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Iraq Biosafety and Laboratory Biosecurity Workshop

Tuesday, January 31, 2012

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Jordan

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Agenda Overview

Day 1

- Introduction to basic concepts and terminology
- Discussion of the benefits of biosafety and biosecurity
- Objectives of a National Biosafety Committee
- Reporting requirements in Iraq
- Discussion of Topical Areas I

Day 2

- Discussion of Topical Areas 2
- Summary of international non-proliferation obligations
- Roundtable open discussion
- Conclusion and Next Steps

The Benefits of Biosafety and Biosecurity

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Paula Austin and Eric Cook, Sandia National Laboratories

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Spectrum of Biological Risks

Naturally occurring diseases	Re-emerging infectious diseases	Unintended consequences of research	Laboratory accident	Lack of awareness	Negligence	Deliberate misuse

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Key Definitions and Concepts - Biosafety

- **Laboratory biosafety is the set of containment principles, technologies and practices that are implemented to prevent unintentional exposure to pathogens and toxins, or their accidental release**

- **The concept of biosafety as it is used under the Cartagena Protocol on Biosafety focuses on the safe movement of genetically modified organisms (GMO) between countries, and their use within countries.**

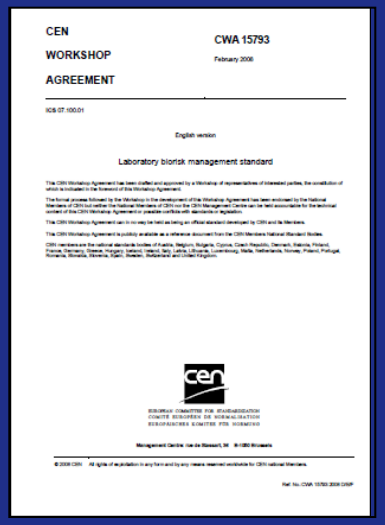
Key Definitions and Concepts - Biosecurity

- **Laboratory biosecurity is the set of measures aiming at the protection, control and accountability for biological agents and toxins within laboratories, in order to prevent their loss, theft, misuse, diversion of, unauthorized access or intentional unauthorized release**

- **The concept of biosecurity in the food and agriculture sector is the process of managing biological risks to achieve food safety, protect animal and plant life and health, protect the environment and contribute to its sustainable use**

Additional Key Definitions and Concepts

- **Biorisk is "the combination of the probability of occurrence of harm and the severity of that harm where the source of harm is a biological toxin or agent**
  - The source may be an unintentional exposure, accidental release or loss, theft, misuse, diversion, unauthorized access, or intentional unauthorized release.
  - Biorisk is the integration of biosafety and biosecurity


CEN
WORKSHOP
AGREEMENT

CWA 15793

February 2008

ICS 07.100.01

English version

Laboratory biorisk management standard

Source: CWA 15790 Laboratory Biorisk Management Standard, Feb 2008

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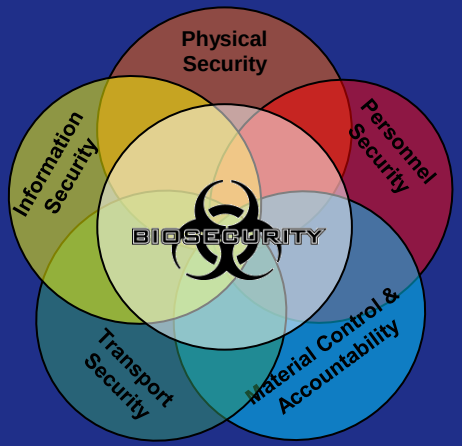
Additional Key Definitions and Concepts

- **Biorisk management effectively and efficiently manages an institution's biorisks**
  - Defines management practices for biosafety and biosecurity, location of the hazards, biological agents and their products
  - Establishes systems and policies to manage the laboratory biorisk
  - Integral in the day-to-day operations of the institute / organization, both in normal times and times of emergency



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Additional Key Definitions and Concepts

