



## **Sustaining a Competitive Advantage For the Chemical and Biological Defense Program (CBDP)**

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# Chemical and Biological Defense Program

- Established by Congress in 1994, re-organized in 2003
- Consolidated all Department of Defense (DoD) chemical and biological (CB) defense efforts into defense-wide funding accounts overseen by a single office —Assistant to the Secretary of Defense for Nuclear and Chemical and Biological Defense Programs (ATSD(NCB))— within the Office of the Secretary of Defense
- **Vision:** to ensure DoD operations are unconstrained by chemical, biological, radiological, and nuclear (CBRN) effects
- **Mission:** to provide CBRN defense capabilities in support of the National Military Strategies

**Realizing the vision and mission of the CBDP will ensure we sustain our competitive advantage**



# State of the Union

- Complex set of actions within CBDP that demand resources and time
- Work to hold current operational risk constant and reduce risk associated with future potentially catastrophic CBRN threats
- Program for the near- and mid-term (FY 2010 to 2015) to:
  - Improve CBRN defense preparedness
  - Reduce risk to the Warfighter
  - Field proper mix of capabilities to enable military operations
  - Prepare to meet the future threat.
- Continuous examination to improve process of identifying, prioritizing, and resourcing capabilities-based requirements of the 21<sup>st</sup> Century
- Establish goals beyond current programming activities ( 10 to 15 years) to drive transformational actions



# Agenda

- Introduction
- Threat
- Action
- Methodology
- Overcoming Challenges
- Accomplishments
- CBDP Strategy
- Future Vision
- Measures of Success



# Global Security Environment

## Threat

- Pervasive
- All types of conflict
- Every possible region
- Asymmetric (seeks weapons of mass destruction (WMD))
- Adaptive

**Nation is at War:** Maintain homeland defense and security

## Major Challenges

- Traditional
- Irregular
- Catastrophic
- Disruptive

## Multitude of Stakeholders

- Joint
- Interagency
- International

**Failure to address this environment with the right mix of CBRN capabilities will increase risk to sustaining the nation's competitive advantage**



# Chemical Threats

## Traditional Threats

- Traditional chemical warfare threats (nerve, blood, and blister)
- Agents designed for military operations/ applications

## Emerging Threats

- Nontraditional CBRN hazards
- Toxic industrial materials (TIM) hazards
- Toxic industrial chemicals (TIC)

## Enhanced Threats

- Small levels of CBRN hazards, not necessarily weaponized, caused by a terrorist incident that may cause mass casualties
- Next generation agents

## Advanced Threats

- Unforeseen CB agent threats
- Asymmetric applications and/or engagements





# Biological Threats

Threat

## Traditional Threats

- Intracellular bacterial pathogens
  - Anthrax
  - Plague
  - Tularemia
- Viral hemorrhagic fevers
  - Ebola
  - Marburg
  - Junin

## Enhanced Threats

- “Bioprospecting” to find particularly virulent strains in nature
- Cultivating particularly virulent strains of pathogens in the laboratory

## Emerging Threats

- Natural and emerging diseases:
  - Cholera
  - Pandemic flu
  - SARS
  - Drug-resistant TB
  - Malaria



## Advanced Threats

- Adding, deleting, or mutating genes to engineer pathogens that are more resistant, transmissible, and virulent
- Creating viruses *de novo*



# Reason for Action

## The Warfighter:

**Individuals from Active Forces, Reserve Components, governmental and departmental civilians, and contractors who participate in the growing range of worldwide military operations**

Action



# Motive for Action

- **The CBDP is shaped by the threat, funding, policy, and rapidly changing factors influenced by socio-economic, political, and environmental impacts:**
  - Planning for warfighting support to a new force-sizing construct, and maintaining capabilities and forces to wage multiple campaigns in an overlapping timeframe
  - Continued proliferation in spite of Chemical Weapons Convention (CWC) and the Biological and Toxin Weapons Convention (BWC)
  - The need for innovative, less costly technology approaches to support force modernization
  - Growing strategic threats from state and non-state actors
  - Expected identification of additional CBRN defense doctrine, organization, training, materiel, leadership and education, personnel and facilities (DOTMLPF) requirements
  - A rapidly changing geopolitical environment





