COMPUTER-BASED MASS CASUALTY MANAGEMENT SIMULATION EXERCISES

MUSTER GUIDELINES

Emergency and Humanitarian Action
World Health Organisation
South-East Asia Regional Office
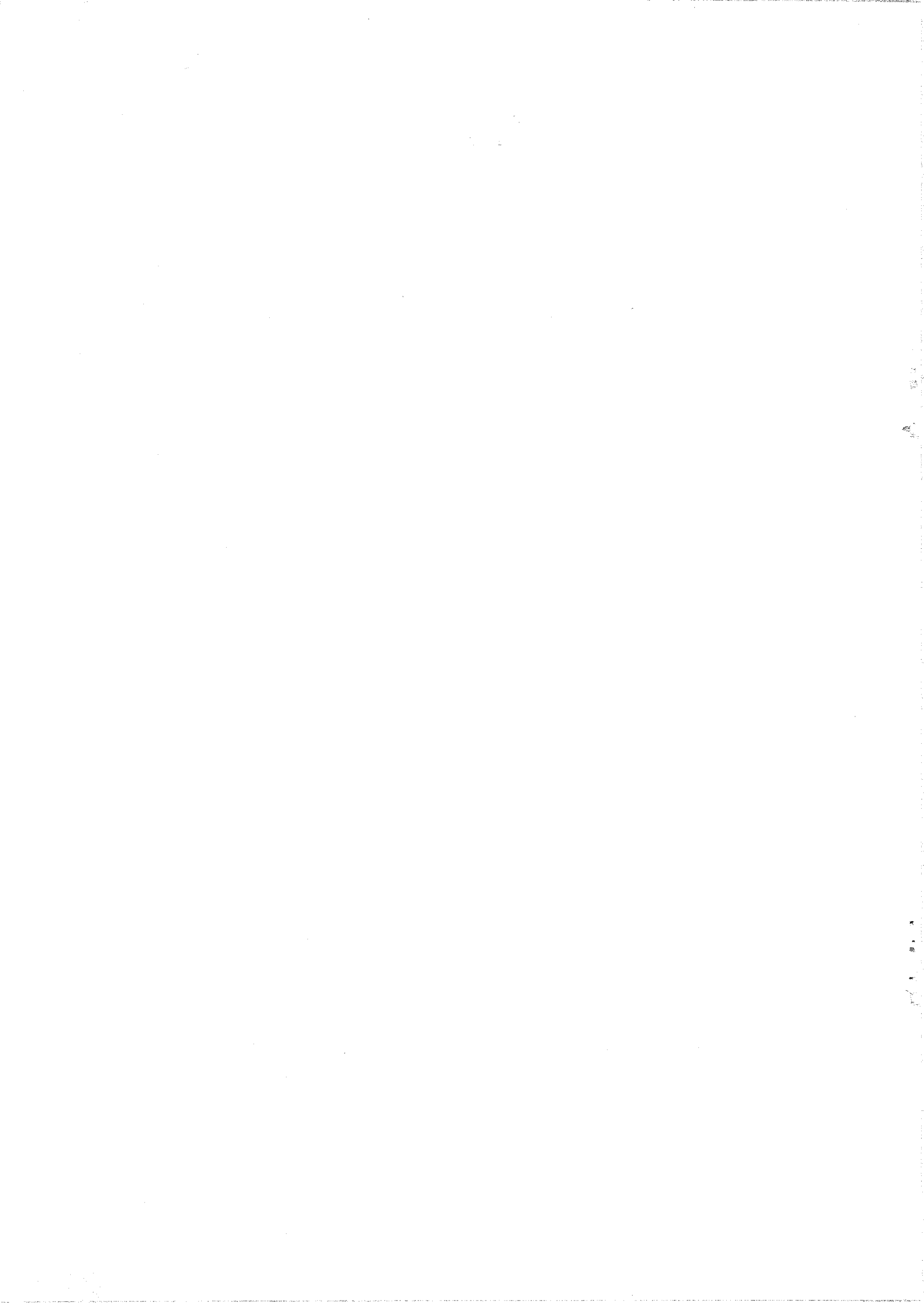
December 2003

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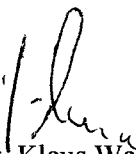**South-East Asia Regional Office**

December 2003

Foreword

The World Health Organisation is pleased to present the publication, *Computer-based Mass Casualty Management Simulation Exercises. MUSTER Guidelines*. These guidelines are based on the experiences gained through the last two years of implementing training using the MUSTER software and as such incorporate the feedback from and input of a range of people who contributed to the development of this refined and well thought-out training programme.

The MUSTER software provides health sector personnel with an opportunity to learn about and practise the Mass Casualty Management System in an interactive disaster scenario. Combined with theoretical presentations on the different aspects of an efficient and life-saving disaster response, the training material is a valuable tool in the effort to further health sector emergency preparedness; not least because it provides the participants with a rare opportunity to practise how to respond to mass casualty incidents in a simulated real life situation.

What distinguishes the MUSTER software from others is first of all the fact that the victims' conditions are based on real patient profiles and that their conditions change over time thus enabling the facilitators and trainers to give a qualitative feedback on the participants' response. Once the computer network is established, it is a cost-effective and efficient way of training a large number of people in a relatively short period of time, and the interactive nature of the programme stimulates discussion and further thought amongst the users.

The use of a computer-based simulation was an innovative approach and the first of its kind in the health sector in Nepal. It has been instrumental in creating a greater interest in and awareness of the mass casualty management system in a diversity of institutions across the national health system.

It is my hope that, by getting access to this trainers' manual, other SEARO countries will be able to benefit from the experiences gained in Nepal and be inspired to implement similar training programmes in their respective countries in order to heighten the national health sector emergency preparedness and the regional capacity for response.

Dr. Klaus Wagner
WHO Representative to Nepal

CONTENTS

1. INTRODUCTION

During the past three years, the Emergency & Humanitarian Action Programme (EHA) in the World Health Organisation (WHO) in Nepal has spent considerable efforts in developing and implementing a comprehensive mass casualty management training programme in collaboration with the Epidemiology and Disease Control Division, Department of Health Services, Ministry of Health, His Majesty's Government, Nepal. The objective of the training programme is to enhance the health system's pre-hospital emergency response capability by focussing on inter-sectoral collaboration, victim stabilisation, triage and disaster logistics. By utilising various training modalities such as desk-top exercises, computer-based simulations and mock drills, the programme has achieved a high level of adaptability. At the time of writing, approximately 700 health sector staff and first responders have been involved in the training out of which more than 500 people have participated in computer-based simulation exercises. The development of a national template of a triage tag followed by its strategic dissemination to health facilities has helped to institutionalise the training and ensure tangible and sustainable outputs.

The computer software "Multi-User System for Training Emergency Response" (MUSTER) developed by the IFAD Company in Odense, Denmark is a powerful tool to generate interest in the training. The software was initially field-tested in New Delhi and Kathmandu to ensure that users with limited computer experience could adjust to the software and that team work minimised the need for hardware knowledge. Moreover, the producers of MUSTER designed a Nepal-specific earthquake scenario, which made it easy for the trainees to relate to the simulation. Virtual earthquake and air crash scenarios set new standards for simulations by allowing medical doctors and emergency responders to test their collaboration and management skills on imaginary victims equipped with realistic and dynamic injury profiles.

These MUSTER guidelines are intended as a basic manual for organisers and facilitators of computer-based mass casualty management simulation exercises. They represent the culmination of the experiences of two comprehensive training programmes in Kathmandu. Whilst the guidelines are intended for use throughout South-East Asia, readers should be aware of the fact that any virtual training programme needs to be adapted to the specific context. It is recommended that these WHO guidelines are used in conjunction with the IFAD technical manual, so the specific experiences from Nepal can be mirrored in the technical options of the MUSTER software.

By publishing these guidelines in collaboration with the WHO South-East Asia Regional Office (SEARO), the authors wish to encourage other member countries to undertake similar training programmes by utilising the MUSTER-software available at WHO EHA. The guidelines have been written in a fairly simple language to facilitate their practical usability.

2. BACKGROUND

Before initiating a computer-based mass casualty management training programme, it is important to recognise both the need for training in mass casualty management and also the effectiveness of this modality of training. If these two aspects are understood and internalised, the training programme has the potential to be highly successful.

2.1 MASS CASUALTY MANAGEMENT TRAINING

Every year natural and man-made hazards combine with human vulnerability to create thousands of disasters. One of the main keys to successful relief and recovery following these disasters is the ability of the health sector to respond in an effective and timely manner. If the response is properly prepared and is coherent and co-ordinated, more injured will receive adequate and timely treatment, which will not only save lives but also ensure that life will return to normal more quickly and with less long-term consequences.