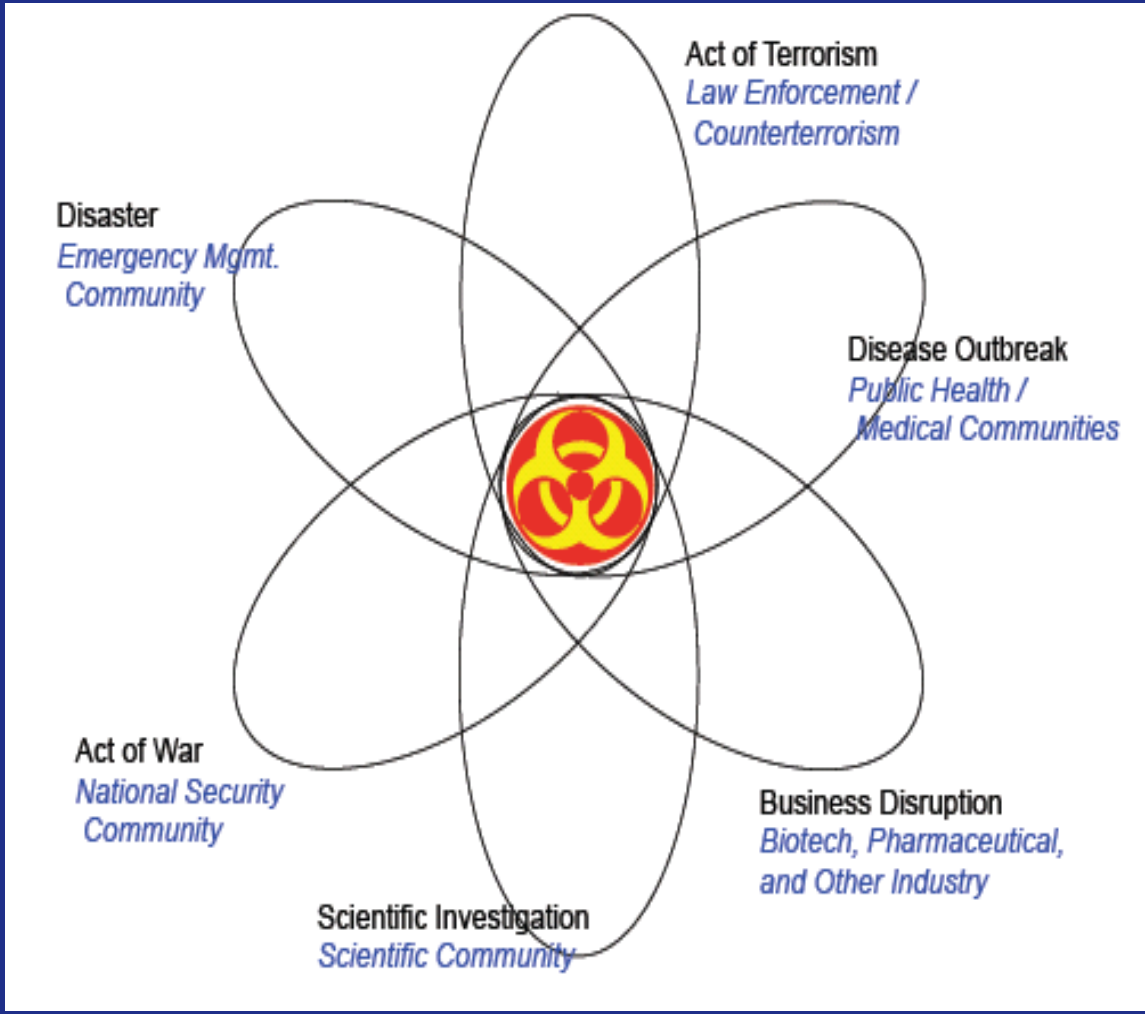
- **Dual-use** refers to aspects of certain materials, information, research, and technologies with a "legitimate scientific purpose but may be misused to pose a biologic threat to public health and/or national security" (DHHS, NSABB, 2004)

Biosafety and biosecurity offer significant benefits:

- Contains and restricts dangerous biologic agents
- Reduces the potential of exposure of laboratory staff, the public, and the environment
- Improves response capability
- Minimizes impact and spread of animal and human disease outbreaks
- Facilitates international collaboration

Biosafety and biosecurity are important elements to strengthen global health and security

Opportunity: Engaging a Multi-sectoral, Global Community



Biorisk Case Studies

- Laboratory exposures
- Unintentional release from a facility
- Theft
- Inappropriate shipments
- Inventory Discrepancies
- Unauthorized Access
- Inadequate Biosafety and Biosecurity
- Inadequate Training

Objectives of a National Biosafety Committee

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What is the value of a National Biosafety Committee?

