
4. TRANSFER ORGANIZATION

A. DEFINITION

The transfer organization includes those procedures implemented to ensure that victims of a mass casualty incident will be safely, quickly, and efficiently transferred by appropriate vehicles to the appropriate and prepared health care facilities.

B. PREPARATION FOR EVACUATION

1. General Procedures

1.1 Single Receiving Facility

In the case that there is one receiving health care facility, there will be a direct link (by radio/phone) between the Acute Treatment Manager (ATM) and Accident and Emergency Department or hospital Command Post. The receiving hospital must maintain an active record of space available.

1.2 Multiple Receiving Facilities

In the case that there are multiple receiving facilities available, the Acute Treatment Manager will provide the Command Post Medical Officer with patient status and most appropriate care need (c.f. Evacuation Triage).

The Command Post Medical Officer (CPMO) will contact receiving facilities to confirm space available and inform of transfer. The Command Post Medical Officer will transmit destination to the Acute Treatment Manager.

The Acute Treatment Manager will then inform the Transport Officer of the following:

- Type of vehicle required
- Type of escort required
- Destination

The Transport Officer will notify the evacuation area of the required transport resource, if available. If the appropriate transport resources/escort are not available, the Transport Officer will propose alternative resources to ATM. If the team leader agrees on an alternative, then dispatch may proceed. If the team leader disagrees, the victim will continue to be monitored until an appropriate resource is available.

As each victim departs, the Transport Officer will inform the Command Post.

2. Preparation for Transport

The Evacuation Officer will:

- a. Assess the stability of the patient's status by monitoring pulse, B/P, breathing/ventilation, hemostasis. Any abnormality must be reported to ATM.
- b. Assess the security of the equipment, including:
 - Checking all tubes for correct positioning, and their ability to stay attached to the patient during the rigors of transfer. Deficiencies should be corrected where possible - if not, the ATM must be informed.

- Ensuring the efficiency of immobilization measures (e.g., collars, splints, etc.)
- Ensuring that triage tag is securely attached and clearly visible.

Short-term monitoring of victims may be necessary if the AMP treatment capacity is overloaded, and/or transport resources are not immediately available or are en route to the AMP, and/or if the receiving facility asks for delay. In such circumstances the Evacuation Officer maintains observation of the victims and informs ATM of any deterioration in their condition. This short-term monitoring should only be required in exceptional cases, as the evacuation area is supposed to serve only as a check point for victims before their departure.

C. EVACUATION PROCEDURES

1. Regulation of Evacuation

1.1 Principles

Strict control of the rate/destination of evacuation is necessary to avoid overwhelming the health care facilities. One of the roles of the first responding team arriving on the scene will be to stop spontaneous evacuation organized by witnesses. This unmanaged transport in unsafe, uncontrolled conditions to any unprepared health care facility will endanger the life of victims and disrupt the implementation of the Mass Casualty Management System - thus endangering the lives of those to follow.

1.2 Rules

No victim may be removed from AMP to health care facilities before:

- Victim is in most stable possible condition
- The victim is adequately equipped for the transfer
- The receiving health care facility is correctly informed and ready to receive the patient
- The best possible vehicle and escort are available