The challenge facing every health sector is that the scarcer its resources, the more efficient its organisation must be. The experience of the Pan American Health Organisation (PAHO), which is the Regional Office of WHO in the Americas, has shown that the introduction of mass casualty management systems can meet this challenge.

A mass casualty incident is any event resulting in a number of victims large enough to disrupt the normal course of emergency and health care services. Whether it is an emergency on a large-scale following an earthquake or flood, or on the smaller scale of a road traffic accident, mass casualty management is the most efficient means of coping with the situation.

The key to success when services are over-stretched is the filtering of victims so that only the most urgent cases are sent to appropriate and prepared hospitals. A mass casualty management system necessitates pre-established procedures for rescue mobilisation, field management and hospital reception, which are adapted to the specific situational problems of the country, region or institution. An introduction to mass casualty management is given in the PowerPoint presentation in Section 5.3. For further information please refer to "Establishing a Mass Casualty Management System" (PAHO, Washington, 1995).

In order to address mass casualty management issues and to prepare medical teams for the necessary inter-sectoral rescue operations that a mass casualty incident can entail, it is imperative to arrange disaster drills and simulation exercises.

2.2 COMPUTER-BASED TRAINING AND MUSTER SOFTWARE

The training of personnel in mass casualty management has traditionally been conducted through tabletop exercises and field mock drills. The use of computer-based simulations is a relatively new concept which complements these other forms of training. The use of computers introduces a dynamic element into a training session which it is difficult to replicate in any of the other training modalities.

MUSTER simulations involve the actors attending victims at an emergency site. Triage, the stabilisation of victims and the clearing of the site are the key aspects of each session. The aim is to allow participants to put into practice the theories of mass casualty management.

The MUSTER software has the following unique functions:

- **It enables the definition of specific emergency scenarios based on hazard analysis**. In Nepal, for example, a scenario was developed to replicate an earthquake in Kathmandu Valley – the disaster generally accepted by planners as the worst-case scenario.

- **It includes realistic and dynamic scenarios based on available input**. Types and levels of resources, for instance, vary between countries and regions and the scenarios can be tailored to reflect the contextual situation of the training programme.

- **It provides realistic and dynamic injury patterns which are based on medical records**. Unlike other modalities of training, the victims in the MUSTER simulations deteriorate if they are not given appropriate attention. Vital signs change depending on treatment and some victims are programmed to die unless they are successfully stabilised.

3. ORGANISING THE TRAINING PROGRAMME

3.1 EQUIPMENT

The following equipment should be available for use throughout the training programme:

- Computers – enough for the anticipated number of participants as well as three for use by the facilitators (see also Section 3.5).
- UPS for each of the computers, or if this is not possible, for the server.
- A multimedia player.
- A video player.
- An overhead projector, acetates and pens.
- Costumes and props for the debriefings.
- Relevant documents and handouts.

3.2 PERSONNEL

The number of facilitators needed during the training programme is dependent both on budget and on the availability of trained personnel. However, when deciding how many people to employ, please note the following:

- More than one person should do the presentations.
- There must be a facilitator who has been trained in presenting the MUSTER software.
- There should be a computer expert present throughout the training to deal with any problems.

3.3 LOCATION OF THE TRAINING PROGRAMME

The nature of computer-based training is such that the location of the training is a fundamental criteria to its success. The computer network, for example, relies on the continuous supply of electricity. It is therefore important that the training programme is conducted in an institution in which there is a backup generator to cover electricity cuts.

The location of the training programme must also take into account the target participants. Logistical issues need to be analysed in relation to the need for training in certain areas.

3.4 TIMING OF THE TRAINING PROGRAMME

It is important to ensure that as many participants as possible will be able to attend the training programme. It is therefore necessary to schedule the programme so that it does not coincide with the monsoon season, religious festivals, or the examination period of teaching hospitals.

3.5 SETTING UP THE COMPUTER NETWORK

One of the key components of this modality of training is the team-building interaction created by the computer network. If something causes the network to collapse then there is the risk of the whole simulation being lost. It is therefore vital that the computer network remains operational throughout the training session.

Computers: There must be enough computers available to train the anticipated number of participants, with no more than two participants per computer. The simulations contain a large amount of data so it is important to ensure that the computers are of sufficient quality to cope.

UPS: Each computer should be linked to UPS so that minor changes in the electricity supply do not disrupt the simulations. If this is not possible, the server must have UPS otherwise the whole simulation could be lost.

Backup server: There must be a 'spare' computer (not used by participants) that can act as the server if the original server develops problems.

3.6 PARTICIPANTS

It is crucial to determine the target group for each of the computer-based mass casualty management training sessions.

Institutions: This training can be of use to a wide range of institutions. It is important to identify those which will benefit the most and whose preparedness for disaster is essential to an effective response.

Number of participants from each institution: It is useful to train a significant number of people from each health facility as this will be more likely to ensure that there is some level of institutionalisation of the mass casualty management system and it may increase the amount of follow-up activity that the participants engage in.

Profession of participants: It is important that doctors, nurses and paramedics are all trained in mass casualty management if the system is to work in practice. The training programme must be targeted so that it reaches the people most in need of training. Initially this will probably be the doctors and nurses from major emergency wards.

Training medical and nursing students can be very rewarding and their attendance can be of great benefit because of their relative enthusiasm and their computer skills. Including some students in the groups should be considered although their contribution has to be weighed against the long-term usefulness of training people who may not stay in the area.

Attendance: The way in which the participants are invited is of extreme importance in terms of reaching the target groups and of ensuring that those invited turn up.

There are a number of means to ensure that everyone attends. Firstly, consider asking those invited to confirm that they will be attending. Each institution should provide a list of attendees by a given date before the training programme. This would allow the invitation of other people, if necessary.

It is important to ensure that if, despite preparations, the participants do not turn up on the day, other people can be invited to take their place. A list of available medical students could be used for this purpose.

Note: A registration form can be found in Section 5.8. Each participant should be recorded on this form in order both to ensure that attendance is monitored and to enable the effective grouping of participants throughout the session.

3.7 MISCELANEOUS

Press Release: Informing the press about the coming training session will raise the profile of both mass casualty management and computer-based training.

Certificates: Participants should be provided with a certificate of attendance. A template is included in Section 5.11. This formalises the training session and provides documentation of people with the skills to be involved in real mass casualty management incidents.

Alternative activities: Despite all precautions, the computer network may cause problems. It is important that the training can continue if this occurs. Backup presentations, discussion of relevant issues, or even conducting a simulation without the use of the computers are options which should be prepared in advance.

4. CONTENT OF THE TRAINING PROGRAMME

The following sections outline the activities in the order in which they take place in the suggested agenda.

4.1 AGENDA

A suggested agenda for a two-day computer-based mass casualty management training session can be found in Section 5.1. It is important to be flexible with this agenda as different components will need greater emphasis with different participants. If the suggested agenda is used, the timelines in Section 5.2 should be referred to. They indicate the order in which actions need to be taken as well as the number of facilitators needed at each stage of the session.

4.2 DAY ONE

Day One should provide the participants with an introduction to the importance of and theory behind mass casualty management systems. The participants are introduced to the MUSTER software and are given the opportunity to practice before engaging in the first simulation exercise. This exercise is conducted without any discussion or preparation by the participants. The simulation is followed by a debriefing which highlights the need for mass casualty management systems.

4.2.1 Theory presentation

Aim: To give the participants a strong theoretical foundation on which to build throughout the training session. The participants must have a basic grounding in mass casualty management theory in order to be successful in the computer simulations.

Content: A copy of the theory of mass casualty management presentation can be found in Section 5.3. The importance of mass casualty management within the context of the participants should be highlighted. The very fact that training is being conducted indicates that there is a need for a mass casualty management system and this must be emphasised.

Time should be allowed for questions following the presentation. There is a lot of information which may be new to the participants and there may be some queries over some of the points made – e.g. the different levels of triage, what constitutes a 'black' victim, or the Noria Principle.

Note: The presentation can become quite dry because of the amount of theory involved. It is made more interesting by the introduction of the personal experiences of the presenter. The ability to emphasise the relevance of mass casualty management in the context in which the participants work is key to the successful introduction of this theory.

The presentation is available on PowerPoint but is important to also have a version for use on an overhead projector in case the computer system does not work.

4.2.2 MUSTER presentation and online demo

Aim: To give the participants an accessible introduction to the software through presentation and practice.

Content: A copy of the PowerPoint presentation used in previous training programmes can be found in Section 5.4. The presentation is available on PowerPoint but is important to also have a version for use on an overhead projector in case the computer system has problems.

