An Outcome Evaluation for Prehospital Cardiopulmonary Arrest Patients Using the Utstein Template: A Japanese Experience

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Introduction: Publication of Utstein Style Template made it possible to perform a national hospital based evaluation, and compare Emergency Medical Service systems. This research was done as a national investigation to identify present outcome data for prehospital cardiopulmonary arrest (CPA) patients in Japan.
Methods: The records of 3,029 CPA patients who were transported to 10 Emergency Critical Care Medical Centers from November 1997 to April 1999, were abstracted according to the Utstein style, and the data for outcomes were analyzed using logistic regression.
Results: 109 out of 3,029 cases (3.6%) were found dead. The remaining 2,920 cases (96.4%) underwent CPR by emergency medical technicians (EMT) and were included in this study. Bystander CPR was performed in 28.4% of witnessed cardiogenic CPA. The discharge rate was 4.0% of witnessed cardiogenic CPA, and 18.4% of witnessed ventricular fibrillation or ventricular tachycardia (VF/VT). A comparison of resuscitation rates indicated that a success of 7.9% in prehospital phase and 28.4% in in-hospital phase: this is more than 3 times of former results. Outcome analysis indicated that a discharge rate of witnessed cardiogenic CPA was 49.1% of prehospital resuscitation cases which was 6.6 times higher than for hospital resuscitation cases (7.4%). The latter from an emergency telephone call to defibrillation, the lower one month survival rate, it reached almost 0% in 30 minutes (min). Follow-up evaluation after discharge indicated that the survival rate rapidly decreased from 24 hours to 3 months, then, it reached a plateau in the cardiogenic group; for the noncardiogenic group, the survival rate decreased rapidly from 24 hours to 1 month, then became nearly constant.
Conclusion: To improve the resuscitation rate in prehospital phase, we must develop a prehospital medical control system, and then expand management items provided at the scene by Japanese paramedics, such as endotracheal intubation, administration of emergency drugs, and early defibrillation using standing orders. Educating and cultivating a first responder will be needed, and every effort should be concentrated on improving the bystander CPR rate. It may be possible to change the Utstein style statistics in a follow-up period of one year to 3 months after an onset of CPA.
Key words: cardiopulmonary arrest; cardiopulmonary resuscitation; discharge; emergency medical technicians; in-hospital; outcome; paramedics; prehospital; resuscitation; Utstein style
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Interactive Tactical Simulation Program

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It is very important and informative to test individual tactical preparedness using an interactive simulation program. On the individual level, tactical preparedness can be assessed by proceeding logically through the primary survey and in making sharp priority decisions between casualties and in optimal utilisation of available personal and material resources. It also would be essential to utilise recorded logbooks for evaluation of systemic weak points in tactics. Thus, one could become aware of common deficiencies in tactical entities, and conclude if there are certain components in teaching that should obtain more emphasis and attention.

The collected experiences over last eight years in teaching, training, and testing with my own interactive simulation program, Matimed, will be presented. This PC program produces an accident scene and gives the trainee the task of leading an emergency group to provide prehospital care of casualties. The trainee is obligated to make all decisions and delegate all tasks to the other members of the group. The leader's performance is recorded in a logbook in detailed form, and hence, it is possible to reconstruct the performance step-by-step. Thus, the tutor can draw conclusions about the weak points in the decision-making.

Although there are several casualties at the scene, many trainees stop at the first victim for a long time and start to provide optimal emergency procedures for the first casualty encountered. The importance of primary survey of all casualties cannot be overemphasised.

It also seems to be very difficult to make logical decisions on a priority order of casualties and emergency procedures, although prioritisation of tasks is the key component of triage. There also are deficiencies in utilisation of available resources.

We conclude that there are obvious needs to provide more individual tactical training and improve tactical teaching.
Key words: decision-making; multicasualty incidents; individual; prehospital; preparedness; simulation; tactics; teaching; testing; training
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Simulation and Computer-Aided Training

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In an emergency patient situation as well as in a major accident with multiple injured casualties, the action of medical groups is based on knowledge and experiences. It is relatively easy to obtain theoretical knowledge, but it is much more difficult to collect enough personal experience in

action of real accident situations. It also is difficult to represent accident situations with casualties represented by live players, because different traumas and symptoms are nearly impossible to be vividly and correctly simulated. Thus, there is an urgent need to provide easily available and truly interactive methods for large-scale training for both individual members as well as for emergency groups and ensembles.

