North Western Railway

HQ, Jaipur (Rajasthan)

Disaster Management Manual for Railway Workers

1. Disaster Preparedness:

Introduction:

In 1990 WHO had given the call to member nations to meet disasters.

It focused on Should disaster strike Be prepared which is very relevant in the present context. The MIC leak in Bhopal in 1984 was the greatest man-made disaster in the Indian history. Recently cyclone & earthquake in Gujarat created havoc in 2001 & 2002, how tragic & devastating to human life.

i) Disaster-The term disaster means calamity or sudden or great misfortunes. In other words, disaster is an event or series of events that seriously disrupt normal activities occurring on a scale sufficient to require outside assistance.

Whenever disaster strike, they do not discriminate between men and women, poor or rich, young or old. They do not wait; they simply come, kill and destroy the property. When these strike, the communities are first to react irrespective to cast, culture and religion.

Type of disaster:

(a) Natural Disasters-Earthquakes, landslides, floods, cyclone, drought etc.

(b) Man-made disaster-Fire, explosion, biological & chemical poisoning, vehicular accidents like that of plane, ship, train etc.

Disaster is not only a surgical problem but also a medical & public health problem.

ii) Accident-It is defined as unexpected, unplanned occurrence which may involve injury. Another definition of accident is that occurrence in a sequence of events which usually produces unintended injury, death or property damage.

Type of accident:

(a) *Road accidents*-It accounts for 2.5% of total deaths.

(b) *Domestic accidents*-In accident that takes place at home example burns, positioning, falls, drowning etc.

(c) *Railway accident*-Railway accident is an occurrence, in the course of working a railway, which does or may effect the safety of the railway, its engine, rolling stock, permanent way,

works, passengers or servants or which affects the safety of others or which does or may cause delay to trains or lost to the railway.

Occurrence outside the railway limits threatening the safety of the line or trains should also be reported as accident e.g. floods out side railway limits.

(d) *Serious accident* - It is an accident, which occurs in the cause of working of railway and is accompanied by or is of a nature usually accompanied by loss of human life or grievous heart or severe damage to property or serious interruption to traffic.

Train accidents-It is an accident involving a train which may be a set of vehicles empty or loaded, worked by a locomotive or any other self propelled unit, or rail motor vehicles, or a single rail motor vehicle, empty or carrying passengers, live-stock, parcel or goods when running under a particular number or a distance name from a fixed point of departure to a fixed destination.

It envelops a wide spectrum of occurrences or consequences not necessarily leading to a mishap. Failure of railway equipments is also treated as technical and potential accident.

- **A consequential train accidents include collision, derailment, fire etc.**
- **Indicative accidents include breach of block rules, averted collision, train passing signal at danger etc.**

<u>Classification of accidents</u>:

With a view to assess the relief needs/mode of rescue.

Railway accidents can be categorized into different levels best on severity of accident/disaster.

(a) Accidents/Natural calamity of a magnitude, which can be managed by the concerned divisional authority.

(b) Accidents in which assistance is required from neighboring divisions and can be managed by the zonal railways.

(c) Magnitude of disaster is so-severe that scale of causalities to be treated as national level disaster and require active involvement of multiple agencies viz. the Central Government (e.g. Ministry of Railways and other concerned Ministries). In such a disaster involvement of Railway Board will be necessary in managing rescue, relief and restoration.

<u>Gradation of accidents</u>:

(i)Minor (ii) Medium (iii) Major (iv) Disaster of great magnitude.

<u>Classification of injuries</u>:

A. Grievous: (i)Emasculation. (ii)Permanent loss of sight of either eye. (iii)Permanent privation of the hearing of either ear. (iv)Privation of any part of a joint. (v)Destruction or permanent impairing of the powers of any joint. (vi)Permanent disfiguration of the head or face. (vii) Fracture or dislocation of a bone or tooth. (viii) Any hurt which endangers life, or which causes the sufferer to be during the space of 20 days in severe badly pain or unable to follow his ordinary pursuits.

B. Simple: Simple injuries are other than those defined above.

2. Disaster Management Plan:

Principals- The following principals should be considered before writing a disaster management plan:

i) Simple to be understood by everyone.

ii) Flexible to fit different types of disasters.

iii) Adoptable for all hours.

iv) Clear & concise.

v) Rehearsed before implementation & updated according to experience gained.

vi) Priority in order to manage emergencies & mass casualties should be well defined.

