

## A REVIEW ARTICLE ON HOSPITAL PHARMACY AND ITS ORGANIZATION

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### ABSTRACT

The Main aim of this concept is To ensure the availability of right medication, at right time, in the right dose at the minimum possible cost .To act as a counseling department for medical staff, nurses & for patient. To act as a data bank a drug utilization. To co-ordinate & co-operate with other departments of a hospital .To implement decisions of the pharmacy & therapeutics committee .TO professionalize the functioning of pharmaceutical services in a hospital. cost containment . Effective &Efficient service .patient satisfaction .Effective staff utilization .To participate in research projects and To plan, organize& implement pharmacy policy procedures in keeping with the established policies of the hospitals.

### 1. INTRODUCTION

Hospital pharmacy is one of the most important department among several departments of a hospital. A Hospital pharmacy is controlled by a professional competent and a qualified pharmacist. Hospital pharmacy may be defined as that department of the hospital which deals with procurement, storage, compounding, dispensing, manufacturing, testing, packaging & distribution of drugs. A hospital pharmacy is a department within a hospital that prepares, compounds stock and dispenses inpatient medications . Hospital pharmacies usually stock a larger range of medications, including more specialized and investigation medications (medicines that are being studied, but have not yet been approved), than would be feasible in the community setting. Hospital pharmacies may also dispense over-the-counter and prescription medications to outpatient . Hospital pharmacies may provide a huge quantity of medications per day which is allocated to the wards and to intensive care units according to a patient's medication schedule. Larger hospitals may use automated transport systems to aid in the efficient distribution of medications.[1] Hospital pharmacists and trained pharmacy technicians compound sterile products for patients such as total parenteral nutrition (TPN) and other medications given intravenously such as neonatal antibiotics and chemotherapy. Some hospital pharmacies may outsource high-risk preparations and some other compounding functions to companies that specialize in compounding. Hospital pharmacists provide services to people admitted to hospitals as in-patients. The services provided include ensuring appropriate therapies are identified and in reducing medication errors. These services may be pharmacist-led interventions or part of interdisciplinary teams. They may further organize for medication reviews post- discharge. These services may be provided in person or via telehealth. In the United States, hospital pharmacy was not a significant practice until the 1920s. In the 18th and 19th centuries, the medicine and pharmacy were commonly one practice, in which a medical apprentice would be responsible for the drug preparation. Hospital pharmacists often require additional education support and professional development to develop advanced skills and specialization. Many health services require junior pharmacists to undertake pharmacy residencies for skill development. In the United States, hospital pharmacy was not a significant practice until the 1920s. In the 18th and 19th centuries, the medicine and pharmacy were commonly one practice, in which a medical apprentice would be responsible for the drug preparation.[2]

#### Aims of Hospital Pharmacy

- Primary mission of hospital pharmacy is to manage the use of medications in hospitals and other medical centers.
- Goals include the selection, prescription, pro-curation, delivery, administration and review of medications to optimize patient outcomes.
- It is important to ensure that the right patient, dose, route of administration, time, drug, information and documentation are respected when any medication is used.[3]

### 2. TYPES OF PHARMACY

#### Community pharmacy

Community pharmacy means any place under the direct supervision of a pharmacist where the practice of pharmacy occurs (or) where prescription orders are compounded & dispensed other than a hospital pharmacy (or) a limits service pharmacy.

### Hospital pharmacy:

Hospital pharmacy is the organization (or) department of the hospital to manage the procurement, storage, preservation packaging, compounding, preparation, dispensing (or) distribution of medicine in the hospital. Pharmaceutical services in a hospital comprises of the service rendered to the patient through a number of activities like

- Dispensing of drug
- Manufacture & distribution of medicament and products.
- Patient counseling service .
- Establishment and maintenance of Drug Information centre.
- Providing the therapeutic drug monitoring services.
- Maintaining liaison with medical staff, nursing staff and the patients themselves.
- Participate in teaching programme of nursing & pharmacy students.
- To maintain the nursing department & the central sterile supply unit in the hospital
- Maintenance of proper records of the drugs purchased & there distribution .

