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Role of Clinical Pharmacy Services in Healthcare System

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ABSTRACT

Clinical pharmacy services are needed into practice for better pharmacotherapy towards safe and optimal patient care. It takes into account, patient-centred orientation with specialized therapeutic knowledge, experience and judgement to assure prudent patient outcomes. Medication Reconciliation is one of the fundamental responsibilities of clinical pharmacy as it forms the basis for many different clinical pharmacy activities such as patient counselling, therapeutic drug monitoring, and detection and regulation of probable adverse drug reactions; therefore, it is the principal duty of a clinical pharmacist to approve drug orders. In many hospitals, where clinical pharmacy services are not fully established much commitment is needed for betterment and expansion of this system in contemplation of bringing out the benefits of these services for advantage of society. Clinical pharmacy mainly focuses on a patient-oriented attitude. They require regular and frequent interactions with the physicians and other health care providers which contribute to improved quality of care. The provision of pharmaceutical care can result in expanded identification of drugs and dose associated problems in admitted patients. The decision-making process for choosing economical and effective medications can be assisted by pharmacists in order to improve the standard of patient care and clinical results by ensuring that medications are chosen in accordance with local protocols and formularies. Clinical pharmacist plays a key role in the patient safety initiatives, intercepting and acting towards feasible prescribing errors. Clinical pharmacy services can serve as vital contributing factor in the betterment of health care system. Pharmacists have roles and responsibilities both as team members and as individual practitioners ensuring that patients benefit from their pharmaceutical care.

INTRODUCTION

Clinical Pharmacy Services are characterized as professional services which are provided by clinical pharmacists. They utilize their expertise and knowledge to make a vigorous contribution in patient health, by interacting and communicating with both, the patients and other healthcare experts in a health care sector. Clinical pharmacy is a biomedical science discipline where pharmacists provide patient care that improves medication therapy and promotes overall health, wellbeing and disease prophylaxis. Clinical pharmacy mainly focuses on a patient-oriented attitude. They require regular and frequent interactions with the physicians and other health care providers which contribute to improved quality of care. In order to keep serving the best to the patients and related health care professionals, health care sector and pharmacy profession are growing day by day. Transition of pharmacy profession from product focused to patient focused in previous couple of decades, with rising population, rising prevalence of

diseases and ageing have demanded more services from health care providers, including pharmacists. With the implementation of pharmaceutical care concept, over a long period, pharmacists have taken many new responsibilities in their daily activities like in clinical & community settings, immunization, therapeutic drug monitoring and need based research to enhance efficient use of medicines in health care settings. This area of pharmacy is concerned with rational use of medication. They are also employed in supporting the health care team, monitoring and evaluating therapies for patient's appropriateness and effectiveness. Clinical pharmacy services can serve as a crucial contributing factor in the advancement of health care system.[1,2]

Clinical pharmacy services, which are provided to a patient, contains a number of activities that overlap and many of which are performed concurrently. These activities facilitate the contribution of the pharmacist's component of the medication action plan, with the goal of optimising the use of medicines.

There are six fundamental components of a medication action plan for an individual patient:

1. Interpretation of patient-specific data
2. Identification of clinical problems
3. Establishment of therapeutic goals
4. Evaluation of therapeutic options
5. Individualisation of therapy
6. Monitoring of patient outcomes

There are ten specific clinical activities that contribute to the components of a medication action plan:

1. Taking accurate medication history of the patient
2. Taking decision to prescribe a medication
3. Assessing current medication management of the patient
4. Clinical review
5. Therapeutic drug monitoring
6. Ward round participation
7. Providing drug information to healthcare professionals.
8. Patient counselling
9. Information regarding ongoing care
10. Adverse drug reaction management[3]

These clinical activities play vital role in medication action plan and the goal of these activities is to improve the quality of care and eventually the health of all patients. Thus, each of the above clinical activities are explained as follows:

1. Taking accurate medication history of the patient

A medication history is that part of a pharmaceutical consultation that identifies and documents allergies or other serious adverse events, as well as information about how medications are taken currently and how they were taken in the past. It is the initial point for medicines reconciliation and medication review. Obtaining accurate and complete medical histories has been shown to possess a positive effect on patient care, and pharmacists have demonstrated that they will compile such histories with a high degree of precision and reliability as a part of medicines review. The gain to the patient is that prescribing errors of omission or transcription are recognised and corrected early, reducing the threat of harm and enhancing care. Discrepancies between the history recorded by the health care team and that which the pharmacist elicits fall into two categories: intentional (where the medical team has made a decision to alter the regimen) or unintentional or accidental (where an entire record was not obtained). Discrepancies should be clarified with the prescriber or referred to a senior most clinical pharmacist.[4]

