



Integrating Biosafety and Biosecurity

SNL Biosecurity Team

National Workshop on Biosecurity

Kuala Lumpur, Malaysia

2 June 2005

SAND No. 2005-1561C

Sandia is a multiprogram laboratory operated by Sandia Corporation, a Lockheed Martin Company,
for the United States Department of Energy's National Nuclear Security Administration
under contract DE-AC04-94AL85000.

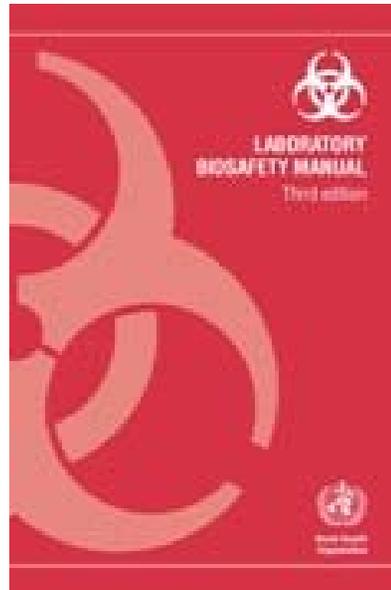


**Sandia
National
Laboratories**



World Health Organization: Laboratory Biosafety and Biosecurity

- **Third edition of World Health Organization's (WHO) Laboratory Biosafety Manual (LBM) demonstrates that biosafety contributes to biosecurity**



- **“Security precautions should become a routine part of laboratory work, just as have aseptic techniques and other safe microbiological practices.”**



WHO LBM Biosafety Levels 1 and 2

Biosafety Measure	Provides Security	Potential to Compromise Security
Signage		✓
Authorization of Entry	✓	
Windows and Doors		✓
Decontamination & Waste Handling	✓	
Emergency Power	✓	
Physical and Fire Security	✓	



WHO LBM Biosafety Level 3

Biosafety Measure	Provides Security	Potential to Compromise Security
Signage		✓
Self-closing, and Interlocking Access Doors	✓	
Sealed and Break Resistant Windows	✓	
Decontamination & Waste Handling	✓	



WHO LBM Biosafety Level 4

Biosafety Measure	Provides Security	Potential to Compromise Security
Two-person rule	✓	
Controlled Access	✓	
Primary Containment	✓	
Decontamination & Waste Handling	✓	
Emergency Power	✓	



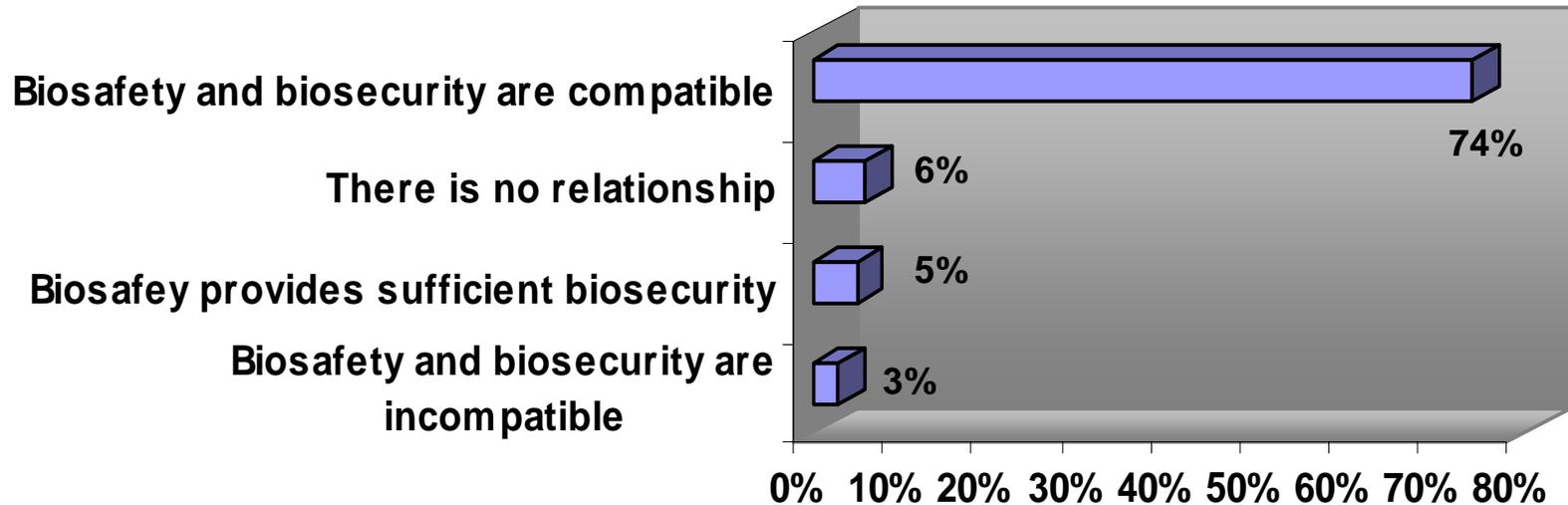
Potential Conflicts between Biosafety and Biosecurity

- **Access controls and emergency response**
 - Emergency ingress and egress are important for life-safety, but the biological agents should remain secure
- **Signage**
 - Staff and visitors should be alerted to biohazards, but identifying the biological agents in use violates an important principle of biosecurity
- **Identification badges**
 - Important for identifying personnel, but may cause a hazard in a high containment facility
- **Thus, laboratory biosecurity measures must be carefully implemented**





Biosafety and Biosecurity are Compatible



“A program should be designed to incorporate both activities [biosafety and biosecurity] into a daily regime that allows for productive work as well as safety and security.”

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"



Summary

- **Biosafety and biosecurity mitigate different risks, but they share a common goal**
 - **Keeping dangerous pathogens safely and securely inside the areas where they are stored and used**
- **Biosafety and biosecurity must work as coordinated, complementary systems**
- **A sound biosafety system can provide some biosecurity**
- **But biosafety alone cannot provide sufficient biosecurity**
 - **Biosecurity policies and procedures should be developed**
 - **Several potential conflicts between biosafety and biosecurity should be resolved**
- **Good laboratory biosecurity practices reinforce and strengthen laboratory biosafety systems**