

Clinical Pharmacy: The Future Necessities of The Profession

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ABSTRACT

Clinical pharmacy is a discipline concerned with the application of pharmaceutical expertise to help maximise drug efficacy and minimise drug toxicity in individual patients. This can only be achieved when the pharmacists function as integral members to the health care team. A basic objective of clinical pharmacy services is to provide the right drug to the right patient at the right time. To meet this objective, two components of clinical pharmacy practice are mandatory. The first component is the overall management of medicines on the ward or at any part of the hospital dealing with drugs through advice on safe handling and formulary management. The second one is the contribution to the care of the individual patient through the provision of drug information and assisting in problem solving. Since one of the pharmacist's responsibilities in clinical practice is to attend and participate in patient's care rounds, the lack of clinical orientation will be an obstacle to their professional success. A clinical practice requires that a major portion of the pharmacist's time be devoted to clinical activities. Obviously there are many significant

difficulties that hinder the implementation of a successful clinical pharmacy service. However, one can overcome these difficulties by the proper clinical pharmacy training.

Introduction:

The concept of clinical pharmacy services is not completely new. One of the most dramatic changes affecting the education and the future of pharmaceutical practice is the emerging concept of clinical pharmacy. As we move into the next century, it is evident that, clinical pharmacy will be one of the important aspects in the practice of the profession. The services provided within the field of clinical pharmacy was seen as an excellent appropriate drug therapy.

Clinical pharmacy is a philosophy emphasising the safe, appropriate effective and economic use of drugs in patient. It is also a discipline concerned with the application of pharmaceutical expertise to help maximise drug efficacy and minimise drug toxicity in individual patients. This can only be achieved when the pharmacists function as integral members to the health care team. The health care team is defined as a group of persons who share a common health goal and common objectives, determined by community needs. Each member of this team contributes, in a coordinate manner, in accordance with his/her competence and skills and respecting the functions of others. All categories of health personnel including those of physicians, nurses and other health professionals such as dentists, pharmacists, sanitary engineers, etc. will have to accept membership in, and, if justified, leadership responsibility for the health team. If the health team concept is to become a reality, each member of the health team must contribute to and benefit from its functioning. Instead of being viewed as performing specialised tasks within the narrow

confines of their past professional training, health professionals must assume new leadership tasks, including the supervision and provision of continuing education to other members of the teams as well as relating to them in the spirit of equality in the achievement of a common objective⁽¹⁾.

The clinical role of the community pharmacist

The clinical role of the pharmacist may be applied today in both community and hospital pharmacy. In the community pharmacy, the pharmacist seeks to collect and integrate information about the patient's drug history; prepares a patient medication record when such records are kept in the pharmacy; clarifies the patient's understanding of the intended dosage regimen and the method of administration and advises the patient of drug-related precautions' monitors and evaluates therapeutic response.

Because the community pharmacist is in a position to be fully aware of the patient's past and current drug history, he or she can therefore, provide essential advice to the prescriber. In addition, the community pharmacist can compile and maintain information on all medicines, particularly new ones, provide this information, as necessary, to other health care professionals and to patients and use it in promoting the rational use of drugs by providing advice and explanations to physicians and to members of the public.

The clinical role of the hospital pharmacist:

A basic objective of clinical pharmacy services is to provide the right drug to the right patient at the right time. Inappropriate medication can have serious consequences, leading to increased morbidity, hospital admission and/or prolonged hospitalisation and even death. In addition it has implications on health budget.

The results of a single study⁽²⁾ have showed that a total of 2103 clinically important medication errors were detected by pharmacist over one year period in a teaching hospital. Medication errors related to incorrect dose were estimated by 58%; failure to modify therapy in accordance with hepatic or renal function, by 14%; failure to account for patients history of hypersensitivity by 12%; use of wrong drug name or dosage by 11%; and incorrect calculation by 11%.

To meet the objectives of clinical pharmacy two components of clinical pharmacy practice are mandatory. The first component is the overall management of medicines on the ward or at any part of the hospital dealing with drugs through advice on safe handling and formulary management. In one particular study the workers have revealed the importance of the introduction of clinical pharmacy services within the operating theatre, of an 850 bed-hospital, to control proper handling and distribution, patient safety, and promote the cost effective use of drugs⁽³⁾. The second one is the contribution to the care of the individual patient through the provision of drug information and assisting in problem solving.