Disaster preparedness-It is a programme of long term development activities whose goals are to strengthen the overall capacity and capability of railway to manage efficiently all type of emergencies and bring about and orderly transition from relieve through recovery and back to sustain development.

Objective of disaster preparedness:

To ensure-

- **Appropriate systems.**
- **Procedures.**
- **Resources are placed at a place to provide prompt effective assistance to victims.**
- **Facilitating relief measures and rehabilitation of services.**

Policy development:

It is the formal statement of a course of action. Policy is strategic in nature and performs the following functions -

- **Establishing long-term goals.**
- **Assign responsibilities for achieving goals.**

- **Establishing recommended work practice.**
- **Determine criteria for decision making.**
- **The form of emergency preparedness policy varies from railway to railway.**

Following six sectors are required for response and recovery strategies-

- **Communication.**
- **Health.**
- **Security and Police.**
- **Search and rescue.**
- **Transport.**
- **Social Welfare.**

3. Policy in case of a disaster because of railway accident:

Policy:

The general policy in case of Railway accidents in which casualties occur is that rapid evacuation after rendering immediate & necessary first-aid treatment and removal of injured passengers to the nearest railway or non-railway hospitals by first means of transport so that timely necessary medical aid may be rendered.

Objective:

(i) Save human life.

(ii) Protect property.

(iii) Ascertain cause of accident

(iv) Restoration.

4. Preparedness & Response for Prevention of disaster:

Pre-planning:

No one can have all the resources at various stages of different type of disasters. Therefore, resource inventories involving Railway, Civil, Private sector, non-government sector, voluntary agencies and even public is of paramount importance. The success of disaster management depends on optimum utilization & coordination of available resources. Disaster preparedness is directly related to many important policies, organizational and operational matters, which affects the preparedness level and efficient response.

Database updating:

Details of local resources easy, local doctors & hospitals, defense establishments, communication establishment, transportation agencies, fire brigade, civil administration & NGOs.

Training:

Training and education are very important aspect of disaster management. Disaster prevention, preparedness & response require close collaboration of diversity of people & organization. It requires managerial, technical & coordination skills of different persons. So training should be imparted through institutionalized training centers.

Public awareness & education:

The object is to create a partnership between Rly, Govt and people so that disaster preparedness is recognized as a joint responsibility.

Displaying of guidelines in coaches for taking suitable precaution & actions in case of accidents in order to save human life.

Rendering of first aid to injure by qualified persons present in the train or at accident site.

Transportation of injured persons by local civilians to nearby hospitals.

Disaster Drills:

To test the readiness & quick turnout of ARMV & ART periodical & regular mock drills should be ensured.

Accident Drill:

As in real emergency the train along with necessary staff should be turned out promptly & safely within prescribed time. An officer of Transportation or Mechanical Department should supervise the drill. These should be organized once in two months in rotation so that every ARMV is covered except any relief train /ARMV that actually turned out in a particular month in connection with an accident.

Periodical inspection of ARMV:

Railway doctor should carry out periodical inspection of ARMV every month & a report should be submitted to CMS/MS who will exercise supervisory check to see that contents have been inspected and are in good condition as per schedule. In addition to it, Supervisory check of ARMV should be made once in three

months by Div. In-charge. Complete team should do periodical inspection once every three months.

The inspecting doctor will make entries in the inspection book provided with ARMV & should sign the entries with date.

The inspecting doctor will carry out inspection of the following items:

a. Drugs & injections - No expired drugs.

b. Equipments - Every equipment is in working order.

c. Rubber items - Preserved properly.

d. Metal articles - Well polished.

e. Efficacy of adhesives & elastic plasters.

f. Petromax, stores should be in working order.

g. Stretchers, folding chairs, tents should be opened & rolled.

h. Blankets, sheets should be exposed to the sun & folded properly with Naphthalene balls & should be kept in the boxes.

i. Use of each item & equipment to be well versed.

j. Ensure availability of updated information of non-railway facilities of whole section in binded form.

<u>Community Rescue operation</u>:

Fear-Fear must be countered by issuing certain information by using mega-mike and loudspeakers and mobilizing volunteers.

(i) What to do to be safe.

(ii) Information of essential matters easy water, food, shelter etc.

(iii) Where to obtain information of injured persons.

