Management of Dead Bodies after Disasters:

A Field Manual for First Responders

Pan American Health Organization

Regional Office of the World Health Organization

World Health Organization

ICRC

International Federation of Red Cross and Red Crescent Societies

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A Field Manual for First Responders

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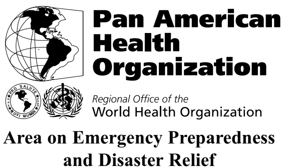

Washington D.C., 2009

PAHO HQ Library Cataloguing-in-Publication

Morgan, Oliver -- ed
Management of dead bodies after disasters: a field manual for first responders.
Washington, D.C: PAHO, © 2006.

ISBN 92 75 12630 5

I. Title II. Tidball-Binz, Morris -- ed
III. Van Alphen, Dana -- ed

1. CADAVER
2. NATURAL DISASTERS
3. DISASTER EMERGENCIES
4. DISASTER PLANNING

NLM WA 840

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A publication of the Area on Emergency Preparedness and Disaster Relief of the Pan American Health Organization, the World Health Organization, and the International Committee of the Red Cross.

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This publication has been made possible through the financial support of the Division of Humanitarian Assistance, Peace and Security of the Canadian International Development Agency (HAPS/CIDA), the Office of Foreign Disaster Assistance of the United States Agency for International Development (OFDA/USAID), the United Kingdom's Department for International Development (DFID) and the European Commission Humanitarian Aid Office (ECHO).

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FOREWORD

Management of the dead is one of the most difficult aspects of disaster response, and natural disasters, in particular, can cause a large number of deaths. Although the humanitarian community has been aware of these challenges for over 20 years, the massive loss of life following the South Asian tsunami in 2004 highlighted limitations in our current capacity to respond. Several large natural disasters in 2005, including Hurricane Katrina in the United States, Hurricane Stan in Central America, and the earthquake in Northern Pakistan and India, further reveal the need for practical guidance.

Natural disasters frequently overwhelm local systems that care for the deceased. Consequently, the responsibility for the immediate response falls on local organizations and communities. The absence of specialist advice or mass fatality planning amplifies the problems, often resulting in the mismanagement of human remains. This is significant because the way victims are treated has a profound and long-lasting effect on the mental health of survivors and communities. In addition, correct identification of the dead has legal significance for inheritance and insurance that can impact on families and relatives for many years after a disaster.

This manual marks an important step toward promoting better treatment of victims and their families. It recognizes the vital role of local organizations and communities and the exceptionally difficult task of managing human remains following disasters.

We are pleased that the principles outlined in this document are being implemented and promoted by a variety of organizations, including the Pan American Health Organization, the World Health Organization, the International Committee of the Red Cross and the International Federation of the Red Cross and Red Crescent Societies.

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1. INTRODUCTION

This manual has two broad aims: first, to promote the proper and dignified management of dead bodies, and second, to maximize their identification. Following disasters, implementing simple measures early on can significantly improve the opportunity for successful identification. However, after the majority of disasters, the immediate management of human remains is done by local organizations and communities and not by specialist teams of national and international experts. Consequently, this manual focuses on practical recommendations for non-specialists.

Immediately after a disaster there is little time to read guidelines, so this manual dedicates one chapter for each key task and uses bullet-points for brevity and clarity. Local coordinators can photocopy and distribute the relevant chapters to individuals responsible for specific tasks, such as body recovery.

Throughout the manual we have chosen to use the term "dead bodies" instead of the more respectful and technically correct term "human remains," because the term "dead bodies" is less ambiguous for readers whose first language is not English.

This manual does not provide a comprehensive framework for forensic investigation. However, following the recommendations will aid the work of forensic specialists when they arrive at the scene. These recommendations will also help communities for whom forensic expertise is unavailable to collect basic information that may aid identification of the deceased. Nevertheless, this manual does not replace the need for specialist forensic identification of victims.

2. COORDINATION

Overview

- Immediately after a disaster, emergency response is often chaotic and uncoordinated.
- Coordination is needed at several levels: local, regional/provincial, and national.
- Disaster preparedness plans may already have identified a coordination structure.
- Early coordination is vital for the following tasks:
  - Manage information and coordinate assessment activities.
  - Identify required resources (e.g., forensic teams, morgues, body bags, etc.).
  - Implement a plan of action for the management of dead bodies.
  - Disseminate accurate information to families and communities about identification of the missing and management of dead bodies.

Effective local coordination

- As soon as possible, and in accordance with existing disaster preparedness plans, identify an agency and name a person to serve as a local coordinator with full authority and responsibility for the management of dead bodies (e.g., local Governor, Police Chief, Military Commander, Mayor).
- The selection of Medical or Hospital Directors as coordinators should be discouraged as their primary responsibility is the care of the living and injured.
- Establish a team, within the Emergency Operations Center, to coordinate management of the dead. Include key operational partners such as the military, civil defense, fire service, local emergency or rescue organizations, National Red Cross/Red Crescent Society, and local funeral homes, morticians, and coroners, etc.

- Appoint persons to be in charge of one or more of the following tasks and provide them with a copy of the relevant chapter in this manual:
  - Body recovery (Chapter 4).
  - Storage (Chapter 5).
  - Identification (Chapter 6).
  - Information and communication (Chapters 7, 9 and 11).
  - Disposal (Chapter 8).
  - Support for families (Chapter 10).
  - Logistics (Chapters 4, 5, 6 and 8).

Effective regional and national coordination

- As soon as possible, name a person as a national or regional coordinator and provide him or her with the appropriate authority for the management of dead bodies (e.g. Minister, Governor, Police Chief, Military Commander, Mayor).
- Refer to the mass fatality section of your disaster response plan or major incident procedures manual, if available.
- Establish a coordination group including key individuals to advise on:
  - Communications with the public and the media.
  - Legal issues about identification and death certification.
  - Technical support for identification and documentation.
  - Logistical support (e.g., military or police).
  - Liaison with diplomatic missions, inter-governmental and international organizations (for example, United Nations, World Health Organization, International Committee of the Red Cross, International Federation of Red Cross and Red Crescent Societies and INTERPOL).

3. INFECTIOUS DISEASE RISKS

Overview

- After most natural disasters there is fear that dead bodies will cause epidemics.
- This belief is wrongly promoted by the media, as well as some medical and disaster professionals.
- Dead bodies do not cause epidemics after natural disasters.
- The political pressure brought about by these rumors causes authorities to use unnecessary measures such as rapid mass burials and spraying so-called "disinfectants."
- The consequences of mismanagement of the dead include mental distress and legal problems for relatives of the victims.
- The surviving population is much more likely to spread disease.

Infections and dead bodies

- Victims of natural disasters are normally killed by injury, drowning, or fire—not by disease.
- At the time of death, victims are not likely to be sick with epidemic-causing infections (i.e., plague, cholera, typhoid, and anthrax).
- A few victims will have chronic blood infections (hepatitis or HIV), tuberculosis, or diarrheal disease.
- Most infectious organisms do not survive beyond 48 hours in a dead body. An exception is HIV, which has been found six days postmortem.

Risk to the public

- ♦ The risk to the public is negligible because they do not touch dead bodies.
- ♦ There is the potential (but as yet undocumented) risk of drinking water supplies contaminated by fecal material released from dead bodies.

Risk to body handlers

- ♦ Individuals handling human remains have a small risk through contact with blood and feces (bodies often leak feces after death) from the following:
  - ✳ Hepatitis B and C.
  - ✳ HIV.
  - ✳ Tuberculosis.
  - ✳ Diarrheal disease.
- ♦ Body recovery teams work in hazardous environments (e.g., collapsed buildings and debris) and may also be at risk of injury and tetanus (transmitted via soil).

Safety precautions for body handlers

- ♦ Basic hygiene protects workers from exposure to diseases spread by blood and certain body fluids. Workers should use the following precautions:
  - ✳ Use gloves and boots, if available.
  - ✳ Wash hands with soap and water after handling bodies and before eating.
  - ✳ Avoid wiping face or mouth with hands.
  - ✳ Wash and disinfect all equipment, clothes, and vehicles used for transportation of bodies.
- ♦ Face masks are unnecessary, but should be provided if requested to avoid anxiety.
- ♦ The recovery of bodies from confined, unventilated spaces should be approached with caution. After several days of decomposition, potentially hazardous toxic gases can build-up. Time should be allowed for fresh air to ventilate confined spaces.
- ♦ See Chapter 4 (Body Recovery) for recommendations about the use of body bags.

4. BODY RECOVERY

Overview

- Body recovery is the first step in managing dead bodies and is usually chaotic and disorganized.
- Many different people or groups are involved in body recovery. Communication and coordination with them is often difficult.
- This part of the process can be essential for identification and should be read in conjunction with Chapter 6, Identification of Dead Bodies.
- Body recovery only lasts a few days or weeks, but may be prolonged following earthquakes or very large disasters.

