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HARVARD | SCHOOL OF PUBLIC HEALTH
Emergency Preparedness and Response Exercise Program


# MDPH HOSPITAL EVACUATION TOOLKIT

## II. HOSPITAL EVACUATION PLANNING GUIDE

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# PREFACE

## Purpose

The Hospital Evacuation Planning Guide is meant to provide planning assistance and assist a hospital in refining and augmenting its efforts to prepare for the possible evacuation of part or all of the facility. This guidance is meant to complement and integrate with the institution's Emergency Operations Plan (EOP), and not replace, duplicate, or conflict with the structures, roles, or guidance offered by the EOP. Not all portions of the guidance will necessarily be appropriate for all hospitals. Hospitals are encouraged to review this document and adapt and incorporate those sections and tools they deem useful and appropriate to their needs.

## Current Scope of Planning Guidance

While this guidance contains principles and procedures applicable to all healthcare facility evacuations, the specific tools in this document address evacuation procedures for inpatient care units only. Hospitals must, of course, consider all spaces within their campus including outpatient care sites, procedural suites, public spaces, research programs, and other areas when developing their EOPs and during evacuation planning.

## Assumptions

The general assumptions upon which this toolkit is based are listed in the Introduction (found in Section I, page 1).

For this guidance, it is assumed that the systems, structures, and tools within this guidance will always be used after the hospital's EOP has been activated. Therefore, it is also assumed that the Hospital Incident Command System (HICS) will be used throughout the duration of a hospital's evacuation response. Because each hospital may have its own unique HICS structure specified within its EOP, this planning guidance does not replace or alter the institution's fundamental HICS structure, but rather proposes to add additional specific functional components that may be activated during a hospital evacuation when needed. Whenever relevant, this planning guidance will show where a proposed function specific to evacuation may fit within a general Hospital Incident Command System.

As also mentioned in the Introduction, there are many reasons why a hospital would need to evacuate and different constraints that hospitals will need consider when conducting an evacuation. Because some emergency planners may feel more comfortable specifying a timeline within which evacuation must occur in a "basic" evacuation planning scenario, the core planning assumption in this guidance is that full evacuation of the hospital must be completed within 4-6 hours. Nonetheless, this planning guidance is relevant for other, including less and more, urgent evacuation scenarios. In a gradual or planned evacuation, the same steps are followed but with more time to complete them. In an immediate evacuation, while there is no time for anticipation of the incident, the efforts a hospital makes to adapt the guidance and tools within this document are anticipated to help staff better know what to do without needing specific direction and where to go to protect their patients and themselves.

# GUIDING PRINCIPLES

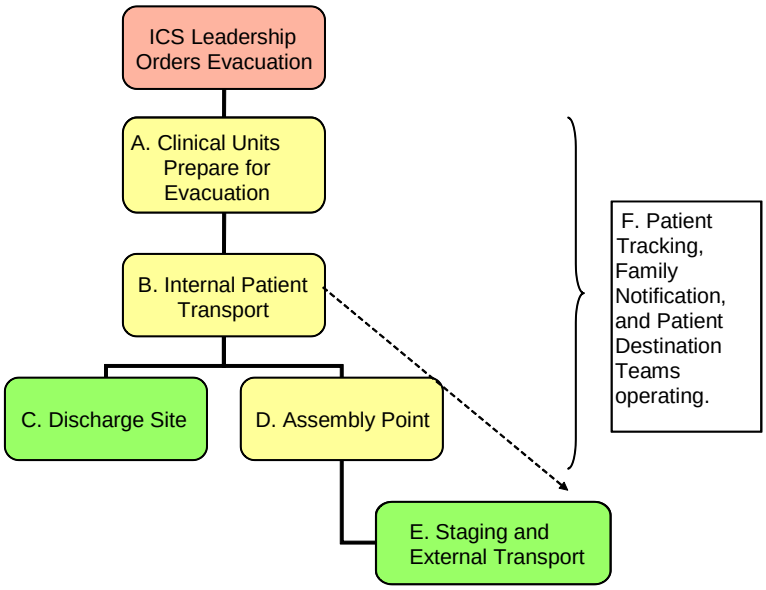
Moving all patients, visitors and staff out of dangerous and/or damaged facilities as safely as possible is always the goal of an evacuation. **It is important to recognize that routine care and processes will not be optimal in response an evacuation scenario.** To that end, understanding key principles will help staff make good decisions during a challenging event.

- Full evacuation of a hospital should generally be considered as a last resort when mitigation or other emergency response efforts are not expected to maintain a safe care environment.
- Safety is always the primary concern.
- Simplicity is key; the staff will need a simple plan to follow in an emergency.
- Flexibility is vital because the procedures must be able to be adapted to a variety of situations.
- Self-sufficiency at the unit level is important because timely communication from hospital leaders may be difficult or even impossible, requiring employees at every level to know immediately what to do in their area.
- It may be necessary to evacuate patient care sites before transportation resources and/or receiving destinations are available. Because horizontal safe sites may not always be available, hospitals must also identify and designate Assembly Points located away from the main clinical areas for every patient care unit that will accommodate essential patient care functions while patient transport is being arranged.
- Individual patient care units should stay together at the Assembly Points whenever possible (instead of dividing their patients into separate groups by ambulatory status). This is because the unit teams familiar with their patients will be better able to manage them in a chaotic situation away from the care unit.
- EMS and other external patient transporters should generally not be asked to come onto the hospital units to load patients because of the risks, time delays, and inefficiency in this process when large numbers of patients are involved. Instead, evacuating patients should be brought to meet their transporting ambulances and other vehicles in rapid-throughput staging areas.
- When difficult choices must be made, leaders and staff must focus on the “greatest good for the greatest number.”

*The primary consideration when deciding whether to evacuate a hospital is the safety of both patients and staff[1, 2]. How patient and staff safety is evaluated will drastically affect whether or not a hospital evacuates. Hospitals should strive to develop a clear, comprehensive, and consistent decision-making matrix that can be used when they are considering whether to evacuate or not.*

# PROCESS OVERVIEW

The process of evacuating a hospital can be organized into several key components. Each component is described in detail in this guidance. As detailed in the *AHRQ Hospital Evacuation Decision Guide*, the decision to evacuate is a difficult one that will likely be made with the input of a team of leaders in the hospital and/or external authorities after carefully assessing the safety threats and all possible alternatives. However, once the decision to evacuate has been made, then the process of hospital evacuation is fairly linear. Below is an example schematic of the core stages in the hospital evacuation process:




**A. Clinical Unit Preparation** is managed by a "Unit Leader" on each care unit (typically a resource nurse or other site leader). This stage begins with the preparation of medical records, medications, and equipment needed to accompany each patient during transport and ends when patients are ready for transport from the unit. The Unit Leader is also responsible for working with responsible clinicians to identify which patients may be safely discharged from the hospital immediately and not require transfer to another unit or hospital.

**B. Internal Patient Transport** is arranged by a "Floor Coordinator" who works with the Unit Leader to ensure all patients are transported off the unit to the Discharge Area, Assembly Point, or Staging Area via stairs or elevator, as appropriate. On the ground level, "Transport Coordinators" ensure that patients are transported to either the pre-designated Assembly Point or Discharge Site.

**C. Discharge Site Operations** personnel take charge of care for patients who, following the evacuation order, have been deemed appropriate for safe, rapid discharge from the hospital. Discharge site leaders ensure that supplies and staff are ready and organized to supervise patients while they wait for transport to their home or another appropriate location. The Discharge Site takes responsibility for patients when they "check-in" and provides support until they leave the hospital.

**D. Assembly Point Operations** leaders ensure that supplies, equipment, and staff are available and organized to care for patients in the Assembly Point. The Assembly Point takes responsibility when patients "check-in" and manages patient care until patients are ready to be transferred to another facility.

**E. Staging and External Transport** staff manage patients as they "check-out" from the Assembly Point and load into ambulances and other transport vehicles to be taken to other hospitals. Leaders ensure that the patients' travel needs are met (records, equipment, staff supervision if necessary), confirm patient identity and transfer destination, and document that the patients have left the hospital.

**F. Patient Tracking, Family Notification, & Patient Destination Team:**

**Patient Tracking** staff are responsible for tracking and reporting on the location of patients throughout the evacuation process to provide continual accountability.

**Family Notification** unit members are responsible for attempting to notify family members and other related and responsible parties about patient transfer destinations, answering calls and responding to questions from family members about patient welfare and location. Unit members should also carefully track which notifications have been successfully made and which families could not be reached.

**Patient Destination Team** staff begin work as soon as the evacuation plan is activated to match evacuating patients with appropriate available beds in other facilities. Because of the complexity of this process, the Team should include representation from the Chief Medical Officer, senior nurses, admitting office representatives, and case managers. The Team works closely with public health and EMS officials to identify available beds and ambulances for patient transfers.

*Hospital Emergency Operations Plans and evacuation plans should both anticipate the possibilities of catastrophic failures of their usual communication systems and develop appropriate contingency strategies.*

*For example, during Superstorm Sandy, some evacuating hospitals lost their telephone, internet, and radio systems at once. When that happened, maintaining communication with the patient care floors to coordinate transfers out of the hospital was a significant challenge[4, 6].*

# PLAN ACTIVATION

### Authority to Order Evacuation

An appropriate and available official must retain or be delegated the authority to order partial or full evacuation of the hospital. This authority may generally rest with the CEO, the Administrator On-Call (AOC), and/or the Incident Commander in an activation of the hospital EOP. All hospital evacuation plans must delegate the authority to order an evacuation to a leader who is on-site 24 hours a day, 7 days per week so s/he may act immediately to respond to an extraordinary situation. Hospitals must also be prepared to receive and immediately act upon an evacuation order issued by an external authority.

*In the review of 68 facilities evacuation events described by Rojek et al., the primary decision-maker for hospital evacuation was most often a single individual, such as the hospital CEO[3].*

In many cases, however, it is not immediately obvious that evacuation is the safest course of action for a hospital in response to a threat. Deciding to evacuate may require input from a variety of clinical and non-clinical leaders. When time permits, hospitals may wish to consider convening a pre-established Evacuation Decision Team that has representation from nursing, physicians, safety, facilities maintenance, security, and others so hospital leaders can quickly weigh the risks of evacuation against the risks of staying in place.

### Making the Decision

In most emergencies, a full evacuation of the hospital will not be required. Evacuation is generally considered as a last resort due to the complex needs and unstable nature of many hospital patients. An evacuation should only be ordered when it is absolutely necessary. For example, evacuation would be necessary when there is an imminent or potential unmitigated hazard that threatens patient and staff safety. Hospital leadership must monitor and carefully consider the situation outside the hospital when making the evacuation decision. Any hospital evacuation puts a strain on community resources, often in a situation when those resources are already strained. Consideration should be given to bolstering hospital capabilities and resources if an evacuation could cause greater harm to patients by putting them into a setting that cannot provide an appropriate environment of care.

