Study on Status of Preparedness for Disaster Management in Global Hospitals

By

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Dissertation submitted for the partial fulfillment of the

MBA Hospital and Health Management

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TO WHOMSOEVER MAY CONCERN

This is to certify that Monika Sharma student of MBA Hospital and Health Management (PGDHM) from The IIHMR University, Jaipur has undergone internship training at Global Hospital, Hyderabad from 10-02-2016 to 10-05-2016.

The Candidate has successfully carried out the study designated to him during internship training and his approach to the study has been sincere, scientific and analytical.

The Internship is in fulfillment of the course requirements.

I wish him all success in all his future endeavors.

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Certificate

This certificate is awarded to Monika Sharma in recognition of having successfully completed her internship in the administrative department and has successfully completed her Project on the topic " A Study on Preparedness of Hospital on Managing Mass Casualties" on 10th MAY 2016 at Global Hospital, LB Nagar, Hyderabad. She comes across as a committed, sincere & diligent person who has a strong drive and zeal for learning.

We wish her all the best for future endeavours.

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This is to certify that the dissertation titled A **Study on Status of Preparedness for Disaster Management in Global Hospital** and submitted by Monika Sharma Enrolment No. **2014-2016/0169** under the supervision of **Dr. Suresh Joshi** for award of Postgraduate Diploma in Hospital and Health Management of the University carried out during the period from **10/2/2016 to 10/5/2016** embodies my original work and has not formed the basis for the award of any degree, diploma associate ship, fellowship, titles in this or any other Institute or other similar institution of higher learning.

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Monika Sharma

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INTRODUCTION

A "disaster" is defined as "any occurrence that causes damage, ecological disruption, loss of human life or deterioration of health and health services on a scale sufficient to warrant an extraordinary response from outside the affected community or area past few years were full of disasters. Laila in Andhra Pradesh in 2010, 26/11 Mumbai terrorist attack 2007, Cyclone Aila in West Bengal, Kosi flood in Bihar, Dec. 2004 Indian Ocean Tsunami, Hurricane Katrina in USA, wars in SriLanka are few examples. WHO and international partners are underscoring the importance of health infrastructure that can withstand hazards and serve people in immediate need. **World Health Day theme 2009** also talks about preparedness of hospitals to handle emergencies. i.e. **"Save lives, make hospitals safe in emergencies."**Hospitals would be among the first institutions to be affected after a disaster, natural or man-made. Because of the heavy demand placed on their services at the time of a disaster, hospitals need to be prepared to handle such an unusual workload.

Whenever a hospital or a health care facility is confronted by a situation where it has to provide care to a large number of patients in limited time, which is beyond its normal capacity, constitute a disaster for the said hospital.

In other words when the resources of the hospitals (infrastructure, trained manpower and communication system) are over whelmed beyond its normal capacity and additional contingency, measure are required to control the event, the hospital can be said in a disaster situation.

This implies that a same event may have a disaster potential for a smaller hospital and nit so for a bigger hospital. Therefore disaster for a hospital is "a temporary lack of resources which is caused due to sudden influx of unexpected patient load".

In order to find out what constitutes a disaster or unmanageable incident for the hospital, the hospital needs to calculate its normal capacity, beyond which it has to act according to the Disaster paln.

REVIEW OF LITERATURE

Hospitals, because of their unique mission, size, complexity, the type of materials they handle, and the types of patients they encounter, are especially vulnerable to natural and human initiated disasters. Therefore each hospital much develops disaster prevention strategies, disaster control strategies and hospital response strategies. Containment and disaster control strategies are necessary for minimizing the effects of impairment and maximizing recovery effects. It includes infrastructure development and concise containment process. Organizations especially hospital, must develop containment infrastructure to deal with the loss and damage of an event.Moreover,well defined procedures ,the assembly of recovery teams and the availability of communication systems will ensure an efficient ,coordinated and routine approach to containment and control damage.

The key hospital personnel should be trained to implement a formal command system, which is an organized procedure for managing resources and personnel during an emergency.
While responding to a mass casualty event, the goal of the health and medical response is to save as many lives as possible. Rather than doing everything possible to save every life, it will be necessary to allocate limited resources in a modified manner to save as many lives possible. When a hospital responds to a large number of victims presenting over a short time, often without a prior warning, delivering care to the level of usual hospital standards or benchmarks may not be possible and "altered standards" may have to be acceptable. The term "altered standards" has not been defined, but generally be assumed to mean a shift to providing care and allocating scarce equipment, supplies and personnel in a way that saves the largest number of lives in contrast to the traditional focus on saving individuals . For example, it could mean applying principles of field triage to determine who gets what kind of care it could mean creating alternate care sites in the waiting area, lobby or corridors, which are not designed to provide medical care; minor surgical procedures in victims in these areas could mean altered level of asepsis.

Preparedness for disasters is a dynamic process In addition to having a well-documented DMP in place; it is prudent to have regular drills to test the hospital's DMP. The purpose of the hospital disaster drills is to train hospital staff to respond to an emergency, to validate the readiness and effectiveness of the hospital's DMP, to make new hospital staff to become aware of procedures in disaster response, to incorporate advancements in knowledge and technology into the DMP and to use the reports from the drill to reinforce the DMP. Hospital disaster drills should test various components viz incident command, communications, triage, patient flow, drugs and consumables stock, reporting, security and other issue.

RATIONALE

Hospitals would be among the first institutions to be affected after a disaster, natural or man-made. Because of the heavy demand placed on their services at the time of a disaster, hospitals need to be prepared to handle such an unusual workload. This necessitates a well-documented and tested **Disaster management plan (DMP)** to be in place in every hospital.

