

## Free Papers: Global Sharing: Nuclear Biological Chemical Hazards

### Preparation for Chemical Attacks in a Hospital

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**Background:** Early decontamination (DECON) on site, triage, second DECON at hospitals and emergency treatment are required for dealing with chemically contaminated mass casualties.

**Purpose:** To introduce the activities planned for dealing with chemically contaminated, massive numbers of casualties at the hospital and on-site of the exposure.

**Methods:** The planning, training, and exercises to treat massive numbers of chemically contaminated casualties that were developed and conducted after the 11 September 2001 attacks were reviewed.

#### Results:

a. DECON showers and outlets of compressed air were set at the bottom of the parking building. Casualties doff their dress at this area. Wet DECON for massive numbers of casualties was conducted using showers and fire engines in the parking area, DECON shelters, and a DECON room inside of the hospital. The type of Wet DECON administered was determined according to severity. Exercises were performed according to the plan using trained, medical procedures wearing level "C" Personnel Protective Equipment (PPE).

b. An exercise was conducted with the Tokyo Fire Department in order to coordinate with the HAZMAT teams and EMT/Paramedics on-site. Triage and emergency treatment were conducted at the warm zone and temporary care tents in cold zone.

**Conclusions:** At the hospital, preparing DECON shelters was time consuming. For the treatment of massive numbers of casualties, multiple DECON facilities should be prepared including rapid undressing and wet DECON using fixed showers. It is important to play a role in spite of the lack of PPEs, equipment, and a communication system, since Japanese paramedics are not able to provide a full complement of medical care.

**Keywords:** attacks; chemical; decontamination; exercises; HAZMAT; hospitals; personal protective equipment (PPE); planning; treatment; triage

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### Specification and Selection of Chemical Personal Protective Equipment (CPPE) for Health Service First Responders — The United Kingdom Approach

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**Introduction:** The aim was to provide appropriately specified, evidence-based, generic chemical personal protective equipment (CPPE) to all United Kingdom ambulance

services and emergency departments, which would provide body, hand, foot, and respiratory protection, and take into account usability.

**Methods:** Protection requirements were defined a priori using national surveillance data for chemical incidents and advice regarding the potential chemical warfare (CW) agents that might be encountered in a deliberate release scenario. A specification was determined using relevant European Standards and by incorporating additional test methodologies for performance against CW agents. The procurement of CPPE to the specification was subject to a competitive tendering process. The selection process required all potential suppliers to submit independently accredited test certificates demonstrating compliance with the specifications. Samples were supplied for CW agent testing. Additionally, a cohort of 20 test subjects wearing CPPE carried out the decontamination of standardised, simulated, chemically contaminated casualties for a period of one hour. Parameters assessed during these 'tests of performance in use' included the microenvironment within the CPPE, weight loss, heart rate, respiratory rate, temperature, and subjective opinions regarding usability.

**Results:** Upon completion of the process appropriately specified, evidence-based, generic CPPE was selected for purchase for all of the United Kingdom ambulance services and emergency departments. Details of the specification and selection process, together with the CPPE selected, are presented.

**Conclusions:** The United Kingdom's approach to the specification and selection of CPPE is relevant to health service first responders preparing for NBC hazards in other countries.

**Keywords:** chemicals; personal protective equipment; specifications; testing; United Kingdom

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### Baseline Knowledge of Class A Agents Among Clinicians

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The bioterrorist attacks in the U.S. underscored the need for public preparedness at all levels of the public health system. The Columbia University Center for Public Health Preparedness at the Mailman School of Public Health, which is one of 19 national academic centers supported by the Centers for Disease Control and Prevention, responded quickly to help address the rapid and effective education of the health care workforce, one of the many of the important gaps in our response to this public health threat.

The focus was on the front-line clinicians in the community, who might be reasonably expected to see patients in early stages of bioterrorism-related illnesses, especially as many of these diseases present with symptoms similar to influenza. In order to better understand the educational and training needs of healthcare providers, pre- and post-tests were conducted for the >700 healthcare workers enrolled in a three- hour educational program on the dis-