The demonstration should start with the background – scrolling up and down, the victims' positions etc – and then go through all of the actions one by one. The short-cut keys must be shown and the meaning of the red and blue dots above the victims should be highlighted by logging on two doctors who go to the same victim. Participants also need to know how to move between locations and how to send messages.

It is essential to ensure that the participants do not over-use the mouse. This causes severe problems in the network and causes the whole simulation to slow down. This should be emphasised initially and then re-emphasised during the trial simulations.

Note: The online demonstration should be lead by the person controlling the mouse.

Participants and trainers listening to the MUSTER presentation.

4.2.3 MUSTER trial simulations

Aim: It is very important that the participants are given enough practice on the computer before the simulations begin. The simulations need to be a dynamic forum in which people feel comfortable enough to put newly learnt theory into practice. The trial simulations aim to ensure that this is the case.

Content: The first trial should take place in the hospital setting. Participants should be encouraged to use all of the options available to them rather than attempt to stabilise a victim.

A second trial should use the earthquake simulation in order to allow the participants to practice moving between locations and communicating with each other.

Note: The participants should be paired together so that there is a combination of medical experience and good computer skills at each computer. The registration form (Section 5.8) can be used to facilitate this.

There should be enough facilitators to ensure that participants can be monitored. It is important to be available to answer specific questions but it is also important to check that the participants are taking full advantage of the practice session rather than simply trying to treat the patient.

Following the hospital simulation it is a good idea to make the participants think about tagging and what constitutes a red victim or a yellow victim. They have all treated the same injuries and will probably have tagged them differently. Use this discussion time to get them thinking about triage and also as time to reboot the server so that the earthquake simulation runs more smoothly.

4.2.4 Earthquake scenario

Aim: To show the participants what to expect during a mass casualty incident and to highlight the difficulties encountered if there is no mass casualty management system in place.

Setting up the session: To set up the session, follow the instructions below. It takes time for the session to be ready so ensure that you begin the set-up ten minutes before you want to begin the scenario.

- Open the server icon.
- Open the supervisor icon.
- Double click on 'Nepal version'. The computer automatically checks the simulation. Once it has finished checking;
  - Click on the 'create' button.
  - Click on the 'start' button.
- Reduce the speed to 10% until all participants are logged on and the simulation has begun.

Participant log on: When logging on the participants, please note the following:

- Each computer should be logged on as the correct agent. It is important that the number of the computer is written before the name of the participant so that it is easier for everyone to monitor who is doing what.

- Log each computer on separately. It is a good idea for one person to log-on the doctors and another the nurses. This will prevent a delay in the start-up caused by two people selecting the same agent.

- Don't allow anyone to start until all the agents have been logged on because this will slow down the network.

- When all participants are logged on and are ready to begin remember to increase the speed to 100%. This is done on the server screen.

Roles: It is essential that the roles of the facilitators are decided upon before the simulation begins. However, the simulation should be monitored and the roles added to or adjusted as required.

Please note that there needs to be at least one person available throughout the simulation to monitor the actions of the participants and to be available to solve problems or answer questions.

The following roles are examples which work well when played during the same scenario:

Ministry of Health: This role should be played by the person at the supervisor screen. His / her job is to send formal messages from the Ministry regarding the overall situation as well as reply to requests for resources or help.

Journalist: The number of journalists active in the first simulation is dependent upon the success of the group. If they are very successful in their response to the situation, then it is worth adding more journalists and it is possible to play more than one journalist on one computer. The journalists should try to get as much information as possible from the participants and if they don't co-operate the journalists can speak to the victims and interfere with treatment. The length to which the journalist goes to get information must relate to the reactions of the participants.

Police officer: The police officer should offer to provide assistance in security matters and can also be the person informing the participants of road blocks etc.

Messages: The messages sent during the simulation should reflect the actions of the participants. They are a way of highlighting mass casualty management issues whilst the action is taking place and are also a means of causing realistic problems. The following suggested messages should be timed according to the needs of the participants and should be developed based on their reactions:

- *"The Minister's daughter was in the area at the time of the earthquake. Her name is Victim 34. Please attend to her immediately."*

The response to this message is a key aspect of the debriefing (see Section 4.2.5). The issue should be pursued throughout the simulation by all of the facilitators.

- *"Bir Hospital has collapsed. Do not send any patients there."*

- *"Tripureswore Road is blocked with rubble. Please find alternative means of transporting patients."*

- *"The Minister will be arriving at the AMP in 5 minutes. Please prepare a situation report."*

- Others: If the site is not being cleared quickly, then messages should be sent to remind the participants of the importance of quick evacuation and the importance of following the 3T principle.

4.2.5 Debriefing

Aim: The debriefing is used to highlight the main aspects of mass casualty management as they relate to the specific earthquake scenario.

The point of the first debriefing is to be quite tough. Highlighting the issues is vital to the success of the whole training session and this debriefing is an effective means of emphasising how many things the participants need to think about.

Content: It is important that the roles played in the debriefing reflect the events of the simulation. There should be a 'Minister of Health', a 'UN Representative', and a 'journalist'. It is more effective if the facilitators play the role they were assigned in the simulation as they are more aware of the issues that are relevant to the particular participants. The facilitators playing a role should ideally have a prop or some piece of costume which indicates who they are.

The need to collect information can drive the content of the debriefings. The reaction of the participants will determine how strongly the issues should be stressed. If the participants have never been involved in a mass casualty management exercise, it is unlikely that they will have collected all the information they should have. This point should be highlighted so that it can be improved in the next simulation.

In general, the journalist should ask about facts and figures. These can include the number of casualties as well as information about number of people tagged and transported. The table in Section 5.10 should be used by the 'journalist' to record the information given by the participants. This information is then used for the performance evaluation to emphasise issues such as co-ordination and having an overview of the whole situation (see section 4.3.1).

The UN Representative should be interested in the application of mass casualty management theory in this setting. For example, how the participants co-ordinated and how the triage system worked - who triaged the victims, how they co-ordinated with those treating the patients, whether there was a distinction between those who triaged and those who treated, did red victims get priority or was it still first come first served. This again needs to be flexible in order to be

effective. The person playing the UN Representative must be aware of the activities of the particular group of participants so that they can highlight the areas of concern.

The Minister of Health should be most concerned about his daughter. His reaction obviously depends on what happened to her.

Notes: If there are enough resource persons, it is useful for someone to act as a facilitator in order for the others to stay in their roles throughout the debriefing.

The necessity for co-ordination is especially crucial to point out again and again. The end of the debriefing should be marked by the facilitators taking off their costumes. Once everyone is out of role it is useful for each facilitator to say something positive about the simulation.

4.3 DAY TWO

Day Two of the training programme is a chance for the participants to review mass casualty management theory. Their performance in the first simulation should be assessed, they should be given another theory presentation, and should be given time to prepare for the second simulation. In the afternoon, emphasis is placed on the real world and the application of theory to the context in which the participants work.

4.3.1 Evaluation of Day One simulation

Aim: The evaluation of the unplanned exercise of Day One gives the facilitators the opportunity to highlight the importance of mass casualty management principles. Because it relates specifically to their own actions, the theory becomes more accessible to the participants.

The focus should be on the performance of the group rather than individuals.

Content: A template for the presentation of the evaluation of Day One can be found in Section 5.6. It provides slides to be completed which facilitate the analysis of the performance and includes suggestions for possible issues to highlight. Each evaluation must be adapted to the specific issues raised and the group's performance.

Note: It is important to include victim profiles from the Day One scenario in this evaluation as it makes it more relevant to the participants. Approximately 10 victims should be included to cover the main points. Please note that the profiles should not reflect the mistakes of any individuals. They should be chosen to represent the actions of the group as a whole.