For further information regarding the decision making process, please review the *AHRQ Hospital Evacuation Decision Guide*. Excerpted from that guide below is a partial list of situations that may warrant evacuation:

- Fire and smoke
- Facility or structural damage
- Loss of major utilities
- Potential exposure to hazardous materials
- Terrorism or violent, armed visitor(s)
- Credible bomb threat

*Prior to Superstorm Sandy, some hospitals implemented a rapid and focused patient discharge effort in advance of the storm as part of a shelter-in-place strategy. Although one hospital later had to evacuate because of subsequent systems failures, the fact that it had discharged 50% of its inpatients in advance of the storm made a difference in getting everyone out quickly and safely[4].*

It is important to remember that the decision to evacuate is not necessarily an “all or none” action. When additional time is needed to assess the danger posed by the event, hospitals should consider issuing a “Prepare Only” order as long delaying the evacuation decision does not place patients and staff at risk. Under such an order, hospital staff should prepare for evacuation, but not actually remove patients from their care units (i.e. packing patients, moving supplies to Assembly Point, etc.) Subsequently, if the hospital needs to evacuate, it will have saved valuable time and minimized risks to patients. If the hospital does not need to

evacuate, no patients will have been placed at risk in transit and the preparatory work will have served as excellent practice for staff.

### Notification of Hospital Employees

Once the decision is made, the full institution should be notified of the evacuation. If available, an automated Emergency Notification System that contacts all hospital leaders and managers should be utilized to broadcast the evacuation order. Overhead pages, emails, text messages, notification of news outlets, and other means of contacting employees and staff should be also be considered and used if necessary.

*Facilities that incorporated the fewest outside agencies when developing their disaster and evacuation plans took the longest amount of time to evacuate during Hurricane Rita[5].*

### Notification of External Agencies

As should be described in the Hospital EOP, all appropriate agencies must be immediately notified of any plans to evacuate the facility. At a minimum, state public health, local public health, local EMS, local fire, and local police representatives should be notified of this decision.

### Key Decisions for the Incident Commander

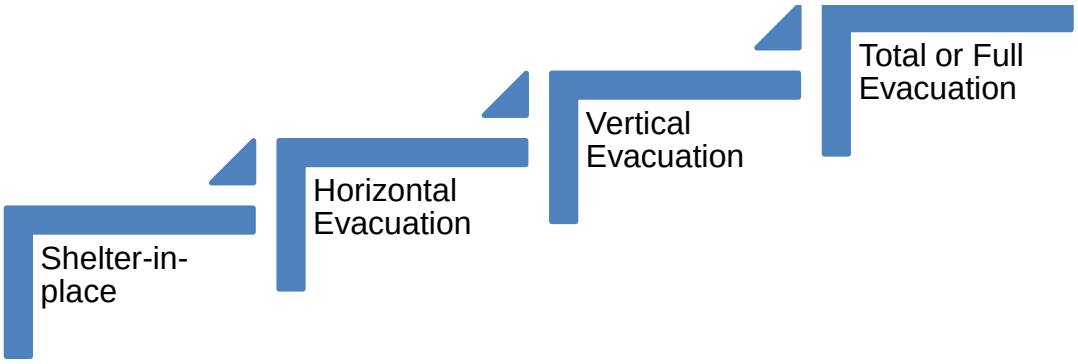
Once the decision to evacuate has been made, there are several additional key decisions that must be made quickly and communicated to both internally to hospital employees and among external partner agencies. The following pages will explore important considerations for each of these decisions.

1. Level of Evacuation
2. Type of Evacuation
3. Evacuation Time Frame (Immediacy of Evacuation)
4. Patient Prioritization
5. Assembly Point and Discharge Site Locations
6. Labor Pool Activation
7. Evacuation Coordinator Assignment
8. Patient Destination Team Activation

*Hospital Emergency Operations Plans and evacuation plans should anticipate the catastrophic failures of communication systems. During Superstorm Sandy, evacuating hospitals lost telephone, internet, and radio communication capabilities. Maintaining effective lines of communication among patient care floors and HICS leadership to coordinate transfers was a significant challenge for these hospitals[4, 6].*

### *1. Level of Evacuation*

The scope of any evacuation can change over time depending on the nature and course of the event. Below is the full list of options for evacuation in order of increasing scope and severity:




**A. Shelter-in-place***:* This level of evacuation requires cessation of all routine activities in preparation for an impending threat, such as a hurricane or toxic cloud. Specific preparations should be made to mitigate against the anticipated threat. In general during a no-notice event, patients, visitors and staff remain where they are until they receive further instructions. In most cases, the safest place for the patient is in his/her room. Closing doors/windows provides initial protection from fire, smoke, and other hazards. During a shelter-in-place response, preparations should also be taken to enable immediate evacuation of patients should the situation change and evacuation become necessary. For an event with notice, such as impending hurricane, numerous activities should be undertaken to mitigate risk and prepare to support patient care in a resource-constrained environment. These activities include rapidly discharging patients, increasing on-site staffing levels and securing extra food, linen, and supplies.

**B. Horizontal Evacuation***:* This level of evacuation involves moving patients who are in immediate danger away from the threat. Patients remain on the same floor of the hospital as the area that they are evacuating. Horizontal evacuation typically involves moving patients to an area of refuge in an adjacent smoke/fire zone or in some cases, at the opposite side of the building. Most evacuations of a single department or patient care unit can be done horizontally, which is the fastest option and has the simplest re-entry process. Evacuation of an entire building may even be accomplished horizontally if every floor of the evacuated building connects to another building.

**C. Vertical Evacuation***:* This level of evacuation refers to the complete evacuation of a specific floor in a building. In general, patients and staff evacuate vertically towards ground level whenever possible. Moving patients and staff to lower levels helps to prepare for total or full evacuation of the facility should the situation worsen. For most localized incidents, vertically evacuated patients and staff are sent to an area of refuge elsewhere in the hospital typically at least two floors away from the incident floor. During the vertical evacuation of one floor, other floors may be ordered to shelter-in-place or prepare only for their own evacuation.

**D. Total or Full Evacuation**: This level of evacuation is used only as a last resort and involves a complete evacuation of the facility. There are many different ways that a total or full evacuation can be planned for and managed.

### *2. Type of Evacuation*

In addition to determining the level of an evacuation, the hospital Incident Commander needs to determine the priority for moving groups of patients based on the conditions of the event. The underlying principle is to maximize lives saved with respect to the constraints of available resources and time. Incidents requiring evacuation can evolve quickly. Remembering the underlying principle can enable rapid decision-making that can positively impact the number of lives saved. Generally, a hospital evacuation will be conducted in one or a combination of three previously described Response Models based on the amount of time available for a given evacuation and the other resources (especially transport resources) available:

**A. Geographic Model:** This systematic evacuation focuses on the evacuation of areas at greatest risk within the hospital or selects individual care units to evacuate sequentially as entire units. This may occur when a hospital has significant advance notice and/or has the required time to evacuate based on the geographic location of patient units.

| ***Pro(s)*** | ***Con(s)*** |
|---|---|
| Allows for partial evacuation that will not disrupt the entire hospital and allows units to stay together throughout the evacuation process supporting the consistent delivery of medical care. | Requires considerable evacuation time. |

**B. Resource Model:** This evacuation focuses on utilizing resources in the most efficient manner possible. Evacuation would occur vertically (top to bottom if elevators are available, or reversed if not) while identifying evacuees that require scarce resources. Therefore, patient prioritization would be directly linked to resource availability (e.g. ICU patients would be evacuated in a way that makes the best use of ambulances equipped to handle ICU patients).

| ***Pro(s)*** | ***Con(s)*** |
|---|---|
| Utilizes available resources effectively; effectively streamlines evacuation process in a top-down or bottom-up method. | Requires significant real-time planning and logistical management to best allocate scarce resources at a time of crisis. |

**C. Acuity Model:** This evacuation process attempts to account for patient acuity in the prioritization of patients during the evacuation operation. In this model, evacuation is conducted in the same top-down or bottom-up method as described in the Resource Model, however, in this model, patient acuity is the primary driver of the evacuation order decisions. In general, it is advisable to evacuate the most ill and most resource-intensive patients first if there are sufficient transport resources and receiving facilities to accommodate them. This model rapidly decreases the medical workload on the evacuating hospital staff as high-acuity patients are transferred, and also protects those patients if power, suction, oxygen, or other systems fail as the evacuation progresses. However, some experts have suggested that the very most medically fragile patients may be evacuated last to ensure that they are not removed from ventilators and other life support equipment until absolutely necessary and/or because their risk of death in transfer is exceedingly high.

| ***Pro(s)*** | ***Con(s)*** |
|---|---|
| Evacuates patients in an order that ensures the greatest good for the greatest number of patients. Partial evacuation can be accomplished in the shortest amount of time of all three models. | Does not account for the allocation of scarce resources so could induce a situation where ICU patients would have to wait a long time for the appropriate transport vehicles. |

### *3. Evacuation Time Frames*

The time frame for evacuation may be different depending on the nature of the threat and how much time can be taken to prepare for moving patients. The chart below contains specific orders that may be used:

| Example Evacuation Orders | |
|---|---|
| Immediate/Emergent: | No time for preparation – evacuate immediately |
| Rapid/Urgent: | Limited time for preparation (1-2 hours) – everyone out in 4-6 hours |
| Gradual/Planned: | Extended time for preparation – phased evacuation to occur over many hours or even days |
| Prepare Only: | Do not move patients, but begin preparation for evacuation |

### *4. Patient Prioritization*

Prioritizing patients for the limited physical resources available for evacuation, such as personnel, elevators, stairwells, transport sleds, etc., is among the most logistically and ethically challenging tasks required in hospital evacuation. There is no single priority model that will work equally well for all hospitals and all circumstances. Nonetheless, it is worthwhile for hospital leaders to consider how they may prioritize patients under certain example scenarios in their particular facility. Listed below are some general potential priorities of evacuation in selected scenarios. Because of the physical locations of different units within a given hospital, the elevator and stairwell locations, and other factors, these priority lists may or may not be appropriate for that hospital. Hospital leaders should use these scenarios to discuss patient prioritization on their own as part of their planning efforts.

