A complete service model of medicines management offers patients continuity of care

Abstract

A patient-centred pharmacy service has been running in an elderly care rehabilitation wing for five years with good results. This service encompasses all aspects of medicines management from admission to discharge. A self-medication policy has been written and patients are continuously assessed and allowed to manage their own medication before being discharged.

An average of 126 medication reviews are carried out each month, resulting in around 70 clinical interventions. Around 30 patients are deemed suitable for technician assessment and around 80% of these patients will be self-medicating at any one time in the unit.

At discharge, a letter is computer-generated by the clinical pharmacist that details all medication changes and it is sent to primary care. This has been shown to improve communication across the secondary-primary care interface.

Background

The use of medication among the elderly population has grown exponentially over the past decade through a combination of increased life expectancy and improved elderly care services in both primary and secondary care. It is well known that up to 50% of elderly patients do not take their medication correctly, but how many robust systems are in place to assess these patients.[1] Where should these assessments take place? Some community pharmacies offer medicines use reviews (MUR) services, which is an invaluable tool to filter out patients that may not be complying with their medication, such as those with poor inhaler technique or because their rheumatoid arthritis makes it difficult to open bottles. However, this service is only available to those patients who are able to make the trip into the community pharmacy.

This article describes a service that is supplied to four care of the elderly wards (total of 96 beds) at the Queen Elizabeth Hospital in Gateshead. When designing the service we decided to look at how all members of the multidisciplinary team make assessments and mirror these to ensure that medicines management is high on the agenda of assessments while patients are in hospital.

Aims of the service

1. All patients will have an accurate drug history taken on admission.
2. All patients will have a full clinical medication review completed within seven days of admission to the unit. This includes information gathering from primary care. When a patient is admitted to the Queen Elizabeth Hospital a two-sided summary of their GP record is faxed to the admissions unit. This includes details of the drug history, past medical history, allergies or intolerances.
3. Where appropriate, all patients will be assessed for self-medication by a clinical pharmacy technician within 14 days of admission to the unit.
4. Where it is deemed safe to do so, all patients will be allowed to self-medicate following a specifically written self-medication protocol.
5. A pharmacist will clinically check every drug's kardex each week. This is a check to ensure that the drugs prescribed are formulary, safe and that any monitoring that is needed is done. Clinical appropriateness would be ensured during the medication review at admission and at discharge.
6. A continual assessment of the patients' ability to self-medicate will take place during the patients' stay.
7. To involve the whole multidisciplinary team to ensure all members are up to date with the progress that the patients are making with their medication.
8. At discharge a pharmacist-written discharge summary will be sent to primary care that will document all changes made to medication. If requested, a patient may have a copy of the sum-

Medication Reminder Chart

Name.....Date... 19/10/2006...Contact Number...0191 4820000...bleep

Medicine Name, Strength	Dose	Morning	Lunch	Tea	Night	Reason for taking	Notes
Omeprazole 20mg tablets	1 tablets	X				To reduce the amount of acid in the stomach, heal ulcers and prevent heartburn	
Paracetamol 500mg tablets	2 tablets	X	X	X	X	To relieve pain	Contain paracetamol. maximum dose is 2 at once, 8 in 24 hours

Figure 1. Example of a medication reminder chart

mary. However, patients discharged home are given a medication reminder chart (Figure 1) that details all of their medication. This chart is written in a patient-friendly format.

9. If further assessment is required the patient will be referred at discharge to the intermediate care pharmacist who will visit the patient at home to ensure that they are managing their medication. It is anticipated that community pharmacists will increasingly take on this role but at present workload in the community pharmacy sector does not allow this in the majority of cases.
10. A seamless transfer of care is the aim of all discharges. This has been assessed in a published study.[2]

On admission

The patient is seen by the clinical pharmacist who discusses the medication. Any problems with compliance or concordance are hopefully picked up at this point. A drug history is taken from the patient, if possible, and then checked with the GP or community pharmacy. Information such as compliance aids being used is identified at this point. Quite often the community pharmacy that dispenses and delivers the patient's prescriptions is unaware when the patient is in hospital. This can create a problem after discharge when the patient arrives home to their old medication, which might have been stopped. This emphasises the importance of informing the community pharmacy of changes where possible.

The pharmacist will also consider the social circumstances of the patient before their hospital admission and the impact of the admission on the patients' ability to cope with medication. For example, a patient admitted with a cerebrovascular accident may have been perfectly fit and well before the event and now has a marked disability. This needs to be considered.

