

Personal Protective Equipment and Risk Exposure Characterization for Naturally Occurring Anthrax

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Abstract

In regions of the world where anthrax is endemic, humans are at risk of infection from contact with infected animals and contaminated animal products. The World Health Organization proposed recommendations, based on then current evidence, for personal protective equipment (PPE) use when performing clinical, laboratory, and field work activities involving collection and handling of specimens from humans, animals, and environments potentially contaminated with *Bacillus anthracis*. However, it is often unclear how these recommendations apply under field settings in low-resource countries, leading to inadequate protection and subsequent exposures of veterinary, medical, and public health professionals investigating anthrax outbreaks. To illustrate how existing recommendations can be applied to reduce the risk of exposures in endemic regions with limited resources, while balancing access to PPE, CDC subject matter experts (field epidemiologists working on anthrax outbreak response, control and capacity building activities around the globe) reviewed current recommendations, existing data from human anthrax case reports and anthrax prevention studies, and discussed professional judgment based on years of personal field experiences. To develop a risk assessment for exposures to naturally occurring anthrax, the group evaluated exposure mechanisms in settings such as the laboratory, clinical practice (animal and human), environmental specimen collection, and foodborne exposures, and provided examples of simplified anthrax-exposure risk characterization scenarios and illustrations of post-exposure prophylaxis (PEP) practices. Although these practice-informed examples and risk exposure scenarios are most applicable in endemic regions with limited resources, they may be applied anywhere that *B. anthracis* occurs naturally, to assess whether PEP and monitoring are indicated.

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