

Study finds new tool to measure homeland security risks

June 30 2016

Researchers have validated a new risk assessment tool that can be used by the Department of Homeland Security to help evaluate decisions and priorities in natural disasters, terrorist events, and major accidents.

The Department of Homeland Security has a broad and complex mission, with priorities that include preparing for and responding to a range of terrorist events, natural disasters, and major accidents. Russell Lundberg of the Department of Security Studies at Sam Houston State University and Henry Willis, Director of the Rand Homeland Security and Defense Center, recently applied a tool originally developed to address risks in environmental policy, the Deliberative Method for Ranking Risk, to aid in strategic planning for security. Their findings were published in [*Homeland Security Affairs*](#) and the [*Journal of Homeland Security and Emergency Management*](#).

The study was in response to a National Academy of Sciences recommendation that the Department of Homeland Security adopt qualitative risk assessments as part of the strategic planning process. The Deliberative Method for Ranking Risk has five-steps, which include defining and categorizing risks to be ranked, identifying the risk attributes to be considered, describing the risks in a summary document in term of the attributes, selecting participants to assess the risks and performing risk ranking, and finally analyzing and describing the issues identified and the resulting rankings.

To test the validity of the method, a second study examined 10 key

hazards under the purview of the Department, including earthquakes, hurricanes, tornados, pandemic influenza, nuclear detonation, explosive bombing, anthrax attack, cyber-attack on critical infrastructure, accidents involving toxic industrial chemicals, and oil spills. By searching existing literature, Lundberg and Willis identified the key attributes of each hazard based on health and economic damages as well as social, psychological, environmental, and political concerns.

Among the top attributes identified were:

- Greatest number of deaths in a single episode
- Average number of deaths per year
- Average number of severe injuries or illnesses per year
- Average number of less severe injuries or illnesses per year
- Average amount of economic damages per year
- Greatest economic damage from a single episode
- Average number of individuals displaced per year

The method was tested on 26 individuals in groups assembled in Pittsburgh, PA and Santa Monica, CA. Although the sample was not representative of the city, state, or nation, it did provide a glimpse into citizen concerns over homeland security issues.

Among hazards prompting the highest concerns were pandemic influenza, hurricanes, and earthquakes, while the hazards prompting the least concerns were oil spills, anthrax attack, or cyber attacks on critical infrastructure.

The method can be useful to support strategic decisions across the [homeland security](#) enterprise, from individual buildings to the nation as a whole.

Provided by Sam Houston State University

Citation: Study finds new tool to measure homeland security risks (2016, June 30) retrieved 17 April 2024 from <https://phys.org/news/2016-06-tool-homeland.html>

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