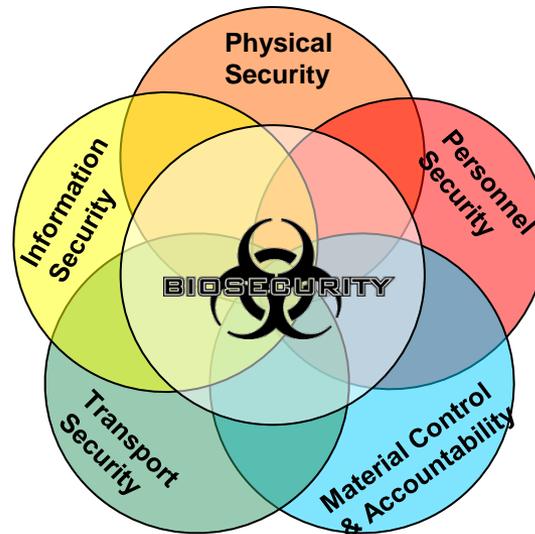


Advanced Biosafety Officer Training Pilot Certificate Program



Biosecurity

**University of the Philippines Manila
Philippine Biosafety and Biosecurity Association
Biological Engagement Program**

January 2011

Objectives/Topics

At the conclusion of this module, participants will be able to:

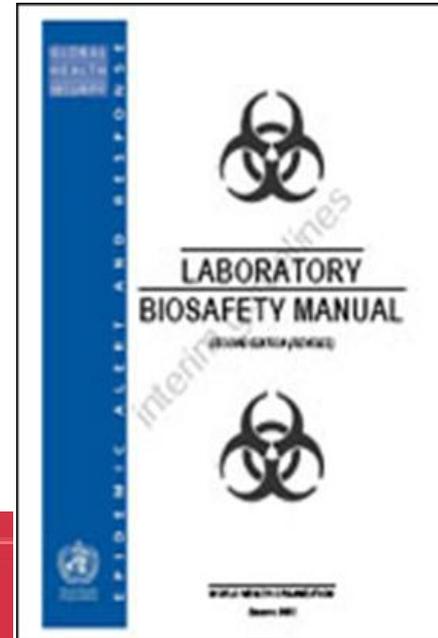
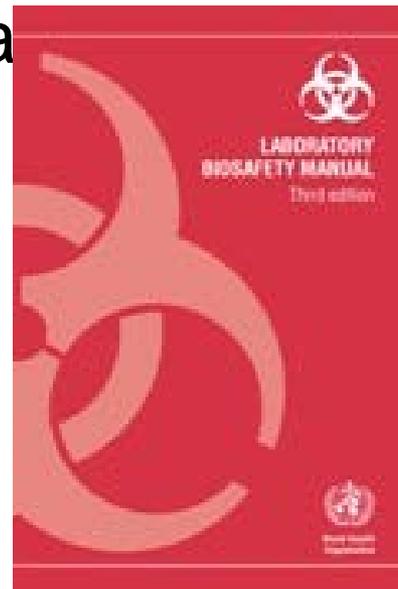
- Discuss integration of biosafety and biosecurity
- Define the goals of biosecurity
- Discuss the components of a security management and operations plan
- Define biosecurity countermeasures
- Define physical security approaches

