

## Chemical Biological Defense Program Overview

Chemical, biological, radiological, and nuclear (CBRN) threats are dynamic and ever-changing. The rapid advancement and global proliferation of chemical and biological (CB) capabilities greatly extends the spectrum of plausible actors, agents, concepts of use, and targets. These advancements enable our nation's state and non-state adversaries to develop unique CBRN threats with the intent of circumventing our current defenses. To ensure an effective response to these threats, the Department of Defense (DoD) Chemical and Biological Defense Program (CBDP) continuously and actively develops CBRN defensive capabilities to stay ahead of evolving threats. This 2014 budget request includes \$1.5 billion to provide a framework for the allocation of fiscal resources against valid capability requirements to achieve a strategy-driven balance of risk in accordance with National Defense Strategies, Department-level objectives, and Service force development priorities.

The CBDP published a new strategy in 2012 to address current defense policy set by public law, National strategies, Departmental Directives and Instructions, and senior leadership guidance. This strategy outlined the CBDP vision and mission of a DoD that addresses CBRN threats and minimizes their effects, and its mission is to enable the Warfighter to deter, prevent, protect, mitigate, respond, and recover from CBRN threats and effects as part of a layered, integrated defense. To support the vision and mission, the CBDP has four enduring strategic goals that define the desired strategic end-states and associated lines of action for the program and its Enterprise Components. These are:

1. *Equip the force* to successfully conduct military operations to prevent, protect, and respond to CBRN threats and effects.
2. *Prevent surprise* by anticipating CBRN threats and developing new capabilities for the Warfighter to counter emerging threats.
3. *Maintain infrastructure* to meet and adapt current and future needs for personnel, equipment, and facilities within funding constraints.
4. *Lead the Enterprise* to integrate and align activities to fulfill the CBDP mission.

Throughout FY2012 and going forward, the following strategic program objectives guide efforts to accomplish the *CBDP Strategic Plan* goals:

- Establish a robust MCM pipeline from requirements definition, through Research, Development, Test, and Evaluation (RDT&E) and U.S. Food and Drug Administration (FDA) approval, to manufacturing and distribution. This pipeline shall focus on mitigating current CBRN threats using platform technologies capable of expediting responses to validated known and emerging threats.
- Develop synergistic, technologically advanced environmental surveillance and point-of-need diagnostic capabilities against CBRN threats to enable rapid force protection decisions.

- Provide CBRN defense capabilities to support biosurveillance efforts and enable the Warfighter to achieve information dominance in the CBRN domain.
- Integrate NTA defense capabilities into future CB defense systems, as appropriate.
- Develop and field suitable, effective, and affordable broad-spectrum CB detection capabilities to detect current and emerging CB hazards.
- Maintain critical capabilities and competencies, aligned with RDA priorities, to rapidly develop, test, and field CBRN defensive capabilities to the Warfighter.
- Implement risk-based planning and decision-making processes within the Enterprise.

Focused efforts within this budget are captured in a number of emphasis areas that are a collection of mutually-supporting S&T efforts, systems acquisition programs, and T&E capabilities aimed at delivering comprehensive CBR defense capabilities to the warfighter. Emphasis areas are derived from National Strategies, senior leader guidance, and CBDP community priorities. The four key emphasis areas are: medical countermeasures (MCMs), diagnostics, biosurveillance, and non-traditional agent (NTA) defenses.

## **Medical Countermeasures**

The *National Strategy for Countering Biological Threats* emphasized the importance of developing MCMs to reduce impacts of outbreaks of infectious disease whether of natural, accidental, or deliberate origin. Homeland Security Presidential Directive (HSPD)-10, “Biodefense for the 21<sup>st</sup> Century,” and HSPD-18, “MCMs Against Weapons of Mass Destruction,” directed U.S. government agencies to “conduct joint development and procurement of medical countermeasures” throughout the Interagency and with international partner nations. MCMs include capabilities to protect the warfighter against CBR threats and mitigate illness, suffering, and death. MCMs will provide end-to-end countermeasures against emerging infectious diseases, genetically engineered threats, naturally occurring biological phenomena, novel chemical agents, and radiological threats. Program efforts include core medical efforts aimed at developing and delivering pretreatments/prophylaxes and therapeutics to the warfighter. MCMs in development by the CBDP traditionally fall into one of two categories: 1) pretreatments/prophylaxes such as a plague vaccine and 2) post-exposure, pre/post-symptomatic therapeutics such as the Hemorrhagic Fever Virus therapeutic.

