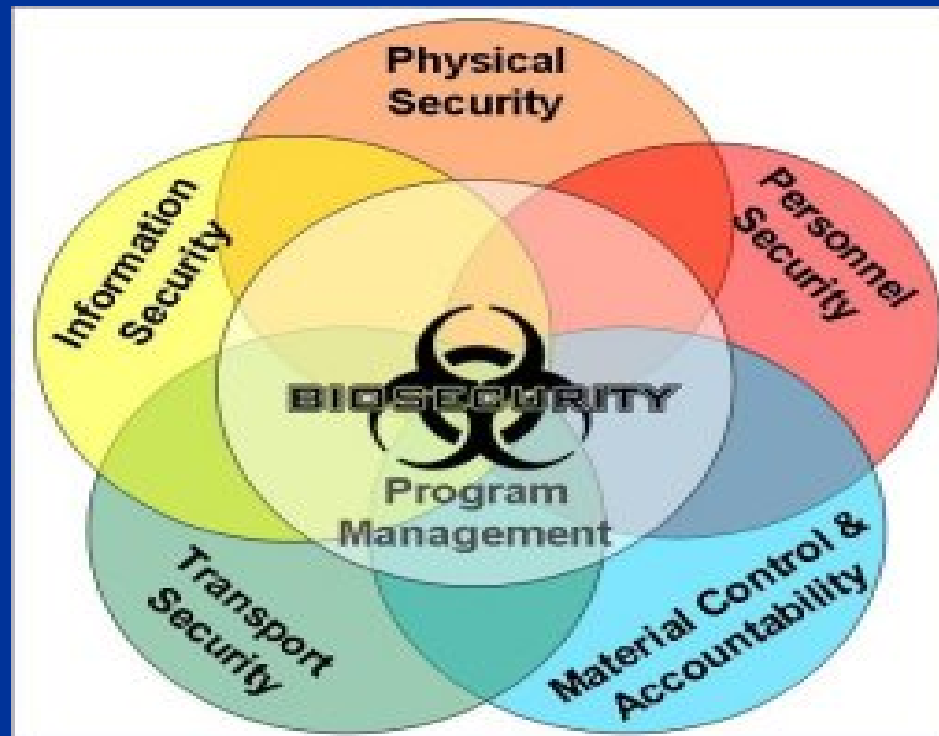


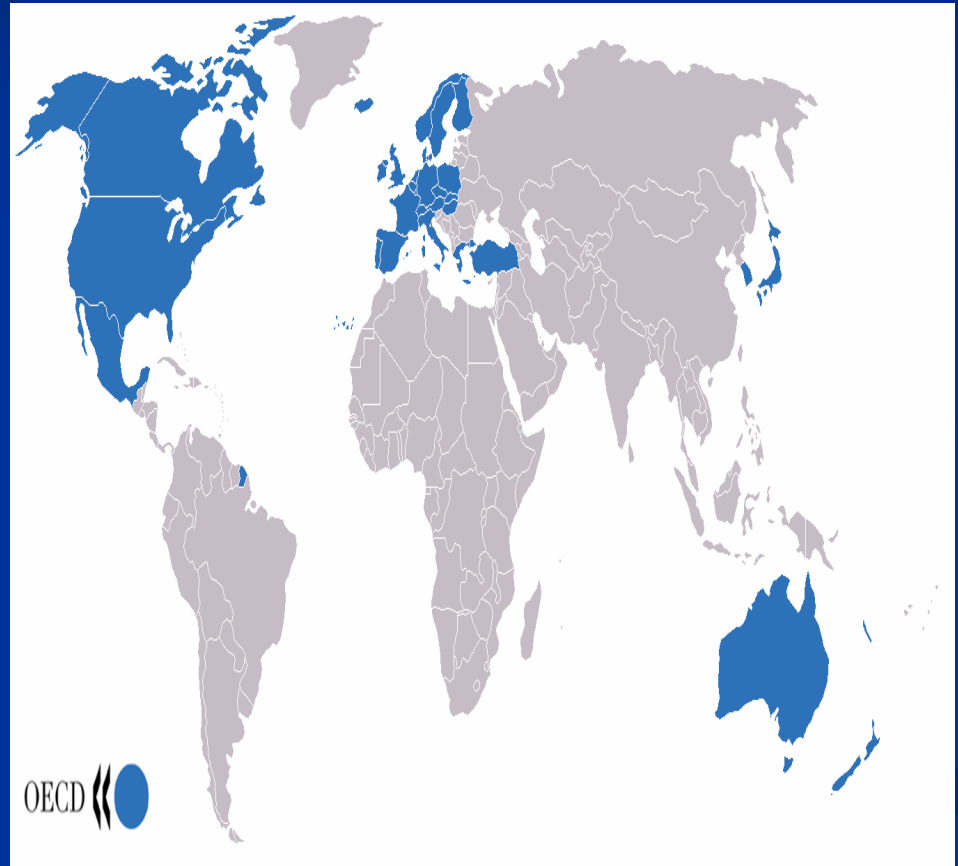
Organisation for Economic Co-operation and Development

