The art of prescribing

Introduction

Most junior doctors are unaware of the sizeable contribution that prescribing aberrations make to hospital adverse events and medicolegal activities. The incidence of drug-related adverse events in patients in hospital varies widely. It is estimated that about 7% of hospital admissions are related to medication problems, although this may rise to 30% in the elderly, and these account for 4–7000 deaths per year in the UK (Karch and Lasagna, 1975; Brennan et al, 1991; Dean et al, 2002).

Changes to undergraduate medical courses in the 1990s mean that many students are no longer examined on how drugs interact with the body and which drugs to prescribe; a quarter of medical schools have closed their pharmacology departments.

The financial implications of this for the NHS are great as adverse drug events have been reported as the leading cause of medical injury in hospital practice, about half of which are the result of errors. Reports from independent insurers show that injuries caused by drugs were the most common reason for procedure-related malpractice claims (Peyriere et al, 2003; Pirmohamed et al, 2004).

Prescribing is about communicating

It may sound obvious, but the act of prescribing is to communicate the prescriber's intentions for a patient to the person(s) who will dispense or administer the drugs. For this to work properly, the very minimum information required is the drug name, form (e.g. liquid, cream, patch), dose, route, and frequency of administration. (There are also legalities like signature and date, and additional instructions which might include duration of treatment, precautions or limitations such as 'only if diastolic bp>60 mmHg', or other notes.)

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In surveys performed in Thames Valley Hospitals in 1999, 21% of inpatient drug prescriptions lacked even the basic information and 32% of inpatient drug prescriptions were endorsed by a pharmacist to provide the necessary warnings and advice for the nurses to administer the drug safely (Oxford Regional Clinical Pharmacy Group, unpublished data, 1999), while 80% of patients had their charts endorsed by pharmacists (*Figure 1*).

While it is true that modern prescribing is a team effort, and junior doctors will be grateful for pharmacists and nurses who help them out, there will be situations where there is little real check between the doctor prescribing and the patient getting the drug. Therefore the intention to prescribe and the actual prescription must both be correct.

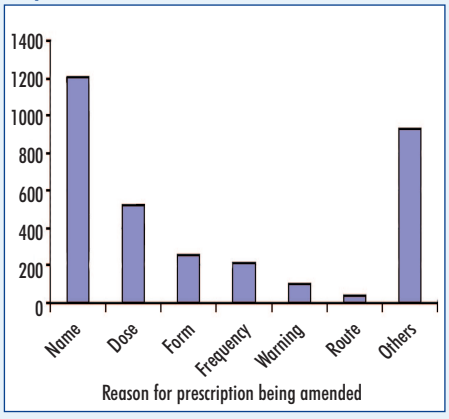
Remember that you are not the only person who gets tired on duty. Nurses can lose concentration or fail to read your mind accurately in the absence of a clear prescription.

How to prescribe well: communicating with colleagues

An example of a well-completed prescription form is shown in *Figure 2*. To avoid errors when completing prescription forms, the following are important:

1. Complete every box.
2. Write in BLOCK CAPITALS. Once you get into the habit it doesn't slow you down too much and it prevents a lot of confusion. There are numerous cases of poor handwriting leading to the wrong drug being given and the patient suffering.
3. Do not use unorthodox abbreviations. Patients who should have had zidovudine have been given azathioprine because someone wrote 'AZT' on a chart, thinking that 'everyone' would know what it meant.
4. The dose should be specified clearly in appropriate units. Never abbreviate the word 'units' to 'U' because it looks too much like an extra zero and many patients have had a ten-fold overdose of insulin or heparin as a result. 'Micrograms' and 'nanograms' should never be abbreviated. Doses less than 1 mg are more likely to be given correctly if written as micrograms (e.g. DIGOXIN 125 micrograms rather than 0.125 mg).
5. Don't write down several routes (e.g. iv/im/oral) unless the dose is the same for each route. If you do want to give nurses the option, make it clear which is the preferred route.
6. Make sure that the dosing frequency and times of administration match (it is surprising how often a twice-daily drug is given once daily) and that the times suit the nursing procedures as well as the patient's needs. Asking nurses on your ward about the best times to administer drugs will save you a lot of hassle later.
7. If writing a prescription for an as-required (prn) drug make the indication clear (is codeine for pain or diarrhoea?).
8. Specify any restrictions very clearly. Heart failure drugs may be required even if the blood pressure is low whereas the same drug given for hypertension is contraindicated when the pressure drops. Consider what you write in the patient's notes as well as on the chart; will a cover house officer know what to do when the nurse calls him/her at the weekend?
9. The differences between brands of the same medication are closely controlled by the licensing authorities and are not often important; the pharmacy will buy and supply the best deal, which may not be the cheapest brand but will take account of ease of administration and other practical issues. Therefore you should use generic (non-proprietary)

Figure 1. Endorsements made by pharmacists in 10 155 inpatient prescriptions in Thames Valley Hospitals.



names for most prescribing. In some cases, however, the differences between brands can matter and the *British National Formulary* (BNF) (Mehta, 2008) advises the use of brand names for some drugs including antiepileptic and transplant medication.

