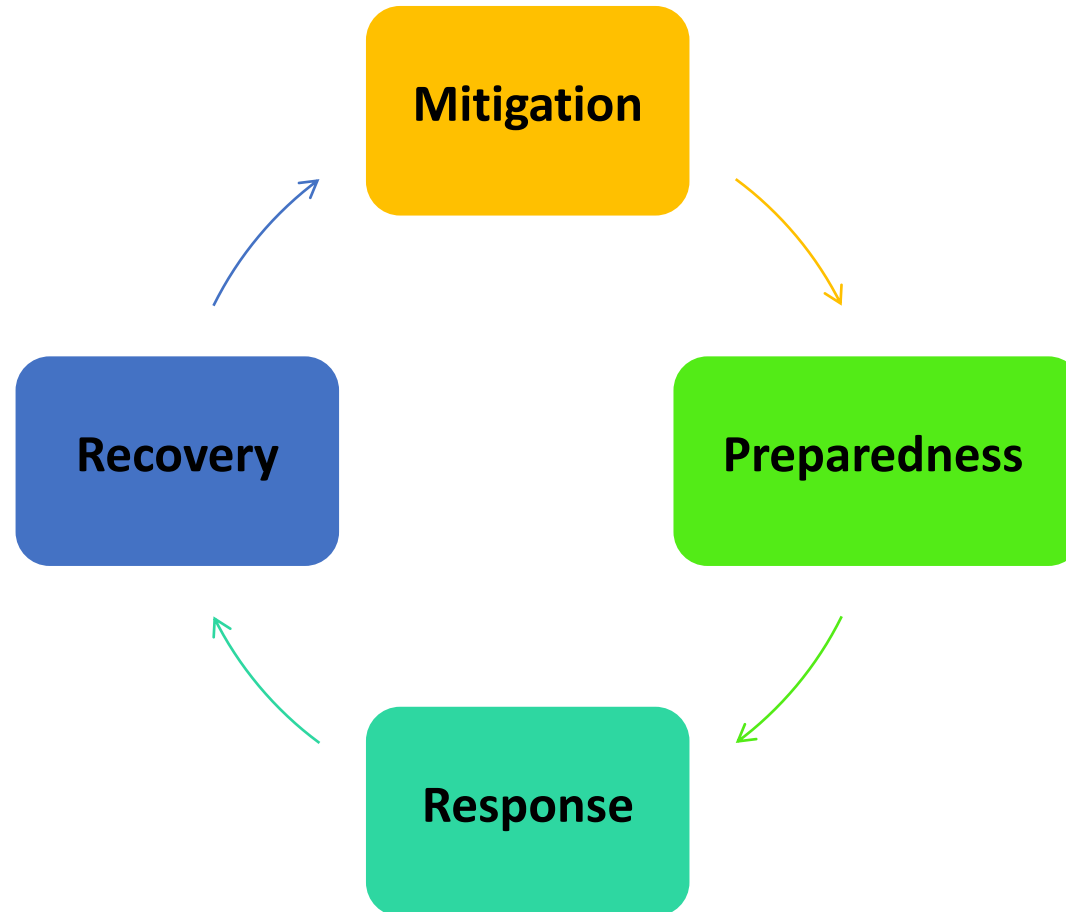


Hospital Emergency Evacuation

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Disaster management cycle



Preparedness phase

فعالیت ها و اقداماتی که پیشاپیش برای اطمینان از پاسخ موثر به آثار سوء مخاطرات انجام می گیرند:

۱- استقرار سامانه هشدار اولیه

۲- تدوین برنامه آمادگی

آموزش و تمرین اجزای اصلی برنامه آمادگی هستند.

Hospital Disasters

1- Internal disasters(Emergency Evacuation)

2- External disasters(MCI)

Hospital Emergency evacuation

- تخلیه اضطراری بیمارستان شامل خالی کردن **کامل** یا **قسمتی** از بیمارستان به دلیل مخاطرات **داخلی** و **خارجی** برای بیماران و همراهان و به منظور انتقال آنها به منطقه امن می باشد.

اهمیت تخلیه اضطراری بیمارستان...

