

# APPLICATION OF A MODEL FOR RESPIRATORY PROTECTION: SELECTION FOR CONTAGIOUS EVENTS

Simon J. Smith

3M Canada

The Canadian standard under development for the selection of respiratory protective equipment for CBRN incidents incorporates a probabilistic method for defining equipment selection for contagious events arising from the use of a biological weapon. This method is based on available information or worst-case assumptions about: the properties of the pathogen, exposure circumstances, equipment user work rate, duration and fit of protective equipment used. The standard uses a published model for calculation of the probability of infection of the equipment/user combinations based on the measured protection factor. A simplified guidance table has been created for typical first responder usage scenarios to indicate protection levels required according to infection probability. The model has been initially developed for the worst-case biological agents for use in the early stages of an event but could be extended for other scenarios. The draft standard requires protection factor measurement based on a simplified workplace protocol for all types of equipment. It does not allow the presumption of a safe distance from an infectious individual in a closed work area nor the variation in safety protocols based on assumed or known aerosol particle size. The calculation method is being prepared in an interactive format so that users can provide as much information as they have in order to generate a table of recommended protection factors for a range of probabilities of infection.