

HOSPITAL and CLINICAL PHARMACY

For Second year Diploma in Pharmacy

Hospital Full form :-

- H = Healing कोई भी धात का करना
- O = Observation जो धात है उसको देखना क्या धात मरली है या बचता जा रहा है
- S = Supervision धात बचाव के तरीके से मरने की निवारण
- P = Persuasion Patient को प्रोत्साहन करना
- I = Investigation बिगरी का देखना Investigation करना
- T = Treatment Disease का treatment करना
- A = Assurance Patient को विश्वास दिलाना कि आप धातों पर ध्यान देकर ठीक हो पाएंगे
- L = Leisure structure बनाना और Patient के लगे प्रशासकीय और प्रौद्योगिकी होना

The word "HOSPITAL" derived from the Latin word Hospital. which in turn derived from French word "Hospes" the means "a Host or a guest".
Noun
Shob in name

A Hospital is a health care institution providing treatment to patient with specialized staff and equipment.

Definition of Hospital :-

The Institution in which the disease is treated or cured and developed
Hospital is defined as an Institution of Community

Health or it is a Specialized Complex
Organization which makes use of Physicians
Surgeons and technical Staff

It also providing
Facilities for diagnosis, therapy, rehabilitation,
Prevention Education and research.

Hospital has to remain a Customer Oriented
Institution since it is means for them

Function's of a Hospital

- ⇒ Patient Care
- ⇒ Public health Care
- ⇒ Education Services
- ⇒ Research
- ⇒ Medical Services (diagnosis, therapy, therapy)
- ⇒ Administrative Services
- ⇒ Patient Care & Education (Record keeping)
- ⇒ Diagnosis, treatment of illness

- ⇒ Rehabilitation (Treatment of the patient or management of the disease)
- ↓
- ⇒ Treatment and management of patients
- ⇒ Patient care with nursing, dietary, diagnostic, therapy, pharmacy and laboratory services.

Classification of Hospital

1) On Clinical basis:-

Clinical Basis			Non clinical basis	
Medicine	Surgery	Maternity	Government	Non-Government
1. Pediatrics <i>बच्चों के रोगों</i>	1. Orthopedic <i>हड्डियों के रोगों</i>	Short term	Army hospital	Private hospital for profit
2. Psychiatric and Nervous diseases <i>नर्वस से संबंधित रोगों</i>	2. Gynecology	Long term	Navy hospital	Non-profit Church hospital
3. T.B <i>Tuberculosis</i>	3. ENT	City	City hospital	Community hospital
4. General Medicine			Civil hospital	Missionary hospital
			AIIMS/PGI etc.	Charitable hospital

02) On the basis of Bed Capacity

- (a) Large Hospital :- Bed's 1000 and above
- (b) Medium Hospital - Bed's between 500-1000
- (c) Small Hospital - Bed's between 100-500
- (d) very Small Hospital :- Bed's less than 100

03) On the basis of Medicine System based

- (a) Allopathic Hospital -
- (b) Ayurvedic Hospital -
- (c) Homeopathic Hospital
- (d) Unani Hospital

04) On the basis of Cost

- (a) Elite Hospital :- ^(VIP) Room rates are very high hence are called Five Star Hospital
(Ex - Jaslok & Hindustani Hospital)
- (b) Budget Hospital - These hospital's are meant for moderate budget and low budget users
जो आम public के लिए है पाछे कोर्स की जा सका है
Ex - Civil Hospital, Corporation Hospital

(C) Private Hospital / Nursing homes -

These medical centers are operated generally in all the metropolitan cities and towns in India by either a single or group of medical practitioners or

(D) Teaching Hospital:- Hospital can be teaching hospital or research centers to which medical college attached
ex- A.I.I.M.S (All India Institute of Medical Science, Delhi) etc.

* Hospital Pharmacy *

⇒ The department of the hospital which deals with procurement, storage, compounding, dispensing, manufacturing, testing, packaging and distribution of drugs (the practice of pharmacy within the hospital under the supervision of a professional pharmacist is known as hospital pharmacy).

