Improved Criteria for Emergency Medical Protective Clothing

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PPT Stakeholders Meeting
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Emergency Medical Operations

- 17,000 transporting ambulance services (includes fire departments)
- 26,000 fire departments (most of which provide some sort of EMS and about half of which offer ambulance transport)
- 52,000 ambulances
- 600,000 EMTs
- 142,000 paramedics
- 1,009,000 firefighters (many of whom are cross-trained in EMS)
Background – NFPA 1999

• Standard on Protective Clothing for Emergency Medical Operations
  – Sets minimum requirements for clothing items
  – Applies to emergency patient care and transportation prior to arrival at hospital or other health care facility
  – First edition in 1992; Revised 2003; Current edition is 2008
NFPA 1999 Product Areas

- **Garments**
  - Partial body
  - Single-use
  - Multiple-use

- **Gloves**
  - Examination
  - Cleaning/utility
  - Work

- **Footwear**
  - Multiple-use
  - Medical care facility*
  - Single-use covers

- **Eye and face protection devices**
  - Single use medical facemasks*
  - Multiple-use

- **Helmets***

- **[C]BRN Ensembles***

* Added for 2008 edition
NFPA 1999 Performance Properties

- **Materials**
  - Viral penetration resistance
  - Physical properties
  - Comfort properties

- **Overall item**
  - Integrity
  - Functionality
NPPTL Research Project

- Initiated in 2005 and completed in 2008
- Undertaken to support the NFPA Technical Committee (TC)
- Focused on known gaps and issues of the 2003 Edition of NFPA 1999 and impacted the 2008 Edition
Gaps and Issues in 2003 Edition

- **Cleaning gloves**
  - Certain criteria mutually exclusive, preventing certification

- **Single use garments**
  - Physical property criteria don’t distinguish single use/reusable products consistent with field requirements

- **Eye and face protection**
  - Criteria do not match user needs or address all product types used by EMS providers

- **Respiratory protection**
  - No current requirements requested by NPPTL

- **Head protection**
  - No current requirements requested by peer review
Project Objective and Approach

- To provide the basis for and recommend appropriate design and performance criteria for “cleaning” gloves, single-use protective garments, eye/face protection devices and head protection devices for emergency medical operations
- To recommend appropriate flammability and visibility criteria
- To recommend appropriate respiratory protection for CBRN emergency medical operations ensembles
- Provide support to NFPA TC on Emergency Medical Operations PPE through a series of investigations:
  - Determine specific hazards
  - Identify relevant PPE characteristics and features
  - Evaluate “acceptable” & “unacceptable” products through testing and user input
Interview Findings

- Distinctions exist between aid and transportation
- Extent of PPE use varies among EMS organizations
- Awareness of NFPA 1999 not consistent
- Examination gloves are predominate PPE item
- Not all organizations use cleaning gloves
- Few organizations have work gloves
- Routine use of specialized garments is limited
- Most organizations have disposable protective clothing
Interview Findings

- Wide variety of practices in place for eye/face PPE
- Largest eyewear complaint – fogging
- Concerns on overall face exposure not recognized
- Specialized footwear generally not used
- Major footwear concern – long wearing comfort
- Headwear sporadically used
- Visibility garments are used
- Flammability only an issue for extrication
Dissemination

- **Presentations**
  - NFPA Technical Committee throughout the project
  - IAFF Redmond Symposium
  - TSWG PPE Conference
  - NPPTL Stakeholders Meeting

- **Participation at trade shows**

- **Public Proposals and Public Comments within the NFPA revision process**

- **R2P Handout**

- **Featured in NIOSH Science Blog**

- **Project Final Report available**
Project Evaluation

- **Increase in Number of Certified Products**
  - New designs and technologies
  - Broader range of products
  - Additional manufacturers

- **Greater User Acceptance**
  - Specification and purchase of NFPA 1999 Certified clothing
  - Use of federal and state grant money
Challenges and Next Steps

- User understanding and training on hazards
- Volume of business for manufacturers
- Knowledge of federal and state grant programs (FEMA, DHS, and Federal Fire Act Grant) for NFPA 1999 Certified gear
- Comfort and ease of use for products
- Economic concerns for departments
- NIOSH resources for education and awareness
Quality Partnerships Enhance Worker Safety & Health

Acknowledgements

NFPA Technical Committee on Emergency Medical Services Protective Clothing and Equipment

www.cdc.gov/niosh/npptl/default.html

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