- در فاصله بین سال‌های ۲۰۰۰ تا ۲۰۱۷ بیش از ۱۵۰ بیمارستان در ایالات متحده آمریکا تخلیه شدند.
- بررسی‌ها نشان داد که ۷۱٪ از بیمارستان‌ها به دلیل تهدیدات خارجی، ۱۶٪ به دلیل تهدیدهای انسان‌ساخت و ۱۳٪ هم به دنبال تهدیدات داخلی تخلیه شده‌اند.
- آتش‌سوزی بیمارستانی حدود ۴۰٪ از تهدیدات داخل بیمارستانی را شامل شد.

- Evacuation is a **crucial component** of the aim to **save lives** in emergency situations in hospitals.
- A comprehensive **evacuation plan** needs to be in place that all **staff members** are aware of and are **experienced** in carrying out.
- It is important to **note** that there **is no fixed methodology** for evacuations; the procedure will vary for each **individual health care facility**.





مراحل تخلیه اضطراری

تصمیم گیری (Decision making)

هشدار (Alert)

حرکت (Movement)

پناه گرفتن (shelter)

بازگشت (Recovery)

Hospital emergency evacuation *decision-making*

- **Hospital infrastructure consequences** (Loss of electricity and water)
- **Threat** (type of disasters)
- **Internal factors** (resources such as staff, and removing patient devices)
- **External factors**(transportation)

Notification

- If there is the **decision to evacuate is made**, there should be a designated person **responsible** for notifying the entire facility of the evacuation order, using appropriate systems such as **overhead pages, emails, text messages,** and **internal hospital communication systems.**
- The procedures of the hospital emergency operations center **(EOC)** should include **immediate notification** of appropriate agencies such as the **Ministry of Health; fire, police,** and/or **army** service.

Types of Evacuation based on time

Immediate	"Emergency move"—evacuate immediately or patients and staff may die; no time to prepare.
Rapid	Evacuate as quickly and safely as possible; limited time to prepare (1 to 2 hours); follow procedures.
Gradual	No immediate danger; sufficient time for systematic evacuation procedures (many hours to several days).
Prepare Only	Do not move patients, but begin to prepare for evacuation.

The types of evacuation based on movement

Horizontal: The primary mode of evacuation involves moving patients in immediate danger away from the threat but keeping them on their current floor.

Vertical: This usually involves the complete evacuation of a specific floor in the hospital. Patients and staff will be evacuated out of the hospital only if necessary.

Shelter in Place: The staff may be instructed to “shelter in place,” that is, remain in their units and await further instructions.

Level of Evacuation



Evacuation Routes

- Evacuation routes should be **clearly** established.
- All hospital staff should have a working *knowledge* of the *evacuation routes*
- Evacuation planning must take into consideration all *spaces around* the hospital compound. This will help in the development of *emergency transit routes, assembly areas, holding areas*, and so forth.

Egger

- There must be a minimum of **two independent egress** routes and exits for every **location on every floor**.
- Exit routes should be located as **far away from each other** as possible so that if one exit route is **blocked** with **smoke or fire**, the alternate route can be used.
- The width of the corridor leading to the **emergency exits** (unobstructed) should be at least **2.4 m**. This will permit the transportation of hospital **beds, mattresses**.

Egger ...

- **Doors** should be of the minimum width necessary to accommodate a **stretcher**
- **Evacuation maps** should be posted at the **hospital's main access points** to clearly **identify egress routes**.

evacuation process

1-Preparation time: The required time for preparing the patient for evacuation.

This time depends on the type of preparation and the ability of the corresponding personnel to be ready to move the patients: (1) with no devices—ambulant patients- (2) to a wheelchair, (3) to a stretcher or (4) to a blanket.

evacuation process

2-Response time: The time elapsed until each health care personnel member starts movement to evacuate the patients.

evacuation process ...

3-Transportation speed: The walking speed of personnel while transporting the patient to another safe compartment or while walking with the patients (ambulant patients).

Personnel Resources

- Effective evacuation of a health care facility depends on the **number of staff and trained personnel available.**
- Understanding the **scope** of the evacuation and **knowing** the minimum number of people required to undertake these procedures in the event of an ***emergency is paramount in saving lives.***

Number of Staff

- Standard acceptable ratios of number of **medical staff** to **number of patients** have been established.
- These ratios are dependent on the *level of care required* for each patient.

