



D75 Management of Mass Disasters in Spain: The March 11th Madrid Train Bombing

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After attending this presentation, attendees will be familiar with the forensic investigation of victims of the terrorism attack that occurred on March 11, 2004, in Madrid, Spain, which was carried out by a collaboration of different forensic teams in Spain.

This presentation will impact the forensic science community by providing knowledge on the features of mass disaster management in Spain, highlighting the role of different forensic disciplines in the identification of the victims.

On March 11, 2004, during the morning rush hour between 7:39 a.m. and 7:42 a.m., ten improvised explosive devices were detonated on four commuter trains running from outside Madrid to the Atocha Railway Station, located near the center of the city. The ten explosions occurred almost simultaneously and resulted in 177 deaths, with more than 2,000 injured. There were subsequently 14 more in-hospital deaths (9 soon after admittance and 5 occurring later), bringing the ultimate death toll to 191. The 11-M Madrid commuter train bombings of 2004 constituted the second-largest terrorist attack to occur in Europe after the 1988 Lockerbie bombing, while the subsequent investigation became the most complex and wide-ranging forensic case in Spain's history.

The 11-M Madrid train bombings were a challenge for the teams' professionals involved in victim identification. Although every mass disaster is unique, presenting a specific scenario, an accurate management of the situation is critical for proper victim identification. As a result, management, recovery, and laboratory methods of identification are all of great importance to an efficient resolution of those types of disasters.

A provisional morgue was established in the 6th pavilion of Institución Ferial de Madrid (IFEMA), where the different forensic teams worked on victim identification. Five work sites were created in the pavilion and the cadaver study was performed as follows: (1) Autopsy — three pathologists, three scientific police personnel, and a photographer worked together in this area where seven autopsy stations were located; (2) Radiology — two portable X-ray devices were taken from a nearby hospital. Two forensic pathologists and two radiology technicians performed the radiographic study of the victims; (3) DNA sample collection — a team of the National Institute of Toxicology took the required samples for DNA identification; and, (4) Forensic Anthropology and Forensic Odontology — two forensic odontologists, an anthropologist, and a pathology technician worked in the anthropological and odontological postmortem data collection of the victims.

Once the postmortem data was collected, a comparison with antemortem data was conducted, establishing positive identification of the decedent when possible.

The identification methods and percentage of identifications were as follows: fingerprints identified approximately 76% of the victims; dental, medical data, personal effects, tattoos, and family testimony were used to identify 8% of the victims; and DNA was used to identify 16% of the victims. Eighty percent of the victims were identified within 40 hours of the disaster.

In situations of mass disaster, the participation of the different forensic disciplines is needed to establish an identification protocol or to develop a new protocol in order to be prepared for future situations. For that reason, review of the management, recovery, and identification process developed during the 11-M Madrid train bombings may help to understand and improve the approach to these situations.

Terrorism, Bombing, Identification