

Results: In response to the 1997–1998 influenza season, Stamford Hospital and the Stamford Department of Health developed a collaborative, community-wide IVP in order to increase the influenza vaccine coverage in the community. Evolution of the IVP was aided by mapping and rehearsing several key processes, including patient education, triage, registration, patient flow, staffing, and vaccine administration. The IVP regularly processes 240 patients per hour. Staffing requirements for this volume include: (1) eight registered nurses; (2) four volunteers; (3) four security personnel; (4) two reception/triage personnel; and (5) one–two supervisors who also serve as rovers and troubleshooters. At its maximum, the IVP vaccinated 20,800 persons (>16% of the community and almost 300% of baseline), including more than 75% of residents >64 years of age. Hospital employee vaccination rate also rose from 34–58% over six seasons.

Conclusion: Six seasons of experience implementing and refining the IVP has enabled the Collaborative to define the structural components, patient flow, and staffing requirements necessary to vaccinate healthcare workers and the community urgently. With simple staffing adjustments, the IVP readily may be adapted to a community-wide smallpox vaccination program.

Keywords: influenza vaccine; staffing; vaccination program
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11 March 2003 Madrid Bombings: A Prehospital Analysis

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Introduction: On 11 March 2004, 13 terrorist bombs exploded, nearly simultaneously, in four trains in urban Madrid, Spain. The bombings injured more than 2,000 persons at the four separate sites, left 191 dead and 233 victims with severe injuries, and produced the equivalent of four separate mass-casualty incidents (MCI). Lay persons, many public-private organizations, prehospital emergency medical services (EMS), and 14 emergency departments and hospitals provided care to the victims. **Objective:** This study sought to: (1) describe the prehospital emergency response to these four terrorist bombings; and (2) identify strengths and limitations of the prehospital response to this event.

Methods: This was a descriptive study, using multiple information sources, including: (1) official government reports; (2) print and television media reports; (3) interviews with eyewitnesses; and (4) interviews with >180 first responders and EMS workers who participated in the emergency response. Items for data collection were suggested by a consensus group of disaster experts (listed at <http://www.mebe.org>).

Results: Prehospital resources dispatched to the four scenes included: (1) 49 mobile intensive care units (with one physician, one nurse, and two emergency medical technicians (EMTs)); (2) 22 fast-cars (with one physi-

cian, one nurse, and one EMT); (3) 11 home medical cars (with one physician and one EMT); (4) two helicopters (with one physician, one nurse, and 1–2 EMTs); (5) 48 Basic Life Support (BLS) SERMAS ambulances; (6) 47 BLS SAMUR ambulances; (7) 32 BLS Red Cross ambulances; (8) 20 BLS civil-protection ambulances; (9) three BLS SAMER ambulances; (10) private vehicles; and (11) >100 other vehicles for logistical and operational support. The number of immediately injured, immediately dead, critically injured, and scene times at each site are listed in Table 1. An estimated 14–20 victims with initial vital signs died at the scene. An estimated 85–90 victims received Advanced Life Support (ALS) care at the scene. Thirty-nine percent of victims were transported by ALS ambulance. More than 650 victims were transported to hospitals by BLS ambulances. All together, 58.6% of victims were transported to hospitals by EMS. Emergency departments received an estimated 233 red triage tag victims in the first hours.

Most red triage tag patients were received at the three closest hospitals (91, 38, and 30 victims, respectively). Factors that aided prehospital emergency response included: (1) the location of the bombings on open air trains (not in tunnels or buildings), which did not impede prehospital transit; (2) the collaborative efforts of citizens, fire-rescue, police, and public/private workers in rescuing victims; and (3) the strenuous efforts of many EMS providers. Factors that limited prehospital emergency response included: (1) the occurrence of four separate MCIs, two of which were proximally located (Atocha and Telez), which led to operational confusion; (2) the lack of operational coordination between two different responding EMS with two different and independent coordination centers; (3) inadequate emergency planning and deficient communication at SUMMA, which contributed to the maldistribution of victims to hospitals; and (4) a lack of information about hospital bed availability, which also contributed to the maldistribution of victims to hospitals.

Conclusion: Although the prehospital response to the 11 March 2004 Madrid bombings was nothing less than heroic, several lessons may be learned, which can be applied to future prehospital emergency preparedness and response.

Table 1—Injuries and estimated scene-times at four mass-casualty incident sites (*+30 severely injured; **+6 severely injured; Imm = immediately; min = minutes; n = number)

Site	Imm. dead (n)	Imm. surviving injured (n)	Critically injured (n)	Estimated total scene time (min)
Atocha	34	145	27*	120
Santa Eugenia	17	52	14**	75
El Pozo	67	56	6	75
Tellez	64	83	7	145

Keywords: bombing; emergency medical services; emergency response; Madrid; prehospital; preparedness
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