EUROPEAN COMMISSION

Community Research

European Union
Final meeting

April 16-17, 2009

Mdarid, Spain

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WP4- Personal Protective Equipment (PPE)
Work Plan

Pre-workshop research to be performed:

a. identify and assess the current knowledge of PPE needs
b. identify and assess the current products available
c. obtain samples for evaluation and use by workshop participants
d. identify knowledge of current WMD response models
e. identify environment in which PPE is used
f. identify personnel (first responders, law enforcement, etc.) using PPE
g. identify and compile a matrix of specific needs of the various personnel
h. identify and compile a matrix of personnel in relation to training and PPE

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WP4- Personal Protective Equipment (PPE)
Work Plan

Submit research to steering committee:

a. produce pre-workshop document for use in workshop
b. pre-workshop document to be reviewed and adopted by the steering committee
c. produce agenda and methodology for workshop
d. agenda for workshop to be adopted by the steering committee

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WP4- Personal Protective Equipment (PPE)
Work Plan

Conduct workshop on PPE:

a. discuss needs for PPE in a WMD environment
b. discuss knowledge of current models
c. discuss areas of future research and analysis
    i. technical needs
    ii. human factors
d. discuss road map for future research and analysis

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WP4- Personal Protective Equipment (PPE)
Work Plan

Produce final document:

a. submit final document to steering committee
b. adopt final document

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Learning Objectives covered

Divided up into 4 sections

1.To identify appropriate choices regarding the use of personal protective equipment through scenario evaluation, best practices, surveys, and research and analysis.

2.To provide recommended protection from hazardous materials and weapons of mass destruction associated injuries and illnesses to emergency responders.

3.To compile a PPE program after an in depth evaluation of the equipment needed to protect against the hazards.

4.To design PPE recommended programs that protect the wearer from incorrect use and/or malfunction of PPE.

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Methods

- Conduct an in depth product review of PPE utilized globally by medical personnel – presented at the report.
- Research best practices and limitations of PPE worn by medical personnel – presented in the report.
- Compare and analyze U.S. and European PPE standards for medical personnel.
- Compare and analyze response protocols emergency medical service personnel from the European Union and the United States

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Methods, continued

- Research best practices, recommendations and lessons learned of PPE and Healthcare Personnel
- Compare and analyze U.S. and European PPE recommendations

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Improvement recommendation

• PPE must be designed that permits the fine movements required for medical Care

• Breathing apparatus used by should be designed to be less scary to the public and to the wearer

• Current breathing apparatus does not permit adequate ability to communicate through existing communications equipment. The failure of the equipment to work together reduces clarity of communications or the integrity of the PPE.

• Current equipment that is used by EMS was designed for industrial applications, not EMS. Emergency medical personnel need equipment that was designed for the EMS task (e.g., reinforced knees in garments)

• The current “PPE manufacturer – EMS user relationship” does not have a feedback mechanism (to the manufacturers) for design improvements

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Improvement recommendation

• Current EMS PPE equipment has not been designed for the differences in gender physical structures. The failure to address these difference results in poorly fitting garments that can inhibit movement.

• Emergency Medical personnel need multi-use “everyday uniforms” that can be worn as a component of PPE within the warm zone

• The issue of heat build-up within PPE is a critical issue affecting the wearer’s ability to perform tasks over an extended period. Breathable suits that permit heat/moisture build-up to exit the suit (similar to Gore-Tex) while still permitting safe emergency medical work in the warm zone is a design request for the next generation of PPE.

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Improvement recommendation

• There is a confusion of standards as to when certain levels of PPE are appropriate − and when they are not. There should be 1 set of standards – civilian and military, providing guidelines on when to use PPE and at what level.

• Smart sensors in air breathing filters currently exist. However, the wearer is unable to ascertain when his/her filter requires replacement.

• Because of the civilian nature of EMS, Emergency Medical personnel have different vision correction (glasses) and some have facial hair. Breathing apparatus that will fit with beards and glasses should be designed.

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Improvement recommendation

- Equipment that is environmentally stable so it can be stored in vehicles
    - Example: gloves that deteriorate because of the high heat environment of Israel (current designs permit storage in storerooms, not necessarily in vehicles)

- Standards produced by manufacturers for ongoing certification of equipment in use in the field

- Different EMS organizations have different combinations of equipment. However, there is no independent validation of what equipment will provide acceptable levels of protection with other equipment.

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Improvement recommendation

• Emergency Medical personnel have various levels of training. Because of this fact, PPE that is designed to be intuitive (“idiot-proof”) and can be used with minimal training should be developed.

• Face pieces of breathing apparatus should be designed to be anti-fogging

• Emergency Medical personnel would benefit from the standardization of
  o Training and guidelines
  o Placement of equipment on vehicles
  o Credentialing of personnel
  o Color coding of equipment for identification of personnel and to identify task

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