HEALTH DEPARTMENT, GOVERNMENT OF BIHAR

MASS CASUALTY MANAGEMENT

Standard Operating Procedure (SOP) and Operational Guidelines

विहार सरकार

राज्य स्वास्थ्य समिति, बिहार

Developed under GoB-ADPC Technical Collaboration for

“ Strengthening Institutional Leadership Capacity for Disaster Preparedness and Emergency Response in Bihar.”

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Message

Bihar is prone to various types of disasters. Their intensity and frequency have increased in recent years. Mass casualties due to natural and man made disaster are quite common in Bihar and this leads to chaotic situation in the hospitals. In case of mass casualty incidence health sector is expected to respond immediately. Sudden influx of unexpected patient load due to a disaster creates a situation of relative lack of resources in the hospital. Hospital functionaries have to manage such situations even with limited resources.

Disaster risk reduction for health is multisectoral and refers to the systematic analysis and management of health risks, posed by emergencies and disasters. The traditional focus of the health sector has been on the response to emergencies. The ongoing challenge is to broaden the focus of disaster risk reduction approach which emphasizes prevention and mitigation, and the development of community and country capacities to provide timely and effective response and recovery. Resilient health systems based on primary health care at community level can reduce underlying vulnerability, protect health facilities and services, and scale-up the response to meet the wide-ranging health needs in disasters.

To ensure timely and effective response during Mass Casualty Incidence, the Standard Operating Procedure and Operational Guidelines for Mass Casualty Management provide essential guidelines. The SOP and guidelines enable establishing co-ordination mechanism and preparedness prior to such incidence, clarity on role and responsibilities of various cadres of health functionaries, planning and contingency agreements with stakeholders & volunteers to involve them during Mass Casually Incidence. These operational guidelines and Standard operating procedures will go a long way and play important role in saving lives and minimizing disabilities in the event of a disaster.

I am sure that the SOP and the guidelines would be very effective and helpful in managing the mass casualty incidences in a well-coordinated manner at all levels of hospitals in Bihar in the event of any disaster.

R. K. Mahajan)
Principal Secretary,
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MESSAGE

The Standard Operating Procedure and Operational Guidelines for Management of Mass Casualty by hospitals is a useful document that will help to effectively standardize disaster preparedness and response in health facilities in the state of Bihar. This document will go a long way in enhancing the resilience of hospitals for handling mass casualty resulting from disasters.

A large part of Bihar is susceptible to disasters, especially floods and earthquakes that cause immense damage to human life, property and agriculture in affected areas. To be able to ensure the well-being of disaster affected people and their families, hospitals and health care providers need to be resilient and ready to deal with such situations. It is worth noting that this publication takes into account the global standards of the emergency trauma management and incorporates the approach enunciated in the Bihar DRR Roadmap (2015 -30) developed in line with the Sendai Framework for Disaster Risk Reduction.

I am aware that these guidelines are an outcome of intensive consultations that were jointly organised by Disaster Management Department and Department of Health, Govt. of Bihar under the guidance and oversight of an expert committee comprising of local and national level specialists. I congratulate the team responsible for preparation of this document.

I am confident that this document will serve to guide the district administration, hospital staff, police force, NDRF, SDRF and all other related stakeholders to effectively respond to mass casualty incidences.

Pratyaya Amrit
Principal Secretary
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Government of Bihar

MASS CASUALTY MANAGEMENT

Standard Operating Procedure (SOP)

and

Operational Guidelines

GLOSSARY OF TERMS

Casualty : Refers to victims, both dead and injured, physically and/or psychologically.

Mass Casualty Incident : Any event resulting in a number of victims and is large enough to disrupt the normal course of health care services.

Mass Casualty Management : Management of victims of a mass casualty incident, aimed at minimizing loss of life and disabilities.

Triage : It is the process of identifying victims needing immediate assistance, those that can have delayed treatment, those which need minimal treatment and the victims that are dead or are likely to die.

Coordination : The bringing together of organizations and departments in order to ensure effective disaster response.

Disaster : A serious disruption of the functioning of a community or a society causing widespread human, material, economic or environmental losses which exceed the ability of the affected community or society to cope using its own resources.

Capacity enhancement : Efforts aimed at developing human skills or societal infrastructures within a community or organization needed to reduce the level of risk. In extended understanding, capacity enhancement also includes development of institutional, financial, political and other resources, such as technology at different levels and sectors of the society.

GLOSSARY OF TERMS

ANM	Auxiliary Nurse and Midwife
ANS/DNS	Assistant Nursing Superintendent /Deputy Nursing Superintendent
BDO	Block Development Officer
BMSICL	Bihar Medical Services and Infrastructure Corporation Limited
BSDMA	Bihar State Disaster Management Authority
CHC	Community Health Center
CMO	Chief Medical Officer
CMS	Chief Medical Superintendent
CSSD	Central Sterile Services Department
CT	Computerized Tomography
DEOC	District Emergency Operations Centre
DH	District Hospital
DM Cycle	Disaster Management Cycle
ED	Emergency Department
EOC	Emergency Operations Center
ERP	Emergency Response Plan
ER	Elected Representative
FLWs	Front Line Workers
HAZMAT	Hazardous Material
HDU	High Dependency Unit
HERP	Hospital Emergency Response Plan
HIRS	Hospital Incident Response System
HOD	Head of Department
HSC	Hospital Surgical Capacity
HTC	Hospital Treatment Capacity
ICU	Intensive Care Unit
IC	Incident Commander
I/C	In-Charge

ICDS	Integrated Child Development Services
IRS	Incident Response System
IRCS	Indian Red Cross Society
MCI	Mass Casualty Incident
MCM	Mass Casualty Management
MICU	Medical Intensive Care unit
MLC	Medico Legal Case
MO	Medical Officer
MO I/C	Medical Officer In Charge
MRD	Medical Records Department
NCC	National Cadet Corps
NDRF	National Disaster Response Force
NGO	Non-Governmental Organization
NSS	National Service Scheme
NYKS	Nehru Yuva Kendra Sangathan
OPD	Out Patient Department
OT	Operation Theater
OTA	Operation Theater Assistant
PHC	Primary Health Center
PRI	Panchayati Raj Institution
PWD	Public Works Department
PRO	Public Relations Officer
SDRF	State Disaster Response Force
SEOC	State Emergency Operations Centre
SOP	Standard Operating Procedure
QMRT	Quick Medical Response Teams
UNISDR	United Nations International Strategy for Disaster Reduction

CONTENTS

1. Introduction to Mass Casualty Incidence

1.1. Definition :

Generally, a Mass Casualty Incident (MCI) is defined as an event which generates more patients at one time than locally available resources can manage using routine procedures. It requires exceptional emergency arrangements and additional or extraordinary assistance. It can also be defined as any event resulting in a number of victims large enough to disrupt the normal course of emergency and health care services[1].

Most such incidents are marked by a relatively sudden and dramatic event that causes a surge in numbers of patients. This definition covers a wide range of incidents of varying degrees of severity. A bus crash in a small rural community with tens of injured survivors would fulfil this definition, as would a major natural disaster such as a severe earthquake affecting a heavily populated area.

The categorization of MCI is based on the number of casualties coming to a hospital at a time and the capacity of the hospital to deal with those casualties. Categorization will differ from hospital to hospital and depend on several factors, such as the number of doctors and nurses available and the availability of emergency supplies and support services. Assessment of the capacity of a hospital to respond to a given emergency situation can be assessed by the number of casualties and type of casualties. (Refer Annexure I for details)

1.2. Scope and purpose of these Guidelines:

Objective

The objective of these guidelines is to assist in the development of the mass casualty management system in the state of Bihar. These are designed to help in creating Standard Operating Procedures which will be comprehensive and evidence-based. These SOP's will be capable of responding to all types of incidents at different levels.

These guidelines would also help in assessing the training needs of Doctors, Paramedics, Volunteers and First Responders in the field of Mass Casualty Management. Training sessions and mock drills to be organized annually to upgrade the knowledge and skills of the health care professionals and to keep them prepared to deal with any kind of MCI.

These guidelines are to be used to monitor and evaluate hospital

preparedness on a quarterly basis compared to the baseline findings. Some indicators that will be evaluated are:

a) Formation of Hospital Disaster Management Committee
b) Resource mapping
c) Hospital Emergency Response Plan
d) Mock drills
e) Trainings / skill enhancement sessions

Standard Operating Procedures (SOP's) :

SOP's are "detailed written instructions to achieve uniformity of the performance of a specific function". The SOP's make it easy to find out what guidelines and procedures are in place to handle specific situations/tasks. SOP's help in responding to MCI's by optimal use of resources in a timely manner.

Capacity enhancement

These guidelines also lay down the scope of capacity enhancement of the hospital as well as the hospital staff. Some implementable steps to handle MCI's are:

a) Training in Basic Life Support for all doctors and paramedical staff in a phased manner

b) Simulation exercise/ Mock drills to be conducted at least once a year

c) Involvement of all cadre of staff in preparedness and response to mass casualty and instilling in them a sense of responsibility during such scenarios with required skills and knowledge enhancement.

Documentation and Research

Documentation of all MCI's and their reporting to the state must be institutionalized. This is important for lessons learned analysis which can lead to review and updating response protocols to deal with future MCI's. Research on cause and effect of MCI's in the community, health system, hospital, health workers etc. are to be conducted and must be promoted. The data requirement for documentation should include:

a) Location of MCI
b) Time of MCI
c) Type of MCI
d) Number of casualties

e) Affected population
f) Resources needed/used
g) Challenges faced and learnings

Target Users

The primary target users/stakeholders for these guidelines are those responsible for developing health emergency response plans and policies, as well as those managing health system responses to mass casualty incidents. These guidelines are also designed to be useful to a wide range of individuals and organizations with responsibilities for emergency management.