Scope of Hospital Pharmacy

⇒ A hospital pharmacy is the place where the management of medications occurs in a hospital, medical clinic or nursing home.
A hospital pharmacist after works in close collaboration with other staff

2) Collaboration with other health professionals to ensure that the medication regimen for each patient is optimized to achieve the best outcomes.

They may also be involved with clinical trials, as well as compounding medications for individualized dosing or sterile medications. Teaching, administrative functions in the selection, proper-storage, distribution and prescription protocols of drug, education of medical staff in the aspects of selection, administration and monitoring of drug safety.

There are many different types of pharmacy and other places where a trained pharmacist may work. This includes:

- * Community pharmacy.
- * Hospital pharmacy.
- * Clinical pharmacy.
- * Industrial pharmacy.
- * Compounding pharmacy. (MCS)
- * Consulting pharmacy. (Patient को सही ही सलाह देना है और सही ही दवा देना है)

- in developed country
- * Pharmacy profession is still lagging behind in developing countries as compared with development country in a way that the pharmacy professionals have never been considered as a part of health care team neither by the community nor by the health care providers.
 - * In a recent study in UK researcher's found that most of the ~~pharmacists~~ pharmacist were involved in advising the doctor's and educating the patients.
 - * Pharmacist in developed countries have shown real upgrading their knowledge and have refined their professional skills to meet the health care demands.
 - * In countries like UK, pharmacists were also given the prescribing rights for certain diseases.
 - * In many parts of the world, pharmacist have played a significant role in provision of pharmaceutical ~~and patients~~ care services.

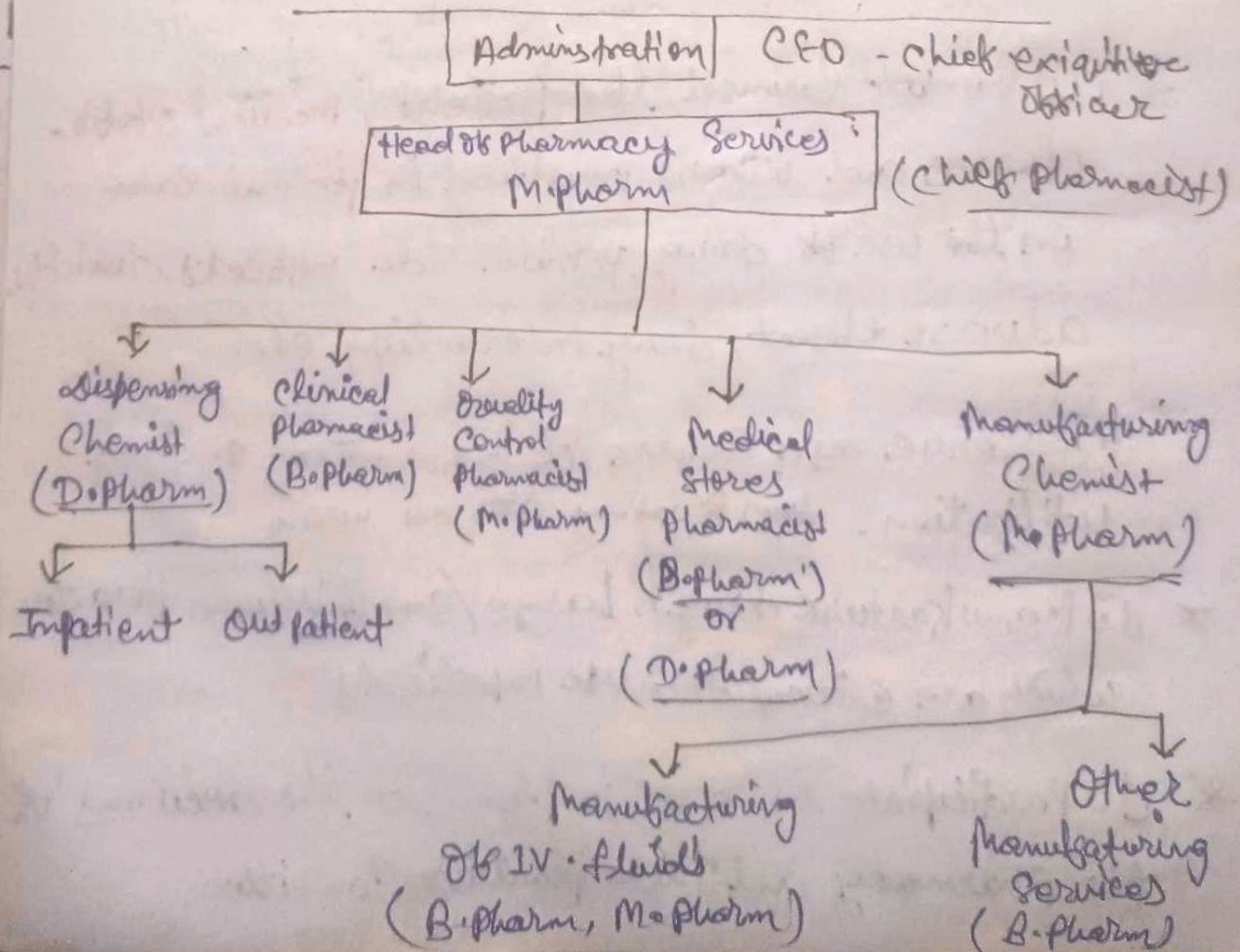
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Objective of Hospital Pharmacy

