



# **The Chemical and Biological Defense Program (CBDP)**

## **Advance Planning Briefing for Industry (APBI)**

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**Sept 19, 2012**



# Agenda

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- **Chemical and Biological Defense Program Overview**
- **Threat and Future Challenges**
- **Key Objectives and Focus Areas**
- **Medical Countermeasures Development**
- **Partnerships**



# Chemical Biological Defense Program (CBDP) Overview

This program is a key part of a comprehensive, national strategy to prevent, protect, and respond to an ever-evolving spectrum of emerging 21st century chemical and biological threats

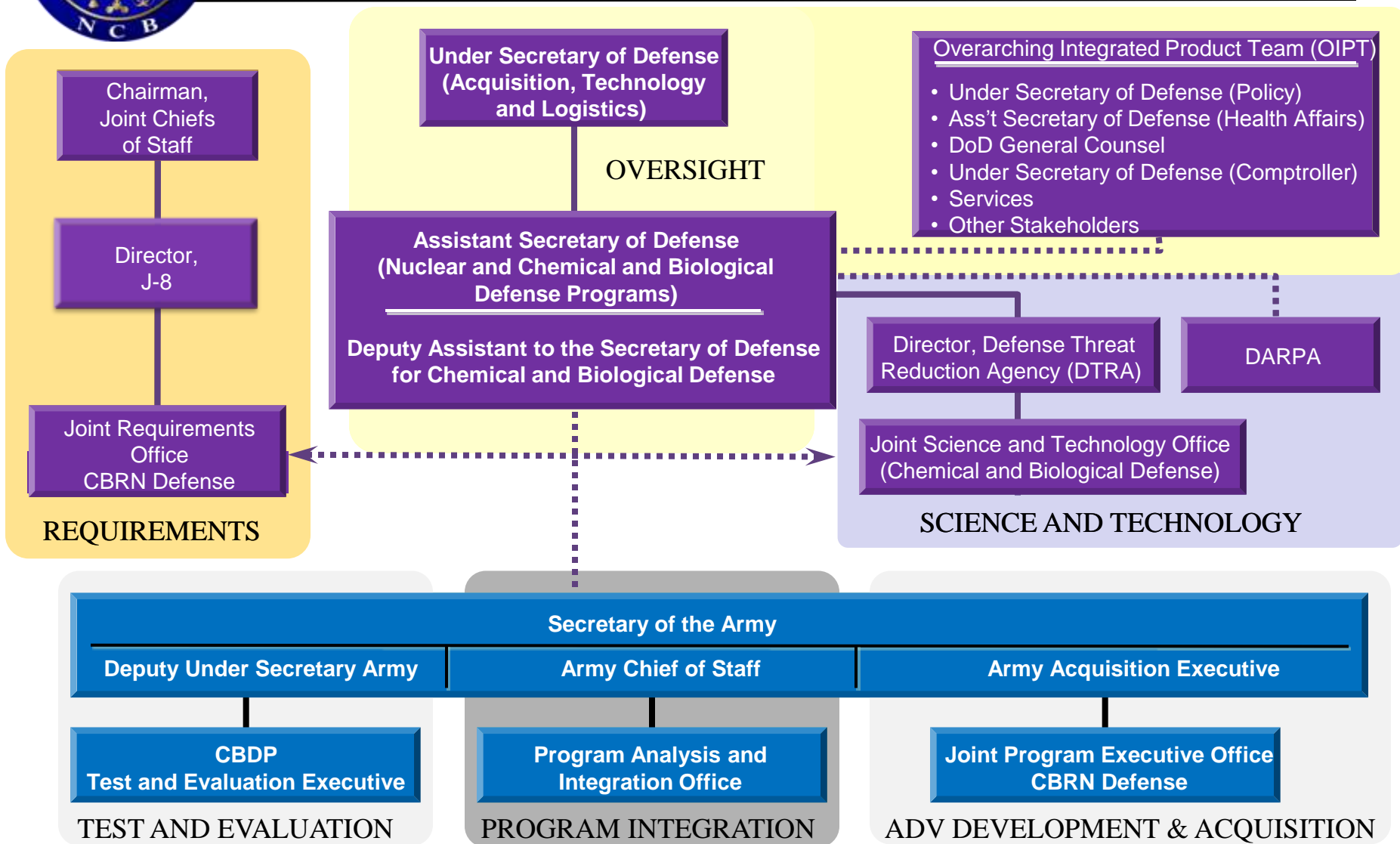
**The CBDP supports comprehensive DoD efforts to:**