Hospital disaster management provides the opportunity to plan, prepare and when needed enables a rational response in case of disasters/ **mass casualty incidents (MCI)** .Disasters and mass casualties can cause great confusion and inefficiency in the hospitals. They can overwhelm the hospitals resources, staffs, space and or supplies. Lack of any tangible plan to fall back upon in times of disaster leads to a situation where there are many sources of command, many leaders, and no concerted effort to solve the problem. Everyone does his/her own work without effectively contributing to solving the larger problem of the hospital. Therefore, it is essential that all Hospital Emergency Plans have the primary feature of defining the command structure in their hospital, and to extrapolate it to disaster scenario with clear cut job definitions once the disaster button is pushed.

It is in this context that it is important to understand the current situation in Global Hospital which could feed in the exercise of develops/ refine the disaster plan of the hospital.

RESAERCH QUESTION

What is the status of preparedness of hospital for Disaster management?

AIM

The aim is to understand the Status of Preparedness for the Disaster Management in Global hospital.

OBJECTIVES

- To understand the current situation of Preparedness of the hospital to manage the Mass Casualties in terms of availability of Manpower (including knowledge/skill), Equipment and Supplies, are ready when a disaster hits.
- To understand the Internal Communication System of hospital during mock drills.
- To understand the hospital policy and standard procedures in managing mass casualties.

METHODOLOGY

Study design:

Cross -sectional descriptive study

Data Collection Method:

- Review of Disaster Management Plan.
- Interaction with people (Stakeholders) who are involved in formulating the Disaster Management plan.
- Observation of Mock drill.

Sample: All the head of the sections Viz Unit Head, Head-Medical Services, Head-Operations, Chief nursing officer (CNO), OT In charge, Emergency OPD/Indoor In charge, ICU In charge, Media & Communication Manager, Store In charge, Security in charge, Staff nurse, Pharmacy Manager, Housekeeping In charge.

Area of study

- The study will be conducted at Global Hospital Hyderabad.

Study Timeline

- The study will be for Three months.

RESULTS:

- **The Disaster management plan of Global hospitals is having this Disaster management team, and it constitutes these members:**

Disaster Management Team:

- Unit Head
- Medical Services-head
- Operations –head
- CNO
- Media & Communication Manager
  Chief Security Officer
- Deputy Chief Security Officer
- Security Officer

- Manager –Transport
- Manager-Maintenance
- Manager –Biomedical Engineering
- Manager-Housekeeping
- F&B Manager
- Assistant Manager- Pharmacy
- Safety Officer
- HR-head
- IT- head
- Receptionist/Telephone Operator
- Purchase Coordinator
- Nursing Supervisor

➢ **The hospital is having 1 Disaster management Committee and the Functions of committee are**:

a. To establish and coordinate the Disaster Plan for the Hospital
b. Conduct Disaster Drills twice-a-year.
c. Debriefing after drill or disaster to be done next working day to review adequacy of response to disaster
d. To update the Disaster Plan accordingly.

➢ **The hospital is capable of handling these incidents:**

a. Vehicular Accident (multiple trauma cases approx 30-50)
b. Fire Accident in large building (30 – 50)
c. Epidemics of Food-Poisoning and / or Gastro-Enteritis (>30)
d. Explosions
e. Plane Crash
f. Riots
g. Collapse of Building
h. Rail accidents

- **Guiding principle of Global hospitals for managing Disaster**

The **Hospital will receive and manage a maximum casualties of 30 - 50 patients** before diverting patient traffic to other partner hospitals and this would be informed to local government/municipal authorities including police & other nearby hospital, **the rationale being** the hospital can plan for & be prepared to efficiently manage up to 50 casualties & provide quality healthcare delivery, rather than accept a higher patient load & be unable to cope & deliver poor quality healthcare.

- This table shows the Status of handling patients during disaster.

Estimated Patient Profile				
Number of Casualties	**Immediate care** - 20%	**Delayed care** - 30%	**Minor care** - 50%	**Expected Admissions**
50	**10**	**15**	**25**	**25**

- **The hospital is having ERCC – Emergency Response Coordination & Communication System**

This system has been implemented in Aware Global Hospitals for communication and coordination during an emergency. The employees of AIMS can operate this system through mobile set / internet. When an emergency is detected by any employee (activator of that respective situation), he / she will call the emergency number (111) through speed dialing and announce the code and location. Simultaneously all the responding members related to the announced code will get the call on their mobile set within 5 secs.

- **The plan has list of Functional areas which are working during disaster and these are**:

✓ **Functional Areas:**

- **Receiving area -** Emergency Ward
- **Additional treatment area:-**OPD/ Auditorium.
- **Command centre**
- **Information centre**
- **Discharge area**

a) Receiving Area:

- **Area allocation for casualties will depend on Numbers Expected and Hospital Occupancy.**
- Receiving area for all casualties will be at designated area in **Emergency Ward (to be made Disaster ward) where** a **quick initial assessment** will be made to determine severity of injuries by **Triage.** The Incident Coordinator in concert with Triage officer will select an alternate site if needed.
- Two Trolleys & Two Wheel-chairs will always be kept on standby.

a. Priority-1 patients will be transported to the Emergency Dept. - Nurses to Manage & Security Staff to direct/escort

b. **Priority-2** patients to Emergency Nursing Station &

c. Priority-3 patients to Surgical OPD Treatment Room

b) **Additional Treatment Areas:** For a maximum of 25 Casualties: OPD & Mini Auditorium (Ground floor).

c) **Information Center:** To be managed by the **Mgr-Front Office** or **Mgr-Security** at the Main Reception.

Press & Police room to be created at area below ramps, along with any of the top officials.

d) **Command Center:** Emergency Call Centre will assume the function of command center.

e) **Discharge area:** Patients who have minor injuries will be discharged immediately from main reception entrance and **NOT** through the Emergency door.

- **General Duties of Department Heads:**

a. They have current and available list of names & contact numbers of personnel of the Department at **ALL TIMES**.

b. **Call Centre** has **up-to-date** list of names of persons on stand-by for Disasters (**365 x 24**)

- **The plan has these Instructions to Personnel On-Duty/ Off duty durind disaster**

- All Staff to remain at their own departments unless re-assigned otherwise.
- Do not leave the hospital without permission.
- Keep **ALL** phone lines open.
- Accept transfer-of-station or duties **without question**.
- Stay on duty until relieved.