*In any evacuation that is severely time-sensitive*, where there are immediate and broad threats to life safety, the priority must be to get as many patients out as possible. Therefore, a different version of the acuity model may be adopted requiring patients needing the most assistance and most time to "package" for transportation to be the last to move**.** The default priority in these situations may be:

1. Patients who are in immediate danger
2. Ambulatory patients
3. Patients on general care units who require some transport assistance
4. Patients on intensive care units

If time is critical and a version of the acuity model is adopted, ICU patients may be moved after many or all of the general care units have been evacuated. In addition to maximizing patients evacuated in the least amount of time, this plan model anticipates that critical care patients have access to medical gases, suction, and monitoring for as long as possible. (If a resource model evacuation is possible, ICU patients should be evacuated as transport resources become available.) Although ICU patients may be the last to leave the hospital, they should be the first to leave the Assembly Point, as they are the highest priority for transfer to other hospitals. . Obviously, if a given ICU is more unsafe than the rest of the hospital, the patients within that ICU should be given a higher priority for evacuation, even in a critically time sensitive situation.

*In Superstorm Sandy, patients at NYU Langone Medical Center were prioritized so that the most critical patients in the most damaged part of the building were moved first[4].*

In a *rapid or urgent (but not immediate) evacuation*, the default transport plan for evacuation should be based on an orderly, rapid process where entire patient care units are moved sequentially. Units of different acuity (i.e. a general medical/surgical unit and an ICU) may be evacuated in parallel when possible to avoid uneven demand on EMS resources (i.e. avoid heavy use of ALS ambulances only at the beginning or end of the evacuation). There is controversy about the order of floor evacuations, but one

recommended plan is to evacuate from the top of the building to the bottom if elevators are available, or from the bottom of the building to the top if only stairs are available.

In a *gradual or planned evacuation*, hospitals may not require the use of Assembly Points, but rather may choose to send patients directly from their units to waiting EMS assets in the staging area. In such a circumstance, communication between the staging area and the floors is critical to ensure that the flow of patients out of the units anticipates available EMS units and prevents bottlenecks of ambulances waiting at the curb for arriving patients to transport.

### *5. Assembly Point(s) and Discharge Site Locations*

The hospital should identify several locations surrounding the hospital that could be used as either an Assembly Point or a Discharge Site.

**Assembly Point:** The place, or set of places, where patient care units gather (outside the main clinical buildings of the hospital) to receive basic care and await transfer, or re-entry back into the hospital. Internal locations should be considered if circumstances outside the hospital prohibit safe transport. *The Assembly Point(s) should not be a comprehensive field hospital. The Assembly Point(s) should be designed as a holding area with only essential care resources needed to support patient care while patients await transportation assets to leave the hospital grounds.*

**Discharge Site**: The place where patients who are being discharged home wait for family or friends to pick them up. Ideally, the Discharge Site is located at some distance away from the Assembly Point to minimize traffic congestion and competition for roadways.

It is important to consider proximity and size when determining suitable Assembly Point and Discharge Sites. An Assembly Point that is close to the hospital can aid in the effort to relocate fragile patients during an evacuation; however, a short distance between the Assembly Point and the hospital may also be of concern for any event involving an explosive device, chemical hazards, or other potentially expansive threat that is acting upon the hospital. Ideally, both the Assembly Point and Discharge Site will permit sheltering indoors. It is also important to remember economies of scale when choosing assembly points and discharge sites. It is much more difficult for clinical support services, including Pharmacy and others, to support patient care in multiple locations.

*Several nearby sites should be identified, and their willingness to help in the event of an emergency should be confirmed upon the incorporation of this guidance into hospital emergency operation and evacuation plans. In the event of an emergency, these sites should be contacted immediately.* For capacity and capabilities of other Assembly Point/Discharge Site options, reference the Assembly Point Guide, Section VI, page 89.

### *6. Labor Pool Activation*

Evacuation is an enormously labor-intensive process. Using the hospital EOP, the Labor Pool should be activated immediately to identify and assign staff to support the evacuation. The Labor Pool may need to call in staff from home for any evacuation, but is much more likely to need to do so if an evacuation happens on the evening shift, the night shift, during a weekend or holiday. At a minimum, the Labor Pool should be put on standby if staff may need to be called into the hospital to support operations. Standby lists should include both clinical and general staff.

The following chart identifies the functions and supervisors that may be required to effectively evacuate a hospital. Space has been left to calculate the estimated resources needed for the key functional areas involved. These numbers are highly dependent upon the normal patient demographics of the hospital that requires evacuation. Note that many of these resources can be re-deployed as the evacuation progresses. For example, some of the staff transporting patients out of the main campus buildings can be re-assigned as runners at the Assembly Point once the majority of patients have been evacuated.

**Example of Labor Pool Staffing Chart**

| Function | Estimated Staff Needed | Supervised By |
|---|---|---|
| Prepare/pack patients on inpatient care units<br>(# clinicians and # administrative staff per unit – Identify those only needed for night shift events as well) | *Fill in clinical staff requirements* | Inpatient Unit Leaders |
| Transport to Assembly Point (with elevators working) | *Fill in general staff requirements* | Transport Unit Leader |
| Transport to Assembly Point (without elevators working) | *Fill in general staff requirements* | Transport Unit Leader |
| Monitor/assess patients at Assembly Point | *Fill in clinical staff requirements* | Assembly Point Transport Supervisor |
| Patient assessment at Assembly Point (one clinician/patient care unit) as supplemental staffing until all the inpatient unit nurses and clinicians have arrived at the Assembly Point | *Fill in clinical staff requirements* | Assembly Point Section Leaders |
| Care for patients/support nurses with vitals, feedings, etc. at Assembly Point *(# staff members per unit)* | *Fill in clinical staff requirements* | Inpatient Unit Leaders |
| Relay information and/or transport supplies and medications between Assembly Point and main hospital *(# runners per Assembly Point)* | *Fill in general staff requirements* | Assembly Point Section Leaders |
| Load patients into vehicles and ensure readiness to travel | *Fill in general/clinical staff requirements* | Staging and External Transport Unit Leader |
| Care for/assist patients at Discharge Site | *Fill in clinical staff requirements* | Discharge Site Leader |
| Answer calls from families in Phone Bank | *Fill in general/clinical staff requirements* | Social Services |

***7. Evacuation Coordinator Assignment***

The key link between Incident Command and the patient care units during evacuation are the *Evacuation Coordinators* (see Job Action Sheet found in Section V: Evacuation Staffing Guidance, page 80). Staff who serve in this role are responsible for communicating with hospital leaders and their assigned patient care units and monitoring each unit's progress to ensure that they safely evacuate in a timely manner. Ideally, following the ICS principle of span of control, each Evacuation Coordinator would be assigned between three and seven patient care units to manage. Hospitals should consider the total number of patients in each unit, the acuity of patients in each unit, and the size and layout of the hospital when deciding how many Evacuation Coordinators the hospital will need to properly organize and manage evacuation operations. The Incident Commander should designate the minimal number of Evacuation Coordinators needed to effectively monitor the progress of patient care units during evacuation.

As mentioned previously, each patient care unit should specifically designate a "Unit Leader". Upon receiving the order to evacuate or prepare for evacuation, the Unit Leader should be prepared to discuss the following questions with their Evacuation Coordinator to help the hospital effectively prepare for evacuation.

1. *Time for units to prepare:* How much time is available to pack patients before transport begins?

2. *Assembly Point location:* Should the unit move to its default Assembly Point, or is there modification based on the scenario?

3. *Discharge Site location:* Should the unit send discharged patients to the default site, or is there modification based on the scenario?

4. *Priority sequence for evacuation:* In what order will units be evacuated?

5. *Elevator assignment:* Per plan or are there modifications based on the scenario?

6. *Stairwell assignment:* Per plan or are there modifications based on the scenario?

7. *Non-unit staff:* should any hospital staff currently on the unit, but not based on that care unit (such as physical therapy or respiratory therapy) return to their home department or stay on the patient care unit and help evacuate patients?

8. *Staff recycling back into building:* Transporters and security staff may re-enter the building when needed, but what about other unit staff? Should nurses escort patients to the Assembly Point and then return for another group of patients or not?

9. *Labor Pool staging area/phone:* Where should extra staff report for assignment?

10. *Family Notification Center location/phone:* Where should families be directed for support?

### *8. Activation of the Patient Destination Team*

If it seems likely that re-entry (into the hospital) will not be possible in a timely manner, the Chief Medical Officer should activate this team immediately. The team is activated to match evacuating patients with appropriate available beds in other facilities. Because of the complexity of this process, the Team should include representation from the Chief Medical Officer, senior nurses, admitting office representatives, and case managers. The Team works closely with public health, emergency management, and EMS officials to identify available beds and ambulances for patient transfers.

The Team should have primary and backup locations designated both in and nearby the hospital that have sufficient computer, telephone, and meeting space resources to permit it to function efficiently. All physicians, physician assistants, and nurse practitioners must be notified that the Patient Destination Team has been activated and is working with public health authorities and receiver facilities to arrange for appropriate destinations for all patients. It is vitally important to the success of the Patient Destination Team that individual physicians do not circumvent the Patient Destination Team and attempt to arrange transfer beds on their own. This will cause unnecessary competition for beds and furthermore creates the potential for significant confusion and introduces potential errors into the process.

Hospitals should discuss how placement efforts will occur among hospitals who are members of their Health and Medical Coordination Coalition (HMCC) and other nearby hospitals that may receive patients during an evacuation. In the absence of previously agreed upon processes made through coalitions or other regional efforts, the Team should be prepared to work under different processes at different institutions.