The pharmacist carries out a full clinical medication review. This is possible because the pharmacist has full access to secondary care notes and lab results — the pharmacist is authorised to request biochemical tests if needed. A medication review tool has been designed (Figure 2) to ensure that the same structured review is conducted regardless of the pharmacist working on the team or the reason for the admission. Once the review is complete the outcome is documented in the notes for the medical staff to consider. An average of 126 medication reviews are completed and an average of 70 major interventions are made each month. The interventions vary from recommending medication additions, such as a statin after cerebrovascular accident, to recommending the stopping of a medication (such as hypnotics in a patient at risk of falls.) In most cases, the intervention is discussed with the patient to ensure that they are fully involved in their care.

Older persons directorate pharmacy medication review. (Date_____By:_____)

Affix patient addressograph here

PC:

PMH (brief):

SH:

MDS: Yes/No Who fills:

1. Check DH is complete: ☐
2. Lab results checked: ☐

Notes:

Falls risk:

1. Patient being admitted with a fall or 2 or more falls in last 6 months? yes/no (2 points for yes)
2. Any drugs causing drowsiness? Yes/no (1 point/drug)
3. Any drugs causing hypotension? Yes/no (1 point/drug)
4. Any drugs causing dizziness? Yes/no (1 point/drug)

Total score: _____ (>5 = high risk)

Osteoporosis risk:

Post-menopausal/female/smoker/steroids/thyroxine/antiepileptics/low fragility #/low BMI/T score ≤ -2.5/Falls risk/RA/hyperparathyroidism/Cushings syndrome/thyrotoxicosis/renal disease/IBD

If > 4 risks (including #), consider treatment.

Medication changes during admission: (Carry on overleaf if multiple changes have been made.)

Started	Stopped	Changed

Medication review comments:

Technician referral for self medication assessment ☐

Medication review only needed ☐

Figure 2. Older persons directorate pharmacy medication review

After the pharmacist-led medication review patients may be referred to the pharmacy technician for a self-medication assessment with the aim of determining how competent and safe the patient is at taking responsibility for the administration or application of their prescribed medicines. The assessment will consider the patient's social circumstances, for example whether they reside alone or in a residential or nursing home or if they receive assistance from social services. Consideration will be made as to compliance and any factors that may influence this, for example, dose frequency. It may be possible to reduce the dose frequency of certain medicines, or change to a formulation with a reduced dose frequency to aid compliance (if this is needed the technician will refer to the pharmacist). If before admission a patient was using a monitored dosage system (MDS) they will be asked to demonstrate their use of it. Common problems that may arise with a MDS are linked to dexterity and understanding the instructions. If a patient is competent with their medicines in their MDS then they are encouraged to continue using it during their stay in hospital. Those patients who previously took responsibility for filling their own MDS have the opportunity to demonstrate their ability and if deemed adequate by the pharmacy technician they are encouraged to continue to be autonomous. This has the advantage of maintaining continuity for the patient and ensures that they do not lose their self-medication skills. It also allows the team to educate the patient to find new ways of looking after their medication themselves if they are no longer able to use their old methods. For example, after a stroke with one-sided paralysis a patient may be unable to open blister packs. A pharmacist will check patient-filled MDS each week. For patients in hospital for more than one week or for those deemed not suitable for filling their own MDS, this will often involve liaising with their community pharmacist. The ideal situation is for a patient to self-administer their medication under nursing staff supervision, but this is not always possible.

An internal audit of the service found that self-medication assessments are performed by the pharmacy technician at a rate of about 30 per month, with 80% of patients deemed capable to self-medicate. All of the information gained by the pharmacy team is entered into a database that allows workload to be monitored and allows for easier follow-up of patients. A care plan is completed for each patient who self-medicates (Figure 3). There are four levels of self- medication (detailed in the Trust self-medication policy):

Level 1 — Nursing staff administer the medication and sign the drugs kardex.
Level 2 — Nursing staff unlock the patients individual drugs locker and place the medication in front of the patient who then takes it correctly. The nurse signs the kardex.
Level 3 — The patient has a key to the drugs locker and self-medicates. The nurse does not sign the drugs kardex.
Level 4 — As level 3 except the patient re-orders the medication.

