

APPENDIX C

MASS CASUALTY SITUATIONS**C-1. General**

a. Mass casualty situations occur when the number of casualties exceeds the available medical capability to rapidly treat and evacuate them. Therefore, the actual number of casualties required before a mass casualty situation is declared varies from situation to situation depending upon the availability of CHS resources. Technically, a mass casualty situation occurs if a combat medic has more than one seriously injured soldier to be cared for at one time. A mass casualty situation could occur from incidence such as an ambush of a platoon where 18 soldiers are wounded, an accident involving a troop carrier where 30 soldiers are hurt, or the use of chemical weapons or the detonation of a nuclear device where hundreds of soldiers are injured. To take this one step further, if the troop carrier accident occurs in the CZ in the vicinity of the medical company, a mass casualty situation has occurred (as this number of casualties would overwhelm the resources of the medical company). However, if the same accident occurred in the COMMZ in the vicinity of a GH, a FH, and an ASMC, the patients could be sent to three different MTFs for treatment (*MINIMAL* to the ASMC; *DELAYED* to the FH; and *IMMEDIATE* and *EXPECTANT* to the GH). By having the medical resources of the three MTFs available, the impact of the mass casualty situation is effectively reduced.

b. This appendix provides a detailed description of how to establish a mass casualty station. Due to the complexity of the mass casualty station and the number of personnel involved, the entire station may not be able to be setup at the medical company level. The CHS planner should, therefore, modify the station based on the specific unit's needs.

c. This station is not practical at the BAS level. When faced with a mass casualty situation at the BAS level, the important aspects for the management of the situation are establishing control, organizing activities, and effectively sorting patients. Effective sorting will enhance the physician's ability to maximize the use of his time and resources on those patients who would receive the most benefit from the intervention.

C-2. Mass Casualty Management

Mass casualty situations are normally chaotic and may include—

- Casualties in various stages of pain and distress.
- Casualties who may have single wounds, multiple wounds, or wounds from combined sources, such as thermal and blast injuries in a nuclear detonation.
- Medical conditions which vary from relatively minor injuries to severe, life-threatening trauma.
- New casualties arriving before the patients already on hand are treated.
- Personnel who are just dazed wandering throughout the area disrupting operations.

- Uninjured personnel looking for a buddy or, when civilian casualties are being treated, relatives looking for a loved one.

a. *Planning.* To ensure efficient management of mass casualty situations, the CHS planner must develop an effective plan and then rehearse it on a periodic schedule.

(1) In mass casualty situations, CHS resources are scarce. The plan, therefore, must be comprehensive and efficiently use what CHS resources are available.

(2) Planning considerations include—

- Establishing a control element to coordinate ongoing activities and release information updates.
- Securing the area and limiting access to nonessential personnel.
- Establishing communications between areas and to higher headquarters, if possible.
- Establishing the triage, treatment, and holding areas.
- Establishing a traffic pattern which provides for the smooth flow of patients and vehicles.
- Marking routes to the different areas.
- Orienting all personnel (medical and nonmedical) operating the mass casualty station to the types of markings used, layout, and routes to be followed during the mass casualty operation.
- Organizing medical personnel for staffing of the different areas.
- Organizing nonmedical personnel for litter bearer duties, messengers, restocking supplies, and other nonmedical functions.
- Ensuring an adequate blood supply and/or other Class VIII items are available or on order.
- Providing timely evacuation.

b. *Rehearsal and Training.*

(1) The response to a mass casualty situation must be rehearsed. By conducting rehearsals, unit personnel become familiar with where they should report and with what their duties should entail.

(2) Nonmedical personnel assigned to the unit should be trained in the proper techniques for loading, carrying, and unloading litters. This training will enhance their ability to perform the task of transporting patients correctly; using the proper techniques will reduce fatigue and the risk of injury. (Refer to FM 8-10-6 for additional information.)

C-3. Triage Categories

Triage is the medical sorting of patients according to the type and seriousness of the injury, likelihood of survival, and the establishment of priorities for treatment and evacuation. (Evacuation priorities are discussed in paragraph 1-10.) Triage ensures that medical resources are used to provide care for the greatest benefit to the largest number of casualties.

a. *Triage of Conventional Wounds and Injuries.*

(1) Triage (or sorting) is the process of prioritizing or rank ordering wounded soldiers on the basis of the individual needs for surgical intervention. The likely outcome of the individual casualty must be factored into the decision process prior to the commitment of limited medical resources. Casualties are generally sorted into four categories (or priorities). These priority groupings are discussed in decreasing order of surgical urgency.

