

Probabilistic Analysis for National Threats Hazards and Risks Program



Science and Technology

PROGRAM MISSION

The Department of Homeland Security (DHS) Science and Technology Directorate's (S&T) Probabilistic Analysis for National Threats Hazards and Risks (PANTHR) program provides accurate, useful, and defensible knowledge and tools to stakeholders to enable risk-informed decision making for defense against weapon of mass destruction threats to the homeland.

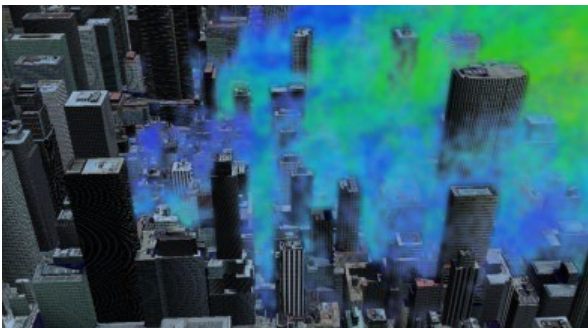
OVERVIEW

The Homeland Security Enterprise (HSE) is required to prevent, protect, mitigate, respond to, and recover from chemical, biological, radiological, nuclear, and explosive (CBRNE) events. The quantity of potential CBRNE attack scenarios and their possible consequences make defensive planning challenging, as it is infeasible to prepare for every scenario.

It is critical for decision makers across the HSE to have useful information about potential CBRNE hazards and a way to evaluate their potential harm. The PANTHR program comprehensively assesses the probability and consequences of CBRNE risks to the homeland, leveraging an integrated, laboratory-based threat characterization capability. PANTHR capabilities help to inform how bad different threats actually are, how the U.S. Government (USG) can defeat those threats, and how DHS and its partners can prioritize limited resources to protect the American people.

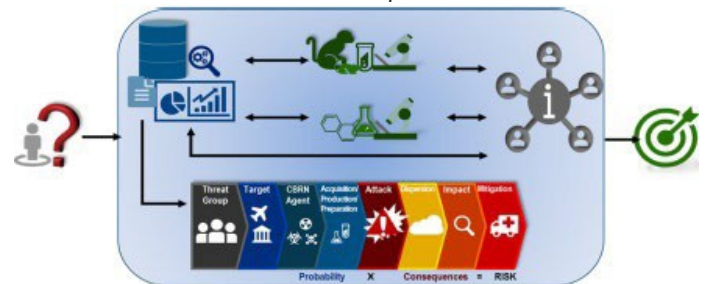
SCOPE

PANTHR focuses on hazard awareness and threat characterization activities to inform and enable decision-makers to address CBRNE threats to the homeland more effectively through five projects: Tools for Integrated Evaluation of Risk, Biological Threat Characterization, Chemical Threat Characterization, Agricultural Threat Characterization, and the Hazard Knowledge Center.



STRATEGIC GOALS

- Execute CBRNE **risk analysis** capabilities to support national assessments
- Characterize biological and chemical hazards** to support HSE chemical and biological defense
- Provide a **knowledge management** system to archive and communicate CBRNE hazard information
- Coordinate hazard awareness** and characterization activities across S&T, DHS Components, and the HSE



The illustration above shows the process PANTHR uses to analyze CBRNE threats to provide decision makers with effective options. Questions and requests come in from stakeholders.

IMPACT

The PANTHR program establishes and leverages innovative science-based capabilities to provide knowledge and expertise, data, tools, and technologies to increase awareness, improve understanding, and facilitate effective decision making regarding current and future CBRNE hazards. PANTHR delivers tailored products to its stakeholders based on their specific mission needs. Critical data and insights generated by PANTHR ensure that the HSE:

- Has a clear understanding of traditional and emerging threats to prioritize requirements for detection, protection, and medical response
- Recognizes impactful and sensitive data gaps for further analysis and experimentation
- Has a scientifically defensible basis for the implementation of USG strategic goals and investments

PANTHR data can help improve operating procedures and protocols, provide indicators and warnings for DHS components and law enforcement agencies, inform further research and development investment decisions, and enable effective policy making to secure the homeland against CBRNE hazards.