Patient's baseline information & injuries

Life expectancy with and without treatment

Record of actions involving this patient
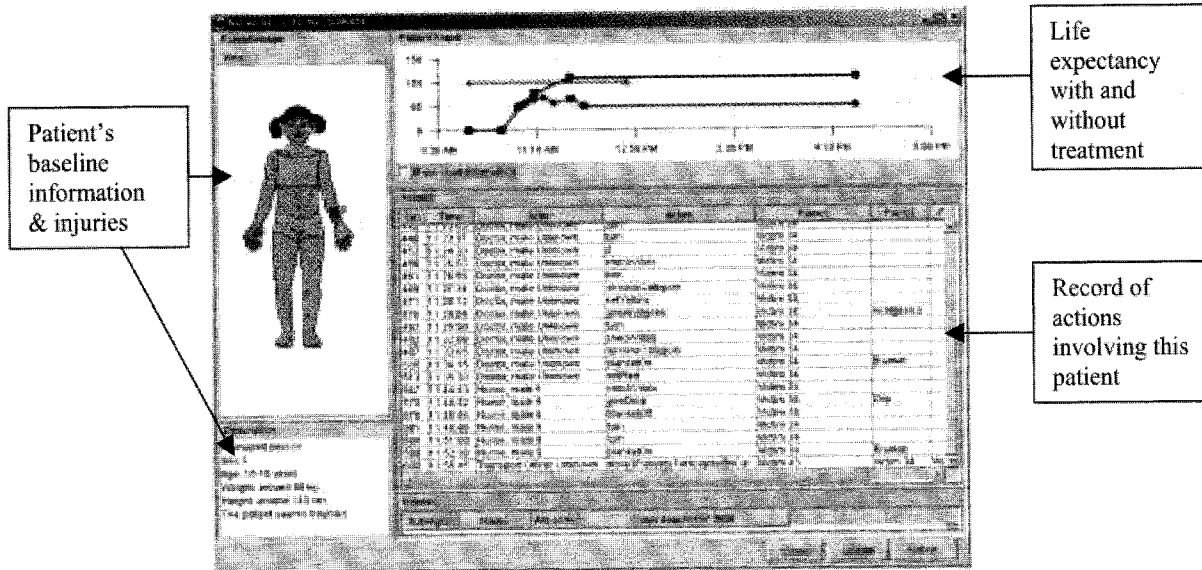
An example of the patient profiles used during evaluations.

4.3.2 Mass casualty management video

Aim: The showing of a half hour video on mass casualty management is intended to consolidate the theory introduced in Day One (see Section 4.2.1) and highlighted in the evaluation of the participants' performance on Day One (see Section 4.3.1).

Content: The video should reflect the context in which the training is taking place. In previous training programmes in Nepal, the video used was created by WHO Nepal and the Epidemiology and Disease Control Division of the Department of Health Services, Ministry of Health. It is of use in any training session as it highlights all the major issues and is available in both English and Nepali.

Note: Remember to check if the tape is at the start before the day's activities begin. To ensure that this is the case, always rewind the video after it has been shown.

4.3.3 Discussion of rescue chain / pre-planning

Aim: This is intended as time for the participants to work out roles and means of co-ordination for the second simulation.

Content: It is important that the main principles of mass casualty management are incorporated into any strategy developed by the participants. The roles to be played at each computer should be defined at this point.

Note: This session needs to be facilitated by one of the trainers in order to ensure that all points are addressed. This facilitator should also ensure that those setting up the scenario know the total number of each type of agent (e.g. doctor, nurse, incident commander) that is required.

4.3.4 Air-crash scenario

Aim: The second scenario gives the participants the opportunity to appreciate the success that can be achieved by ensuring the effective use of mass casualty management systems. It is important to test the areas which were poor in the first simulation. The content of this scenario should be adapted to the needs of each group.

Setting up the session: To set up the session, follow the instructions below. It takes time for the session to be ready so ensure that you begin the set-up ten minutes before you want the scenario to start.
- Open the 'server' icon
- Open the 'supervisor' icon
- Double click on 'Kathmandu Airport version'. The computer automatically checks the simulation. Once it has finished checking;
- Click on the 'create' button
- Click on the 'start' button
- Reduce the speed to 10% until all of the participants are logged on and the simulation can begin.

Supervisor log on: The supervisor must log-on first and then add the correct number of actors to the scenario. This information must be gathered during the discussion period prior to the scenario (see section 4.3.3).

Participant log on: When logging-on the participants please note the following:

- Each computer should be logged on as the correct agent. It is important that the number of the computer is written before the name of the participant so that it is easier to monitor the actions of each participant and give help where required.
- Log-on each computer separately. It is a good idea for one person to log-on the doctors and another the nurses. This will prevent a delay in the start-up caused by two people selecting the same agent.
- Don't allow anyone to begin until everyone has been logged on because this will slow down the network.
- If the suggested agenda in Section 5.1 is followed then it is possible to log-on each computer during the coffee break which will avert any problems.
- When all the computers are logged on and the participants are ready to begin, remember to increase the speed to 100%. This is done on the server screen.

Roles: As with the Day One scenario, there are a number of roles which can be played. The ones below are the same as those indicated in Section 4.2.4 but it should be noted that the emphasis placed on each one must be decided based on the needs and actions of the specific group of participants. Please note that there needs to be at least one person available throughout the simulation to monitor the actions of the participants and to be available to solve problems or answer questions.

Ministry of Health: This role should be played by the person at the supervisor screen. His / her job is to send formal messages from the Ministry regarding the overall situation as well as reply to requests for resources or help.

Journalist: The number of journalists active in the second simulation is dependent upon what happened in the first simulation. It is possible to play more than one journalist on one computer. The journalists should try to get as much information as possible from the participants. If they don't co-operate the journalists can speak to the victims and interfere with treatment. The length to which the journalist goes to get information must relate to the reactions of the participants.

Police officer: The police officer should offer to provide assistance in security matters and can also be the person informing the participants of road blocks etc.

Hospital Director: This role is useful if the participants are not thinking about how they evacuate the victims. The Director can demand that records are filled out, that patients arrive in a stable condition and that the hospital is informed of the transfer before the victims are sent.

Messages: The messages sent should reflect the actions of the participants. They are a way of highlighting mass casualty management issues and should at this stage in the training be focussed on issues which still seem to be unclear. The following suggested messages should be timed according to the needs of the participants and should be developed based on their reactions:

- *"The British Ambassador and his wife are thought to have been on the plane. Please identify them and give them all possible help."*

The introduction of VIPs in this scenario should be to increase the amount of work that the participants have to do - even if this work is only dealing with the media rather than actually attending the victims. In order to avoid a repeat of the Day One scenario, it is useful to begin by only giving descriptions of the two VIPs.

- *"His Majesty the King wishes to visit the site. For security reasons the AMP should therefore be closed. Please prepare to shut down and be ready for his arrival. Once the visit is over, the AMP can be re-opened."*

The AMP cannot be closed for a VIP. The participants need to be able to diplomatically refuse to stop their activities.

- *"There is a crowd developing around the entrance to the airport. It is restricting the transportation of victims."*

It is important that the participants are aware that their role in a mass casualty incident may not only be medical triage and treatment. They may have to manage other problems in order to ensure that their medical work is not affected.

4.3.5 Debriefing

Aim: This debriefing should highlight any remaining problems regarding mass casualty management systems and should emphasise the need for each individual to co-ordinate with the rest of the team. The purpose of the debriefing is to indicate both the positive and negative activities of the group. It should not be focussed on the individual. This is especially important to note in relation to the Incident Commander.

Content: It is useful to remove the Incident Commander from the room for the first part of the debriefing so that the other participants realise that they too need to keep good records of what has happened.

It is important that the roles played in the debriefing reflect the events of the simulation. There should be a 'Minister of Health', 'journalist', 'Hospital Director' and possibly a representative of the Embassy whose VIPs were involved in the crash.

Ministerial Debriefing: 'Minister of Health', 'Minister of Civil Aviation' & 'UN Representative' listening to the report of the Incident Commander.

Minister of Health: The main points of interest are how the participants dealt with the VIPs and whether they successfully cleared the site. The Minister can also highlight the positive actions taken by the participants.

Journalist: It is the role of the journalist to get the correct data about the casualties - number of victims, number tagged, number transported etc. The journalist should check that the figures given add up. The template in Section 5.10 can be used to facilitate the collection of this data.

The journalist can also add some confusion by trying to take photographs of the Incident Commander giving his report. This helps to increase the realism of the debriefing.

Hospital Director: The role of the hospital director is dependent upon the way in which the participants co-ordinated with the hospital during the simulation. Points to be highlighted include: the need to inform the hospitals before victims are sent; the importance of stabilising victims ready for transportation; the necessity to provide account for what has happened to each victim following the crash.

Embassy Representative: The role of the representative is determined by the way the participants reacted to the VIPs introduced during the simulation.

It is more effective if the facilitators play the role they were assigned in the simulation as they are more aware of the issues that are relevant to the particular participants.

Note: If there are enough resource persons, it is useful for someone to act as the facilitator. The facilitator should ensure that all of the principles of mass casualty management are discussed.

4.3.6 Group work and presentation of policy recommendations

Aim: To give the participants the opportunity to discuss the application of mass casualty management within their specific context.

Content: The participants should be split into small groups. Each group should discuss the problems of introducing mass casualty management into their country and should also attempt to provide a solution to each problem. They should write their problems and solutions on an acetate to display on an overhead projector.

After the group work, the participants should come together and each group should present their ideas so that they can be discussed.

Note: The groups may highlight the same issues and suggest similar solutions. If this is the case then the resource person facilitating the discussion should try to limit any repetition.