- **Research, develop, and acquire capabilities for a layered, integrated defense focused on CB threats**
- **Better understand potential threats**
  - *Further develop capabilities to respond to current and traditional threats*
  - *Respond to natural and emerging infectious diseases*
  - *Counter advanced threats (engineered pathogens, Non-traditional agents, etc.)*
- **Secure and reduce dangerous materials whenever possible**
  - *Support the Cooperative Threat Reduction and Cooperative Biological Engagement program efforts*
  - *Provide guidance and support on DoD biosecurity and biosafety*
- **Leverage industry and interagency partnerships**

*DoD has unique operational requirements, a global presence, and significant current and emerging threats*



# CBDP Organization





# CBDP Vision and Mission

## Vision

A Department of Defense (DoD) that addresses CBRN threats and minimizes their effects

## Mission

Enable the Warfighter to deter, prevent, protect against, mitigate, respond to, and recover from CBRN threats and effects as part of a layered, integrated defense



***The CBDP is a key part of a comprehensive national strategy to prevent, protect, and respond to an evolving spectrum of 21<sup>st</sup> Century CBRN threats***



# Global Security Environment

## Threats

- Pervasive impact
- Conflict engagement
- Regional prevalence
- Asymmetric warfare (WMD)
- Adaptive / emergent

## Major Challenges

- Traditional / non-traditional threats
- Irregular warfare
- Catastrophic consequences
- Disruptive economic impact

## Stakeholders

- Joint Forces
- Interagency Partners
- International Collaborators

**These issues must be addressed with the right mix of resources to improve Warfighter CBRN defense capabilities and enhance the nation's security**

**PRIORITY –IMPROVE WARFIGHTER CBRN DEFENSE CAPABILITIES AND ENHANCE HOMELAND DEFENSE**



# Threat Environment

## Biological

### Traditional Threats

- Bacterial pathogens (anthrax, plague)
- Viral pathogens (VEE, WEE)
- Toxins (botulinum, ricin)

### Emerging Threats

- Current and emerging diseases
  - **Influenza**
  - **Melioidosis**
  - **Brucellosis**
  - **Cholera**

### Enhanced Threats

- Strains enhanced for environmental survivability
- Selection or creation of hypervirulent strains and pathogens with increased resistance to preventatives and treatments

### Advanced Threats

- Pathogens with altered targets or symptoms to confound diagnosis and treatment
- Creating viruses *de novo*

## Chemical

### Traditional Threats

- Chemical warfare agents (nerve, blood, and blister)
- Agents designed for military operations/applications
- Toxic Industrial Materials (TIMs)/Toxic Industrial Chemicals (TICs)

### Advanced Threats

- Non-traditional Agents (NTA)
- Asymmetric applications and/or engagements





# Defense Strategic Guidance: Climate and imperative to refresh DoD strategy

Anticipating and Meeting Future Challenges

**Today's  
Wars**

*President's Priorities for 21<sup>st</sup> Century Defense*

**Future  
Challenges**

## Impetus for Reassessment

- Draw down from extended operations in Iraq and Afghanistan
- Protect our nation's economic vitality and operate within changing fiscal circumstances
- Guard our interests in a world of accelerating change
- Meet changing geopolitical environment

## Addressing Current and Future Challenges

- ➔ ▪ **Maintain active approach to countering violent extremists**
  - Rebalance toward the Asia-Pacific region
  - Continue presence in and support for the Middle East
- ➔ ▪ **Assure access to and use of air, sea, space, and cyberspace**
- ➔ ▪ **Develop innovative, low-cost, small-footprint approaches**
- ➔ ▪ **Act with domestic and foreign partners to prevent proliferation WMD**





# Chemical and Biological Defense

## Key Objectives

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- Establish medical countermeasures (MCM) pipeline from requirements definition, through Research, Development, Test and Evaluation (RDT&E) and FDA approval, to manufacturing and distribution.
- Develop synergistic, technologically advanced environmental surveillance and point-of-need diagnostic capabilities against CBRN threats to enable force protection decisions.
- Provide CBRN defense capabilities to support biosurveillance efforts and enable the warfighter to achieve information dominance in the CBRN domain.
- Integrate Non-Traditional Agent (NTA) defense capabilities in future CBD systems.
- 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.



