



ISSN: 0975-833X

Available online at <http://www.ijournalcra.com>

International Journal of Current Research
Vol. 12, Issue, 08, pp.13326-13329, August, 2020

DOI: <https://doi.org/10.24941/ijcr.39450.08.2020>

INTERNATIONAL JOURNAL
OF CURRENT RESEARCH

RESEARCH ARTICLE

DEALING WITH DISASTER VICTIM IDENTIFICATION: A REVIEW

Dr. Sandhya Jain and *Dr. Nikita Choudhary

Dept. of Orthodontics and Dentofacial Orthopaedics, Government College of Dentistry, Indore, MP, India

ARTICLE INFO

Article History:

Received 05th May, 2020
Received in revised form
27th June, 2020
Accepted 14th July, 2020
Published online 30th August, 2020

Key Words:

Disaster Victim Identification, Fingerprint Analysis, Forensic Dental Analysis, DNA Analysis.

ABSTRACT

Background: Disaster is an unfortunate event that occurs suddenly and cause death and injury of many people. Dealing with this situation and proper management after disaster is a very challenging task. This article gives an overall general overview about the procedure of managing a disaster especially focussing on identification of victims of disaster. The article describes about teams and their overall functions involved in management of disaster and also an overview about methods of disaster victim identification. Central Emergency Rescue unit is first to reach the situation and starts the rescue operations. Central Investigation Unit investigate the extent of disaster. Victim Identification Unit is focused towards identification of victims of disaster. 'Command' of victim identification unit takes all the decisions required and issues all the orders for actions. Management and communication staff is the collection point of information between Recovery, Evidence collection, and Disaster victim identification unit. Recovery and Evidence Collection Team recovers the dead bodies from the disaster site. AM Team collects ante mortem data from various sources for identification of victims. PM Team collects the data from deceased victims (dental, medical, forensic information). Disaster Investigation Unit investigate cause of disaster

Copyright © 2020, Sandhya Jain and Nikita Choudhary. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Citation: Dr. Sandhya Jain and Dr. Nikita Choudhary. 2020. "Dealing with disaster victim identification: a review", International Journal of Current Research, 12, (08), 13326-13329.

INTRODUCTION

A disaster is an unfortunate accident or calamity which occurs suddenly and causes injury or death of many people¹. It can be of many kinds like terrorist attacks, technical accidents (fires, explosions), natural disasters like flood, earthquakes, consequences of wars etc. It is difficult to assess the extent of damage immediately after disaster. Each disaster is of its own kind therefore formulating a common plan for all disaster is not possible. For effective disaster response following activities are indispensable:

- Proper analysis of situation

Identify the type of natural disaster i.e aircraft crash, railroad accident etc. Identify the resulting hazards i.e fires, biological or nuclear contamination etc. Identify all other potential sources of danger e.g. recurring tidal waves etc.

- Analysing the persons and resources required to handle situation.
- Formation and implementation of plans for victim management.
- Providing information of missing victims to their families and local authorities.

Many agencies and organisations work together during disaster management. These have different functions and responsibilities. All of them are needed to work together in coordinated way to prevent chaos of situation³. To properly handle disaster each country should have its own permanent victim identification team. The DVI team should be able to respond immediately following disaster. The protection of life of victims and personnel is prior to all other measures.

Immediate actions after disaster

- Call the local police
- Seal the disaster site for entry of unauthorised people
- Call the DVI team (head+ forensic pathologist+2 police officers)

Early action of DVITeam

- Evaluation of area extent of the disaster site.
- Evaluation of duration of the disaster.
- Evaluation of State of the corpses and methodology to remove them.
- Evaluation of medico-legal institute able to respond.

*Corresponding author: Dr. Nikita Choudhary,
Dept. of Orthodontics and Dentofacial Orthopaedics, Government College of Dentistry, Indore, MP, India.

First an overview of situation is obtained. After understanding the situation many teams are formed and assigned specific

functions and responsibilities. The teams in management of disaster are as follows:

- Central Emergency Rescue unit
- Central Investigation Unit
- Victim Identification
- Disaster Investigation Unit

Central Emergency Rescue unit: In most of the situations people in immediate vicinity will start the rescue operations. After some time rescue team will come to the disaster site and start performing its function. The people in vicinity generally describe them about the disaster but such descriptions are not reliable. The head of this team should coordinate with police for description of the event. After taking the overview of situation the team starts its function.