1.3 Guiding Principles :

Clear Lines of Responsibility : Plans must clearly define the roles, responsibilities and expected activities of all those dealing with the incident.

Scalability : Preparedness must address different levels of incident and surge in demand for health care. While some activities (triage, transportation, treatment) are common to managing all mass casualty incidents, additional measures such as evacuation of large populations may be required in some cases.

Whole-of-healthviz a viz public health systems: In addition to death and injury, other health considerations must be planned for a holistic approach. Planning strategies must also take into account the basics of environmental health (i.e., water, sanitation, housing); chronic diseases (including psycho-social and mental health); maternal and child health; communicable diseases; nutrition; and health care delivery services (including health infrastructure).

Knowledge Based : Almost every imaginable form of mass casualty incident has already occurred before, and planners therefore have access to a great – and growing – body of knowledge. Alignment with the Bihar DRR roadmap 2015-30is to be ensured with a focused aim of reducing number of deaths near to zero and minimizing the damage and loss to infrastructure.

Multi-sectoral : These guidelines are meant to include the coordination of all line departments in the state in order to have an effective and successful response to MCI. Preparedness of the hospital, line departments&the community and their effective linkage to a coordinated response to MCI is desirable.

National policies customised for the state : Plans must be in place to mobilize state resources to prepare for, respond to and recover from a mass casualty incident.

2. Coordination Mechanism for Mass Casualty Management

Coordination mechanism for mass casualty management is required to respond effectively during emergency. The mechanism to be formed in the preparedness phase itself and the roles and responsibilities of various departments and officials must be well defined.

Nodal Department

Health Department will be the Nodal Department for the implementation activities related to MCI in Hospital. Concerned officials may be responsible for the policy decisions and implementation:

- Directors /Administrators
- Principals
- Superintendents
- Civil surgeons
- Dy. Superintendents
- Other Health Care Organizations either in Government or Private sector hospital

Concerned Department / Agencies of State

The following departments shall also provide the necessary support and assistance as per their domain:

1. Disaster Management Department
2. Home Department
3. Energy Department
4. Urban and Housing Development
5. Public Health Engineering Department
6. Building construction Department
7. Social Welfare Department
8. Department of Transport
9. Information & Public Relation Department
10. Directorate of Civil Defense
11. Directorate of Home Guard and Fire Services
12. Department of Planning and Development

13. Railway Hospitals & Administration (Disaster Management Wing)

14. Bihar Medical Services and Infrastructure Corporation Limited (BMSICL)

The Director of Health or any other nominated official of the state should facilitate preparation of detailed plans for hospital emergency services in the event of a disaster. These plans should ideally be district wise (part of DDMP) and should consider the assessment of all hospital beds available in the district (government as well as private sector), besides inventory of the same in the adjoining districts. The plan should also have detailed information about other medical facilities like CT Scans, Blood Banks, and Investigation Labs etc. which can be utilized in the time of mass casualty incidents. All disaster victims treated at any hospital must be treated as Medico Legal Case.

2.1. Coordination mechanism at District level :

At district level the DDMA under the chairmanship of District Magistrate will be responsible to support, assist, monitor and review preparedness for Mass Casualty Management on regular basisfor ensuring an effective response during MCI.

The preparedness at district level should be reviewed and monitored under following components:

1. Resource mapping – *ref chapter 3*
2. Pre Hospital Preparedness – *ref chapter 4*
3. Hospital Preparedness – *ref chapter 5*
4. Relief and rehabilitation - District Administration may identify locations for setting up temporary camps. Agencies to supply the necessary logistics will be identified in the pre-disaster phase. The temporary relief camps must have adequate provision of water for drinking, bathing, sanitation and essential health care facilities. Extra care of vulnerable populations – pregnant women, lactating mother, newborn, differently abled, old aged, critically ill people etc. is to be taken. In this regard pre-fabricated emergency hospitals are being set up by BMSICL, under Health dept.

District Administration/DDMA The district emergency operations center plays a vital role in maintaining a clear line of communication between the district and the state. It has the following functions:

a) Receive, monitor, and assess disaster information

b) Keep track of available resources and manage resource deployment for optimal usage

c) Provide direction and management for DEOC operations through SOP, set priorities and establish strategies

d) Coordinate operations of all responding units, including law enforcement, fire, medical, logistics etc.

e) Augment comprehensive emergency communication from DEOCs to any field operation when needed or appropriate

f) Operate a message center to log and post all key disaster information

Law and Order :

a) Early recognition of:

- The extent of possible security problems (e.g. geographical location, physical plan arrangements, number of entrances, etc.)
- Uniqueness of security problems both internally and externally; and
- Possible shortcomings of personnel to provide security.

b) Steps to minimize and control points of access and exit in buildings and areas.

c) Steps to control vehicular traffic and pedestrians.

d) Arrangements made to escort responding emergency service personnel and ensure their safety.

Crowd Management :

a) Communication with the crowd – Local administration (BDO/CO/SDO/ SHO/ADM) at the site of incidence. Nodal person must be identified for media communication.

b) Developing a traffic management/control plan.

c) Using crowd control and dispersal method – Police support.

d) Protecting critical facilities – Police support.

e) Providing a high-visibility law enforcement presence – Scene secure by Police

Media Address :

Information to the media regarding the event to be briefed by the incident commander of DEOC/ Designated Authority. Proper information to be also given to the relatives of the victims. Clarification about any rumour to be also

briefed by the Institutional Head / Authorized personnel to the media, in order to avoid law and order situation. During MCI persons adjacent to affected area or places are to be alerted by using communication medium.

2.2. Structure and role of Hospital Disaster Management Committee at Institution/Hospital level :

Hospital Disaster Management Committee :

The hospital disaster management committee is headed by the Civil Surgeon or his/her next in command, preferably the ACMO of the district. The Deputy Superintendent of the district, Surgeons, Orthopedicians, head of specialists, District Program Manager, Hospital Manager, engineers (PHED/Electricity/ building dept) , security I/C, SHO of Police Station and Nursing in-charge are all part of the committee. The regular up-dation of Disaster Yellow Page (List of important phone nos.) and Job Action Cards of various teams constituted under the Hospital Emergency Response Plan.

As per Hospital Emergency Response Plan, the Hospital Disaster Management Committee will be responsible and supervise the activation and functioning of the following response teams under the over all supervision of hospital incident commander:

1. Hospital Emergency Operation Centre (EOC)
2. Hospital Incident Response System (HIRS)
3. First Aid
4. Pharmacy
5. Diagnostics and CSSD (Central Sterile service department)
6. Triage
7. Mortuary
8. Fire Safety
9. Security and Crowd Management
10. Media and liaison officer.

Activation of Hospital Emergency Response Plan (HERP) :

The hospital emergency response plan is to be activated by the Civil Surgeon/Incident Commander or the Deputy Superintendent. In case of their non-availability, it can be done by the senior most medical officer availablein the hospital after informing the Civil Surgeon.

3. Resource Mapping

Resource mapping is done to prepare an inventory of all available resources at any given time. This helps in planning for contingency situations as well as networking to deal with emergencies in minimal time. Contingency agreements with vendors and stakeholders need to be in place during non-crisis period. These are to be activated during MCI. Networking of hospitals and human resource to be done in order to meet additional surge demand during MCI. Resource mapping includes the following:

3.1 Infrastructure

A. Building : Details-(Head/Owner, Location, Phone no., Fax No, Mob. no. Email etc.)

- **a)** No. of Medical Institutions.
- **b)** No. of Medical Colleges & Hospitals.
- **c)** No. of District Hospitals.
- **d)** No. of Community / Referral Hospitals.
- **e)** No. of Primary Health Centers.
- **f)** No. of Additional Primary Health Centers.
- **g)** No. of Sub Centers.
- **h)** No. of Private Hospitals.
- **i)** No. of Nursing Homes
- **j)** No. of Charitable / Trust Hospitals
- **k)** No of Central Govt. Hospitals (CGHS, ESI, Railway, Military, Etc.).
- **l)** Trauma Centre.

B. Diagnostics

- **a)** Blood Banks
- **b)** Pathology
- **c)** Radiology

3.2 Human Resources (Govt. & Non Govt. Sector)

- **a)** Doctors (Allopath).
- **b)** AYUSH
- **c)** Technicians (Radiology, Pathology, ECG, etc.)
- **d)** Paramedics (OT Assist., Dressers, Nurses, etc.)

e) Pharmacist
f) Driver
g) Lab technician
h) Sweeper
i) Ward attendant
j) Security personnel
k) Messenger
l) Record keeper
m) Computer / Data Operator.
n) Counselor.
o) QMRT[3] / Volunteers of Civil Defense /Personnel of Bihar Home Guards and Fire Services

3.3 Material

a) Vendors for medicines/consumables/food/water/fuel.
b) No. of Ambulances (Govt. & Non Govt. Sector)
c) No. of Beds (Govt. & Non Govt. Sector)
d) Equipment (Medical / Surgical)
e) Equipment (Communication)
f) Other Specialized facilities
g) No. of Vehicles of Health departments (For use in emergency).
h) No. of Other Govt. Vehicles.

3.4 Others

a) Identification of nearest assembly area in case of evacuation.
b) Assessment of crisis expansion area.
c) No. of stretchers and trolley beds.
d) No. of Generator Set, Battery operated lighting equipment (for the use of displaced patients during fire incident).
e) Provision of alternate source of medicine supply with nearest supplier.