Name:			**DOB:**			
Goal number:			**Goal discussed with client:**		yes	
Long term goal:	To administer their prescribed medication appropriately, with or without compliance aids either independently or with supervision or prompting prior to discharge.			**Timescale:** 6 weeks	**Achieved:** yes / no **Date:**	**Signature**
Comments:						

Date:	**Short term goal:**	**Timescale:**	**Instruction:**	**Date : achieved**	**Signature of nurse**	**Signature of Pharmacy**
	Patient to take medication given by nurse		Nurse to administer prescribed medication at specified time until the client has been assessed.			
Comments:					**Refer to new goal**	

Date:	**Short term goal:**	**Timescale:**	**Instruction:**	**Date : achieved**	**Signature of nurse**	**Signature of Pharmacy**
	Patient to take medication under supervision of nursing staff		Nursing staff to unlock patients locker and place medication in front of patient. Patient to be encouraged to self medicate using the MRC chart and the labels on the boxes. Nursing staff to supervise and to sign kardex. Please report any problems to the pharmacy team.			
Comments:					**Refer to new goal**	

Figure 3. Example of care plan

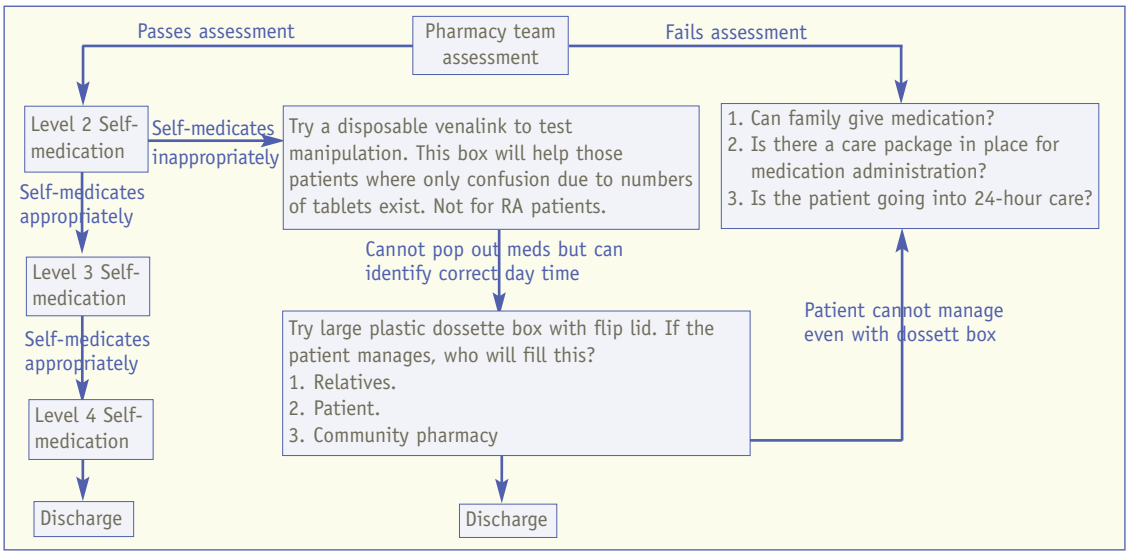

Figure 4. Flow chart to show medicines management process of assessment

During admission

The pharmacist clinically checks the patients' drugs kardex once each week to pick up on any new medication and also to ensure that recommendations made during the medication review have been considered. The pharmacy team are in continuous contact with ward staff with regards to self-medication patients. These patients' are reviewed each week by the pharmacy team to ensure that they are managing their medication safely and correctly. If problems arise then these are addressed. The flow chart in Figure 4 shows a typical journey of a patient through the assessment process. At all points in the process medication is reviewed so that the patient is taking the minimum amount of medication that is appropriate for their needs. A once-daily regimen is the ideal if possible.

The pharmacy team also cover the basic pharmacy service, including ordering ward stock, medicines information and attending consultant-led ward rounds. This is advantageous because the team know that if this basic service is not efficient then the more complex roles will not work.