The aim of body recovery

- Rapid retrieval is a priority because it aids identification and reduces the psychological burden on survivors.
- Recovery of bodies should not interrupt other interventions aimed at helping survivors.

The workforce

- Body recovery is often done spontaneously by a large number of individuals, including:
  - Surviving community members.
  - Volunteers (e.g., National Red Cross/Red Crescent Societies).
  - Search and rescue teams.
  - Military, police or civil defense personnel.

- Coordination of these groups is needed to encourage the use of procedures and health and safety precautions recommended in this manual.

Methods and procedures

- Bodies should be placed in body bags. If these are unavailable, use plastic sheets, shrouds, bed sheets, or other locally available material.
- Body parts (e.g., limbs) should be treated as individual bodies. Recovery teams should not attempt to match the body parts at the disaster scene.
- Body recovery teams work most effectively in two groups: one to take bodies to a nearby collection point and a second to take them to identification or storage areas.
- Noting the place and date where the body was found helps identification (see Annex 1, Dead Bodies Form).
- Personal belongings, jewelry, and documents should not be separated from the corresponding remains during recovery, but only during the identification phase (see Chapter 6, Identification of Dead Bodies).
- Stretchers, body bags, and flatbed trucks or tractor-trailers can be used to transport bodies. Ambulances should not be used for this purpose as they are best used to help the living.

Health and safety

- Body recovery teams should wear protective equipment (heavy-duty gloves and boots) and wash their hands with soap and water after handling dead bodies (see Chapter 3, Infectious Disease Risks).
- Recovery teams often work among debris or collapsed buildings. First-aid and medical treatment should be available in case of injury.
- Tetanus may be a particular problem in unvaccinated workers. Local medical teams should be on the alert for tetanus prone injuries.

Source: Oliver Morgan

Protective equipment used for body recovery, Banda Aceh, Indonesia, 2005.

5. STORAGE OF DEAD BODIES

Overview

- Without cold storage decomposition advances rapidly.
- Within 12 to 48 hours in hot climates, decomposition will be too advanced to allow facial recognition.
- Cold storage slows the rate of decomposition and preserves the body for identification.

Storage options

- Whichever storage option is used, each body or body part should be kept in a body bag or wrapped in a sheet before storage.
- Waterproof labels (e.g., paper in sealed plastic) with a unique identification number should be used (see Box 6.1 in Chapter 6, Identification of Dead Bodies). Do not write identification numbers on bodies or body bags/sheets as they are erased easily during storage.

Refrigeration

- Refrigeration between 2°C and 4°C is the best option.
- Refrigerated transport containers used by commercial shipping companies can be used to store up to 50 bodies.
- Enough containers are seldom available at the disaster site and alternative storage options should be used until refrigeration becomes available.

Temporary burial

- Temporary burial provides a good option for immediate storage where no other method is available, or where longer term temporary storage is needed.

- Temperature underground is lower than at the surface, thereby providing natural refrigeration.
- Temporary burial sites should be constructed in the following way to help ensure future location and recovery of bodies:
  - Use individual burials for a small number of bodies and trench burial for larger numbers.
  - Burial should be 1.5m deep and at least 200m from drinking water sources (see Chapter 8, Long-term Storage and Disposal of Dead Bodies).
  - Leave 0.4m between bodies.
  - Lay bodies in one layer only (not on top of each other).
  - Clearly mark each body (see Chapter 6, Identification of Dead Bodies) and mark their positions at ground level.

AFP/Getty Images

Temporary burial of dead bodies in Thailand following the tsunami disaster on 26 December 2004.

Dry ice

- Dry ice [carbon dioxide (CO_2) frozen at -78.5°C] may be suitable for short-term storage.
  - Dry ice should not be placed on top of the bodies, even when wrapped, because it damages the body.
  - Build a low wall of dry ice (i.e., 0.5m high) around groups of about 20 bodies and cover with a plastic sheet, tarpaulin, or tent.
  - About 10 kg of dry ice per body, per day is needed, depending on outside temperature.
  - Dry ice must be handled carefully as it causes “cold burns” if touched without proper gloves.
  - When dry ice melts it produces carbon dioxide gas, which is toxic. Closed rooms or buildings should be avoided when using dry ice in preference to areas with good natural ventilation.

Ice

- The use of ice (frozen water) should be avoided where possible because:
  - In hot climates ice melts quickly and large quantities are needed.
  - Melting ice produces large quantities of dirty waste water that may cause concern about diarrheal disease. Disposal of this waste water creates additional management issues.
  - The water may damage bodies and personal belongings (e.g., identity cards).

6. IDENTIFICATION OF DEAD BODIES

Overview

- Identification of dead bodies is done by matching information from the deceased (physical features, clothes, etc.) with information from individuals who are missing or presumed dead.
- Mobilizing forensic resources may take several days. This means that early opportunities to help identify bodies may be lost as the bodies decompose.
- Visual recognition of cadavers or their photographs by acquaintances of the deceased is the simplest form of identification, but this is prone to errors. Therefore, whenever possible, it should be complemented with other means of forensic identification, albeit at a later stage.
- Forensic procedures (autopsies, fingerprinting, dental examinations, DNA) can be used after visual identification of bodies or photographs becomes impossible.
- The early work of non-specialists in managing the dead (especially proper recovery, documentation and storage methods) will determine much of the success of future identifications by forensic specialists.
- The Dead Bodies Identification Form in Annex 1 can be used to collect basic and invaluable information that will aid later forensic identification procedures.

General principles

- Sooner is better for victim identification. Decomposed bodies are much more difficult to identify and require forensic expertise.
- The key steps to identification as described below are: Unique reference number, Label, Photograph, Record, and Secure.
- It should be appreciated that visual recognition, while simple, can result in mistaken identifications causing serious embarrassment, distress to the bereaved and legal difficulties. It is always preferable to ensure that accurate identification is achieved by evaluating a combination of criteria and not solely on visual recognition.

- Injuries to the deceased, or the presence of blood, fluids, or dirt, especially around the head, will increase the chance of mistaken visual recognition.
- Any separate body part which proves that a person is dead can aid in the identification and should therefore be managed as though it is a whole body (i.e., using a unique reference number).

Processes

Unique reference (mandatory)

- Assign a sequential, unique reference number to each body or body part. Reference numbers must not be duplicated. (see Box 6.1, page 17 for a recommended numbering system).

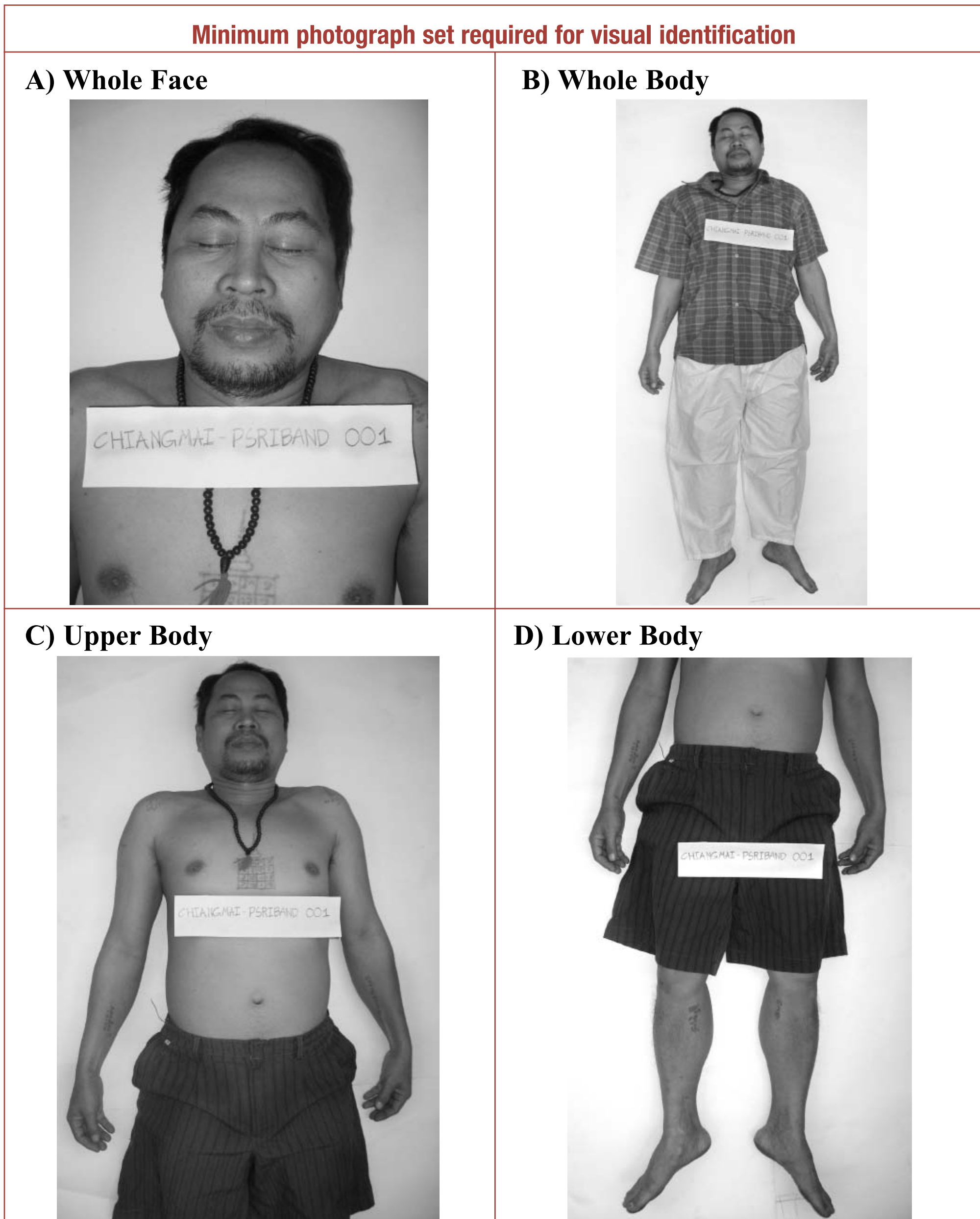
Label (mandatory)