Resource mapping and report to be submitted to the DDMA and also to be kept with the DEOC as well as the officer responsible for the Health department.

4. Pre Hospital Preparedness

Pre-hospital preparedness and timely response at the incidence site plays a vital role in the survival outcome of mass casualty incident victims. Preparedness on the following components of Pre-hospital preparedness should be monitored:

4.1 First Aid : Assessment of services of other medical care providers such as the Armed Forces, Railways, Red Cross, NGO's and other private stake holders. The networking for this should be a part of pre-disaster planning. Primarily First Aid is meant for treating the lightly injured casualties (those not requiring hospitalization), thus relieving congestion at the hospitals. It is also responsible for screening casualties to prioritize those who need immediate hospitalization. Cases needing urgent medical attention should be sent directly to the networked hospital without delay.

4.2 Triage : It is the process of identifying victims needing immediate assistance, those that can have delayed treatment, those which need minimal treatment and the victims that are dead or are likely to die. Accordingly they are categorized as Red, Yellow, Green and Black. This helps in prioritizing the transport of victims needing immediate care at the earliest. It also helps in deciding the level of care needed for the victims and thus transfer of Red victims can be done immediately to higher centres. On site first aid provision and discharge of victims with minor injuries (Green victims) so that health facilities are not overcrowded by the number of Green victims.

4.3 Ambulance service : An efficient ambulance service is an integral part of pre-hospital preparedness; for the transportation of casualties from the incident site to Hospitals.

4.4 Contingency agreements : Contingency agreements with local vendors must be in place so that adequate supply of medicines, consumables etc. are available to deal with MCI's. These agreements are a second line of logistics support in the event of exhaustion of essential supplies. This is needed so that the vendor doesn't overcharge in times of crisis.

Community, being the first responder,tends to reach the incident site earliest. Generally they dispatch the injured to the hospital with available resources. First responders/Volunteers are required to have a basic knowledge of victim assessment, vital sign, triage, splinting, bandage and CPR to dispatch the injured to the hospital after pre hospital treatment. The community is to be acquainted with post disaster epidemiology and disinfection process as well.

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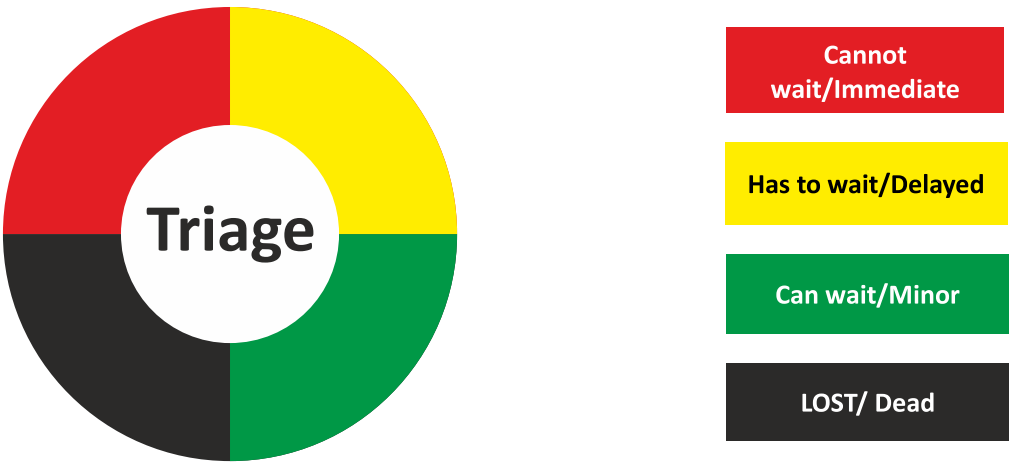
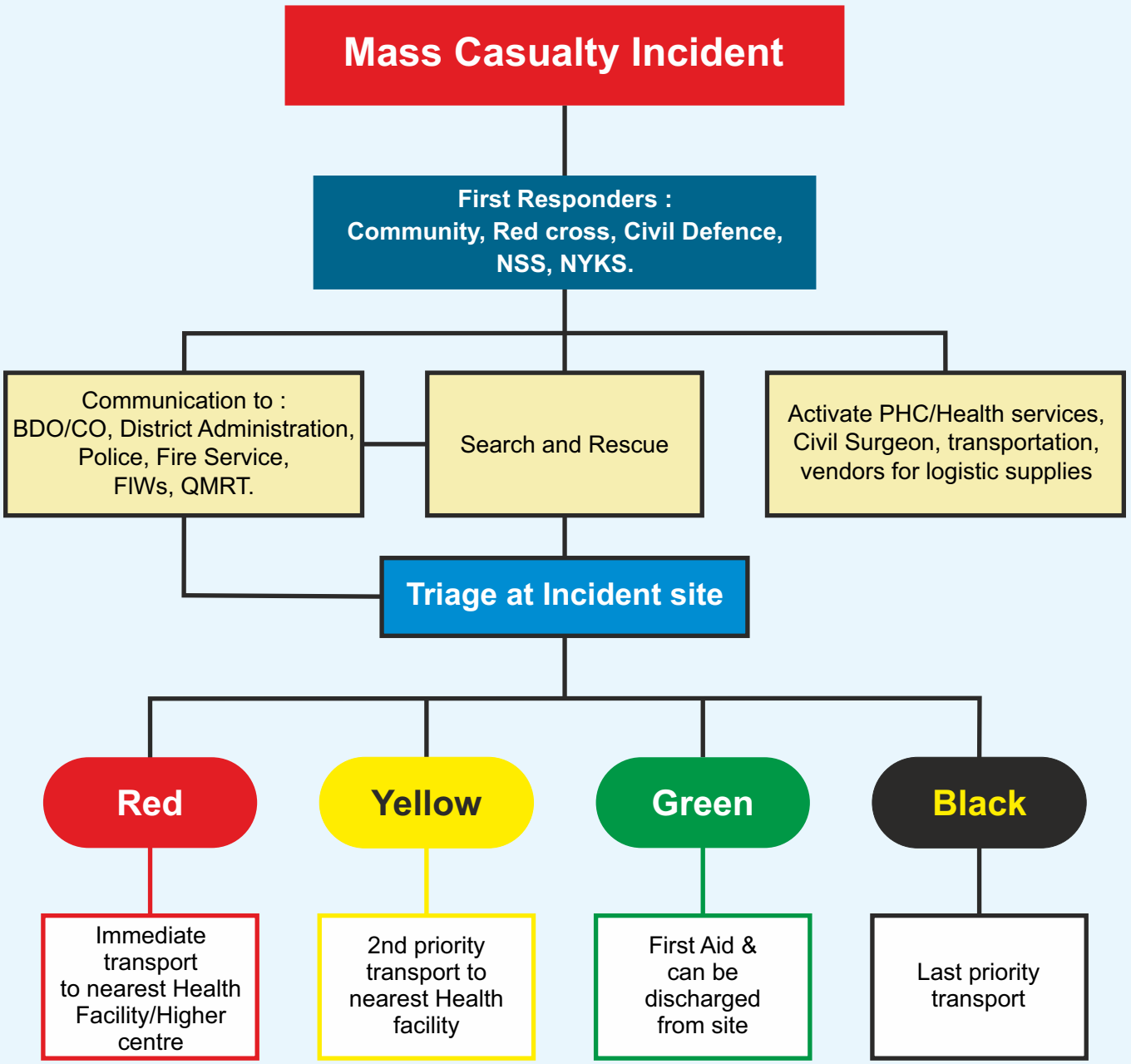
Triage Protocol for transport of victims at Incident site :



Extrication : *Extrication may also be required for trapped/non-ambulatory victims of MCI. Volunteers from the community are to be trained in basic extrication techniques. It is to be ensured in the minimal rescue time and stabilization done by the humane management of pain and absence of injury to rescuers. Steps involved in extrication remain almost same but scene safety and personal protection changes depending on existing situation of fire, flood and road crashes. Rescuer must consider the need for early extrication of critical patients. Personal protection equipment is to be provided in all scenarios of extrication.*

Evacuation: *Identification of an accessible assembly area is to be done in pre-disaster period. The vulnerable population is to be evacuated to the nearest safe and open area. Prior identification of such an area must be done and mentioned in the evacuation plan. A clear description of horizontal and vertical evacuation as well as holding areas are to be indicated in the evacuation plan.*

Pre-hospital/On-site Response in Mass Casualty Incident



5. Hospital Preparedness

Hospital preparedness is an integral part of effective mass casualty management. The Hospital Emergency Response Plan (HERP) must be in place. The roles and responsibilities of the Hospital Disaster Management Committee must be clearly defined and disseminated. Contingency agreements/ flexi MoU with different vendors must be in place. There must exist a network of nearby hospitals with an agreement to respond to MCI's by sharing of resources and manpower. Regular mock drills and table top exercises are to be conducted to test the HERP. The different components of the HERP are to be activated in case of any MCI without any delay. The different components of hospital preparedness/HERP are discussed in this chapter.

5.1. HIRS :

a) Situation analysis: Specification of the circumstances of MCI to be analyzed by the Hospital Disaster Management Committee after which the plan can be activated.

b) The plan will stipulate the position holder who has the authority to activate/ deactivate the plan including during the quiet hours, weekend and holidays.

c) Identification of activation stages in the plan and roles outlined with each stage. The stages are as follows :

- **Alert:** Disaster situation possible; there is an increased level of preparedness.
- **Stand-By:** Disaster situation probable; available for immediate activation.
- **Call-Out:** Disaster situation exists;activation of Emergency Response Plan.
- **Stand-Down:** Disaster situation is contained.

