M-technologies in Management of Disasters and Mass Casualties

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Nowadays, a great number of applications are used to compile and transmit information relative to casualties and disasters, but there are many problems associated with the technology including reliability, and the size and weight of the devices that a medical staff must carry. Telecommunication infrastructures support information movement among geographically dispersed locations. Recently, many small devices have appeared in the buyer's market. They are called Personal Digital Assistants, and because of their physical and technical features, they can be very useful in the emergency field. With regard to communications reliability, many technologies have been developed in the last few years. However, it is necessary to find a solution that can be used in every situation independent of the emergency circumstances.

In cases of disaster, the responsible Health Emergency Coordination Centre must receive accurate and current information about the number, type of injuries, and location of the victims. This information, as well as the location and status of all the available resources, must be communicated immediately to the related emergency services and to the authorities in charge of the situation. Acknowledging this need, the Spanish government funded REMAF, an ATYCA (Initiative of Support for the Technology, Security and Quality in the Industry) project. The REMAF joined research groups (UPM), telephone operators (Fundación Airtel Móvil), and the end users (SAMUR) to build a disaster data management system. The system was designed to use modern telemedicine systems—including the aforementioned mobile communication tools and networks in order to optimise management of these situations.

Key words: communications; computers; disasters; management; system; telecommunications; telemedicine
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Four Workers Poisoned with Crezol

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Introduction: Four patients who were in contact with Creozote (crezol) came to the emergencies with a cutaneous and respiratory symptomatology.
Method: Four workers handled beams which were soaked in creozote oil a few days prior to the exposure. Creozote is a mixture of phenols and polyphenols. These beams are exposed to the sun and diffuse emanations of chlorinated polyphenols. The workers suffered from a face rash and irritated eyes and were also hyperthermic. The poisoning with crezol ingestion usually results in the development of a hepatocellular syndrome,[1] and/or neurotoxicity.[2] The local symptoms often consist of cutaneous irritation or even a cutaneous burning.[3]
Results:

Patient (age)	Symptoms	Chest X-ray
1 (26 years old)	Face irritation, breathing problem, wheezing, T: 37.7°C.	Normal
2 (38 years old)	Face irritation, normal pulmonary auscultation, T: 38.5°C.	Normal
3 (46 years old)	Face irritation, normal pulmonary auscultation. T: 37.7°C.	Normal
4 (29 years old)	Important face irritation, breathing problem, normal pulmonary auscultation. T: 38.7°C.	Normal

Patient (age)	Gasometry (pH, pO_2, pCO_2, SaO_2%)	Biology
1 (26 years old)	7.41, 99, 41, 98%	Normal
2 (38 years old)	7.40, 93, 36, 97%	Normal
3 (46 years old)	7.38, 78, 46, 95%	Normal
4 (29 years old)	7.45, 60, 38, 93%	Normal

Conclusions: The handling of soaked creozote oil beams caused face irritation, breathing problems, and an unexplained hyperthermia.

References

1. Hashimoto T, Lida H, Dohi S: Marked increases of aminotransferase levels after cresol ingestion. *Am J Emerg Med* 1998;16(7):667–668.
2. Craig PK, Barth ML: Evaluation of the hazards of industrial exposure to tricesyl phosphate: A review and interpretation of the literature. *J Toxicol Environ Health B Crit Rev* 1999;2(4):281-300.
3. Lin Ch, Yang Jy: Chemical burn with cresol intoxication and multiple organ failure. *Burns* 1992;18(2):162–166.

Key words: creazote; hyperthermia; hypoxemia; manifestations; phenols; polyphenols; rash
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Efficiency of Cardiopulmonary Resuscitation: Comparison Between Evolutions

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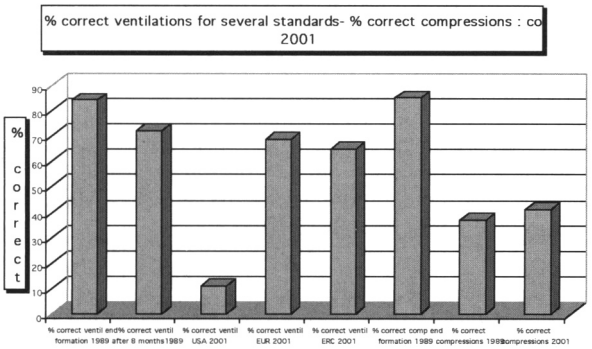
Introduction: Criteria used for teaching of cardiopulmonary resuscitation (CPR) change with time. We studied the results of evaluations of nurses tested following several standards used at several times of CPR teaching.
Method: Nurses were evaluated on the Resusci-Anne Skillmeter (Laerdal, Stavanger, Norway). Results from ventilation were analysed using the old American criteria for resuscitation (800 to 120 ml for each ventilation), old European criteria for resuscitation (400 to 600 ml for each ventilation), and the new recommendations from the European Resuscitation Council (10 ml/kg). The results were compared with results of similar evaluation realised in 1989 with nurses at the end of their formation and eight months after CPR formation with American criteria from 1989 (800 to 1,200 ml). Each group contained 18 people. Percentage of correct compressions in 2001 were also compared with 1989.
Results:



