General Session-I
Technology
Monday, 10 May, 13:00–14:15 hours
Chair: ***Saiedeh vonKeitz, Genro Ochi***

G-1
Hospitals and Year 2000 Computer Compliance: An Unforeseen Disaster

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Introduction: Year 2000 (Y2K) compliance refers to computer ability to recognize the last two digits of the year 2000 as the beginning of the 21st century, not the beginning of the 20th century. Detection is imperative, since all computer-operated and management information systems within a hospital could shut down the moment the next millenium begins. A recent survey of the US health-care industry found that organizations lag behind most other industries in preparedness for what could be the greatest worldwide disaster in the last hundred years.
Objective: To present the Temple University Health System (TUHS) planning process to attain Y2K compliance.
Methods: The vice president for computer services of Temple University (AP) spearheads a multi-million dollar effort to prevent computer standstill in all components of the TUHS. We currently are midway through a five-step process that will enable us to achieve our goal.
Results: Task forces have been assembled within TUHS to analyze and remedy problems associated with automatic date-based functions. These include facilities, biomedical equipment, information systems and interfaces, telecommunications, fixed asset management, and others. Each task force has defined goals and objectives that are designed to enable full compliance by either rewriting computer applications or replacing computer systems. These are outlined in a flow diagram, along with specific tasks in the overall change process, such as assessment and prioritization of inventory, resource development and vendor tracking.
Conclusion: The TUHS Y2K project is rewriting computer applications and replacing computer systems to avoid mission-critical computer failure associated with entering the new millenium.
Keywords: computers; disaster; failure; hospitals; planning; preparedness; Y2K; year 2000

G-2
Factors that Affect Information Management during Hospital Disasters

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Introduction: Reliable and continuous information flow is important for effective hospital disaster response. The disaster literature is filled with evidence that communication systems and information management succumb quickly in disasters, but few solutions have been offered.
Objective: To discuss elements that undermine effective communications and information flow, and to present one strategy for dealing with these problems.
Methods: The communications and information management infrastructure of a university hospital was examined for threat resistance, survivability, utility, and versatility for both internal and external crises. Losses of telecommunications and data management systems were analyzed for their effects on patient care and hospital operations. A comprehensive action plan was developed to assure the safeguarding of information systems and the availability of redundant communication systems.
Results: The Hospital Emergency Incident Command System (HEICS) was utilized as the basis to construct a position description for an information manager. This person is responsible for risk assessment, hazard identification, and contingency planning for all hospital information systems during disaster operations. Identifiable weaknesses include a lack of communications capability in proposed command post locations and insufficient protection of non-automated medical records. Other concerns include computer and medical record security, year 2000 compliance, and lack of redundancy in paging and other notification methods. To enhance familiarity and discourage fear of disaster operations, the entire disaster plan will be loaded into a central server for easy accessibility during a crisis.
Conclusion: Advanced planning, dedicated staff, and redundant communications systems are crucial to successful information management during hospital disaster response.
Keywords: communications; contingency planning; data management; disaster; hazard identification; hospital; hospital emergency incident command system (HEICS); incident command system (ICS); information management; infrastructure; planning; risk assessment; telecommunications

G-3
Light Guidance in the Darkness of Disaster Situations

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It is important that people easily find their routes out of dangerous areas. However, it is as important that members of different rescue groups are guided easily to the place where they are directed to work.

Verbal guidance has many intrinsic drawbacks. It continuously demands manpower, and advice given is forgotten easily. In darkness, these problems increase logarithmically. There is an urgent need for the solutions to these problems.

Modular Intelligent Life-Line System (MILS) was planned primarily for safety systems in passages of cruise ships and fast ferries so that in case of an accident, all passengers can find a safe way out of their cabins to ship's deck and lifeboats. This computer-controlled light guidance can be adjusted easily to meet the actual needs and conditions. The intelligent light guidance system also has been installed to airports and aircraft.