5.2. Communication (Alert system, Crowd management, Media addresses) :

5.2.1 Alerting the system :

a) Situation analysis as per alert received

b) Establish communication with the District Magistrate/ District EOC

c) Activate Hospital Emergency Response Plan

d) Alert QMRT (for pre-hospital care and in-field triage)

e) Activate disaster ward/surge capacity

f) Detail responsibility to initiate a system for recalling staff back to duty.

g) Provision for an alternative system(s) of notification which considers staff, equipment and procedures.

5.2.2. Crowd and security Management :

a) Provision for free and uninterrupted flow of in-house traffic, e.g. pedestrian traffic in corridors, casualty movement to and from special treatment areas.

b) Exit routes for patients and staff will be designated for hospital evacuation.

c) Exit route signage will be posted at proper places about movement routes within the hospital.

d) Arrangement for both vehicle and people to enter and exit the hospital campus.

e) Arrangements in place for :

- Uninterrupted flow of ambulances and other vehicles to casualty, sorting areas or emergency room entrance.
- Access and exit control of authorized vehicles carrying supplies and equipment.
- Authorized vehicle parking.
- Direction for authorized personnel and visitors to proper entrances.

f) Arrangement for police support.

g) Provision to establish waiting areas, with provision for supportive counseling; away from the Emergency Department to minimize exposure of relatives and friends to disaster victims.

h) Provision to handle medical and emotional situations resulting from the anxiety and shock of the disaster situation.

5.2.3. Media Address :

a) Designated area for media persons.

b) This area must be located well away from the:

- Emergency Departments.
- Hospital Emergency Operation Centre.

– Waiting area for relatives, family and friends.

c) Designated position holder to control and take care of the housekeeping needs of the media.

d) Designated spokesperson to address media.

5.3. Hospital Reception and Triage protocol in disaster : The process by which victims are sorted according to severity of injury. Immediate attention to be paid to the victim who are serious and can be saved.

Ref annexure II

5.4. Treatment *(Emergency and Trauma care) :*

a) Casualty Medical Officer on duty *(On receiving information of disaster)*

– Enquire about the nature and magnitude of the emergency.
– The location, time, possible number of casualties.
– Approximate time of arrival of patients.
– Inform MO on duty/ Senior MO/Deputy Superintendent.

Act as an incident commander unless and until deputy superintendent arrives. Thereafter, assume the role of planning section chief.

On arrival of patients :

– Receive the disaster patients.
– Registration and identification of the patients.
– Do primary triage and attach appropriate triage documents.
– Facilitate treatment by respective specialist.

b) MO on duty :

– On receiving information of disaster he/she must inform Deputy Superintendent immediately.
– Should cross check with the informing authority and try to find out other details regarding the emergency situation.
– Mobilize transport equipment like wheel chairs, trolleys.
– Call Additional CMO if there is large number of victims.
– Should also alert other emergency departments like Radiology, Clinical Laboratories, Matron, Pharmacist, Class IV supervisor and the Sanitary Inspector so that adequate man power is available like X-ray technicians, lab technicians, nurses, ward attendants and sweepers.

– Inform pharmacist to ensure adequate supplies.
– The MO on duty should also inform the senior MO.

c) Radiology, Pathology, Microbiology, Biochemistry, Blood bank :

– Inform other staff present about the disaster situation.
– Call additional staff members and technicians if required.
– Check for the supplies like chemicals, x ray plates, and blood bags.
– Give utmost priority to disaster victims and their investigations.
– Send investigation reports as early as possible.
– Do not leave the duty area until relieved by other doctors.

d) Nursing in charge/ Staff on duty :

– Depute proper staffs of nurses and doctors in red, yellow and green areas.
– Keep triage equipment/stretcher/ bands ready
– Make necessary items available for patient care.
– Arrange emergency indent from stores.
– Not to relieve staff unless sufficient alternate arrangement are made.

e) Sanitary Inspector :

– Mobilize Sanitary Squad.
– Mobilize Sweepers for Emergency ward.
– Mobilize sweepers to carry dead bodies to mortuary.
– Keep casualty and emergency ward / disaster ward clean.

f) Class IV Supervisor :

– Provide additional ward attendants to emergency ward.
– To provide additional dressers, ward boys.

g) In-charge of Ambulances

– Call all ambulance drivers and ambulance attendants staying in campus.
– Arrange duties of additional drivers and ambulance attendants.
– Check the ambulances for stretchers, O2 cylinders etc.

h) Medical Superintendent :

– Overall in charge for disaster management.
– Coordinate patient care activities.

- Coordinate administrative activities of Mos.
- Establish communications with other peripheral hospitals.
- Prepare press notes.
- Delegate duties of Public Relation to Medical Social Workers by rotation.
- Instruct medical and surgical stores for supplies.If required purchase locally.
- Review the situation with the Hospital Disaster Management Committee along with the team leaders of the Task Force members and resource mobilization accordingly.
- Release of office orders for free treatment and investigations of the injured.
- Display the names of injured persons and admission details.

i) Medical Social Workers :

- Establish round the clock information counter near the entrance of main building.
- Keep a list of patients admitted in various wards.
- Keep list of patients who were brought dead.
- Keep a list of patients who were discharged.
- Try to contact the relatives of the victims.
- Try to solve social problems of the victims.
- Make arrangements to look after the children accompanying the victims.
- Provide food, milk, to these children.Get in touch with NGOs for this.
- Provide psychosocial care to the victims and attendants.

j) Blood bank :

- Call additional staff on duty.
- Keep adequate blood units in stock.
- Get additional blood stock from other blood banks.
- Arrange for donation camps with the help of NGOs.

k) Mortuary :

- Arrangements for carrying out postmortems.
- Arrange duties of all staff members round the clock.

l) Contribution of Para clinical and Non-clinical departments :

– Depute some staff to clinical departments for additional help.

5.5. Creating surge capacity :

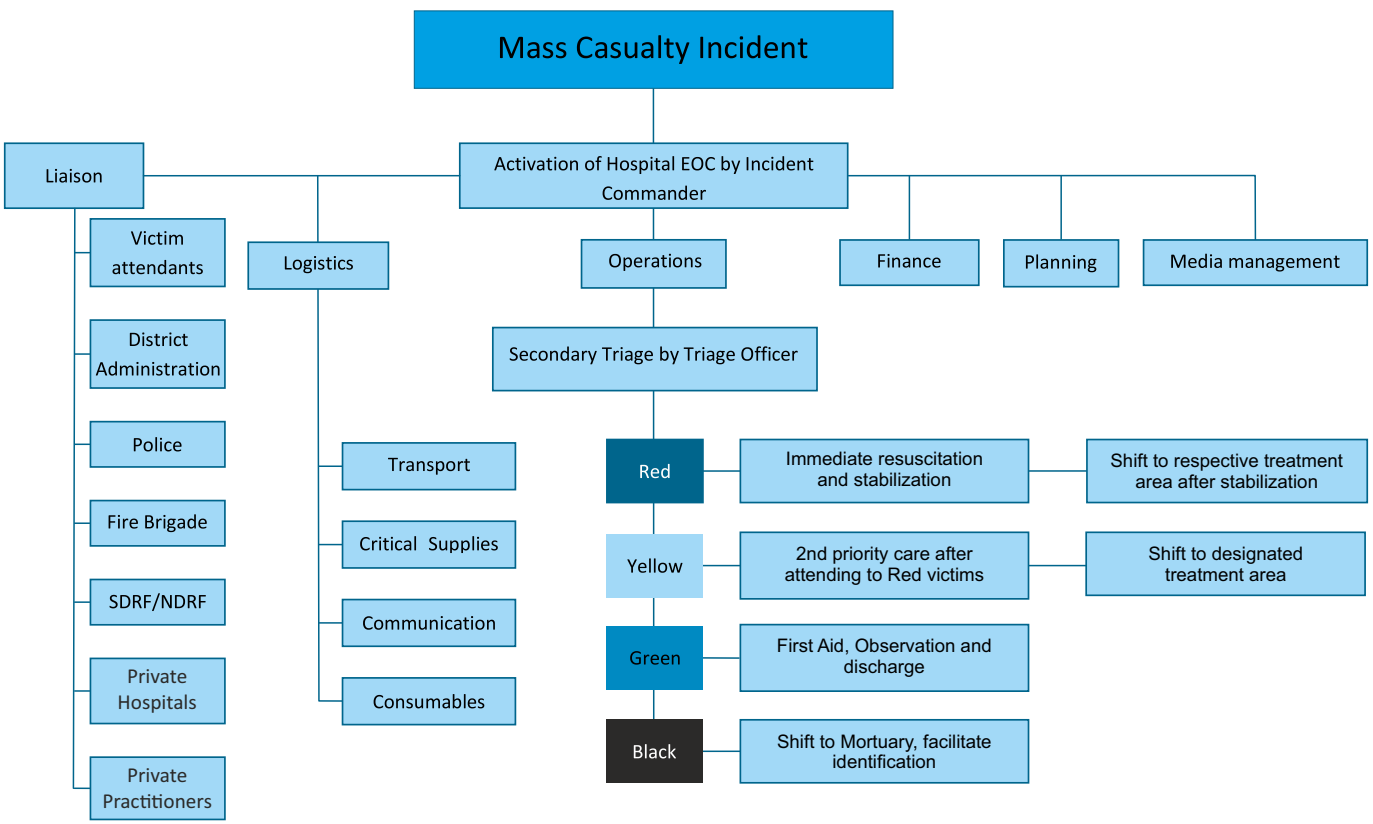
a) Discharge routine patients to handle large numbers of casualties/ emergency patients upon short notice.

b) In case of evacuation (partial), provision made for immediate assistance, care and comfort for the patients and staff in pre-designated assembly area.

