

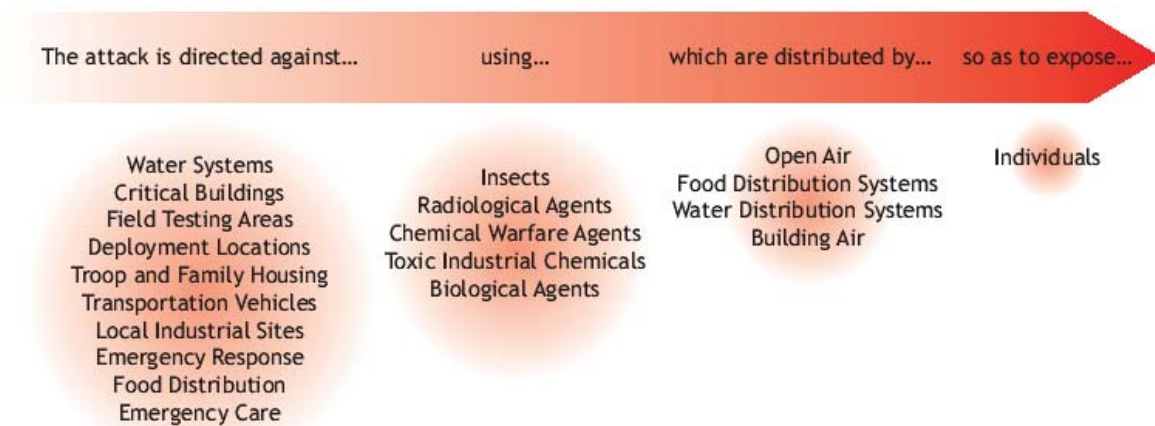


## Just the Facts...

### Assessment of the Medical Threat to Installations to Prioritize Force Protection/AntiTerrorism (FP/AT) Chemical, Biological, or Radiological (CBR) Efforts

The Medical Threat Assessment is an operational tool designed to improve the defensive posture of the installation. It identifies threats against the mission in terms of risk and vulnerability. Because of the many unknowns involved with the CBR<sup>1</sup> threat spectrum, the assessment is not rigidly scientific or extremely detailed in approaching the problem of defending against CBR attacks. However, Commanders can use the information from the analysis to allocate attention and resources for hardening their installations, defending their mission, and protecting their people.

Figure 1: Spectrum of CBR Scenarios



To ensure continuance of the mission, the installation must sort through CBR potential scenarios and devise plans and defenses against credible threats. With CBR however, determining what is and is not credible requires highly technical subject matter expertise not routinely found at most installations. Because of this, legitimate credible threats can be dismissed and non-credible threats included in the planning process. In most cases, money and resources run out long before the list of potential attacks. In order to manage the risk that such threats pose using limited and available resources, Commanders need to prioritize potential attack scenarios and choose FP/AT efforts that minimize the overall risk to the installation mission. The assessment of Medical Threat<sup>2</sup> to the installation mission uses military risk management doctrine to provide prioritization. The Medical Threat Assessment can be performed in one to two weeks (depending on the size of the installation) and has been developed so that no lag time between the onsite assessment and the final report is needed. In essence, the Command outbrief *is* the final report.

As stated in Army Field Manual 100-14, Risk Management—

*Risk management is the recognition that decision making occurs under conditions of uncertainty. Decisions must remain consistent with the commander's stated intent and offer a good expectation of success. The risk-taking skill requires competency as a prerequisite.*

<sup>1</sup> In managing the full CBRNE threat, nuclear and explosives (the NE of CBRNE) were not considered because these are generally well factored into existing installation FP/AT efforts. They can be included if needed by the installations.

<sup>2</sup> In Army and multi-service publications, the term is defined as a composite of all ongoing potential enemy actions and environmental conditions and disease and non-battle injuries that may degrade a unit's combat effectiveness or, for the purpose of this fact sheet, the installation mission. (See Joint Publication 4-02.)

The medical threat analysis ranks the CBR risk by combining technical expertise in CBR threat mechanisms with local knowledge of the installation (primarily from FP/AT and facilities management organizations). The combined team then subjectively evaluates relative risk from specific scenarios. According to risk management doctrine, hazards are identified and then assessed in terms of probability of occurring and severity of the result. For the installation medical threat assessment, four fundamental steps are performed—

- STEP 1: Situation - Obtain or develop a list of mission critical assets.
- STEP 2: Hazard - Develop list of hazards (potential scenarios) and relative likelihood of occurrence. The hazard should combine the agent that can cause harm as well as a mechanism that transports the agent to critical mission asset(s) if applicable.
- STEP 3: Event - Determine relative vulnerability of critical mission installation asset if hazard is realized.
- STEP 4: Damage - Determine susceptibility of personnel exposed to the hazard.

Using the risk management procedures yields a prioritized list of threats and their relative risk ranking. Table 1 shows an example of the assessment results.

**Table 1: Example Final Risk Ranking for 5 Scenario/Asset Combinations**

Mission Critical Asset	Scenario			Rankings		Risk
	Agent Type	Threat	Distribution	Probability	Severity	Relative Risk
Electrical Plant	TIC/TIM	Chlorine	Open Air	B	1	Extreme
C3I Building	CWA	VX	Bldg. Air	C	1	High
HQ Building	CWA	VX	Bldg. Air	C	2	High
Family Housing	TIC/TIM	Arsenic	Water	B	3	Medium
Hospital	Bio	Botulism Toxin	Food	D	4	Low

Table 1 is extremely abbreviated. As an example, an analysis involving only 4 different agents with each one having 4 distribution mechanisms against 10 targets, a total of 160 scenarios would be analyzed. From Table 1:

- Probability is ranked for each scenario and is based on how easy the agent is obtained and how easily the distribution method is adapted to deliver it to the asset. A probability ranking of “B” means that the agent is somewhat (but not easily) available and can potentially be delivered via the specific distribution method.
- Severity is how vulnerable the asset is when exposed to the agent/distribution combination and how susceptible the personnel are. A severity ranking of “1” indicates that the asset is highly vulnerable, and most personnel will experience severe medical effects.

The hypothetical electrical plant was determined to be at extremely high risk from a chlorine gas cloud. The facility was imagined to be very close to a rail line that frequently has chlorine tank cars traveling on it. The probability of “B” indicates that breaching one or more of the chlorine tanks can be done with relative ease and creating the airborne cloud not too difficult. The severity ranking of 1 indicates that the building is not hardened against a toxic gas cloud at all. This is based on a combination of the building being open, no mechanism to shut off the air handling systems exists, and personnel who are not trained to shelter-in-place. As such, a large percentage of personnel would experience irreversible and severe medical effects to include death. For the Command outbrief, this information would be conveyed as well as any obvious control measures that would improve the risk ranking of the scenario (such as enabling a shelter-in-place program).

The Medical Threat Analysis provides military installation commanders with a rapid tool to defend their installations from the increased threat of attack from CBR agents. It primarily relies on available installation expertise to develop and is completed in one to two weeks. The results from the analysis would indicate where installations should focus CBR FP/AT attention and resources.