

### The Internet Revolution in Disaster Medicine: the Present and the Promise

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Over the past decade, the rapid evolution of the Internet has transformed the ways people collaborate and communicate, defeating geographic and cultural barriers along the way. Whereas historically communities were defined and confined largely by landscape, the electronic communications technologies have led to the formation of global villages that are free from limitations imposed by distance or topography. The current race towards wireless connectivity further liberates the dependence on land wires, thereby fuelling the adaptation of the Internet in countries lacking underground telecommunications infrastructure.

The Internet is ideally suited for the mitigation, management, and education in Disaster Medicine. Advantages of the Internet include: broad and economical access, ease of use due to its open architecture, mobility of the server and the potential to place it in the epicentre of disasters, multiple routes of information transfer, convergence of technologies to record and distribute essential information, store-and-forward convenience of multimedia data transfer, automatic documentation of communication for quality assurance and research, and cross-cultural buy-in and synergy.

The challenges of the Internet are mostly unrelated to technologies, but more to human factors. They include: 1) the familiarity to the medium and related technologies; 2) the cooperation of and agreement on communication protocols; 3) confidentiality and safe-guarding of essential channels of communications, security and virus prevention; and 4) accuracy of information dissemination.

It is opportune now for health professionals in Disaster Medicine to coalesce and synergize on the development and implementation of Internet protocols in order to improve wide geographic networking and exchange of information. In time, the Internet will become an integral component of an effective system of world-wide communication strategy, and ultimately will promote cooperation and seamless global coordination of disaster management.

**Keywords:** barriers; communication; cooperation; coordination; Disaster Medicine; factors; information; internet; protocols; technologies

### Availability and Appropriateness of Communication Technology in Disasters: The Evolution of Virtual Emergency Management Information Systems

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Disasters pose many obstacles for integrating and coordinating emergency health operations, especially when essential emergency staff are prevented from reaching emergency centres or when field staff need to communicate under conditions in which the critical local networking infrastructure is severely degraded or unavailable. New developments in wireless and fixed information networking open significant opportunities for overcoming such participation problems. These solutions can be used to provide telemedicine resources in a wide range of disaster situations. However, as will be discussed, not all solutions are appropriate, both given a local economy, and often the fragility of the underlying infrastructure. This presentation will describe and demonstrate examples of collaboration between Simon Fraser University's Telematics Research Lab and government, non-government and research organizations to establish virtual emergency management information systems where wireless information networks, interconnected to other fixed and mobile networks, allow practitioners and managers to remain in important decision-making and emergency medical support processes regardless of physical location. A variety of applications will be presented including the use of videoconferencing, database systems, white boarding and a number of portable Internet-based diagnostic and communication techniques, supported through live satellite and terrestrial wireless networks.

**Keywords:** communication; disasters; information systems; internet; management; networking; technology; telematics; telemedicine

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