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LETTER FROM AMERICA

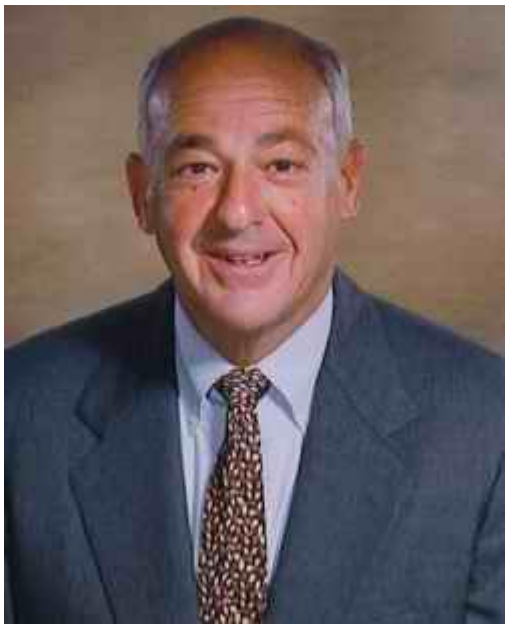
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Mass disasters: Forensic scientific considerations

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Disasters typically occur without warning and can strike anywhere and at any time. Whether the disaster is natural like a flood or earthquake, or man-made like a fire or terrorism attack, the primary roles of the Coroner/Medical Examiner's (C/ME) office are essentially the same.

The three primary roles of the C/ME are: (1) examination of samples of tissues and bones to determine if they are human remains; (2) positive identification of such human remains; and (3) determination of the cause and manner of death. The C/ME also has three important secondary functions. These include: (1) provide data and evidence collected from the scene and victims to local, state, and federal investigative agencies; (2) provide epidemiological summary of the victims of the disasters; and (3) develop information to prevent or diminish future fatalities.

After a flood or a bombing, the scene contains a large amount of debris, consisting of pieces of building materials, papers, clothing, vegetation, and human and animal remains. The first role of the death investigators at the scene is to locate and differentiate human remains from other materials. Once human remains have been identified, their original locations must be marked and documented by photographs. Next, the human remains must be positively identified. The method used for identification is dictated to a great extent by the physical state of the remains. The methods at the disposal of the C/ME include tattoos, fingerprints, dental comparisons, medical implants, and DNA analysis. The third role of the C/ME is to determine the cause and manner of death in order to issue the certificate of death. In case of a terrorist attack, obviously the manner of death will be homicide. In non-criminal situations, it is conceivable that the manner of death could be ruled natural, or rarely, suicide, although undoubtedly, deaths occurring is such instances will almost always be categorized as accidental.

Once the identified remains have been located and the death certificate (DC) issued, the forensic epidemiologist would provide a detailed breakdown of the age, sex, race, cause of death, and also specify the methods used to identify the victims. A post-disaster analysis of the location and actions of the victims may offer meaningful and feasible suggestions designed to prevent similar types of deaths in the future.

The final role of the C/ME is to provide statistical and epidemiological data regarding physical evidence recovered during the post-mortem investigation to various governmental investigative agencies. In non-criminal matters, similar information would be made available to private attorneys, insurance companies, and appropriate entities acting with the permission and legal authorization from the victims' families.

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Current societal trends lend themselves to clustering of large groups of people whether it be in cities, buildings, or various modes of transportation, such as airplanes and trains. It is this frequent clustering that increases the likelihood of deliberate man-made disasters, as well as increased fatalities in natural disasters.

When disasters occur involving multiple deaths, the Coroner/Medical Examiner (C/ME) must rapidly and accurately identify and determine a cause of death for all victims. These disasters are often complicated by fire, high-impact force and the scattering of victims and their possessions. Accordingly, pre-planned protocols for the recovery and processing of disaster fatalities are important and necessary to help relieve the extent to which a community's resources are strained during such situations.

Every metropolitan C/ME should have a plan that provides a high level of preparedness for their office to respond to disasters with fatalities within their jurisdiction and surrounding communities that may require assistance. All necessary planning and arrangements should be in place for rapid implementation and development.

It is highly relevant and extremely important to keep in mind that detailed, precise, scientifically documented post-mortem findings can often be utilized prior to future disasters of a similar nature in order to prevent and diminish morbidity and mortality.

What more worthwhile and significant role can Coroners/Medical Examiners and other forensic scientists play than this in the performance of their professional duties?