

Probabilistic Analysis of National Threats Hazards and Risks (PANTHR)



Science and Technology

PROGRAM MISSION

The Department of Homeland Security (DHS) Science and Technology Directorate's (S&T) PANTHR strategic 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.

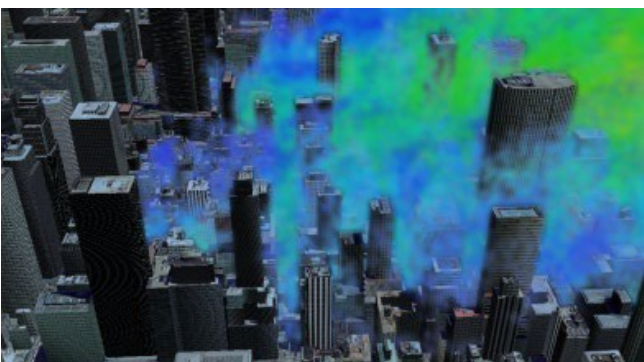
OVERVIEW

The Homeland Security Enterprise (HSE) is required to prevent, protect, mitigate, respond, and recover from Chemical, Biological, Radiological, Nuclear, and Explosive (CBRNE) events. But the quantity of potential CBRNE attack scenarios and their possible consequences make defensive planning challenging, as it is infeasible to be prepared for every scenario.

To enable HSE decision making for CBRNE defense, it is critical to have useful information about potential CBRNE hazards and a way to assess their potential harm. The PANTHR program provides this to the HSE through a portfolio of risk assessments, analytic tool developments, and laboratory and field threat characterization activities. PANTHR is unique in its programmatic design, novel products—and, most importantly—the support capabilities it can provide to the HSE to enable CBRNE risk awareness and decision making.

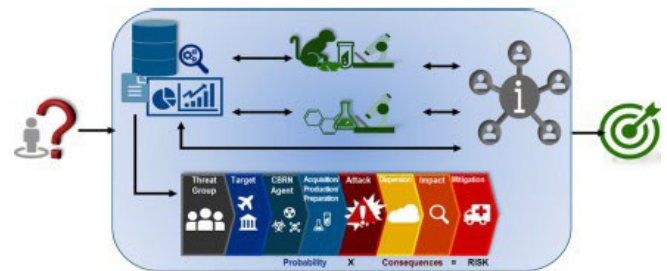
SCOPE

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 strategic 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 for the HSE
- Coordinate hazard awareness** and characterization activities across S&T, DHS Components, and the HSE



IMPACT

The PANTHR program establishes and leverages innovative science-based capabilities to provide expertise, data, knowledge, and technologies to increase awareness, improve understanding, and provide more effective decision making regarding current and future CBRNE hazards through tailored products, tools, technologies, and other information. Critical data and insights generated by PANTHR ensure that S&T and chemical and biological defense communities:

1. Have a clear understanding of traditional and emerging threats to prioritize requirements for detection, protection, and medical response.
2. Recognize impactful and sensitive data gaps for further analysis and experimentation.
3. Have a scientific and traceable basis for rational and consistent implementation of DHS' strategic goals.

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