- Helps to inform policy, both institutional and governmental
- Reduce biorisks
- Manages dual-use issues
- Supports mitigation strategies
- Promotes biosafety and biosecurity
- Reviews information relating to accidents/incidents/data trends
- Helps establish an institutional review and approval process
- Publishes national guidance documents

Objectives of a National Biosafety Committee

- To put in place appropriate policy (national and institutional) and decision-making mechanisms to maximize the potential benefits of biotechnology while minimizing its associated risks
- To reduce risk to human and economic health
- To ensure the effective management of biological materials, in keeping with international standards
- To facilitate public awareness in biosafety and biosecurity policy implementation and transparency in decision-making
- To increase capacity of national institutions to implement and monitor a national framework for biosafety and biosecurity
- To serve as a resource for best laboratory practices

Topical Areas I
Topic 1: Lab Biorisk Management and Risk Assessment

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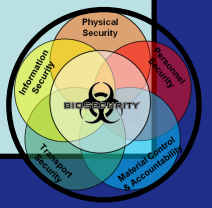
Biosecurity Supports Biosafety

- A set of preventive measures designed to reduce the risk of accidental exposure to or release of a biological hazard

Laboratory Biosafety

- A set of preventive measures designed to reduce the risk of intentional removal (theft) of a valuable biological material

Laboratory Biosecurity



- Implement graded levels of protection based on a risk management methodology

Common Biorisk strategy

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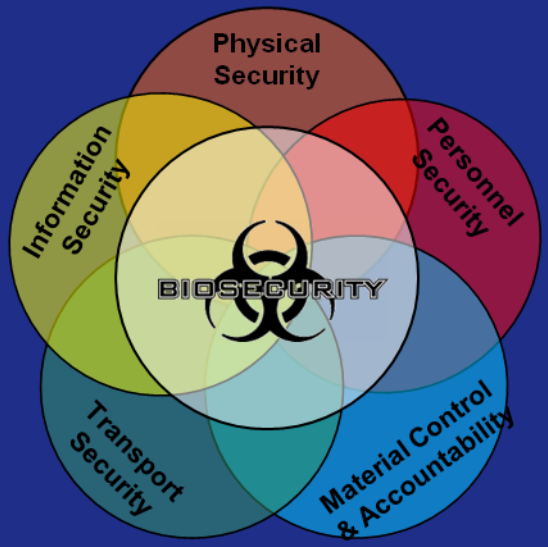
Biosecurity Supports Biosafety

- **Laboratory biosecurity supports the laboratory biosafety agenda of preventing disease in people, animals, and plants and minimizing the risk of worker injury**



- **Biosecurity and biosafety should be integrated systems that avoid compromising necessary infectious disease research and diagnostics**