- ⇒ To Professionalize the Functioning of the Pharmaceutical Services in Hospitals. Pharmaceutical services in hospitals should be professionalized.
- ⇒ To ensure availability of the required Medications at an affordable Cost at the required time. Medicines should be available at an affordable cost and at the required time.
- * To plan, organize and implement the Policies of the Pharmacy. Pharmacy should have its own policies and implement them.
- ⇒ To perform Function of management of materials, Purchase, Storage of essential items. Pharmacy should manage the purchase and storage of essential items.
- ⇒ To maintain strict inventory of all time's received and issued.
- ⇒ To Counsel the Patient, Medical staff, Nurses and Others involved in patient care on the use of drug, possible side effects, toxicity, adverse effect, drug interaction etc.
- * To serve as a source of information on drug utilization. Pharmacy should serve as a source of information on drug utilization.
- * To manufacture drug's, large / small volume parenterals which are critical for use inpatients
- * To participate in and implement the decisions of the Pharmacy and Therapeutics Committee

- * (To organize and participate in research programmes, educational programmes.
- * (To provide training for various members of the patient team on various aspects of drug action, administration and usage.
- * (To engage in public health activities to improve the well-being of the population.
- * (To interact cooperate and coordinate with various other department's of the hospital

ORGANIZATIONAL STRUCTURE



The Hospital Pharmacy consist of various departments depending on setup of the hospital.

It has generally dispensing department and medical store in small setup but in big setup. It has also manufacturing, quality control and clinical pharmacy departments.

Professional Responsibility

Responsibility of Hospital Pharmacist: In-door Pharmacist

(a) Central dispensing area:

- 1) To ensure that all drugs are stored and dispensed ^{Correctly.}
- 2) To check the accuracy of the dosage prepared.
- 3) Maintain proper records.
- 4) Preparation of bills
- 5) Co-ordinator over all pharmaceutical needs of patients
- 6) Framed policies and procedures are followed
- 7) Maintain professional competence
- 8) Communication with all pharmacy staffs.
- 9) To coordinate the all pharmacy staffs.
- 10) activity of the area.

b) Patient care areas:-

- 1) To maintain liaison between nurses.

2) Reviewing of drug administration in each patient

3) To provide instruction and assistance to junior pharmacist

4) Inspect periodically the medication areas

5) Identify the drugs brought into the hospital

6) Monitoring of drugs

7) Counsel the patients

1C) General Responsibilities:

1) To provide in service training and information for:

2) Pharmacist

3) Pharmacy Students

4) Nurse and Nursing Students,

5) Physician and Medical Students.

6) Ensure that all drugs are handled properly.

7) Participate in Cardio-pulmonary emergencies.

8) Co-ordinate overall pharmaceutical need of the

Outdoor Services.

Responsibility of Hospital Pharmacist: Outdoor Pharmacist.

