

UNDERSTANDING MOVEMENT PATTERN IN HOSPITAL

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Abstract - The hospital is crucial to the healthcare system. These hospitals provide structured, qualified medical knowledge, inpatient facilities. The significance of linkages between various hospital departments and the significance of placing departments appropriately according to floors have both been explored and briefly discussed in this essay. In this work, a thorough investigation has been used to deduce the departments' horizontal and vertical locations as well as their linkages. And the movement patterns have been implemented in accordance with the various user groups.

Key Words: Entry, Horizontal Movement Patterns, Vertical Movement Pattern, Out Patient Department, Inpatient Department And Operation Theatre.

1. INTRODUCTION:

Hospital plays an important role in the healthcare system. These institutions offer organized and professional medical expertise and inpatient facilities and deliver nursing and medical related services twenty four hours and seven days a week. In this research we will be studying about the area circulation of the hospital buildings and there service pattern. this study will help us to have better understanding of the connections between different departments within the hospital building and identify there weak points. And hence we will try to give a relevant solutions of these problem through our research.

1.1 Circulation

Circulation inside any building starts right from its entry inside the campus and then inside a block. The circulation pattern can be derived into two types first is vertical which can be carried out by the means of entry and corridors and the other one is made out through Elevators, Staircase and Ramp.

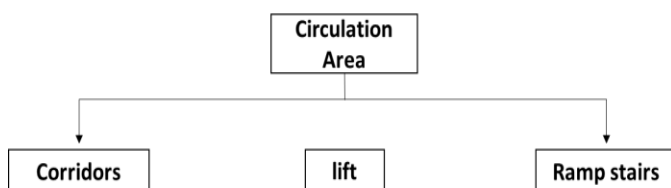


Fig -1: flowchart Circulation Area

1.2 Corridors:

The width of the corridors must not be less then 3 Mtr. As prescribed in Indian Public Health Standards (IPHS).

1.2 Ramps:

Ratio prescribed for the ramp is 1:15 to 1:18 as per Indian Public Health Standard (IPHS).

2. Entry:

There are two kinds of entries described firstly entry to the site and secondly entry inside the main hospital building. There should be two different entries for ambulance carrying patients and other one for service and goods crier.

Where as in side the block entry depends upon the department placed at the ground floor because the approach to the other floor totally depends upon the lifts and elevators. We have identified the emergency and O.P.D should have separate entry due to their functioning criteria well get to learn ahead. According to GOI requirements, a barrier-free environment is required for simple access for non-ambulant (wheelchair, stretcher), semi-ambulant, visually impaired, and elderly people.

3. Movement Patterns:

The movement patterns depends upon the different kinds of user groups. The user groups observe to have movement are of four kinds:

1. Nurses and Doctors
2. Patients
3. Visitors
4. Other Technical Staff

The patters of Movement observed by different users are mainly of two kinds:

1. Vertical movement
2. Horizontal movement

3.1 Vertical Movement Patterns:

Vertical movements should be designed in such a way that it connects the essential department twithought creating

any hindrance in movement of users and provides proper connections within various departments with proper entry.

3.2 Horizontal Movement Patterns:

Horizontal movement pattern depends up on more over the placement of the department horizontally and making a viable connections within them via elevators, Stairs and Ramps.

4. Floor Wise Placement Of Departments:

Departments should be placed in such a way that they have proper connection between themselves. The emergency department, Out Patient department and In-Patient Department should have proper unhindered connection within them selves so that nursing staff and doctors have proper reach to the patients in need in both the departments from O.P.D. following is the floor wise configuration of the departments.

4.1 Ground Floor:

Ground floor is subject to the various entries for various types of user groups depending upon there needs. We are considering to provide placement of the most important department to the ground floor with separate entry.

4.1.1 Emergency Department:

The department should be located at a place which may be easily accessible to both indoor and out door patients. The entrance to the emergency should be sheltered to protect ambulance patient from weather while unloading.

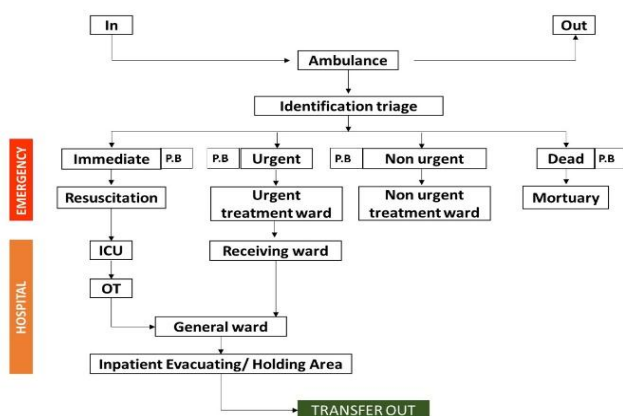


Fig -1: flowchart emergency department

4.1.2 Maternity Department:

Maternity department is can also be considered to be one of the most sensitive and important departments and should be provided at the ground floor with a proper connection with O.P.D.