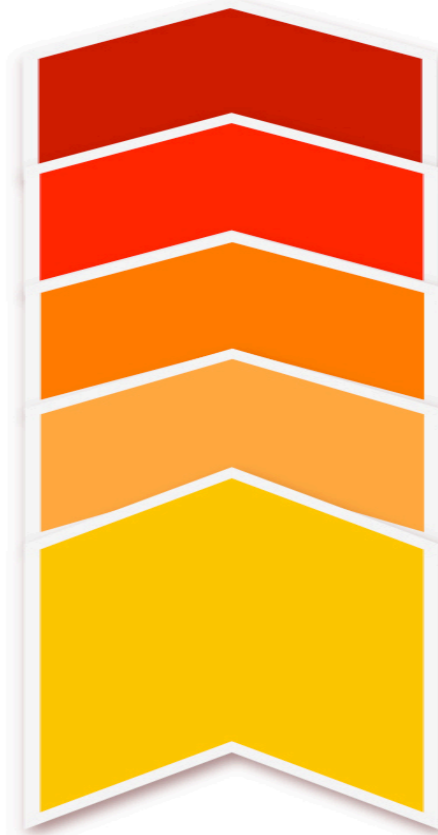
- Staff ratios are based on the **hospital's protocol** and the country's statutory regulations.
- Every shift should have **health and safety officers** or wardens on-site who are **trained** and **knowledgeable** regarding fire response and evacuation procedures.
- In some instances, **volunteers** can assist with the **gradual** or **rapid** evacuation of a hospital.

Nurse:patient ratio	Description of patient care
$\leq 1:8$	Routine care (generally, this ratio should not be exceeded)
$\leq 1:2$	ICU, neonatal, post-anesthesiology recovery, labor and delivery, emergency unit and recovery unit
$\geq 1:1$	Operating theatre (typically more than 1 nurse to 1 patient)
1:4	Antepartum, postpartum, pediatrics, emergency room, specialty care
1:5*	General surgical units

Patient Prioritization Evacuation

1. Patients in immediate danger (**near the fire**)
2. Ambulant patients — **Type 1**
3. Patients requiring some transport assistance (wheelchair) — **Type 2**
4. Patients requiring transport assistance (stretcher/blanket) — **Type 3**
5. Patients who are being treated and/or would be difficult to relocate/evacuate
(**i.e. ICU, bariatric**).

Priority Ratings for Immediate Evacuation of Patients



Patients in immediate danger

Ambulatory patients

Patients in general care units requiring transport assistance

Patients in intensive care units

Patients in the operating room (It is important to note that surgical procedures that have been initiated should be completed to a point of safety before the patient is moved. In the case of immediate danger, evacuate horizontally to a safe area to complete the surgery to a point of safety. Operating beds are movable.)

Patient Special Needs

❖ Needs of Patients with Disabilities:

- Patients who cannot **hear** or **see** or are **under anesthetics** (unconscious) at the time of the evacuation may require *special accommodations*.

❖ Emotional Support Needs:

- Patients may require *psychological support* as a result of the stress of the disaster situation.

Patient Special Needs...

