ease of teaching CPR rather than actual evidence-based treatment priorities. Although there are definite differences in the techniques and interventions for paediatric CPR, the adoption of some of these techniques is based mainly on adult studies.

In the teaching of basic CPR, studies have shown that it is difficult for laypeople to recognise an absent pulse or detect presence of pulse. Hence, as in adult CPR, the circulation check now involves teaching laypeople to recognise signs of circulation rather than for the presence of pulse. Again, because of the ease of teaching, chest compressions are taught as a techniques to remove foreign body in an obstructed airway.

In advanced paediatric CPR, most changes follow those of the adults. One of the notable changes is the use of amiodarone in the treatment of arrhythmias. Studies in children are limited mainly to its use in postoperative cardiac arrhythmias. But, amiodarone can affect sterility in growing boys, and a lethal complication described as the "gasping syndrome" have been described in neonates.

In the resuscitation of the newly born, recommendations to the start of chest compressions and administration of intravenous adrenaline have been simplified for easier teaching.

Teaching CPR in children continues to emphasize the need to pay attention to airway and breathing.

Keywords: amiodarone; cardiopulmonary resuscitation; circulation; CPR; gasping syndrome; pediatric; resuscitation

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2.11. Information Technology: The Way of the Future

Information Technology and Emergency Medicine: Present and Future

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The two elements that make information technology (IT) attractive, with regard to data, are speed and storage. Traditionally, the emergency department is the logical place for the treatment of acute illness and injuries. However, with the increasing awareness of the health care status of the individual, the demand and expectations from the public have increased tremendously in the past few years. Emergency departments face a constant increase in workload and episodic increase in attendance. Various methods have been used to cope with the additional workload. Information technology is an enabling tool to improve the efficiency of the emergency operating system.

Currently, the application of IT in emergency medicine usually starts with administrative and managerial systems. Clinical applications were developed on top of these administrative systems and infrastructures. Currently, many emergency departments in the world already have begun to capture patients' data into an electronic medical record in digital format. These clinical data include the diagnosis coding, medications, and discharge summary. Supportive clinical information also are available, such as the laboratory, diagnostic imaging, and electrocardiogram reports. Images could be retrieved in computer workstations through the use of Picture Archive Communication System (PACS) technology.

In the near future, expert systems commonly will be employed on top of the clinical information systems so as to enhance the decision support for emergency physicians. Global sharing of clinical data will be the future trend. Development of e-business for electronic transactions and interactions between health care providers will become the primary driving for e-medicine. The improvement in international broadband networks such as Gigabit Switch Router (GSR), Asynchronous Transfer Mode (ATM), and the Internet 2 technology will enhance the data transmission speed. Wireless workstations using the wireless Local Area Network (LAN) in IEEE 802.11b standard and Bluetooth technology will be the coming trend. Mobile phones using 3G technology will be very helpful in prehospital care and disaster field management.

Keywords: data; data storage; emergency department; information technology

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Medical History in an Emergency: Tapping Information Technology

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LifeMedic is an on-line personal medical history record system developed to help reduce the number of preventable medical errors made every year due to inadequate patient information. Using this system, doctors can retrieve important patient history in LifeMedic using the internet, telecommunication (facsimile and WAP-enable handphone), and wireless communications (personal digital assistant devices) technologies. LifeMedic allows timely access to information on critical illnesses, past surgery, current medications, and allergies to facilitate quick and accurate diagnosis, and help doctors optimise treatment of patients in an emergency.

LifeMedic is developed for simple and quick access in an emergency. For the non-medical community users, LifeMedic's webpages are designed to be user-friendly, easy to understand, and simple to navigate. LifeMedic is multilingual for worldwide use.

LifeMedic provides a 24-hour emergency medical and travel advisory services to its members when they are overseas. LifeMedic also promotes healthy lifestyles and fitness for disease prevention and personal well-being amongst its members through online and offline health education programmes.