5.6. Redistribution of Patients to other Hospitals :

The MO on duty, after documentation, directs the patients to different specialty hospitals for treatment as per their need. Networking of hospitals plays a very important role at this stage.

Hospital response in Mass Casualty Incident



6. Management of Dead Bodies/Human Remains

In any disaster situation, appropriate recovery and management of the dead bodies is an important and essential component of humanitarian response, along with rescue and relief measures and restoration of essential services. The care of the dead is not a primary responsibility of the health sector. It has been noticed that doctors and paramedical staff, along with hospital infrastructure, are deployed for management of the dead. This causes deficiencies in the medical logistics which could have been utilized for taking care of the survivors.

The essential components of dead body management are :

a) Identification of the deceased is an essential requirement for financial compensation, property rights and inheritance.

b) Dignified disposal of the dead bodies, according to religious, cultural, ethnic and psycho-social needs of the affected community.

C) Proper information management with data for identification of the dead, along with its proper dissemination through the media.

Code of Criminal Procedure (Cr PC) A Legal Inquiry or an Inquest is required to ascertain the cause of all sudden, suspicious or unnatural deaths as per Code of Criminal Procedure Sections 174 and 176. However, in disaster situations, legal obligations of carrying out of a post-mortem in each and every case can be waived off after inquest by the competent legal/judicial authorities having jurisdiction over the area, which is usually a Class I Magistrate, appointed by the State government. In addition, the Commissioner, Deputy Commissioner, District Magistrate or Commissioner of Police in metropolitan cities, having jurisdiction over the area is also invested with these powers.

Human Resource Development :

a) **Medico-legal post-mortem experts -** Short term training courses for Forensic experts for the recovery of dead bodies, retrieval, storage, preservation and identification by various forensic methods, including DNA profiling is essential. These teams will help the local authorities for management of the dead and psycho-social support to the surviving relatives.

b) Various teams will be constituted from the available pool of different departments, First Responders and the local community

c) Quick Medical Response Team (QMRT)

d) Community Level Volunteers

7. Post-Disaster Recovery

Post-disaster recovery planning shall be part of the Emergency Response Plan and it shall be performed at the onset of response activities.

To ensure speedy and effective post-disaster recovery; every hospital/healthcare facility shall:

a) **Designate an official/member of the staff to oversee the hospital recovery operations:** This is to ensure that the recovery activities are taking place according to prescribed protocols and in a timely manner.

b) **Determine the essential criteria and processes to deactivate the disaster response and recovery activities from the hospital's normal operations:** Once the active disaster phase is over the Incident Commander takes the decision to deactivate the emergency response plan and resume normal services at a time that is feasible for all.

c) **Undertake a Post Disaster Damage Assessment if there is structural damage to the hospital :** Undertake a post-response hospital inventory assessment and consider repair or replacement of equipment as required. A post-response report should be prepared and submitted to the chief of the hospital and other pertinent stakeholder.

d) **Reopening of the hospital :** Estimate the time and resources that shall be required to undertake complete repair/replacement/retrofitting before a facility that is severely damaged (and requires complete evacuation) can be re-openedin case of new construction or structural or nonstructural retrofitting of the hospitals it should be always emphasized that the key departments like Emergency, ICU, gynecology or pediatric wards may always be shifted to the newer better and accessible structures.

8. Standard Operating Procedure during MCI

1. Immediate Actions (Refer Section 5)
Situation analysis – MCI severity, population affected, number of estimated casualties.
Establish communication with the District Magistrate – About the severity and geographic location of MCI, support needed.
Activate Hospital Emergency Response Plan
Alert first responders/ QMRT – (for pre-hospital care and in-field triage)
Activate ambulances – To reach incident site at the earliest.
Alert the Operation Theatre, lab and blood banks within the hospital
Activate disaster ward and surge capacity
Activate all response team viz. triage, first aid , HIRS, pharmacy, diagnostics & CSSD, fire safety etc. as per Hospital ERP
2. Activate Hospital Emergency Response Plan (Refer Section 2)
Alert nearby government and private facilities for readiness
Alert vendors for emergency drug/dressings/consumables supply as well as reserve fuel – Contingency agreements to be activated.
Alert all trained volunteers for optimal support
Alert Mortuary and deploy personnel for respectful handling of dead bodies and communicating with attendants *(preferably district administration should set-up temporary mortuary outside hospitals as per DDMP)*
Alert the designated Media Spokesperson
Seek adequate Police protection and Security at hospital emergency and mortuary
3. Triage (Refer Annexure II)
RED (Immediate Treatment needed)
YELLOW (Delayed Treatment needed)
GREEN (Minimal Treatment needed)
BLACK (Dead)
4. Preparedness of Laboratory, Pharmacy and other supply related departments
Laboratory services: Technicians to follow up on supply according to contingency agreements.
Pharmacy:Pharmacy/Store In-charge to follow up on supply according to contingency agreements for additional medicines and consumables.

Rational deployment of paramedic staff: Relevant staff to be deployed in pre-designated areas as per emergency roster.
Consumables, water and gas supply: Contingency agreements to be activated for drinking water, oxygen, food, medical consumables.
Laundry and dietary services: Staff to be alerted to keep laundry and dietary services active to handle surge of patients.
5. Crowd Management and Traffic Control (Police and Administration)
Ensuring traffic control to allow for timely transportation of victims to the healthcare facilities.
Managing crowd at hospital to allow uninterrupted and effective health care delivery.
6. Management of Dead Bodies/Human Remains (As per norms) (Refer Section 6)
Management of dead bodies/human remains is to be done by hospital administration and/or the District Administration. The essential components of dead body management are: a. Proper information management b. Sampling for DNA profiling as & when required
7. Bio-medical waste management
8. Involvement of Volunteers/Community
Assistance of volunteers and community member in dealing with the non-medical aspects of MCM like logistics, search and rescue, crowd management etc. to be encouraged.
9. Management of Information and Media
Media briefing by the Institutional Head / Designated Authority.
Proper information to be given to the relatives of the patients .
Clarification about any rumour will be also briefed by the Institutional Head / Authorized personnel to the media, in order to avoid law and order situation.
10. Creating Surge Capacity
Discharge routine patients to handle large number of patients on short notice
In case of evacuation (partial), provision for immediate care and comfort for the patients and staff on pre-designated assembly areas
11. Review meeting of Hospital Disaster Management Committee
Review meeting with response team leaders designated in the Hospital Emergency Response Plan.
Resource mobilizing activated as per need expressed in review meeting.

Recommended Time Frame of Standard Operating Procedure during MCI

(Not to be quoted for Medico-legal purpose)

(T = Time of first information received of MCI by Hospital)

T+30 minutes*(Recommended)*	
Immediate Actions	a) Situation analysis as per alert received b) Establish communication with the District Magistrate/ District EOC c) Activate Hospital Emergency Response Plan d) Alert QMRT (for pre-hospital care and in-field triage) e) Activate disaster ward/surge capacity f) Activate all response team viz. triage, first aid, HIRS, Pharmacy, Diagnostic & CSSD, fire safety etc. as per Hospital ERP
T+1 hour*(Recommended)*	
Activate Hospital Emergency Response Plan	a) Alert nearby government and private facilities for readiness b) Mobilize resources from other government facilities c) Alert vendors for emergency drugs/dressing materials/consumables/fuel etc. d) Alert nearby lab and imaging centres e) Alert blood banks of nearby hospitals and red cross f) Alert all trained volunteers for optimal support g) Alert mortuary and deploy personnel for respectful handling of dead bodies. *(Preferably district administration should set-up temporary mortuary outside hospital as per DDMP)* h) Alert the designated media spokesperson/Liaison officer to address media and communicating with attendants I) Seek adequate police protection and security at hospital emergency and mortuary (inside &/or outside hospital)
Triage (in designated Triage area)	Segregating patients into a) GREEN (Minimal Treatment needed) b) RED (Immediate Treatment needed) c) YELLOW (Delayed Treatment needed) d) BLACK (pending Treatment, lowest on priority)
T+2 hour *(Recommended)*	
Preparedness of Laboratory, Pharmacy and other supply related departments	a) **Laboratory services:** Technicians to follow up on supply according to contingency agreements. b) **Pharmacy**:Pharmacy/Store In-charge to follow up on supply according to contingency agreements for additional medicines and consumables.