# CBDP Focus Areas

## Detection and Protection

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### ■ Detection

- Provide actionable information to allow commanders to mitigate the effects of CB events with minimal impacts to the force.
- Pursue common technologies for diagnostics and environmental detection.
- Ensure development and fielding of enhanced capabilities able to detect and identify emerging threats.
- Ensure adequate capability exists in the field to detect and identify known threats.
- Ensure critical information provided by sensors is capable of rapid integration into BSV and information systems that provide critical information to decision-makers.

### ■ Protection

- Focus long term individual and collective protection efforts on integrating CBRN protection within materials used for field structures and uniforms.
- Accept risk by limiting procurement to economical order quantities.
- Continue modernization of the force with the Joint Service General Purpose Mask (JSGPM) but at minimum levels IAW FPC.



# CBDP Focus Areas

## Info Systems, CM, and Rad/Nuke Defense

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- Information Systems
  - Continue development of networked sensors (diagnostics and environmental) and information systems in support of Biosurveillance, GCAS, and tactical common operating picture systems.
  - Standardize data requirements to allow data sharing with interagency and internationally developed updates.
- Consequence Management
  - Equip multi-mission forces and specialized units with CBR defense equipment to enable assistance to state and local governments in response to and recovery from the effects of a CBRN event.
- Radiological/Nuclear Defense
  - Develop radiological / nuclear defense medical therapeutic efforts for radiological exposure.



# CBDP Focus Areas

## MCM and Biosurveillance

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### ■ Medical Countermeasures

- Fund S&T efforts to develop the next-generation of manufacturing systems and regulatory science technologies.
- Provide a dedicated, cost-effective, reliable, and sustainable advanced development and manufacturing capability.
- Enhance the MCM S&T pipeline and advanced development portfolio to address priority threats.

### ■ Biosurveillance

- Capabilities to prevent or reduce the impact of biological threats and risks:
- Provides early detection of biological events of concern.
- Strengthens decision-making and force health protection by informing overall biological situational awareness with integrated health and environmental data.



# CBDP Focus Areas

## Diagnostics and Non-Traditional Agents

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- Diagnostics
  - Resource a robust portfolio that provides capabilities to:
    - Identify threats in both permissible and non-permissible environments by autonomous individuals or teams with limited to no infrastructure support, e.g., a small team deployed to the third world.
  - Diagnose the causative agent and survey for the presence of disease to anticipate, detect, identify, and quantify, disease-causing organisms with limited supporting infrastructure.
  
- Non-Traditional Agent (NTA) Defense (Countering Advanced Threats)
  - Develop technologies that address existing and emerging NTAs in the near, mid, and far-term.
  - Strengthen and integrate capabilities that provide warning of attack, barrier protections, and both pre-treatments/prophylaxes and post-exposure treatments.
  - Expand interim NTA defense capabilities to additional DoD response forces.