*One major lesson learned from Hurricane Irene that was beneficial in Superstorm Sandy was was the realization that not all hospitals receiving patients in transfer have the same process for accepting patients in an emergency. Some hospitals prefer to work with nursing leadership, others with physician leadership, other hospitals had no preference. It is essential that all hospitals develop a multidisciplinary Patient Destination Team in order to facilitate effective patient placement activities during an evacuation.*

*Additionally, the use of common language instead of acronyms, codes, or organization-specific terms is an important part of patient placement efforts. Not all hospitals use the same language or categories to identify or define their patients and clinical capabilities among hospitals also may vary. For example, a step-down unit patient at one hospital may be a critical care patient at another hospital.*

# GENERAL EVACUATION RESPONSIBILITIES

(BY DEPARTMENT)

The following table summarizes key evacuation responsibilities by department in a hospital. Depending on the administrative structure of each hospital, these responsibilities may fit into the department listed, or they may be better assumed by another department. For smaller hospitals, many of these responsibilities may need to be combined under one department or ICS function. All of the responsibilities listed are in addition to the general responsibilities that will be otherwise listed in the hospital EOP.

| Department | Responsibilities | Notes |
|---|---|---|
| Admitting | <u>Patient Tracking</u><br>• Assembly Point check-in and discharge<br>• Discharge Site check-In and discharge<br><u>Other</u><br>• Provide data to Social Services<br>• Assist Patient Destination Team | Social Services may also need a list of patients by unit with "next of kin" information including contact phone numbers |
| Biomedical Engineering | • Identify all available equipment for internal and external patient transport<br>• Transport appropriate medical equipment to Assembly Point<br>• Troubleshoot malfunctioning equipment during evacuation<br>• Track any equipment that leaves facility<br>• Coordinate maintenance of equipment with receiving hospitals | |
| Blood Bank | • Inventory available blood products<br>• Identify coolers and other resources available to support blood transport<br>• Transport blood products to Assembly Point<br>• Consider transporting additional blood to receiving facilities as needed if hospital will not be reoccupied quickly | |
| Case Management | • Assist with Patient Destination Team<br>• Identify non-acute care transfers (on unit) that may be discharged to skilled nursing facilities<br>• Staff the Discharge Site as needed<br>• Assist at the Family Support Center as needed | |
| Emergency Department | • Notify appropriate authorities of need to go on diversion and/or close<br>• Staff emergency resuscitation and stabilization area at the Assembly Point<br>• Respond to injuries/illness during evacuation as requested<br>• Provide staff to support loading teams | |

| Department | Responsibilities | Notes |
|---|---|---|
| Environmental Services | • Set up Assembly Point and Discharge Site<br>• Provide staff for patient transport | |
| Facilities Maintenance | • Activate emergency elevator control systems<br>• Monitor system utilities<br>• Assist with Assembly Point site setup<br>• Assist with patient transport as needed | |
| Food/Nutrition Services | • Transport emergency supplies to Assembly Point and Discharge Site, distribute as needed<br>• Provide food for staff | Includes standard TPN bags |
| Health Information Systems | • Retrieve or track medical records before patient transfer to other facility<br>• Assist receiving institutions with obtaining medical record data | Or print/email abstracts |
| Human Resources | • Provide Labor Pool resources<br>• Assign Assembly Point Labor Pool representative<br>• Track staff who travel to other facilities<br>• Monitor emergency challenges to labor agreements | Clinical staff may be needed for transport |
| Interpreter Services | • Provide interpreter staff at the Assembly Point and Discharge Site<br>• Assist with the translation in the Family Notification Center | |
| Materials Management | • Manage patient transport process<br>• Transport medical supplies, linens, other items to Assembly Point Discharge Site | |
| Pharmacy | • Transport medication “cache” and IV fluids to Assembly Point and dispense as needed<br>• Support Discharge Site with needed medications and dispensing as possible<br>• Secure narcotics and other pharmaceuticals | |
| Respiratory Therapy | • Deploy staff to critical care units for internal and external transport<br>• Transport respiratory equipment to Assembly Point<br>• Provide emergency care as needed in the resuscitation and stabilization area at the Assembly Point | |

| Department | Responsibilities | Notes |
|---|---|---|
| Security | • Communicate with outside agencies<br>• Lockdown facility and secure roads<br>• Unlock all stairwell doors<br>• Assign additional staff to units that are usually secured – pediatrics, nursery, NICU, psychiatry<br>• Manage access to/from secure units<br>• Clear evacuation route<br>• Manage routes/checkpoints<br>• Check units after closing (if possible)<br>• Support care units and Family Waiting Areas at the Assembly Point<br>• Assist with psychiatric patient transport<br>• Provide staff to manage ambulance flow<br>• Coordinate with local police as needed | |
| Social Services | • Manage family call center<br>• Manage family notification/waiting areas | |
| Telecommunications | • Use overhead paging system to communicate information as appropriate<br>• Setup phone bank at Assembly Point, Discharge Site, Family Notification Center | |

# PATIENT TRACKING

During an evacuation, a functional internal patient tracking system, even if simple and paper-based, is crucial to provide clinicians, families, and leaders with situational awareness of the appropriate location and status of all patients throughout the event. A system that reports selected "check-in" and "check-out" data for patients at various touch-points in the process is ideal. Those touch-points include:

| Check-in Points | Check-out Points |
|---|---|
| ☐ Inpatient census | ☐ Leaving the patient care unit |
| ☐ Arriving at the Assembly Point | ☐ Leaving the Assembly Point |
| ☐ Arriving at the Discharge Site | ☐ Leaving the Discharge Site |
| ☐ Arriving at the Staging Area | ☐ Leaving the Staging Area |
| ☐ Arriving at the receiving hospital | |

The Admitting Department may be best tasked with the responsibility for the Patient Tracking function. Their role may include the following responsibilities:

- Checking-in patients to both the Assembly Point and the Discharge Site
- Discharging patients from both the Assembly Point and the Discharge Site
- Updating patient location information in electronic information systems and/or using manual paper logs as backup
- Providing routine patient tracking reports for the hospital EOC
- Participating in the Patient Destination process
- Providing reports with contact information for Social Service staff working in the phone bank
- Notifying receiving hospitals when patients are en route
- Contacting receiving facilities to confirm patient arrivals
- Obtaining location and contact information data from the receiving hospitals for sending to clinicians and patient families

*Tracking systems must be robust enough for single & multiple transfers. Reliance on manual tracking system posed a logistical challenge for hospitals during recent evacuation events. Electronic tracking systems such as barcoded patient wristbands may be more effective for tracking patient during evacuation but they must be used and tested regularly prior to an evacuation*[5, 7].

**Sample Guidelines for Patient Tracking:**

1. The Admitting Department will create a detailed inpatient census at the time of the evacuation order to provide accountability for all inpatients in the facility at the time of the order.

2. Patients will be tracked upon arrival at either the Assembly Point or the Discharge Site. In addition, each Unit Leader will use their Patient Tracking Log to verify that all of their patients arrived at the Assembly Point. The Admitting Department will be notified if any patients are missing. The Admitting Department will notify the appropriate supervisor according to HICS.

3. The Admitting Department will need to notify the Patient Destination Team of patients who eloped without notifying staff, left the hospital against medical advice (AMA) prior to transfer, or were discharged directly from the units. The Admitting Department will track all such patients in order to reconcile the final transfer and discharge lists with the inpatient census as created at the beginning of the evacuation.

4. At the Assembly Point, the Admitting Department will periodically verify the census to ensure accuracy of Patient Tracking information. Admitting will provide regular reports on the status of tracking information to the EOC.

5. The Admitting Department will track all patients who leave the hospital campus from the Discharge Site and Staging Area.

6. The Admitting Department will attempt to contact all receiving hospitals to verify the arrival of the transferred patient and will obtain location and contact information data from the receiving hospitals. This information will be sent to clinicians and patient families.

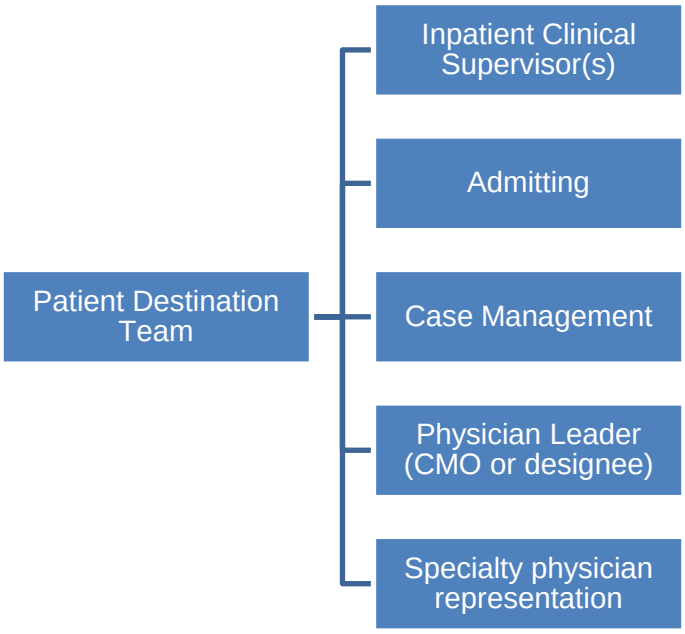
*When preparing your facility's patient tracking plan it is important to remember that undocumented equipment (e.g. ventilators) transported with patients have been a major source of financial loss for institutions[5]. Consider assigning staff from biomedical engineering to document serial numbers of equipment being transported to other facilities.*

# PATIENT DESTINATION TEAM

The Incident Commander will need to mobilize a Patient Destination Team *as soon as it becomes clear that evacuation is necessary and/or that timely re-entry to the facility will not be possible*. This team will match all patients who need to be transferred with appropriate beds at other facilities.

The Patient Destination Team may report to the Chief Medical Officer, nursing supervisor, or the admitting office in a hospital's EOP. The Team will work with the EMS liaison from the community, public health officials, and any other coordinators or organizations involved such as a regional organization of hospitals, etc. The hospital staff below should be included in the Patient Destination Team. Clinicians providing care to special inpatient populations (such as pediatrics, obstetrics, specialty surgical, psychiatric, etc.) should work with the Team to help coordinate unique bed needs and care networks. These networks may include Level III nurseries, burn centers, specialty ICUs, inpatient psychiatric facilities, or other facilities.

*It is essential for the Patient Destination Team to have a resource guide complete with the region's hospital contact information and clinical capabilities. Even if computers are functioning, it can be faster and easier to work with a paper directory that has essential contact and capability information.*




It is important to determine the site where this group will gather with sufficient computer, telephone, and meeting space resources to permit it to function efficiently. There must be a plan for backup sites and support in case the first area is not available and/or safe. All physicians, physician assistants, and nurse practitioners must be notified that the Patient Destination Team has been activated and is working with public health authorities to arrange appropriate destinations for all patients. It is vitally important to the success of the Team that individual physicians not compete with the Patient Destination Team and attempt to arrange transfer beds on their own. This creates significant confusion and introduces potential errors into the process. However, providers with strong working relationships with colleagues at other facilities, especially in specialty areas, have been instrumental in actual evacuations as well as drills at facilitating the transfer process and bed placement of patients. Therefore, these providers would ideally be assigned to the Patient Destination Team.

*Hospitals need to identify potential receiving facilities in their evacuation plan including specific details regarding those facilities capabilities and the types and numbers of patients they can potentially accommodate. This can simplify the communication that occurs during an actual evacuation event*[1, 6].

# PHYSICIAN ROLES

(STAFF PHYSICIANS, HOUSE STAFF [IF APPLICABLE] AND PHYSICIAN EXTENDERS)

In the event of either an emergency that requires preparation for possible evacuation or an actual evacuation of the facility, all responsible and responding clinicians (i.e. MDs, PAs, NPs) with patients in the hospital must be notified of the event immediately by an electronic notification system or other mechanism. All Chiefs of each hospital service should also be notified. Clinicians should follow the direction of their immediate supervisor or Department Chief, as specified within the Hospital Incident Command System (HICS). Clinicians should not attempt to contact the Incident Commander or other institutions directly during the evacuation process as this may interfere with ongoing evacuation operations and put both patients and staff at further risk.

