pharmacist counselling has been shown to reduce readmission rates by 15% from baseline \(^{(3)}\)


Skill Mix & Service Design

• Skill mix need to be considered
  • Bed occupancy and turnaround
  • Discharge rates and peak time for senior decision makers
  • Tasks appropriate to level of training and expertise
  • Defining roles within the pharmacy team
Service Models and Skill Mix

Model 1

Pharmacist

Model 2

Pharmacy Technician

Model 3

Pharmacy Support Worker

IP Prescribing
PTWR Attendance
Level 2 MR
Clinical review
Complex Counselling
Authorising supply
Supply
Patient Own Drug
Assessment
Level 1 MR
Discharge counselling
Transfer of medicines
Data Gathering for Level 1 MR
Getting Skill Mix Right.....
QUIPP Case Study - Pharmacy Support Workers

Provided by: University Hospitals of Leicester (UHL) NHS Trust

- Problems with medication related waste identified after introduction of dispensary robot
- Patient specific medication often returned to pharmacy but left unused due to time constraints
- Medication is reviewed by support worker and either
  - Returned for reuse
  - Provided to an alternative ward as stock
  - Stored in satellite pharmacy units for discharge dispensing
- Forecast saving of £450,000 due to reduction in medication related waste
The Role of the Pharmacist Prescriber in the Acute Medicine Setting
What is Independent Prescribing (IP)?

Prescribing by a practitioner (e.g. doctor, pharmacist, nurse) responsible and accountable for the assessment of patients with undiagnosed or diagnosed conditions and for decisions about the clinical management required, including prescribing.

*(Improving patients' access to medicines: A guide to implementing nurse and pharmacist independent prescribing within the NHS in England Department of Health, April 2006)*
Background

• The Health and Social Care Act 2001 enabled the Government to extend prescribing responsibilities to other healthcare professionals.

• The Medicines and Human Use (Prescribing) (Miscellaneous Amendments) Order of May 2006 introduced pharmacist IP

• Primary aims of legislation were:
  • Improving patient access to medications
  • Improving patient care without compromising safety
  • Better use of healthcare professional skills
  • Contribution to flexible team working in the NHS
Initial Service Evaluation

- New service hence evaluation

- Current published literature focuses on supplementary prescribing with very little focus on clinical outcomes

- There is little published research about pharmacist IP, particularly in secondary care
Aims & Objectives

• Aims
  • To develop a model of IP for the acute medical unit
  • To evaluate its impact on patient care

• Objectives
  • To implement Pharmacist IP on the acute medical unit
  • To document the numbers and types of prescribing decisions made by the pharmacist
  • To explore the clinical significance of these prescribing decisions
Methods

• **Study population, inclusion criteria and duration**
  • All patients admitted to two acute medical wards (B1 and B2; total of 28 beds) on the 40 days during which IP pharmacist cover lead to the writing of one or more prescriptions **within 24 hours of admission**.

• **Data collected**
  • Patient identifier, date and reason for admission, details of any prescriptions written plus reasons for prescribing, and whether or not each prescription was queried by the medical team by the time of the next post-take ward round (PTWR)

• If no amendments were made by the medical team, this was taken to mean that the prescription was accepted and that the IP pharmacist had not made any prescribing errors.
Methods

IP Pharmacist assessment of patient followed by writing of the prescription chart

Data entered into electronic database

Two senior pharmacists and two medical consultants assessed each prescribing decision on a scale of 0-10*

Mean score calculated and used as an index of clinical significance

Failure to prescribe could have resulted in death

No Clinical Significance

Minor Significance 3

Moderate Significance 7

Major Significance 10

*Dean B and Barber D. A validated, reliable method of scoring the severity of medication errors. Am J Health-Syst Pham 1999; 56: 57-62
Results

- A total of 217 prescriptions were written during the 40 days (mean 5.4 per day) of the study.
- All were accepted by the medical team without amendment or query, and the prescribing error rate therefore assumed to be zero.
Results

• The 217 prescriptions were then screened for clinical significance

• The mean clinical significance score was 4.6

• Of the 217 prescriptions, 99.5% (n=216) were of moderate significance and 0.5% (n=1) was of minor significance. None were of major significance
Current Literature Concerns

• Lack of clear strategy at organisational level and lack of funding seems

• Lack of access to medical records, accountability and compromising patient safety by not separating prescribing and dispensing

• Not having enough knowledge of patient before prescribing, physicians losing opportunity to review drug treatment, writing discharge prescriptions, effective communication with other healthcare professionals and pharmacists having time to do this (overstretched pharmacy department) and legal and professional accountability

• Inadequate clinical examination skills and diagnosis

• Potential loss of prescribing skills for junior doctors
Conclusions

• Successful implementation of Pharmacist IP on an acute medical unit

• The high number of items prescribed each day suggests a demand and key role for a pharmacist IP

• Mean severity score of 4.6 (in local study)- prescribing interventions were likely to be significant in relation to patient care

• Sustainable service - part of the existing ward-based pharmacy team

• There are issues around implementation

• Also, many solutions to the implementation issues

• Go and prescribe!!!
Prescription errors in patients on an acute medical assessment unit

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Most UK hospitals now have acute medical units that provide acute care in the first 48 hours of a patient’s hospital stay. With this arrangement, drugs are likely to be administered to patients before pharmacy checks can be carried out and this is a particular problem for overnight and weekend admissions.

We believe that pharmacists may help significantly in reducing the rate of prescription errors – their focused training and their knowledge of medicines’ prescribing, supply and administration support their value in ‘front-door’ departments.
Weekend service at Imperial

- Pharmacy service from 8am-1pm
- PTWR focused
- Part of regular team hence sustainable
- Increasingly similar workload to weekdays
- Business cases
Summary

• Appropriate skill mix and resource is important to ensure you utilise your pharmacists.
• Get pharmacists involved in quality improvement initiatives
• Prescribing is way forward – if you can't beat them, join them!
• Extended and weekend service essential
• The future is green – the future is pharmacy!
Any questions?

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