4.3.7 Emergency planning presentation

Aim: To continue to relate the simulations and theory to the real world by highlighting the current level of preparedness for disaster within the health sector and indicate any activities that are taking place to improve it.

Content: An example presentation created by EHA WHO Nepal can be found in Section 5.5. The presentation is available on PowerPoint but it is important to also have a version for use on an overhead projector in case there are problems with the computer system. The presentation discusses the situation within the health sector of Nepal. If the training programme is taking place outside Nepal, or is directed at participants working in other countries, this presentation must be adapted to their context.

Note: If it is possible for someone within the health sector planning system to give the presentation, it makes it more effective. Participants' questions can then be answered by someone with authority.

4.3.8 Evaluation of Day Two simulation

Aim: To give the participants encouragement about how much they have learnt and how important it is to continue mass casualty management within their own institutions.

Content: A template of the presentation can be found in Section 5.7. Due to lack of time to prepare, it is not possible to include victim profiles in this presentation.

Note: At this stage, the participants may be less attentive. It is therefore sensible to keep this presentation relatively short.

4.3.9 Participant evaluation of training programme

Aim: To determine the participants' response to the training programme in order to ensure that subsequent programmes are effective.

Content: An example of a questionnaire can be found in Section 5.9. It should be adapted to ensure that it covers all of the aspects of the specific training programme.

Note: The collection of evaluation forms is only useful if these forms are then analysed to assess areas for improvement.

4.3.10 Distribution of certificates

Aim: To provide the participants with a record of their attendance at the training session.

Content: Certificates should be given to each of the participants.

Note: This is also an opportunity to ensure that any administrative issues (such as per diems or travel expenses) are concluded.

5. APPENDICES

5.1 SUGGESTED AGENDA

TIME	ACTIVITY
DAY ONE	
09:00 – 09:30	Welcome Speech and Introduction
09:30 – 10:30	Theoretical Approach to Mass Casualty Management
10:30 – 11:00	Coffee Break
11:00 – 12:00	Introduction to Simulations and MUSTER
12:00 – 13:00	MUSTER Trial Simulations 1) Hospital, 2) Earthquake
13:00 – 14:00	Lunch Break
14:00 – 16:00	Earthquake Simulation (without preplanning)
16:00 – 16:30	Debriefing to the Minister of Health
DAY TWO	
09:00 – 09:30	Feedback on Earthquake Simulation
09:30 – 10:00	Mass Casualty Management – A Training Video from WHO Nepal
10:00 – 10:30	Group Discussion on How to Organise a Rescue Chain
10:30 – 11:00	Coffee Break
11:00 – 13:00	Air-crash Simulation (with preplanning)
13:00 – 14:00	Lunch Break
14:00 – 14:30	Debriefing to the Minister of Health
14:30 – 15:30	Group work on Policy Recommendations and Follow-up
15:30 – 16:30	Emergency Planning Presentation
16:30 – 17:00	Feedback on Air-crash Simulation
17:00 – 17:30	Distribution of Certificates and Evaluation of the Training Programme

5.2 TIMELINE OF EVENTS

5.2.1 Day One

DAY ONE		
TIME	**ACTIVITY**	**NUMBER OF FACILITATORS**
8:45	Start up all computers	1
	Register participants	1
9:00-9:30	Welcome speech	1
	Introductions	All
9:30-10:30	Mass casualty management presentation	2 (1 to speak, 1 to move slides)
	Work out the pairing of participants & make name plates	1
10:30-11:00	*Coffee Break*	All
	Put out name plates	1
11:00-12:00	MUSTER presentation	2 (1 to speak, 1 to move slides)
	Start up hospital scenario (at slide 28)	1
12:00-13:00	Online presentation	3 (1 to speak, 1 to move mouse, 1 to be 'extra' doctor)
	Practice simulation	All (1 to act as MOH, rest to facilitate participants)
13:00-14:00	*Lunch Break*	All
	Reboot all computers	1
13:50-14:00	Start up earthquake scenario &	
	log-on participants	2 (1 to set-up and 1 to log-on)
14:00-16:00	Earthquake Scenario	All (1 to act as MOH, 1 to facilitate participants, other to play roles such as journalist/police etc)
16:00-16:30	Debriefing to Minister	All (1 to act as facilitator, rest to take roles played in scenario)
16:30-16:45	Analysis of day (facilitators only)	All
16:45-	Evaluation of participants' performance & prepare presentation for Day Two	At least one, 2 is better

5.2.2 Day Two

DAY TWO		
TIME	ACTIVITY	NUMBER OF FACILITATORS
8:45	Start up computers and check video is at beginning	1
9:00	Check all participants have arrived	1
9:00-9:30	Evaluation of Day One performance	2 (1 to speak, 1 to move slides)
9:30-10:00	Mass casualty management video	1
10:00-10:30	Discussion of rescue chain	1
10:30-11:00	*Coffee Break* Start up airport scenario & log on participants	2
11:00-13:00	Airport scenario	All (1 to act as MOH, 1 to facilitate participants, other to play roles such as journalist/police etc)
13:00-14:00	*Lunch Break*	All
14:00-14:30	Debriefing to Minister	All (1 to act as facilitator, rest to take roles played in scenario)
14:30-15:30	Group work on policy recommendations	2
14:30-16:30	Evaluation of Day Two performance & creation of presentation	1
15:30-16:30	Planning presentation	2 (1 to speak, 1 to move slides)
16:30-17:00	Evaluation of Day Two performance	2 (1 to speak, 1 to move slides)
17:00-17:30	Participant's feedback & distribution of certificates	2
17:30-	Analysis of day (facilitators)	All

5.3 MASS CASUALTY MANAGEMENT PRESENTATION

Theory of Mass Casualty Management

Prepared by by Mr. Erik Kjaergaard
Emergency & Humanitarian Action
WHO Nepal

Based on
Establishing a Mass Casualty Management System
(PAHO, Washington, 1995) and
Manual 2 Disaster Medicine
(AEM, Australia, 1995:99)

Definitions

- **Mass Casualty Incident**
  Any event resulting in a number of victims large enough to disrupt the normal course of emergency and health care services.
- **Mass Casualty Management**
  Management of victims of a mass casualty event, aimed at minimizing loss of life and disabilities.
- Mass casualty is a relative term depending on the capacity of the health system.

Challenge and Objective

- The challenge: The scarcer the resources, the more efficient the organization must be.
- The learning objective: To accustom you in establishing a mass casualty management system designed to maximize the use of existing resources by multi-sectoral preparation and response as well as strong pre-planned and tested coordination.

Inappropriate Approaches

- **Scoop and Run Approach**
  Competition and no coordination.
- **Classical Care Approach**
  Basic triage and field care before evacuation but no coordination between the field organization and the receiving health care organization.

Appropriate Approach

- **Mass Casualty Management Approach**
  Pre-established procedures for resource mobilization, field management and hospital reception.
- This theoretical approach must be adapted to specific situational problems in terms of topography, infrastructure, communication and scarce health facilities.

Purpose of Mass Casualty Management Systems

- Accelerate and amplify daily procedures to maximize the use of existing resources.
- Establish a coordinated multi-sectoral rescue chain.
- Bring disrupted emergency and health care services back to routine operation promptly and efficiently.

General Principles of Field Mass Casualty Management

A Multi-sectoral Rescue Chain

PRE-HOSPITAL ORGANIZATION   HOSPITAL ORGANIZATION
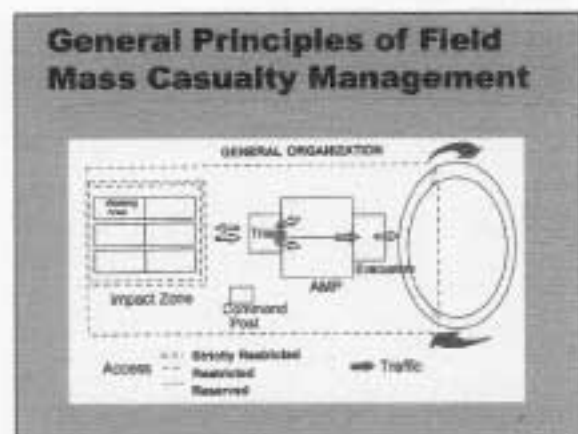
Alerting Process

Objectives:
- To confirm the initial warning.
- To evaluate the extent of the problem.
- To ensure that appropriate resources are informed and mobilized.
- The core of the alerting process is the dispatch (communications) center that must have the capacity to mobilize a small assessment team (flying team).

Field Area Identification

- The second role of the initial assessment team is to identify the field areas to be established. These will include:
- ✓ Impact zone,
- ✓ Command Post Area,
- ✓ Advance Medical Post Area,
- ✓ Evacuation Area,
- ✓ VIP and Press Area, and
- ✓ Access Roads.

