

Prescribing in Family Practice

Objectives:

- Writing prescriptions
- Cost-effective prescribing
- Adverse drugs reactions
- Prescribing for special groups
- Medicine Management and Concordance

(Note: Text in GREEN is taken from the Oxford Handbook of General Practice, 4th Edition)

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OBJ: 1

Prescription writing: Prescriptions should be **legible** and in permanent ink, and include:

- **Patient details**— full name, address, and age
- **Date**
- **Full name of the drug** (not abbreviated), with quantity to be supplied and dose interval (avoid the use of decimal points, e.g. for quantities <1g, write in mg)
- **Signature of the prescriber in ink**
- **Name and address of the prescriber**

Who is a good prescriber?

- 1- One who ensures that diagnosis is correct.
- 2- Makes a positive & correct decision that drug is needed.
- 3- Chooses a drug appropriate to patients need.
- 4- Who consults patient and ensures his/her informed consent.
- 5- Who explains patient's role and secures his/her co-operation.
- 6- Who terminates treatment when no longer needed.

Is it always Necessary to Prescribe?

Before prescribing, always keep these questions in mind:

- 1- Is the diagnosis still in doubt?
- 2- Is the value of treatment debatable?
- 3- Are the combinations & formulations irrational?

Why so irrational?

- 1- Increased cost of un-necessary prescription to the health care system.
- 2- Harmful prescribing fails to meet acceptable standards.
- 3- Chances of polypharmacy – effecting vulnerable groups like elderly.

Why Family Medicine/PHC and Rational Use of Drugs?

The Barbara Starfield Study related to the practice of Family Medicine and health outcome indicators of a country:

- The studies showed a relationship **between more & better primary care & most health outcomes studied.**
- Evidence showed a **positive** impact of primary care on prevention of illness & death.
- Primary care (in contrast to specialty care) is **associated with a more equitable distribution of health in populations.**

How we can improve prescribing habits:

There is no such thing as GOOD MEDICINE or BAD MEDICINE.

“Good prescribing is the prescribing based on the **best available evidence & current guidelines**”

How to prescribe rationally:

- Is a drug really required?
- Will it work?
- Will it do harm?
- Is it the cost-effective choice?
- Have all alternatives been considered?
- Is the likely risk-benefit ratio acceptable?

Social reasons for inappropriate prescribing:

- Any pressure of pharmaceutical advertising.
- Patient's demand.
- Habit, peer group recommendation & ignorance.
- To avoid confrontation.
- Because of medico legal worries.
- To play for time until true picture of the disease becomes clearer or natural recovery occurs.
- To hasten the conclusion of consultation.

OBJ: 2

Evidence – Based Prescribing:

Decisions on what to prescribe were in the past, largely based on guesswork or faith. With the advent of information from randomized controlled trials and their evaluation using systematic reviews and other techniques, such decisions can now be based on scientific evidence.

Failure to do this may:

- Cause patients to suffer unnecessary side effects of ineffective drugs.
- Deprive patients the chance to benefit from effective treatments.
- Waste valuable resources.

Generic prescriptions:

Use of generic names when prescribing is one of the simplest ways to decrease cost of drugs. Every marketed drug has a chemical name, generic name, and a proprietary or brand name. For as long as the drug's patent is valid, the company that developed the drug will derive income from the prescription. Once the patent has expired, competitors can manufacture the drug and market it under its generic or an alternative brand name. If the drug is prescribed generically, the pharmacist decides which brand to supply and market forces drive price down.

Advantages of Generic Prescribing:

1. Reduced cost
2. Professional convenience; everyone knows it
3. Convenient to the patient (pharmacists do not stock each brand of a given drug. However, generic preparations of all commonly used drugs are available).
4. Convenient to the pharmacist

Reason for Not Prescribing Generically:

1. Drugs with a low therapeutic index e.g. Lithium, Carbamazepine, Phenytoin (small difference in plasma concentration can be significant) – this is especially true for seizure medications.

2. Modified release formulations, difficult to standardize e.g. Diltiazem, Nifedipine.
3. Formulations containing > 2 drugs. (Not all combinations have generic names)

Placebo medications:

It is a harmless pill, medicine, or procedure prescribed more for the psychological benefit to the patient than for any physiological effect.