In the hospital, the clinical role of the pharmacist is expanded. Because he had more opportunity to interact with the prescriber, he can promote the rational prescribing and use of drugs. A proactive approach to providing information to physicians and nursing staff can improve the standing of pharmacy. By questioning the patient about his medications history and looking in his medical record the pharmacist can influence the selection of drugs and dosage regimens; monitor both his compliance and therapeutic response; and recognise and report adverse drug reactions (ADR). Most importantly the clinical pharmacist, through therapeutic drug monitoring, can determine optimum

dose regimens for drugs with a fairly narrow range of effective blood levels and serious side effects at toxin levels. The commonest drug to be monitored are theophylline, phenytoin and digoxin. Generally speaking, clinical pharmacists are responsible for all aspects of drug therapy. They should be able to verify therapeutic doses of a specific drug and correlate with haematological laboratory values. They also, should be able to provide correct and quick information as needed and when needed for the health care professionals on proper selection of medications, side effects, drug-drug, drug-food interactions, and drug-laboratory test interference for most of drugs used in particular unit or department.

In addition to providing a safe, effective, appropriate and lowest possible cost of drug therapy, clinical pharmacy services in a hospital should be able to provide a safe and efficient drug distribution system for all patients treated. Their roles include supplying medical staff and nurses with high quality drug information whenever needed and furnish safe and effective drug therapy by supplying nurses with accurately prepared unit-dose drug for patients.

Other clinical roles:

Since one of the pharmacist's responsibilities in clinical practice is to attend and participate in patient's care rounds, the lack of clinical orientation, which all pharmacists realise, will be an obstacle to their professional success. The pharmacist must work co-operatively with the physician in meeting this fundamental purpose. A clinical practice requires that a major portion of the pharmacist's time be devoted to clinical activities. The pharmacist needs to realise that a review of basic drug information is equally essential in order to contribute to the

health care team. In general, numerous creative types of services have been developed by pharmacy which were directed towards clinical care for patient. These activities include drug monitoring and education activities, information management activities, and specialised clinical pharmacy services were the most classes of services recently developed in the field of the clinical pharmacy. However, there are many significant difficulties that hinder the implementation of a successful clinical pharmacy service. These difficulties can be overcome by changing traditional attitudes, philosophies and responsibilities of each component of drug utilisation axis which include physician, pharmacist, nurse and patient.

A call for new skills:

Practising in the patient's care environment does call for new skills from the pharmacist's part and perhaps these skills are the newest addition to the clinical pharmacy practice. This calls upon pharmacists for: i) better vocabulary so that they can understand physicians and communicate with them; ii) training on the aspect of initiating and administering intravenous admixtures or solutions; iii) a refreshing course having the criteria for vein selection, venous puncture, venous cannulation, indication for intravenous therapy, complications, trouble shooting; and practical experience in administering intravenous therapy; iv) foundation of complete description of the new services that pharmacists pledge to provide both in primary and secondary care sectors. Although it is not the usual standard practice to have pharmacists administering intravenous medications, there is no legal statute to prevent this expanded role for pharmacist⁽⁴⁾.

Characteristics of clinical pharmacy personnel:

The appropriate pharmacy personnel to be selected to provide these clinical services should have certain characteristics which can be summarised in the following: a) adequate clinical database, b) self confidence and initiative, c) conscientiousness, and d) desire for professional growth.

Summary and Prospective:

The development of specific and potent drug has moved, substantially but not completely, the pharmacist's responsibility towards the proper use of medicines. The pharmacist can fulfil his or her responsibility by providing the following services where appropriate:

- * Taking patient's medication history on admission, hospitalisation, and discharge.
- * Participating in therapeutic decision making (rounds, formulary, pharmacy and therapeutic committee, reviewing prescription order, OTC drug selection).
- * Selection of dose, dosage form and dosage schedule using the scientific application of biopharmaceutics and pharmacokinetics.
- * Preparing the dosage form (compounding).
- * Providing the medication for the patient or care giver.
- * Educating the patient or care giver.
- * Monitoring of patients for compliance and clinical outcomes (including ADR).

To provide the above mentioned services, the pharmacist has

a moral responsibility to maintain a high level of knowledge and professional competence through a process of life-long learning. This can be achieved through continuing education programme. Opportunities for continuing education need to be offered to pharmacists throughout their careers. The programme should be assessed so that students could acquire the skills and the habits of independent learning and evaluate their own progress. This enables them later on to determine their own continuing education needs. In summary there are many significant difficulties that hinder the implementation of a successful clinical pharmacy service. These difficulties can be overcome by changing traditional attitudes, philosophies and responsibilities of each component of drug utilisation axis that include physician, pharmacist, nurse and patient. Whether you work in the community or a hospital environment, you have a vital role in scrutinising prescriptions to check that the drug prescribed and its dose match the patient requirements in terms of indication, age, underlying disease and concurrent medication.

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