Instruction to Personnel Off-Duty

- Keep phone lines free.
- Do not call hospital
- If you are not called, come at your regular working hour.
- All personnel have to arrange for their own transport (Except – Nursing staff)

- **The plan is having the Disaster management flow chart**.

Hospital might receive intimation / information of disaster from Municipal Authorities and / or Police

⇩

Information may be received by Emergency Department/ Pre Hospital Services/ Anyone

⇩

After receiving information ER Personnel on duty will inform Hospital Command Control (Unit Head)

⇩

After getting" GO "signal from Unit Head

⇩

The Call-Centre will announce the "Code Yellow" on **ER Communication System**

⇩

Hospital telecom department will inform all the key personnel (Disaster Management Team) within 15 minutes.

⇩

Set up all the key receiving areas

⇩

Triage SEIVE/ SORT

⇩

Reception of patients in Priority areas

⇩

Initial measures as required

⇩

Department specific measures

⇩

Major incident Step down Exercise

⇩

Back to normal Workflow

- **The plan has list of Responsibilities of Command Post**

- Command post will be set up at the Emergency Call Centre.
- After hospital disaster management capacity is full, Security personnel at Hospital gates along with Supervisor / Police will direct all fresh patients to other hospitals
- Purchase Coordinator, Medical Services Head / Mgr-Front Office / Head-Safety will organize materials & mobilize manpower.
- All Nursing-in-Charges (DAY)/Team Leaders (NIGHT) will report to **CNO/ Nrsg-Shift-Supervisor** at Command Centre
- All departments (**Triage** / **OTs** / **Front Gate**) - to constantly update Command Centre as relevant.
- Oversee the ER process & coordinate gathering extra staff (**Doctors/Nurses**) at Emergency/Triage area
- Post-ponement of Elective operations
- Make OTs available (**Inform Anesthetist- on-Call & OT-Technician-on-Duty**)
- In-case of non-availability of beds lay out mattresses in a temporary dormitory under supervision / directions of CNO / Nursing-Shift-Supervisor.
- Arrange setting up of Communication centre at **Emergency Command Post** / **Main Reception** to liase with relatives/police/blood bank etc
- Authorize & ensure restrictions on visitors
- Handover duties at end of working shift
- Decide & declare "**all clear**" only when situation is under control.

- **The plan has Communications protocol which should be follow during disaster**

- During a disaster all communications between members of disaster team will be through the use of Mobiles
- All department heads to have a specific & limited no. of disaster team members to call.
- These team members in turn will have a specific list.
- No personal calls will be made.
- Calls regarding information about **Next of Kin** will be diverted to Command Centre.

- **The plan has list of things which is going to be done at Reception Area for Victims**

- Nurses (with lower workload) will note down demographics & allot **Disaster ID Numbers** on **DisasterTags** (**which will be hung around each Casualties' neck**), entry to be made in register also.
- **ALL** patients to be treated as Medico-Legal Cases (MLCs)
- **ALL** Deceased cases & Brought-in-Dead will be identified & tagged – Examined by Doctors / Declared Dead by Doctors / Death Summary
- Under supervision of Security Officer / HK Manager - Ward boys will **shift** dead bodies to the Mortuary + Hand-Over Dead-Body to Police – **update** Command Centre - Next of Kin to be **notified** by Senior at Command Centre.
- When the Mortuary Trays are full, the bodies will be kept on side on Slabs and additional body would be kept at Amphitheatre (Ice is to be arranged by HK-Supervisor).
- **Documentation** is to be BRIEF / ESSENTIAL / SIMPLE / STANDARDISED – viz DISASTER TAG & wherever possible **back-up by Photographs of Casualties**

  Registers also should be kept in Emergency Dept. which are to be filled initially and later can be updated on HIS.

- **The plan has listed different Categories of casualties**

Emergency Doctor-on-Duty will notify the ER team; Casualties will be classified into 3 categories.

- **Priority 1 casualties** – **Immediate Resuscitation** - This type of casualty includes:
  - Major hemorrhages ± rapidly progressive shock.
  - Respiratory distress – mechanical ventilation, unstable airway / Severe smoke inhalation

- Traumatic Brain Injury with Coma
- Penetrating wounds to head / neck / chest / abdomen / groin / extremity with neuro-vascular compromise
- Compound fractures / Crush injuries
- Extensive burns (more than 30%)
- Cervical & Maxillo-Facial injuries / Spinal cord injuries / Open or Un-Stable Pelvis fractures
- Judgment of the ED Physician

The following actions are recommended:

- Primary Survey (Secure **A**irway / **B**reathing / **C**irculation)
- Oxygen administration / IV Lines / Intubation / Secondary Survey
- Advanced Life Support / Resuscitation / Transfer to SICU or NS-ICU
- Patients who require Urgent **Limb-Saving** or **Life-Saving** Surgery :

  - Identify them
  - Refer for Urgent-**PAC** (Pre Anesthetic Check)
  - Get on-the-Spot Consent by **Next-of-Kin** or Head- Med. Services /Operations.
  - Blood Samples taken & sent to Lab
  - Admission by Bedside
  - Change of Clothes on bed / trolley
  - Transfer to O.T. for Surgery

- **Priority 2 Casualties: Urgent Treatment –**

  The injuries have systemic implications or effects, but patients are not yet in life threatening shock or hypoxia although systemic decline may ensue, given appropriate care, can likely withstand a 45 to 60 minute wait without immediate risk. These casualties injured can be placed under shelter pending transportation.

