



A story of **Impact**

NIOSH Research Recommendations are Incorporated into National Standards to Enhance Protection for EMS Responders

Firefighters, emergency medical service (EMS) responders, and many other public safety officials play a critical role in protecting the safety and health of people and property every day. It is estimated that more than 1 million firefighters and an additional 50,000 EMS responders are engaged in EMS operations. Routinely, these EMS responders are exposed to a wide range of hazards, including bloodborne pathogens, that require the use of personal protective equipment (PPE).

Requirements for emergency medical PPE are established in the National Fire Protection Association's (NFPA) Standard number 1999, Protective Clothing for Emergency Medical Operations (NFPA 1999). The NFPA Technical Committee on Emergency Medical Operations Protective Clothing and Equipment identified a number of deficiencies in the 2003 edition of NFPA 1999. These deficiencies were primarily clothing or equipment categories where industry had not responded with certified products even though these items are understood to be extensively used during emergency medical operations.

Relevant Information

As of January 13, 2009 there were 29 manufacturers with 92 products certified to the 2008 edition of NFPA 1999. Reusable footwear and work gloves have seen notable increases in certified products under the 2008 edition of NFPA 1999. Prior to the 2008 edition, these 2 categories of PPE had seen relatively little to no certification efforts. The trend of certifying single use garments and single use footwear is expected to continue.



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To address this issue, researchers at the National Institute for Occupational Safety and Health (NIOSH), along with external partners, conducted a series of investigations as the basis for recommending specific mission-based criteria for protecting EMS responders during medical operations. NIOSH and its partners assessed the hazards faced by EMS workers, met with EMS responders to learn about their PPE needs, and evaluated commercially available PPE to determine the appropriate technical performance levels necessary for a suite of PPE including garments, gloves, footwear covers, respiratory protection, eye wear and face wear, and head protection. The majority of this research was conducted in 2006 and 2007.

NFPA incorporated NIOSH recommended criteria and test methods resulting from this research into the 2008 edition of NFPA 1999. In addition, the Department of Homeland Security and the Interagency Board for Equipment Standardization and Interoperability have adopted the 2008 edition of NFPA 1999, making compliance with the standard a requirement for use of certain federal grant money. NFPA standards are recognized by numerous industries as the basis for equipment quality and performance; this is especially true for the first responder industry.

PPE certified to the 2008 edition of NFPA 1999 is now available, enabling a level of protection not previously provided to the Nation's EMS responders. NFPA 1999 now contains requirements for certification of a range of products including single use and multiple use garments; examination, cleaning, and work gloves; eye and face protection; and single use and multiple use footwear. The certification of individual products allows users to select the appropriate level of protection necessary for each response.

Visit www.cdc.gov/niosh for more information about research efforts to protect EMS and other public safety workers. Authors of *Improved Criteria for Emergency Medical Services (EMS) Protective Clothing*—Angie Shepherd and William Haskell; National Personal Protective Technology Laboratory; NIOSH—received a 2009 Bullard-Sherwood Award in the Intervention category.

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