*The first responsibility of clinicians with active responsibility for inpatients is to prepare their inpatients for evacuation.* If a clinician has patients on multiple units, s/he should prioritize the most critical patients – specifically, any patients who will not be able to move without clinician input and/or assistance. Clinicians should:

1. Reassess each patient's clinical status.
2. Review all active medications and clinical interventions (i.e. oxygen, monitoring, etc.).
3. Minimize all medications and clinical interventions until the patient is successfully evacuated and arrives at another hospital. Only continue essential treatments.
4. Write/print a summary of the patient's inpatient course and treatment plan to assist clinicians at the receiving hospital in assuming safe care of the patient. Clinicians should include multiple forms of their own contact information in this documentation.
5. Give report to receiving clinicians at the receiving hospital.

*"What information would I need to manage an influx of patients?"*

*This should be the guiding question in preparing a summary of patient information before evacuation[6].*

**Key Points/Issues:**

*During Superstorm Sandy, it was learned it is essential for qualified clinical staff from the evacuating hospital to accompany critically ill patients when large numbers of them are transferred to a receiver hospital. This helps to both maintain continuity of care and supports surge operations at the receiver hospital[4, 8].*

- Commonly, physicians are not aware of their roles during an evacuation. Evacuation plans should ensure the communication of job roles and functions for physicians.
- Clinicians without active inpatient responsibilities, or clinicians who can be safely relieved of those responsibilities, may be asked to assist with other functions. Some clinicians will be sent to the Assembly Point to receive and care for patients evacuated from their floors.
- Clinicians should still retain primary responsibility for their patients at the Assembly Point. Discharge or transfer notes should be written if possible before patients leave the Assembly Point, though this may not be possible in all cases.
- *Clinicians MUST NOT attempt to arrange transfer destinations for their inpatients on their own.* This function should be performed by the Patient Destination Team.

# CLINICAL UNIT PREPARATION

In order to prepare patients for the safest possible evacuation, a number of steps must be taken to ensure the appropriate staff; equipment, medications, medical records, and other necessary items accompany the patient during the process. A complete "tool" for inpatient care units has been developed to guide staff in preparing individual floors or units for evacuation. This tool provides structured mechanisms to gather and report data on the patients and their needs, on available resources, and to help package patients for safe transfer (see Section IV: Evacuation Floor Guide, page 57 for related and expanded documents, including step-by-step instructions for Unit Leaders on page 64). This general guidance has been designed to support either a rapid or gradual evacuation. However, many of the preplanning efforts and patient tracking forms in this section may be impossible to complete given a lack of time during an immediate evacuation.

If patients are clinically stable, they may be discharged from the unit at the time of the evacuation order to minimize transfer needs. Because it may be difficult to contact patient families to arrange to have the patient picked up and/or it may be dangerous to let families into the facility, it is generally preferable to have a centralized discharge site away from the main buildings of the hospital and away from the Assembly Point(s). All patients from a given clinical unit should be sent to either the Discharge Site or Assembly Point. Any patients who leave the hospital without notifying staff or who leave against medical advice should be clearly tracked and reported to the Admitting Department /Tracking team.

*Shelter-in-place plans should include guidance for how to prepare patient records for evacuation. Interviews with hospital employees at facilities that received evacuated patients during Superstorm Sandy indicated that the records of evacuated patients' were missing a wide range of information[6].*

**Sample Procedure for Clinical Unit Preparation:**

1. Staff will receive the order to evacuate or prepare for evacuation. Each clinical unit will designate a "Unit Leader" according to a specified procedure. A designated "Floor Coordinator" may provide logistical support to the Unit Leader.
2. The Unit Leader will open and use the Evacuation Floor Guide and associated tools.
3. Nursing and other staff will complete the tools in the Floor Guide. The Unit leader will send unit-level patient and resource reports to the EOC per hospital protocol.
4. Patients will be individually "packaged" for transport with their necessary medical equipment, records, medications, and assistive/adaptive devices to maintain independence.

*Following the Joplin tornado, it was determined that shelter-in-place plans should include keeping patients' shoes with them in the event of an immediate evacuation[9].*

5. Patients "off the unit" for testing or treatment at the time of evacuation may not return to the unit. Instead, they may be transported to the Assembly Point, and will rejoin the unit there, depending on the required urgency of the evacuation. Clinical staff caring for the patient "off-unit" will contact the Unit Leader to confirm this transport request and location. If patients do not return to the unit, clinical staff on the unit will bring a completed tracking form, and any necessary medical equipment, records, medications, and assistive/adaptive devices to maintain independence to meet the patient at the Assembly Point.

6. Visitors may either stay with the patient or be directed to leave per direction of the Unit Leader.

7. Ambulatory patients and visitors may take the stairs. Non-ambulatory patients will wait for their turn on the elevators, or the med-sled stair route.

8. Discharges may be made directly from the unit, at the assembly point or at a separate designated discharge site.

9. The Unit Leader should communicate with the Evacuation Coordinator and Transport Coordinator to learn the order of unit evacuations and ensure that all patients are safely transported to the Assembly Point or Discharge Site. Floor Coordinators will assist the Unit Leader with tracking and communications.

*Knowledge about evacuation plans and emergency policies and procedures varies widely among hospital personnel. Staff should be encouraged to participate in the planning process. Staff should also routinely exercise the specific roles that they will be expected to fill during an evacuation*[10, 11].

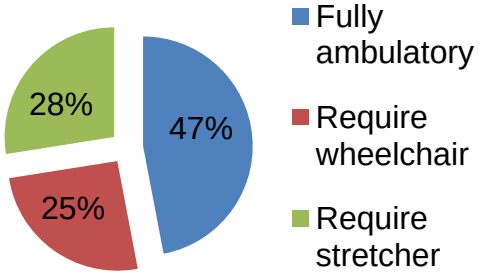
# TRANSPORT PROCESS

Patient transport resources including personnel, elevators, stairwells, transport sleds, etc. will be limited during any evacuation. Prioritizing patients under urgent conditions, when available transport resources are more scarce and there is less time to make decisions, is among the most logistically and ethically challenging tasks required in hospital evacuation. There is no single priority model that will work equally well for all hospitals under all circumstances. Hospital leaders and emergency planners should consider the physical locations of different units within a the hospital, the elevator and stairwell locations, and other factors, in order to create a patient transport evacuation plan that supports an orderly, rapid process where entire patient care units are moved one after the other. Units of different acuity (i.e. a general medical/surgical unit and an ICU) may be evacuated in parallel when possible to avoid an uneven demand on EMS resources (i.e. avoid heavy use of ALS ambulances only at the beginning or end of the evacuation). There is controversy about the order of floor evacuations, but one recommended plan is to evacuate from the top of the building to the bottom if elevators are available, or from the bottom of the building to the top if only stairs are available.


If time is critical, evacuation of ICUs and other critical care units should be coordinated based on the resource model to maximize efficiency in transportation resources. In addition to maximizing the number of patients evacuated, an evacuation plan should endeavor to ensure critical care patients have access to central medical gases for as long as possible to minimize demand on portable tanks.

The results of a cross-sectional survey of one academic teaching hospital are shown below. Acquiring this type of type of data periodically and taking the average of survey results helps to inform evacuation planning. However, if there is time to discharge ambulatory patients during a shelter-in-place response, then the proportions of patients requiring assistance may change. Also, some patients may be physically capable but not emotionally or psychologically able to walk out of the hospital unassisted or unsupervised during an emergency.

**Survey of Ambulatory Ability Among Patients in a Teaching Hospital[10]**




Patients/visitors who are able to travel down stairs on foot should not necessarily have to wait for their unit's turn on the elevators if time is critical. During the evacuation the Assembly Point should be established with at least minimal staffing as soon as possible. Then patients should be escorted by unit staff and guided along the evacuation route to the Assembly Point by other hospital personnel manning checkpoints throughout the hospital, when possible.

Hospitals with several vertical floors may wish to explore purchasing transport sleds to assist with transporting non-ambulatory patients down stairwells if elevators cannot be used. The experience of California hospitals that have four or fewer stories and have evacuated after earthquakes suggests that such devices may not be necessary; however, hospitals with multiple stories may find staff availability and fatigue to be a factor when repeatedly carrying patients down multiple floors during the evacuation. No specific product or procedure is endorsed by this guidance.

In general, patients may require internal transportation in two stages: 1) from the unit to the Assembly Point (or Discharge Site) and 2) from the Assembly Point to the Staging and External Transport Area(s). It may be useful to have separate ALS (and/or critical care transportation) and BLS transport areas at

different staging points to accelerate the distribution and loading of patients who requiring different types of ambulance transport and limit bottlenecks.

**Evacuation Routes**

Patients, visitors, and transporters from all areas should be directed to take specific, pre-specified routes to the Assembly Point(s) and the Discharge Site (or other locations if necessary). Security and other designated hospital staff should make sure the route is clear and monitor the route for problems or bottlenecks. Manned checkpoints should be created at selected locations along these routes where staff can give directions and provide help. Staff in high-rise hospitals in particular may be unfamiliar with where emergency stairs exit. Staff should be stationed at all exits to guide transport teams out of the building. A reference map should be outlined containing this information in the hospital's written evacuation protocols.

**Sample Procedure for ELEVATOR Transport Process:**

1. Start at the top patient care unit in each building, with critical care units being prioritized based on the external transport and receiving destination resources available.

2. Transport stretchers and wheelchairs should be dropped off immediately on the top floors early in the process to speed patient loading. As soon as sufficient stretchers and wheelchairs are delivered, staff should begin delivering stretchers and wheelchairs to the next units to evacuate to permit them to begin to package their patients.

3. Floor Coordinators should assist unit staff with elevator loading and provide direction to the elevator operators.

4. Patients are loaded onto elevators and taken to the Assembly Point in the order in which they become ready for internal transport. A clinical staff member will accompany the first transported patient(s) to ensure that the Assembly Point has at least one medical worker who can begin to care for the unit.

5. Other clinical staff members will accompany patients in transport as needed for medical monitoring and care. When the last patient leaves the unit, the Unit Leader and Floor Coordinator will travel to the Assembly Point to oversee care in the Assembly Point area.

6. Transport staff may need to re-enter the building to transport more patients to the Assembly Point(s) and Discharge Site. There should be separate, designated routes for transporters to re-enter and re-ascend the floors so that they do not interfere with patient evacuation processes.