Preparedness of Laboratory, Pharmacy and other supply related departments	c) **Rational deployment of paramedic staff:** Relevant staff to be deployed in pre-designated areas as per emergency roster. d) **Consumables, water and gas supply:** Contingency agreements to be activated for drinking water, oxygen, food, medical consumables. e) **Laundry and dietary services:** Staff to be alerted to keep laundry and dietary services active to handle surge of patients.
Crowd Management and Traffic Control	a) Ensuring traffic control to allow for timely transportation of victims to the healthcare facilities. a) Managing crowd at hospital to allow uninterrupted and effective health care delivery.
Creating Surge Capacity	a) Discharge routine patient b) Immediate assistance, care and comfort for the patients and staff on pre-designated assembly areas
T+4 hours*(Recommended)*	
Involvement of volunteers/community	a) Assistance of volunteers , NGOs and community member in dealing with the non-medical aspects of MCM like logistics, registration, search and rescue, transportation, crowd trafficking, blood donation , psychosocial care.
T+5 hours*(Recommended)*	
Management of Information and Media	a) Media briefing by the institutional head / designated spokes person/ authority only. b) Proper information to be given to the relatives of the patients by the HIRS Liaison officer/ designated authority only.
T+12 hours*(Recommended)*	
Management of Dead Bodies/Human Remains	a) Bio-medical waste management b) Management of dead bodies/human remains by the hospital administration and/or district administration. c) The essential components of dead body management are: i. Proper information management ii. Sampling for DNA profiling as & when required
Review meeting of Hospital Disaster Management Committee	a) Review meeting with response team leaders designated in the Hospital Emergency Response Plan b) Resource mobilizing activated as per need expressed in review meeting.

Disclaimer : The time frame recommended in the SOP for MCM have been proposed for optimal conditions. These are NOT to be quoted for medico-legal cases since the time frame may vary based on local ground conditions.

9. Annexures

ANNEXURE I

Types of MCI

Based on number of casualties :

Category 1 : Up to thirty patients belonging to a single accident or any other emergency, coming to a hospital at one time.

Category 2 : Thirty to fifty patients belonging to a single accident or any other emergency, coming to a hospital at one time**.**

Category 3 : More than fifty patients belonging to a single accident or emergency coming to the hospital at one time.

Based on type of casualties :

Category A : Patients in critical condition:
Include cases of poly-trauma with head injuries, thoracic injuries, abdominal injuries, fractures of major bones with profuse bleeding etc. These patients require immediate resuscitation and supportive measures. About 10% of these are beyond salvage.

Category B : Patients in serious but not life threatening condition:
Include poly-trauma cases of a less serious nature, for example, fractures and crush injuries of limbs without major blood loss, facial injuries, spinal injuries, etc.

Category C : Walking wounded:
These patients may have minor injuries requiring wound toileting and dressing and / or limb fractures requiring closed reduction and immobilization.

Based on the categorization, it is advisable to further classify by the contingency plan into three classes :

Class A :
The plan can be put into practice without any disruption to the normal and routine work of the institution.

Class B :
The plan can be put into practice with minor disruption to the day to day functioning of the hospital and with some readjustments. The plan may be upgraded to C if the numbers of casualties increase.

Class C :
There would be definite disruption of routine work: Major readjustments would be required in hospital functioning, inpatient treatment, duty arrangements, laboratory and operation theatre scheduling, and increased demand on stores, pharmacy etc.

ANNEXURE II

Hospital Reception and Triage protocol in disaster :

Triage upon arrival makes it possible to review the severity of the condition. Triage is the process by which victims are sorted according to severity of injury. Immediate attention will have to be paid to the patients who are serious and can be saved.

The simplest classification of triage :

- **Critically injured** – **Red** colored flash card or ribbon; critically injured patients requiring rapid, lifesaving care.
- **Seriously injured** – **Yellow** colored flash card or ribbon; seriously injured patients requiring definitive care but are not in need of urgent treatment.
- **Lightly injured** – **Green** colored flash card or ribbon; lightly injured patients requiring minimum treatment.
- **Brought dead** – **Black** colored flash card or ribbon.

The goal of triage is :

- To selects those patients in greatest need of medical attention
- To ensure that patients are sent to appropriate treatment areas to conserve limited personnel and supply resources.

Where to do triage :

- The triage officer should do the initial triage at the designated triage area.
- They should be re-triaged by the senior consultants in the treatment area.
- The area of triage upon arrival at the hospital should be the only point of entry for victims of mass casualty.

ANNEXURE III

Hospital Emergency Response Plan Checklist

Emergency Response Plan for health care facilities includes elements of prevention, preparedness, response and recovery. These plans should take into account such factors as the appropriateness and adequacy of physical facilities, organizational structures, human resources and communication systems.

1. BASIC CONSIDERATIONS

a) Does the hospital have an Emergency Response Plan?

b) Has a hospital disaster management committee been appointed and does the hospital disaster management committee have the authority to carry out their mandate?

c) Does the plan detail actions to be taken for both internal and external disasters?

d) Does the plan detail the position holder responsible to issue situation reports?

e) Is the plan widely distributed and freely available throughout the hospital?

2. IDENTIFICATION OF AUTHORISED PERSONNEL

a) Does the hospital have a Hospital Disaster Management Committee headed by the authorized/administrative head that is responsible for the hospital's medical responses during the time the plan is activated?

b) Have other key position holders who have a role in disaster management been identified?

c) Is an appropriate notification system to alert personnel to a potential situation in place?

d) Does the plan include lines of authority, role responsibilities and provide for second line deputation?

e) Are those who are expected to implement and use the plan familiar with it?

f) Are disaster roles and responsibilities assigned in terms of positions rather than individuals?

g) Have job action cards been developed for all personnel involved in disaster response?

h) Does the plan designate how people will be identified within the hospital e.g. hospital staff, outside supporting medical personnel, news media, visitors, etc?

i) Does the staff have the proper identification to gain access to the hospital when called back on duty?

j) Is there designated assembly points for all personnel to report to, be they hospital staff or participating organization staff?

3. ACTIVATION OF THE PLAN

a) Does the plan specify the circumstances for which the plan can be activated?

b) Does the plan stipulate the position holder who has the authority to activate/ deactivate the plan including during the quiet hours, weekend and holidays?

c) Have activation stages been identified in the plan and roles outlined with each?

4. ALERTING SYSTEM

a) Does the plan provide for the prompt activation of the plan during normal and quiet hours including weekends and holidays?

b) Does the plan specify how notification within the hospital will be carried out?

c) Does the plan specify the chain of command to notify internal and other appropriate hospital staff of the hospital's status?

d) Does the plan detail responsibility to initiate a system for recalling staff back to duty?

e) Does the plan provide for an alternative system(s) of notification which considers people, equipment and procedures?

5. RESPONSE

a) Has the hospital developed internal plans for internal emergencies?

b) Has the hospital developed internal plans to respond to an external disaster?

c) Does this plan indicate how the hospital will respond to an abnormally large influx of patients?

d) Has the hospital developed plans indicating how the hospital will be able to supply resources and personnel to an external disaster?

e) Does the plan include a chemical hazard, biological hazard or radiological hazard component?

f) Has provision been made for activating the hospital disaster medical team in response to both internal and external disasters?

g) Does the plan include procedures for incorporating and managing volunteers and unexpected medical services responders who want to help?

h) Has each department developed standard operating procedures to reflect how it will provide its services in a timely 24 hours manner? Such departments may include the following:

– Administration

– Emergency

– Nursing

– Radiology

– Laboratory

– Pharmacy

– Critical care

– Central supply

– Maintenance and Engineering

– Security

– Housekeeping and Laundry

– Social

– Mortuary

6. HOSPITAL EMERGENCY OPERATION CENTRE

a) Does the plan indicate where the Hospital Emergency Operation Centre is located within the hospital?

b) Has an alternate location been designated?

c) Have standard operating procedures been developed that stipulate:

– Who will occupy the centre?

– Who will be in charge?

– Provision for regular operational reporting?

– What the responsibilities will be?

– What equipment and supplies will be needed to operate the Emergency Operation Centre?

d) Has provision been designated (e.g. space, equipment) for extra people who may come to the hospital to provide a service (e.g. volunteers and agencies from outside)?

7. SECURITY

a) Has recognition been given to?

– The extent of possible security problems (eg. geographical location, physical plan arrangements, number of entrances, etc);

– Uniqueness of security problems both internally and externally; and

– Possible shortcomings of personnel to provide security?

b) Have steps been taken to minimize and control points of access and exits in buildings and areas?

c) Have steps been taken to control vehicular traffic and pedestrians?

d) Have arrangements been made to meet and escort responding emergency service personnel?

8. COMMUNICATIONS SYSTEMS

a) Does the plan recognize that normal systems (e.g. telephone, mobile phones) may be rendered unserviceable during disasters?

b) Is there provision of alternative communication arrangements in circumstances where the hospital communication system fails/overloads?

c) Is there an organised runner, messenger system as back-up for power failures, disasters, etc?

d) Are runner personnel provided with schematic area layout maps showing key areas for disaster operations

9. INTERNAL TRAFFIC FLOW AND CONTROL

a) Has provision been made for the free and uninterrupted flow of in-house traffic, e.g. pedestrian traffic in corridors, casualty movement to and from treatment areas?

b) Have exit routes for patients and staff been provided for hospital evacuation purposes?

c) Have movement routes been designated within the hospital and have traffic flow charts been prepared and posted?

10. EXTERNAL TRAFFIC FLOW AND CONTROL

a) Have arrangements been made for both vehicle and people to enter and exit from the hospital premises?

b) Are arrangements in place for:

- uninterrupted flow of ambulances and other vehicles to casualty sorting areas or emergency room entrance;
- access and exit control of authorized vehicles carrying supplies and equipment;
- authorized vehicle parking
- direction for authorized personnel and visitors to proper entrances?

c) Have arrangements been made for police support?

d) Has recognition been given to the management of vehicle and people convergence upon the facility

11. VISITORS

a) Is it recognized that visitors can be expected to increase and curious onlookers may seek to gain entrance during disasters?

b) Has provision been made to establish waiting areas, with provision for supportive counselling, away from the Emergency Department to minimize exposure of relatives and friends of disaster victims?

c) Has provision been made to handle medical and emotional situations resulting from the anxiety and shock of the disaster situation?

