Tools for Integrated Evaluation of Risk (TIGER)
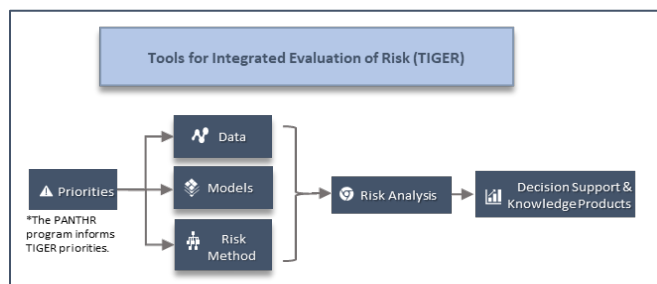
Science and Technology

THE NATIONAL DEFENSE MISSION

The Department of Homeland Security (DHS) Science and Technology Directorate's (S&T) Probabilistic Analysis of National Threats, Hazards and Risks (PANTHR) strategic program supports the national chemical, biological, radiological, nuclear, and explosive (CBRNE) defense mission. PANTHR 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. PANTHR enables decision makers to address CBRNE threats more effectively through three strategic capabilities: risk assessment, characterization, and knowledge management.

TOOLS DECISION MAKERS NEED

The Tools for Integrated Evaluation of Risk (TIGER) project provides a comprehensive evaluation of hazards and risk, comprising pertinent data and analyses, to decision makers across the Homeland Security Enterprise (HSE). TIGER enables risk awareness and hazard prioritization so that decision makers can maximize resources and enhance CBRNE defense activities.

TIGER accomplishes this by developing and executing modeling and risk analysis capabilities to generate strategic, operational, and tactical CBRNE hazard-tailored risk assessments and decision-support tools that aid in hazard awareness. TIGER is also leveraging these capabilities to expand to other stakeholder mission areas, such as the food and agriculture sector and explosives.

A diagram of the TIGER Process

TIGER'S KEY ELEMENTS

TIGER builds upon former CBRNE risk assessment activities, leveraging enhanced computational abilities and extensive stakeholder engagement to conduct more comprehensive CBRNE risk analyses in support of decision makers. This includes evaluating public health and economic consequences.

Key elements of the TIGER project that help execute the PANTHR mission include:

- **Capability Refinement and Development**
  - Activities to generate new or improved capabilities such as new assessment frameworks or improved computational models
- **Risk Analysis**
  - Annual cycle activities to generate a new risk image that feeds assessments and tools
  - Tailored analyses to address questions from HSE customers to provide decision support
- **Community Tools**
  - Software tools that provide the HSE with the ability to assess risk

STRATEGIC GOALS

- Provide comprehensive capabilities to assess CBRNE risks to the nation

- Improve the timeliness of executing risk analyses to support decisions at DHS and the HSE

- Provide decision support information for prioritization of DHS and HSE efforts

- Coordinate with other projects within the PANTHR program and with the HSE on activities

IMPACT

TIGER's tailored analyses work to assess CBRNE risks and enable strategic, operational, and tactical decisions (investments, research, development, test and evaluation, concept of operations, policy, etc.) to increase prevention, protection, preparation, mitigation, response, and recovery from CBRNE hazard events. By improving the ability of decision makers to assess threats and understand hazards, these data and models allow improvement of risk management and our ability to understand and prepare for high-impact risks to the homeland.