Because the Life-Line is produced as strips in reels, it can be installed easily and readily moved in accordance with the needs. Its intrinsic features also make this product suitable for use at the scene of an accident or disaster.

Polyurethane, the basic material for Life-Lines, makes the product easy to handle and offers superior resistance to tearing and abrasion. It can be installed in the field even in extreme situations, because the product is resistant to tension, abrasion, and moisture. It also is essential that the consumption of energy is very small. All of these features make Life-Line a good fit for use in disasters. This light guidance system earns the epithet, "Intelligent", because it can be controlled from a portable computer located in the command centre.

Important and actual alphanumeric information can be transmitted in the form of safety guidance panels. These information texts can be controlled using the computer network. Thus, these texts can form an essential element in leading of different groups and individuals to their targets and goals instead of or beside the use of verbal communication.

Modular Intelligent Life-Line System will improve the coordination and efficiency of different groups engaged in rescue work, thus enabling the more optimal utilisation of resources. This improves the potential for saving human lives and decreasing the prolonged suffering of untreated casualties. There is a need to learn how to utilise this technique of intelligent light guidance in exercises, so that the rescue teams can get maximal benefit from this guidance system immediately as the first rescue groups arrive at a real accident scene.

Keywords: command; communications; computers; control; coordination; disaster; guidance system; information management; lighting in; resource utilisation; verbal communications

G-4
Telemedical Support Onboard a Large Passenger Ferry: Experiences from M/S Stena Germanica

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HECTOR is an European Union-sponsored project aimed at improving management of health emergencies through multimedia and telecommunication. One test site is located on M/S Stena Germanica — a ferry with a capacity of 2,200 passengers sailing between Göteborg and Kiel. About 500,000 passengers are transported annually. The traditional approach in cases of medical emergencies, has been radio contact (VHF) between the ship and MRCC, with medical assistance given by Radio Medical.

In December 1997, a telemedical system was installed on the ship. The system consists of a Mobimed Pegasus unit that can transmit 12-lead electrocardiogram (ECGs), as well as other vital signs (blood pressure, pulse, SaO_2). This unit is interfaced with a video conferencing system, enabling the officer caring for the patient to be in dual voice and video contact with the Emergency Department at SU/Östra Hospital. The physician answering the call can be chosen pending the nature of the emergency. All communications are relayed via the Inmarsat-B satellites to a ground station in Eik, Norway, and from there on by ISDN.

The system was evaluated during 1998. The impression, so far, has been an improvement of diagnostic accuracy and medical decision-making, especially for patients suffering from cardiac emergencies.

Keywords: boats; electrocardiogram; radio communications; satellites; telecommunications; telemedical system; video conferencing

General Session-III
Trauma-I
Monday, 10 May, 13:00–14:15 hours
Chair: ***Carlos M. Santiago, Kunio Kobayashi***

G-10: Medical Assortment of Patients with Multiple and Combined Trauma

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Introduction: In cases of technogenic disasters, car accidents, and earthquakes, the patients with poly-trauma make up from 50% to 80% of all victims. In such situations, the definition of gravity of the patient's condition, diagnostics of injuries, order of priority, and volume of antishock therapy both in the prehospital and hospital stages, play decisive roles and affect the mortality rate. All of these measures together are called medical assortment.

Aim of Investigation: The aim was to make a universal sorting card that could be used at the assembly point on the edge of site of the disaster, in ambulance cars, and in emergency rooms of hospitals. There should be kept sequence and continuity of diagnostics and treatment measures that are based on evaluation of the gravity and shockogenics of the injuries, using primary blocks for the therapy of shock.

Results: The sorting card is being tested in Emergency Hospital No. 2 of Rostov-On-Don, both in sporadic and mass numbers of admissions. Within the period of six years in the Department of Multiple and Combined Trauma, there were treated 9,861 patients with combined injuries. Patients requiring intensive and critical care comprised 72%. Mortality in this group was 25.5%. There were performed 14,480 surgical operations. The differ-