This type of casualty includes:--

• Non-asphyxiating Thoracic trauma • Closed Single/ Multiple fractures of the extremities • Head Injury without Coma / Shock • Altered level of consciousness with Glasgow Coma Score 9-13		• Injuries to Soft Parts • Traumatic amputations • Judgment of the ED Physician • Limited burns (< 10 - 30%)

- **Priority 3 Casualties: Minor Care Casualties**

Injuries are localized without immediate systemic implications; with a minimum of care, these patients generally are **Un**-likely to deteriorate for several hours, if at all.

- This type of casualty includes minor injuries only.
- Usually **managed by 2 or more RMOs / Junior Doctors** (brought in from Wards)
- Basic First-Aid / Dressings / Suturing / Analgesics are given

➢ Triage Process of Global Hospitals

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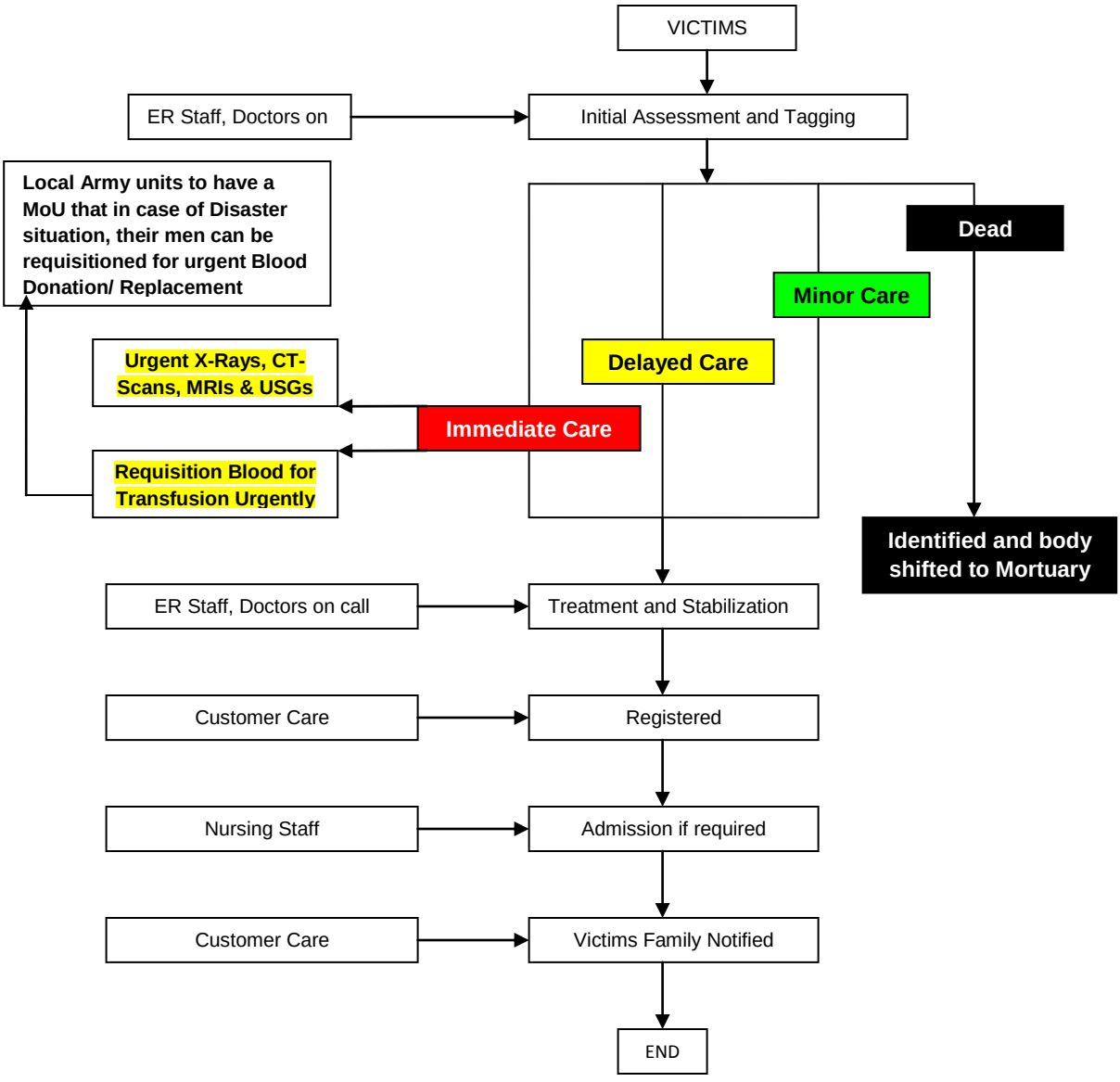