(2) The four triage categories of conventional injuries are—

(a) *IMMEDIATE.* This category is for the patient whose condition demands immediate, resuscitative treatment. An example of this treatment is the control of hemorrhage from an extremity. Generally, the procedures used are short in duration and economical in terms of medical resources. (Approximately 20 percent of the casualties are normally in this category.)

(b) *DELAYED.* Casualties in the delayed category can tolerate delay prior to operative intervention without unduly compromising the likelihood of a successful outcome. When medical resources are overwhelmed, soldiers in this category are held until the *IMMEDIATE* cases are cared for. (Approximately 20 percent of the casualties are normally in this category.) An example of this category is stable abdominal wounds with probable viscera] injury, but no significant hemorrhage. These cases may go unoperated for 8 to 10 hours, after which there is a direct relationship between time lapsed and the advent of complications. Other examples include—

- Soft tissue wounds requiring debridement.
- Maxillofacial wounds without airway compromise.
- Vascular injuries with adequate collateral circulation.
- Genitourinary tract disruption.
- Fractures requiring operative manipulation, debridement, and external

fixation.

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- Eye and central nervous system (CNS) injuries.

(c) *MINIMAL (or AMBULATORY)*. This category is comprised of casualties with wounds that are so superficial that they require no more than cleansing, minimal debridement under local anesthesia, administration of tetanus toxoid, and first-aid type dressings. They must be rapidly directed away from the triage area to uncongested areas where first-aid and nonspecialty medical personnel are available. (Approximately 40 percent of the casualties are in this category and most of them are ambulatory.) An example is burns of less than 15 percent total body surface area (TBSA), with the exception of those involving the face, hands, and genitalia. Other examples include—

- Upper extremity fractures.
- Sprains.
- Abrasions.
- Behavioral disorders or other obvious psychiatric disturbances.

(d) *EXPECTANT*. Casualties in the expectant category have wounds that are so extensive that even if they were the sole casualty and had the benefit of optimal medical resources application, their survival would be very unlikely. During a mass casualty situation, this type of casualty would require an unjustifiable expenditure of limited resources that are more wisely applied to several other more salvageable soldiers. The *EXPECTANT* casualties should be separated from the view of other casualties; however, they should not be abandoned. Above all, one attempts to make them comfortable by whatever means necessary and to provide attendance by a minimal, but competent staff. (Approximately 20 percent of the casualties are normally in this category.) Examples of this category include—

- Unresponsive patients with penetrating head wounds.
- High spinal cord injuries.
- Mutilating explosive wounds involving multiple anatomical sites and organs.
- Second- and third-degree burns in excess of 60 percent TBSA.
- Profound shock with multiple injuries.
- Agonal respiration.

b. *Triage of Nuclear-Generated Patients*. There are four triage categories for patients generated in a nuclear detonation. These categories are: Immediate Treatment Group (T1); Delayed Treatment Group (T2); Minimal Treatment Group (T3); and Expectant Treatment (T4). A discussion of these triage categories is contained in paragraph 5-6.

c. *Triage of Neuropsychiatric Casualties.* These casualties are usually triaged as *MINIMAL* and should be quickly separated from the wounded patients. Within the MH discipline, the triage categories for psychiatric disorders are contained in FM 8-51.

C-4. Control Element

a. The MTF commander designates the individuals who will staff the control element. This element is responsible for—

- Implementing the plan.
- Establishing security.
- Limiting access to the area.
- Monitoring ongoing activities.
- Coordinating medical resource augmentation.
- Providing informational updates as required.

b. Communications with the triage, treatment, and holding areas are essential to accomplish the coordination and control of ongoing activities. If telephone/radio communications are not available, a messenger system is employed using some of the nonmedical personnel for this function.

C-5. Establishing Triage, Treatment, and Holding Areas

Depending on the tactical situation or the location of the mass casualty, the triage, treatment, and holding areas may be established in the existing MTF, an available shelter, or outdoors.

a. *Using the Existing Medical Treatment Facility.*

(1) When the existing MTF is used, the triage area should afford easy access for incoming litter bearer teams, ground and air ambulances, and nonmedical transportation assets. Sufficient space must be allocated for ambulance turnaround to ensure a smooth traffic flow. These requirements are normally met with the established layout of the MTF; however, depending upon the number of casualties being received, additional space may be required to accommodate the patient flow. Litter stands should be established (such as sawhorses supporting litters) for placing patients to be triaged. At a minimum, two should be established with the triage officer between the stations. Resuscitation and vascular volume replacement are initiated in the triage area, if required. The flow of wounded into the triage area must be controlled. An increase in the noise level and confusion can result if too many casualties are brought into the triage area at one time. These factors can adversely impact on the ability of the medical personnel to thoroughly evaluate and prioritize each casualty.