<u>Panic</u>:

Instructions given over a loudspeaker asking people to be calm, may help to reduce the adverse effect of panic.

Rescue operation-Group of rescue volunteers must be organized to reach to the site of an accident. As soon as rescuers reach on injured person, they should be careful to-

- Maintain respiration, clear the victims air way.

- Use blankets to prevent catching coal.

- When lifting the injured persons, movement must be calm and coordinated.

- **Carried out in accordance with the instructions of leader.**
- **The injured person must be moved as little as possible.**
- **Victims had, neck and trunk must be kept in same axis.**
- **No stretcher-bearer should walk backwards.**
- **Stretcher must go forward with the patients head foremost, jerkiness must be avoided.**

5. <u>Definitions</u>:

Railway doctor will mean the following Railway Medical Officers-

1. **Chief Medical Superintendent (CMS).**
2. **Medical Superintendent (MS).**
3. **Senior Div. Medical Officer (Sr.DMO).**
4. **Div. Medical Officer (DMO).**
5. **Asstt. Div. Medical Officer (ADMO).**
6. **Contract Medical Practioner (CMP).**

Team A-means team of doctors & paramedical staff nominated to proceed to accident site by ARMV.

Team B-means team of doctors & para-medical staff nominated to work at the Div. Railway Hospital.

Team C-means team of Road Mobile Van.

Leader of the Team - Senior most Railway doctor of the team.

Emergency-A sudden occurrence demanding immediate action that may be due to natural or man-made cause.

Risk-Pay concept used to describe the likelihood of negative consequences.

NGOs-Non-government organizations.

MOU-Memorandum of understanding.

Injured person-A member of the public is to be considered an injured person except when the injuries received are only patty abrasions or bruises of a minor nature.

A railway servant is to be considered in injured person when injured in an accident and prevented from returning to work within 40 hours.

6. <u>Procedure for Rapid Concentration of Medical Equipments and Staff at the Site of accident</u>:

<u>Following points should be covered</u>-

1. **Advice of accident.**

2. **Mobilization of facilities available railway/ non-railway.**
3. **Medical work at the site.**
4. **Note taking.**
5. **Comforts of the injured.**
6. **Transport of the injured.**

<u>Advice of the accident</u>:

In case of an accident causing injury to any person, whether passenger, railway servant, trespasser or other, the Railway Medical officer in-charge of both sides of the subsection the sub-section in which the accident has occurred will be advised by the Station Master / Station Supdt. on telephone.

- **Station master shall also send telephonic message to the control office for medical assistance.**
- **He shall arrange to send a call to nearby Civil / Private / Military Hospitals & request them to extend medical assistance by the quickest possible means.**
- **An updated list of Railway, private, civil, mission hospitals should be exhibited on a board at the station.**

  (Railway medical officer of the section should periodically inspect the list to ensure that the list has been updated).
- **In case the in-charge of the section is not available then next senior person who may be a doctor or a pharmacist should take the initiative & should proceed to the site of the accident with all available equipments & the staff by first available means.**

<u>Action to be taken by Control office</u>:

i) **The control office shall immediately advise by telephone or microwave to Station Master of the station equipped with ARMV scale I & II on either side of the accident to move the equipment to the accident site by first available means. The ARMV should be given absolute priority. The target time is 20 mints during day and 30 mints during night.**

ii) **The control office shall inform the Railway Medical Officer in-charge and the casualty medical officer and will provide detail of the accident e.g. site of accident, Train no, Time of occurrence of the accident, Nearest Railway station on both side of the accident, Expected number & nature of casualties, Cause of accident etc.**

iii) **The control should inform all the staff trained in first aid, who can be conveniently spared and St.John persons, civil defense person who can be of assistance to the medical staff in the clearance & transport of the injured.**

iv) **The control should immediately advise the senior official of Mechanical Department & Safety Department to give every possible assistance in his effort to arrive at the site of the accident in the shortest possible time & by quickest means of transport.**

v) **In case number of casualties is more or Division is of the opinion that ARMV of neighboring division can reach the site earlier then request should be made to order ARMV with all available equipments & staff by first available means.**

vi) **The control shall keep in close touch with the in-charge of Division in order to find out his requirements & shall make necessary arrangements for transportation of injured persons.**

7. Measures to be taken in the event of an accident / disaster:

In accordance to above policy, following measures are to be taken in the event of an accident /disaster:

A. i) Action & steps at casualty department of hospital on receipt of First Information from site.

On receipt of first information from site through Control room or Station Master, casualty doctor will inform CMS/MS in-charge of the hospital & to all other doctors and Paramedical concerned either by sounding the hooter or by conveying message by telephone. He will also arrange vehicles (e.g. Ambulance, Road mobile van) and POMKA.