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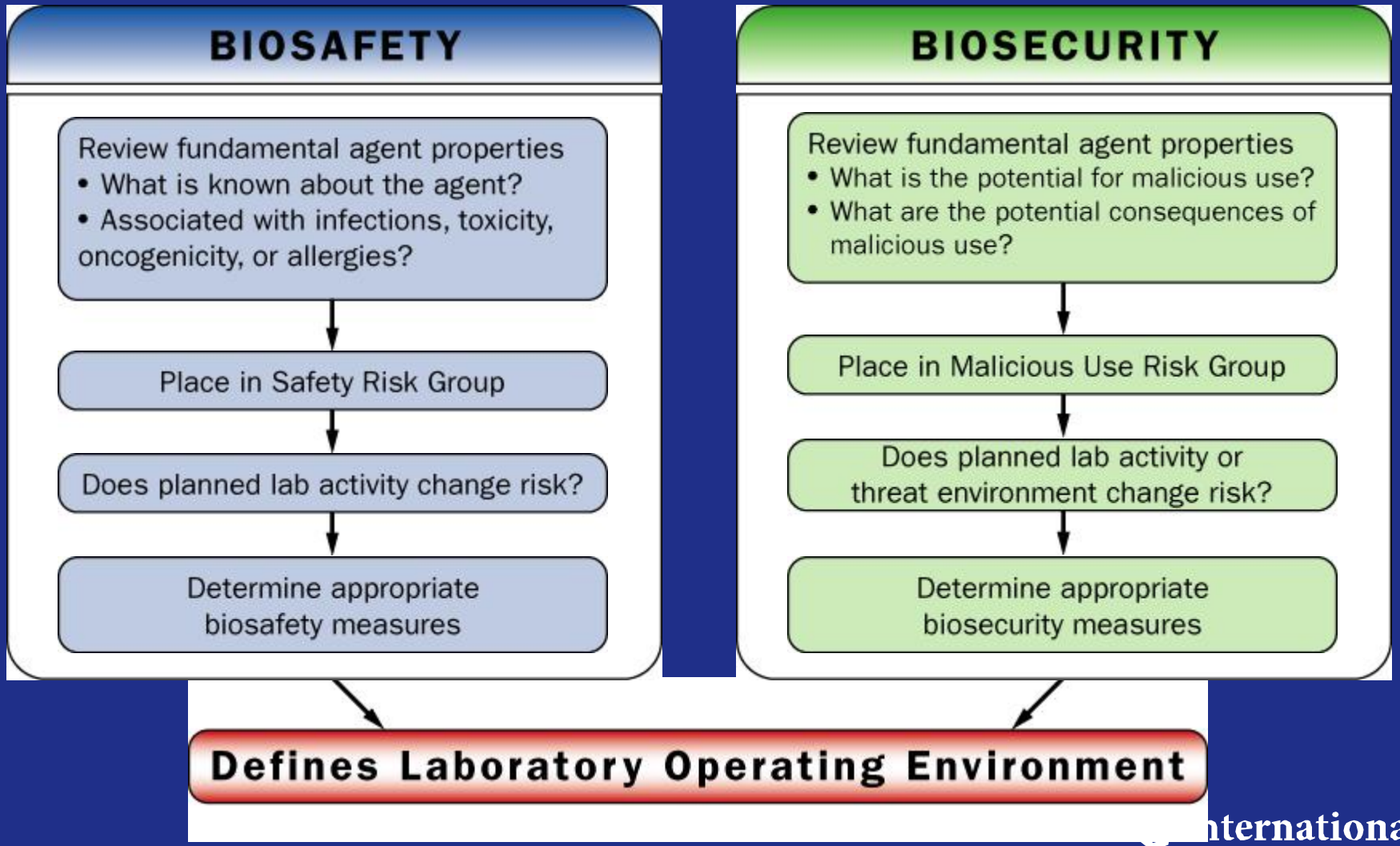
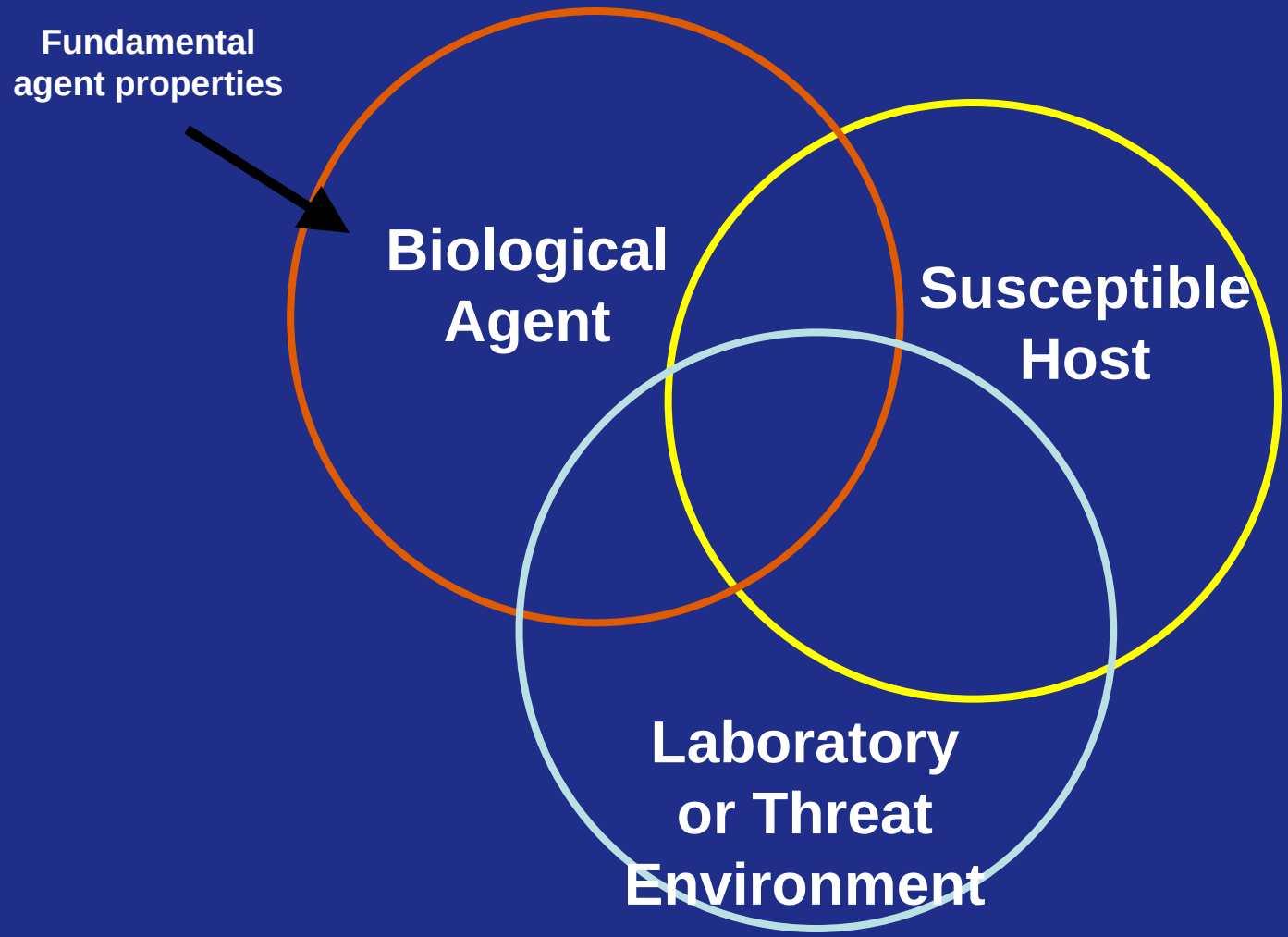
Risk Assessment: Integrated Biosafety and Biosecurity