7. As patients arrive in the Assembly Point, it may be necessary to take them off of the transport stretchers and wheelchairs in order to retrieve additional patients from the hospital. Transporters should work with clinical staff to identify which patients can be removed from the stretchers and chairs and assist with patient movement as appropriate when directed by clinical staff.

**Sample Procedure STAIRS-ONLY Transport Process:**

1. Immediately gather any designated equipment for stairs-only transport process and identify vendors or other partners that can be contacted for required manpower and equipment. Specialty transport sleds or other devices will need to be dropped on the units early in the process. Ideally, there will be enough sleds so that while one unit is evacuating into the stairwells, the next unit already has sleds and is packing patients and lining up for their turn.


2. Fire department and other public safety staff may be requested for lifting and moving of patients and to help with obtaining specialty equipment such as backboards, scoop stretchers, stair chairs, etc., however, such personnel may not be available in a major community event Staff unfamiliar with such equipment or with procedures for carrying patients in stairwells should not carry patients except in cases of immediate life threatening emergencies. Advance discussion with public safety officials is critical to understanding what external agencies will do to support an evacuation.

3. Start at the bottom patient care unit in each building, with critical care units being prioritized based on the external transport and receiving destination resources available. Separate stairwells should be designated for ambulatory and non-ambulatory patients if possible. ***Do not forget to assess the ability of your staff and visitors to walk down multiple flights of stairs. Patients, visitors, and staff may require assistance.***

4. Floor Coordinators should assist with distributing transport sleds and other transportation equipment and staging of patients for transport via stairwells.

5. The stairwell teams should manage transport sleds and transport patients to the ground floor. Then the transport team should move patients to stretchers/wheelchairs and transport to the Assembly Point.

6. Patients are taken down the stairs and taken to the Assembly Point in the order in which they become ready for internal transport. A clinical staff member will accompany the first transported patient(s) to ensure that the Assembly Point has at least one medical worker who can begin to care for the unit.

7. Transport staff may need to re-enter the building to transport more patients to the Assembly Point(s) and Discharge Site. There should be separate, designated routes for transporters to re-enter and re-ascend the floors so that they do not interfere with patient evacuation processes.

8. Other clinical staff members will accompany patients in transport as needed for medical monitoring and care. When the last patient leaves the unit, the Unit Leader and Floor Coordinator will travel to the Assembly Point to oversee care in the Assembly Point area.

*Lessons learned from the Joplin tornado[9]:*

- *Store disaster equipment and supplies (including evacuation equipment) in storage areas on patient units*
- *During a crisis hospital personnel can use doors, mattresses, and other flat surfaces for rapid evacuation of patients*
- *Hospitals cannot plan to depend on local fire and emergency response personnel to assist with an evacuation during a community-wide disaster*
- *Sufficient emergency lighting is crucial when conducting emergency response operations*

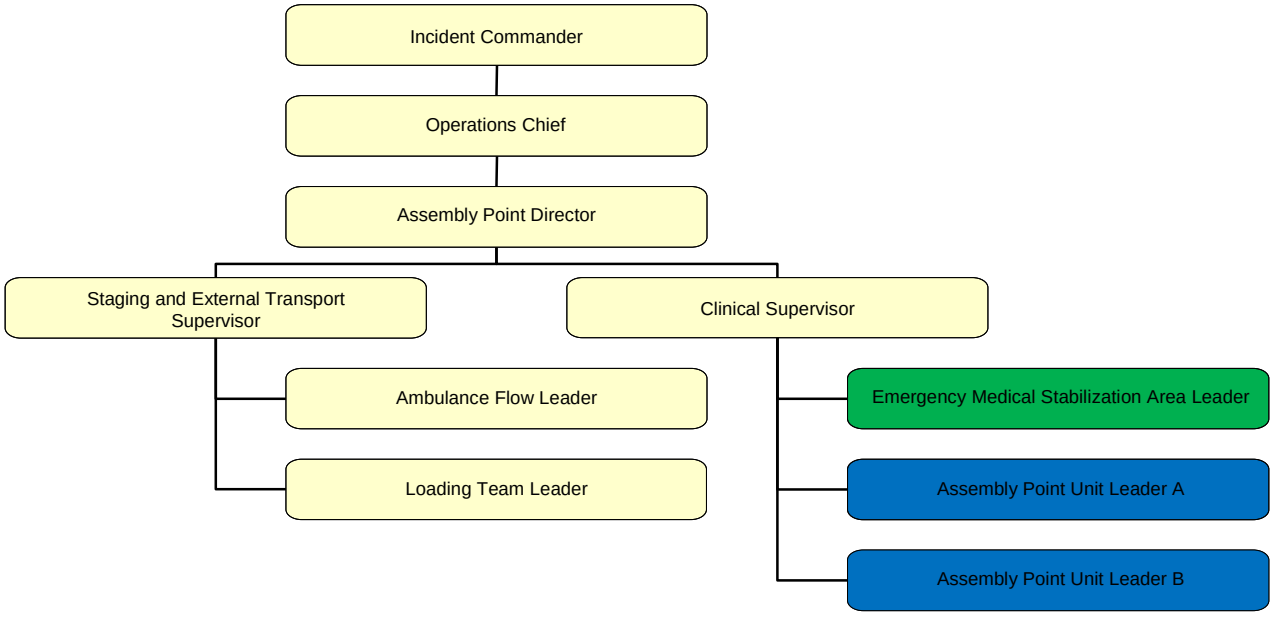
# ASSEMBLY POINT ORGANIZATION

It may be necessary to evacuate patient care sites before transportation resources and/or receiving destinations are available. Assembly Points (AP) can serve as temporary care sites during an evacuation. Hospitals should identify and designate Assembly Points located away from the main clinical areas for every patient care unit and plan to continue essential patient care functions at Assembly Points while patient transport is being arranged. Instead of dividing patients into separate groups by ambulatory status, individual patient care units should stay together at the Assembly Points whenever possible. This is because the unit teams familiar with their patients will be better able to manage them in a chaotic situation away from the care unit. *The Assembly Point(s) should not attempt to serve as a comprehensive field hospital. The Assembly Point(s) should be designed as a temporary holding area with only essential care resources.*

Each hospital unit should identify primary and secondary Assembly Points based on proximity to the primary hospital facility. This ensures that the primary AP can be reached rapidly during the most time sensitive emergencies that only affect the hospital facility. The secondary AP can be utilized if more distance from the hospital if required.

An "Assembly Point Director" is responsible for the overall operations at the Assembly Point. The hospital Incident Commander or Operations Chief will designate an Assembly Point Director, who, in turn will designate a Clinical Supervisor and a Staging and External Transport Supervisor (see Section V: Evacuation Staffing Guidance, page 73 and pages 86-87 for these JAS). These supervisory positions will report to the AP Director. The Clinical Supervisor will oversee the individual patient care Unit Leaders at the AP. If there are too many units at a single AP for the Clinical Supervisor to manage, s/he may create Section Leaders to oversee groups of clinical units. The number of supervisory positions required will depend on the size of the AP, the number of patients, the acuity of the units located there, and the specifics of the physical space.

**Sample Organizational Chart of the Assembly Point Positions**




1. All of the Patient Care Units at the ***Assembly Point*** are managed by a Unit Leader. The Unit Leaders report to a "Clinical Supervisor" in the ***Assembly Point***.

2. The ***Emergency Medical Stabilization Area*** should be created, staffed, and led by the Emergency Department. This area should stabilize patients who decompensate during transport, and treat injuries suffered during the evacuation process. In addition, one or two mobile ED physician/nurse teams should be available to respond to care needs along the evacuation route.

**Assembly Point Area Map**

An Assembly Point Map should be developed as part of the evacuation plan. The map and corresponding Assembly Point procedures will detail how a space will be temporarily converted into an Assembly Point capable of supporting essential patient care operations. The map should detail the Occupancy Plan for the Assembly Point including: a patient check-in area, specific sites for each clinical care unit's patients, a location of common basic medical supplies, a biomedical equipment holding area, and an Emergency Medical Stabilization Area. It may also include routes to the Staging and External Transport Area.

Additionally, key departments should have designated locations in the Assembly Point that can be designated on the Assembly Point Map. The following departments may require detailed information:

- Where the Pharmacy will dispense medications from their satellite location.
- Where Food and Nutrition Services will distribute basic foods.
- Where Materials Management will stage and distribute from the various supply/linen areas already distributed throughout the facility.
- Where Environmental Services will locate and empty biomedical and routine waste containers.

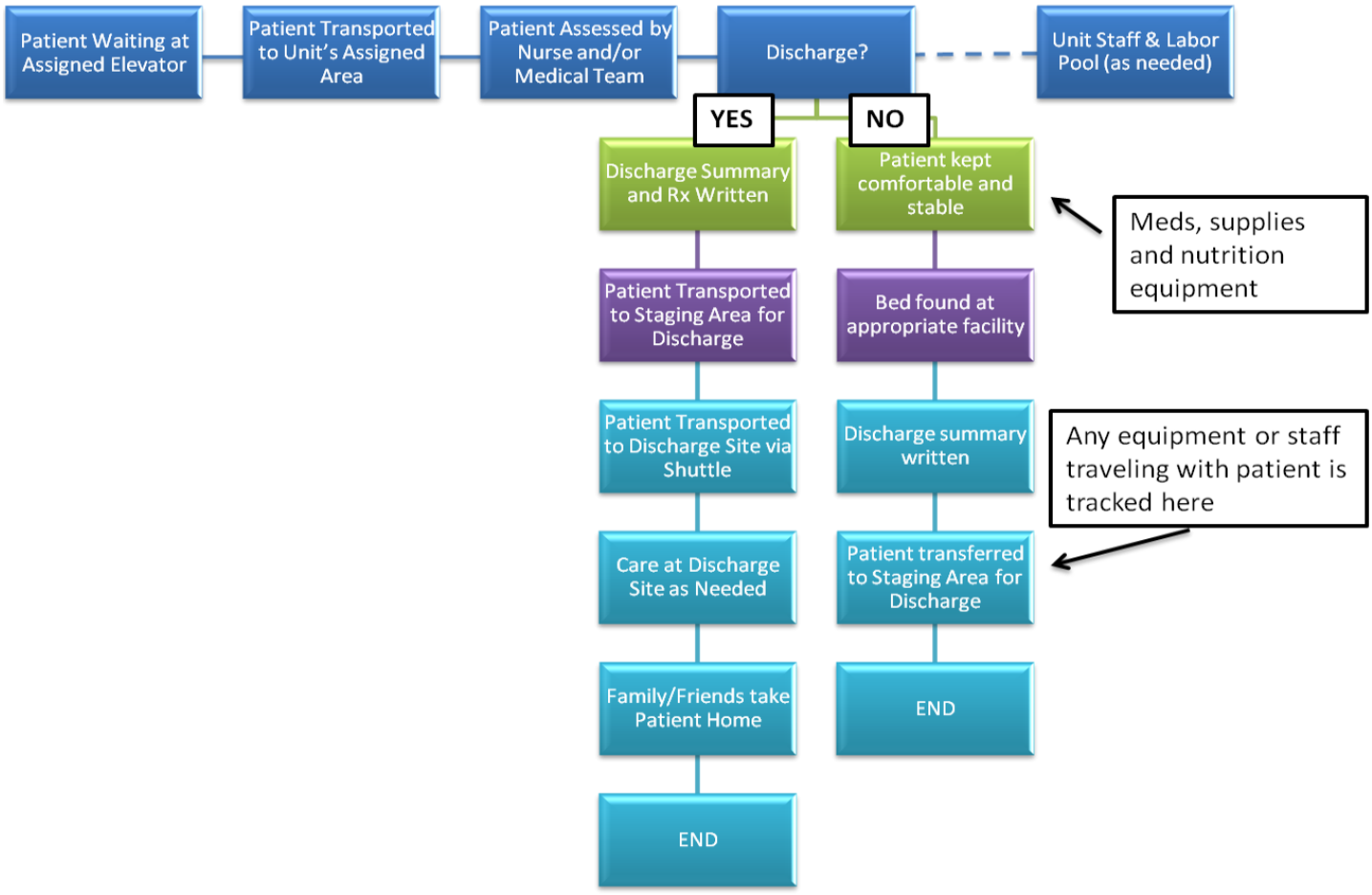
Pathways should be marked on the map. Traffic coordinators should guide transporters who are entering the Assembly Point with patients or bringing patients down to the Discharge Area. The locations of traffic coordinators should also be identified in the map. Upon receiving his/her assignment, the first responsibility of the Assembly Point Director is to ensure the AP is setup appropriately in accordance with the AP map.