Safety Measures

- Preventive actions include establishment of the following restricted areas:
1. The impact zone - Strictly restricted to professional rescuers.
2. The secondary area - Restricted to authorized staff involved in the rescue operation.
3. The tertiary area - Restricted to press officials and a buffer zone for onlookers.

Restricted Areas RTA
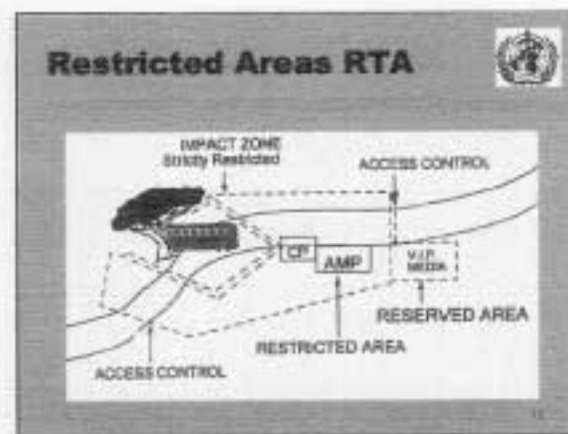
The Command Post

Objectives:
- Coordinate the various sectors involved in the field management.
- Link with back-up systems to provide information and mobilize resources.
- Supervise victim management.
- The command post must be set up at the very beginning of a rescue operation.

Preconditions for an Efficient AMP

- Located in a safe area, with direct access to the evacuation road, at a short distance from the Command Post and in a clear communication zone.
- Good triage capacity.
- Specifically trained medical teams.
- Good radio-communications between the field and the hospital.
- Good coordination of all involved sectors.

Design of a Basic AMP

3 T Principle

TAG

↓

TREAT

↓

TRANSFER
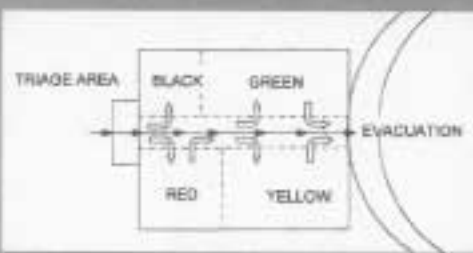
Triage

- Triage is the process by which victims are sorted, prioritized, and distributed according to their need for first aid, resuscitation, stabilization, evacuation, and hospital care.
- Triage is a continuing process which begins in the field and continues into the hospitals.

Requirements for Triage

- Triage, by implication, necessitates accurate medical judgment. It should always be carried out by the most clinically skilled and experienced doctor.
- Triage has to be undertaken in isolation; it CANNOT be combined with resuscitation and victim stabilization.
- The most skilled and experienced doctor should NOT be involved in individual case management.

Principles Behind Triage

- Based on urgency (victim status), likelihood of survival, and care resources available.
- Operational objectives:
  1) Quick identification of victims needing immediate stabilization (field medical care).
  2) Quick identification of victims who could be saved only by life-saving surgery.
- Only a small number of victims need immediate treatment in a hospital.

Triage Color Codes

- Red: Requires immediate stabilization care.
- Requires close monitoring; care can be somewhat delayed.
- Green: Requires delayed or no treatment.
- Black: Dead.
- If the AMP is successful, the number of red victims should decrease, and reclassification will be necessary before evacuation.

Optimizing Triage

- When color code triage is utilized, the percentage of incorrect classification decreases in accordance to experience.
- If red and victims are categorized in an "acute victim" category and green and black in a "non-acute victim" category, the percentage of incorrect classification is significantly lower.
- Tagging should be combined with spatial relocation of victims.

Levels of Triage

0) Field Triage (non-medical!)	Green & Red **Ribbons**	
1) Medical Triage	Green, , Red & Black Triage **Tags**	
2) Evacuation Triage	Green, , Red & Black Triage **Tags**	
3) Hospital Triage	Green, , Red & Black Triage **Tags**	

Evacuation Color Codes

- Red: Victims to be transferred immediately or as soon as possible to hospital, by equipped ambulance, with medical escort.
- Victims to be transferred, after evacuation of all red victims, to hospital, by ambulance, with first aide escort.
- Green: Victims to be transferred, at the end of the field operations, to appropriate health care facilities by available vehicles, without escort.
- Black: Victims to be transferred to morgue.

Transport Organization

- Objective: To ensure that victims will be safely, quickly, and efficiently transferred by appropriate vehicles to appropriate and prepared health facilities.
- Initial task: Stop spontaneous evacuation in unsafe, uncontrolled conditions to any unprepared health care facility.
- In limited resource conditions, transport of victims should be staggered.

Rules of Evacuation

No victim may be removed from the AMP to the hospital before:

- The victim is in the most stable possible condition.
- The victim is adequately equipped for the transfer.
- The receiving hospital is correctly informed and ready to receive the victim.
- The best possible vehicle and escort are available.

The "Noria" Principle

- Victim movement must be in a "one way" direction and without any crossings.
- Victim movement will be organized as a kind of one-way "conveyor belt", taking them from a basic first aid care level to sophisticated levels.
- Each transport level will have to use its own limited resources in a rotating system.
- Decrease the number of times a red victim is handled between field and hospital.

Victims Flow

"Conveyor Belt" Management

Impact Zone · Collecting Point · AMP · TRANSFER · HOSPITAL

Victim Flow   Transport Resource Flow
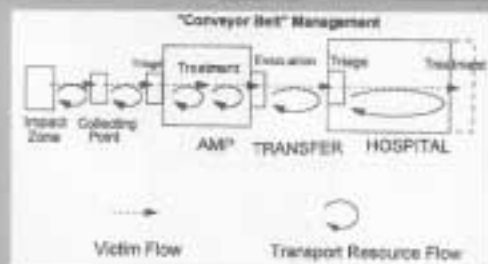
Field Organization Checklist

- Situation Assessment.
- Report to Central Level.
- Working Areas Pre-Identification.
- Safety.
- Command Post.
- Radio Communications.
- Search and Rescue.
- Triage and Stabilization.
- Controlled Evacuations.

5.4 MUSTER PRESENTATION

WHO Nepal presents:

MUSTER
Multi User System
for Training
Emergency
Response

Computer-based Mass Casualty Management Simulation Exercises

Prepared by Erik Kjaergaard
based on a presentation from
IFAD in Denmark

IFAD

MUSTER IN ASIA

- Developed by IFAD in Denmark in collaboration with emergency managers and medical doctors.
- Currently version 2 of the software.
- WHO Nepal acquired the software in 2001.
- WHO and MOH conducted training for more than 350 health sector staff in Nepal in 2001 and will train additional 200 responders in 2002
- WHO Nepal has the rights to use the sof the whole South-East Asian Region

IFAD

LEARNING OBJECTIVES

General Objective:
- Enhance the emergency response capability of the health sector.

Specific Objectives:
- Introduce a timely and efficient mass casualty management system includ
  - disaster logistics
  - triage techniques
  - victim stabilisati

IFAD

TARGET TRAINEES

Pre-hospital Medical Trainer for:
- Decision Makers
- Medical Doctors
- Nurses
- Paramedics
- Volunteers
- Police
- Military
- Etc.

IFAD

TRAINING OF TODAY 1:4

- Paper
- Table top
- Field exercise
- Real life

IFAD

TRAINING OF TODAY 2:4

- Paper
- Table top
- Field exercise
- Real life

This technique is used by NSET – Nepal on shaking-tables to illustrate seismic risks.

IFAD

TRAINING OF TODAY 3:4

MUSTER

- Paper
- Table top
- **Field exercise**
- Real life

IFAD

TRAINING OF TODAY 4:4

MUSTER

- Paper
- Table top
- Field exercise
- **Real life**

IFAD

WHY MUSTER ? 1:3

MUSTER

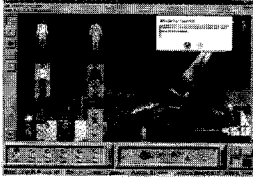Intermediate level -

Supports execution of other simulated emergency drills.

From theory to practice!

From static to dynamic!

IFAD

WHY MUSTER ? 2:3

MUSTER

- **Interactive**
- **Flexible**
- **Dynamic**
- **Team building**

IFAD

WHY MUSTER ? 3:3

MUSTER

- Enables definition of specific emergency scenarios based on hazard analysis.
- Provides realistic and dynamic scenarios based on available input.
- Provides realistic and dynamic injury patterns based on medical records.
- Rules & competencies can be tailored to actual situations.
- Time can be adjusted to real or manipulated time.