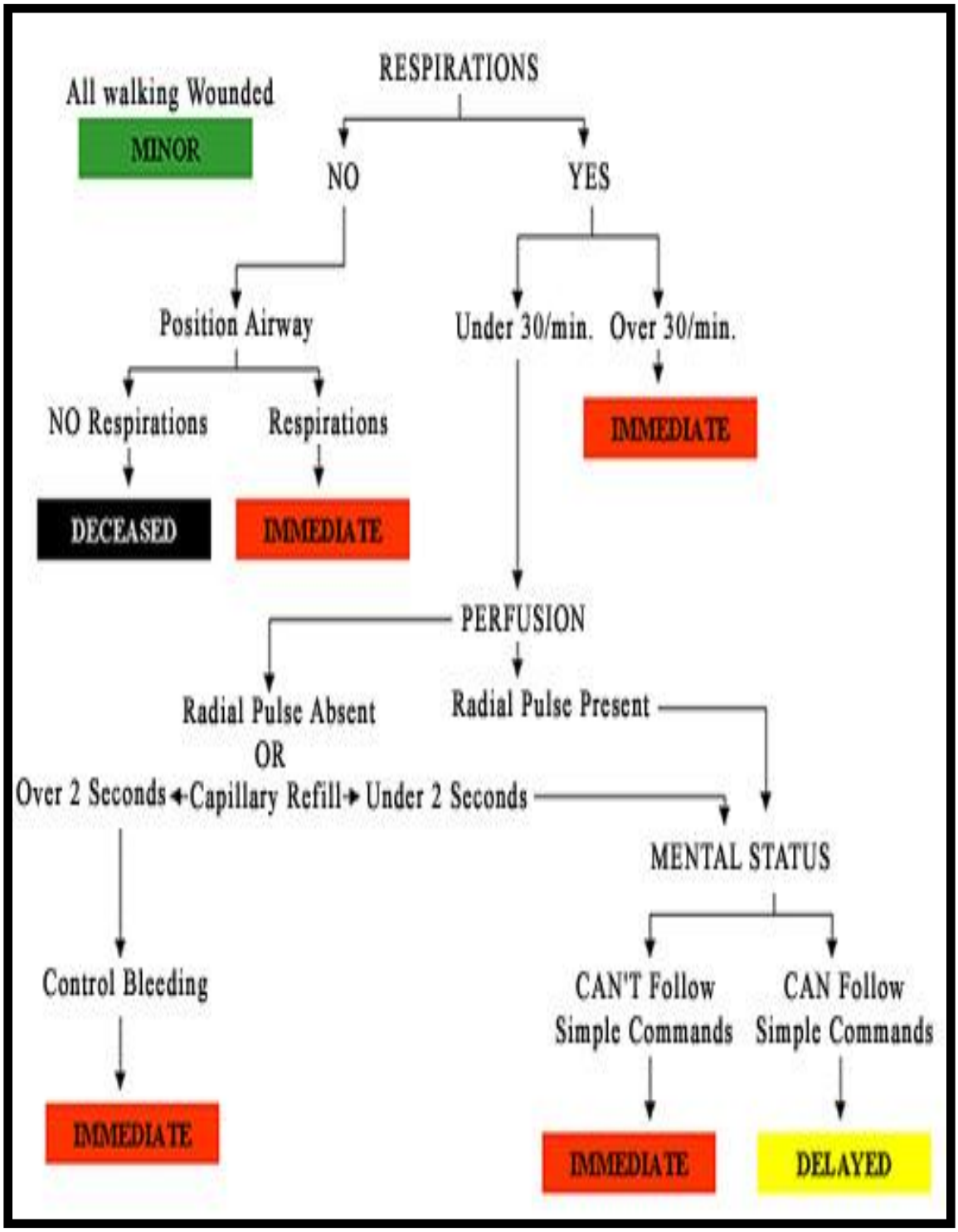

Fig.3 shows the flow of patient traffic during a disaster

- **The plan has the list of Medications &Equipments which are essential during disaster.**

- **The plan has protocol for Dead patients.**

Patients who are Brought-in-Dead will be transferred to Mortuary (wait for processing – MLC Documentation / ID by Police / Hand-over-to-police.

- **Specific Responsibilities of every Stakeholder has been documented in the plan.**

❖ **Unit Head:-**

- Authorization of announcement of disaster to hospital personnel.
- Provide leadership to the hospital during the disaster management.
- Maintains controls
- Ensure smooth &coordinated response to the incident.

❖ **Medical Services-Head & Operations-Head :-**

- Check with local authorities to **verify the disaster** and obtain additional information.
- Authorize announcement of disaster to hospital personnel.
- Get help from local police & volunteer organizations as required; coordinate with partner hospitals.
- Stay in the area of command center to be available to make decisions / Resolve conflicts / **Verbal orders**
- Responsible for notifying all departments heads or alternates.
- Co-ordinate & arrange for supply of Medicines/IV Fluids /Blood & Blood products (Verbal orders /Urgency)
- Coordinate with CNO and doctors-on-duty for the early discharge of patients from wards, daycare and dialysis to accommodate priority-1 casualties.

❖ **Chief Nursing Officer (CNO):**

- Collect pertinent data from **Command Center**.
  - Expected number of patient load.
  - Type of disaster & Location of disaster.
  - Types of injuries expected
  - Estimated time of arrival of patients (**ETA**).
- Evaluate number of extra staff necessary & mobilize Nurses (those who are off-duty /due-on-next-shift)
- Submit demand for Logistics to Stores/ Wards/ICUs as per patient requirements (continuous/ progressive)
- Prepare unit assessment and submit to Control Center.
  - Room suites & nursing personnel available for immediate use / after next 2 hours .
  - Assign additional nursing staffs to designated suites to prepare for incoming patients.
  - Prepare room suites for critical & non-critical patients.

❖ **Anesthetist / O.T. Technician**

- **Medical Services Head & Operation Head / CMOs -** inform /requisition OTs. & Coordinate / supervise transfer of patients to OTs.
- **O.T. Technician** will call other OT Technicians / OT Nurses till the arrival of OT supervisor/ in-charge.
- **O.T. Technician** will Check area for supplies & conduct immediate equipment check for Emergency Surgery
- **O.T. Technician** keeps list of additional Sterile supplies to be indented in Disaster situations
- Prepare OTs & Recovery Rooms / Trolleys / get Instrument Sets from CSSD
- Notify Command Center when Operating Rooms & Recovery Room is ready to receive more patients.
- Notify anesthetists who will maintain adequate anesthesia and drug supplies.
- Conduct Life & Limb saving surgery
- Inform Command Centre as & when more Surgeons & OT available & ready again.

❖ **Materials Management – Stores**

- Call in extra staff
- Supply all departments with supplies – quickly (**document on verbal orders from Head Med. Services / Operations / CNO / CMOs**)

Mgr. Stores will designate assistant to supply runners/volunteers to deliver supplies/ acquire more supplies if required

❖ **Security Officer (Engg services + Maintenance team + Security)**

- To be on standby at their room in case power-failure due to sudden increase in the load.
- Call in more staff
- Maintain full operation of all facilities.
- All doors should be locked immediately **except** employee entrance, Emergency Department door, and front lobby for security purposes. (Restrict entry at doors)
- Be responsible for setting up extra beds in hospital if needed, as well as transporting store-room supplies and bringing in extra supplies from other areas.
- Be willing to help with movement of victims from Ambulance to Triage / Triage to ER / ER to OTs
- Coordinate transfer of patients to nearby hospitals as required.
- Coordinate with partner Hospitals or ambulance services to arrange for more ambulances if required.