Importance of accurate drug history includes:

- To prevent prescription errors and subsequent risk to patients.
- Useful in detecting drug related pathology or changes in clinical signs and symptoms that may be the result of medication therapy.
- It must encompass all currently and recently prescription drugs, previous adverse drug reactions including herbal or alternative medicines and adherence to therapy for better care plan.[2]

2. Taking decision to prescribe a medication

Clinical and cost-effective drug selection in the context of individualised patient care is among those concerns that need to be addressed. The list of anticipated therapies is now reviewed to ensure that each one is appropriate for the patient. Drug-patient, drug-disease, and drug-drug interactions must be distinguished as three distinct categories for this to happen. In order of chance of occurrence and potential severity of result, the interactions should be prioritised.[2]

3. Assessing current medication management of the patient

All the medications that are being given to the patient are recorded. This will consist the date on which the medication was started as well as all the administered doses. This permits the clinical pharmacist to have an overview of all the medicines given to the patient and if the doses were given in accordance to the prescription. The patient additionally evaluated for untoward medication reactions, and all unfavourable drug events should be reported to the regulatory authority.[5] Assessing the medication chart is helpful in the medication management of the patient. Medication chart evaluation is a systematic review of a patient's drug therapy. It is a vital accountability of a clinical pharmacist to ensure the adequacy of medication orders sheet. It serves as beginning point for different clinical pharmacy activities. The patient's medical record must be reviewed in conjugation with the medication administration document by considering the following;

- On the first day of admission, check the medications prescribed by the registered medical practitioner.
- Annotate the chart to furnish clarification as required.
- Detecting orders for medications to which the patient can be hypersensitive/ intolerant.
- Problems associated with drug handling (e.g. problems with swallowing or inhaling medications, inappropriate crushing of tablets).
- Ensuring that medication order is suitable with respect to:

- The patient's preceding medication order.
- Patient's specific considerations e.g. ailment state, pregnancy.
- Drug dose and dosage schedule, specifically with respect to age, renal function, liver function.
- Route of drug administration, dosage form and method of administration.

- Ensuring that administration time is suitable e.g. with respect to meals, other drugs and procedures.
- Checking the medication administration record to make sure that all ordered have been administered.
- Ensuring that the drug administration order clearly show the time at which drug administration is to commence.
- Special considerations should be given particularly in short course therapy as in antibiotics and analgesics.
- Ensuring that the order is cancelled in all sections of medication record when the drug therapy is meant to cease.[6,7]

4. Clinical Review

One of the essential elements of medication review is clinical review, which ideally ought to be done every day. It is an evaluation of the patient's progress with the goal of determining the effectiveness of the treatment. Prior to the review, the therapeutic objective for the particular disease should be precisely defined. To make sure that the patient is receiving the best possible treatment for their medical condition or disease, clinical pharmacists must assess the patient's drug therapy during clinical reviews. In order to provide better patient care, he should also relate the patient's signs and symptoms, laboratory findings, medical diagnosis, and therapeutic objectives to the medication history.[8]

The clinical review's main objectives are to:

- Evaluate the effectiveness of medication therapy.
- Examine the treatment plan's safety.
- Evaluate the disease's progression and the necessity for any therapy changes.
- Determine whether monitoring is necessary.
- Evaluate how convenient therapy is (to improve compliance)[6]

5. Therapeutic drug monitoring

Therapeutic drug monitoring (TDM) can be defined as the management of a patient's dosage regimen based on the serum, plasma, or whole blood concentration of a drug. It is used to determine the best drug doses for people taking certain types of medicines having narrow therapeutic index. Team-work between nurses, doctors, pharmacist, scientist and technical staff is needed for a reliable and responsive TDM service. The clinical pharmacist is required to provide advice to medical staff about the appropriate use and correct timing of TDM and assist with the interpretation of results.[9-11]

6. Ward Round Participation

The role of clinical pharmacists is to attend ward rounds as a member of healthcare team to provide their intensive knowledge for immediate intervention to improve the patient conditions. The goals of ward round participation are to improve understanding of patient's history, progress, clinical data, to optimise clinical aspects of patient's therapy and to improve discharge planning. The Pharmacists can also help in decision making for selecting the affordable and efficient medicines to optimize the quality of patient care and clinical outcomes which ensure medication selection as per formulary and local guidelines.[6]