IFAD

WORST-CASE SCENARIO

MUSTER

In Nepal defined as a major earthquake

Gujarat earthquake
26 January 2001

IFAD

EARTHQUAKE SCENARIO

Expected number of people killed and injured in Kathmandu Valley

MMI SCALE	PEOPLE KILLED	PEOPLE INJURED
VI	0 – 20	0 – 100
VII	20 – 750	100 – 3,750
VIII	750 – 22,500	3,750 – 112,500
IX	22,500 – 75,000	112,500 – ?

Estimation by Mr. Jaime Argudo, WHO and NSET-Nepal based on destr... of buildings.

IFAD

SCENARIOS

Define training sessions in terms of:
- emergency sites (the scene)
- victims and their injuries
- personnel and actions
- resources
- transportation

IFAD

SCENE DIAGRAM

- Emergency Site
- Triage Area
- Treatment Areas
- Transport Area
- Hospitals

IFAD

ARCHITECTURE

MEDICAL TRAINING MODULE
EMERGENCY TRAINING MODULES
MEDICAL, RESCUE POLICE, FIRE, COMMUNICATION
SUPERVISOR
EVALUATION
SIMULATION
SCENARIOS
ACTORS

IFAD

MUSTER SCREEN

IFAD

ACTORS

A selection of possible players:

Coordinator, Doctor/Medic, Paramedic, Red Cross Worker

Fire Chief/Man, Rescue Worker, Army Doctor, Army Paramedic

Police Officer, Civilian, News Reporter

IFAD

MEDICAL TOOLS

A selection of possible medical resources:

IFAD

MEANS OF TRANSPORT

A selection of possible means of transportation:

Fire Engine · Fire Truck Ambulance · Fire Brigade Helicopter · Police Truck · Police Helicopter

Ambulance · Red Cross Ambulance · Medevac Helicopter · Stretcher

Army Ambulance · Army Helicopter

IFAD

HANDLING

The actors can interact with the victims in a number of ways:

· carry a stretcher
· add support
· classify victims
· move victims
· handle the victims
· dress/undress victims
· put blankets on victims

Paramedic

Army Paramedic

Rescue Worker

IFAD

OBSERVATIONS

The actors can observe and analyze the victims in a number of ways:

· enter into a dialogue with victims
· measure the victims in different ways
· observe victims
· write victims' medical records

IFAD

TREATMENTS

The actors can treat the victims in a number of ways:

· put on a bandage
· attach a drip
· give medicine
· give injections
· add support

IFAD

MEDICAL FEATURES 1:2

·Palpate,
·Stethoscope
·Feel Pulse
·Skin
·Capillary refill
·Sensibility
·Reflex
·Motoric
·Muscle power
·Examine eye

IFAD

MEDICAL FEATURES 2:2

VICTIM INJURIES 1:2

- 100 sub-regions
- 3 severity levels
- Wound, fracture or burn
- Blunt or penetrating
- Syndromes

VICTIM INJURIES 2:2

The victims' injuries are indicated in the following way:

- A wound or a pulsating fracture
- A non-pulsating fracture
- A burn

EVALUATION

- Victims (before and after treatment)
- All actions in the session are logged
- Actions per agent
- Resources (how many, where)
- Messages (who, when)

VICTIM DATA

VICTIM IVD-LINE

The core of the evaluation is the IVD-model (Intra Vascular Deficit) developed by Danish Doctors.

OUR SUCCESS CRITERIA

- Number of saved victims
- Number of correct tagging
- Time taken to clear the site

A collective evaluation of the team performance is emphasised!

TRAINING APPROACH

1. Introduction to MUSTER.
2. Demonstration of the use of hardware & on-line demonstration of the software.
3. MUSTER trial simulations in the hospital and at the disaster site.
4. First MUSTER simulation without mass casualty management procedures.
5. Second MUSTER simulation with mass casualty management procedures

SOP FOR ACTORS

Without Mass Casualty Management Procedures

- Go to accident location by car.
- Begin observation and evaluation of victims.
- Classify victims by triage colour.
- Stabilise victims by medical intervention.
- Write medical journals.
- Transfer needed victims to the h... others to the morgue / hom...

*

SOP FOR ACTORS

1) Incident Commander: take charge, define lines of communication and delegate responsibilities.
2) Transport Officer: transfer priority victims to the hospital; others to the morgue / home.
3) Medical Teams Members:
- Go to accident location by car.
- Do what IC tells you to do (use your notebook to write orders down).
- Begin observation and evaluation of victim...
- Classify victims by triage colour.
- Stabilise victims by medical i...
- Write medical journal...

*

SOP FOR TRIAGE

ABC	Conscious	Tag
Negative	No	Red
Positive	No	Yellow
Positive	Yes	Green

*

SOP FOR VICTIM STABILISATION

- Clear airways and ensure breathing
- Stop bleedings
- Stabilize fractures
- Provide IV fluids – if needed
- Provide blanket – if needed
- Write medical record
- Initiate medical evacuation

* PLEASE NOTE THAT THESE ADDITIONAL SLIDES ARE BASED ON GROUP DICSUSSIONS AND MAY, OR MAY NOT, BE SHOWN DURING ONE OF THE DISCUSSIONS / EVALUATIONS.

5.5 EMERGENCY PLANNING PRESENTATION

**Health Sector
Emergency Planning in Nepal**

Disaster Health Working Group

Why Emergency Planning?

Excellent Hazard Analysis

National Disaster
Management Efforts

The DHWG

The DHWG Secretariat

Creating an Identity

- Institutionalise the Disaster Health Working Group Approved logo
- Establish a legal identity within the national disaster management framework.

The Planning Format

- Adopted the format of *UN Nepal's Disaster Response Preparedness Plan* (Part 1 printed in Kathmandu, 2001) with some modifications:
  1) More focus on health
  2) Higher priority to emergency preparedness.
- Strategic advantage to apply the same format among all disaster responders and all sectors.

The Planning Process

- Collaborative process has progressed through the following phases:
- Consensus regarding hazard analysis and adoption of worst-case scenario.
- Consensus regarding response guidelines: core commitments, guiding principles and basic strategies.
- From senior policy-level via inter-agency level to agency-level and staff preparedness.

Overall Objectives

- To ensure human being's survival and well-being – particularly the health needs of the most vulnerable groups – in whatever emergencies develop.
- The most vulnerable groups are defined as sick, injured, disabled, children, pregnant and lactating mothers, elderly and poor.

Core Commitments

- The health sector aims to provide rapid field assessments within 24 hours of a disaster to enable appropriate and timely response.
- DHWG aims to be instrumental in developing standing readiness to provide initial survival assistance. In case of a major earthquake within 24-48 hours for 200,000 people for 1 month, and within 7 days for 500,000 people for 1 month.

Guiding Principles

- The health sector gives highest priority to vulnerability reduction, capacity building and drafting an emergency plan.
- Preparedness is the responsibility of every health worker and health agency and not simply of disaster managers / units.
- Foreign assistance should be provided only in consultation with officials designated by the Ministry of Health.

Basic Strategies

- The health sector aims at providing a coordinated inter-agency response in close collaboration with external partners.
- The health sector gives priority to rapid health assessment, emergency relief, leadership, mass casualty management, curative care and fundraising.
- The quality and appropriateness of international assistance will be considered more critical than its size, monetary value, or the speed with which it arrives.

DHWG Task Forces

1) Political Recognition & Coordination
2) Disaster Response
3) Disease Control
4) Physical Assessment
5) Hospital Preparedness
6) Emergency Preparedness

- The task forces are yet to be permanently established!

Next Steps

- Obtain input to the health sector emergency plan by all relevant agencies / institutions.
- Change the plan from a policy document to an operational emergency plan.
- Mobilise resources to operationalise the plan, enhance capacities and reduce vulnerabilities.
- Make frequent training programmes and simulation exercises to train emergency response procedures at all levels.

Conclusions

- Emergency preparedness seems much more meaningful than disaster response. Proactive rather than reactive occupation.
- Inter-agency planning is a slow process; losing momentum is easier than gaining it.
- It is sometimes necessary to leave institutional identities behind to pursue a mutual goal among all concerned planners.

5.6 DAY ONE EVALUATION TEMPLATE

Hospital Name
Day One

EVALUATION OF THE

EARTHQUAKE

SIMULATION

Date

Hospital Name
Day One – Victims

No. of Victims	Incident Commander	Ministry of Health
Victims		
Dead		
Rescued		

No overview of number of victims. Only qualified guesses.

Hospital Name
Day One – Transport

Location	No.
Accident Site	
Hospital	
Home	
Morgue	

Group reported moving ?? victims (more than the number of victims reported). The group actually moved ?? victims.

Transport of victims seemed correct according to tag colour. Evacuation priorities were unsound.