Ethical reasons to favor placebo:

- It is effective – does mechanism matters if results are satisfactory?
- Sometimes reassuring.
- Helps morale in chronic & incurable diseases.
- No significant toxicity.

Ethical reasons against against placebo:

- It is a deception and abuse of a relationship of mutual trust.
- It may create an ill-feeling if the deception is uncovered.
- It may delay the true diagnosis.
- It reinforces a sick role.

Placebo side-effects:

It has been reported that 40% can experience side effects like:

- Headache
- Anorexia
- Diarrhea
- Dry mouth
- Palpitations
- Vertigo.

Risks of self-medication:

- Drug interaction with prescribed medicine.
- Increased risk of self-medication side effects.
- Taking wrong preparation & wrong formulations.
- **Less chances to offer any opportunistic health promotion advice.** – (Because the patient is self-medicating at home, there is no chance for the physician to

advise him about any other conditions he may have, such as being overweight, or diabetic, etc.)

OBJ: 2

Adverse Drug Reactions:

Classification:

Type A: Common and relate to the pharmacology of the drug (e.g. constipation with opioids)

Type B: Rare, unpredictable, and often serious

Within this classification, reactions may be:

- **Allergy:** Anaphylaxis, allergic rash
- **Toxic effect**, e.g. ataxia with carbamazepine if dose is too high
- **Predictable:** Well-recognized side effect, e.g. dry mouth with amitriptyline, GI bleeding with aspirin
- **Idiosyncratic:** Unpredictable and unique to the individual

Prevention of Adverse Drug Reactions:

- Never use a drug unless there is a good indication.
- Do not use a drug in pregnancy, unless the need for it is **imperative**.
- **Ask if there is history of allergy/idiosyncrasy.**
- Consider possible drug interaction.
- Age and hepatic or renal impairment may require much smaller doses.
- Prescribe as few drugs as possible.
- Give clear instructions, especially in elderly.
- Be particularly alert for adverse reactions or unexpected events, when prescribing new drugs.
- Fill the required form in case of suspected adverse reaction. Warn the patient if serious adverse reactions are liable to occur.

Delayed Drug Effects:

Some adverse reactions may become manifest months or years after treatment e.g. chloroquine retinopathy.

Principles for antibiotic selection

Allow for a number of variables:

- History of allergy/sensitivity
- State of renal and hepatic function
- Increasing resistance
- New information on side effects
- Age of patient & duration of therapy
- Dosage and route of administration
- Site, type and severity of infection
- Individual response
- If female, whether pregnant, breast feeding or on oral contraceptives
- Likely organism and antibacterial sensitivity?

Special Problems in Prescribing:

- Delayed drug effect.
- In elderly.
- In children.
- In hepatic impairment.
- In renal impairment.
- In pregnancy.
- In breast feeding.
- In palliative care.
- Drug inter-actions.

OBJ: 4

Prescribing for Elderly:

Problems commonly encountered when prescribing to the elderly:

Polypharmacy: Elderly people often have multiple problems. It is easy to keep adding drugs for each new problem leading to polypharmacy.

Form of the medicine: Swallowing tablets can be difficult for elderly people.

Consider using liquid preparations or giving advice to take medication with plenty of water.

Increased susceptibility to side effects: Common due to altered:

- **Pharmacodynamics:** leading to increased susceptibility to GI side effects (e.g. constipation with opioids; gastric irritation with NSAIDs) and increased sensitivity to effects of CNS drugs, e.g. benzodiazepines, opioids.
- **Pharmacokinetics:** decreased renal function is particularly important—**always assume any elderly person has moderate impairment if renal function is not known**

Social and personal factors: low level of home support; physical factors, e.g. poor vision, poor hearing, or poor manual dexterity; and mental state e.g. confusion/disorientation, depression—can all affect ability of an older person to take medication.

Guidelines for prescribing for the elderly:

1. Limit range of drugs.
2. Reduce dose.
3. Review regularly.
4. Simplify regimens.
5. Explain clearly.
6. Repeats and disposal.