Biosafety and Biosecurity

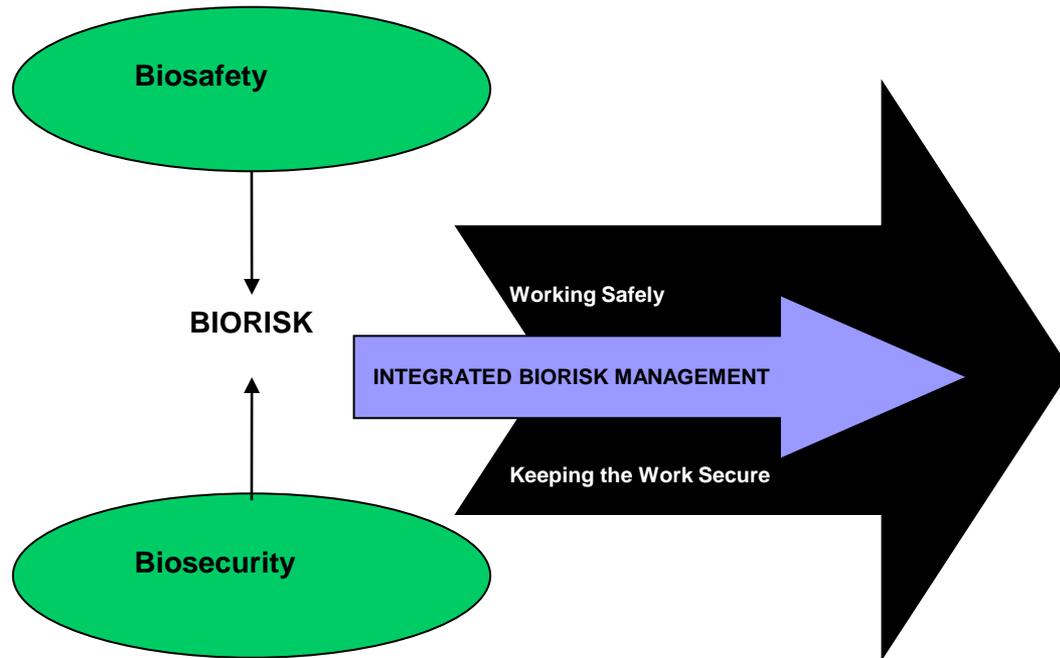
- Both biosafety and biosecurity keep pathogens from escaping into the environment or community.
 - Biosafety prevents accidental exposure.
 - Biosecurity prevents deliberate exposure.

Laboratory Biosecurity Supports Laboratory Biosafety

- **Laboratory biosecurity**
institutional and personal security measures designed to prevent the loss, theft, misuse, diversion, or intentional release of pathogens and toxins



Strengthening Biological Risk Management



Vision for Integrated BioRisk Management:

- Increased focus on “awareness” to change current culture
- Clarify terminology
- Development of targeted “training “strategies”
- Securing “commitment” from key stakeholders, including Government officials, who must be on board
- Continue increasing “capacity” based on Regional/Country needs and establish accountability through development of Country “report cards”

Similar Physical Aspects of Biosafety and Biosecurity



Biosafety

- Physical protection
 - Increasing levels of physical containment to prevent the accidental release of dangerous biological agents
 - BSL-1
 - BSL-2
 - BSL-3
 - BSL-4
- Examples: negative air pressure, cabinets and hoods

Biosecurity

- Physical protection
 - Graded protection designed to secure dangerous biological agents from adversaries
 - Property protection area
 - Limited area
 - Exclusion area
- Examples: access controls, delay, intrusion detection

Similar Procedural Aspects of Biosafety and Biosecurity

Biosafety

- Material control and accountability
 - Handling procedures to prevent accidental infection
 - Use of personal protective equipment

Biosecurity

- Material control and accountability
 - Basic inventory procedures to limit opportunities for illicit acquisition
 - Designation of laboratory workers responsible for specific material

Similar Procedural Aspects of Biosafety and Biosecurity



Biosafety

- Personnel reliability
 - Background checks to ensure proper credentials to handle dangerous organisms
 - Policies to prevent untrained individuals from working with materials that pose a biosafety risk

Biosecurity

- Personnel reliability
 - Background checks to ensure personnel are reliable and trustworthy
 - Procedures to remove unauthorized personnel from secure areas

Similar Procedural Aspects of Biosafety and Biosecurity

Biosafety

- Transport
 - Requirements to ensure the safe transport of materials within a lab
 - Federal and international regulations governing the transport of infectious substances outside the lab

Biosecurity

- Transport
 - Best practices to ensure the secure transport of materials both inter-facility and intra-facility
 - Chain of custody where appropriate