Hospital Name
Day One - Tagging Colours

Tag	Group	Ministry of Health
Black		
Red		
Yellow		
Green		

UNTAGGED VICTIMS: Group = ??, MOH = ??

Good individual reports but no consolidated figures.

Hospital Name
Day One – Tagging Success Rate

Classification	Number & Percentage
Correct	(??)
Questionable	(??)
Wrong	(??)
Untagged	(??%)

High success rate but no system of re-tagging.

---

* Hospital Name*
Day One – Main Points

- TAGGING –
  - » Right colour
  - » Right time
  - » Right action
  - » Re-tagging

- OBSERVATION –
  - » Check whole body

- TREATMENT –
  - » RED – wound / pulsating fracture
  - » BLUE – non-pulsating fracture
  - » BROWN - burn

```
┌─────────────────────────────────────────┐
│              *Hospital Name*             │
│        Day One – Think About. . .        │
│                                          │
│   • CO-ORDINATION                        │
│   • COMMUNICATION                        │
│   • DIVISION OF LABOUR                   │
│   • TAGGING                              │
│   • MEDICAL OBSERVATION                  │
│   • TREATMENT                            │
│   • RECORD KEEPING                       │
│                                          │
└─────────────────────────────────────────┘
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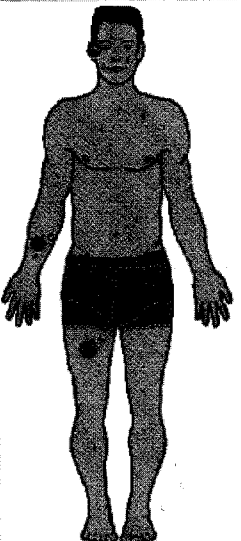
PLEASE NOTE THAT IT IS WORTH HIGHLIGHTING PERTINENT ISSUES USING VICTIM PROFILES FROM THE SCENARIO. THESE PROFILES SHOULD BE INCLUDED BEFORE THE 'MAIN POINTS' SLIDE.

EXAMPLE OF A VICTIM PROFILE HIGHLIGHTED DURING AN EVALUATION:

Actions

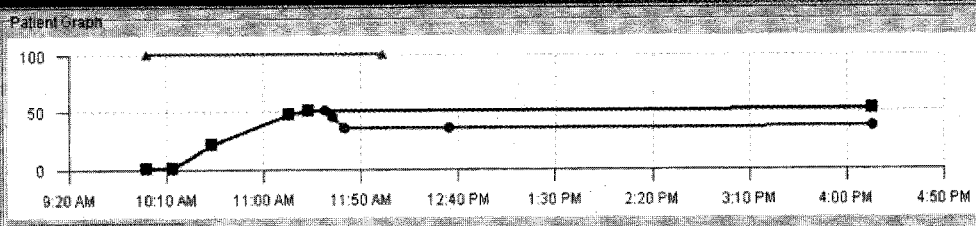| No	Time	Actor	Action	Parm1	Parm2
310	11:00:01	Doctor, male Unknown	j1	Victim 20	
314	11:00:44	Doctor, male Unknown	canYouWalk	Victim 20	
320	11:01:33	Doctor, male Unknown	checkVitals	Victim 20	
324	11:02:26	Doctor, male Unknown	setRed	Victim 20	
450	11:29:50	Nurse, female Unknown	whereDoesItHurt	Victim 20	
453	11:30:20	Nurse, female Unknown	checkVitals	Victim 20	
458	11:31:30	Nurse, female Unknown	giveDrop	Victim 20	Drip
461	11:32:23	Nurse, female Unknown	supplyOxygen	Victim 20	Oxygen Mask
464	11:32:59	Nurse, female Unknown	checkVitals	Victim 20	
472	11:34:34	Nurse, female Unknown	takeAllClothOff	Victim 20	
476	11:35:14	Nurse, female Unknown	giveBandage	Victim 20 - right ear	Bandage
481	11:36:32	Nurse, female Unknown	support2	Victim 20	
484	11:37:15	Nurse, female Unknown	giveCreme	Victim 20	Antibiotic creme
489	11:37:50	Nurse, female Unknown	turn	Victim 20	
491	11:38:18	Nurse, female Unknown	turn	Victim 20	
494	11:39:08	Nurse, female Unknown	putAllClothOn	Victim 20	
497	11:39:58	Nurse, female Unknown	setYellow	Victim 20	

Description

An injured person
Sex: M.
Age: 30-40 years.
Weight: around 75 kg.
Height: around 175 cm.
The patient seems troubled.

Injuries

Subregion	Name	AIS code	Injury description (AIS)
5	right ear	2	unconsciousness < 1 hr.
49	right forearm	2	Radius fracture closed
67	right femur dist	0	Burn
96	left lower leg	2	Tibia fracture NFS

5.7 DAY TWO EVALUATION TEMPLATE

Hospital Name

Day Two

EVALUATION OF THE

AIR-CRASH SIMULATION

Date

Hospital Name
Day Two - Victims

No. of Victims	Incident Commander	Ministry of Health
Victims		
Dead		
Rescued		

Hospital Name
Day Two -Transport

Location	Incident Commander	Ministry of Health
Accident Site		
Hospital		
Home		
Morgue		

Incident Commander reported moving ?? victims while actually moving ??. Transport of victims was correct according to tag colour.

Hospital Name
Day Two –
Tagging - Colours

Tag	Incident Commander	Ministry of Health
Black		
Red		
Yellow		
Green		

UNTAGGED VICTIMS: ?? (Day 1 = ??)

Hospital Name
Day Two
Tagging – Success Rate

Classification	Day 1	Day 2
Correct		
Questionable		
Wrong		
Untagged		

WELL

DONE!!

5.8   PARTICIPANT REGISTRATION FORM

Computer-based Mass Casualty Management Simulation Exercises
*__**FILL IN PERIOD & LOCATION OF TRAINING**__*

<u>*List of participants*</u>

Date :

S.N.	Name	Designation	Office Address	Telephone /Fax	E-mail	Computer Knowledge
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						

5.9   EVALUATION FORM

EVALUATION FORM Computer-based Mass Casualty Management Simulation Exercises

DATE: _____

I.   INFORMATION ABOUT PARTICIPANTS

		Yes	No
1.	Do you work in the health sector? (tick yes or no)	☐	☐

2.   What profession do you have?
(one tick mark only)

Medical Doctor ☐
Medical Student ☐
Nurse ☐
Nursing Student ☐
Paramedic ☐
Volunteer ☐
Other (please specify) _____

3.   In which institution do you work / study?
(one tick mark only)

Hospital ☐
Medical / Nursing College ☐
Government Office ☐
UN Office ☐
NGO ☐
Other (please specify) _____

4.   Previous experiences in mass casualty management?
(one tick mark only)

A lot (years) ☐
Some (weeks) ☐
None ☐

II. ASSESSMENT OF THE TRAINING PROGRAMME

		Yes	No
5.	Did you attend the MUSTER programme last year? (tick yes or no)	☐	☐
6.	Did you learn anything new? (tick yes or no)	☐	☐
7.	Would you like to see the training programme repeated? (tick yes or no)	☐	☐

8. What do you think about ? (one tick mark for each line only)

	Excellent	Good	OK	Bad
The theory class on MCM	☐	☐	☐	☐
The video on MCM	☐	☐	☐	☐
The presentation on emergency planning	☐	☐	☐	☐
The computer simulation exercises	☐	☐	☐	☐

9. What was the best item in the programme? Why?

10. How can we improve the training programme?

III. ADMINISTRATIVE MATTERS

9. What do you think about the training facilities?

10. What do you think about the facilitators of the training programme?

11. Any other comments?

5.10 DEBRIEFING TEMPLATE

DATE:

<u>MINISTERIAL BRIEFING INFORMATION</u>

Category	Medic's Reports		IC Report	(MOH Confirmed)
	Each Report	Total		
Total Victims				
Dead Victims				
Rescued Victims				
Total Transported				
No. Trans to Hospital				
No. Trans to Home				
No. Trans to Morgue				
Total tagged				
Tagged Black				
Tagged Red				
Tagged Yellow				
Tagged Green				
Comments				

MASS CASUALTY MANAGEMENT

5.11 CERTIFICATE TEMPLATE

This is to certify that Dr. / Mr. / Ms.............................. has attended the **"Computer Based Mass Casualty Management Simulation Exercises"** jointly organised by HMG/N, MoH, DHS, Epidemiology & Disease Control Division and World Health Organisation. The training was held from 8 July to 2 August 2002 in Kathmandu, Nepal.

Dr. Klaus Wagner
Representative to Nepal
World Health Organisation

Dr. Govinda Prasad Ojha
Director
Epidemiology & Disease
Control Division