# DoD Medical Countermeasure Strategy

**Core Science and  
Technology and Core  
Advanced Development  
Programs**



**Biosurveillance**

**Discovery**

**Refinement**

**One drug/  
One bug**  
Unsustainable in meeting  
21<sup>st</sup> Century Threats

**Advanced  
Development**

**MCFI**  
Revolutionize advanced  
development and  
manufacturing

**Licensed  
Product  
(12-15  
years)**

**Discovery**

**Refinement**

**Advanced  
development**

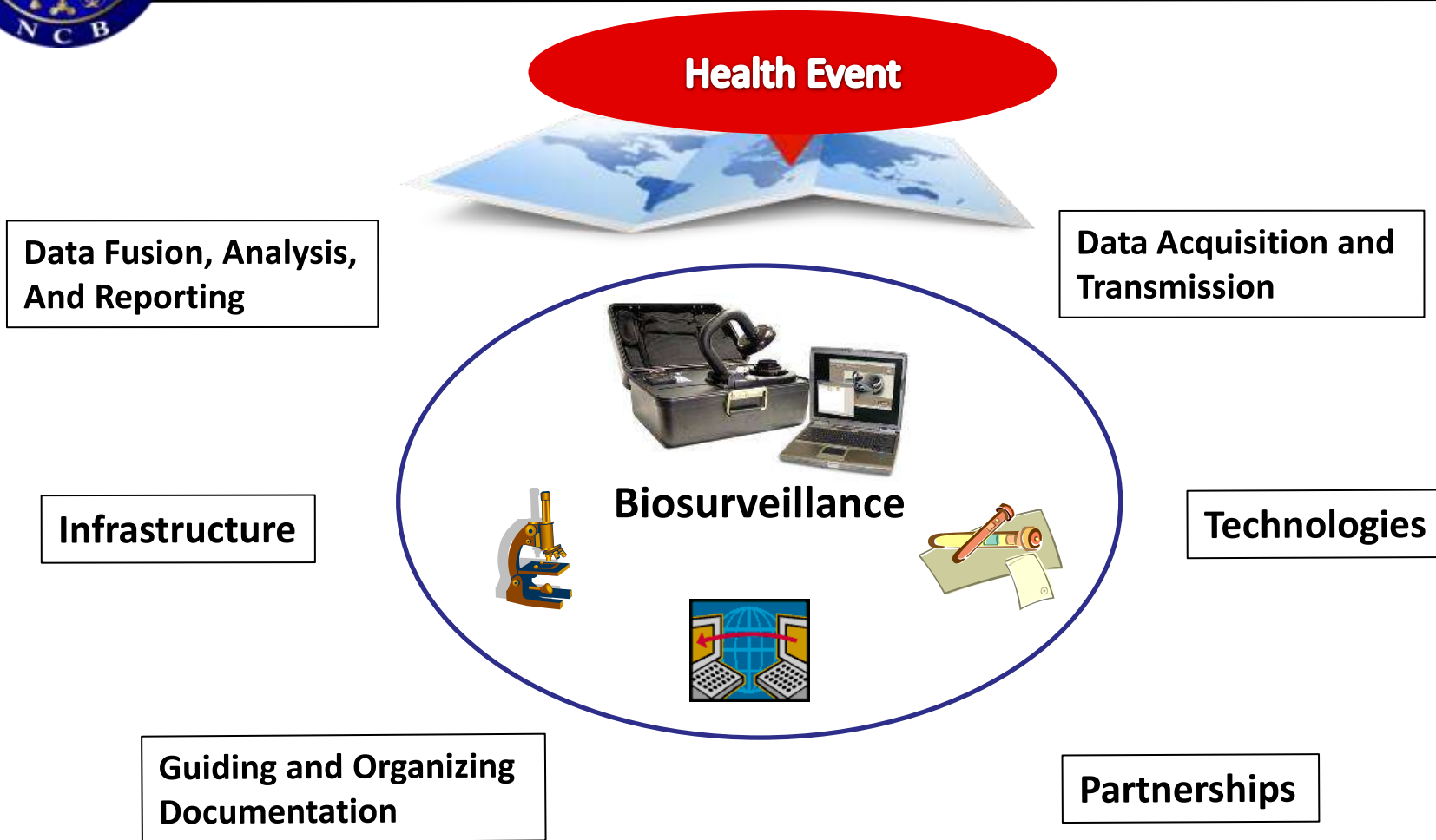
**One drug/  
Many bugs**

**Licensed  
Product  
(reduced  
timeframe)**

**<12-15  
years**



# Biosurveillance Components





# DoD Diagnostics



**Far Forward**



**Deployable Lab**



**Fixed Facilities**

24 Month Challenge



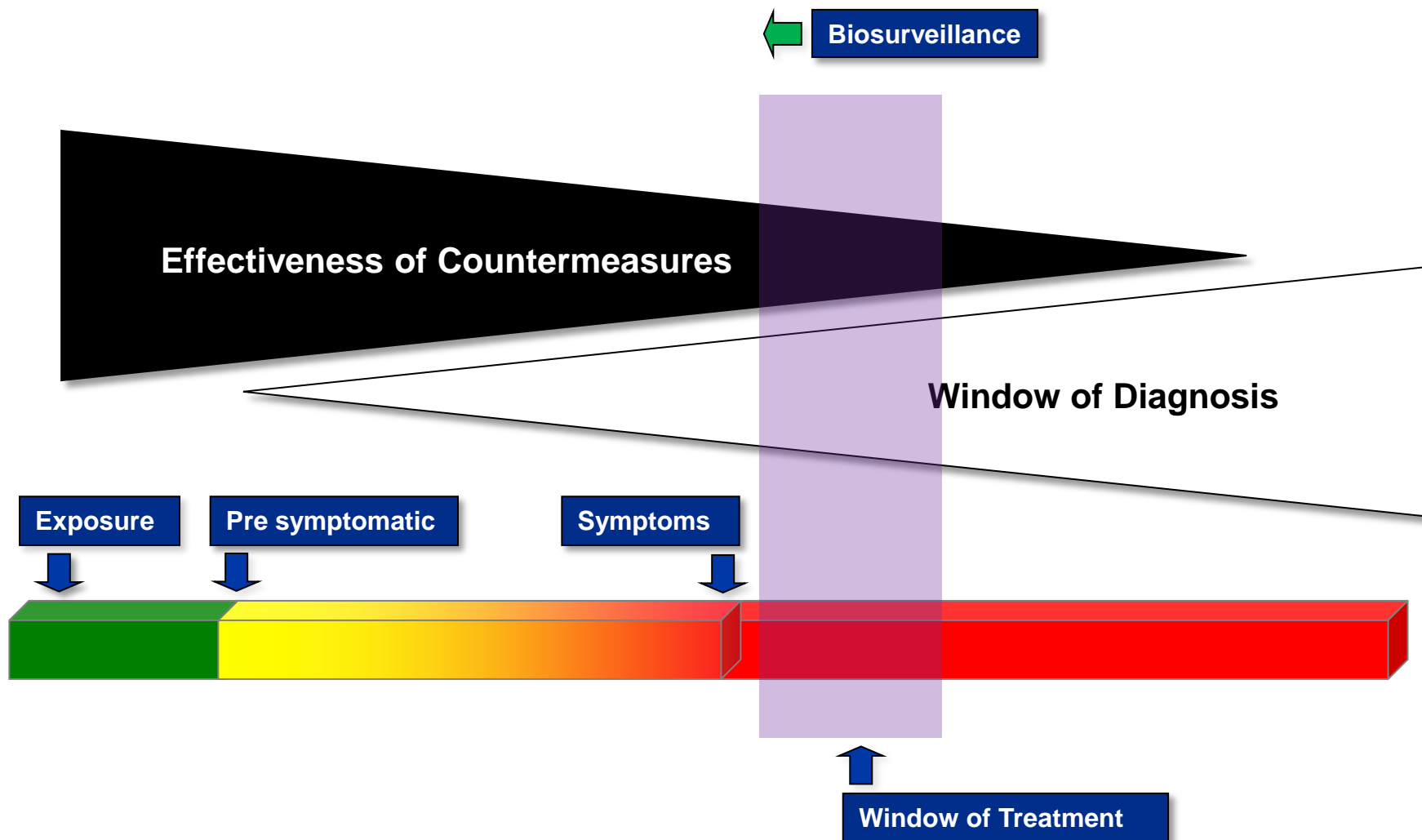
NGDS Increment 2

NGDS Increment 1





# Early Detection Improves Response





# CBDP 2020 Strategic Direction

## Vision, Mission, and Goals in a Layered Defense

**Vision:** A DoD that addresses CBRN threats and minimizes their effects

**Mission:** Enable the Warfighter to deter, prevent, protect against, mitigate, respond to, and recover from CBRN threats and effects as part of a layered, integrated defense

**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

*The CBDP must continue to lead the Nation's efforts to prevent, protect against, and respond to CBRN threats into the future.*



# Strategic Partnerships are Key



Logos from Official Websites

**Coordination  
Cooperation  
Integration**



**Questions?**