### Functions

- To provide & evaluate pharmaceutical services & thereby supporting the medical staff, with due consideration of the objectives & policies of the hospital .
- To estimate the requirements for the department and enforce the policies procedures for the recruitment of time adequate & Competent staff.
- To provide & Evaluate pharmaceutical services .
- To develop & maintain an effective system of clinical & administrative records & Reports.
- Draw a plan to for hospital pharmacy administration.
- To raise the quality of law & general standards of medical practices .
- It lowers the incidences of disease through early detection and treatment .
- To participate in the Financial plan for the operation of hospital .
- To participate in & put into practice, the safety programme of the hospital
- It keeps a record of each supply dispensed.
- It inspects the received items & maintains an inventory for the same.
- To maintain a satisfactory system of records & book-keeping for the above products.
- To do in house production of drugs, the buying of which from outside source is not prudent.
- To furnish information concerning medications to physicians, interns & nurses providing specifications for the purchase of drugs, chemicals, biological etc.,
- Proper storage of drugs .
- Dispensing & sterilizing parental preparations which are manufactured hospital.[4]

### 3. OPERATIONAL STRUCTURE OF HOSPITAL PHARMACIST

Overall hospital pharmacist can be categorized to be working in three major operational structures,

- Drug distribution centre
- clinical pharmacist centre
- patient centre and integrated.

**Organization structure-** The hospital pharmacy has various divisions, like compounding and dis-pending, manufacturing are production, quality control, centre sterile supply, researches education and training, administration and library. The chief hospital pharmacist is the head of pharmacy who reports to the administrator. The number of assistant chief pharmacist ,who assists the chief in administration, depend on the work, nature and scope of operations, staff strength, etc. The chief has a secretary and other office clerks to assists him, staff pharmacists, technicians, pharmacy helpers, and others workers of hospital pharmacy are involved in compounding, despending ,manufacturing, drug supply . The chief hospital pharmacist is the head of pharmacy who reports to the administrator.

### SET UP OF HOSPITAL PHARMACY

The services described above can only be rendered efficiently by setting up properly a hospital pharmacy department An abstract manner the pharmaceutical services indicating boundaries (or) interface between the hospital's pharmacy department and several other departments and functions in the hospital. The arrows represent interactions between pharmacy department and also the flow of information & material.[7]

**Professional Requirements for chief Hospital pharmacist-** The chef hospital pharmacist should have academic, administrative and professional competence. He should be a post graduate in pharmacy (or) pharmacology and should have a license From drug control authority . He is a member of many hospital Committee . He should have a good knowledge of various aspects related to drug use, its pharmacokinetic and pharmacodynamic profile, stability and appropriate storage conditions. The chief pharmacist also organizes the training of students of pharmacy, nursing staff, technicians of health care system . So,he should be in conversation with research methodology. A candidate has to pass an undergraduate course in pharmacy with a minimum of 50%. Also, a person has to qualify for the entrance exam GPAT or PGECET. Hospital pharmacists' duties include administrative duties, clinical service patient care, drug distribution, drug control, ensuring medication safety, and activities for quality and performance improvement .

#### **Academic and professional Requirement of other pharmacy staff :**

The manufacturing chemist in a hospital pharmacy is responsible for manufacturing division of the hospital and should be approved to take manufacture by the drug control authority.

- He should possess a post graduate degree in pharmacy or pharmacology.
- Similarly quality control chemist control quality control division.
- He should also be post graduate in analytical chemistry and approved by drug control authority.
- The dispensing work in a hospital is controlled by the persons having bachelor degree.
- The person controlling drug store can be a diploma holder.[8]

#### **Location and layout**

When ever possible, the pharmacy should be located on the first Floor, (or) on the ground Floor of the hospital, such that it is readily accessible to the elevators, to ensure sufficient & Effective service to the various department and nursing stations The hospital pharmacy should be located in hospital premises so that patients and staff can easily approach it If the hospital has an outpatient department, the pharmacy (or) its branch should be near it.