- Write the unique reference number on a waterproof label (e.g., paper sealed in plastic) then securely attach it to the body or body part.
- A waterproof label with the same unique reference number must also be attached to the container for the body or body part (e.g., body bag, cover sheet or bag for the body part).

Photograph (mandatory – if photographic equipment is available)

- The unique reference number must be visible in all photographs.
- If available, digital cameras allow for easier storage and distribution of photographs.
- Clean the body sufficiently to allow facial features and clothing to be properly represented in the photographs.
- In addition to the unique reference number, the photographs should include at least:
  - A full length of the body, front view;
  - Whole face;
  - Any obvious distinguishing features.
- If circumstances permit, or at a later time, additional photographs can be included with the unique reference number of the following:
  - Upper and lower part of the body;
  - All clothing, personal effects, and distinguishing features.

- When taking photographs the following should be considered:
  - ✳ Blurred photographs will not be useful.
  - ✳ Photographs must be taken close to the dead body; when photographing the face, it should fill the entire picture.



Source: Pongruk Sribanditmongkol / Photographer: Kunt TongTahm Na Ayudhaya

Note: For the purpose of demonstration, photographs were taken of a volunteer and not of a deceased individual.

  - ✳ The photographer should stand at the middle of the body when taking the picture, not at the head or feet.
  - ✳ The photograph must include the visible unique reference number, to ensure that identification made using the photograph matches the correct body, and a scale, to calculate the size of features in the photo.

Record (mandatory)

- If photographs have been taken, record the following data together with the unique reference using the form in Annex 1: (Dead Bodies Identification Form):
  - ✳ Gender (confirmed by looking at the genital organs).
  - ✳ Approximate age range (infant, child, adolescent, adult, or elderly).
  - ✳ Personal belongings (jewelry, clothes, identity card, driver's license, etc.).
  - ✳ Obvious specific marks on the skin (e.g., tattoos, scars, birthmarks) or any obvious deformity.
- If no photographs have been taken, also record:
  - ✳ Race.
  - ✳ Height.
  - ✳ Color and length of hair.
  - ✳ Color of eyes.

Secure

- Personal belongings should be securely packaged, labeled with the same unique reference number, and stored with the body or body part. *This is mandatory.*
- Clothing should be left on the body.

Identification and release of body to relatives

- To increase reliability of visual recognition, viewing conditions should mini-mize emotional stress to bereaved relatives.
- Although there may be no alternative following large disasters, the psychological impact of viewing dozens or hundreds of dead bodies may further reduce the validity of visual recognition.
- Viewing photographs of the highest possible quality may be a better approach.

- Release of a body:
  - A dead body should only be released when identification is certain.
  - Visual recognition should be confirmed by other information such as identification of clothing or personal effects.
  - Information collected about missing people can be used to cross-check visual recognition (see Annex 2, Missing Persons Form).
  - A body should only be released by the responsible authority, which must also provide documentation of the release (a letter or death certificate).
  - Record the name and contact details of the person or relatives who claimed the body together with the body's unique reference number.

Box 6.1 Unique reference numbering for dead bodies

Each body or body part ***must*** have a unique reference number. The following is recommended.

PLACE + RECOVERY TEAM/PERSON + BODY COUNT

For example:

Colonia San Juan - Team A–001

OR

Chaing Mai Hospital - P. Sribanditmongkol–001

PLACE: Where possible, all bodies should be assigned a unique reference number indicating place of recovery. If recovery place is unknown, use instead the place where the body was taken for identification/storage.

RECOVERY TEAM/PERSON: Person or team numbering the body.

BODY COUNT: A sequential count of bodies at each site (e.g., 001 = body number one). See Annex 3 for a list of sequential numbers.

Note: Details about where and when the body was found and the person/organization who found it should also be recorded on the Dead Bodies Identification Form (see Annex 1).

- Bodies that can not be recognized by visual means, should be properly stored (see Chapter 5, Storage of Dead Bodies) until forensic specialists can investigate.
- Care should be taken before releasing bodies that are not whole, as this may complicate subsequent management of body parts.

7. INFORMATION MANAGEMENT

Overview

- State authorities bear primary responsibility for the proper handling of information about the dead and missing in disasters.
- A large amount of information is collected about the dead and missing, even after relatively small disasters. Necessary resources (human, technical, and financial) for information management must be provided.
- Management of information is a key role for coordination (see Chapter 2, Coordination).

Organizational arrangements

- Information centers should be established at regional and/or local levels.
- Local centers act as focal points for collection and consolidation of information on the dead and for attending to the public. They are particularly necessary for receiving tracing requests, leaving photographs and information about the missing, and for the release of information on persons found or identified.
- A national system for management and coordination of information should centralize all information on the dead and missing in disasters. Tracing services of the International Committee of the Red Cross and National Red Cross/Red Crescent Societies may assist in this task.
- Data should flow in both directions between the national and local level.

Information for the public

- The population should be promptly and clearly informed about the response and procedures adopted for:
  - Searching for the missing.

  - ✳ Recovery and identification of dead bodies.
  - ✳ Collection and release of information.
  - ✳ Support for concerned families and communities.
- ♦ Information can be provided through the local or regional centers.
- ♦ A wide range of media can be used:
  - ✳ The Internet.
  - ✳ Notice boards.
  - ✳ Newspapers, television, radio, etc.

Information about dead bodies

- ♦ Basic information must be collected about all dead bodies when possible (see Chapter 6, Identification of Dead Bodies, and Annex 1, Dead Bodies Identification Form).
- ♦ Early data collection may use paper forms (see data collection forms in Annex 1, Dead Bodies Identification Form and Annex 2, Missing Persons Form) and this information may be entered into an electronic database at a later stage.
- ♦ Information is likely to include valuable personal items and photographs.
- ♦ A chain of custody is required to avoid misplacement of information and ensure the availability of evidence.
- ♦ Centralization and consolidation of information about the dead and missing is essential for increasing the possibility of finding a match between tracing requests for missing persons and available/known information of dead bodies (see Annex 1, Dead Bodies Identification Form and Annex 2, Missing Persons Form).

8. LONG-TERM STORAGE AND DISPOSAL OF DEAD BODIES

Overview

- All identified dead bodies should be released to relatives or their communities for disposal according to local custom and practice.
- Long-term storage will be required for remaining unidentified bodies.

Method of disposal/Long-term storage

- Burial is the most practical method as it preserves evidence for future forensic investigation, if required.
- Cremation of unidentified bodes should be avoided for several reasons:
  - Cremation will destroy evidence for any future identification.
  - Large amounts of fuel are needed (usually wood).
  - Achieving complete incineration is difficult, often resulting in partially incinerated remains that have to be buried.
  - It is logistically difficult to arrange for the cremation of a large number of dead bodies.

Location of burial sites

- Careful thought must be given to the location of any burial site.
- Soil conditions, highest water table level, and available space must be considered.
- The site should be acceptable to communities living near the burial site.
- The site should be close enough for the affected community to visit.
- The burial site should be clearly marked and surrounded by a buffer zone that is at least 10m wide to allow planting of deep-rooted vegetation and to separate the site from inhabited areas.