(A) Central Dispensing Area:

- * Provides for adequate record keeping and billing.
- * Correctly maintaining prescription files.
- * Keep the outdoor pharmacy in a neat and tidy manner.

(B) Patient Care Area :-

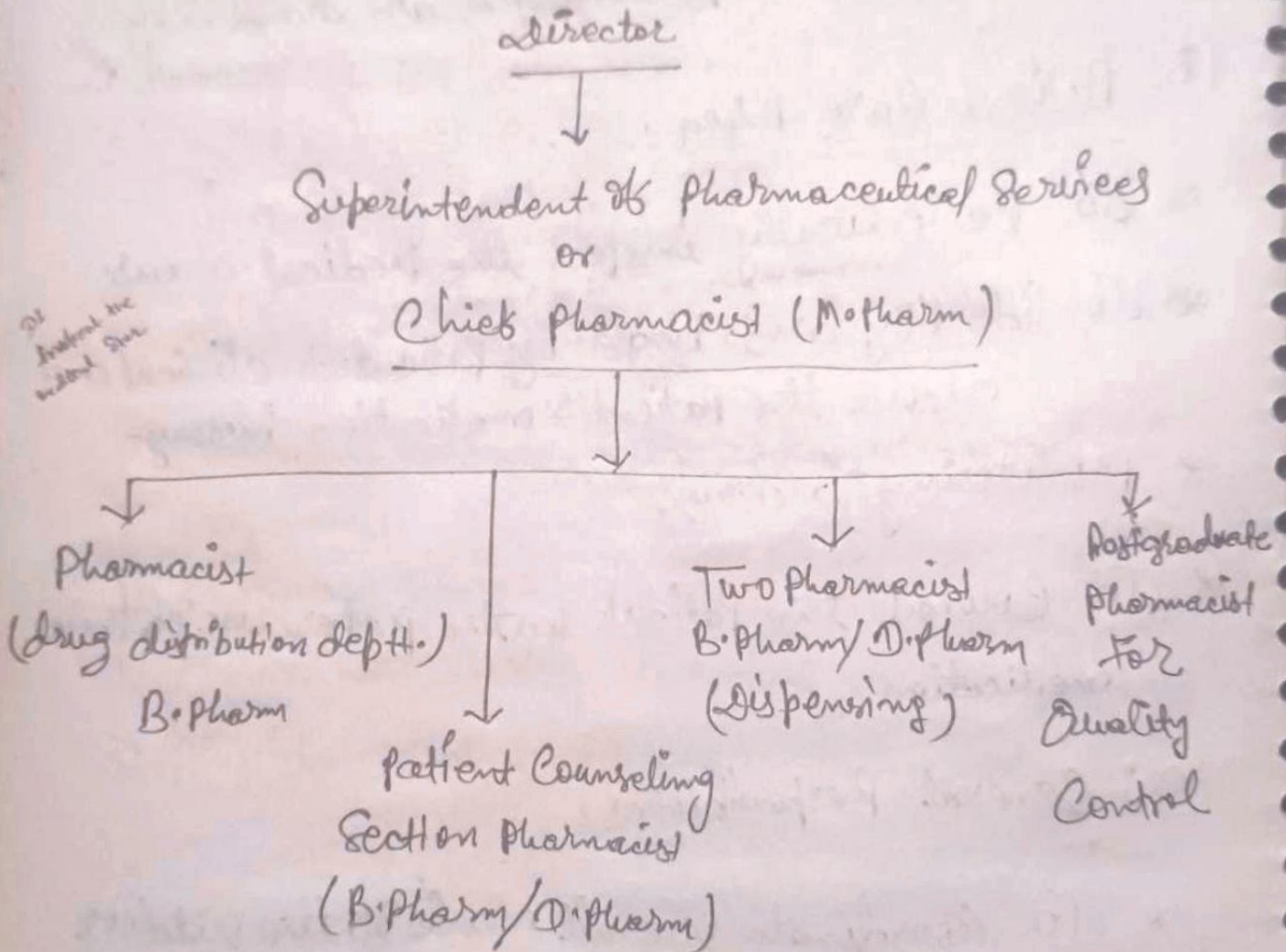
- * To periodically inspect the medical areas.
- * To identify drugs bought by patient to clinical and record the patient's medication history.
- * Monitoring of drugs
- * To counsel the patient on the proper use of their medication.