Biorisk Assessment



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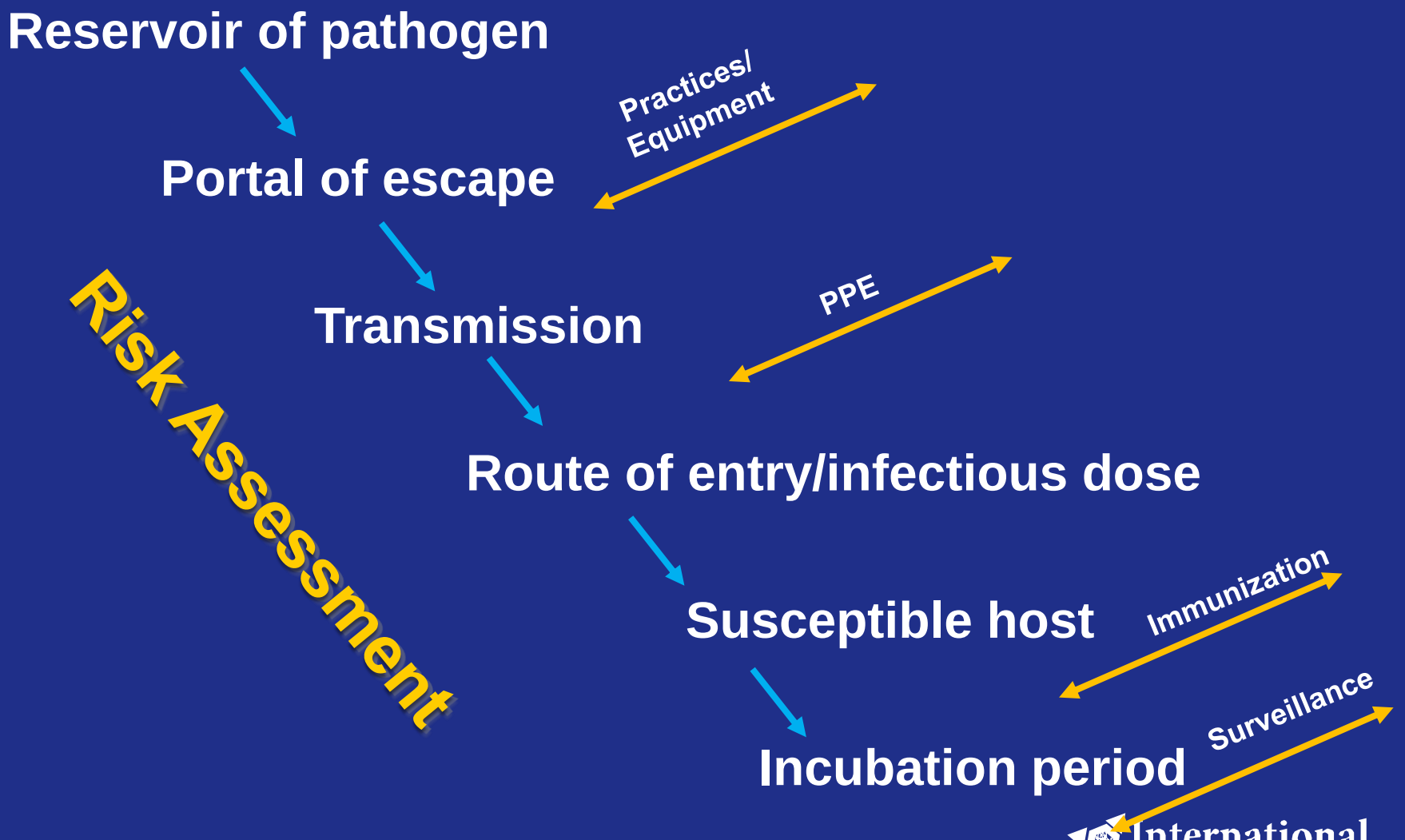
Risk Management: Implementation of Biosafety