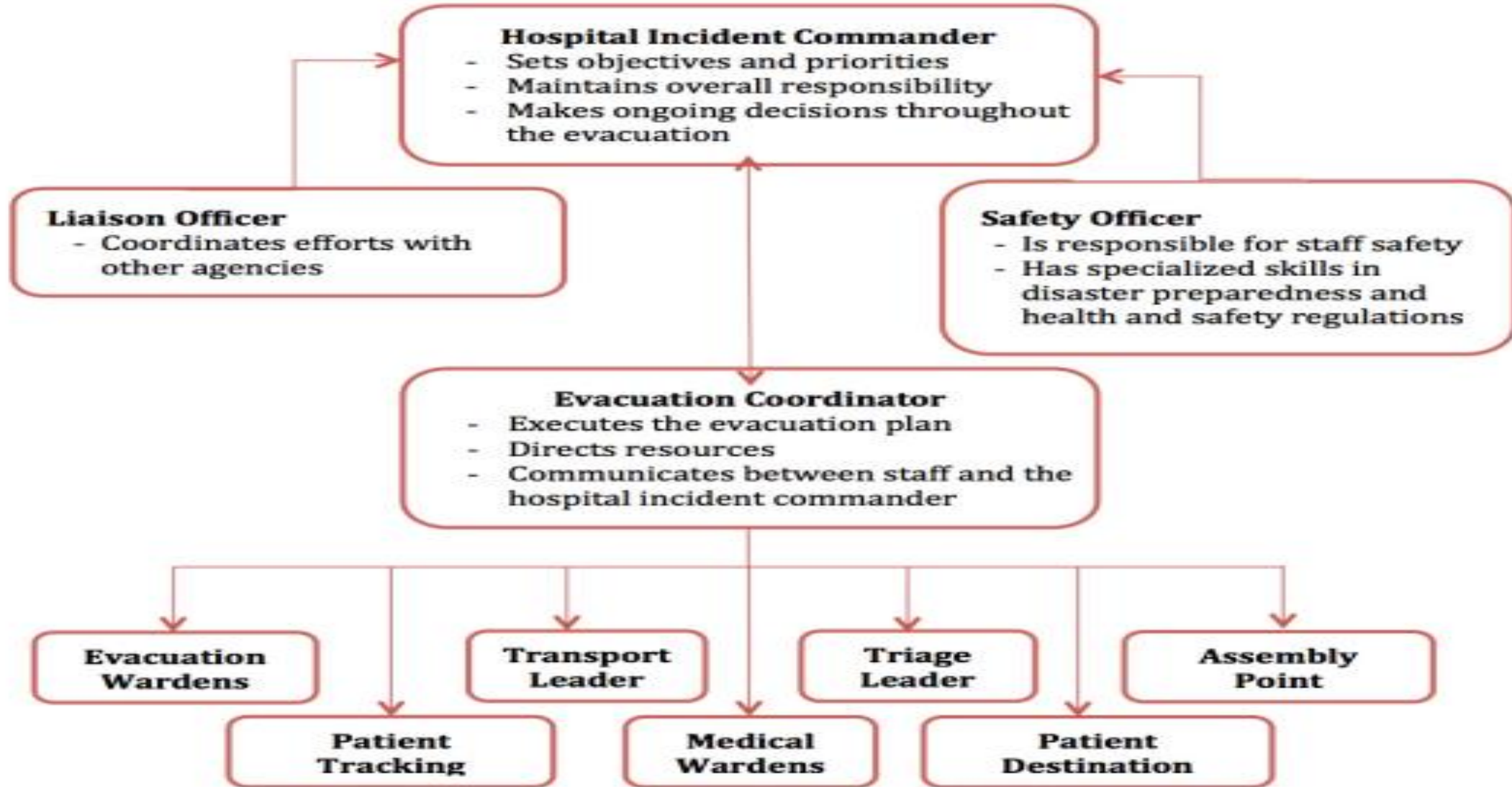
❖ Medical Care and Equipment Needs:

- Patients may require specific **life support equipment** (e.g., **ventilators**) that should **accompany** them when they evacuate.
- ***Specific medications*** that patients need for **treatment** should also **accompany** them when they evacuate.

Evacuation Transport Equipment

- In the event of an evacuation, it is essential to have *transportation equipment* available for patients.
- A *sufficient amount* of equipment should be available to evacuate *each floor* of the facility.
- Equipment should be stored in areas that are *easily accessible* at all times; it should not be stored in *locked closets*.

Hospital Incident Command System



- **Evacuation Warden:** Prepare patients for evacuation
- **Transport Leader:** Transport patients to assembly point
- **Patient Tracking Supervisor:** Track patients at assembly point
- **Medical Warden:** Care for patients/support nurses at assembly point (identify number of staff members needed for each unit)
- **Triage Leader:** Triage patients for transportation or discharge

Tracking

- **Patient Tracking**

An individual designated to perform **head counts** at the **assembly points**.

- Staff assigned to ***check rooms and floors*** to ensure that they have been vacated.
- ***Senior personnel*** in each department are responsible for addressing **special hazards or concerns**.

Medical Records

- **Medical records** are usually located on the wards with the patients. Ensure that medical records **accompany** patients when they evacuate the facility.
- A ***specific protocol*** for ensuring that records leave with patients should be established as part of the **evacuation procedures**.
- Consideration should be given to storing all of a health facility's medical/essential records ***in fireproof filing*** cabinets.

Family Notification

- There should be an **emergency contact** for all patients. Information on this contact person is usually kept with the patient's **medical records**.

In an evacuation, designated personnel should:

- Attempt to notify ***family members*** and other **responsible parties** about the patient's ***transfer destination***.
- Answer ***calls and respond to questions*** from family members about the patient's **welfare** and **location**.



باتشکر از حسن توجه شما