There is good advice on prescribing in the front of the BNF – it is worth reading this from time to time to remind yourself. The rules for writing controlled drug prescriptions can also be complicated but the BNF offers good advice and your hospital should have a procedure for doing this. Your ward pharmacist will also guide you if asked.

Communication issues: when a patient arrives

Good communication is not only important when a patient is in the hospital, it is vital when the patient moves from the community into hospital and back again.

Getting an accurate drug history when a patient arrives is notoriously difficult. There are national moves to have a system of 'green bags' for patients and ambulance crews to transport their medicines and most GPs can provide a list of what has been prescribed. The problem may be, however, that the patient is not taking what the GP prescribed; he/she may take too much or too little. This non-adherence is widespread for all sorts of good and bad reasons, and treatment strategies must be agreed with patients (concordance) or they are doomed to failure.

In most hospitals, medical admissions will be checked by a pharmacist within the first day or so of their stay and several sources of information will be used to create an accurate drug history. Surgical patients will often have been seen in a pre-admission clinic where drug-taking can be checked.

If in doubt about a patient's medication when he/she arrives, follow the principle of 'first do no harm'. Many medications can be stopped safely for a period while checks are made or progress is observed. Some problems are the result of non-adherence but some are the result of adverse reactions. Stopping medication without careful consideration would not be wise, however, for antiepileptic medications, many cardiac medications, transplant immunosuppression medication, antipsychotic drugs and bronchodilators.

Communication issues: when a patient leaves

When a patient leaves your care they may be cared for by a lay carer or relative, a residential home assistant or no-one. It is essential that your intentions are clear to all, and are agreed by the patient.

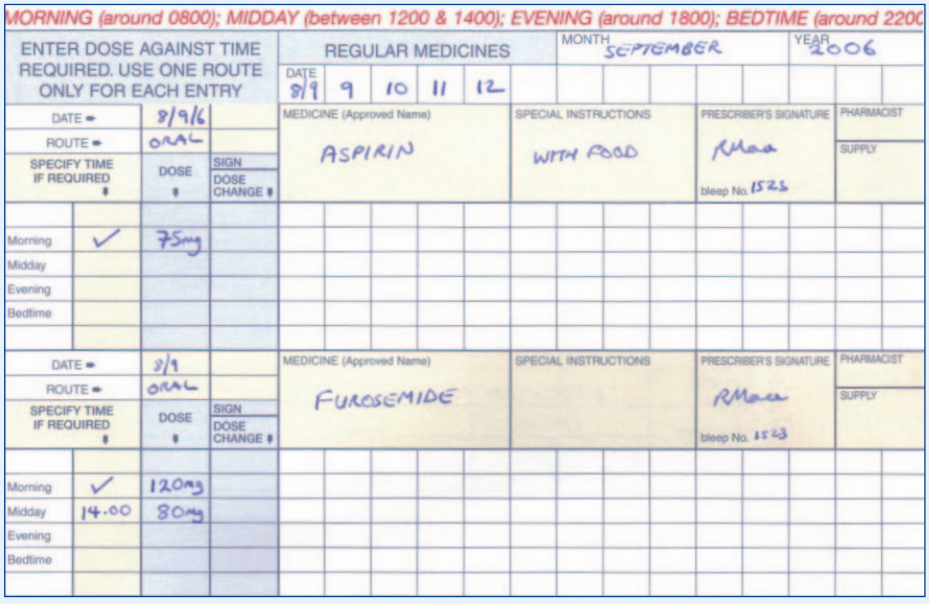
If prescribing antibiotics, or other short courses including steroids for asthma or post-acute coronary syndrome antiplatelet agents, make sure the stop date is clear.

If the patient needs a special administration system (e.g. a Dosette box) to help him/her adhere to the prescription the pharmacy will need advance notice to make arrangements with a community pharmacy and GP to continue the supply without interruption. A carer may need to be instructed on how to deal with such devices. Therefore, try to predict the discharge prescription well before the patient goes home. Allow plenty of time for the patient to be counselled about what the medication is for and how to use it. The British Thoracic Society and Scottish Intercollegiate Network guidelines (2005) recommend that patients on respiratory medication should use their exact discharge prescription for 24 hours in hospital before discharge to establish that it is indeed the appropriate prescription.

Conclusions

This article has focussed on the practicalities of writing a prescription but further articles in this series will consider issues relating to particular groups of drugs. **BJHM**

Figure 2. A typical inpatient prescription form.



Conflict of interest: Dr Shakur is a council member for the Royal Society of Medicine's Research and Pharmaceutical section.

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KEY POINTS

- Communicate clearly and fully.
- Do not abbreviate; it is a shortcut to disaster.
- Do not assume others will cover your deficiencies.
- Asking for help is a sign of strength, not weakness.