2. Control of Victim Flow

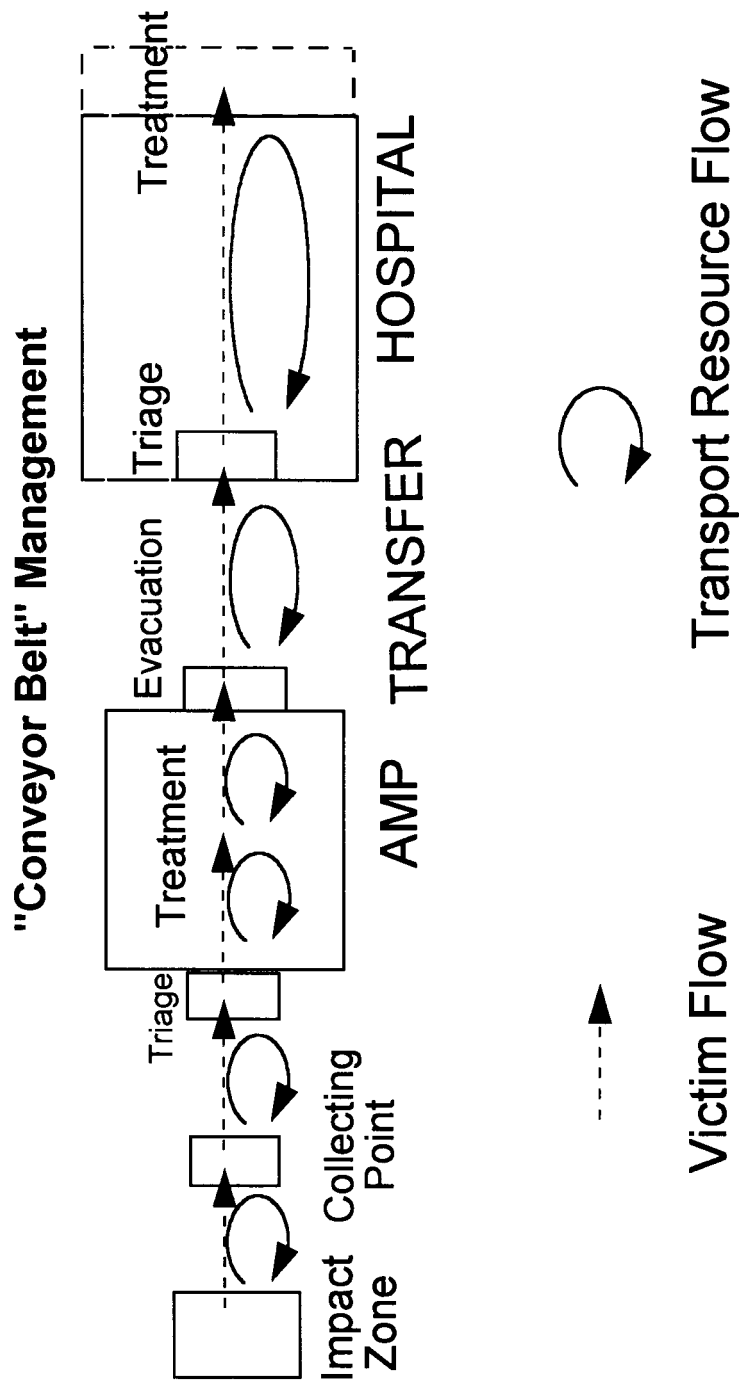
2.1 The "Noria" Principle

Patient movement (whether by walking, by stretcher, by vehicle) must be in a "one way" direction and without any crossing. From impact zone site to collecting point, from collecting point to AMP entrance, from AMP entrance to treatment area, from treatment area to evacuation area, from evacuation area to hospital receiving area, from hospital receiving area to appropriate care area, the victims will be on a kind of one-way "conveyor belt," taking them from a basic first aid care level to sophisticated care level (see Figure 12).

In a mass casualty event, it will never be possible to have a transport resource for each victim. So, each transport level will have to use its own limited resources in a rotating system, to bring all patients from one level to the next. The efficiency of each successive transfer between levels will be maximized by ensuring that the circulation follows in a "one-way", controlled rotation.

This one-way progression from level to level by rotating transportation resources was labelled "Noria" in 1916 during the World War I battle of Chemin de Dames in Verdun, France. "Noria" comes from the Latin word for "wheel".

Figure 12. **VICTIMS FLOW**



2.2 Ambulance Traffic Control

Smooth and efficient ambulance traffic requires:

2.2.1 Radio links

Radio links must be established between:

- Transport Officer at AMP
- Hospital Accident and Emergency Department
- Command Post
- Ambulance Headquarters

The Transport Officer must be aware of the exact location of each ambulance.

Five minutes before arrival at either Accident and Emergency Department or AMP the ambulance crew must inform the Accident and Emergency Department or Transport Officer.

2.2.2 Responsibility of ambulance driver

The driver will take orders only from the Transport Officer.

While on standby or during loading/unloading of victims, the driver must remain in the vehicle on radio watch. The driver must never leave the vehicle even to assist with the carrying of the patient.