- **He will keep proper record of the messages of accident received from control office e.g. time of receiving call, name & designation of informing authority, place of accident nearest station on either side, kilometers or pole No., LC gate No., Train No., time of accident, Train Number involved, expected no. of casualties and cause of accident.**
- **He will inform to on duty staff, ARME staff (Team A), medical officer in- charge of ARMV, DMO (G), ANO, Hospital team (Team B) to report to the casualty immediately.**
- **With the help of paramedical staff of casualty he will load POMKAs and Boyles apparatus in the Road Mobile Van (or hired van) /Ambulance for earliest possible movement of Team C (Road mobile team).He will find out the approach road to the site of accident. As soon as leader of Road mobile van reports to the casualty, casualty**

doctor will give him complete feedback and will guide him to move for the accident site. He will note down the departure time of the RMV.

- **He will ensure that staff of Team A reported at station within stipulated time and rushed to the site by ARMV. He will record the name of Medical Officers of Team A and also the time of departure of ARMV.**
- **Members of Team B will report to casualty duty doctor and will establish an emergency cell in the hospital.**
- **One doctor will be sent to the control room. He will collect complete information of the accident and will convey it to leader of Team B. He will coordinate between Team A, Team B & Headquarter. He will give first information to HQ.**
- **On arrival of the leader of Team B, he (casualty doctor) will work under his guidance.**

ii) <u>Duties of Team B (Hospital Team)</u>.

- **Leader of Team B will contact the local hospitals near the accident site and will request them to provide medical assistance to the victims, using database of the hospitals (Rly/State Govt. /Pvt.) located along the track.**
- **He will inform other neighboring divisions to keep their medical team in readiness so that their services can be availed if needed.**
- **Members of civil defense, St.John ambulance & trained first-aiders must be sent to the accident site.**
- **He will maintain liaison with control room, accident site and zonal headquarters for exchange of information and additional assistance if required at the accident site.**
- **He should also initiate the management of hospital to receive & treat the victims.**

a. According to the number of casualties, one or two wards should be kept vacant for admission of the victims.

b. Radiology, laboratory, kitchen should be kept ready.

c. Sufficient stock of emergency medicine, oxygen, I.V.fluids, plaster should be kept to avoid shortage.

d. All paramedical staff should be asked to report at the casualty room & duties should be assigned to them.

iii) <u>Action at Station & enroute to the site</u>.

- **Leader of Team A will inform SS/ASM on duty regarding readiness of Medical team and will obtain a certificate to this effect. He will ensure timely departure of ARMV.**
- **OT staff will ensure sterilization of instruments.**
- **Leader of Team A will distribute the duties among available doctors:**

i) **One doctor for Reception Post to prepare list of injured.**

ii) **One doctor for Resuscitation Post to attend non-surgical serious cases.**

iii) **One doctor for First-Aid post to provide first-aid treatment.**

iv) **One doctor to keep record and look after the dead bodies.**

v) **One doctor in OT of ARME.**

vi) **AHO/Health Inspector for Comfort post.**

vii) **One doctor with senior paramedical to visit hospitals where injured passengers have already been shifted.**

viii) **Rest of the doctors will be involved in rescue operation. Haversack will be distributed among them.**

ix) **For easy identification Medical& paramedical staff will wear arm bandages.**

B. <u>Action at the site of accident</u>:

<u>Principles of Mass Casualty Management</u>-

- **Doing the best for the most within available resources.**
- **Triage is inescapable throughout the chain of treatment.**
- **Graded care of casualties-**

(i) **First Aid life saving measures.**

(ii) **Preparation for evacuation.**

(iii) **Primary surgery.**

(iv) **Definitive treatment.**

- **First Aid measures carried out at the earliest assume life saving significance.**
- **First Aid at the scene of disaster must be limited to monitoring & restoring vital function.**
- **Simple & standard therapist principals.**
- **The casualty must be conditioned or treated so that the degree of urgency is lessened.**
- **A reduction in mortality in severely injured can be achieved by early first aid.**

The first aid is usually limited to primary life support measures, the main function of which is maintaining airway breathing & circulation.

