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Bespoke pharmacy:

TAILORING MEDICINES TO THE NEEDS OF PATIENTS

— the clinical pharmacist's role

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The first part of this month's special feature shows how clinical pharmacists tailor medicines to patients' needs at all stages of the hospital stay



A complete drug history taken by a clinical pharmacist is the ideal opportunity to review the patient's regular medication regimen in collaboration with the multidisciplinary team

The concept of pharmaceutical care has been defined as “a practice in which the practitioner takes responsibility for the patient's drug-related needs and holds him or herself accountable for meeting these needs”.¹ This definition has been incorporated into mission statements by all pharmacy professional associations and organisations. Working to this definition, a pharmacist ensures that all medicines that a patient is taking are the correct ones, assesses their effectiveness and appropriateness in light of the patient's clinical status, develops a care plan for the patient and follows up on a systematic basis. It is the responsibility of a clinical pharmacist to ensure that there is an indication for every medicine and that each is safe and convenient for the patient for whom they have been prescribed.

The term “clinical pharmacy” was first coined during the evolution from a product-oriented to a patient-oriented pharmacy service.² It aims to describe a suitable means by which pharmaceutical care is delivered by a “clinical pharmacist” to ensure desired outcomes are achieved. This article highlights, from the author's perspective, the challenges

that a clinical pharmacist might encounter from admission through to the discharge of a patient from hospital.

PROBLEM-SOLVING

Problems can be identified and solved at various stages of the hospital stay from admission through to discharge.

Admission The admission of a patient to hospital provides a clinical pharmacist with an opportunity to provide input and advice to ensure all prescribed medicines are tailored to the needs of the particular patient.

Patients admitted to hospital will usually have a medication history taken by a multidisciplinary team as part of the clerking process. Since medical admissions, in particular, are often untimely and unexpected, information relating to the medication history available at the time of admission is often limited and of poor quality. When the admission follows a GP referral, a referral letter may be provided, although in the author's experience, these are usually handwritten and lack clarity. In addition, specific details relating to the medicines are often omitted, eg, dose, dosage frequency and type of formulation. Admissions often take place outside the opening hours of GP surgeries and so such particulars cannot be clarified

when the patient's regular medicines are first prescribed. In situations where the only source of information is the patient, limitations such as the patient's inability to recall drug names and doses are often encountered. In other situations, the patient's clinical status and/or nature of the admission may mean that they are unsuitable for interview. The electronic patient record, such as the one used at Chelsea and Westminster Healthcare NHS Trust, can prove to be a valuable source of information. Prescribing records relating to previous admissions and/or clinic visits are stored and can be displayed at the touch of a button. However, any modifications to the patient's medication by the GP may not be identified if there is a significant time lapse since generation of the record. Sometimes, historical prescribing information is available, but even if it is accurate, medical staffing pressures and time restraints coupled with lack of familiarity with pharmaceutical formulations can result in inadequate documentation of a patient's medication history in the medical notes and/or transcription on to the medication chart.

The clinical pharmacist is an ideal health care professional to confirm patient medication histories on account of his/her familiarity with the physical appearance of solid oral dosage forms, wide knowledge of medicinal products and preparations avail-

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able over-the-counter. Previously published studies have demonstrated the superiority of a pharmacist-acquired medication history compared with a doctor-acquired history.^{3,4} Reconfirmation of the medication history by the clinical pharmacist is an important role which is becoming more widely recognised. Potential benefits include early identification of possible drug-related side effects, continuity of therapy previously initiated and follow-up of any discrepancies with the GP during working hours. In addition, knowledge of the medicines taken immediately before admission helps to minimise the prescribing of potentially interacting drugs and to maximise the possibility of obtaining the desired therapeutic outcome.

If the medication history has not been reconfirmed by a clinical pharmacist, potential consequences include failure to identify any of the patient's regular medicines that may have been omitted unintentionally or where doses have been unintentionally changed. If such discrepancies are not identified during the inpatient stay, subsequent transfer to the discharge prescription can occur. This can result in inaccurate communication to the GP and an assumption that the particular medicines have been intentionally discontinued or doses changed.

Failure to continue therapy that is still needed could result in loss of control of the patient's chronic condition, failure to achieve the desired therapeutic outcomes and/or withdrawal symptoms. Medicines commonly omitted unintentionally include eye drops, inhalers and antidepressants. When a medicine has been temporarily suspended for a given reason, the clinical pharmacist should document this as part of the pharmaceutical care plan to ensure re-initiation of the medicine(s) when clinically appropriate.

In cases where the clinical pharmacist has taken a complete history, this is an ideal opportunity to review the patient's regular medication regimen in collaboration with the multidisciplinary team. The pharmacist should ensure that the indication for each medicine is known. If the indication is not obvious or the condition for which the patient was first prescribed the medicine has since resolved, this should be brought to the attention of the multidisciplinary team. Frequent reviews of regular medication for all patients over the age of 75 years is an aim outlined by the National Service Framework for older people⁵ and is now considered to be an important component of medicines management. Potential benefits include clinical control of repeat prescribing by discontinuing unnecessary medicines, optimisation of the regular medication regimen, reduced pill burden by switching to modified-release formulations and reduced drug expenditure.

In addition, clinical pharmacists should review the medicines prescribed for the management of the patient's acute condition. The patient's presenting complaint and past medical history should be taken into consideration and steps taken to ensure the medicines are compatible with the patient's current clinical status. For example, doses of antibiotics should be adjusted for patients admitted with declining renal function secondary to sepsis. Interactions with and need to make dosage adjustments to any of the patient's regular medicines must also be considered.