Prescribing for Children:

1. Special care needed in neonates
2. Avoid injections if possible
3. Actions of drugs and their pharmacokinetics may be different than adults
4. Suitable formulations may not be available for children
5. Drugs are not extensively tested in children

Prescribing in Hepatic Impairment:

1. Impaired drug metabolism (In severe liver failure the dose may need to be decreased, and/or the time between each dose increased).
2. Hypoproteinemia (This affects binding of drugs. Highly protein-bound drugs can become toxic in normal dosage)
3. Reduced clotting (In liver disease, effects of oral anticoagulants are increased)

4. Hepatic encephalopathy (Drugs that depress cerebral function (e.g benzodiazepines, opioids) can precipitate encephalopathy if severe liver failure)
5. Fluid overload (Drugs causing fluid retention (e.g. NSAIDs) make edema and ascites worse)
6. Hepatotoxic drugs

Prescribing in Renal Impairment:

1. Reduced renal excretion of a drug (May cause toxicity)
2. Increased sensitivity to some drugs even if elimination is not impaired
3. Many side effects are tolerated poorly (Nephrotoxic drugs may have more side effects)
4. Some drugs become ineffective

Prescribing in Pregnancy:

Particular care is needed in prescribing for women in child bearing age or men trying to father a child.

Drugs taken by the mother can harm the fetus at any stage of the pregnancy:

- A. **First trimester** – congenital malformations
- B. **Second and third trimester** – effect on the growth or the functional status of fetus, including toxic effect on fetal tissues.
- C. **Shortly before term or during labor** – possible adverse effect on labor or neonate, after delivery.

Prescribing in Breast-feeding:

Avoid drugs (if possible) which:

1. Cause inhibition of sucking reflex (e.g. phenobarbital).
2. Suppress lactation (e.g. bromocriptine)
3. Appear in a significant quality in the milk (e.g. fluvastatin).

If not sure, look up at the therapeutic guidelines from a reputable source (e.g. BNF).

Prescribing in Palliative Care:

1. The importance of pain relief and other symptoms are **more important** than sticking to the usual drugs or dosages.
2. Oral medications are preferable, if possible.
3. As few drugs as possible should be prescribed.
4. Doctor – patient relationship is usually more effective than the drug.

Drug Interactions

A Family Physician is not expected to know all the possible drug interactions, but awareness of some important categories is imperative:

- Anticonvulsants
- Oral contraceptives.
- Warfarin

OBJ: 5

Medicine Management and Concordance:

- **Medicine management:** Defined as “facilitating the maximum benefit and minimum risk for medicines for individual patients”. Its **components** are:
 - *Optimizing a medication regime* (right drug at the right time)
 - *Facilitating adherence to medications.*
 - *Organizing supply and administration support.* (such as drug refill systems)
- **Concordance:** A process of prescribing and medicine taking based on partnership. **It is not the same as compliance** as it does not refer to a patient's medicine-taking behavior, but rather the **nature of the interaction between clinician and patient**. Lack of patient concordance is a major challenge in general practice.

Consequences of non-concordance include:

- Failure to reach therapeutic levels
- Wasting of resources.

Causes of non-concordance:

- **Patient beliefs:** strongest predictor of concordance. (e.g how natural a medicine is seen to be, the dangers of addiction and dependence, have all been shown to influence concordance).
- **Lifestyle choices**
- **Information:** Poor understanding of the condition and/or treatment.
- **Practical:**
 - Forgetfulness
 - Inability to open containers.
- **Professional:**
 - Poor doctor-patient relationship
 - Mistakes in prescribing

Factors Related to Poor Compliance:

1. Purpose of medicine not clear to patient.
2. Perceived lack of efficacy of medicine.
3. Real or perceived adverse effects by the patient.
4. Lack of understanding between the doctor and the patient.
5. Instructions for administration not clear.
6. Unpleasant taste.
7. Complicated regimen – poly-pharmacy.
8. Physical difficulty in taking medicines.
9. Medicines too costly.

Practice Formulary

An effective way to limit prescribing and costs of prescribing:

Essential features:

- Evidence of efficacy
- Evidence of safety
- Cost-effectiveness
- Local policy

Conclusion:

- While prescribing, apply the saying ‘think before you ink’ – by prescribing this drugs are you going to do more harm or more good?
- Factors related to compliance of medications by the patient must be considered.
- Cost-effective and generic prescribing is generally preferable.
- Prescribing in special circumstances requires special attention.