The vehicle must be parked on standby in a specified area (designated by the Transport Officer) in such a way that the vehicle is accessible and clear to move.

2.3 Road Control

To facilitate the ambulance Noria, the central headquarters must organize, through the police, clear control of the access roads between hospitals and the AMP (e.g., crossing control).

The Advance Medical Post can request from the Command Post that some specific patient (e.g., one with unstable internal

bleeding) be sped along by "out riders" .

D. EVACUATION OF NON-ACUTE VICTIMS

Non-acute victims are evacuated only at the end of field operations. However, non-acute victim transfer can be inserted in the general evacuation process when:

- Primary health care facilities are available
- Non-medical transport resources are available (e.g., minibus, pick-up truck)
- No interference will occur with transfer of acute victims (timing, manpower, roads)

This transfer will be coordinated by the Green Treatment Team Leader, the Evacuation Officer, the Transport Officer and the Command Post.

At all times, priority for evacuation must be given to acute victims.

Figure 13 is a checklist of the elements of field organization for mass casualty management.

E. CASE STUDY

During an earthquake, a 33 year-old man, Mr. John Smith, is trapped in a collapsed building. We will follow this victim through the system.

Search and rescue team extricate Mr. Smith and reviewing injuries and status (thoracic trauma, abdominal trauma, crushed legs; conscious; breathing slightly laborious; pulse 100) classify him as Acute (RED ribbon).

Figure 13. **MASS CASUALTY MANAGEMENT SYSTEM
FIELD ORGANIZATION CHECKLIST**

- ✓ SITUATION ASSESSMENT
- ✓ REPORT TO CENTRAL LEVEL
- WORKING AREAS PRE-IDENTIFICATION
- SAFETY
- COMMAND POST
- RADIO COMMUNICATIONS
- CROWD AND TRAFFIC CONTROL
- SEARCH AND RESCUE
- TRIAGE AND STABILIZATION
- CONTROLLED EVACUATIONS

Victim is transferred immediately to Advance Medical Post. He is triaged by Emergency Physician (BP 85/60, Pulse 120, RR 20, bilateral rhonchi) as RED.

Victim is received in RED Treatment Area where following takes place:

Infusions (IV lines x 2)

Oxygen

No obvious rib fracture, bilateral rhonchi (lung contusion?)

Abdomen: slightly tense x painful

Fracture of left femur

Compound fracture of the right tibia and fibula

No dorsalis pedis pulse on right foot

In spite of the rapid infusion of 2 liters, B/P remained at 85/60

Abdomen tension increasing

Diagnosis: suspicion of abdominal internal bleeding; crush syndrome to the right leg; suspicion of lung contusion.

Red Team Leader requests priority evacuation to surgical facility in equipped ambulance escorted by EMT.

The Acute Treatment Manager:

- Requests Command Post for identification of appropriate reception facility, according to victim status and Red Team Leader request.
- Contacts Transport Officer for identification of ambulance and escort (on standby).

Hospital identified 10 Km from disaster site with operating theater and surgical team immediately available. Victim is assessed and secured in the ambulance by the Evacuation Officer and dispatched to the receiving hospital.

Chronology:

T+0	Incident
T+2mn	Warning
T+5mn	First Team at site
T+15mn	Victim located
T+18mn	Victim at AMP entrance
T+20mn	Victim at Red Treatment Area
T+30mn	Decision to evacuate
T+38mn	Victim in ambulance
T+45mn	Victim at hospital
T+55mn	Victim at operating theater

This time frame assumes the deployment in the field of the AMP as soon as the mass casualty event is declared.

This scenario emphasizes the need for rapid stabilization and appropriate dispatch of the victim according to the type of injury. Stabilization means not simply the establishment of infusion and immobilization but arresting deterioration or improving victim status.

In this scenario, the victim received stabilization care 20mn after the incident. If he had been extricated and sent directly to hospital, stabilization care would have started after 31mn, viz:

- 15mn (from incident to victim located)
- + 05mn (departure of ambulance)
- + 07mn (arrival at hospital)
- + 02mn (triage)
- + 02mn (care starts)

TOTAL: 31mn

Moreover, in the immediate evacuation approach, the victim is subjected to the physical stress of transport before being stabilized.