



US DEPARTMENT OF DEFENSE

BLAST INJURY RESEARCH PROGRAM COORDINATING OFFICE

Risk Assessment and Surveillance

Assessed Injury Risk from Blast Exposures for the XM104 Non-lethal Bursting Hand Grenade

Investigators at the USAPHC performed a quantitative risk assessment of the blast produced by the XM104 Non-Lethal Bursting Hand Grenade. The XM104 Grenade uses an explosive charge to produce a bright flash and loud report to disorient individuals to facilitate dispersal or easier apprehension, and is intended for use in confined spaces such as room clearing. Data collected during tests conducted by the US Navy at Naval Sea Systems Command Dahlgren were analyzed using Blast Overpressure-Health Hazard Assessment (BOP-HHA) v 2.0 software developed by USAMRMC. The BOP-HHA software helps characterize occupational exposures sustained by personnel firing weapons or detonating explosive devices and is the primary method used by the USAPHC to assess injury risk from the non-auditory component of blasts. This risk assessment of the grenades provided hazard severity and probability estimates for two firing conditions that helped the US Navy make evidence-based decisions about how this weapon should be employed. The results of this test will aid in developing a standard operating procedure for the use of the XM104 Non-Lethal Bursting Grenade that will reduce injury risk to the Warfighter/operator and to ancillary personnel in the vicinity when these weapons are deployed.