(2) Specific areas within the MTF are designated for each of the triage categories, personnel pools, and control elements. Additionally, internal traffic routes to the x-ray area, the laboratory area, and the preoperative, recovery, and holding areas (if augmented by a surgical detachment or if the MTF has an organic surgical squad) must be identified. Surgical procedures are limited to those required to save life and stabilize nontransportable patients for evacuation.

- Ideally, holding areas for each of the four triage categories should be established. Each area should be clearly identified and the route to that area marked. Marking can be accomplished with the use of different color panels or a numbering system. Each area can be designated as a specific color or number and the route to that area marked accordingly. The marking system used should function during times of good visibility as well as times of limited visibility (such as at night or during blackout conditions). (Materials used for marking purposes should be prepared when the mass casualty plan is developed and stored until required for use.)

- Two personnel pool areas should be designated; one for medical personnel and one for nonmedical personnel. The MTF commander should designate those individuals who will supervise the management of these pools. As unit personnel complete tasks, shifts, or other duties, they report back to the appropriate personnel pool area. Using this system ensures the efficient use of available resources and permits the reallocation of resources as requirements change. *MINIMAL* category patients can be used as an additional manpower pool while awaiting transportation back to their units. They, with minimal training or briefing, can act as runners, litter bearers, or guides to free up medical personnel so they can attend to medical tasks.

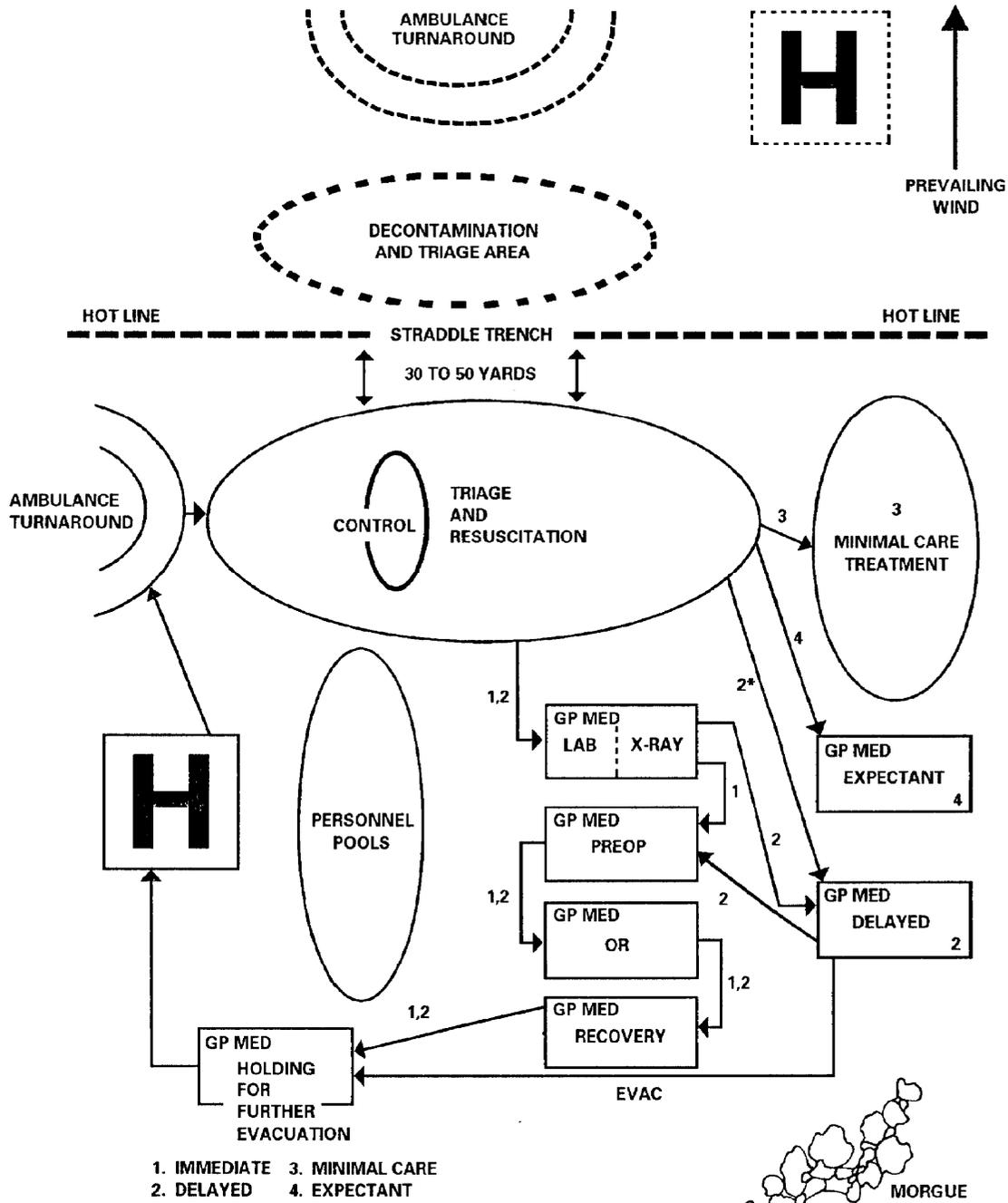
- The control element should have access to all areas as required.

