outstretch the resources of a single country or involve several states simultaneously. Through confidential questionnaires and other means, MASH investigated the current response capabilities and planning for chemical and radiological incidents within the EU and also explored, through a number of seminars, developments in information and communications technologies, together with relevant developments in biotechnology which could improve a unified response. Finally, a foresight study has identified a number of areas for improvement and identifies six strategic aims for EU Member States to cope with chemical and radiological mass casualties. This presentation will cover the main findings of the MASH study and consider its wider message for chemical and radiological incidents worldwide.

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(A206) Simulation of an Emergency Situation Caused by Biochemical Incident

P. Čech,[1] V. Bures,[1] T. Otcenaskova,[2] K. Antos,[3] J. Vaněk[1]

1. Faculty of Military Health Sciences, Brno, Czech Republic
2. Faculty of Informatics and Management, Hradec Kralove, Czech Republic
3. Faculty of Military Health Sciences, Hradec Kralove, Czech Republic

Emergency situations such as biological or chemical incidents require prompt decision making. The problem is that the authorized personnel responsible for conduction the response operations might lack the knowledge about the agent's biological, chemical and epidemiological characteristics that would influence the impact of the incident. Thus the effect of response operations on lives and assets could hardly be anticipated. The paper suggests simulation based approach to provide appropriate decision making support in such situations. The simulation would imitate the development of an emergency situation under various scenarios and help to determine the proper response operations by which the casualties and loss of assets would be minimized. The aim of the paper is to present the simulation of a spread of an agent in an environment and the corresponding impact on population. The simulation is based on a model with incorporated knowledge about environmental and agent characteristics such as weather conditions, transmission, fatality, incubation period combined also with demographic information. The provided simulation forms a part of the proposed non-military decision support framework for emergency response operations during biochemical incidents.

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(A207) Resuscitation of Casualties Following Exposure to Toxic Chemicals: What is New?

D.J. Baker

Centre for Radiation, Chemical and Environmental Hazrads, London, United Kingdom

Injury following exposure to toxic chemical agents has potential life–threatening effects, particularly on the respiratory system. Antidotes alone often are not sufficient to reverse this situation, and the need to provide early and effective advanced life support for chemical casualties increasingly has been accepted by emergency services around the world. Although the principles of life support are the same for toxic as for conventional casualties, the requirement for responders to wear personal protective equipment makes airway and ventilation management more difficult. Special training and familiarity with devices and equipment used are essential to ensure effectiveness. Recent studies have indicated both the limitations and the possibilities for resuscitation of casualties in a contaminated environment before decontamination. Ventilation of patients with respiratory failure or arrest requires the use of devices which are able to operate and be used by responders wearing protective equipment. The laryngeal mask airway has been shown to be an easier and viable alternative to intubation in this situation. Portable automatic ventilators have been developed which can be used to provide controlled ventilation in a contaminated zone. The ideal mode of ventilation for potentially damaged lungs, following exposure to agents such as chlorine and phosgene has yet to be established. There may be a case for early application of the protective lung ventilation strategies that are now common in intensive care units. This presentation will review recent human and animal studies related to resuscitation in a contaminated zone and provide illustrations of the practical approaches currently used by emergency medical services.

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(A209) Developing Medical Facility Preparedness for Radiological Hazmat Emergencies: Applying Surge Science

H.C.S. Lim,[1] A. Cheong,[2] Y.L. Cai[2]

1. Emergency Department, Singapore, Singapore
2. Singapore, Singapore

Introduction: Singapore is considered a prime target for transnational terrorism. Perpetrators may select an explosive radiation dispersal device or "dirty bomb" as their weapon of choice. Additional risks of a local radiological emergency may arise from mishaps involving visiting marine nuclear-powered vessels. Strategies and methods used to enhance preparedness to respond to radiological mass-casualty incidents (MCIs) will be described.
Methods: A core group comprising hospital emergency managers and radiology and emergency department staff spearheaded preparedness efforts. The Ministry of Health Guiding Document on managing radiological MCIs provides the principles and operational concepts to anchor the development of local protocols. Discussion sessions, site visits, drills, and exercises are conducted to improve organization performance. Expert opinion and feedback from various stakeholders and partners help shaped the overall plan.
Results: Preparedness activities focused on improving surge response capability through broad categories include: 1. Staff—Radiation response teams were developed and assigned roles and responsibilities. Training and education programs were created for different staff positions, e.g., on correct usage of electronic personal dosimeters and acute radiation syndrome. 2. Stuff—Material resources such as antidotes, and expendables like