Biosecurity: securing pathogens against
loss and theft



WHAT IS OECD?

- Inter-governmental organisation
- 30 member countries representing the most industrialized economies
- 80% of global GDP
- 85% of global R&D



Global Biological Resource Centres Network

- Biological Resource Centres (BRCs) are repositories of biological material
- Provide source material for biosciences research, development of biotechnologies, ultimately driver for economic growth
- Current standards of curation vary; poor quality material impedes research
- OECD Task Force on BRCs developed a set of best practices for the high quality maintenance and exchange of micro-organisms

OECD Group of Experts on Biosecurity

- Dual use capacity of some biological material in BRCs
- Mandate to develop rules on security and access to biological resources for BRCs
- 2 insights:
 - Existing classification of bio-safety levels are not suited to biosecurity
 - Mechanism should not hinder research nor be excessively financially burdensome

Definition of Biosecurity

‘Institutional and personal security measures and procedures designed to prevent the loss, theft, misuse, diversion or intentional release of pathogens, or parts of them, and toxin-producing organisms, as well as such toxins that are held, transferred and/ or supplied by BRCs.’



Proposal: Institutional Biosecurity Programme for BRCs

■ Elements:

1. Designated biosecurity officer in each BRC.
2. Assessing the risk associated with material in the collection: What materials require extra measures to secure against loss or theft?
3. Risk management practices: concrete measures to secure the pathogens in a collection.
4. Framework for BRC accreditation: how to ensure the implementation of the standards.

Biosecurity Risk Level



Biosecurity Risk Assessment Qualitative Framework

■ Potential for malicious misuse:

- Availability
- Amplification
- Skills and Knowledge
- Dispersal
- Environmental viability
- Countermeasures
- Economic consequence

■ Virulence:

- Infective dose
- Pathogenicity
- Lethality
- Transmissibility



Biosecurity risk management practices

- Physical security:
 - General, Restricted, High
- Security Management of personnel
- Security management of visitors
- Incident response plan
- Staff training
- Material control and accountability
- Supply of material
- Transport security
 - Internal, External
- Security of Information
 - Information that relates to access to materials
 - Information that relates to the collection