Triage - This is a French word used to short out good coffee beans from the inferior ones. The word was first used by Japan in Medical Science at the time of Hiroshima episode and later on picked up by Military Services in USA. It simply means the act of shorting according to quality. It also means the assignment of degree of urgency to decide the order of treatment of wounds, illnesses etc. The Triage Officer nominated should do shorting of cases, assess the degree of urgency and allot the priority of treatment.

Injured persons-Triage Categories:

Plastic tag with serially number should also be tied on left wrist of the injured passenger shifted to railway/non-railway hospital. This serial umber should be same as of list prepared.

Triage category of all patients must be identified with color of the tags.

Priority I - Yellow-Those needs urgent resuscitation and urgent surgery.

Priority II - Red-Those who need urgent surgery.

Priority III - Green-Those who need only first aid.

C. Priority (of treatment) -The priority should be as under:

(i) Priority I-Those who need urgent resuscitation and urgent surgery.

(ii) Priority II-Those need an urgent surgery.

(iii) Priority III-Those needing first aid only.

D. Doctors with their paramedical staff will takeover the charge of their allotted post & the leader will complete the round to assess the situation.

- **Leader of the team CMS/ senior most doctor will sit at the control post of the accident site & will coordinate all relief measures.**
- **Leader of the team will establish a communication with leader of Team B available at Div. Hospital for exchange of information through Railway/BSNL/cell phones.**
- **Leader will also share the information with control room of the division.**
- **Leader will establish contact with in-charges of nearby hospitals (Civil/Pvt.)& will request them to extend their assistance.**

(i) Duties of doctors in Reception post.

- **He will receive all injured cases & will segregate them in different categories e.g. grievous, minor & trivial. Health Inspector/ paramedical staff will help in documentation.**
- **Minor& trivial cases will be diverted to first-aid post.**
- **Serious surgical cases to Surgical post.**
- **Serious Medical cases to Medical post**
- **After resuscitation they will be directed to First Aid post or surgical post for necessary aids.**
- **After completion of work of his post, he will assist in preparation of list of persons injured or dead.**

(ii) <u>Duties of doctors of First Aid post</u>.

- **He will provide first-aid treatment to minor & trivial cases. After documentation injured persons will be shifted to comfort post for further necessary action.**
- **Serious surgical cases directed from surgical post will be shifted to nearby hospital for further treatment.**
- **Paramedical staff & St.John ambulance person of First Aid post will provide services for transportation of serious cases to the ambulances.**
- **First-Aid parties should be instructed to tie a plain white label on casualties with a symbol marked on it in following cases**

a. H for severe hemorrhage.

b. T for tourniquet with time.

c. X for penetrating wound of chest & abdomen.

iii) <u>Duties of doctors of Surgical post</u>.

- **He will attend the cases where immediate surgical intervention is required.**
- **After surgical intervention he will shift the injured persons to the First Aid post for further removal to nearby hospital.**
- **He will mention code on card if some sedation is given or tourniquet is applied.**

(iv) <u>Duties of doctors of Medical post</u>.

- **He will resuscitate all serious medical & surgical cases and after improvement shift the cases to either surgical post where immediate surgical intervention is required or to the First Aid post for documentation and final disposal.**

(v.) Duties of doctors in Mortuary post.

- **With the help of St.John Ambulance, Civil Defense personnel, Paramedicals dead bodies should be shifted quickly to the nominated place of accident site.**
- **After proper documentation and photography of each dead body (Two photo should be of full body length and two should be close-up of face) the body should be kept in a plastic bag having a labeling system. One plastic tag should be tied to the left wrist with S.No. & information like Date, Name, Age, Sex, Address if any etc.**
- **After this the dead bodies should be handed over to the GRP/Police for necessary action.**
- **For unclaimed dead bodies foldable coffins to be arranged from Divisional hospital on need basis & dead bodies should be shifted with due respect to Divisional hospital for preservation & to keep in A/C mortuary.**
- **He will help in collection of personal belongings of unclaimed bodies & will hand the over to police after completion of formalities.**
- **He will also help to make arrangement for transportation of victims if needed by comfort post.**
- **He will prepare a list of dead bodies in three copies. List will be signed by leader of Team A. One copy will be handed over to the commercial officer, one copy to be given for photocopies and one copy will be kept with the leader as Office copy. The list should be updated at regular interval.**

(vi) Duties of the doctor at Comfort post.