The in- patient setting of hospital pharmacy is unique & patients treated by a hospital pharmacist will typically have more complicated conditions than those in an ambulatory setting & be taking multiple medications. An out - patient pharmacy should look pleasant ,& have enough space & seating arrangement for patients waiting for the medicine . A staff pharmacists may have exposure to different departments like oncology, intravenous medication therapy , neonatal care, nutrition , pain therapy , geriatrics, and much more .

The location & layout of a hospital pharmacy varies greatly between hospitals some are centralized, with all of the pharmacy staff & equipment located in a single area of the hospital and are decentralized meaning there is a main pharmacy in a central location but there are also mini - pharmacies, called satellites, located throughout the hospital at key patient care units. The layout of the pharmacy of will the depend on the size, needs, resources, and focus of the hospital. The interior should not be congested Outpatient pharmacy's waiting room should have professional look . The manufacturing room can be adjacent to the pharmacy (or) can be located in the basement directly below the pharmacy.[9]

#### **Free Flow layout**

- Fixtures & merchandise are grouped in Free Flowing patterns on the sales Floor
- This layout is used in specialty stores like : Reebok Nike
- The works best in small stores in which customers wish to browse.

#### **Equipment**

Equipment's required in hospital pharmacy includes :

- prescription case
- storage cabinet with shelves & drawers
- sink with drain board
- oven
- Narcotics safe with individually locked drawers
- working table and counters.
- cabinet to store mortar & pestles.
- cabinet For glass utensils, Flasks, Funnels & beaker .
- Space for journal & books .
- Narcotics safe with individually located drawers .
- Dispensing window for nurses and outpatients .

### **Facilities required in Hospital pharmacy**

In smaller hospitals, with one pharmacist only, one room is required for pharmacy, having a combination of dispensing, manufacturing, administrative and all other sections of complete pharmaceutical service. For sterile products there should be a separate room (or) area. In larger hospitals, with 200 (or) more beds, departmentalization of pharmacy activities is required. A separate area is required for :-

- Inpatient services and unit dose dispensing
- outpatient service.
- A compounding room
- A store room
- An office for the chief pharmacist
- prepackaging & labeling room
- sterile products room.[15]

### **4. ABILITIES REQUIRED FOR HOSPITAL PHARMACIST**

- Technical Ability
- Ability to Develop a manufacturing section.
- Administrative Ability .
- Ability to control Inventory
- Ability to conduct & participate in Researches
- Ability to conduct Teaching programme

#### **Accuracy**

Pharmacists are dealing with medicines in every aspect from production to marketing of it and even involved in dispensing of medicines. As a pharmacist, we aware that medicines could be dangerous if wrongly dispatched or mishandled. Pharmacists are expected to dispense medicines in error-free manner and that quick, too. They have to understand the handwriting of doctors and also required to fill prescriptions in developed countries like USA, Canada etc Humans are naturally known to make mistakes, but Pharmacist should be accurate in his work, because it's matter of life or death.

#### **Communication Skills**

Communication skills are important for most of the professionals and it is important to have command on English as well as local languages. It is important while you communicate with patients. It is duty of pharmacists to communicate with patients regarding dose of administration, when to take and how to take medicines. Sometime in few chronic illnesses, it is necessary that patient should not miss a single dose. Then, it can become challenge for pharmacist to communicate same with patients in a way that they can understand.

#### **Proof Reading**

Sometimes doctors miss drug-drug interaction and prescribe such medications. Then pharmacists can become proof-readers and inform back doctors about it and suggest changes in prescription. But, before that pharmacist have to study intensively on same

#### **Interpersonal Skills**

Pharmacists often have to struggle between doctors who don't like to be questioned and frustrated patients who may get upset due to waiting for their prescriptions Pharmacists need interpersonal skills like patience, diplomacy and a great sense of humour.

#### **Management Skills**

When chain pharmacies are part of the country and big hospitals require senior pharmacists who can manage budgets, monitor inventories and keep accountable records. Pharmacists are also responsible for supervising and manage junior staff.

#### **Multitasking**

Pharmacists are involved in multiple tasks along with dispensing of medicines. Pharmacists are responsible for checking expiry dates of medicines, stocking of required medicines, recording and many other small to big tasks are assigned to them.

