

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 practice 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

them, and the overall and health-related damages that result. They include a conceptual formula for identifying factors that affect the probability of damage resulting from an event. The formula and the concepts that it entails also should facilitate identification of the impact of measures taken to eliminate or decrease hazards (prevention, modification) and/or the risk of hazards becoming a devastating event.

Fourteen major functional elements of a society that may be affected either directly or indirectly by an event resulting in a disaster are: 1) public health; 2) medical; 3) sanitation and water supplies; 4) shelter and clothing; 5) food; 6) energy supplies; 7) search and rescue; 8) public works and engineering; 9) environment; 10) logistics and transport; 11) security; 12) communications; 13) economy; and 14) education. These fourteen basic societal functions are linked together by a coordinating-and-control function provided by the respective governments. The interaction and relative impairment of any function can be depicted as a change from the pre-event status.

A series of three templates provides a structure for the study of disasters. The first groups the chronological, continuous mayhem of a disaster into recognizable, well-defined phases: 1) pre-event status; 2) event; 3) assessments of overall damage; 4) disturbances in health status; 5) needs assessment; 6) responses; 7) changes in health status; and 8) restoration of health status. The endpoint of the management a disaster is the time when the pre-event situation for the societal function has been recovered.

The second provides a structure and guidelines for the conduct of such studies, and the third provides a structure and guidelines for the design of such studies.

Two severity scores are proposed: a disaster severity score and a health disaster severity score. The use of the proposed severity scores will facilitate the comparison of the damage of disasters of similar severity and should facilitate the identification of factors that mitigate or intensify the effects.

A set of recommendations for implementation and testing of the Guidelines and their templates is provided.

Keywords: disaster; evaluation; guidelines; methodology; severity score

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Mobilisation of Medical Resources during Catastrophes

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Our capabilities to react promptly in case of disasters has improved significantly during the last decades. However, much of the aid provided has been, and still is, based on intuition and anticipation. This presentation discusses obstacles, possibilities and mechanisms to foster better cooperation and management in the future. Ideally, responses, after being identified in needs assessments, must be requested and coordinated by a Coordination and

Control (C2) body, responsible for the overall disaster management. The C2 body must include both local and national authorities and must have continual access to all information.

The primary focus should be the needs necessary to bring supplies above the critical thresholds for minimal functioning of the society. To avoid oversupply the "Disaster Critical Control Point" (DCCP) (when supplies and assistance balance the needs) should be identified as accurately as possible. These structures, combined with disaster severity scores and standardized evaluation, should improve both the accuracy and timelines of international assistance, medical and nonmedical, and help identify any "lowest common denominator" for future disaster response. Exclusive focus on medical responses is not usually effective, since provision of health care is intimately dependant on other societal functions. Traditionally, the focus on surgical needs has been given priority in medical disaster response and, in general, the effectiveness, efficiency, efficacy, benefits, and costs of such efforts remain to be demonstrated in the overall context of resource utilization. The resources provided must be in concert with the affected society and its culture. The narrow specialisation, taking place in the western world, is highly counterproductive for medical assistance in disasters. Any team assisting in disasters must be self-sufficient and part of an experienced operational organisation.

Nationally, a cost-benefit disaster management should be feasible, but, internationally, absence of an endorsed C2-structure hamper these processes. In the 1960's United Nations Disaster Relief Coordinating Office (UNDRO) was established to give the UN a coordinating instrument for disaster management. It never fulfilled its mandate as it was opposed both from within and from outside the UN. In 1971, the UN-Secretary-General stated, "more often than not the nature of relief depends on what donors can readily supply rather than on real needs." The UN resolution "Right to Intervene" has encouraged assistance, even if national authorities neglect a dire situation, but the downside is the concomitant acceptance of interventions without a C2 structure.

Keywords: Coordination and Control; Disaster Critical Control Point; disaster management; disaster response; needs assessments; resource utilization; team; United Nations

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Emergency Medical Preparedness and Response to a Singapore Airline Accident

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A Singapore Airline crash in 2000 was the first documented mass casualty incident (MCI) caused by an aircraft disaster in Taiwan. This aircraft accident was anticipated by a MCI plan revision program tested with field exercises at the airport. The new plan adopted a two-phase response model. During the secondary phase of the plan, a multiple