❖ **Staff Nurses**

- Take charge of patients (ideally **1:1** , maximum **1:2**)
- Give aggressive First Aid treatment.
- Follow Doctors orders & Obtain information and fill out available information and time on disaster tags.
- **DO NOT** leave your patient unattended.
- Make out the appropriate lab slips / X-ray requisitions with disaster number as per Doctors orders

- If patient admitted be sure to send all oxygen equipment with patient to his room.

❖ **Pharmacy Manager**

- Pharmacy In-Charge / Executive to Report to Command Center, then remains in department.
- Have list of drug suppliers that can provide emergency supplies quickly.
- Keep minimum supply of Emergency Drugs on hand at all times (**Buffer Stock -15 - 21 days reserve stock always there**)
- Assess the situation and determine the necessary steps to be taken.
- To ensure smooth distribution of pharmaceuticals – open more counters
- Maintain proper record of drugs issued / used during the disaster.
- More billing counters
- **OT Stores – should have a specific protocol for extra-provisioning during Disaster situations including Manpower & Consumables availability.**

❖ **Media & Communication Manager**

- Unit head is the only authorized spokesperson who will meet or talk with the Media.
- Notification to the families of relocated patients & responses to inquires will be coordinated by the Media Manager through supervisors/ team leaders.

❖ **Responsibilities of Housekeeping and Linen**

- The housekeeping supervisor to **arrange extra staff** to standby at the areas where the victims are treated
- To ensure quick & efficient **cleaning** & handling blood spillage, immediately.
- To assist facilities in **transfer** of equipments / **transfer** of patients if required
- To arrange for **linen** supply to the departments due to increase in demand, if required.

To send housekeepers to ward to **clear rooms** as soon as possible, if necessary

- **Debriefing protocol has been documented in the plan.**

a. Disaster situation is under control & "**all clear**" has been announced by Head- Medical Services / Operations.

b. All victims of minor injury are discharged & after all victims of serious injury are admitted to hospital.

c. All patients will be treated as Medico-Legal Cases.

d. Relatives of victims have been located / MLC reports completed / dead bodies handed over to police

- **Debriefing will consist of**:

- A complete log of all activities carried out by department heads & patients registered, treated and/ or shifted.
- Assessment of current supplies used / cost of disaster management / extra stocks to be procured
- Identify, report document any lapses, adverse events, logistical problems, command-control issues – all with the aim of reconciling finances + improving the response to a Disaster in future.

- **The plan is having list of these Documentations & Records that should be maintained at the time of disaster:**

Documentation

1. Records should be minimized, depending on circumstances.
2. Numbered disaster tags and triaging bands are available in the Receiving Area and will be affixed to EVERY patient until the proper outpatient chart or hospital chart is prepared and records time.
3. Sufficient information should be recorded in order to aid in identification and determination of extent of injuries. This should be done in Treatment area rather than Receiving.
4. As soon as disaster tag information is obtained, remove the top sheet from the chart and send the runner to Command Centre in the Emergency Department on affix to clips outside each treatment room and information centre and medical record will prepare casualty list.
5. Report any major change of the patient's to this Command centre.
6. Treatment areas, Lab and X-ray should include the patient's disaster tag number and the patient location in the hospital.

Records

1. **Mortuary Register**
   This will include
   a) Name of the identification of person taking the body
   b) Signature of a witness to the release of the body
   c) Destination of a body, name of the security guard on duty with sign
   d) Time of release of body

2. **Store Record**
   It will include details about the materials indented, list of shortage of materials during the disaster circumstances etc.
3. **Purchase Record**
4. **Valuable handover register and form**
5. **Pharmacy Record**
6. **Food & Beverages Record**

- List of Medications & Equipments with respect to the Priority of Patients has been documented in the plan.

❖ Observation of Code yellow Mock drill:

This was a scenario for a code yellow mock drill. Customer care assistant gets a call on the hospital landline 04024111111 and on hearing about the incident, the customer care calls ER and informs the medical officer about the incident. Medical officer then notes down the nature of incident and the number of patients affected. If the number of patients is less than ten, then Code Yellow ER is announced. In this situation, Emergency room is equipped with the resources and manpower required to handle the emergency. If the number of patients is more than ten but less than 50, then Code Yellow Hospital is announced. In this situation the patients are received through the main entrance and triage is done in the main lobby. Red area will be the ER, Yellow and green areas are the OPD1 and 2 areas respectively.

Date: 19/4/2016

Scenario:

Train accident near Nampally railway gate. 40 casualties with various grades of injury.

Occupancy: 100

Observation points	Things did not take place
Security personnel wheeling out patients directly to ER	• Receiving area should be manned by a nurse. • Security should be verify with the nurse for mode of transport (on wheelchair/ trolley)
Triage area getting crowded	• Queue manager should be placed near triage • Train the housekeeping staff to organize queue near triage area.
Shortage of trolleys in the receiving area	• Patient trolleys and wheelchairs should be mobilized from all the areas and parked at receiving area
Delay in doctor reporting to triage area	• ER MO should be trained to report to triage area
Reconciliation of patient status with POC (Point of control)	• The nursing staff and CCA from all the areas should report to POC and update the patient status to POC members (Customer care assistant)
All the details not being captured in ER while receiving call	• A code yellow checklist for receiving call should be made for ER MO reference
Infection control measures	• A kit with mouth masks and gloves has to be prepared
Area commanders to monitor reinforcements	• Ops Manager – Triage area • CMO- Red area • Asst Manager Nursing – Yellow area • Executive Nursing- Green area
Lift landing area to be manned by security	• The deceased patient to be shifted to lift landing area and the area should be manned by security

Additional power points to be provided in ER	• Facility to organize extension board to ER and Yellow area.
Triage areas to be demarcated	• Triage flags should be displayed in the respective area.