Central Investigation Unit: Its function is to investigate the extent of disaster. It surveys the disaster site in following way:

- seals the disaster site and ensures complete security
- Identity checks of individuals entering or exiting at the site
- Establishment of fixed paths with specific entrance and exit points, parking, helicopter landing pads etc
- Survey of the disaster site/area as needed(GPS, laser surveying equipment, photographic documentation)

Victim Identification Unit: This team is focused towards identification of victims of disaster. In order to perform its work thoroughly this team requires accurate maps of disaster area. Victim identification unit works with recovery and evidence collection team. It is structured as follows:

Command

- Takes all the decisions required and issues all the orders for actions.
- It coordinates with other agencies involved in investigation.
- It releases the information to media.

Management and communication staff: It is the collection point of information between Recovery, Evidence collection, and Disaster victim identification unit.

- It forms and maintains the time table for various operations.
- It identifies the needs of team and provides them the resources.
- Maintains contact with other organisations involved in disaster management and also the foreign organisations involved.
- Maintains the flow of information between all the units from identification of victim until the issue of death certificate.

Recovery and Evidence Collection Team

- Recovers the dead bodies from the disaster site.
- Collects and preserves the evidences and properties at disaster site (suitcases, lockers of banks etc)

AM Team

- The AM Team collects ante mortem data from various sources for identification of victims.
- Prepares files of persons to be identified.

PM Team

- Collects the data from deceased victims (dental, medical, forensic information)
- formed by experts in fields of
 - Fingerprint analysis
 - Forensic pathology
 - Forensic odontology
 - DNA analysis

Reconciliation Team

- Matches AM and PM data records for victim identification.
- Gives the corresponding documents to the Identification conference.
- Identification conference then give final decision.

Care and Counselling Team

- Provides medical and psychological care and counselling for all Team members.
- Relatives of disaster victims can contact this team for assistance.

Identification Board

- The group of experts in this team meet at regular interval of time.
- They make the final decision regarding identification of victim.
- Finally they certify the decisions.

The victims of the disaster can be identified on the basis of many factors. The methods used in identification should be scientific, reliable and easy to use.

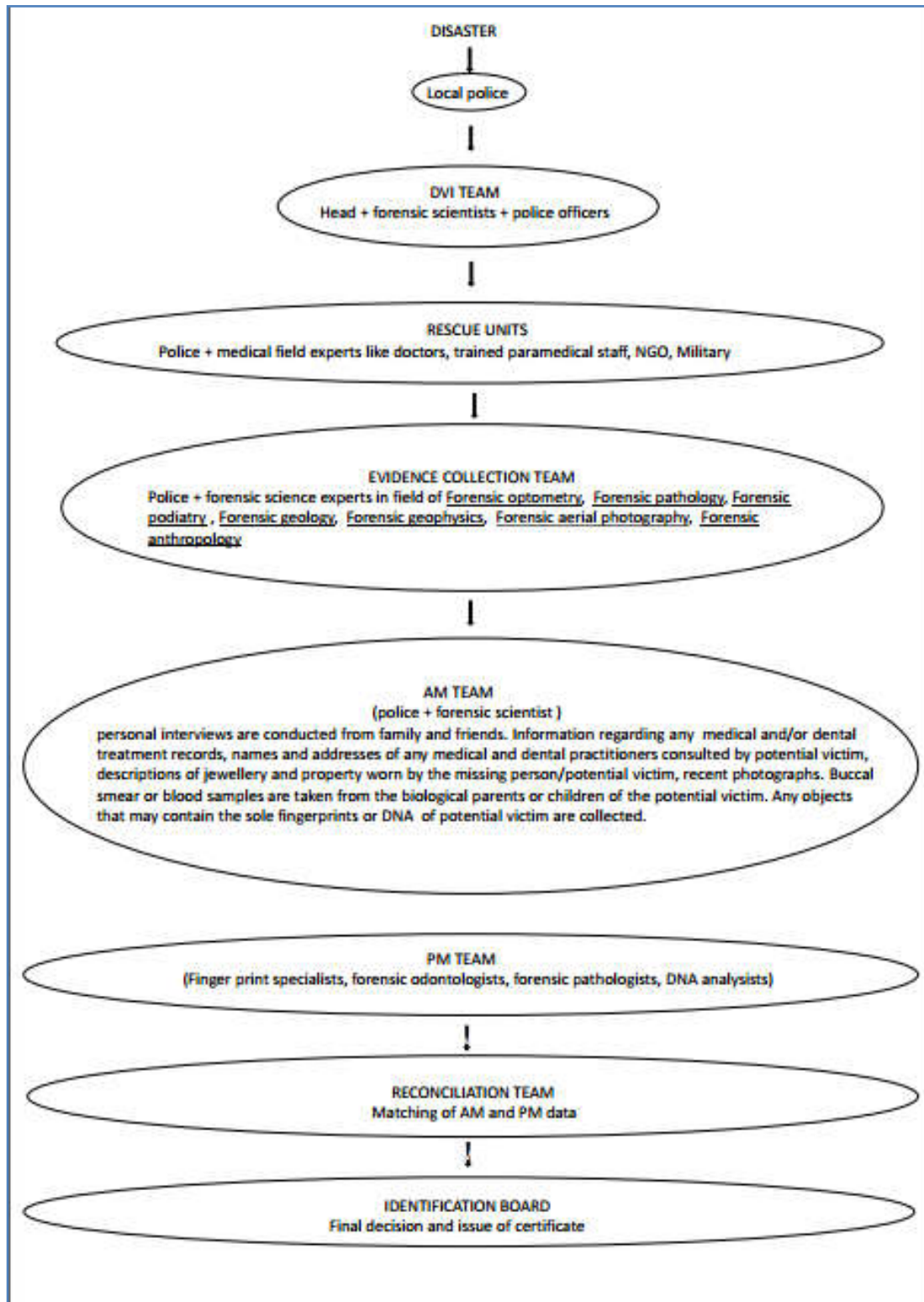
The primary methods of identification are