(C) General Responsibilities :-

- * To coordinate overall needs of the outdoor service area and exercise control over such drug.
- * To ensure that all drugs are handled properly such as storage of investigational drugs.
- * To participate in cardio pulmonary emergency.
- * To provide for in services education and training for pharmacist, pharmacy items.

Qualification and Experience Requirements

Flow chart for requirements of a Hospital Pharmacist



* Minimum academic requirements for hospital pharmacists include a two-year D. Pharm diploma course and a pre-registration training programme.

* Hospital pharmacists are responsible for the dispensing and procurement of medical products and supplies used in the hospital. Hospital pharmacist can also work in health care centres.

Abilities Required:

1) Technical Ability:-

- * He should have thorough knowledge of basic Sciences Pharmacology, toxicology, & insight of administrative

A hospital pharmacist must provide information regarding proper handling of drug.

Drugs ko proper handling karne chahiye aur seedhi se use karne ki jagan rakhni chahiye.

2) Ability to develop a manufacturing section.

- * Manufacturing within a hospital requires control over supply, quality, equipment, raw material cost.

- * Hospital pharmacist to organize manufacturing function by doing proper cost benefit analysis.

Pharmacist ko manufacturing function ko organize karne ke liye proper cost benefit analysis karna chahiye.

3) Administrative Ability: Hospital Pharmacist

Should be able plan, organize and control various functions of Hospital Pharmacy.

- = He should prepare work schedule for his

4) Ability to control inventory

Staff.
(Inventory ko control karne ke liye staff ko train karna chahiye)

- * Chief pharmacist has to exercise his duties on inventories of drugs which are lying at inventory stations, supply rooms and clinical units.

> Job Specifications

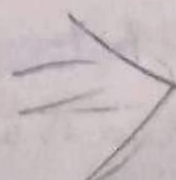
- * Compound and dispense medications as prescribed by doctor's and density, by calculating, wt, measuring and mixing ingredients.
- * Review prescription from doctor to ensure accuracy to ascertain the needed ingredients and to evaluate their suitability for the patient.
- * Provide information ~~and~~ ^{and advice} about drugs, their side effects, correct dosage and proper storage.
- * Keep records such as pharmacy files, patients profiles inventories. storage.
- * Work with other health care professionals to plan, monitor, review or evaluate the quality or effectiveness of drugs.
- * Advise customers on the selection brands, medical equipment or healthcare suppliers.
- * Acts as supervisor in a hospital.

- * Order and purchases pharmaceutical Supplier, Medical supplies or drugs, maintaining stock and storing and handling it properly.
- * Advice Customer's on the Selection brands, Medical equipment, or health care supplies.
- * Acts as Supervisor in a hospital.

Work Load, Requirements and Professional Relationship.

According to work Load:

- * The Manpower trained in Pharmacy varies with the size of the Hospital, and the services it offers.
- * The number of Pharmacists required for a Hospital is calculated on the basis of some work load norm like the number of prescriptions received and dispensed or the number of beds available in the Hospital.
- * As a rule of thumb, it can be said that there must be minimum 3 pharmacist in a very small Hospital. For a 100-bed hospital there can be 5 Pharmacists, as the number of beds increases the number of pharmacist also increases, but not proportionately.



⇒ The following is the suggested staff pattern of pharmacists as recommended by the study group of hospitals.

Pharmacist requirements

Bed Strength	Number of pharmacists required
up to 50 beds	3
up to 100 beds	5
up to 200 beds	8
up to 300 beds	10
up to 500 beds.	15

3:1
ratio

while calculating the number in very large hospital (1000 beds, 2000 beds, 3000 beds) the service points available for dispensing to the inpatients & out patient are considered.

Inter Professional Relationship of Hospital Pharmacists

- 1) Interdepartmental communication is largely a formal affair between different departments of an organization.
- 2) Interdepartmental communication is effective when it is supported by good infrastructural facilities.
- 3) Pharmacy department must interconnect with physician and nursing unit.