# Our Methodology

## Sustain the nation's competitive advantage by...

- Establishing an end-state for everything we do in the CBDP program with purpose driven stretch goals
- Using a deliberate Systems Engineering Approach (DoD 5000) to ensure integration
- Establishing the mindset and culture that seeks innovation at every step, and most importantly, rewards innovation
- Using existing processes (JCIDS) and seeking ways to continuously improve the way we do business and ensure **jointness**
- Seeking transformational capabilities over emerging threats

*“Each Service brings to the fight unique and critical capabilities, but those capabilities are only as good as the contributions they make to the overall strategic effort. Nobody goes it alone today.”*

**ADM Mike Mullen**  
**CJCS Guidance for 2007-2008**

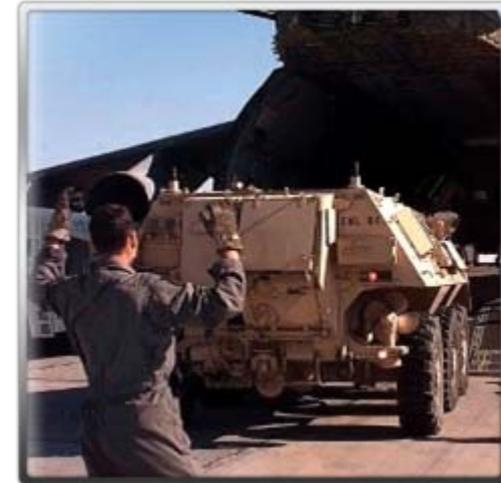




# Integration Challenges

## Overcoming Challenges

- DOTMLPF integration across components, systems, and systems-of-systems
- Building strategies for necessary consensus
- Implementing efforts to realize potential
- Gaining **joint** efficiencies and effectiveness among:
  - Services
  - Interagency
  - International
  - Non-governmental organizations
  - Institutional
  - Infrastructure
- Employing the proper metrics that best show progress
- Conducting necessary CB safety and security measures





# Risk Challenges

## Must avoid increasing risk to the future Warfighter:

- Cannot fail to exploit and field technologies
- Must mitigate the risk of technological surprise
- Must facilitate efforts to create transformational capabilities
- Must address operational elements of sense, shape, shield, and sustain



## Balancing risk may require:

- Delaying developing and fielding of technologies to align science and technology (S&T) in support of advanced development efforts
- Accelerating development and fielding of capabilities to exploit opportunities
- Aligning resources to support test and evaluation (T&E) and training



# Major Accomplishments

- Installation Protection Program Integration
- DoD NTA Security Standards Baseline for HSC
- HR 109-452 Report (Catalyst for Doctrine, Training, Leadership and Education Integration)
- CBR MOU Roadmap (International Coordination)

Accomplishments





# Major Accomplishments

- Executing Chemical Demilitarization Program Strategy
- Established DoD CDBP Strategies
- Established Transformational Medical Technologies Initiative (TMTI)

Accomplishments





Accomplishments



Image courtesy of the National Library of Medicine



Images courtesy of the CDC

## Provides innovative solutions to the Warfighter by:

- Developing broad-spectrum countermeasures and novel technology platforms (**one drug, many bugs**)
- Pursuing countermeasures targeting common disease pathways or enhance the host's immune system
- Integrating best efforts within government, academia, DoD, biotech industry, and small and large pharmaceutical corporations
- Providing seamless “end-to-end” product development
- Eliminating capability gaps by adding promising candidate technologies to the pipeline
- Using milestone-driven management to select the highest-quality performers with the best value products aligned with the program mission



# CBDP Initiatives

**Who:** Warfighter focus/stakeholder relationships

**What:** Continuing innovation and importance of non-materiel solutions integration such as:

- Infrastructure - MILCON Study
- Readiness - Preparedness Study
- Jointness - DTL&E Integration
- Policy - CBDP Strategic Plan.