RECOMMENDATIONS

1. Regular Mock drills should be done at least 4 times in a year.
2. A tie up should be initiated with nearby hospitals (Global Hospitals Lakdi ka pool, Usmania Hospital, Gandhi hospital.
3. Disaster is unpredictable, therefore each and every staff must be trained about their roles and responsibilities.
4. To prevent Overcrowding &Transport problems during disaster, hospital can tie up with various non – government organizations (NGOs) who will act as a helping hand for transportation and controlling the crowd

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❖ Limitations & Problems faced:

- Non availability of Staff (Stakeholders) that to be interviewed.
- Could not have an access of counting Medications & Equipments which are required for handling any Disaster situation.
- Mock drill is not up to the mark, drill is very sketchy.

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CONCLUSION

The key for any successful mastering of a crisis is to be well prepared. All potential problems have to be carefully analyzed and respective precautions have to be taken. Some investments like ERCC System may be expensive but are most likely well worth it.

Mock drills prepare the hospitals to handle disasters of both external and internal origin. Referring to the events in the past, it is always noticed that when disaster strikes, there is panic among the people. If hospital staff are trained and prepared with disaster management, it will definitely help in reducing the after effects of such an event. Although it is hard to establish a perfect system that prevents damage, certainly there is need for an emergency and disaster management system in place that can effectively manage emergencies during a disaster.

No one should rely too much or exclusively on high-tech facilities in extraordinary situations. Major accidents and disasters can only be mastered and controlled by intelligent planning and hence documented Disaster Management Plan becomes a necessary for effective implementation.

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4. Gretenkort P, HarkeH, Blaejak J, Pache B, Leledakis G. Interface between hospital and fire authorities- A concept for management of incidents in hospitals. Prehospital and Disaster Medicine.2002;17(1):42-47
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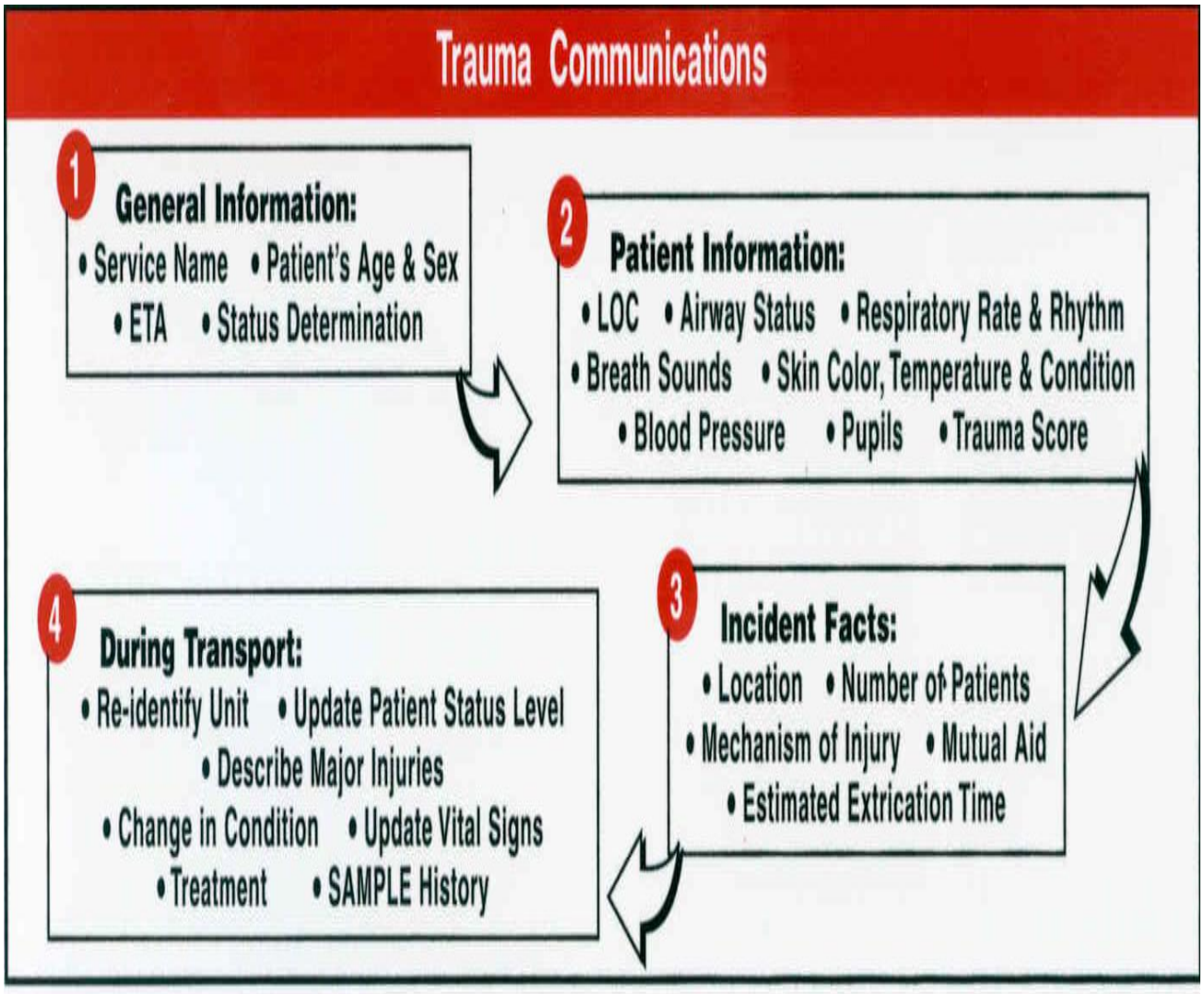
APPENDIX

