procedures were considered, the necessary structure for casualty treatment and decontamination areas were derived, and commercially available products were tested for their usefulness in this situation. Standard operating procedures and algorithms were developed to aid realization of the concept. The suitability of the personal protective equipment and the question, if under these conditions the procedures of advanced life support can be performed, was evaluated in a standardized simulator model. The necessary training for rescue personnel involved was defined. To validate the concept, an exercise was performed.

Results: All persons present at a chemical incident are to be classified as being contaminated. Injured persons must be separated into triage categories, and life threatening conditions treated before being decontaminated. Decontamination at the incident scene is necessary to prevent the transportation of the contaminant away from the incident scene. The principles of the decontamination of injured persons are based on the following pillars: triage, early removal of clothing, management of personal belongings and valuables, basic life support, spot decontamination, management and sealing of open wounds, application of antidotes, and primary decontamination of ambulant and non-ambulant victims.

The cooperation and the definition of roles between fire services (decontamination) and emergency medical services (triage and treatment) are necessary.

The concept uses existing decontamination vehicles used for the decontamination of fire fighters, by expanding its inventory with medical equipment, and extra technical apparatus. Using a modular approach, the system can be easily augmented by further units to treat multiple numbers of victims. However, demands on all rescue services involved are high, and must be complemented with an equally high standard of training, especially where rescue services have to learn skills not akin to their standard duties. An implementation of the system covering all geographical areas with specialized units is not possible, therefore a risk analysis to optimally position limited resources has to be conducted. Legislative bodies must strive to allow for an uncomplicated integration and disposition of disaster management resources.

Keywords: chemical agent; decontamination; treatment
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Mass-Decontamination Gate for Hospitals: A Swiss Western State Model

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Introduction: Accidental or voluntary chemical incidents create many health and environmental problems. According to the physico-chemical proprieties of the released agent, risks are present for all involved persons (victims, rescuers), either by primary contamination (contact with skin or mucosal surfaces, respiratory tract inhalation), or by secondary contamination from close contact with exposed victims. Recent descriptions of mass-chemical accidents with numerous spontaneous evacuations from the contaminated zone to nearby hospitals represent an important risk for secondary contamination to these hospitals.

Methods: The use of an easy-to-set-up decontamination gate to protect or preserve hospitals from contamination of their site and personnel following a massive influx of contaminated patients was evaluated. A multi-disciplinary team equipped six regional hospitals with mass-decontamination gates without mobilizing excessive human or material resources.

Results: Basic formation of hospital personnel took two hours; attaching the gate to a local fire hydrant took <10 minutes.

Conclusions: This decontamination gate has several advantages and limitatins that will be discussed. However, it does have merit as an autonomous protection for non-specialized and equipped hospitals to prevent secondary contamination.

Keywords: chemical, biological, radiological, nuclear, or explosive; decontamination; mass decontamination; model
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Problems in Delivering Emergency Medical Care in Chemically Contaminated Environments

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Early advanced life support measures may be required for victims of a chemical agent release where the main life-threatening hazard is respiratory failure and arrest. If the chemical is persistent, life support should be provided before decontamination by suitably protected emergency responders. The level of chemical contamination often is not known, and this uncertainty has led to the recommendation of the use of self-contained protective suits (Level A or B) to provide maximum security. However, most hazardous materials protocols envisage a rapid removal of casualties from the hot zone to a decontamination point in the warm zone where the level of risk is lower. Wearing personal protective equipment has consequences for medical responders and their ability to provide essential life support skills. Higher levels of protection are of limited duration and may present significant risks for the wearers. Level-C protection with a filtration respirator is more appropriate. In the medical management of chemical casualties, there must be a rational balance between perceived risk, the appropriate level of protection, and the ability to deliver medical care,This presentation will examine: (1) the factors that should be considered in providing a balance between an acceptable level of risk to responders facing secondary contamination and the delivery of essential medical care for the victims; and (2) key medical competences that must be preserved while wearing protective equipment.

Keywords: chemical, biological, radiological, nuclear and explosive; contamination; disaster managment; emergency medical care services systems;personal protective equipment
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