- 4) Co-ordination ensures the availability and requirements of day to day necessities and emergency medicines.
- 5) Pharmacists should always check the physician order and the patient history before dispensing the prescription and in case of any doubt, should consult the doctors.
- 6) While prescribing the medicines, the physicians should always write the patient's age and diagnosis, as it will be helpful to pharmacists to take a note of this while dispensing medicines.
- 7) A healthcare system that supports effective teamwork can improve the quality of patient care, enhance patient safety and reduce workload issues among healthcare professionals.

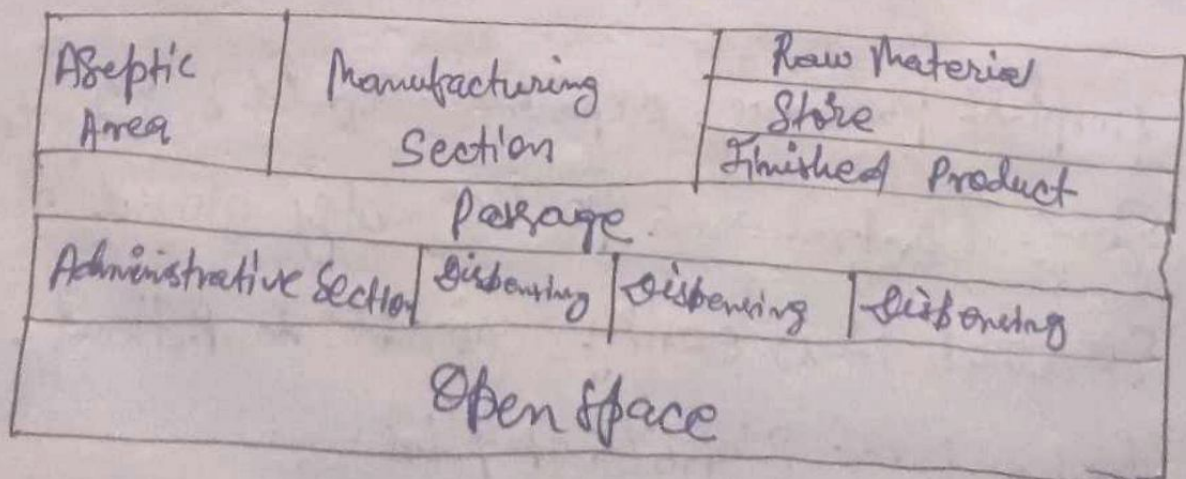
Location & Layout of Hospital Pharmacy

- 1) Hospital pharmacy department should be situated in some central area preferably ground or 1st floor so that it is easily accessible to patient & various department staff of hospital.
- 2) Outpatient pharmacy should have pleasant look & space for seating of patient.

⇒

- 3) There should be display educational posters on health & hygiene.
- 4) Plans can be differencing from hospital based on size on hospital Ex- 50 beds size 200 sq. feet may be space for hospital.
- 5) It is bigger size hospital requirements may be 600 sq. feet (Manufacturing room, store room, library, office, Counseling room)
- 6) Space must be assign for routine manufacturing room adjacent to pharmacy.
- 7) Medical store adjacent to the pharmacy.

Locations layout of Hospital Pharmacy



Good Pharmacy Practice (GPP)

FIP (International Pharmaceutical Federation)
- Central 1312 Declaration

⇒ The objective of framing and implementing Good Pharmacy Practice guidelines for India is that over the next few years, all pharmacists in India should achieve that standard of practice.

Handwritten notes: GPP एक तरह का guidelines है, जो भारत में ही इस लिए कि जो वहाँ इस तरह का है। India के अंदर हिन्दुस्तान के अंदर जो pharmacist हैं जो कि इस वाले है जो वापस मिल सके अपने Indian एक standard level कि practice करते।

ETHICS: The aim of Pharmacy Practice is to enhance people's health by assisting patients with medical conditions in getting the most out of their medications. This purpose has six components -

Handwritten notes: People's health को बढ़ावा देने के लिए। Patient को मदद कर के उनके अंदर से अंदर। Condition's में getting the most out of their। क्लिफॉन Medication provide कर लेके मिलते हैं उनके health को बचाता है। Medications. This purpose has six components - जो लेंके