1. **Trauma Communications**



2.. Adult Trauma Score

Revised Trauma Score - Adult			
Glasgow Coma Scale	SBP	Respiratory Rate	Coded Points
13 - 15	>89	10 - 29	4
9 - 12	76 - 89	>29	3
6 - 8	50 - 75	6 - 9	2
4 - 5	1 - 49	1 - 5	1
3	0	0	0

3. Pediatric Trauma Score

Pediatric Trauma Score				
Component	+ 2	+ 1	- 1	Points
Weight	> 20 kg	10 - 20 kg	< 10 kg	
Airway	Normal	O_2 adjunct: mask, cannula, or oral / nasal airways	Assisted / intubated BVM, ETT, EOA, Cricothyrotomy	
Level of Consious-ness	Awake	Altered level or history of lost consciousness	Coma Unresponsive	
Circulation	Peripheral pulses good SBP >90 mm Hg	Brachial / Femoral pulses palpable; SBP 90 - 50 mm Hg	Weak or no palpable pulses SBP < 50 mm Hg	
Fracture	None seen or suspected	Single closed fracture	Any open or multiple fractures	
Cutaneous	No visible injury	Contusion, abrasion, or laceration < 7cm; not through fascia	Tissue loss, Laceration > 7 cm, Any penetrating injury through fascia	
Color score of 1 red box or 2 yellow boxes equals < 9.			Total:	

CODE YELLOW- CHECKLIST

An overview of the Code Yellow Drill

Date:	
Area of Code Orange:	
Code Initiated by:	
Total number of Casualties	

Code Initiation Protocol

Dialing to 111 done? (note time)	
Code Yellow announced properly	

Call Centre

Code Announced properly on ERCC System.	
Note Time of call?	

Code Yellow Team Response

Time at which call received from the spot	
Time at which team reached the spot	
Note time at which ERCC call came (from any team member mobile)	
Who all came?	
CMO	
MOD	
MS	
Internal Medicine Doctor	
Surgery Doctor	
Critical Care Doctor	
NS/Nursing Shift Supervisor	
Registration Staff/Billing Staff	
Housekeeping In charge	
Security In charge	
BME In charge	
Pharmacy In charge	
Extra personnel observed?	

Assessment of patients done by CMO/Nurses	

Triaging carried out by the CMO	

AMBULANCE

Call received at Emergency number (1067)	
Time at which call received at emergency number in the hospital	
Time at which ambulance reached the spot	
Was the ambulance adequately staffed	
Were the patients handled in a proper way?	

SPECIFIC ROLE CHECKLIST

FRONT OFFICE

Coordination with nurses for patient identification and registration.	
Note patient demographics and allot them UHID numbers	
Refer all enquiries and press to desk in the appropriate areas.	

CMO

Ask for announcement of appropriate code and thus inform all concerned – through ERCC	
Convert emergency waiting area into pre-triage sorting area	
Appoint one duty doctor in pre triage sorting area	
Off duty ER Physician to be informed immediately and to report on duty.	
As per the situation, he will call the required doctors from the concerned departments.	

MOD

Responsible for coordinating the communication to all departments heads or alternates.	
Co-ordinate & arrange for supplies	
Coordinate with NS and doctors-on-duty for the early discharge of patients from wards, daycare and dialysis to accommodate priority-1 casualties.	
Be responsible for setting up extra beds in hospital if needed, as well as transporting store-room supplies and bringing in extra supplies from other areas.	
Be willing to help with movement of victims from Ambulance to Triage / Triage to ER / ER to OTs	
Coordinate transfer of patients to nearby hospitals as required.	

SECURITY

Security Manager / Supervisor will coordinate for the arrangement of canvas stretcher from fire control room.	
Clear the emergency area	
Take care of the belongings of the victims	
All the belongings of the patient are to be kept stored in the lockers in the security room under lock and key.	
The belongings are identified by the Disaster number/UHID number allotted to the patient(s) by the Nursing staff/Front office staff.	
In case the dead bodies increase the capacity of the hospital mortuary, then additional space needs to be created.	
The additional dead bodies will be stored inside the mortuary on Ice Slabs covered in white sheets; In case there is a further need to create more additional space then they can be kept inside the -1 basement parking area.	-
In case a patient dies during treatment, the dead body(ies) have to be kept in mortuary.	-
Direct the relatives to the information desk	

NURSING

The Nursing Superintendent prepares a list of nursing staffs that may be made available at a short notice.	
The nursing supervisor is also able to mobilize additional nursing staffs from non-critical areas.	
Direct extra-nursing staff to reach emergency	
Arrange for extra First Aid material for patients in coordination with pharmacy	
Appoint one nurse at the sorting area before triage	
Coordinate patient shifting	
Nursing staff called from the Nursing Hostel.	
Nurses handed over the belongings of the patients to the security.	
Nurses took the census of the patients.	
Give aggressive First Aid treatment.	
Follow Doctors orders & Obtain information and fill out available information and time on disaster tags/cards	
Make lab slips / X-ray requisitions with disaster number as per Doctors orders	

HOUSEKEEPING AND GDA

Allot extra staff for emergency	
Keep the emergency area clean	
Help nursing to shift patients	
Arrange wheelchairs & stretchers to transfer the patients.	
Arrange linen for transporting the patients	
Arrange Ice slabs for Mortuary, if required.	

PHARMACY

Pharmacy In-Charge / Executive to Report to Command Center.	
Keep minimum supply of Emergency Drugs on hand at all times	
Assess the situation and determine the necessary steps to be taken.	
To ensure smooth distribution of pharmaceuticals – open more counters	
Maintain proper record of drugs issued / used during the disaster.	
Have list of drug suppliers that can provide emergency supplies quickly.	

LABORATORY & BLOOD BANK

Department Head or designee will call in their own personnel as needed after reporting to Command Center.	
Call personnel from nearby hospitals and clinics if necessary.	
Have arrangements made to obtain additional blood, equipment and supplies from area agencies.	