Physical security

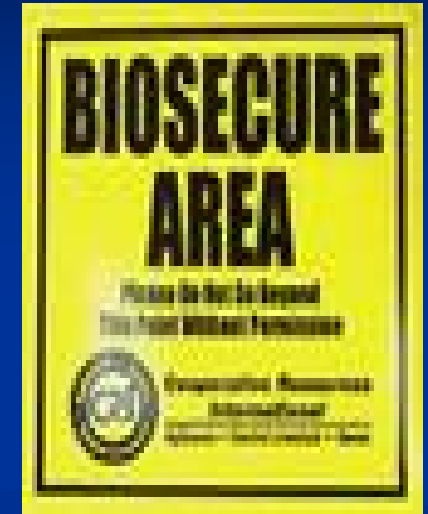
1. General Security Area

- Physical barrier and access controls



2. Restricted Area

- Encompassed by general area, extra access control, 24 hour intrusion system



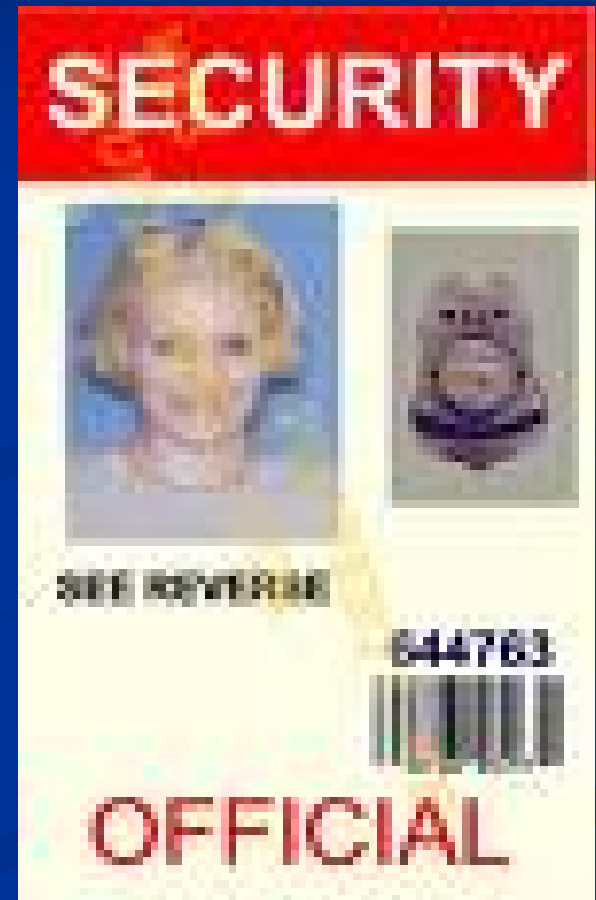
3. High Security Area

- Encompassed by restricted area and additional access control, 24 hour intrusion system



Security management of personnel

- BRC manager should ensure attention to the biosecurity risk management practices
- BRCs should conduct a background check on staff with access to high or moderate biosecurity risk level material
- BRC staff should have an identification token with picture and indication of their level of access in the facility



Security management of visitors

- System should list the types of visitors, and classify them as escorted or non-escorted
- Unescorted visitors are subject to same security measures as personnel
- Escorted visitors should not have access to high biosecurity risk areas



Incident response plan

- Reporting requirements in case of a security breach
- For breaches involving high or moderate biosecurity risk level material, the incident response plan should indicate the staff member responsible for reporting duties, and the national authorities to whom the incident should be reported

Material control and accountability

- Accurate knowledge of:
 - what biological materials are in the BRC
 - where the materials are
 - who has access or custody to them



Supply of material

- BRCs should document all acquisition requests, and make such information available to national authorities upon request
- BRCs should condition dispatch of high or moderate biosecurity risk level material upon agreement of the receiving party to provide notice of successful receipt

Transport security

- External transport, BRCs should follow:
 - WHO Guidelines on International Regulations for the packaging and Transport of Infectious Substances
 - IATA Dangerous goods Regulations
- Internal transport
 - High biosecurity risk level material should not be left unattended or stored outside the high security area
 - BRCs should employ a chain of custody approach to internal transfer of high and moderate biosecurity risk level material, or transfer through restricted or general security areas



Security of Information

- Information that relates to access to materials
 - Proportionate measures to secure such information (physical or electronic means)
 - Granted on need to know basis for high or moderate biosecurity risk level material, and only to personnel with high enough security clearance
- Information that relates to the collection
 - Detailed information such as environmental hardiness, cultivation method, sequence data



Dissemination

- OECD countries have negotiated and agreed these best practice guidelines
- Implementation: BRCs are in the process of adapting their facilities and protocols to the requirements of the guidelines.
- Regional workshops and raising awareness: OECD is looking for opportunities to do workshops with labs that work with pathogens.