Conclusions: The percentage of correct compressions can be considered as similar between 1989 and 2001 for nurses trained for CPR for more than eight months. Percentage of correct ventilations also is similar if we considered old European standards or actual standards. We can explain this by the fact than nurses tested are young and CPR was learned with standards of 2001 or more recent European standards and not 1989 standards. The same conclusion than in 1989 can be made: the efficiency of CPR performance quickly decreases when they don't train frequently.

References

Verbeiren A: Etude du besoin de formation en réanimation cardio-pulmonaire des infirmières d'un hôpital général. ULB, Ecole de Santé Publique.1989.

Key words: cardiopulmonary resuscitation; criteria; deterioration; nurses; skill; standards
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Comparative Study of Cardiopulmonary Resuscitation Efficiency

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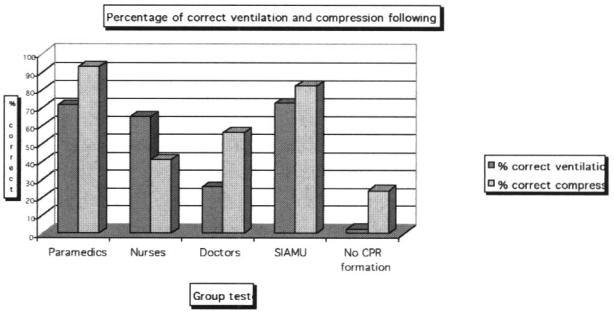
Introduction: During cardiopulmonary resuscitation (CPR), different people (nurse, paramedics, doctors) perform CPR. We compared their efficiency.
Method: We used Resusci-Anne Skill reporter mannequin (Laerdal, Stavanger, Norway). We recorded tidal volume, ventilation rate, minute volume, percentage of correct ventilation, deepness of compression, and percentage of external cardiac compressions that were correct during CPR performed by paramedics, emergency service's nurses and doctors, nurses following special course for acute medicine (SIAMU), and finally people with no CPR training. Each group contained 18 people. Data were analysed following the last European Resuscitation Council recommendations.
Results:



Conclusions: Paramedics, by daily experience, have better results. SIAMU nurses have more of a habit of training on mannequins during their year of training. Nurses have the worst score for compression due to of insufficient compression. Doctors generally perform less CPR, and so, have relatively bad results.

Key words: Cardiopulmonary resuscitation (CPR); doctors; experience; nurses; paramedics; performance
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Evaluation of Analgesia for Outpatients

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Objectives: Minor traumatic injuries handled by the casualty department usually are treated on an outpatient basis, often without being reexamined in the hospital. Analgesics are prescribed often without receiving feedback on their effectiveness. The purpose of this small exercise was to see whether the analgesic prescribed was sufficient, and if the method for collecting the information is practical.
Method: We evaluated inpatients with minor injuries (ATLS classification, I), using a visual analog scale (VAS). Consequently, we have a baseline without any analgesic intake. Three groups were formed: Group I received 6 tablets of piroxicam, 20 mg in the form of lyophilised pills (2 pills taken the day of the consultation at the casualty department, 2 pills the next day and 1 pill for each of the next 2 days). Group 2 received 12 paracetamol tablets (4 each day);. And Group 3 received both drugs. We asked the patients for consent to our contacting them by telephone once each day during the 3 days following the day of consultation at the casualty department. During the phone call, we ask the patient to refer to the VAS provided at the casualty department and to tell us the actual corresponding degree of discomfort. We also 1 enquired about any secondary effects that may have occurred.
Results: 150 patients were evaluated (50 in each group): 13 Patients (8.67%) did not answer any of the telephone calls and 34 patients (22.67%) did not reply to either 1 or 2 of the 3 calls.