

Architectural Design-IV(26151)Lesson-04

PLANNING CONSIDERATION OF EMERGENCY DEPARTMENT

Planning Considerations for an Emergency Department:

The **Emergency Department (ED)** is a critical unit in a hospital that provides **immediate medical care** for patients with acute illnesses, injuries, or life-threatening conditions. Proper planning ensures **efficiency, accessibility, and rapid response** to emergencies.

1. Location & Accessibility

- **Ground floor placement** for quick access and evacuation.
 - **Direct access from main roads** for ambulances and emergency vehicles.
 - **Separate entry and exit points** to avoid congestion.
 - **Proximity to critical hospital departments** (ICU, OT, Radiology, Blood Bank).
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2. Zoning & Functional Areas

An effective **emergency department layout** includes:

a) Triage Area (Initial Assessment)

- Located near the entrance for **quick patient classification** based on urgency.
- Staffed with **trained nurses and paramedics**.

b) Resuscitation Room (Critical Cases)

- Equipped for **CPR, cardiac arrest, and life-threatening emergencies**.
- Located near **ICU and Operation Theatre** for rapid transfer.

c) Major & Minor Treatment Areas

- **Major Treatment:** For **serious injuries requiring observation**.
- **Minor Treatment:** For **non-life-threatening conditions**.

d) Observation & Recovery Area

- Short-term patient monitoring before **admission or discharge**.
- Equipped with **beds, oxygen supply, and monitoring devices**.

e) Diagnostic & Imaging Facilities

- Nearby access to **X-ray, CT scan, ultrasound, and laboratory services**.

f) Isolation Room

- For **infectious patients** to prevent cross-contamination.

g) Staff & Support Facilities

- **Doctor's and nurse stations** for continuous monitoring.
 - **Medication storage & pharmacy** for emergency drugs.
 - **Waiting areas** for patient attendants with **toilets and seating**.
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3. Design & Infrastructure

- **Wide corridors & doorways** for easy movement of stretchers and wheelchairs.
 - **Shock-resistant and non-slip flooring** for safety.
 - **Adequate ventilation and temperature control** for patient comfort.
 - **Noise control measures** to reduce stress in high-pressure areas.
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4. Medical Equipment & Technology

- **Emergency crash carts** with life-saving drugs and tools.
 - **Defibrillators, ventilators, and oxygen supply** for critical cases.
 - **Digital patient records (EHR) and telemedicine** for faster diagnosis.
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5. Safety & Infection Control

- **Separate entry for infectious patients** to minimize spread.
 - **Hand hygiene stations and PPE storage** for staff.
 - **Bio-medical waste disposal system** for hazardous materials.
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6. Human Resources & Workflow Efficiency

- **24/7 medical team availability** (Doctors, nurses, paramedics).
 - **Clear signage and wayfinding** for quick navigation.
 - **Communication system (intercoms, paging, emergency alarms)**.
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7. Disaster Preparedness & Mass Casualty Management

- **Emergency response protocols** for accidents, epidemics, and disasters.

- **Expansion capacity** to handle **mass casualties** in crisis situations.
 - **Backup power supply (generators, UPS)** for uninterrupted operations.
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Conclusion

A well-planned **Emergency Department** ensures **rapid treatment, smooth patient flow, and effective crisis management**. By integrating **efficient zoning, safety measures, and modern technology**, hospitals can provide **lifesaving emergency care** efficiently.