



[Color index : **Important** | **Notes** | Extra]

Objectives:

not given

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Introduction

❖ 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 relationship b/w more & better primary care & most health outcomes studied.
- Evidences shows 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.
- One primary care physician / 10,000 population.
- In US 127,617 deaths /year could be saved by increase in number of primary care physicians.

❖ 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 unnecessary prescription to the health care system.
- 2- Harmful prescribing fails to meet acceptable standards.
- 3- Chances of polypharmacy → effecting vulnerable groups like elderly.

❖ How we can improve prescribing Habits?

- There is no such thing as **GOOD MEDICINE** or **BAD MEDICINE**;
However, “A **good prescribing** is the prescribing based on the best available evidence & current guidelines “



❖ Evidence – Based Prescribing:

- 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.

❖ Advantages of Generic Prescribing:



➤ Reason for not Prescribing Generically:

Prescribing medicines **generically** rather than by brand name can improve cost-effectiveness and is encouraged. However, there are some circumstances in which **brand-name prescribing is preferred**. These include:

- 1- Drugs with a low therapeutic index e.g. Lithium, Carbamazepine, Phenytoin (because small difference in plasma concentration can be **significant**)
- 2- Modified release formulations, difficult to standardize e.g. Diltiazem, Nifedipine.
- 3- Formulations containing ≥ 2 drugs.



❖ How to prescribe Rationally:

You should first think about these aspects:

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



❖ Who is a good prescriber?

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

★ 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.

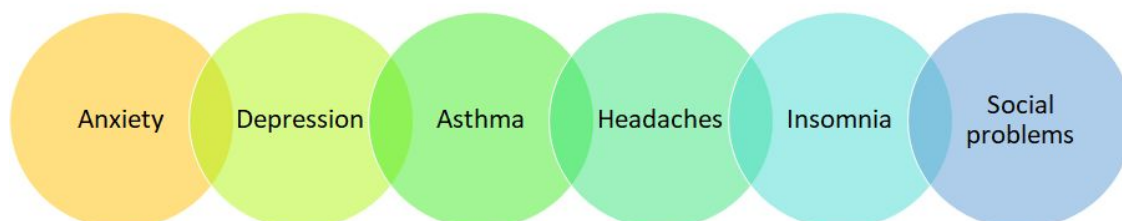
- To play for time until true picture becomes clearer or natural recovery occurs.
- To hasten the conclusion of consultation.

Placebo medication:

❖ What is it?

A **harmless** pill, medicine, or procedure prescribed more **for the psychological benefit** to the patient than for any physiological effect.

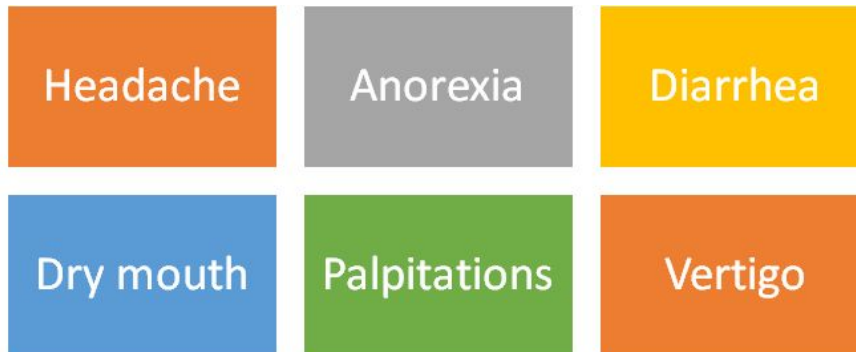
Evidence shows that response **can be psychological as well as physiological**; Conditions that could be helped are -for example-:





❖ Placebo side effects:

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



Adverse Drug Reactions:

❖ 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 H/O 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 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.

❖ Prescribing cascades:

Examples of prescribing cascades

Initial drug therapy	Adverse drug event	Subsequent drug therapy
Antipsychotics	Extrapyramidal signs and symptoms	Antiparkinsonian therapy
Cholinesterase inhibitors	Urinary incontinence	Incontinence treatment
Thiazide diuretics	Hyperuricemia	Gout treatment
NSAIDs	Increased blood pressure	Antihypertensive therapy

Medication prescribing cascades occur when patients are prescribed medications to treat the adverse side effects of previously prescribed medications. This leads to polypharmacy and further increases the risk for adverse drug events. Periodic review of medication lists, especially in older adults, can minimize this risk.

NSAIDs: nonsteroidal antiinflammatory drugs.

Data from: Rochon PA, Gurwitz JH. Optimizing drug therapy for elderly people: the prescribing cascade. *BMJ* 1997; 315:1096 and Gill SS, Mamdani M, Naglie G, et al. A prescribing cascade involving cholinesterase inhibitors and anticholinergic drugs. *Arch Intern Med*



◆ 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:

A. Prescribing for Elderly:

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

B. 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.

C. Prescribing in Hepatic Impairment:

1. Impaired drug metabolism.
2. Hypoproteinaemia.
3. Reduced clotting.
4. Hepatic encephalopathy.
5. Fluid overload.
6. Hepato-toxic drugs.

D. Prescribing in Renal Impairment:

- A. Reduced renal excretion of a drug.
- B. Increased sensitivity to some drugs even if elimination is not impaired.
- C. Many side effects are tolerated poorly.
- D. Some drugs become ineffective.

E. Prescribing in Pregnancy:

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

- 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.

Shortly before term or during labour → possible adverse effect on labour or neonate, after delivery.

F. 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).



G. 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.

H. Drug Interactions:

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

- Anti-convulsants.
- Oral contraceptives.
- Warfarin.

Compliance:

- **Compliance**: “a willingness to follow or consent to the wishes of another person”
- **Adherence**: “The extent to which the patient’s action matches the agreed recommendations”
- **Concordance**: “The process of prescribing and medicine-taking based on partnership”

In other words:

- **Compliance**: Extent to which patient’s behavior matches recommendations from the prescriber.
- **Adherence**: Extent to which the patient’s behavior matches **agreed** recommendations from the prescriber.
- **Concordance**: Extent to which the patient’s behavior matches **agreed** recommendations from the prescriber **after exploring and discussing the patients beliefs, views and opinions.**

❖ 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.

◆ Adherence:

Table 1

The AIDES method for improving adherence to medications

A: Assessment	Assess all medications
I: Individualization	Individualize the regimen
D: Documentation	Provide written communication
E: Education	Provide accurate and continuing education tailored to the needs of the individual
S: Supervision	Provide continuing supervision of the regimen