Distance from water sources

- Burial sites should be at least 200m away from water sources such as streams, lakes, springs, waterfalls, beaches, and the shoreline.
- Suggested burial distance from drinking-water wells are provided in the following table. Distances may have to be increased based on local topography and soil conditions:

Recommended distance of graves from drinking water wells

Number of bodies	Distance from drinking water well
4 or less	200m
5 to 60	250m
60 or more	350m
120 bodies or more per $100m^2$	350m

Grave construction

- If possible, human remains should be buried in clearly marked, individual graves.
- For very large disasters, communal graves may be unavoidable.
- Prevailing religious practices may indicate preference for the orientation of the bodies (i.e., heads facing east, or toward Mecca, etc.).
- Communal graves should consist of a trench holding a single row of bodies each placed parallel to the other, 0.4m apart.
- Each body must be buried with its unique reference number on a waterproof label. This number must be clearly marked at ground level and mapped for future reference.
- Although there are no standard recommendations for grave depth, it is suggested that:
  - Graves should be between 1.5m and 3m deep.
  - Graves with fewer than five people should allow for at least 1.2m (1.5m if the burials are in sand) between the bottom of the grave and the water table, or any level to which ground water rises.
  - For communal graves there should be at least 2m between the bottom of the grave and water table, or any level to which groundwater rises.
  - These distances may have to be increased depending on soil conditions.

9. COMMUNICATIONS AND THE MEDIA

Overview

- Good public communication contributes to a successful victim recovery and identification process.
- Accurate, clear, timely, and up-dated information can reduce the stress experienced by affected communities, defuse rumors, and clarify incorrect information (see Chapter 11, Frequently Asked Questions).
- The news media (TV and radio, newspapers and the Internet) are vital channels of communication with the public during mass disasters. Journalists, both local and international, often arrive soon after the disaster.

Working with the media

- Generally, most journalists want to report responsibly and accurately. Keeping them informed will minimize the likelihood of inaccurate reporting.
- Engage proactively and creatively with the media:
  - A Media-Liaison Officer should be assigned both locally and nationally.
  - Establish a Media-Liaison office (as near as possible to the affected area).
  - Cooperate proactively (prepare regular briefings, facilitate interviews, etc.).

Working with the public

- An information center for relatives of the missing and the dead should be set up as soon as possible.
- A list of confirmed dead and survivors should be made available, and details of missing individuals recorded by official staff.

- Information should be provided about the processes of recovery, identification, storage, and disposal of dead bodies.
- Arrangements for death certification may also need to be explained.

Working with relief agencies

- Humanitarian workers and relief agencies, including United Nations agencies, the International Committee of the Red Cross, and Red Cross/Red Crescent Societies, have direct contact with affected communities and may act as a source of local information.
- Aid workers are not always well informed and may give conflicting information, especially about the infectious risks of dead bodies.
- Providing correct information to aid agencies on management of the dead will further help to reduce rumors and to avoid incorrect information (see Chapter 11, Frequently Asked Questions).

Information management

- Care is needed to respect the privacy of victims and relatives.
- Journalists should not be allowed direct access to photographs, individual records, or the names of victims. However, authorities may decide to release this information in a managed way to help with the identification process.
- Soon after the disaster, a decision must be taken whether or not to provide information about the number of victims. The disadvantage of this is that these estimates will undoubtedly be wrong. The advantage is that official statistics may prevent exaggerated reporting by the media.

10. SUPPORT TO FAMILIES AND RELATIVES

Overview

- The dead and the bereaved should be respected at all times.
- The priority for affected families is to know the fate of their missing loved ones.
- Honest and accurate information should be provided at all times and at every stage of the recovery and identification process.
- A sympathetic and caring approach is owed to the families throughout the process.
- Mistaken identification should be avoided.
- Psycho-social support for families and relatives should be considered.
- Cultural and religious needs should be respected.

Identification of victims

- A family liaison focal point should be established to support relatives.
- Families should be informed about findings and the identification of their loved ones before anyone else.
- Families of the dead and missing must be given realistic expectations of the process, including the methods used and timeframes for recovery and identification of remains.
- Families should be allowed to report a missing relative and provide additional information.
- Identification should be conducted as speedily as possible.
- Children should not be expected to aid in the visual recognition of dead bodies.
- The need for relatives to view the bodies of their loved ones as part of the grieving process should be respected.

- Once identified, bodies should be released as swiftly as possible to their next of kin.

Cultural and religious aspects

- The overwhelming desire of relatives from all religions and cultures is to identify their loved ones.
- Advice and assistance from religious and community leaders should be sought to improve understanding and acceptance of the recovery, management, and identification of the dead bodies.
- Undignified handling and disposal of dead bodies may further traumatize relatives and should be avoided at all times. Careful and ethical management of dead bodies, including disposal, should be ensured, including respect for religious and cultural sensitivities.

Providing support

- Psycho-social support should be adapted to needs, culture, and context and should consider local coping mechanisms.
- Local organizations such as the National Red Cross/Red Crescent Societies, NGOs, and faith groups can often provide emergency psycho-social care for those affected.
- Priority care should be given to unaccompanied minors and other vulnerable groups. Where possible, they should be reunited and cared for by members of their extended family or community.
- Material support may be necessary for funeral rituals, such as burial shrouds, coffins, etc.
- Special legal provisions for those affected (i.e., rapid processing of death certificates) should be considered and publicized within the affected communities.

11. FREQUENTLY ASKED QUESTIONS

Information for the public

1. Do dead bodies cause epidemics?

Dead bodies from natural disasters *do not* cause epidemics. This is because victims of natural disasters die from trauma, drowning or fire. They do not have epidemic-causing diseases such as cholera, typhoid, malaria, or plague when they die.

2. What are the health risks for the public?

The risk to the public is negligible. They do not touch or handle dead bodies. However, there is a small risk of diarrhea from drinking water contaminated by fecal material from dead bodies. Routine disinfection of drinking water is sufficient to prevent water-borne illness.

3. Can dead bodies contaminate water?

Potentially, yes. Dead bodies often leak feces, which may contaminate rivers or other water sources, causing diarrheal illness. However, people will generally avoid drinking water from any source they think has had dead bodies in it.

4. Is spraying bodies with disinfectant or lime powder useful?

No, it has no effect. It does not hasten decomposition or provide any protection.

5. Local officials and journalists say there is a risk of disease from dead bodies. Are they correct?

No. The risk from dead bodies after natural disasters is misunderstood by many professionals and the media. Even local or international health workers are often misinformed and contribute to the spread of rumors.

Information for workers

6. Is there a risk for those handling dead bodies?

For people handling dead bodies (rescue workers, mortuary workers, etc.), there is a small risk from tuberculosis, hepatitis B and C, HIV, and diarrheal diseases. However, the infectious agents responsible for these diseases do not last more than two days in a dead body (except for HIV, which may survive up to six days). These risks can be reduced by wearing rubber boots and gloves and practicing basic hygiene (i.e. washing hands).

7. Should workers wear a mask?

The smell from decaying bodies is unpleasant, but it is *not* a health risk in well-ventilated areas, and wearing a mask is not required for health reasons. However, workers may feel better psychologically if they are using masks. The public should not actively be encouraged to wear masks.

Information for authorities

8. How urgent is the collection of dead bodies?

Body collection is *not* the most urgent task after a natural disaster. The priority is to care for survivors. There is *no* significant public health risk associated with the presence of dead bodies. Nevertheless, bodies should be collected as soon as possible and taken away for identification.

9. Should mass graves be used to quickly dispose of the bodies?

No. Rapid mass burial of victims is not justified on public health grounds. Rushing to dispose of bodies without proper identification traumatizes families and communities and may have serious legal consequences (i.e., the inability to recover and identify remains).

10. What should the authorities do with dead bodies?

Dead bodies should be collected and stored, using refrigerated containers, dry ice, or temporary burial. Identification should be attempted for all human remains. Photographs should be taken and descriptive information recorded for each body. Remains should be stored (i.e., using refrigeration) or buried temporarily to allow for the possibility of an expert forensic investigation in the future.

11. What are the potential mental health issues?

The overwhelming desire of relatives (from all religions and cultures) is to identify their loved ones. All efforts to identify human remains will help. Grieving and traditional individual burial are important factors for the personal and communal recovery or healing process.

12. How should bodies of foreigners be managed?

Families of visitors killed in a disaster are likely to insist on the identification and repatriation of the bodies. Proper identification has serious economic and diplomatic implications. Bodies must be kept for identification. Foreign consulates and embassies should be informed and INTERPOL contacted for assistance.

Information for responders

13. I am a volunteer; how can I help?

To be helpful you should promote the proper recovery and management of dead bodies and assist in recording necessary information. You might also assist with the recovery and disposal of the dead, under the direction of a recognized coordinating authority. However, you would first need to be briefed, advised, equipped, and supported for this difficult task.

14. I work with an NGO; how can I help?

Providing support for families and collection of information in collaboration with the coordinating authority will best help the surviving relatives. You may also promote proper identification and treatment of the dead. NGOs should not be asked to carry out the identification of dead bodies unless they are highly specialized for this task and work for and under direct supervision of a legal authority.

15. I am a health professional; how can I help?

The survivors need you more than the dead. Any professional help in fighting the myth of epidemics caused by dead bodies will be appreciated. Talk about this to your colleagues and members of the media.

16. I am a journalist; how can I help?

If you hear comments or statements regarding the need for mass burial or incineration of bodies to avoid epidemics, challenge them. Consult PAHO/WHO, ICRC, the IFRC or the Red Cross/Red Crescent locally. Quote this and other publications. Please do not jump on the band wagon of alarmists spreading incorrect information. Be professional.