Maternity and emergency ward should be connected well to the Pathology and Radiology department.

4.1.2 Out Patient Department:

The facility must be planned with the potential for future growth and the maximum peak hour patient load. OPD must arrive from a prominent route with clearly visible signage.

O.P.D consist of various chambers for doctors with different specialization the layout follows following pattern of flow by patients and other users:

Enquiry→Registration→Waiting→Sub-waiting→
Clinic→Dressing room/Injection Room→Billing→
Diagnostics (lab/X-ray)→Pharmacy→Exit

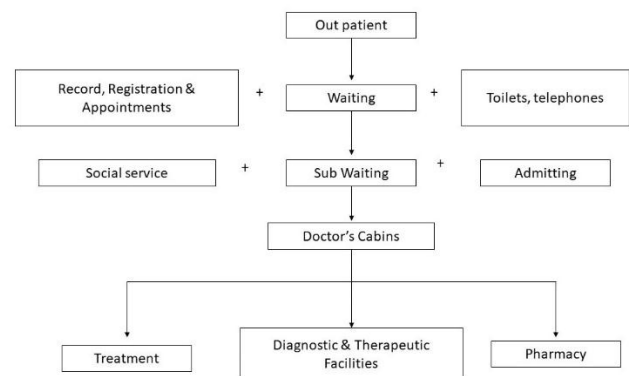


Fig -1: flowchart Out patient department

4.2 In Patient Department:

Floors above the ground floors are generally dedicated to the in patient facilities like wards. Wards generally classified into three categories Medicine, Surgery and Otho. Further wards are classified according to specialized department such as pediatric (pediatric surgery and pediatric medicine), Maternity ward (maternity surgery and Maternity medicine) and cardiology (cardiology medical and cardiology surgical) etc.

1. Both the wards under there special department can be further subdivided into male and female.
2. y. 10% of the total bed strength is recommended as private wards beds.
3. The ward's location should be chosen to provide peace and regulate the amount of visitors.
4. Given that numerous treatments may now be completed in day care settings, it is preferable to reserve up to 20% of the total beds for these institutions.

4.3 Operation Theatre:

A team of surgeons, anesthetists, nurses, and occasionally pathologists and radiologists work on or provide care for the patients in the operating room.

1. Users other than patients, nursing staff, doctors, and other technical staffs should be prohibited from entering operation theatres, which should be situated in a quiet area.
2. Support services such as Intensive Care Unites, High Dependency Unites (for patients related to cardiology) and Critical Care Unites should be provided near Operation Theatres.
3. It should have good connections to the CSSD, surgical ward, radiology, pathology, and pharmacy.
4. Additionally, this unit requires ongoing specific services including power supply, piped suction, and medicinal gases.

4.4 Other Essential Services:

4.4.1 Post Partum Unit:

Every district hospital should have a postpartum unit with a dedicated staff and the necessary resources to offer integrated postpartum care, safe abortion care, comprehensive family planning services, and vaccination.

4.4.2 Hospital Kitchen (Dietary Service):

An essential therapeutic tool is a hospital's nutrition service. There should be a separate area for the dietician and special diet, as well as easy access for vehicles from the outside. It should be situated such that the other departments are not inconvenienced by the noise and cooking smells coming from the department.

4.4.3 Central Sterile Supply Department:

Given that the operation theatre department uses this service the most, it is advised to put the department next to the operation theatre department. It ought to be equipped with a hot water supply.

4.4.4 Hospital Laundry:

It should have the tools essential for pressing, drying, and storing soiled and clean linens. Outsourcing may be used.

4.4.5 Mortuary:

It offers facilities for preserving corpses and doing autopsies. The Mortuary will be situated in a separate structure on the ground floor, next to the Pathology, and

will be simple to reach from the wards, Accident and Emergency Department, and Operation Theater. It must be situated distant from major public thoroughfares.

4.4.6 Blood Bank:

The pathology department, the operating room department, the critical care unit, and the emergency and accident department should all be within easy walking distance of the blood bank.

4.4.7 Pharmacy:

All clinics should be able to easily access the pharmacy, which should be nearby. The space should be sufficient to accommodate 5% of all clinical visits to the OPD in a single session. Every day, there should be one dispensing counter for every 200 OPD patients.

4.4.8 Dharamshala:

It is a location that offers short-term, temporary housing. The area must be at least 0.25 hectares of property next to or inside the hospital's grounds.

5. CONCLUSIONS

We have discovered via our research that the circulation pattern is crucial to carrying out functions inside hospital buildings correctly and to establish adequate connections between various departments. Therefore, we must start from the entrance in order to give proper communication between departments and make the space flow through and functional.

For the emergency room, O.P.D. services, mortuary department, and removal of dead, we have advised separate entrance.

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