- Fingerprint analysis
- Dental analysis
- DNA analysis

Secondary means of identification includes

- Personal description
- Medical findings
- Clothes found on body
- Accessories found on body etc.

Often the relatives of victims will identify the victims visually but this should not be relied on because the bodies of victims are generally very much traumatised. The relatives are also very much psychologically stressed and may identify the victim wrongly. Even only single method should not be used solely as identification method. Combination of methods will give the best results. It is not possible at the time of evidence collection to know that which data will be useful and which will be not.



Figure

So all the possible data should be collected because any data can be a clue at the time of matching of AM and PM data.

Fingerprint analysis: Fingerprint analysis is very reliable method of identification because fingerprints are unique to a person. The pattern of papillary ridges of no two persons match. In fact, papillary ridges of no two fingers of same person match. They are formed in 4th month of I.U life and do not change in entire life. After injury they will repair in same pattern and if injury is severe they will heal by permanent

scarring. Fingerprints can be classified and therefore can be documented properly.

Dental analysis

The dental traits are also unique to person. The anatomical and morphological traits of teeth are compared between AM and PM data². The treatments present in teeth like fillings, root canal treatment, crowns etc make the dentition even more unique.

The teeth are hardest tissue of body and so when other soft tissue of body deteriorates due to disaster, teeth withstand the conditions and can be studied. The teeth are well protected in jaws which is one of the reasons that they survive the disaster.

DNA ANALYSIS

DNA is very unique to person. No two persons can have same DNA except identical twins. It is the best method to be used when the bodies are severely traumatised as any part of the body can be used to obtain the sample. If self-samples are present then AM data matching is done with self-samples otherwise profiling is done by using samples of relatives. The samples so obtained are sent to laboratories and analysed according to international norms for matching.

Disaster Investigation Unit

- Investigation of cause of disaster is the last step in the whole operation of disaster management.
- It is actually responsibility of police

Conclusion

Correct identification of victims of disaster is very important. It is a teamwork and needs to be done in well-coordinated way. The team includes Central emergency rescue unit, Central investigation unit, Victim identification unit, Disaster investigation unit. Proper collection of antemortem and post-mortem data should be done. It is done by experts in fields of Fingerprint analysis, Forensic pathology, Forensic odontology, DNA analysis. Some other secondary means of identification like personal description, medical findings, clothes on body, accessories found on body etc are also used.

REFERENCES

- David Sweet 2010. INTERPOL DVI best -practice standards- An overview, Forensic science international,18-21.
<https://www.cmu.edu/chrs/conferences/eppi/docs/Interpol%20DVI%20Guide.pdf> accessed on 3 august 2019.
- Interpol disaster victim identification guide,2009, of forensic odonto-stomatology, volume 30 , number 1.
- Process Pisha Pittayapat^{1,2}, Reinhilde Jacobs¹, Eddy De Valck³, Dirk Vandermeulen⁴, Guy Willems (5 july 2012) ,Forensic Odontology in the Disaster Victim Identification Process, Journal