ANNEXES

Annex 1: Dead Bodies Identification Form

Annex 2: Missing Persons Form

Annex 3: Sequential Numbers for Unique Referencing

Annex 4: Body Inventory Sheet

Annex 5: Supporting Publications

Annex 6: International Organizations Involved in the Development of this Document

Annex 7: Mass Fatality Plan Checklist for Ministries of Health and National Disaster Offices

Note: Those interested in adapting or copying the forms in annexes 1-4 can consult or download them from the Internet, in MS Word or PDF format, at www.paho.org/disasters (click on Publications Catalog, and see the special page about *Dead Bodies in Disaster Situations*).

Annex 1

Dead Bodies Identification Form

Body/Body Part (B/BP) Code:
(Use unique numbering and include on associated files, photographs or stored objects.)

Possible identity of body:

Person Reporting

Name: ....

Official Status: .... Place & Date: ....

Signature: ....

Recovery details (Include place, date, time, by whom, and circumstances of finding. Indicate if other bodies were recovered in the same area, including name and possible relationship, if identified)

B/BP Code: --

A. PHYSICAL DESCRIPTION

A.1	**General condition** (mark one) **a**	Complete body	Incomplete body (describe):		Body part (describe):	
	b	**Well preserved**	Decomposed	Partially skeletonized	Skeletonized	
A.2	**Apparent sex** (mark one and describe evidence)	Male	Female	Probably male	Probably female	Undetermined
		Describe evidence (genitals, beard, etc):				
A.3	**Age group** (mark one)	Infant	Child	Adolescent	Adult	Elderly
A.4	**Physical description** (measure or mark one)	Height (crown to heel):		Short	Average	Tall
		Weight:		Slim	Average	Fat
A.5	**a) Head hair**	Color:	Length:	Shape:	Baldness:	Other:
	b) Facial hair	None	Moustache	Beard	Color:	Length:
	c) Body hair	Describe:				
A.6	**Distinguishing features:** **Physical** (e.g., shape of ears, eyebrows, nose, chin, hands, feet, nails; deformities, missing limbs/amputation.) **Surgical implants or prosthesis** (artificial limb.) **Skin marks** (scars, tattoos, piercings, birthmarks, moles, etc.) **Apparent injuries** (include location, side.) **Dental condition** (crowns, gold teeth, adornments, false teeth.) Describe any obvious features.	Continue on additional sheets if needed. If possible, include a sketch of the main findings.				

B/BP Code: ---

B. ASSOCIATED EVIDENCE

B.1	**Clothing**	Type of clothes, colors, fabrics, brand names, repairs. Describe in as much detail as possible.
B.2	**Footwear**	Type (boot, shoes, sandals), color, brand, size. Describe in as much detail as possible.
B.3	**Eyewear**	Glasses (color, shape), contact lenses. Describe in as much detail as possible.
B.4	**Personal items**	Watch, jewelry, wallet, keys, photographs, mobile phone (incl. number), medication, cigarettes, etc. Describe in as much detail as possible.
B.5	**Identity documents**	Identity card, driving license, credit card, video club card, etc. Take photocopy if possible. Describe the information contained.

B/BP Code: --

C: RECORDED INFORMATION

C.1	**Fingerprints**	Yes	No	By whom? Stored where?
C.2	**Photographs of body**	Yes	No	By whom? Stored where?

D: IDENTITY

D.1	**Hypothesis of identity**	Explain reasons for attributing a possible identity.

E: STATUS OF BODY

Stored	Specify morgue, refrigerated container, temporary burial; describe location:
	Under whose responsibility:
Released	To whom and date:
	Authorized by:
	Final destination:

Note: Those interested in adapting or copying this form, please download it, in MS Word or PDF format, at www.paho.org/disasters (click on Publications Catalog, and see the special page about *Dead Bodies in Disaster Situations*).

Annex 2
Missing Persons Form

Missing Person Number/Code:
(Use unique numbering and include it on associated files, photographs or stored objects.)

Interviewer name:

Interviewer contact details:

Interviewee(s) name(s):

Relationship with missing person:

Contact details

Address: ....

Telephone: .... E-mail: ....

Contact person for missing person, if different from above: (who to contact in case of news: name/contact details)

MP N°./Code: .... **Missing Persons Data**

A. PERSONAL DETAILS

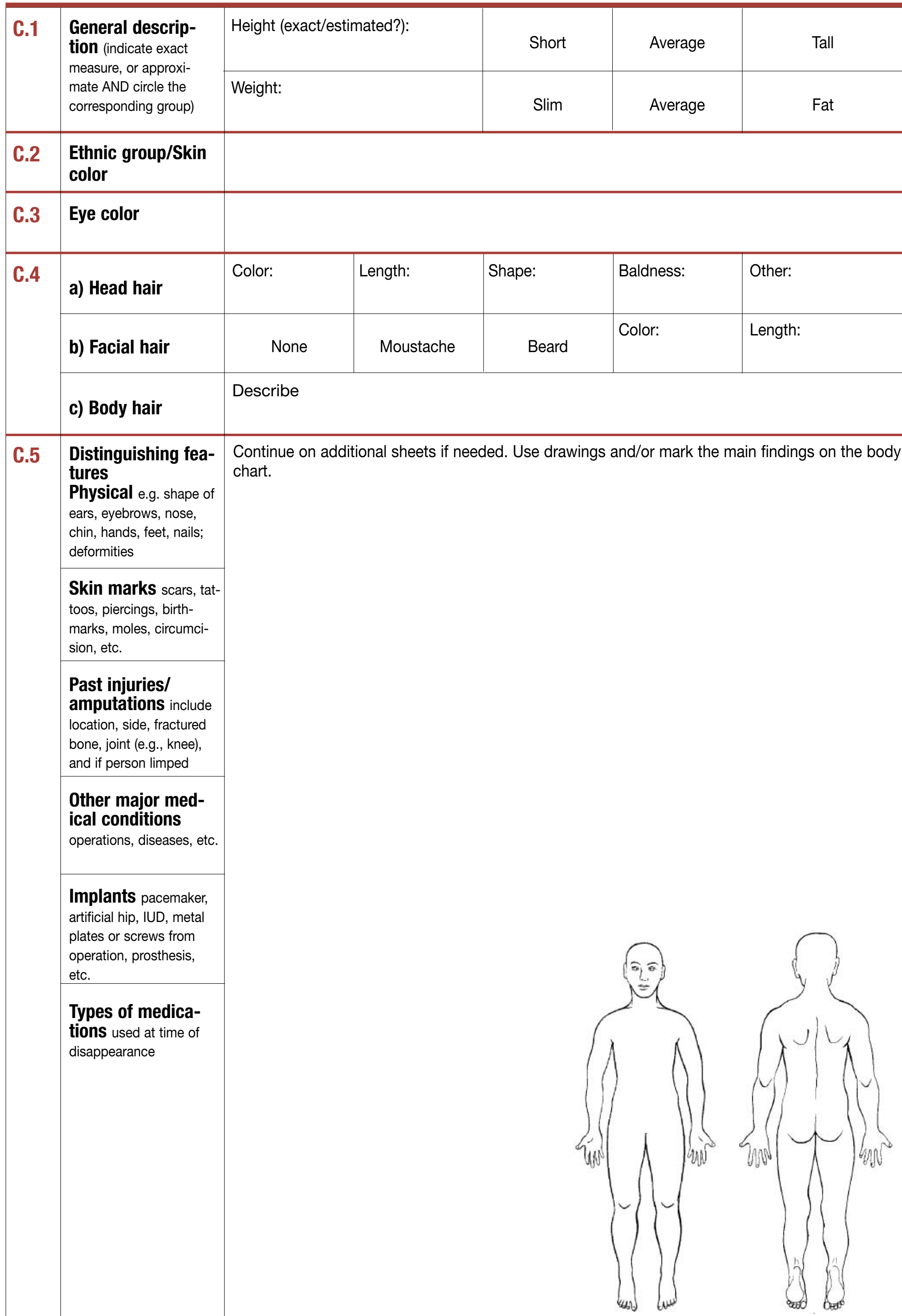
A.1	**Missing person's name**	Include surname, father's and/or mother name, nicknames, aliases:				
A.2	**Address/Place of residence**	Last address and usual address if different from the former:				
A.3	**Marital status**	Single	Married	Divorced	Widowed	Partnership
A.4	**Sex**	Male	Female			
A.5	**If female**	Unmarried name:				
		Pregnant	Children	How many?		
A.6	**Age**	Date of birth:			Age:	
A.7	**Place of birth, nationality, principal language**					
A.8	**Identity document** (Main details, N°, etc.)	If available, enclose photocopy of ID				
A.9	**Fingerprints available?**	Yes	No	Where:		
A.10	**Occupation**					
A.11	**Religion**					

