

Reports at the end of each run of the simulation identify which resources ran out and which were plentiful, as well as the “outcomes” of the patients. The system delivers a what-if capability that allows a user to test the effect of substitutions for resources likely to be in short supply. The system thereby facilitates the development, in advance, of alternative care standards.

Keywords: model; pandemic influenza; regional management; resources; simulation

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(230) Respiratory Hazards: Enhanced Protection for Exposure to Airborne Viruses

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Introduction: There are impending threats of viral respiratory infections for healthcare workers worldwide—SARS, influenza, smallpox. Respiratory protection of healthcare workers is of the utmost importance and requires the highest possible level of protection, provided by such devices as the self-contained breathing apparatus (SCBA) and powered air purifying respirator (PAPR). However, this type of equipment does not allow easy stockpiling, and its use might not be realistic in all situations.

Thus, most occupational health authorities recommend the use of NIOSH (N95, N99) or CE (FFP2, FFP3) certified respirators in situations suspected to involve an airborne infectious hazard. Such certifications require particulate filtration efficiencies of 94%–99% against an aerosol of inert particles with a mean particle size of 0.3 μm and 0.6 μm . Considering that most viruses of pathogenic concern are smaller than 0.3 μm in size, and that the most penetrating particle size through charged fibers shifts towards the nano-sized range = 0.1 μm , this represents insufficient protection.

Methods: N95, N99, FFP2 and FFP3 respirators were evaluated for their powered air purifying respirator (VRE) in parallel with a P95 or FFP2 iodinated polymer-containing (IPC) respirator. Full-scale devices were tested against a viral surrogate, MS2 coliphage, and an animal virus, human influenza A/H1N1.

Results: The IPCs showed VRE results 100 to 1,000 times higher than same class respirators. Additional benefits include a carbon layer for nuisance levels of organic vapors and resistance to oil-containing aerosols.

Keywords: airborne viruses; iodinated polymer-containing respirator; powered air purifying respirator; Self Contained Breathing Apparatus; respiratory hazards; viral respiratory infections

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(231) European Front-Line Health Professionals and the New Public Health Threats: Assessment of Training Needs

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European training for health professionals on Rapid Response to Health Threats (ETHREAT) is a project co-funded by the European Commission (EC). The program consortium is comprised of institutes from Greece, Germany, Poland, Bulgaria, and the UK, and is coordinated by the University of Athens School of Medicine. The 36-month project aims to develop an educational package for front-line health professionals (FLHP) that will help to improve their ability to recognize and respond to new public health threats. Before designing the training package, members of the project team explored the opinions of their target audience and of European experts on the existence and appropriateness of currently available programmes, as well as on the desired content of an educational package.

The project team designed two questionnaires addressed to FLHPs and to Chemical, Biological, Radiological, and Nuclear (CBRN) experts in the European Union (EU) member states (MS) and other European countries. Both questionnaires were administered in hard-copy form and via the project website from March to September 2006.

The FLHP questionnaire was comprised of 47 questions. The total number of valid questionnaires returned was 231 from 23 European countries. Of this total, 106 (45.5%) were answered by physicians and 109 (47.2%) by other healthcare personnel, including 62 (27%) by public health officers.

More than 50% of the responding FLHPs felt that they currently are “poorly” or “very poorly” prepared to deal with a chemical, biological, or radiological incident. Similar numbers of FLHPs are not confident (mean: 57.7%) that they could discriminate a natural versus man-made incident. Nevertheless, 67% of FLHPs stated they know where to report a suspicious, deliberate incident, but 55% stated they do not have access to Personal Protective Equipment (PPE) in their workplace, and 49.6% were not aware of a plan for responding to a CBRN incident or their role in the plan.

The CBRN expert questionnaire included 40 questions. A total of 63 valid questionnaires were returned from 16 EUMS, of which 32 (50.8%) were answered by physicians and 31 (49.2%) by other healthcare personnel, including 14 (22.2%) by public health officers. Six (37.5%) EUMS have courses on CBRN threats for health professionals at all educational levels. Despite the available training courses, the majority of the responding experts believe that <25% of FLHPs in their country could recognize and manage a biological, chemical or radiological incident, to the extent that their role requires. The majority of experts also believe that