- I) Being accessible to patients without an appointment. *Handwritten notes:* Patient को लिये बिना Appointment को बिना अपने मिलने के बिना किसी appointment के
- II) Recognizing and managing or tracing health-related problems. *Handwritten notes:* आपके पास इसकी बीमारी होती है। आपसे कि patient कि किस तरह के Problems
- III) Health promotion. *Handwritten notes:* उनके health को बढ़ावा ला सकें।
- IV) Assuring medication effectiveness. *Handwritten notes:* जो आप medicine के लिये knowledge है वह ही उनके लिए इफेक्टिव होनी चाहिए।
- V) Preventing medication damage and making. *Handwritten notes:* किसी तरह का कोई दवा expire न ले के उनको किसी तरह का नुकसान न पहुंचाने।
- VI) Making responsible use of limited health-care. *Handwritten notes:* अंदर दवाओं का इस्तेमाल किया जाना है। अंदर ही limited दवाओं को इस्तेमाल करा सके।

(A) STRUCTURE GUIDELINES

(B) PROCESS GUIDELINES

जो भी फर्मास्यूटिकल को जो प्रति में बांट (प्रक्रिया) है।

(A) STRUCTURE GUIDELINES

1) FACILITIES :

⇒ The pharmacy should be easily located and identified by the public. Exterior of the pharmacy should be maintained neat and clean. The display should be clearly marked with the word "PHARMACY".

Pharmacy की जगह ऐसी चाहिए कि Patient भ्रमण से मुक्त हो सके। बाहर से Pharmacy होना दिना चाहिए जो है में Pharmacy की display neat and clean होना चाहिए कि जो जो के पता चल सके में Pharmacy की Pharmacy के अक्षरों में लिखा होना चाहिए।

~~⇒ The Pharmacy should be easily located and identified by the public. Exterior~~

⇒ The pharmacy environment should be clean with minimum dust, free from rodents and pests/insects and pest control measures be taken from time to time.

Pharmacy का Surrounding क्षेत्र होना चाहिए neat or clean Dust free होना है कि कबूतर रहे हैं। रूखा है जो कड़े काटे हैं, मछरी उस हो है और एकात्मिक से इनको रोका देना जहाँ चाहिए।

⇒ The pharmacy should have a constant supply of energy especially for the refrigerator. There should preferably be a provision for drinking water.

सिजन, कि लगभग कारगर रही तापी Refrigerator में जो बचाये रही हुई उस बचाओ के storage condition maintained होना चाहिए। drinking water लाने से होती जाते ताकि patient को पता कि जरूरत है तो उसे पानी मिले पाये।

2) The Pharmacy should have .

1) Sufficient space for patients to stand comfortably at the dispensing counter.

space पर्याप्त मात्रा होती चाहिए ताकि क्या होगा कि Patient इसाना से अपनी बचाओ को collect कर सकें।

* Have Communication Skill and Capabilities to give proper advice to the patient
एक ही समय में ध्यान रखना है कि जिस भाषा में आप काम करते हैं उसी भाषा में सलाह दें।

4) Documentation System:

⇒ All necessary statutory documents (eg:- regulatory -
- licences, registrations, permissions etc) ^{Pharmacist} For opening
a pharmacy must be maintained and should be ^{पूरी तरह से सुरक्षित}
displayed if required under the law. ^{नियमों के अनुसार प्रदर्शित किया जाना चाहिए}

⇒ All operational documents like purchase/invoice,
sales/invoices and other statutory documents ^{Medicine में होने वाली चीजों की पूरी जानकारी} should
be maintained and arch as prescribed by the law. ^{सही ढंग से रखा जाना चाहिए}

Some of the necessary documents include ⇒

⇒ Protocols

⇒ Standard working Procedures (SOP) ^{पैटर्न बनाते हैं}

⇒ Operation instructions ^{होती हैं}

⇒ Quality Manual • ^{गुणवत्ता के संकेतकों को संदर्भित करने के लिए} written file document
^{लिखित रूप में}

(B) Process Guidelines

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01) Procurement and Inventory management

- ⇒ The Pharmacist should ensure that the source of supply of Medicines and other items meet the standard's laid down in the law.
- ⇒ The Pharmacist should maintain a products list where all times approval by the Pharmacy for stocking are described.
- ⇒ All products received from vendor's should be tallied their invoice and checked for correctness of quality, price, batch-number and expiry date.
- ⇒ The purchase records / invoice should be maintained as stipulated under the law.