# ASSEMBLY POINT CARE

Assembly Point care should be conducted for only as long as it takes to arrange for appropriate transfer resources and destinations for all evacuated patients or until it is safe to re-enter the building. Once patients arrive at the Assembly Point, only the minimum required care interventions should be continued as directed by the patient's providers. Some additional patients may be deemed appropriate for discharge after they arrive at the Assembly Point. A sample process flow for patients being cared for in the AP is below.

Under certain circumstances, an Assembly Point may not be needed if the flow of patients is staggered and patients are not in immediate danger on their units. Under these circumstances, it may be possible to shelter-in-place until transportation is available and waiting outside to immediately receive patients who are being transferred to other facilities.

**Sample Process Flow for Assembly Point Care**



**Sample Guidelines for Assembly Point Care**

1. The hospital Operations Chief will designate an Assembly Point Director.

2. The Assembly Point Director will designate a Clinical Supervisor and a Staging and External Transport Supervisor.

3. The Clinical Supervisor will oversee the individual patient care Unit Leaders at the Assembly Point. If there are too many units at a single Assembly Point for the Clinical Supervisor to manage, s/he may create Section Leaders to oversee groups of clinical units.

4. Every patient care unit should have a designated space in the Assembly Point. Similar units should be grouped together whenever possible.

5. All the critical supplies needed at the Assembly Point should have been pre-determined (see Section VI: Assembly Point Guide in this toolkit, page 89) and should be transported to the AP by the responsible department. In addition, patient care units should have pre-planned lists of special supplies/equipment that they will need to bring with them to support essential care. In some rare scenarios, it may be necessary to hold patients in the Assembly Point(s) for up to 24 hours. While hospitals may not plan to bring 24 hours of supplies to the Assembly Point initially, they should have plans for resupply of the Area(s) if patients remain in these areas before supplies become scarce or are depleted.

6. Oxygen conservation will be a critical issue if patients on oxygen cannot be transferred to other facilities quickly. Oxygen concentrators should be aggressively utilized if available.

7. In general, patients on contact and droplet infection control precautions should not be cohorted in one area. Patients should remain with their units to maintain the integrity of their diagnosis/infection as much as possible but still adhere to the type of precautions required as possible. This approach enhances the staff's ability to identify and manage the specific infection control needs. However, patients on airborne precautions may be segregated or cohorted by the Unit with patients with the same diagnosis (e.g. TB with TB, Varicella with Varicella), in a separate location or at some distance from others if possible.

# DISCHARGE SITE ORGANIZATION/CARE

Discharge Site Operations staff take charge of care for patients who, following the evacuation order, have been deemed appropriate for safe, rapid discharge from the hospital. Discharge Site leaders ensure that supplies and staff are ready and organized to supervise patients while they wait for transport to their home or other appropriate location. The Discharge Site takes responsibility for patients when they "check-in" and provides support until they leave the hospital. In a gradual or planned evacuation, patients may be discharged directly from the unit. The care units should send the patients with all medications that may be needed for a 4-6 hour stay at the Discharge Site. However, if additional medications are needed while at the Discharge Site, a pharmacist should be responsible for obtaining those medications.

**Process for Opening Discharge Site and Discharge Criteria**

Upon issuing the order to evacuate, the hospital Incident Commander (or designee) may decide to open a dedicated discharge site to facilitate rapid and safe discharge of inpatients who would otherwise need to be transferred away from the hospital to other institutions.

**Sample Patient Criteria**

- Patients whose ongoing medical diagnostic and/or treatment needs do not require inpatient hospitalization
- Patients who can be safely cared for at home
- Transportation to home/family will occur within a 4-6 hour timeframe
- Patients able to tolerate sitting up for 4-6 hours

**Sample Discharge Site Staffing Criteria**

- Leadership: one physician or nursing leader who is responsible for Discharge Site operations
- Registered nurses: one RN for approximately every 6-8 patients
- Clinical support staff: one nursing assistant for approximately every 12-16 patients
- Administrative support staff: one clerical staff and two volunteers for approximately every 20 patients
- Case manager: two case managers for approximately every 30 patients
- Pharmacy: one pharmacist per Discharge Site
- Medical staff: one physician, PA or NP per Discharge Site
- Medical records: one representative per Discharge Site
- Patient tracking/admitting: one person per Discharge Site
- Security: one officer per Discharge Site

**Discharge Site Supplies**

General supply needs for the Discharge Site may include:

- Desk space for staff with computers, printers and phones
- Chairs/recliners/couches
- General medical supplies
- Paper supplies (progress note paper, medication sheets, blank computer paper)
- Linens (blankets, towels)
- Dietary supplies (snacks and meals)
- Toileting facilities/supplies
- Medical record processing (discharge chart management)
- Code cart

**Sample Process for Transferring Patients to and from the Discharge Site**

The following steps should be taken to transfer patients to the Discharge Site:

1. Each patient's clinician (MD, NP, or PA) determines, based upon the patient's clinical situation, that the patient is suitable for discharge from the hospital.

2. The clinician documents a brief summary of all of the items below in the patient's chart, or will communicate this information to the patient's nurse. *If the patient's responsible or responding clinician is not immediately available, the patient should be transported to the Assembly Point*.
    a. The patient is suitable for discharge and a discharge order is written
    b. All necessary prescriptions are written
    c. All treatments required following discharge are specified
    d. The patient's follow up plan following discharge is clarified
    e. Any pertinent signs or symptoms the patient may need to watch for following discharge

3. Family members should be contacted about discharge and pick-up location if time allows. Information regarding who and how patient will be transported home should be noted on the Patient Evacuation Form. (If time does not allow, this step can be completed at the Discharge Site.)

4. All patients should have an identification bracelet documented to be in place before transfer to the Discharge Site.

5. Staff nurses who are preparing patients for transfer to the Discharge Site should provide the following information:
    a. Completed Patient Evacuation Form summarizing key information
    b. A short nursing discharge note

6. All personal items and relevant medical data should travel with the patient including:
    a. Medical record
    b. Medications and treatment supplies
    c. Belongings
    d. Place card

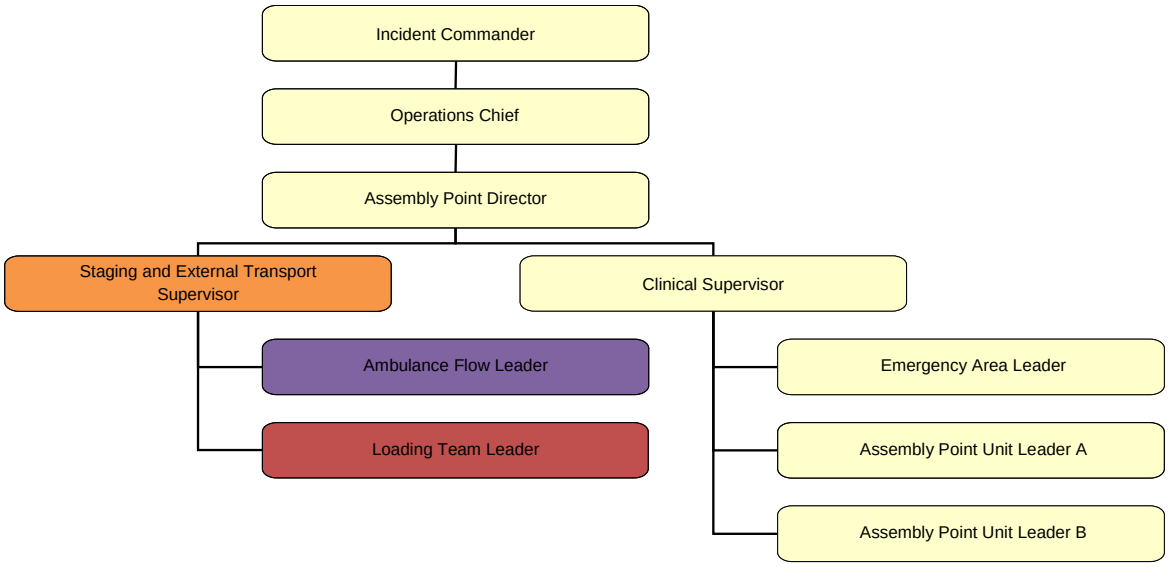
7. Patient may then be transported to the Discharge Site, accompanied by staff or volunteer if possible.

8. The patient's name and medical record information should be added to the tracking sheet upon arrival at the Discharge Site.

9. Patients will be discharged from the Discharge Site when family or other appropriate individuals arrive to transport the patient. The patient's name and medical record information should be documented with the time of discharge. Patient tracking staff should routinely report the number of discharged patients to the hospital EOC.