- **Documentation of injured persons attended by medical team & referred to nearby hospitals (Govt./Pvt./Rly).**
- **Comforts to injured persons.**
- **Arrangement to shift the serious patients to nearby Rly./Civil/Pvt. Hospitals.**
- **Arrangement of safe drinking water & sanitation of accident site.**

vi) Duties of Doctors involved in Rescue Operations.

- **Will setup a field unit as per diagram in the IRMM 2000 and will start receiving injured passengers.**
- **Arrangement will be made to check every part of the affected train particularly the latrines, cabins etc. with the volunteers drawn from the Railway staff. St.John brigade**

members, scout, civil defense members etc. They will move with first aid kits and badges tied in the arms.

- **Will announce the availability of medical team at the accident site through megaphone so that passengers are informed.**
- **The injured will be given preliminary treatment with the triage concept.**
- **The dead bodies will be handed over to the doctor in-charge of dead bodies.**
- **Detailed information about injured passengers will be given to the doctor preparing the list of injured persons.**
- **Arrangement will be made for transport of the injured passengers to the nearest hospitals under the triage concept. Critically injured passengers (red) and passengers requiring immediate attention but can wait for 2-3 hours (yellow) will be transported to nearest Hospitals using ambulances / hiring taxis as per need.**
- **Affected trains driver, diesel assistants & guard will be subjected to medical examination and breath analyzer test. Enquiry will be done about their last PME also.**
- **Arrangement will be made for comfort of the passengers and injured passengers by providing tea, coffee, biscuits, breads etc. at the accident site and at the ARME.**
- **Arrangement will be made for latrine facilities at the site for passengers and staff by Health Inspectors and safaiwalas.**
- **The CMS/Senior most will stay at the accident site till it is required. He/She will leave the site only in consultation with DRM. At that time, one medical team with one doctor and paramedical staff will continue to operate one medical centre at the site till restoration work is completed.**
- **Passengers requiring first aid only (green) will be transported with the ARME when it goes back to headquarter after relief & rescue operation.**

<u>After rescue and relief operation and coming to HQ</u>:

- **Proper liaison & follow up will be maintained with various hospitals in which inured passengers are admitted until patients are discharged from the hospitals.**

(vii) <u>Duties of doctors deputed to visit different hospitals where injured passengers are admitted</u>.

Before they leave the accident site, they should note down the DOT telephone no., mobile no. etc of the leader of the team and other doctors at site for quick communication.

- **In case Rly. vehicle is not available they will hire a vehicle/taxi for movement.**
- **At Civil / Pvt. hospital where injured persons are admitted, they should collect the following information of injured treated/ dead - Name, Age, Sex, Address, Telephone no. of relatives, Nature of injury, Condition of injured person, Brief about treatment of serious cases.**

This information should be transmitted to the leader of Team A and Team B by using local phone.

- **He should make an assessment about capabilities of hospital to handle injured persons. If he feels that serious patients need to be shifted to a hospital with better facilities then he will make necessary arrangements to shift the patients.**
- **From next day senior supervisor will visit the hospitals & will submit a daily progress report.**

(viii) <u>Duties of doctors of Road Mobile Van (Team C)</u>.

- **Team will work under the guidance of the leader of Team A at the accident-site.**
- **Team will also help in transportation/shifting of seriously injured persons.**

(ix) <u>Preparation of list of dead/injured persons</u>.

- **One medical officer will collect information from other doctors about dead/injured persons attended.**
- **He will prepare a list of dead & injured persons in three copies One for the commercial officer, one for photocopy & one as office copy of the leader of the team.**

8. <u>Movement back from accident site</u>:

Before departure from accident site leader of the team will inspect each & every coach specially latrines to ensure that nobody is left unattended. He will talk with Medical Officer in Control room regarding necessary arrangements to be made at the station for transportation of victims to Rly. Hospitals/Civil Hospitals/Private Hospitals. Team will take a round of all the Hospitals where injured persons are admitted/shifted and will ensure that proper care is given. Then the team will disperse after permission from I/c of the team.