**How:** Continuing innovation at the policy level



# Why These Key Areas

- Future battlefield demands that the Joint Force have every possible advantage to enable success (force in being)
- Homeland Defense requires the “force in being” be fully prepared to execute any CBRN Defense role
- Correct mix of capabilities are necessary for a prepared defensive posture, first as a deterrent, and then as a response should deterrence fail
- Future emphasis must be on overall integration of system-of-systems with attention of field forces on two focus areas; the battlefield and the Homeland



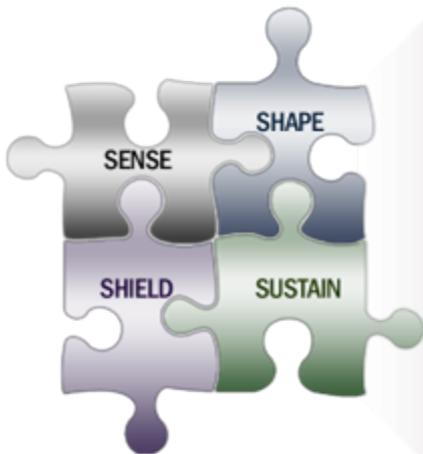
# Improving Existing Processes

- Conduct everything with the Warfighter in mind—there is no room for parochialism
- Address current and future force needs realistically
- Reach across intelligence and threat to know capability gaps
- Seek to integrate quickly, always forward looking
- Develop and sustain necessary checks and balances
- Monitor and validate progress



# CBDP Goals

- Operational Goal: Provide operational capabilities
- Future Goal: Define and develop future capabilities
- Institutional Goal: Sustain capabilities
- Management Goal: Improve management practices



**Operational Elements**

- Joint Service Transportable Decon System
- CB Protective Shelter
- Joint Service General Purpose Mask
- Joint Service Lightweight Integrated Suit Technology
- Joint Vaccine Acquisition Program
- Joint Biological Agent Identification and Diagnostic System
- Antidote Treatment Nerve Agent Autoinjector
- Joint Biological Point Detection System
- Joint Effects Model
- Joint Warning And Reporting Network
- Joint Biological Standoff Detection System
- Nuclear, Biological, and Chemical Reconnaissance Vehicle
- Joint Chemical Agent Detector

**Achieving a complex integrated system of systems requires our best efforts**



# Operational Goal: Provide Operational Capabilities

**Ensure Joint Forces are prepared to operate successfully within all Combatant Commanders' (COCOM) areas of responsibility in current CBRN threat environments:**

- Support current global operations with leading edge capabilities
- Ensure operationally focused T&E
- Reinforce training, leadership and development, and education
- Execute acquisition programs
- Gauge CBRN defense preparedness



# Future Goal: Define and Develop Future Capabilities

**Increase significantly our ability to dissuade, deter, defend against, and defeat any future adversary in any CBRN threat environment:**

- Develop capabilities to maintain military advantage against future threats
- Define future CBRN defense human capital skills and competencies
- Sponsor innovative Joint experimentation
- Maintain robust S&T base: promote and exploit scientific discoveries



# Institutional Goal: Sustain Capability

**Sustain the capability of the Joint Force to operate jointly and provide an effective response in any CBRN environment:**

- Upgrade facilities to enable DoD Transformation Goals
- Streamline decision processes and drive acquisition excellence
- Optimize resources





# Management Goal: Improve Management Practices

**Fulfill enterprise strategic roles and missions, meet the letter and intent of 50 United States Code (U.S.C.) 1522/23:**

- Implement process, organization, and business transformation
- Perform international liaison
- Perform interagency liaison
- Implement a strategic plan
- Implement a strategic communication plan



# CBDP in the Next Five to Ten Years

To execute effectively for the next five to ten years, the CBDP depends on continued Leadership and Congressional support in three priority areas:

- **Consistent resources** for the overall program to ensure that, year after year, we are able to field improved defensive capabilities essential to ensuring our military can operate in any environment, unconstrained by CBRN threats
- **Adequate funding** for the TMTI to counter successfully future genetically engineered biological weapons and any newly emergent or bioengineered pathogen
- **Adequate far-term investment** in the research, development, testing, and evaluation (RDT&E) infrastructure to enhance our RDT&E capabilities, including the modernization and construction.



# Our Measure of Success

## Our Soldiers, Marines, Sailors, and Airmen continue to lead the world in CBRN defense capabilities:

- *Obtain* the necessary DOTMLPF integrated solutions for components, systems, and systems-of-systems
- *Continue to develop* new defensive capabilities in anticipation of the continued evolution of WMD threats
- *Provide* CBRN defense capabilities in support of the National Military Strategies
- *Realize* the vision to ensure that DoD operations are unconstrained by CBRN effects through that same integration.

Inherent responsibility of the CBDP Enterprise is to create a **Joint Force** with Warfighters better organized, trained, equipped, and resourced than in the past to deal with the WMD threat.