At discharge

The key to a safe discharge, particularly in an older person, is addressing two issues. The first is to ask whether the patient is able to take their medication safely and correctly? If they cannot, is there a care package or person able to ensure that this is the case? Any patients who cannot self-medicate and has no carers at home are referred to social services by the ward staff. The second, possibly the most important and crucial aspect of the discharge is communication with primary care. The pharmacist details all

Gateshead Health NHS Trust – Discharge Summary & Prescription

Patient:
Home Address:

Hospital number:
Date of birth:
Under the care of:
Ward:

Date of admission:	26th April 2007
Date of discharge:	5th June 2007
Medication started:	Candesartan - See below Lansoprazole - Gastric protection with aspirin and steroid Docusate - To replace lactulose (advised patient to reduce once home and more mobile)
Medication dose changes:	Prednisolone - Reduced to 1mg
Medication stopped:	Simvastatin - ?caused myopathy Losartan - Replaced as per GMMC Lactulose - See above
Self medicating?	Yes self medicating
Self medicating reason	
Pharmaceutical care pre/ post discharge	Managed to self medicate without a dossette box. Under rheumatology for methotrexate monitoring
Compliance aid used	No
Compliance aid filled by	
Medication reminder chart given to patient	Yes
Allergies	Simvastatin - Myopathy

Medications

Prescription date	Discharge medicines & directions	Route	Quantity disp	Review Date
01/06/2007	PREDNISOLONE 1mg TABLETS Take ONE tablet in the MORNING	Oral	0	30/11/2007
01/06/2007	LANSOPRAZOLE 30mg CAPSULES Take ONE capsule in the MORNING	Oral	0	30/11/2007
01/06/2007	FOLIC ACID 5mg TABLETS Take ONE tablet weekly on a WEDNESDAY	Oral	0	30/11/2007
01/06/2007	METHOTREXATE 2.5mg TABLETS Take FOUR tablets weekly on a FRIDAY	Oral Patient's own	0	30/11/2007
01/06/2007	ASPIRIN 75mg DISPERSIBLE TABLETS Take ONE tablet in the MORNING	Oral Patient's own	0	30/11/2007
01/06/2007	BISOPROLOL FUMARATE 1.25mg TABLETS Take ONE tablet twice daily	Oral Patient's own	0	30/11/2007
01/06/2007	ADCAL-D3 CHEWABLE TABLETS Take ONE tablet in the MORNING	Oral Patient's own	0	30/11/2007
01/06/2007	FUROSEMIDE 20mg TABLETS Take ONE tablet in the MORNING	Oral	0	30/11/2007
01/06/2007	DOCUSATE SODIUM 100mg CAPSULES Take TWO capsules twice daily	Oral	0	30/11/2007
01/06/2007	CANDESARTAN 8mg TABLETS Take ONE tablet in the MORNING	Oral Patient's own	0	30/11/2007

Note to GP – A repeat prescription will be required for each medicine unless a fixed course length is indicated in the directions above

GP Practice:

Approved by: _____ (Pharmacist)

Approved by: _____ (Doctor)

NOTE TO PATIENT: Please contact your GP within 7 days.

Figure 5. Example of a computer-generated discharge letter

medication issues in a computer-generated discharge letter (Figure 5). This is sent to the GP surgery. An audit undertaken to assess the usefulness of this letter showed that it improved communication across the interface.[2] If a patient requires a dossette box on discharge and they are responsible for taking the medication from that box then their community pharmacy will normally take over the filling of this (unless a relative or carer is going to fill it). If this is the case then a copy of the discharge letter is sent to the community pharmacy. If a care package has been arranged for carers to prompt the patient to take their medication from the dossette box then social services are responsible for organising any follow-up that is needed. This has been agreed with Gateshead Council. Patients are discharged with at least 7 days of medication, if dispensed into a dossette box, or original packs, and are fully counselled at discharge by the pharmacy team. All patients returning to their homes will be issued with a computer-generated medical record chart.

After discharge

Patients discharged home will have normally been fully assessed by the pharmacy team while they were inpatients. However, there are occasions when a further check is needed on the patient once they are home. If this is the case a referral is made to the intermediate care pharmacist who can visit the patient at home to ensure that they are managing with their medication.

Summary

This service has now been running successfully for more than five years and is an established part of the directorate infrastructure. It is continuously audited to ensure that targets such as reviewing patients within seven days of admission are met. The ward teams appreciate the work that we do and most importantly the patients benefit from the service. The Older Persons Pharmacy Team are involved in patients care throughout their stay as opposed to the last day at discharge. From a personal point of view it is extremely rewarding to be so involved outside the pharmacy.

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References

1. Department of Health. *NSF for older People*. DH, Leeds, 2000.
2. Young A. Improving information transfer from hospital to primary care. *Hospital Pharmacist* 2006; **13:** 253–6.

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