<u>Follow Up Action</u>:

Post Disaster Information Collection System:

One senior supervisor/Sr.Pharmacist should be deputed to follow up the injured referred to non-railway hospitals and a daily progress report must be submitted to CMD through CMS for one week and then biweekly. If required necessary medicines & other assistance should be provided on demand of civil medical authorities including transportation of serious patients to higher centers.

9. Post-accidental ARME Inspection and Recoupment:

1. **ARME I/c will check all the items and will arrange replacement of shortages just after the return of ARME from the site.**
2. **If T & P item is lost or becomes out of order same should be DS-8ed and replacement should be made without delay.**
3. **Items of comforts should be replaced.**
4. **All the medicines should be checked & shortage should be replaced.**
5. **Linen, rubber goods should be recouped.**
6. **Documentation of all the activities should be made in the movement register of ARMV & should be signed by CMS/Senior most Doctor of TeamB (at the site).**

10. **Short-term Safety Action Plan for Medical Department:**

1. **Periodical Inspection of ARMV by ARMV in-charge once in a month.**
2. **Periodical inspection of ARMV by complete team nominated by CMS In-charge with suitable counseling session of the staff once in three months.**
3. **Full dress mock drill once in three months, for creating simulating conditions.**
4. **Vigorous rescue & relief training to nominated staff to qualify for crack team.**
5. **Ensure availability of updated information of non-railway facilities available on whole section in computer printed & binded form.**
6. **100% availability of all equipments as per guidelines issued from time to time in full working order.**
7. **Also to include-**

- **Use of each & every equipment to be well versed.**
- **Every equipment in working order.**
- **No expiry date drugs.**
- **All rubber items to be preserved properly.**

11. Infrastructure:

A. Railway facilities available:

Railway Equipments:

1. ARMV scale I & scale II / SPART at 100 km distance.

2. POMKA.

3. First Aid boxes.

Hospitals & Health Units:

1. Zonal/Central Hospital

2. Divisional Rly. Hospital.

3. Sub-Divisional Hospital.

4. Health Unit/Dispensary.

5. Lock up Dispensaries

6. Mobile Medical Vans.

B. Other facilities:

1. St.John Ambulance.

2. Civil Defense.

3. First-aiders.

C. Non-railway facilities:

- **Civil Hospitals.**
- **Private Hospitals.**
- **Mission Hospitals.**
- **Military Hospitals.**
- **NGOs - Red Cross Society, Medical Association & Councils, Lions Club, Rotary clubs, Missions, Ambulances services, Taxi Association, Home guards etc.**
- **Police services.**
- **Media.**
- **Communication.**
- **Public works.**
- **Electrical Deptt.**

12. Mobilization of the sources:

On receipt of first information of accident, all resources should be mobilized for quick relief and rescue operation at accident site. Mobilization of resources should be monitored by control room.

Golden hour for retrieval and relief - Most of the trauma patients can be saved if bleeding is effectively stopped and blood pressure restored within an hour. Surgical intervention in first hour is therefore crucial for increasing the chance of survival of victims. This hour is called the golden hour.

The golden hour - It begins the movement the injury occurred. Therefore basic steps for quick, effective rescue and relief operations are as follows:

(i) Rapid assesses to the site of accident with the help of road map.

(ii) Quick extraction of victims and effective on-sites medical management.

(iii) Stabilization of condition.

(iv) Expeditious extraction and shifting to rescue vehicles.

(v) Speedy transportation to hospitals.

13. Photography tallying system through the numbers supported by labels of dead bodies:

(i) After documentation, photography should be mandatory.
(2 photos should be of full body length & 2 should be close-up of face)

(ii) Before keeping the dead body in a plastic bag, one plastic tag should be tied to the left wrist with the serial number & other information like name, age, sex, address(if any).

(iii) In case facility available, video-graph of each dead & injured should be taken for documentation & identification.

(iv) A list of dead bodies should be prepared with detailed information. Serial no. in the list should tally with Serial no. mentioned on plastic tag tied to the left wrist of the dead body.

14. Miscellaneous:

Senior Medical Officer should audit every disaster thoroughly with para-medical staff. The shortcomings noticed should be pointed out and measures to improve in better preparedness for any future accidents should be communicated to them for long-term benefits. New ideas and any innovation suggested by all staff even from rank of Safaiwalas or H.A. should be taken seriously.