12. MEDIA

a) Do the media have a designated area?

b) Has this area been located well away from the :

- Emergency Department;
- Hospital Emergency Operation Centre; and
- waiting area for relatives, family and friends?

c) Has a position holder been designated to control and take care of the housekeeping needs of the media?

d) Does the plan designate a media spokesperson?

e) Has provision been made to identify the procedures for handling requests for information from the media?

13. RECEPTION OF CASUALTIES AND VICTIMS

a) Is there a precise plan of action whereby, at short notice, multiple casualties can be:

- identified;
- registered;
- triaged;
- treated in designated treatment areas; and
- admitted or transferred

b) On the confirmed notification of a disaster, does the surge plan provide for :

- Clearance of all non-emergency patients and visitors from the emergency department;
- Cancellation of all elective admissions and elective surgery;
- Determination of rapidly available or open beds;
- Determination of the number of patients who can be transferred or discharged?

c) Has provision been made to secure traffic access to the Emergency Department and control the access to allow timely ambulance turnaround?

b) Is the receiving and sorting area accessible and in close proximity to the areas of the hospital in which definitive care will be given?

c) Is the reception area equipped with portable auxiliary power for illumination and other electrical equipment, or can power be supplied from hospital circuits?

d) Does the reception area allow for retention, segregation and processing of incoming casualties?

e) Are sufficient equipment, supplies and apparatus available, in an organised manner, to permit prompt and efficient casualty movement?

f) Can radiological monitors and radiation detection instruments be assigned to the area, if required?

i) Has provision been made for a large influx of casualties to include such factors as?

- bed arrangements;
- personnel requirements; and
- extra resources (e.g.linen, pharmaceutical needs, dressings, etc.)

j) Are the medical records and the admissions departments organised to handle an influx of casualties?

k) Is there a system for retention and safe-keeping of personal items removed from casualties?

l) Is there a plan to segregate/isolate disaster victims from the rest of the hospital if those victims are contaminated (e.g. hazardous materials)?

14. HOSPITAL EVACUATION

a) Is there an organized discharge routine to handle large numbers of patients upon short notice?

b) Is it detailed that a position holder is responsible for the removal and control of patient records and documents?

c) Has provision been made for immediate refuge, care and comfort for the patients and staff on the hospital grounds during rainy, summer and winter weather?

15. RELOCATION OF PATIENTS AND STAFF

a) Have alternate locations been pre-determined and confirmed for the housing of patients and staff in the event of an evacuation?

b) Have transportation requirements been pre-designated for the movement of people?

c) Has provision been made for the movement of patient records and documents?

d) Is there a 'time sequence' built into the plan designating appropriate moving times, assigned personnel including professional staff assignment, and priority of patients to specific locations?

e) Is there a method for delegating authority and decision-making responsibility for relocation transfers?

f) Is there a sequence for patient transfers along pre-established routes?

g) Are procedures established for the orderly disposition of patients to their homes if applicable?

h) Has provision been made for the movement of patients and staff to an immediate area of safe refuge within the hospital when the area occupied becomes uninhabitable?

16. HOSPITAL ISOLATION

a) In the event that the hospital is completely isolated, has the plan assigned position holders responsible for-

- Auxiliary power;
- Rest periods and rotation of staff;
- Rationing of water and food;
- Waste and garbage disposal;
- Rationing of medication, dressings, etc;
- Laundry; and
- Staff and patient morale?

b) Has consideration been given to utilize patients and visitors to assist staff with their duties?

17. RESPONDING TO AN EXTERNAL DISASTER

a) Does the hospital have a designated disaster medical response team?

b) Does the plan specify:

- Who is on the team;
- Who is in charge of the team;
- Who has the authority to activate the team;
- What medical equipment they take with them;
- How they get to the incident site;
- What their role is at the site; and
- What are their duties after they return to the hospital?

18. POST-DISASTER RECOVERY

a) Does the plan designate who will be in charge of recovery operations?

b) During recovery does the plan make provision for?

- Documentation;
- Financial matters;
- Inventory and resupply;
- Record preservation;
- Clean-up;
- Garbage and waste disposal;
- Special cleaning and deodorizing;
- Utility and equipment servicing;
- Construction

c) Does the plan address a:

- Post Disaster Debriefing Program;
- Employee Assistance Program;
- Group/individual counseling services; and
- Family Support Program?

ANNEXURE IV

Hospital Evacuation Plans and Guidelines

Evacuation - the removal of patients, staff and/or visitors in response to a situation which renders any medical facility unsafe for occupancy or prevents the delivery of necessary patient care.

Partial Evacuation - patients are transferred within the hospital. There are two levels of a partial response:

Horizontal - first response; patient movement occurs horizontally to one side of a set of fire barrier doors.

Vertical - movement of patients to a safe area on another floor or outside the building. This type of evacuation is more difficult due to stairways which will require carrying of non-ambulatory patients; elevators cannot be used.

Full Evacuation - patients are transferred from Hospital to an outside area, other hospitals, or other alternatives areas.

The building should be evacuated from the top down as evacuation at lower levels can be easily accelerated if the danger increases rapidly.

Authorization for Evacuation -

Evacuation of the facility or portion thereof can only be authorized by:

Civil Surgeon or Deputy Superintendent

Nursing In-charge

The decision to evacuate from unsafe or damaged areas shall be based on the following information:

a) The Engineering Department's evaluation of the utilities and/or structure of the department.

b) The medical staff and/or Nursing Department's determination whether adequate patient care can continue.

Evacuation should only be attempted when you are certain the area chosen for the evacuees is safer than the area you are leaving.

Communication of Evacuation :

This evacuation plan is based on the premise that an event has occurred, causing the Hospital to be in an internal disaster mode

General Instructions -

Evacuate most hazardous areas first (those closest to danger or farthest from exit.

Use nearest or safest appropriate exit. Sequence of evacuation should be :

a) Patients in immediate danger

b) Ambulatory patients
c) Semi-ambulatory patients
d) Non-ambulatory patients
e) Close all doors. If time permits, shut off oxygen, water, light and gas, if able.
f) Elevators may be used, except during a fire or after an earth quake

Hospital IRS :

All available information shall be evaluated and evacuation schedule established in coordination with the Section Chiefs. This information shall include:

- Structural, non-structural, and utility evaluation
- Patient status reports from Planning Section Chief.
- Evaluate manpower levels and authorize activation of staff call-in plans, as needed.

Liaison Officer

- Maintain contact with Public Safety Officials, Health Dept. and Ambulance Agency.
- Complete "Hospital Evacuation Worksheet"

Logistics Chief

- Assign Transportation Officer to assemble evacuation teams.
- Notify Planning Section Chief of plans

Transportation Officer

- Assemble evacuation teams from security staff.
- Ensure coordination of off-campus patient transportation.
- Confirm implementation of Transportation Action Plan.
- If able, assign six people to each floor for evacuation manpower.
- Brief team members on evacuation techniques.
- Arrange transportation devices (wheelchairs, trolleys, etc. to be delivered to assist in evacuation).
- Report to floor being evacuated and supervise evacuation.
- Report to Nursing In-charge for order of patients being evacuated and method of evacuation.

Nursing In-charge

- Designate holding areas for critical, semi-critical, and ambulatory evacuated patients.
- Organize efforts to meet medical care needs and physicians staffing of

Evacuation Holding areas.

- Distribute evacuation schedule to Nurse Managers.
- Verify staff nurses have initiated evacuation procedure.
- Request Medical Officer to notify physicians of need for transfer orders.
- Assign Holding Area Coordinators, and adequate number of nurses to holding areas.
- Contact pre-established lists of hospitals, extended care facilities, school, etc. to determine places to relocate patients. Forward responses to Planning Section Chief.

Medical Officer

- Notify physicians of need for patient transfer orders.
- Assist Nursing Service Officer as needed.

Nursing Staff

- Determine patient status. Patients will be evacuated according to status.
- Communicate status with large sticker on patient's chart according to the following criteria: Non-critical/Ambulatory, Non-critical/Non-ambulatory, critical/requires ventilation or special equipment
- Report patient status to Nursing Service Officer.
- Assign specific nurses to maintain patient care.
- Assign two nurses to prepare patients for evacuation.
- Designate a safe exit after determining location of patients to be evacuated.
- Assign a person to record Evacuation Activity.
- Forward documentation of evacuation and patient disposition to Patient Tracking Coordinator or Patient Info Manager.

Patient Information Manager

- Compile patient info on Inquiry Sheets.

Safety and Security Officer

- If able, assign a security person to each area being evacuated for traffic control/safety.
- Turn off oxygen, lights, etc. as situation demands.
- Check the complete evacuation has taken place and that no patients/staff remain.
- Place "Evacuated at" (date/time) sign up at main area exit/entrance of evacuated area after evacuation is complete.

ANNEXURE V

Knowledge and Skills for Mass Casualty Management at Community Level

Whatever the scale of a mass casualty incident, the first response will be carried out by members of the local community – not just health care staff and designated emergency workers, but also many ordinary citizens.

In order for citizens to play an optimum role in responding to a mass casualty event, it is important to develop a "culture of preparedness". Spreading basic knowledge such as who to inform when an incident occurs can speed up responses and result in lives being saved. Similarly, increasing basic search and rescue and first aid skills for injured can avoid the onset of complications for those injured in a mass casualty incident. In addition to knowledge, attitudes need to be changed. The passive expectation that responding to emergencies is someone else's responsibility (typically someone in authority) can be changed to an active willingness to get involved in the activities necessary to a planned response.