During the hospital stay During the hospital stay, between admission and discharge, the clinical pharmacist will review medication charts regularly as part of the clinical pharmacy service. This review ensures that prescribing continues to be safe, therapeutic and cost-effective for the condition being treated. All medicines should be reviewed in light of the patient's clinical progress. Any new prescriptions should be reviewed taking into consideration other medicines the patient is also receiving. Issues such as side effects, interactions and contraindications should be brought to the attention of the multidisciplinary team.

Formulation When more than one formulation of a drug is available, the clinical pharmacist should endorse the prescription clearly and accurately to minimise the risk of administration errors and to ensure all further supplies are correct. For example, a prescription for

diltiazem should be endorsed with the appropriate brand and formulation, eg, "Adizem XL", to ensure that there is no confusion with a similar strength of any other twice-daily modified-release preparation of diltiazem.

If the patient is unable to swallow solid oral dosage forms, a clinical pharmacist should review all medicines prescribed to see if it is appropriate to supply them as liquid formulations. If a liquid preparation is not available, the pharmacist should advise the prescriber about alternative methods of drug administration.

Sometimes the patient requires administration of his/her medication via a nasogastric or naso-jejunal tube, in which case the pharmacist may need to endorse the chart with additional instructions.

When alternative routes and/or formulations are used, the clinical pharmacist should advise the multidisciplinary team about any dosage adjustments that may be required.

Administration The clinical pharmacist plays an important role in the education and instruction of nursing staff on the correct administration of medicines. This is particularly the case for medicines to be given intravenously because this route is often more complicated and is associated with appreciable risk.

Monitoring Providing advice about the appropriate monitoring of medicines is a role which is often undertaken by the clinical pharmacist. Advice regarding correct sampling times, interpretation of results and management of inappropriate results is frequently sought by medical staff in relation to medicines which require therapeutic drug level monitoring. Clinical pharmacists can be involved in the provision of therapeutic drug monitoring services established within some hospital pharmacies, and this is discussed in another part of this special feature on bespoke pharmacy (from p160).

Patient counselling Counselling and educating patients in hospital has been shown to improve their understanding of the importance of continued therapy and medication concordance following discharge.⁶ Therefore, clinical pharmacists should ensure that patients and/or carers, where appropriate, are educated about the medicines they are prescribed. This includes informing them of the reasons why they are taking each medicine and providing instruction on their correct administration. Pharmacists should target those patients who have a complicated regimen so that they fully understand how to take their medicines. Examples of patients who should be counselled include those taking bisphosphonates, oral anticoagulants and reducing doses of corticosteroids. Patients should be encouraged to ask ques-

tions about their medicines and answers should be provided in addition to written information in patient leaflets.

Discharge Pharmacy discharge has been defined as "the discharge of a patient with the assurance that all pharmaceutical requirements including information are communicated in a safe, efficient and user-friendly manner".⁷ Preparation for discharge is a process which takes place as soon as possible after admission. All action taken by a clinical pharmacist during a patient's hospital stay should ultimately contribute to preparation for successful discharge to the community.

Non-compliance with medication has been highlighted as one of the factors which can contribute to unsuccessful discharge and readmission.⁸ This can be minimised by making an assessment during the hospital stay of how compliant a patient is likely to be following discharge. This is particularly important for those patients who are discharged without a designated carer. Measures such as enrolling the patient on a compliance programme and the use of a compliance aid should be considered by the clinical pharmacist. This will usually require multidisciplinary involvement and liaison with community services. Patients who are already enrolled on a compliance programme in the community should be identified by the clinical pharmacist when confirming the medication history. Appropriate documentation should be made in the pharmaceutical care plan to ensure continuation of the service following discharge.

Since the introduction of the Community Care Act⁹ 10 years ago, there have been many government initiatives to improve the communication across the primary/secondary care interface. Clinical pharmacists who actively participate in the discharge process can ensure important pharmaceutical information is communicated as patients move between the two settings. A clinical pharmacist can help speed up the process to minimise bed blockage and trolley waits. This is particularly significant when pharmacists are involved in writing patient medication discharge prescriptions.¹⁰ At Chelsea and Westminster Healthcare NHS Trust, team and ward-based clinical pharmacists in all directorates transcribe discharge medicines for patients who are on the point of leaving. This has reduced significantly the length of time between the point at which the patient is told they may leave and that at which they are actually discharged from the ward. There are similar services provided by clinical pharmacists working in other hospitals around the UK.

SUMMARY

In summary, clinical pharmacists are effective in identifying and solving drug-related

problems when patients are admitted to hospital.

Reconfirmation of patient medication histories and writing discharge prescriptions are valuable roles played by the clinical pharmacist which help to streamline the transfer of patients between the primary and secondary healthcare settings. In addition, the clinical pharmacist will clinically screen prescriptions, ensure appropriate monitoring of drug therapy, provide advice regarding the correct administration of medicines and educate patients. These functions help tailor medicines to the needs of the individual patient for whom they have been prescribed.

This article has highlighted the expanding role of the clinical pharmacist throughout the hospital stay. The increasing use of automation in hospital pharmacy should reduce the time spent by pharmacists undertaking dispensing and checking duties. In turn, this should allow more pharmacists to take up designated positions in the areas of admission and/or discharge to continue providing patient-focused care to these, the areas that need it most.

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