02) Storage and Storage Management :

- ⇒ A product's coming into the Pharmacy should be checked for correctness of quality, batch number, expiry, integrity etc and then allowed to transfer to their respective storage location.

⇒ All drug should be stored at stipulated temperature areas, protected from excessive light, dust and humidity.

⇒ Some medicines like drugs and -
- psychotropic substances act as some CNS drug etc. keep under lock & key.

03) Prescription handling:

⇒ UP on receiving the prescription, the pharmacist should conform.

⇒ Identity of the client

⇒ Prescription is presented by the client himself or by someone the client be held.

04) Dispensing: The medicine should be removed from the storage area, counted and invoiced. As a final step, the pharmacist should personally dispense the medicines.

05) Extemporaneous preparation:

⇒ AS such preparation should be

used for Compounding. After Compounding the product should be transferred to a Suitable container.

06) Information for Patient:

⇒ Pharmacist provide oral as well as written information about various illness, medicines and other health care products.

07) Patient Counselling:

⇒ The Pharmacist should provide professional counselling with regard to use of medicines and related products.

* How to take the medication's.

* for how long

* when to take the medicine

* what food / beverages / tasks to avoid during the therapy.

Hospital Pharmacy Standards

FIP (International Pharmaceutical Federation) Basel Statements.

- ⇒ FIP is the global federation of national associations of pharmacists and pharmaceutical scientists. It is active across all areas of pharmacy practice, pharmaceutical science and education, primarily through the work of member associations and dedicated volunteers.
- ⇒ It initiates and implements numerous projects and programs to improve the responsible use of medicines.
- ⇒ Hospital pharmacists from around the world met in Basel, Switzerland in 2008 to discuss the future of Hospital - Pharmacy hosted by FIP (International - Pharmaceutical Federation) in 2014 they again gathered in Bangkok and launched an updated version of Basel Statement with 65 ~~statements~~ statements.

⇒ These statements cover following six main areas of Hospital pharmacy (FIP Basel Statement) :-

- 1) Procurement
- 2) Influences on prescribing
- 3) Preparation and delivery of medications
- 4) Medication administration.
- 5) Monitoring Medication.
- 6) Human resources and training

⇒ Each pharmacy should Plan for Emergency Medicine Shortage and emergencies.

⇒ the 7 rights:

- 1) Right Patient
- 2) Right medicine
- 3) Right dose
- 4) Right route
- 5) Right Information
- 6) Right documentation
- 7) Right time

1) Procurement :-

⇒ Hospital Pharmacist should be involved

In the procurement of medicines and health products, promoting equity and access to ensure transparent procurement.

⇒ Procurement practices ensure quality assurance, principles, regularly reviewed and adapted to fit different settings and emerging needs in the most appropriate and cost effective way.

2) Influences on Prescribing.

⇒ Hospitals should utilize a medicine formulary system.

⇒ Hospital Pharmacists should participate in Collaborative Prescribing.

3) Preparation and Delivery

⇒ Hospital Pharmacist should assume responsibility for storage, preparation, dispensing and distribution of all medicines, including investigational medicines.

4) Administration

⇒ Hospital Pharmacist should ensure ⇒

5) Phase-4

⇒ that the information resources needed for safe medicines preparation and administration are accessible at the point of care.

⇒ Hospital Pharmacists should ensure that medicines are packed and labeled to ensure identification.

5) Monitoring of Medicines use

⇒ Reports of defective or substandard medicines should be reviewed internally and sent in a timely manner to regional or national pharmacovigilance or regulatory reporting programs and the manufacturer.

⇒ Reports of medication errors should be regularly reviewed to improve the quality and safety of medicines use practices.

6) Human Resources, Training and Development

⇒ At a national level, competency frameworks are defined, established and regularly assessed.