With the objective of reducing the number of medical errors made due to inadequate patient history, LifeMedic seeks to provide this information to emergency care doctors through the use of the Internet, telecommunication, and wireless communications technologies.

Keywords: communications, information technology; Internet; LifeMedic; medical history; treatment
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Intelligent Care Management Systems

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A clinical information system is capable of ensuring that the health care professional adheres to best clinical practice or evidence-based medicine. Adherence is by means of a prompting system, as in the "Care Plans Manager", and a rule-based-engine, as in the "Medical Sentinel" system.

Care Plans Manager provides autoprompters that advise the doctor on the recommended treatment and management for the patient at various stages of the disease management process. Care Plans ensure that doctors adopt best clinical practise and evidence-based medicine to manage patients. The system also will track and audit the reasons for deviation from the recommended management protocols. This is a powerful tool, allowing doctors, at all levels of practice, to deliver optimum health care based on current standards.

"Medical Sentinel" is a rule-based engine that is capable of monitoring specific conditions, triggers, and events. Examples are blood results, clinical measurements, and scores from specific scales, like the Glasgow Coma Scale. When these triggers are activated, there will be a predefined action ranging from automatically ordered laboratory tests to the prescription of specific drugs. This serves to deliver uniform care for the patient once the correct algorithms have been built into the Sentinel structure.

Together, they work to optimise the care process ensuring a minimum standard and quality of care is provided to the patient.

The Prompted novaEMR takes into consideration the workflow of the health care professional. Once again, for the individual portions to work, it is recommended that the novaEMR portion of Vesalius has to be in place. Although there is also a possibility of interfacing with other systems, it would not be preferred.

Although the separate components can be adopted as plug and play components, they also function optimally when linked together using the novaEMR Vesalius as the platform of choice. "Care Plans" ensures that for a specific disease condition, the health care professional follows a minimum level of care in the ordering of investigations, drugs and management plans. "Medical Sentinel" waits for specific trigger events and conditions, only to fire reactionary orders in response to variances from the established parameters.

Health care professionals benefit from its automated process and warning/prompter system; its facilitation of the workflow; its administrative functions; and its potential to reduce mistakes and medical errors.

Keywords: Care Plans; information systems; health care management; medical sentinel; monitor; protocols
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2.12. Disaster Management and Humanitarian Relief

Disaster Evaluation: Guidelines for Evaluation of Medical Response in Disasters

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Disasters always have been a part of life. The occurrence of a disaster creates varying degrees of chaos combined with a mismatch between resources and needs. Extraordinary efforts are needed to restore an affected society back to its pre-event status, but, currently, much of the aid provided is based on intuition and anticipation, and not necessarily is rooted in understanding and knowledge. Today, we can respond quickly, but the accuracy of what we provide to meet the needs of the stricken society may have deteriorated. Without structured and objective evaluations of the responses and the measures taken to prevent or mitigate the effects of events resulting in disasters, it is not possible to optimize the absorbing capacity of a society and the responses to such disasters. Evaluations are designed to enhance the effectiveness, efficiency, and economies of such activities and should be viewed as efforts at continuous quality improvement.

Prior to the introduction of these guidelines, there did not exist any universally accepted organized methodology for the conduct and reporting of the evaluations of the medical effectiveness, efficacy, and benefit:cost relationships of disaster medical responses and relief efforts. In addition, both the responses and the projects for their evaluation are multidisciplinary, and there are no universally recognized, common definitions of terms and abbreviations used among the multiple disciplines involved in reporting the results.

The overall objective for the use of the guidelines is to attenuate or eliminate the damage from disasters. This could result from the elimination of hazards, decreasing the risks for the actuation of the hazard, augmenting the capacity of the society and environment at risk to absorb the disruption from an event.

The guidelines provide a conceptual framework that assimilates what is known about disasters into a series of definitions and concepts that provide standardized ways of evaluating disasters, the hazards and events that cause