

**Table 1.3:** Main areas of clinical pharmacy practice

- Ambulatory care
- Critical care
- Drug information
- Geriatrics and long-term care
- Internal medicine and subspecialties
- Cardiology
- Endocrinology
- Gastroenterology
- Infectious disease
- Neurology
- Nephrology
- Obstetrics and gynecology
- Pulmonary disease
- Psychiatry
- Rheumatology
- Nuclear pharmacy
- Nutrition
- Pediatrics
- Pharmacokinetics
- Surgery

### *Clinical Pharmacy as a Specialization<sup>8-10</sup>*

The pharmacotherapy specialist designs, implements, monitors, evaluates, and modifies patient pharmacotherapy to ensure effective, safe and economical patient care. Time to time, guidelines come for proper conduct of clinical pharmacy.

- a. **Information gathering and interpretation:** Clinical pharmacists can retrieve, analyze, evaluate, and interpret the scientific literature as a means of providing patient- and population-specific drug information to health professionals and patients.
- b. **New knowledge:** Clinical pharmacists participate in the generation of new knowledge relevant to the

Bedridden patients may have difficulty getting up several times a day to take their medication.

## 2. Functional issues

- a. *Memory loss*: Forgetfulness is the most common barrier hindering the elderly in taking their medications in the prescribed manner and on time. Sometimes, elderly patients can poison themselves after forgetting that they have taken the medicines more than once as well.
- b. *Side effects*: Negative side effects of some medicines prevent a person from taking their medications. In elderly, and in children, side effects can be particularly troublesome.
- c. *Confusion*: Confusion arises especially when multiple drugs and complex regimens are prescribed to the patients. It becomes very difficult to keep medications organized properly and also to remember how to take each drug. If the directions are unclear and not properly described, the confusion can occur. It is now apparently clear that the number of drugs are directly proportional to the compliance. Therefore, it is advised that the number of drugs to be prescribed should be kept as minimum.
- d. *Fixed income*: Most elderly people are retired and depend upon their pension or social security schemes for all expenses; therefore, it becomes difficult for them to obtain more expensive medications.
- e. *Multiple pharmacies*: It may be difficult for the patient to keep up a record of medications he or she should be taking if medications are obtained at more than one pharmacy. It is also difficult for the pharmacist to assist the patient in complying with drug regimens.
- f. *Solidarity*: Many people live alone and may not have someone around who can assist them with their medications regimens.
- g. *Alternative drugs*: Many patients are taking the drugs of alternative system of medicines, concurrently or they drop out on the mainstream drugs for the time being and try the drugs of alternative system of medicine.

1. Age
2. Renal impairment
3. Hepatic impairment
4. Frailty
5. Polypharmacy
6. Female gender
7. Previous history of ADRs
8. Genetics

The first four factors predispose to type A reactions because they are determinants of drug toxicity, but the remaining factors predispose to type A or type B reactions.

### Reporting ADRs

Most ADRs are not reported and this can lead to delays in identifying important drug reactions. The reasons for failure



**Fig. 2.6:** Healthcare professionals' knowledge in the area of adverse drug reactions (ADRs) monitoring is deficient. This has been shown in a number of surveys done in Indian settings. The deficiency spans from MBBS students to higher healthcare professions. The National Pharmacovigilance Program of India suggests health care professionals to report the ADRs and anyone in the healthcare can report. Even patients are encouraged to report the ADRs to the concerned authorities.

## Basic Skills of a Clinical Pharmacist

*Only those who have patience to do simple things perfectly ever acquire the skill to do difficult things easily.*

— James J. Corbett

### What is there in this chapter?

This chapter deals with basic skills that a pharmacist has like dispensing, educating patients, ensuring compliance, monitoring, knowledge of side effects and promoting rationale use of medications.

### **PRESCRIPTION REVIEW AND ENDORSEMENT<sup>1-2</sup>**

The following are necessary for the pharmacists in the hospital:

- Pharmacist should do the 'clinical check', i.e. note down all the patient parameters such as drug history, medical notes, etc. while taking the drug history, a clear communication with all those who are primarily involved in imparting healthcare should be done. Hospitals could be difficult places and certain level of familiarity is required (Fig. 3.1).
- That means, the junior residents, senior residents, specialists and nurses should be consulted about the treatment and monitoring that the patient is getting. Notes of every professional mentioned above can be