While efforts to inculcate such a culture can be sponsored (i.e., funded and conceived) at national level, programming is likely to be most effective if delivered by local government authorities and based in a planning process. Such activities may include :

– preparedness training to teach communities how to survive without outside help for a given period (48 or 72 hours)
– Basic search and rescue and first aid training for community members and for emergency services staff.
– presentations at public gatherings such as clubs, religious centres (e.g., those connected with temples, churches and mosques), and community service organizations.
– Advertising or public information through the press and electronic media, or using posters, leaflets and public displays in markets and shopping areas.

The education system has an important role to play in preparedness. Schools can incorporate some elements of the community's emergency preparedness plans in curricula for children and teen-agers, in order to increase the awareness of what to do during a mass casualty incident.

First aid training

First-aid training for the general public is a key component of community preparedness for mass casualty incidents, and is especially important if the community has no professional Emergency Management System. Training curricula should be based on national and international first-aid guidelines, and will generally include life saving skills like :

a) control of external bleeding;

b) securing airways;

c) splinting of fractures;

d) proper handling of the injured.

It is also highly recommended that all emergency personnel (security, police, fire and rescue, and other "first responders") be skilled in first aid.

Community-based training and education plans

Training and education should not be conceived as a "one-off" efforts, provided only once in the expectation that people will learn and remember what they need to know. Rather, training and education should be planned and budgeted as a continuous and scaled process, and scheduled to reinforce and update skills on a regular basis. In particular, local knowledge should be periodically tested through exercises including "tabletop" exercises (involving writing and discussion rather than physical action), sectoral drills, and even comprehensive Emergency Management Exercises involving all sectors. Plans should also include a monitoring and evaluation process to ensure that training and education is effective.

Since no mass casualty management training is equally suited to all communities, national and international standards should be adapted to specific local needs and conditions.

ANNEXURE VI

Sample Mock Drill Plan

Sequence of Mock drill events

The following sequence was adopted in conducting a mock drill exercise in Sadar Hospital, Motihari in May, 2017 :

1. Hooter/Siren of alert
2. Collapse of structure – 2 minutes of personal protective measures as per the scenario of earthquake
3. Assembly area in front of trauma centre – arrival of hospital staff
4. Activation of EOC
5. Situational analysis
6. Activation of Task Force teams
7. Activation of First Aid station
8. Evacuation process – Search and Rescue
9. Triage
10. Fire safety team activated to deal with fire incident
11. Arrival of patients from community
12. Arrival of fire brigade
13. Patient transport to alternate hospital
14. Arrangement of medicines/consumables
15. Mortuary activation
16. Multi trauma patient care
17. Deactivation of Emergency Response Plan at the end of the drill
18. Hot wash
19. Cold wash

ANNEXURE VII

Response Teams

Response teams were selected to respond to the simulated scenario. The response teams and their roles and responsibilities are :

EOC	Ensure EOC is manned at all times during the crisis Ensure that log book is maintained for all incoming and outgoing communications Establish communication with relevant departments Establish communication with district administration Keep track of all internal and external activities
Search and Rescue	Ensure rescue operation in the hospital is made Ensure team is well equipped with adequate rescue equipment and appropriatetechniques are followed Provide Head Count of rescued victims Provides Head Count of victims transferred to Red & Yellow coded areas Provide timely support to the Triage team for shifting victims to the appropriately coded areas Ensure team safety
First Aid	Ensure First Aid kits are available Ensure proper First Aid is provided to Green & Yellow victims Ensure team safety
Fire Safety	Ensure appropriate fire safety equipment are available Ensure the team has safety gears and well equipped Coordinates well with the Fire agencies Ensure team safety
Triage	Ensure appropriate triage is done and identified victims dispatched safely toappropriate areas with the help of Rescue team Ensure team safety
Red Zone	Ensure all critical medical emergency supplies are enlisted and available in workingconditions Ensure enough stock of surgical/medical supplies Ensure adequately trained staff available to manage emergenci es Ensure team safety

Yellow Zone	Ensure all medical emergency supplies are enlisted and available in workingconditions Ensure enough stock of surgical/medical supplies Ensure adequately trained staff available to manage emergencies Ensure team safety
Green Zone	Ensure early first aid and discharge of victims Ensure all medical emergency supplies are enlisted and available in workingconditions Ensure enough stock of surgical/medical supplies Ensure adequately trained staff available to manage emergencie s Ensure team safety
Mortuary	Ensure that dead victims are treated with adequate respect and dignity Establish communication with district authorities for early hand over of victims Deploy volunteers for psycho social support to the families of victims
Crowd Management	Ensure swift management of crowd with no commotion Good coordination with police/support police Smooth flow from the point of entrance to hospital area to Triage area to First Aid,Coded areas Manages vehicle flow/no parking or assorted parking areas Ensure team safety

Annexure VIII

Sample Job Action Cards

1. Medical Officer Casualty

Reporting Area : Casualty

Reporting Officer : Deputy Superintendent

a) Clear the emergency department of any patients, either admit or discharge them.

b) Inform the Civil Surgeon

c) Inform the Deputy Superintendent

d) Inform the nurse in-charge to organize additional trolleys and drugs and disposables.

2. EOC in charge

Reporting Area : Casualty

Reporting Officer : Civil Surgeon

a) Clear and organize the incoming patient and triage area.

b) Allot another consultant to the triage area.

c) Contact the MO's and Specialists

d) Shift patients requiring immediate treatment (Red) to the emergency room.

e) Shift the walking wounded (Green) patients to the designated area for them.

f) Shift those patients categorized as Yellow or Black to the designated area.

g) Shift those received dead to the mortuary after identification and other medico legal procedures.

h) Supervise the medico legal formalities.

i) Reorganize the shifts for the next day.

3. Nurse In-charge

Reporting Area : Emergency Ward

Reporting Officer : Hospital Manager

a) Arranges to shift patients from that ward to other hospital beds after getting a list of vacant beds from the reception.

b) Arranges for an adequate number of mattresses for the emergency patients.

c) Contacts the Hospital Manager to depute necessary additional staff to her ward.

d) The drugs, supplies and equipment required for the emergency as per the list has to be brought from the store and pharmacy.

e) Allot nurses to receive, resuscitate and stabilize the urgent cases, triaged in from the Casualty.

f) Shift these cases to the areas as specified by the respective consultants managing the cases.

g) Receive postoperative cases in a separate receiving area.

Every hospital must have their hospital DM plans made in line and accordance to DDMP.

Annexure IX : Sample SoP

Standard Operating Procedure

MASS CASUALITY MANAGEMENT AT DISTRICT HOSPITAL LEVEL

Situation I - MCI AT HOSPITAL & COMMUNITY

Sl. No.	Responsibility	Activities	Time Frame	Persons Responsible
A	First response at Community. Trigger the Health administration and system at district/ HQ level	Disconnect Electrical circuits to prevent further consequences	0- 20 min	Civil Surgeon (in liaison with DM) Assisted by ACMO
		Inform Police/District Administration; mobilize resources at the site of MCI; Activate ambulances	0- 60 min	
		Alert nearby govt and private facilities for readiness	20- 60 min	
		Mobilization of HR from other govt facilities	30min–1 hour	
		Alert vendors for emergency drug/dressings/ consumables supply as well as reserve fuel	30 min- 1 hour	
		Alert nearby Lab and imaging centers	30 min–1 hour	
		Alert Blood banks of nearby hospital and Red Cross	30 min – 1 hour	
		Alert for safety of valuable equipment	1 hour – 2 hour	
B	Trigger the command system in district hospital/ Medical College Hospital/ Pvt. Hospitals/ NGO run Hospitals etc.	Close coordination and updates to /from Civil Surgeon	0 - 60 min	Deputy Superintendent (liaison with DM and Civil Surgeon) assisted by Hospital Manager
		Alert OT, Lab and Blood Bank	30 min– 1 hour	
		Alert Emergency services In charge	0 min – 30 min	
		Alert MOs and specialists	20- 40 min	
		Alert Volunteers	1 hour –3 hour	
		Alert Mortuary and deploy personnel for body handling with respect. Spokesperson to respond attendant's queries .	1 hour–4 hour	
		Alert designated media spokesperson	30 min –2 hour	
		Crowd Management and Police Protection at emergency and Mortuary.	30 min - 2 hour	

Sl. No.	Responsibility	Activities	Time Frame	Persons Responsible
C	Triage (at every level and proper referral of patients to respective facilities)	Triaging	from 0 min onwards	Emergency services in charge (report to DS and CS)
		Alert blood bank	0– 30 min	
		Areas identified for surge capacity made functional	30 min–2 hour	
		Temporary OT activation	30 min–2 hour	
		Alert Paramedic head	0 min – 30 min	
		Alert Grade 4 staff to clean surge areas, identified surge wards and prep are beds	0 min – 30 min	
		Temporary ward activation (JE ward, Skin and VD, De addiction, Eye, ENT)	30 min– 2 hour	
		Airlifting may be considered: Provisions for the same may be incorporated during Preparedness.		
D	Preparedness of laboratory, pharmacy and other related supplies and services & Volunteers (NCC, Red Cross, RSS)	Alert Laboratory	15 – 45min	Paramedic services in charge (report to emergency services head)
		Alert Pharmacy for emergency drugs	15 – 45min	
		Paramedic staff rational deploym ent	15 – 45min	
		Alert store for consumable and gases supply	30 min – 2hour	
		Alert laundry and dietary services	1 hour onwards	
		Safety & security of consumables by shifting them to other safer places identified by district administration .	1 hour– 2hour	

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