- The internal communications system should be modified as required to provide communications capability to the major areas within the facility; if a communications systems does not exist, a messenger system is established.

(3) A sample layout of a mass casualty station is provided in Figure C-1. This sample includes surgical augmentation. Each mass casualty situation will be unique as to the number and types of casualties and the medical resources available to treat them. This mass casualty station should be modified to fit the realities of a specific mass casualty situation.

b. Using an Available Structure. A mass casualty situation may occur in an area away from the MTF. It may not be practical or possible to evacuate or transport the casualties to the MTF location. If a structure not previously used for an MTF is available, it may be used. The requirements for the establishment of the area are the same as when an existing MTF is used; however, the actual layout will differ depending on the structure used. Caution must be used to develop a traffic pattern which will avoid congestion and the crisscrossing of internal paths and will expedite patient flow.

c. Establishing the Mass Casualty Station Outdoors. In some instances, a mass casualty station may be required to be established outdoors. When this occurs, efficient use of overhead cover and available shade is essential. Unless inclement weather occurs, the triage area and the *MINIMAL* treatment area remain outdoors. The triage area must be accessible to incoming vehicles and provide



*THE DELAY CATEGORY PATIENT MAY NOT REQUIRE LABORATORY AND/OR X-RAY PROCEDURES

Figure C-1. Mass casualty station with triage and minimal care areas established outdoors.

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sufficient, space for the turnaround of the vehicles. Also, it should not be established too far away from the treatment areas, as the distance will place an additional burden on the litter bearers. Once triaged, patients should be brought inside an improvised shelter as soon as possible. The use of improvised shelters or the use of cover (such as caves) may be required until more appropriate shelters can be obtained or established.

C-6. Patient Accountability

During mass casualty situations, medical personnel do not have the time to fully complete the FMC with the required patient identification information. A numbering system can be used to expedite this process. The patient can be identified by a number and this same number is then entered on his FMC. The FMC is attached to the individual's clothing. The FMC is used to record the treatment and medications that the patient receives. When the mass casualty situation begins to resolve, and as time permits, medical personnel obtain the necessary information to complete the FMC.

C-7. Medical Evacuation

When mass casualty situations occur, the number of casualties will normally overwhelm the available medical evacuation assets. Therefore, the mass casualty plan should include provisions for the use of nonmedical vehicles and aircraft. When at all possible, casualties who have sustained more severe wounds should be evacuated in medical ground and air ambulances. These soldiers will benefit most from the provision of en route medical care. The lightly wounded and stable casualties and those suffering from BF can be transported by nonmedical transportation assets without serious risk of worsening their medical prognosis.

C-8. Contaminated Patients

Initial triage, EMT, and decontamination are accomplished on the dirty side of the hotline. Life-sustaining care is rendered, as required, without regard to NBC contamination. Secondary triage, ATM, and patient disposition are accomplished on the clean side of the hotline. When treatment must be provided in a contaminated environment, outside of the CPS, the level of care may be reduced to first-aid procedures because the treaters are in MOPP Level 4.

C-9. Disposition of Remains

In a mass casualty situation, there will be casualties who have died before reaching the triage area (dead on arrival [DOA]) or who die of wounds (DOW) before they can be stabilized and further evacuated. A temporary morgue area should be established away from and out of sight of the triage and treatment areas. (This morgue area is for use only by the MTF for those patients who have died. It is not a temporary collecting point for deceased personnel from other units.) This area could be established behind a natural barrier, such as a stand of trees, or it can be set off by using tentage or tarpaulins. This

area is not an actual morgue as it has neither the required equipment nor is it staffed; it is only a holding area. The FMC must be completed on each of the deceased personnel, and it must be signed by a physician. The remains are held until MA support can be obtained.