## **Diagnostics**

Diagnostic and analytic-related efforts are a centerpiece of the CBDP’s comprehensive capability to counter CBR threats and characterize CBR attacks or events by diagnosing causative agents of disease and providing situational awareness of threat agents in the environment. The CBDP has resourced a robust portfolio that includes S&T of CBR diagnostics, systems development and procurement

of point-of-need/point-of-care diagnostic equipment, and continuous assay development and procurement to support fielded and developmental diagnostic or analytic platforms.

## **Biosurveillance**

The CBDP is a key contributor to the Department's efforts in support of the National Biosurveillance Strategy and its goal "to achieve a **well-integrated national biosurveillance enterprise that saves lives by providing *essential information* for better decisionmaking at all levels.**" The CBDP focus and support are aligned with the four enabling capabilities outlined in the National Biosurveillance Strategy. These are; integrate capabilities, build capacity, foster innovation, and strengthen partnerships. Key CBDP efforts include; focusing on the ability to strengthen and integrate capabilities that provide awareness of endemic pathogens in the environment along with warning and characterization of biological attacks or events (analysis and diagnostics) for decision-making; improving the ability to find, track, interdict, and eliminate biological weapons and threats directed against our warfighters and citizens; and strengthening our ability to conduct forensics and attribution and to prevent re-attack. The CBDP capabilities represent both pre-event (early warning and indications) and post-event (effective consequence management and persistent surveillance for re-emergence) activities necessary to improve early warning and characterization of man-made (i.e., genetically engineered/synthetic biological agents) and naturally occurring (i.e., emerging infectious diseases and the re-emergence of pathogens from zoonotic reservoirs) disease outbreaks in near real-time. The CBDP is integrating/leveraging various capabilities being developed in other areas across the DoD, Internationally, and within the Interagency in order to provide an enhanced biosurveillance capability.

## **Non Traditional Agent (NTA) Defense**

The 2010 QDR directed the DoD to increase resources for R&D of countermeasures and defenses to NTAs in concert with interagency partners. DoD efforts supporting NTA defense are a key part of an integrated National effort supporting Research, Development, and Acquisition of defensive capabilities. The CBDP works to:

- Develop technologies that address existing and emerging NTAs in the near-, mid-, and far-term, including the ability to address multiple capability gaps and provide multi-layered and integrated defenses to NTAs
- Strengthen and integrate capabilities that provide warning of attack, barrier protection, and both pretreatments/prophylaxes and post-exposure treatments
- Field faster, more flexible consequence management capabilities on the battlefield and in the homeland
- Develop capabilities, policies, and plans that enable us to act swiftly to save lives and restore the effectiveness of contaminated areas.

## **CBDP Support to Priorities to Counter Biological Threats (Presidential Policy Directive-2)**

The CBDP budget directly supports the National Security Staff (NSS) FY 2014 policy priorities for resourcing the *National Strategy for Countering Biological Threats*. These policy priorities spell out four major focus areas supported directly or tangentially by the CBDP:

1) Promote global health security efforts through building and improving international capacity to prevent, detect, and respond to infectious disease threats, whether caused by natural, accidental, or deliberate events. 2) Establish and reinforce norms against the misuse of the life sciences. 3) Expand our capability to prevent, attribute, and apprehend those engaged in biological weapons proliferation or terrorism, with a focus on facilitating data sharing and knowledge discovery to improve integrated capabilities. 4) Leverage science, technology, and innovation through domestic and international partnerships and agreements to improve global capacity to respond to and recover from biological incidents. Priorities 1, 3, and 4 are directly supported across the CBDP FY14 budget submission. Priority 2 is addressed within the CBDP primarily through compliance with applicable DoD and Interagency biosafety and biological security standards that is inherent in all CBDP research done by government entities and contractors alike. All four NSS priorities are addressed throughout the CBDP S&T, Advanced Development, and Procurement efforts. Specific efforts against these priorities are detailed in the mission description and budget item justifications.

### **Summary**

The CBDP continues to effectively meet today's highest priority needs for DoD CBRN defense solutions while shifting to establish the agility and flexibility necessary to rapidly adapt to the evolving strategic landscape. This ongoing transformation ensures that currently available technologies are produced, procured, and provided swiftly and that cutting-edge technologies are harnessed to provide improved capabilities in the future. The DoD CBDP continued to enhance CBRN readiness to counter known and emerging threats and collaborated with other Government agencies to foster exchange of knowledge and coordination of CB defense-related activities. This budget request supports the CBDP as a Joint Force enabler fulfilling the needs of the Warfighters to ensure that they are trained, equipped, and resourced to complete missions in CBRN environments now and in the future, preserving the security and freedom of our nation.