B. EVENT

B.1	**Circumstances leading to disappearance:** (use additional sheet if necessary)	Place, date, time, events leading to disappearance, other victims and witnesses who last saw Missing Person alive (incl. name and address):		
	Has this case been registered/ denounced elsewhere?	Yes	No	With whom/where:
B.2	**Are other family members missing, and if so, have they been registered/identified?**	List name, relationship, status:		

MP N°/Code: --- **Missing Persons Data**

C. PHYSICAL DESCRIPTION



C.1	**General description** (indicate exact measure, or approximate AND circle the corresponding group)	Height (exact/estimated?):		Short	Average	Tall
		Weight:		Slim	Average	Fat
C.2	**Ethnic group/Skin color**					
C.3	**Eye color**					
C.4	**a) Head hair**	Color:	Length:	Shape:	Baldness:	Other:
	b) Facial hair	None	Moustache	Beard	Color:	Length:
	c) Body hair	Describe				
C.5	**Distinguishing features** **Physical** e.g. shape of ears, eyebrows, nose, chin, hands, feet, nails; deformities	Continue on additional sheets if needed. Use drawings and/or mark the main findings on the body chart.				
	Skin marks scars, tattoos, piercings, birthmarks, moles, circumcision, etc.					
	Past injuries/ amputations include location, side, fractured bone, joint (e.g., knee), and if person limped					
	Other major medical conditions operations, diseases, etc.					
	Implants pacemaker, artificial hip, IUD, metal plates or screws from operation, prosthesis, etc.					
	Types of medications used at time of disappearance					

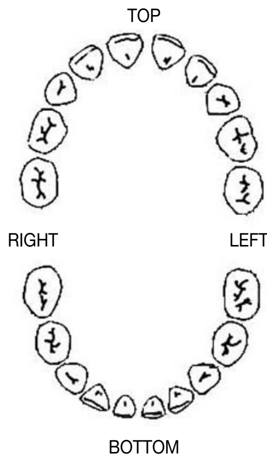
MP N°/Code: -- **Missing Persons Data**

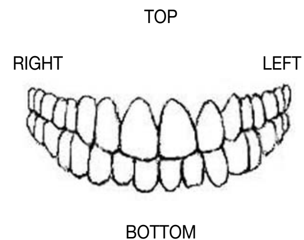
<table>
<tr>
<td>C.6</td>
<td>Dental condition
Please describe general characteristic, especially taking into account the following:
• Missing teeth
• Broken teeth
• Decayed teeth
• Discolorations, such as stains from disease, smoking or other
• Gaps between teeth
• Crowded or crooked (overlapping) teeth
• Jaw inflammation (abscess)
• adornments (inlays, filed teeth etc)
• any other special feature

Dental treatment
Has the Missing Person received any dental treatment such as
• Crowns, such as gold-capped teeth
• Color: gold, silver, white
• Fillings (incl. color if known)
• False teeth (dentures)- upper, lower
• Bridge or other special dental treatment
• Extraction

Also indicate wherever there is uncertainty (for example, the family member may know that an upper left front tooth is missing, but is unsure which one).</td>
<td>If possible, use a drawing, and/or indicate the described features in the chart below

If the missing person is a child, please indicate which baby teeth have erupted, which have fallen out and which permanent teeth have erupted and use the chart below

BABY/PRIMARY TEETH


ADULT/PERMANENT TEETH

</td>
</tr>
</table>

MP N°/Code: -- **Missing Persons Data**

D. PERSONAL EFFECTS

D.1	**Clothing** (worn when last seen/at time of disaster)	Type of clothes, colors, fabrics, brand names, repairs: describe in as much detail as possible.
D.2	**Footwear** (worn when last seen/at time of disaster)	Type (boot, shoes, sandals), color, brand, size: describe in as much detail as possible.
D.3	**Eyewear**	Glasses (color, shape), contact lenses: describe in as much detail as possible.
D.4	**Personal items**	Watch, jewelry, wallet, keys, photographs, mobile phone (incl. number), medication, cigarettes, etc: describe in as much detail as possible.
D.5	**Identity documents** (which the person was/might have been carrying when last seen/at time of disaster)	Identity card, driving license, credit card, video club card, etc. Take photocopy if possible. Describe the information contained.
D.6	**Habits**	Smoker (cigarettes, cigars, pipes), chewing tobacco, betel nut, alcohol, etc. Please describe, incl. quantity.
D.7	**Doctors, medical records, X-rays**	Give details of doctor, dentist, optometrist, or other.
D.8	**Photographs of missing person**	If available, enclose photos or copies of photos as recent and clear as possible, ideally smiling (with teeth visible). Also, photos of clothing worn when disappeared.

Note: The information collected in this form will be used for the search and identification of the missing person. Its content is confidential and any use outside of the intended context will need explicit consent by the interviewee.

Place and date of interview: ....

Interviewer signature: .... Interviewee signature: ....

If requested, a copy of this form with contact details of interviewer should be made available to the interviewee.

Note: Those interested in adapting or copying this form, please download it, in MS Word or PDF format, at www.paho.org/disasters (click on Publications Catalog, and see the special page about *Dead Bodies in Disaster Situations*).

Annex 3
Sequential Numbers for Unique Referencing

See Chapter 6, Box 6.1, for recommended unique numbering (place-team/person-number).
When using the list below, cross each number off the list when it is used to avoid using it twice.

001	051	101	151	201	251	301	351	401	451
002	052	102	152	202	252	302	352	402	452
003	053	103	153	203	253	303	353	403	453
004	054	104	154	204	254	304	354	404	454
005	055	105	155	205	255	305	355	405	455
006	056	106	156	206	256	306	356	406	456
007	057	107	157	207	257	307	357	407	457
008	058	108	158	208	258	308	358	408	458
009	059	109	159	209	259	309	359	409	459
010	060	110	160	210	260	310	360	410	460
011	061	111	161	211	261	311	361	411	461
012	062	112	162	212	262	312	362	412	462
013	063	113	163	213	263	313	363	413	463
014	064	114	164	214	264	314	364	414	464
015	065	115	165	215	265	315	365	415	465
016	066	116	166	216	266	316	366	416	466
017	067	117	167	217	267	317	367	417	467
018	068	118	168	218	268	318	368	418	468
019	069	119	169	219	269	319	369	419	469
020	070	120	170	220	270	320	370	420	470
021	071	121	171	221	271	321	371	421	471
022	072	122	172	222	272	322	372	422	472
023	073	123	173	223	273	323	373	423	473
024	074	124	174	224	274	324	374	424	474
025	075	125	175	225	275	325	375	425	475
026	076	126	176	226	276	326	376	426	476
027	077	127	177	227	277	327	377	427	477
028	078	128	178	228	278	328	378	428	478
029	079	129	179	229	279	329	379	429	479
030	080	130	180	230	280	330	380	430	480
031	081	131	181	231	281	331	381	431	481
032	082	132	182	232	282	332	382	432	482
033	083	133	183	233	283	333	383	433	483
034	084	134	184	234	284	334	384	434	484
035	085	135	185	235	285	335	385	435	485
036	086	136	186	236	286	336	386	436	486
037	087	137	187	237	287	337	387	437	487
038	088	138	188	238	288	338	388	438	488
039	089	139	189	239	289	339	389	439	489
040	090	140	190	240	290	340	390	440	490
041	091	141	191	241	291	341	391	441	491
042	092	142	192	242	292	342	392	442	492
043	093	143	193	243	293	343	393	443	493
044	094	144	194	244	294	344	394	444	494
045	095	145	195	245	295	345	395	445	495
046	096	146	196	246	296	346	396	446	496
047	097	147	197	247	297	347	397	447	497
048	098	148	198	248	298	348	398	448	498
049	099	149	199	249	299	349	399	449	499
050	100	150	200	250	300	350	400	450	500

Note: Those interested in adapting or copying this form, please download it, in MS Word or PDF format, at www.paho.org/disasters (click on Publications Catalog, and see the special page about *Dead Bodies in Disaster Situations*).

Annex 4. Body Inventory Sheet

Body ID Number	Recovery		Storage		Information recorded		Characteristics (Apparent)			Remarks
	Date	Place	Date	Location	Dead Bodies Identification Form	Photos	Sex	Age	Presumed identity	
					Y-Yes N-No	Y-Yes N-No	M-male F-female U-unknown	I-infant C-child A1-adolescent A2-adult E-elderly		

Note: Those interested in adapting or copying this form, please download it, in MS Word or PDF format, at www.paho.org/disasters (click on Publications Catalog, and see the special page about *Dead Bodies in Disaster Situations*).

