

## GENERAL ASPECTS REGARDING THE MANAGEMENT OF DISASTERS

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### **Abstract**

*Disasters may be defined as any event that could cause the wounding or death of a great number of persons, the distraction of goods, and the lack of balance of the surroundings or could affect the local community.*

*The emergency service, the ambulance and the local authorities cannot cope with these situations by themselves and there need to be organized and mobilized some special services and some particular work methodologies. Therefore, special work teams will be organized, teams that will include specialists from the police, legal medicine, radiology, toxicology, stomatology, molecular genetics departments, etc.*

**Key words:** disaster, catastrophe

### **1. DEFINITIONS**

The term disaster (catastrophe) can be approached according to the initial event:

The **accident** is a sudden and unpredictable event, causing in the organism an injury or a functional disorder, permanent or temporary (Robert)

The **catastrophe** is a phenomenon of a greater extension producing a complete disorder or even a violent end in the existence of an individual. It is synonymous to the calamity, cataclysm, disaster or drama.

The **calamity** is a public misfortune, including starvation, war, and epidemic.

The word **cataclysm** comes from the Greek „kataklysmos” which means deluge and can disturb the Earth’s crust through earthquakes, flooding, etc.

The **disaster** comes from „disastro” – astrological term meaning a fatal event, a serious misfortune and therefore destruction and ruins. It signifies the influence of a star ceasing to be favorable, on the other side it is a misfortune produced by fate.

The **scourge** represents all the big calamities to fall upon the population: avalanches, flooding, huge tides.

The **sinister** constitutes a natural catastrophically event, caused by bad weather and which produces destructions and losses (fires, flooding, shipwrecks, earthquakes, etc.)

As a conclusion, a catastrophe may be defined as a sudden and unusual, of great amplitude, hitting a community and causing important damages both as concerns the humans (great number of victims), and as concerns the materials (deteriorations and destructions of the environment).

According to art. Two of the Ordinance 47/1994 (approved by Law 124/1995) in Romania disaster means:

- Natural destructive phenomenon of geological or meteorological origin or the sickening a great number of persons or animals suddenly occurred as a mass phenomenon.
- Event with extremely serious effects on the environment, caused by an accident

The **mass disaster** represents an event which is not in a direct relationship with an act of war and which produces the loss of at least 10 human lives or when the number of bodies is bigger they could investigate by means of local resources.

## 2. TYPES OF DISASTERS

From their origin's point of view, the disasters are divided in:

- Natural, being represented by massive ecological destructions, which can overwhelm a community needing help from outside. E.g. earthquakes, flooding, hurricanes (typhoons) and tornadoes, land sliding, volcanic eruptions.
- Artificial, which are also divided in: technological (events caused by human errors or omissions such as: inadequate transport of dangerous substances, toxic gas leaks), social (represented by deliberate human acts, such as wars, revolutions, terrorists' acts, events followed by huge life and material losses constituting the social disasters) and ecological (caused especially by people and which affects the Earth, the flora and fauna on multiple levels. E.g. destroying the planetary forest and some animal species.

## 3. CONSEQUENCES OF DISASTERS

The disasters can have the following consequences:

- injured people needing treatment and urgent transportation to the hospital;
- deceased who need an identification as accurate as possible;
- survivors who had not been injured and do not need medical care;
- victims of disasters who lost their houses and urgently need shelter, hence the importance of creating a center for receiving such victims,
- relatives or friends who ask for information about the persons involved in the accident;

#### **4. ACTIVITY IN FOCUS**

The sanitary infrastructure is composed of local medical dispensaries, regional hospitals, reference hospitals, specialized clinics. All public resources must be integrated in this system so that they could meet the national plan's objectives.

The national emergency committee (the national leading organism) has to provide some procedures for the application of pre-established intervention plans simulated and adapted to each case.

#### **5. THE FORENSIC'S ATTRIBUTIONS IN CASE OF DISASTERS**

- to search the place, to record the deaths, to assist the body packing and labeling together with the Police and the Prosecutor (a map of the place will be drawn on which each body or segments of the body will be marked)
- When in situations, involving contamination risks when researching the place (chemical, biological accidents) the forensic will instruct the team involved in recuperating the bodies and they will wear protection suits.
- He has a very important role in supervising the operations at the identification center and especially in the actual identification of the bodies, (a mixed team composed of prosecutors, police officers, emergency ambulance representatives, firefighters, forensics, dentists, anthropologists, technical experts, etc.)
- Will supervise the persons involved in the incident, who have no injuries, but who can develop the post-traumatic stress disorder.

**6. THE OPERATIONS AT THE IDENTIFICATION CENTER** (the center will be organized at the nearest morgue, but a temporary morgue can be also arranged in a warehouse, hangar, military base, etc.)

I will now mention the necessary steps for a good functioning of the center:

- The reception of the bodies at the morgue (by a team formed of forensics, police officers, medical students).
- Depositing the bodies and the evidences (which will be packed, labeled and sealed)
- The identification center's structure (the center's leader, usually a prosecutor, will collaborate with other institutions in order to obtain the necessary equipment, scientists)
- Identifying the bodies
- The autopsy
- The relatives' reception

- The cooperation with other agencies (essential for a correct investigation)

## 6. IDENTIFYING THE BODIES

The forensic has to make sure of the sustained efforts of the team in order to establish the correct identification of each body. The difficulties in identifying the bodies are according to the nature of the disaster, with special difficulties in case of body carbonization, decomposition, and disintegration (plane accidents, explosions)

Unfortunately, in some cases it is impossible to do the identification, in which case the body will remain unidentified. In an investigation, the decision to abandon the identification does not have to be taken quickly, but when taken the information about the body will be kept for a possible future identification.

Methods of investigation:

The **visual investigation** is relative method due to the circumstances of the identification done by a family member of a close friend of the victim. The forensic takes part at the accomplishment of the spoken portrait based on the Bertillon method; a modern way of identifying is represented by the robot portrait.

The **palmar or plantar prints**: are based on the existence of the ante mortem prints for comparison or they can be collected on the personal items.

The **odontological identification** – the dental structures are very resistant, even in case of severe mutilations, advanced decompositions or even burns, but this method also is based on the existence of an ante mortem material for comparison (declarations, dental files, and dental radiographies)

The **genetic identification** – a sample of spleen or muscle is collected and represents the source for the DNA procedure. In this case, in addition, one needs ante mortem data or the genetic profile can be determined using biological samples from the close relatives.

For identification the classical methods can be used, represented by the serological methods (blood categories, Rh) or modern techniques of genotypicity: the DNA analysis by the methods RFLP and STR. (the most common one)

The **anthropological identification** by comparing the anthropological characters of the group or individuals (note the importance of comparing the ante mortem radiographies with the post mortem ones.) Another way of identification is the facial reconstruction by special techniques.

## REFERENCES

1. Matei V, Actualitati in medicina legala-note de curs, Timisoara, 2001
2. Belis V, Tratat de medicina legala, vol. I si II, ed. Medicala, Bucuresti, 1995
3. Proceedings of the 1<sup>st</sup> asian-pacific congress on legal medicine and forensic sciences, Singapore, September, 1983
4. Dogaroiu C, Draghici V., Investigatia dezastrelor cu multiple victime, Revista romana de medicina legala, vol.X, nr.1, martie 2002
5. Steinier N., Manastireanu D., Curs practic de urgente medico chirurgicale-introducere in medicina de dezastre, Ed. Didactica si Pedagogica, Bucuresti 1996.