7. Providing medicines information to healthcare professionals

The provision of medicines information to other healthcare professionals helps in:

- Assessment and reporting of adverse drug reactions.
- Determination and prevention of various interactions like drug-drug, drug-food interactions, etc.
- Drug-therapy monitoring.
- Prevention of medication errors.
- Determination of drug incompatibilities.
- Getting unbiased drug and poison information.[6]

Drug information or medicine information is given in response to inquiries from other healthcare-providing organisations, committees, patients, and the general public. It can be given verbally or in writing form. The actions made by pharmacists to provide information about drug use are referred to as drug information services (DIS). To satisfy the needs of practising doctors, pharmacists, and other healthcare professionals, drug information centres offer comprehensive, unbiased sources of essential drug information. It is essential to raise awareness of the role of drug information centres in order to promote the responsible use of medications in a country like India where government laws are more industry-focused than health-focused. The objectives of DIS are:

- In order to satisfy the practitioner needs for drug information, a well-organized database of specialised knowledge on drugs and treatments must be made available.
- Enabling pharmacy students to effectively disseminate information about medications
- To deliver a reliable, unbiased medications information service to hospital staff, doctors, and other medical professionals.
- Enhancing patient care by utilising medications judiciously.[12]

8. Patient counselling

Delivering medical information verbally or in writing to the patient or their representatives about dosage instructions, possible side effects, precautions, storage requirements, dietary restrictions, and lifestyle changes is known as patient counselling. From the perspective of the patient, patient counselling is one of the clinical pharmacist's most significant responsibilities. The clinical pharmacist's job is to enlighten patients about their

current clinical conditions and teach them how to utilise medications safely and effectively, improving their clinical outcomes. In general, patients frequently have a lot of questions about their condition, medications, nutrition, lifestyle changes, treatments, length of therapy, and medical equipment. To ensure that medication is taken as prescribed, a clinical pharmacist may give the patient information about ongoing care.[6]

9. Information regarding ongoing care

The practitioner's involvement is to give the patient accurate, trustworthy information in a way they can grasp. The pharmacist might be required to explain the advantages and disadvantages of the therapy as well as the implications of not taking the medications. The optimal time to give out information regarding medications is at the time of the prescription decision or as soon as possible after the first time medications prescribed. This entails giving patients access to information while they are still in the hospital, instead of waiting until they get discharged. The patient can be informed of the presence of information leaflets, encouraged to read them, and asked any questions regarding medications. With this strategy, patients are able to determine their own informational requirements. This approach enables patients to identify their own information needs and ensures that pharmacists do not create a mismatch between their own agenda and that of the patient. However, there will be a need to clearly explain the limitations of leaflets, particularly when medicines are prescribed for unlicensed indications.[2]

10. Adverse drug reaction management

Clinical Pharmacists play a crucial role in detection, identification, and prevention as well as management of adverse drug reactions (ADRs). They can perform these activities in inpatient settings in hospital while taking part in medication chart review and medication management of patients. One of the main roles of clinical pharmacists is to detect, assess and report suspected ADRs to reduce the risks of adverse events (AEs).[13,14]

CONCLUSION

Patient oriented clinical pharmacy services promote rational use of medications and it plays vital role in a resource constrained setting. Involvement of skilled clinical pharmacists among health care providers team leads to well documented and improved optimization of medication use; and in addition, also assess the implementation of ward-based clinical pharmacy services. The provision of pharmaceutical care can result in expanded identification of drugs and dose associated problems in admitted patients. In the coming years, clinical pharmacists are expected to become an integral part within the health care system. Rather than simply dispensing medications, pharmacists are day by day increasingly predicted to be compensated for their patient care skills. Within a further existing time, clinical pharmacists would have to show their importance inside the health care system. Inside the settings of health care system, their significance can produce modifications ranging from the new opportunity of jobs to the extension of services presented. Clinical pharmacist plays a key role in the patient safety initiatives, intercepting and acting towards feasible prescribing errors. Clinical pharmacy services can serve as vital contributing factor in the betterment of health care system. Pharmacists have roles and responsibilities both as team members and as individual practitioners ensuring that patients benefit from their pharmaceutical care.

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