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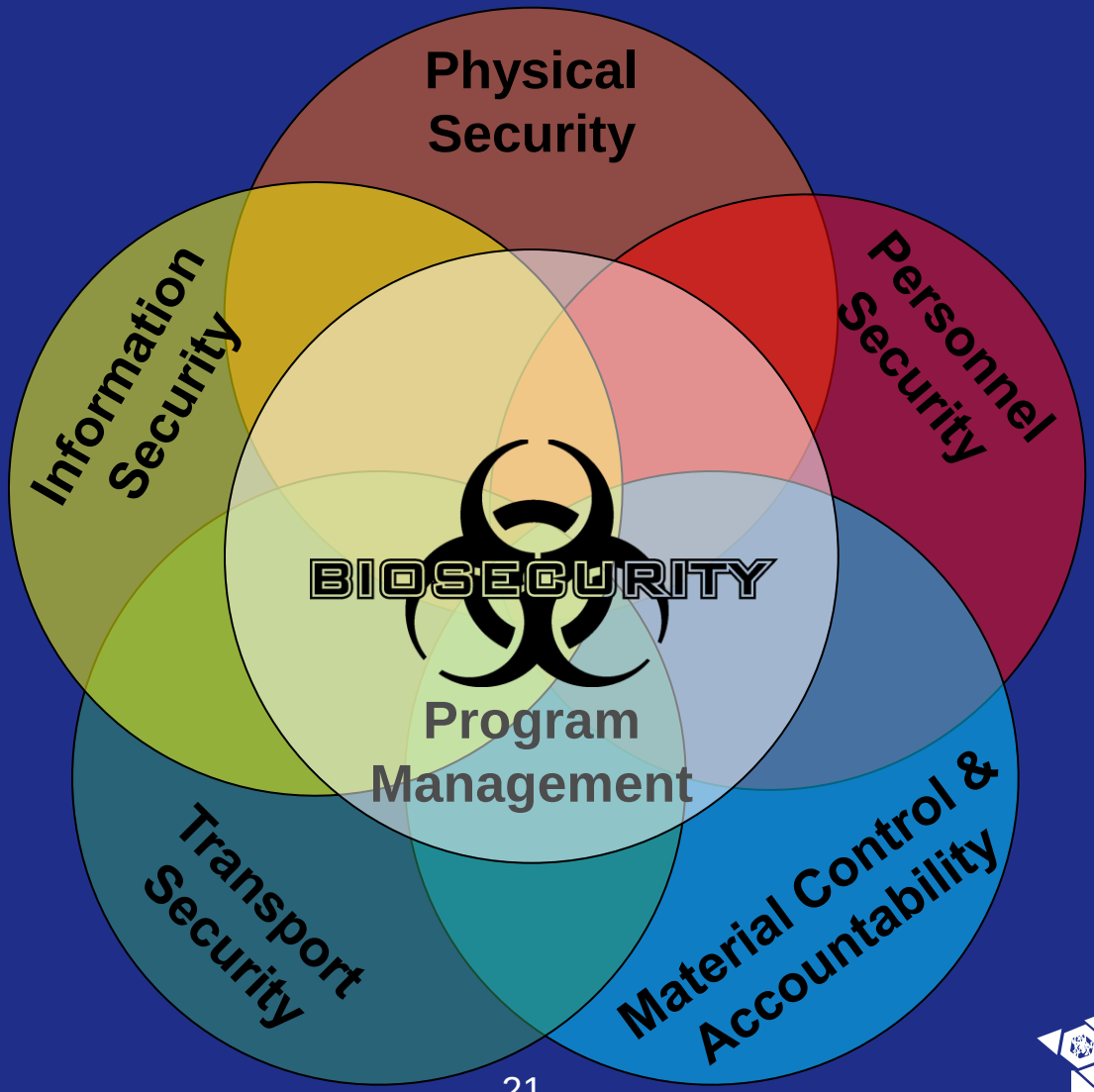
Risk Management: Implementation of Biosecurity