Interactivity, problem solving, decision-making, immediate evaluation, and feedback are the key elements of a simulation program for training actions for medical emergency care.

There are two totally different applications available to provide adequate training. The first is to construct a simulation training centre with giant computers to create integrated group training sessions or even virtual reality circumstances. The other way is to provide large-scale individual training with software running in a normal PC. The tactics and cooperation at the site of an accident are so multidimensional that it has only been in recent years that the more advanced computer technology has made it possible to create this type of simulation program for PCs. With these programs, it is possible to create challenging scenes with naturally acting casualties having different injuries. Because the program "memorizes" the performance step by step, it can be scored and evaluated. This immediate feedback is essential for learning and progressing successfully to more difficult situations. This individual training later can be completed in much more advanced and technically demanding group sessions. We can expect that interactive training software production will accelerate, and thus, provide modern useful training and testing methods for emergency care.

Key words: computers; emergency care; groups; feedback; individual; interactive; learning; simulations

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Municipal Contingency Plans

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During the last century, disaster prevention has become the focus of attention in emergencies administration. Knowing clearly and accurately the possible effects of a disaster, and who commands the responses in case of emergency, can facilitate the civil protection authorities and the general population to develop specific mechanisms to reduce the impact of calamitous events.

Municipal Contingency Plan (MPC) develops community protection actions and includes action organizations, services, people, and resources available to attend to disasters. It also contains specific risk identification, community preparedness, local capabilities for response, risk planning, and establishment of the structure for organization (authorities, agencies, offices, volunteers) to respond at the emergency. Each element knows their respective role—what to do, what not to do, and how to participate in a team effort.

The state of Oaxaca is situated in the southeast portion of Mexico and presents a complex geography that makes access to basic emergency services difficult. The state is also at high risk for earthquakes: Of the total number of earthquakes in Mexico, 40% strike in Oaxaca. Additionally, the Tehuantepec Isthmus Region occupies the first matrix point for generating hurricanes.

Today more than ever before, both the urban and rural population in Oaxaca know the effects of disasters. The government and society are now more inclined to promote and practice self-protection and the prevention of the most traumatic consequences.

Development of the proposed MPC forces decision-makers to plan and execute preventive actions and emergency projects, by developing effective formulas that can improve the stability factors and response mechanisms. Our goal is the generation of organizational schemes based on natural community leadership.

In order to develop prevention strategies, we must facilitate collaborative activities between municipal institutions, like education and health, promoting natural schemes of organization. This organization should be based in the society and not in government offices because if programs are applied by official means, they may have only a short-term effect. However, if its implementation is developed and adopted by the local community, its effect may be more long-term.

The Civil Protection Office in Oaxaca, has implemented this formula and it is clearly effective. Where the population has been adopted these systems, especially in the hazardous places, they have been able to prevent the most common causes of disasters and promote a culture of prevention.

Key words: collaboration; contingency planning; disaster; municipal; planning; prevention; risk; roles
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Cardiac Arrest: The Case Against Public Access Defibrillation

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Objective: The aim of this study was to determine the location of out-of-hospital cardiac arrests in Melbourne, Australia, and to determine if public access defibrillation may be of benefit.

Methods: A retrospective case note review of all out-of-hospital cardiac arrests that presented to the Metropolitan Ambulance Service (Melbourne, Australia) for 1997, was performed with the use of the Utstein Criteria.

Results: 1,064 victims of out-of-hospital cardiac arrests were identified: (1) age, 66.5 ±15.3 years; (2) gender, 64% male; (3) response time, 9.1 ±4.2 minutes; (4) witnessed, 57.5%; (5) documented call to 000, 87.7%; (6) bystander CPR, 34.7%; and (7) location: private home, 915/1,064 (93.7%), public place, 62/1,064 (5.8%).

Conclusions: These results indicate that out-of-hospital car-