#### **Patient Counseling**

It is most important among all the skills. Patient counseling refers to the process of providing vital information, advice and assistance to help patients with their medications and to ensure patients to take medicines properly. Yes, it require communication skill for same but along with that pharmacist require deep knowledge about medicines which they acquire during their education.

### Computer Skills

When the world is moving towards online pharmacies (e-Pharmacy), it is obviously that pharmacists should have knowledge of same. Most pharmacies today are connected to the internet. Also, computers are helpful for easier storage of customer data, inventory counts, billings etc.

### Gaining knowledge

Pharmaceutical field is a field of innovation and many new medicines as well as products hit the market. It is necessary for pharmacists to keep themselves up to date in knowledge and keep learning professional things.

### Professional Ethics

Pharmacists are expected to follow ethical practise. They have to keep secret about patient information. If there are some patients who are purchasing anti-HIV medicines from a pharmacist and they are from neighborhood or distant still their details are not disclosed in community in any circumstances.[19]

## 5. CONCLUSION

The pharmacy is an extremely important element of the structure of each hospital, & its organization and management have a huge impact on the generally understood quality of treatment and the safety of patients staying in the hospital. Pharmacotherapy is one of the pillars of Every hospital's activity. In conclusion, models of automatic drug distribution in the hospital show invaluable therapeutic, economic, and organizational benefits and should be the target systems in modern hospital facilities.[20]

## 6. REFERENCES

- [1] Khar & Nand; "A text book of hospital & clinical pharmacy"; Agra Public Pharmacy College, Artoni, Agra, UP, India
- [2] The Basel statements on the future of hospital pharmacy. Am J Health Syst Pharm. 2009 Mar 1;66(5 suppl 3):S61-6.
- [3] NITHIN MANOHAR R HOSPITAL PHARMACY AND ITS ORGANIZATION MR. MANGESH BANSOD ASST. PROF. SDDVCPRC, PANVEL
- [4] Mukhtar Ansari, Kadir Alam, in Pharmacy Practice in Developing Countries, 2016
- [5] Shahid Karim, Muhammad Adnan, in Pharmacy Practice in Developing Countries, 2016
- [6] Nathorn Chaiyakunapruk, ... Nithima Sumpradit, in Pharmacy Practice in Developing Countries, 2016
- [7] Shahid Karim, Muhammad Adnan, in Pharmacy Practice in Developing Countries, 2016
- [8] Merchant & Goyal's A Textbook of Hospital Pharmacy by Dr. Ramesh K. Goyal, Dr. R.K. Parikh. Page No. 21-28.
- [9] Hospital Pharmacy by H.P Tipnis and Amrita Bajaj. Page No. 49-66. 3. Hospital Pharmacy, W.E Hassan
- [10] A Text book of Pharmacy Practice by the author Sourabh Kosey Nirali Prakashan. Page
- [11] A Text book of Pharmacy Practice by the author Dr. Sachin V. Tembhurne, Dr. Ashwini R. Madgulkar, Dr. Virendra S. Ligade Nirali Prakashan. Miss. Mali Sunayana Mallappa □ Designation - Asst. Professor □ Department- Pharmacy Practice □ College Name- Sahyadri College Of Pharmacy, Methwade, Tal- Sangola, Dist- Solapur, Maharashtra.
- [12] HOSPITAL PHARMACY: ITS FUNCTION AND ORGANIZATION DEEPIKA BAIRAGEE Assistant Professor OCPR, Oriental University, Indore
- [13] Dr. Navaneethakrishnan PharmD., Assistant Professor Department of Pharmacy Practice HOSPITAL PHARMACY AND ITS ORGANIZATION
- [14] Ms Sneha Patel, MPC Merchant, S. H., Qadry, J. S., A Textbook of Hospital Pharmacy, B. S. Shah Prakashan, 2nd Ed., 1994.
- [15] A text book of Hospital Pharmacy by S.H. Merchant & Dr. J.S. Qadry. Revised by R.K. Goyal & R.K. Parikh.
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