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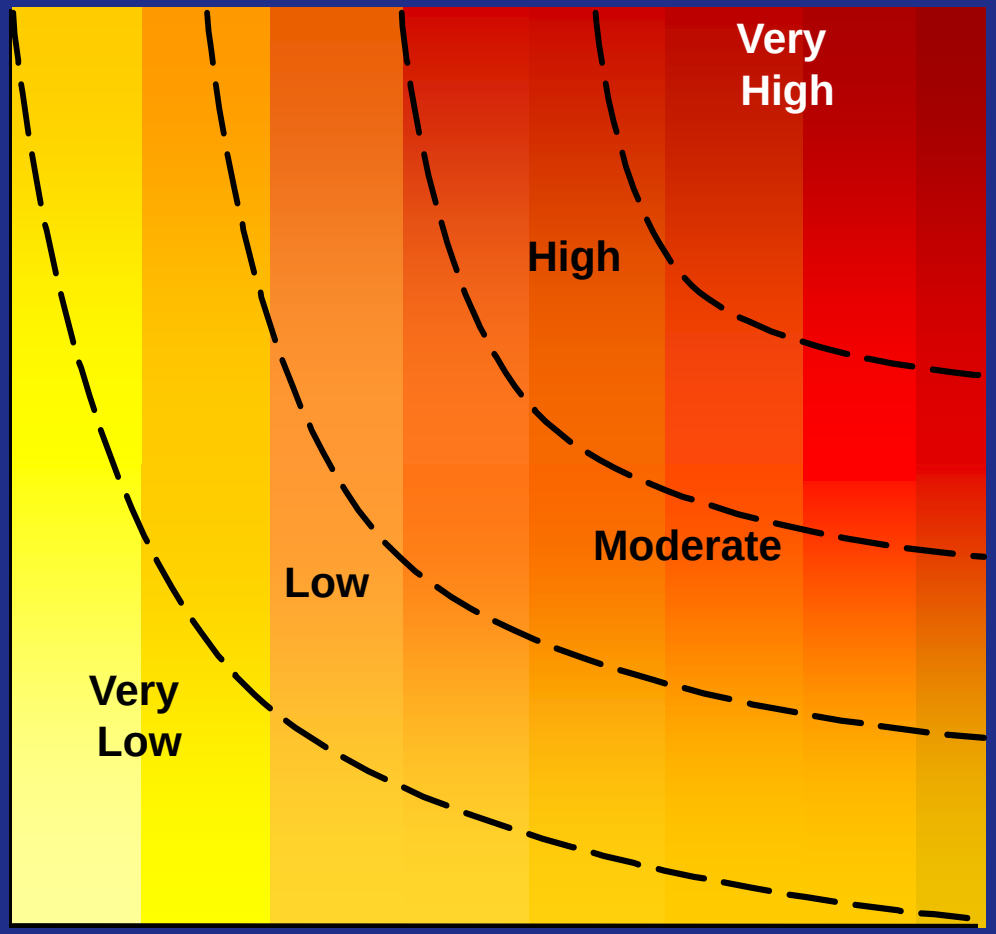
Biosecurity and Biosafety Based on Risk Management



- Protect against unacceptable risk scenarios
- Develop incident response plans for acceptable risk scenarios

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