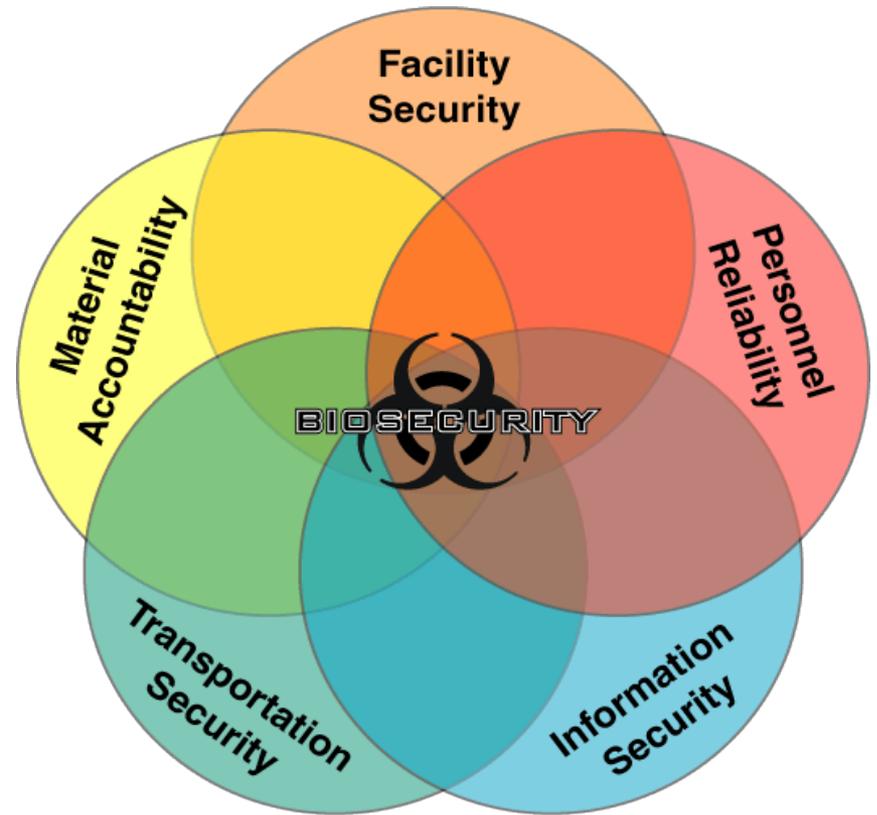
Laboratory Biosecurity Supports Laboratory Biosafety

- **Safe and secure laboratories help**
 - Ensure the containment of hazardous infectious substances in laboratories
 - Maintain citizens' confidence in the activities of the bioscience research community
 - Increase transparency to investors in the biomedical and biotechnology industries
 - Protect valuable research and commercial assets
 - Reduce the risks of crime and bioterrorism

Fundamental Approach

Protect :

- Biological agents
- Information



Security Management/Operation Plan

- Includes:
 - Physical security plan
 - System integration/responses
 - Personnel reliability program (PRP)
 - Inventory control/accountability system
 - Off-site response resources (Local Law Enforcement)
 - Administrative controls

Biological Laboratory Program

- Biological laboratory program includes:
 - Security
 - Safety
 - Personnel reliability program (PRP)
 - Biological agent inventory control/accountability system

Security

- Security
 - Limited access
 - Internal and external monitoring and responses
 - Intrusion alert and monitoring
 - Random searches and inspections



Safety

- Safety
 - Training and mentorship
 - Risk management
 - Environmental surveillance
 - Occupational health screening
 - Biological incident response and reporting



Personnel Reliability Program

- Personnel Reliability Program (PRP)
 - Comprehensive background investigation
 - Medical screening
 - Constant behavior surveillance
 - Random alcohol/drug screening
 - Periodic re-investigation

Accountability



- Biological Agent Accountability
 - Pinpoint location of of biological agents and registration process
 - Limited access
 - Traceable audit records, electronic and/or paper

Discussion

- What are the issues and problems that may arise using these countermeasures?
 - Registration
 - Closed Circuit Television (CCTV) surveillance
 - Two-lock system on DBAs containers
 - Exit inspections

Insider Threat



- Insider threat is most common but underrated
- #1 threat on most organization's list of formidable threats

Physical Security Approaches

- Security should to be reasonable, effective and tailored to the research needs of the facility
- Badge access with personal identification number
- Limit access
 - to persons in PRP with need-to-know and with appropriate training
 - to cleared personnel only (unless with approved escort)
- Alarms on exit doors and within restricted laboratories after hours
- Security force response to alarms

Physical Security Approaches

- CCTV surveillance
- Random searches and inspections
- Audit/inventory controls system
- Informed outside response force
- Armed internal security force if warranted
- Continually train and practice
- Identify and adopt response procedures
- Integrate procedures with technology

Security is everyone's job!

Laboratory Biosecurity

- **Laboratory biosecurity:** institutional and personal security measures designed to prevent the loss, theft, misuse, diversion, or intentional release of pathogens and toxins

Summary

- Biosafety and biosecurity mitigate different risks, but they share a common goal-keeping dangerous pathogens safe and secure.
- The goals of biosecurity are achievable.
- Effective physical security should be reasonable and tailored to the facility.
- Security management should include a physical security plan, use of local resources.

Biosecurity



Questions