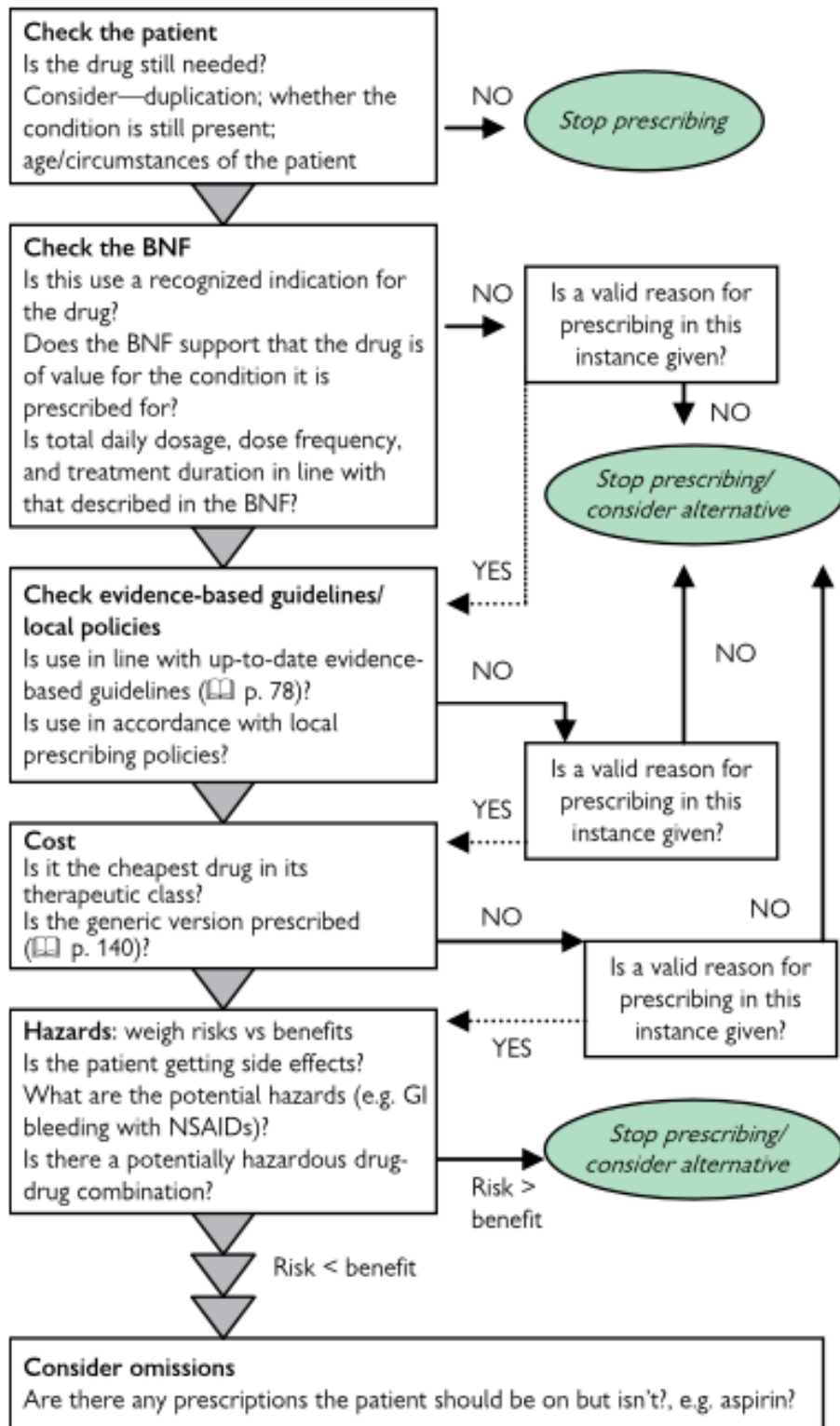


Figure 6.1 Deciding whether a prescribed drug is appropriate

useful diagram from the book