

Abstracts of Scientific and Invited Papers

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Session 1: Blood Donor Response to the Outbreak of Natural Disasters, Terrorism, and War

Blood Supply and Demand in Disaster, Terrorism, and War

Paul J. Schmidt, MD
Florida Blood Services, Florida USA

The continuing demand for blood for transfusion reflects the necessity to supply something that has a limited shelf life.

- Natural disasters or calamities such as an area-wide flood, earthquake, or windstorm do not create an acute need for blood. The problem arises only later because collection, communication, and transportation are impeded.
- Bioterrorism events will not increase the blood need, but may incapacitate donors.
- War needs of fighters are a logistics problem that mostly can be anticipated. The effects of war on civilians can be overwhelming.
- Manmade disasters, which mankind inflicts on itself, are those that need blood. They generally occur at single point locations.

Point-event disasters result from accidental failure of man's mechanisms and technology, but also result from intentional attempts to terrorize and intimidate. They are typified by rail, road, and aircraft accidents and by fires and explosions. Injuries produced in humans are similar whether they were caused accidentally or purposefully.

The problem is the coordination of the needs of victims of manmade disasters with the willing responses from volunteer blood donors. In the United States, there have been only five disasters in 30 years that required more than 100 units of blood. Each time, all of the blood transfused already was available before the disaster began. Nevertheless, ten-fold collections were made. In a 1995 terrorist bombing with 167 killed, the wounded used 131 units; >10,000 were collected. The wounded from the huge

terrorist attack on 11 September, 2001 in which >3,000 were killed used 258 units; >500,000 were collected.

Not all disasters in all countries will fit the above predictive outline. But, other scenarios suggest similar responses.

Reference

Schmidt PJ: Blood and disaster; Supply and demand. *N Engl J Med* 2002;346:617–620.

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Blood Donor Response to Continuous Terrorist Threats

Professor Eilat Shinar
Magen David Adom (MDA) Blood Services, Israel

During the last three years, Israel has faced repeated terrorist attacks involving mostly the civilian population. Each Multi-Casualties Event (MCE) creates an immediate increase in the demand for blood units and components (conditional needs), required to treat the casualties. In 2000–2003, about 150 MCEs occurred, resulting in 719 individuals killed at the scene, 1,189 severely/moderately wounded, and 3,070 with minor injuries.

The responsibility for supplying blood to both the military and civilians in Israel is carried by MDA National Blood Services—a civilian, statutory, not-for-profit organization. It conducts donor recruitment campaigns, blood drives, and blood collection nationwide. Processing, testing, storage, and supply of blood units and components to 30 hospitals are executed daily, concurrently with careful monitoring of the nation's blood inventory. The country is self-sufficient as blood supply is concerned, with a steady increase in blood donations throughout the years, reaching 276,000 units in 2002 (4.6% of the Israeli population). All of the blood donors are non-remunerated volunteers. Of the 1,000 units required/day, 70% are donated by civilians and 30% by military personnel. About 85% are collected in mobile drives and 15% in MDA stations nationwide.

Blood required by the hospitals in response to MCE could result in up to 25% increase of the daily supply. These events create a spontaneous reaction from the public, resulting in a substantial increase in blood donations, in subsequent days. Public appeals were conducted only on three occasions, which were met with an impressive