Annex 5

Supporting Publications

de Ville de Goyet, Claude. 2004. Epidemics caused by dead bodies: a disaster myth that does not want to die. *Rev Panam Salud Publica* 15(5):297-299. Available at: http://publications.paho.org/english/editorial_dead_bodies.pdf

ICRC, 2004. *Operational Best Practices Regarding the Management of Human Remains and Information on the Dead by Non-Specialists.* Available at: www.icrc.org

ICRC, 2003. Report: *The Missing and Their Families.* Available at: www.icrc.org

INTERPOL(DVI). *Guide on Disaster Victim Identification.* Available at: www.interpol.int/public/DisasterVictim/Guide

Morgan O. 2004. Infectious disease risks of dead bodies following natural disasters. *Rev Panam Salud Publica* 15(5):307-12. Available at: http://publications.paho.org/english/dead_bodies.pdf

Morgan OW, Sribanditmongkol P, Perera C, Sulasmi Y, Van Alphen D, et al. (2006) *Mass Fatality Management Following the South Asian Tsunami Disaster: Case Studies in Thailand, Indonesia and Sri Lanka*. PLoS Med 3(6): e195. Available at: www.plosmedicine.org

Pan American Health Organization. 2004. *Management of Dead Bodies in Disaster Situations.* Washington, D.C., ISBN 92-75-12529-5 (English); ISBN 92-75-32529-4 (Spanish). Available at http://publications.paho.org/english/index.cfm

Annex 6
International Organizations involved in the development of this document

Pan American Health Organization, Regional Office for the Americas of the World Health Organization (PAHO/WHO), Area on Emergency Preparedness and Disaster Relief

In 1976, the Pan American Health Organization created this program in response to a call by the Member Countries to establish a technical unit to strengthen health sector disaster preparedness, response, and mitigation activities. The main objective of the Area on Emergency Preparedness and Disaster Relief has been to support the health sector in strengthening national disaster preparedness programs and coordinating all sectors involved in disaster preparedness. This support is channeled to the countries of Latin America and the Caribbean in three principal areas:

- *Disaster Preparedness.* Preparing the health sector to face disasters is a permanent and ongoing responsibility. Disaster preparedness enhances the capacity of the health sector to respond to all types of disasters, create awareness of the associated public health risks, and improve the knowledge and skills of all health actors. Technical areas of work include information dissemination and management, hospital disaster preparedness, mass casualty management, evaluation of damage and needs, and humanitarian supply management.
- *Risk Reduction.* PAHO/WHO encourages the Ministries of Health to promote a national culture of disaster prevention. Its own technical contribution focuses on the safety of health facilities. As an example, countries are urged to use existing knowledge and tools to build new hospitals with a level of protection that helps ensure they remain operational in disaster situations. They are also encouraged to examine the vulnerability of existing health facilities and incorporate appropriate disaster mitigation measures. PAHO/WHO applies this same strategic approach to risk reduction in water and sewerage systems to safeguard this critical infrastructure.
- *Disaster Response.* In disaster situations, PAHO/WHO mobilizes its extensive network of public health experts to survey damage and provide an authoritative assessment of health sector needs, conduct epidemiological surveillance, detect potential health risks, monitor water quality, and improve the overall coordination and leadership in the health sector. The humanitarian supply management system, SUMA, is activated to help bring order to the chaos that often results from the massive influx of international aid. PAHO/WHO also summarizes and publishes the lessons learned from major disasters in an attempt to improve the management of future emergency situations.

For more information, please visit: www.paho.org/disasters

World Health Organization, Health Action in Crises

Within WHO, the principal objective of the Health Action in Crises Department is to reduce avoidable loss of life, burden of disease, and disability in crisis-prone and crisis-affected countries. WHO works with local authorities, civil society, other international organizations, and NGOs in responding to the health aspects of crises. The major activities of WHO in a crisis are to:

- Measure ill-health and promptly assess health needs of populations affected by crises, identifying priority causes of ill-health and death;
- Support Member States in coordinating action for health;
- Ensure that critical gaps in health response are rapidly identified and filled;
- Revitalize and build capacity of health systems for preparedness and response.

WHO brings together expertise in epidemic response, logistics, security coordination, and management. It works in coordination with, and strengthens the response to health crises provided by other UN teams (typically the United Nations Children's Fund, United Nations Population Fund, United Nations Development Programme, United Nations High Commissioner for Refugees, International Organization for Migration, and the World Food Programme). Whether in Country Offices, Regional Offices, or at Headquarters, the WHO network for Health Action in Crises (HAC) provides information and services, and mobilizes partners to agree on standards and courses of action.

For more information, please visit: www.who.int/hac/en

International Committee of the Red Cross (ICRC)

The International Committee of the Red Cross (ICRC) is an impartial, neutral, and independent organization whose exclusively humanitarian mission is to protect the lives and dignity of victims of war and internal violence, and to provide them with assistance. This involves:

- Visiting prisoners of war and security detainees.
- Searching for missing persons.
- Transmitting messages between separated family member.
- Reuniting dispersed families.
- Providing safe water, food and medical assistance to those in need.
- Promoting respect for international humanitarian law.
- Monitoring compliance with that law.
- Contributing to the development of that law.

Established in 1863, the ICRC is at the origin of the International Red Cross and Red Crescent Movement. It directs and coordinates the international relief activities conducted by the Movement in situations of conflict. It also endeavors to prevent suffering by promoting and strengthening humanitarian law and universal humanitarian principles.

For more information, please contact: www.icrc.org

The International Federation of Red Cross and Red Crescent Societies

The International Federation of Red Cross and Red Crescent Societies is the world's largest humanitarian organization, providing assistance without discrimination as to nationality, race, religious beliefs, class, or political opinions.

Founded in 1919, the International Federation has a membership of 183 Red Cross and Red Crescent societies, a Secretariat in Geneva, and more than 60 delegations strategically located to support activities around the world. There are more societies in formation. The Red Crescent is used in place of the Red Cross in many Islamic countries.

The Federation's mission is to improve the lives of vulnerable people by mobilizing the power of humanity. Vulnerable people are those who are at greatest risk from situations that threaten their survival, or their capacity to live with an acceptable level of social and economic security and human dignity. Often, these are victims of natural disasters, poverty brought about by socio-economic crises, refugees, and victims of health emergencies.

The Federation carries out relief operations to assist victims of disasters, and combines this with development work to strengthen the capacities of its member National Societies. The Federation's work focuses on four core areas: promoting humanitarian values, disaster response, disaster preparedness, and health and community care.

The unique network of National Societies—which cover almost every country in the world—is the Federation's principal strength. Cooperation between National Societies gives the Federation greater potential to develop capacities and assist those most in need. At a local level, the network enables the Federation to reach individual communities.

The Federation, together with National Societies and the International Committee of the Red Cross, make up the International Red Cross and Red Crescent Movement.

For more information, please visit: www.ifrc.org

Annex 7

Mass Fatality Plan Checklist for Ministries of Health and National Disaster Offices

The Pan American Health Organization has developed a checklist on mass fatalities that can serve as an annex to any National Health Sector Emergency Management Plan or National Disaster Management Plan. It is based on the London Resilience Mass Fatality Plan, 2006 and Management of Dead Bodies after Disasters: A Field Manual for First Responders.

The checklist contains the essential elements that should be addressed by Ministries of Health and Disaster Management Offices as they develop a mass fatality plan. The plan does not need to be standalone; it can be an annex to the National Disaster Management Plan. As such, the mass fatality annex only needs to focus on elements unique to a mass fatality.

It is important that countries exercise their plans on a regular basis to evaluate organization's capability to execute one or more portions of the plan and to promote preparedness.

Recommendations for Organizing the Plan: We recommend that the plan can be organized first by "essential elements" with specific activities to deal with fatalities caused by various types of disasters.

The Essential Elements

I. Introduction and Purpose

- Outline the purpose of the plan.
- List assumptions of a Mass Fatality Plan.
- Define the scope of the plan and local hazards that can create mass fatalities, i.e. type, frequency, level of impact, etc.
- List members of mass fatality coordination committee/key partners, stakeholders in the planning and implementation process.

II. Activation

- Describe the activation process and identify who or what agency will be responsible for activating the Plan, i.e. Same authority as in the National Health Sector

Emergency Management Plan or the National Disaster Management Plan.

- Include a call out chart and attach roles and responsibilities to each individual for this phase of the plan.

III. Command and Control

- Discuss with local health, law enforcement and disaster management officials where/how mass fatality fits in with national plans.
- Discuss role of health authorities, NGOs and national disaster offices during mass fatalities.
- Discuss legal authority for handling of dead bodies from the point of examination by a physician/pathologist to the actual burial process. Consider the investigative needs of law enforcement agencies.
- Outline the local incident command structure and provide an organizational chart for chain of command, including operations, logistics, planning, and finance/administration. Reference all hazards/emergency operations plan as appropriate.

IV. Logistics

- Consider arrangements for providing transportation for the movement of the deceased/remains/personal effects.
- Storage facilities for temporary morgues may involve the commandeering of 20/40 ft refrigerated containers. Remember that each container has limited capacity and requires considerable quantities of fuel – the cost of which can be substantial.
- Emergency communications with all relevant parties must be done through secured channels that are not easily accessible by the media and general public.
- Provision of resources – are there national/regional stocks available that can be used i.e. coffins, body bags, waterproof labels, dry ice etc.
- There may be the need for provision of portable electrical supply and water to field sites.
- Designate a trained individual supporting team members to mange and oversee logistical arrangements.
- Identification of local and regional technical specialists/resources and arrangements for obtaining their services through agreements.