# STAGING AND EXTERNAL TRANSPORT

Staging and external transport staff manage patients as they "check-out" from the Assembly Point and load into ambulances and other transport vehicles to be taken to other hospitals. Leaders ensure that the patients' travel needs are met (records, equipment, staff supervision if necessary), confirm patient identity and transfer destination, and document that the patients have left the hospital. The process of managing patient flow out of the Assembly Point(s) and into the Staging area, in addition to managing waiting ambulances and other vehicles can rapidly become disorganized and/or create bottlenecks if the appropriate vehicles, equipment and staff are not available in a very timely manner. The Site is managed by a **Staging and External Transport Supervisor**, who is, in turn, supported by an **Ambulance Flow Leader** and a Loading Team Leader.




The **Staging and External Transport Supervisor** is responsible for the overall flow and accuracy of loading patients onto transport vehicles. S/he must maintain close communications with the Patient Destination Team to obtain continual updates on the destinations of the evacuating patients and ensure that all patients are sent to the correct facility and receiving unit. The Supervisor should try to keep the flow of patients into the Staging Area constant, calling for patients from the Assembly Point in anticipation of arriving ambulances so that traffic through the loading area remains brisk and efficient.

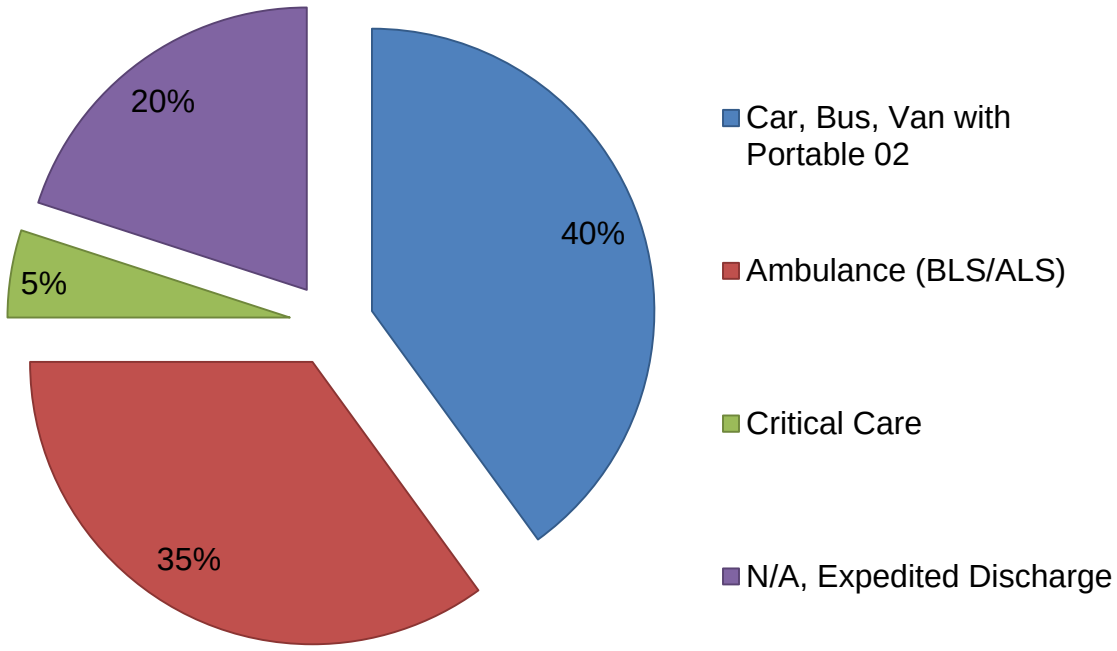
The **Ambulance Flow Leader** monitors the flow and rate of arriving ambulances and other transport vehicles, ensuring that ALS, BLS, chair car and other vehicles are continually arriving to transfer patients to their evacuation destinations. S/he should work with the local EMS liaison to discuss transport vehicle needs or problems. S/he should also work closely with hospital security officials and the local police liaison to ensure smooth traffic flow into and out of the Staging Area. The hospital may choose to designate separate arrival and loading sites for ALS and BLS ambulances in the evacuation procedures to minimize confusion about the capabilities of the arriving crews, and to speed throughput of lower acuity patients.

*During Superstorm Sandy, ambulances from around the country were called upon to support the evacuation of hospitals in New York City. When responding to the evacuation, many of these ambulances were not provided with local maps or GPS. Hospitals were initially unprepared to provide EMS crews with driving directions, causing confusion early in the response.*

The **Loading Team Leader** is responsible for the final matching of patients with their transporting vehicle and crew. S/he will maintain a log of which patients have left the hospital, noting the specific vehicle transporting them, the time they left, and what hospital equipment and/or personnel traveled with the patients.

Patients should be loaded onto the first available vehicle with the appropriate clinical capabilities to get them safely to their transfer destination. Ambulances without higher clinical capabilities (such as BLS ambulances) can be permitted to take higher acuity patients if hospital nurses or physicians travel with the patients with all necessary additional equipment and medications (including syringes and pumps). The Staging and External Transport team should identify cases where transport of hospital staff, supplies, and equipment may be necessary and request the needed supplies, medications and equipment as early as possible in the process to minimize loading and transfer delays.

**Transportation Requirements of Hospital Patients - Survey of 62 hospitals in LA County**[11]



# FAMILY NOTIFICATION PROCESS

Family Notification unit members are responsible for attempting to notify family members and other related and responsible parties about patient transfer destinations, answering calls and responding to questions from family members about patient welfare and location. The Social Services Department, or similar functioning department, should take the responsibility for keeping families informed about the locations of the patients and their condition (when known). The Unit's role includes:

- Contacting patients' families to notify them about the impending evacuation.
- Managing a phone bank that will answer calls from families looking for information.
- Rounding at the Assembly Point to support patients, gathering information about their condition, and updating families as possible.
- Managing and determining locations for the primary and secondary family waiting areas for families that are on-site during the evacuation if they will not or cannot leave.

**Key Points/Issues:**

- Given the understandable anxiety that may surround a hospital evacuation, preparing evacuation risk communication messages ahead of time may help considerably in the family notification process. Quickly and accurately disseminating a reassuring message to families that also describes the process for obtaining further information about the status of their loved one may help prevent family members from arriving onsite, potentially threatening everyone's safety, and further complicating an already chaotic situation.
- Social Services may need to gather support from the Labor Pool to help staff the phone bank. They should consider what other staff within the hospital may best be suited to this task. They may also need runners to help relay information to and from the social workers on the floors.

> *The phone bank should be maintained even after evacuation is complete and all families have been notified. Several disasters have demonstrated that families do not always communicate well with each other. Even though one family member may have been notified, other members of the same family may still call the hospital looking for their loved ones[1].*

**Sample Guidelines for Family Notification**

1. Many patients will want to call their families when the evacuation process begins. When time allows, nursing staff should encourage patients to place these calls while waiting for transport. Pre-written "talking points" may be given to patients as they contact their families to help support the hospital response (i.e. "the hospital has a plan for this event", "please do not come to the hospital", "please call the following hotline for more information", "please do not call the main hospital number", "please share this information with other family members", "I will call you again once I have arrived at the receiving hospital", etc.)

2. Public Affairs should encourage families to stay home until the patient has been transferred to a new facility (or until the hospital buildings are safe to re-enter).

3. A primary and secondary location should be designated that can handle and place calls to and from families during an evacuation.

4. Admitting will need to provide the Family Notification Unit with current lists of patients by unit with "next of kin" information for the phone bank.

# SPECIAL PATIENT POPULATIONS

Although much of evacuation planning for the different individual care units can be generalized across the entire hospital, there are, of course, special populations within hospitals that need special planning and procedures. Below is an overview of guidance that may be given when planning for some of the special populations within a hospital.

### Emergency Department Patients

All Emergency Department patients who have received a medical screening exam and do not have an emergency medical condition should be discharged. All others must be transferred to another facility, along with the hospital's inpatient population. Overall, patients in the ED should be handled based on acuity, with the highest acuity patients transferred out first. Critical care patients may be grouped with the ICUs, depending on hospital plans.

### Infants and Pediatric Patients

Being prepared to keep children safe during an evacuation requires special consideration during the planning process. *Infants and children should stay with their parent at all times, unless their parent is not on-site at the time of the evacuation.* Before leaving the patient care unit, staff should band parents with their child's information. Name bands should also be created for parents who aren't present, so they can be banded at the time of reunification. Hospital staff *must continuously* accompany any children without parents to the Assembly Point.

All the pediatric patient care units should be kept together at the Assembly Point. The location of the pediatric units within the Assembly Point should be chosen for its safe perimeter (i.e. limited number of monitorable access points and child-safe outlets and fixtures). Door monitors should be assigned to make sure ambulatory children don't wander. In addition, the Unit Leaders for each of the pediatric units should ensure that all other necessary equipment for the essential care for children are available at the Assembly Point (i.e. code carts, IV supplies, medications and pumps, etc.).

If parents do present to the Assembly Point, social work staff and security should work with pediatric staff to confirm identities and reunite the family. For verbal children without parents present, staff may use a form to ask questions and document answers (for example, what is your pet's name?). This form can be used later for family reunification. If a parent is not present at the time of transfer to another facility, this form should travel with the child. If possible, photos should be taken of children before they are transported to another facility.

### Obstetric Patients

Patients in active labor, or who appear to be approaching active labor should generally not be transferred prior to delivery, except as directed by the obstetrics clinician. If a woman in labor needs to be transferred to another facility, the hospital should use its standard protocols for staffing and care of the patient. Such patients should be prioritized for immediate transfer.

### Psychiatric Patients

For a variety of reasons, evacuating inpatient psychiatric patients will be challenging. The event will certainly exacerbate anxiety levels and other mental health issues for some patients. Further, there are real safety concerns when moving secured patients out of the secure environment. Evacuating psychiatric patients requires close collaboration with psychiatric clinicians and with hospital security. In general, security staff should be in place *before* patients begin to move. The Unit Leader of a psychiatric unit should identify the different types of psychiatric patients for which separate transportation may need to be considered and relay this information to the Evacuation Coordinator and others in the hospital ICS.

Patients who are violent or have extreme behavioral issues should bypass the Assembly Point. They should instead travel with a clinician and security and have secure transport arranged to a receiving facility. Patients who are not violent or medically complicated could be evacuated directly to a nearby psychiatric facility or other hospital via shuttle bus. They should be accompanied by both nursing and security staff during transport.

**Bariatric Patients**

Bariatric patients may need specialized equipment and additional staff for transport. Ideally, the hospital should have access to bariatric stretchers, wheelchairs, and transportation sleds for evacuation and staff trained to use these devices in an emergency. If these items are not available, the hospital evacuation protocols should indicate where they can be found in the event of an emergency evacuation. Because of resource demand issues, hospitals may wish to consider pre-evacuating their bariatric patients in an anticipatable event and/or evacuating them early in a no-notice event if possible.

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