V. Welfare

- Mention provisions that will be made for handling the welfare needs of family and friends including a designated area for viewing/identifying bodies (consider cases where bodies have to be isolated as in the case of some epidemics).
- Discuss with the medical examiner the process involved in releasing or allowing for burial of the dead and the recognized forms of burial in the country. Ensure that provisions are made in the plan for addressing local cultural and religious needs of the community.
- Include linkages with local Crisis Intervention Teams or psycho-social support teams and define procedures for their activation based on level of assistance that they can provide.

VI. Identification and Notification

- Identify a team of persons from law enforcement, health authority, social services etc. who can serve to identify the deceased (with use of forensic procedures), securing the remains and reuniting with family/friends. Consider the local rescue and recovery procedures in place and how these will be linked to the work of this team. A physician or pathologist should determine how partial remains would be handled and these decisions included in the plan.
- Include information regarding the legal rights of the deceased, e.g. Law Enforcement Acts, Interpol Resolution AGN/65/res/13 (1996), humanitarian laws and other ethical and social norms.
- Arrangement for viewing of bodies should be included, facilities identified and arrangements for setting these up as well. Consider how the bodies will be stored and presented and who will be responsible for these activities.
- The matter of investigation should be carefully considered and the relevant information included – review legislation relevant to inquests, registration of death, insurance procedures, criminal actions etc.
- The plan should consider disaster situations when specialist identification teams are not available or the scale of the disaster exceeds local capacity. Arrangements for external assistance and/or local arrangements to facilitate identification at the local level should be considered.

VII. International Dimensions

- Mass fatality incidents may involve foreign nationals. These may be foreign work-

ers living in the affected areas, tourists, illegal immigrants or relatives of affected families.

- The mass fatality plan should be distributed to foreign embassies or consulates of countries from which large tourist populations arise.
- Many countries deal with illegal immigrants on a regular basis and therefore procedures should be available to support this element of the plan. Include all provisions for repatriation of victims to home country – consult with Immigration and Attorney General's chambers and consider finances for such actions.
- Department of Foreign Affairs or Governor's Offices should be consulted on arrangements for returning victims who are nationals from your country who died in the country where the disaster has occurred. Arrangements for receiving these victims should be included in the plan and provisions for handling the deceased once they have been received .
- Consider special arrangements that may be required such as embalming and how the death certificates will be issued.
- In the event that tourists or high level officials are involved and their remains are being shipped, consideration must be given to the sensitivity of such situation and the controlled release of information to the local and international media. Consult the Pan American Health Organization/World Health Organization resolution on the International Transportation of Human Remains (1966) (www.interpol.int/Public/DisasterVictim/Guide/appendices.asp#c).
- Identify the national and regional INTERPOL counterparts and define arrangements for requesting their assistance when required.

VIII. Site Clearance and Recovery of Deceased Victims

a. Clearly define procedures for photographing victims/body parts and placement of proper identification tags – what tagging system will be used as per police procedures and who will be responsible for keeping accurate records of these. Also consider where these procedures will take place (collection point) and provision of adequate security measures.

b. Procedures for photographing, labeling and securing personal effect must also be included in the plan – who will be responsible for these processes? Most likely assigned to the Police. Are resources available such as digital cameras with sufficient memory?

c. Provisions should be made for a victim audit (may be advisable to have an external group to the police) to verify that the correct procedures were followed. The plan must define who, where and how this will be performed.

d. In certain situations such as criminal and/or terrorist attacks the disaster site must be preserved for investigative purposes – whose responsibility will this be and how will it be done, This should be outlined in the plan in a step by step format – consult with a law enforcement agency on this matter.

IX. Mortuary

e. For storage and body preparation local morgue facilities and funeral homes – location, capacity, resources etc., should be listed in the plan with relevant contact details. Transportation to these facilities must be considered. The plan should consider the development of national/regional stocks of coffins, body bags etc. MOUs can be developed with private morgue/funeral homes and included as part of the plan. Consult with Attorney General's Chambers on these arrangements.

f. Ensure that the plan addresses issues such as individuals who die while being transported and those who die in hospitals as a result of injuries sustained from the disaster. In some countries they are passed through the same procedures as those who have died at the disaster site.

g. Consider arrangements for handling the media and for security at these facilities.

h. A general principle should be applied – hospital mortuaries should **NOT** be used unless numbers are manageable especially in the case where there is only one available hospital. Temporary mortuary facilities should also be considered.

i. Ensure that law enforcement agencies identify and provide procedure for securing routes for transporting victims to identified morgue facilities.

X. Disposal Final Arrangements

- Procedures for returning the deceased to families must be clearly defined – these can be provided by the physician/pathologist. The wishes of the family for returning partial remains must also be considered.
- Discussions should take place with the physician/pathologist and social welfare or other relevant local agencies regarding the disposal/burial of unclaimed victims/remains. The legal issues must be considered and discussed with the Attorney General's Chambers. Ensure that these are clearly documented in the plan.

XI. Chemical Biological Radiological Nuclear (CBRN)

- Include procedures for handling such events including how remains should be han-

dled, personal protective equipment, decontamination requirements and procedures and ongoing monitoring of the site and any remains or items removed and where cold storage facilities can be located.

- Consider decontamination arrangements for vehicles and other storage equipment and facilities and environmental impacts along with requirements for evacuation or isolation of surrounding communities.
- Arrangements with external agencies may have to provide for risk assessments and advice on viewing, return of bodies, burial, cremation and repatriation. Identify such agencies in the plan and establish MOUs accordingly.

XII. Public Information and Media Policy

- Many countries have National Public Information Plans and Policies. These can be applied to this element of the plan. Official statements should be channeled through the relevant media centers either at the National Emergency Operations Centre (NEOC) or incident command post in the field. Information from all sites, i.e. mortuary, hospital, family viewing areas, should be channeled to the NEOC for compilation.
- Media should be restricted from entering mortuary facilities or crisis intervention centers/family viewing areas – include procedures for securing these areas and for channeling information to the media center.
- Procedures for releasing names of deceased should be clearly defined in the plan especially considering large numbers of unidentified deceased victims. Provisions should be made for setting up facilities for the public to enquire about missing/deceased persons and these site should be away from the hospital and mortuary.

XIII. Health and Safety

- Consider provisions for the welfare and psychological needs of responders – the local Crisis Intervention Teams or mental health services can lend support in this area. Consider how volunteers from the Red Cross and other similar services can be accommodated to provide such support – once they are trained.
- There may be a need to identify and equip rest areas – whose responsibility will this be and how will the resources be acquired should be established locally.
- Provision should also be made to determine how responders who have lost family members and friends will be handled and by whom.

XIV. Disaster Mortuary Plan

- In many countries it is the responsibility of the Police to set up and manage the documentation of the deceased at the mortuary and for evidential continuity. Relevant forms, procedures and a layout of the mortuary should be included in the plan.
- In the event of a large scale event involving numerous victims it may be necessary to establish a mortuary management team. The composition of the team should be included in the plan along with call out procedures and responsibilities for each individual.
- Include as part of this element the mortuary procedures to be followed: Registration and arrival, storage, examination and photographing, cleaning of body, radiography, fingerprints, Odontology, re-bagging, embalming, viewing, release of body, bodies not claimed, repatriated bodies, DNA and toxicology, documentation, securing of property, equipment list, waste disposal, staffing, visitors, health, safety and welfare.

Management of the dead is one of the most difficult aspects of disaster response. It has profound and long-lasting consequences for survivors and communities. Globally, disasters claim thousands of lives each year. However, care of the deceased is often overlooked in disaster planning and the absence of guidance for first responders has recently been highlighted following several large disasters.

Immediately after a major disaster, identifying and disposing of human remains are often done by local communities. Forensic specialists may not be available or unable to rapidly access the affected area. There are simple steps that first responders can take to ensure the dead are treated in a dignified way and that can assist in their identification.

This *Field Manual for First Responders* presents simple recommendations for non-specialists to manage the recovery, basic identification, storage and disposal of dead bodies following disasters. It also makes suggestions about providing support to family members and communicating with the public and the media.

This manual will be useful during the immediate response to a disaster and where forensic response is unavailable. Furthermore, it will be useful for those preparing mass fatality disaster plans. The recommendations are relevant for local, regional and national authorities as well as for non-governmental organizations.

The principles outlined in this document are being implemented and promoted by a variety of organizations, including the Pan American Health Organization, the World Health Organization, the International Committee of the Red Cross and the International Federation of Red Cross and Red Crescent Societies.

This document can be viewed on Internet at:
www.paho.org/disasters (click on Publications Catalog)

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