

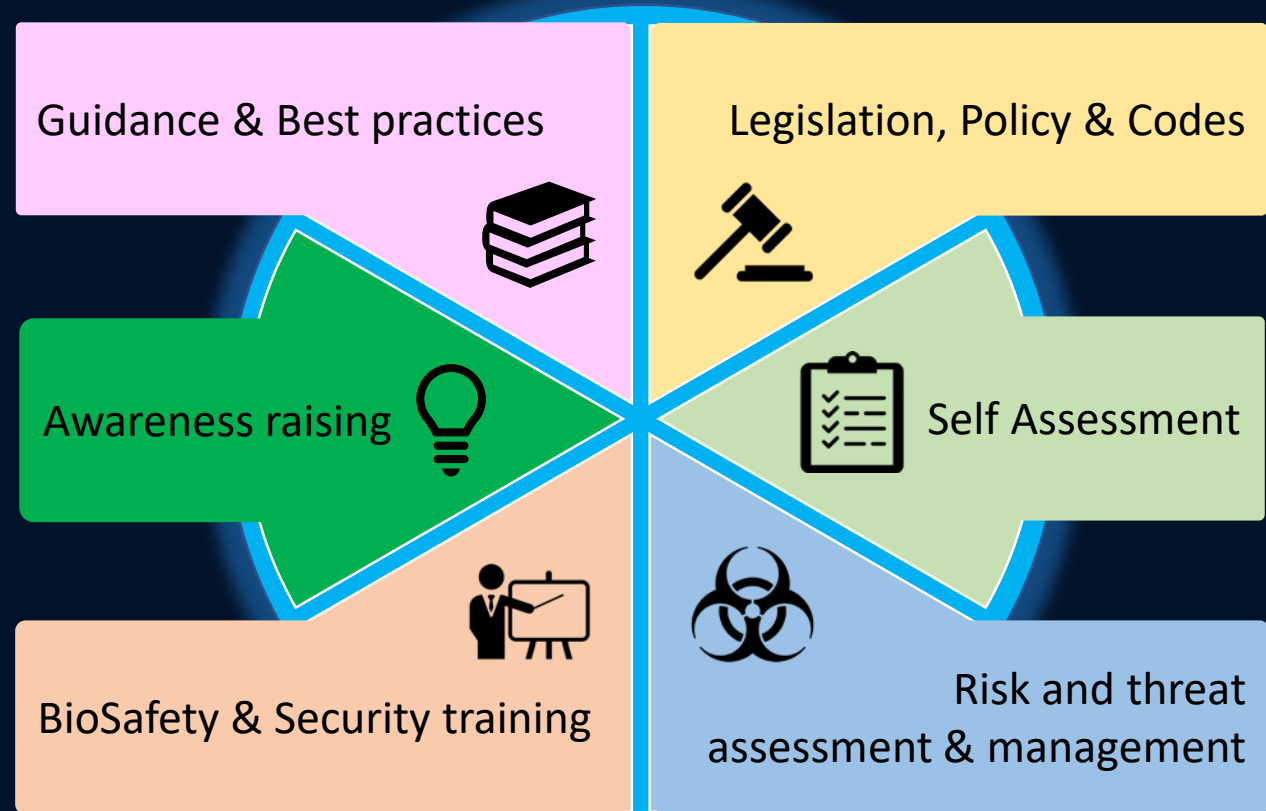


Biosecurity Resource Toolbox

The Biosecurity resource toolbox is categorized into six themes that can be accessed by clicking on the text or icon, shown in the pie chart.

By clicking on each of the themes, a new window will open with the available biosecurity resources within that theme.

Each resource is described using a small introduction, and a link to the location where the resource can be found. This location can be a website, application, or a direct link to a specific document. For more information, send an [email](#)



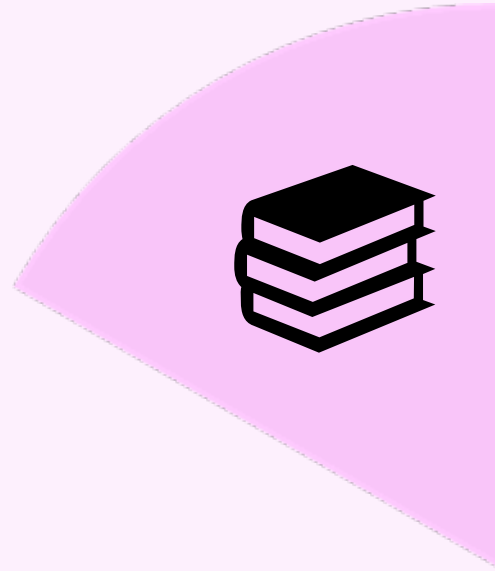


Guidance & Best practices

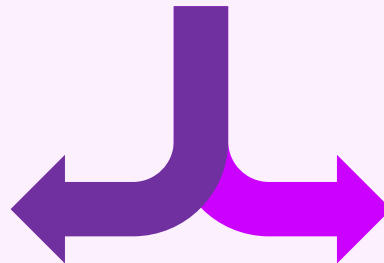
This category contains many resources describing Guidance and Best practices regarding Biosecurity.

Therefore, this category is separated into a part covering Guidance & Best practices on an institutional level, and a part that has an emphasize on the national level.

You can click on the icons representing institutional or national level to navigate to the corresponding resources



Institutional level 

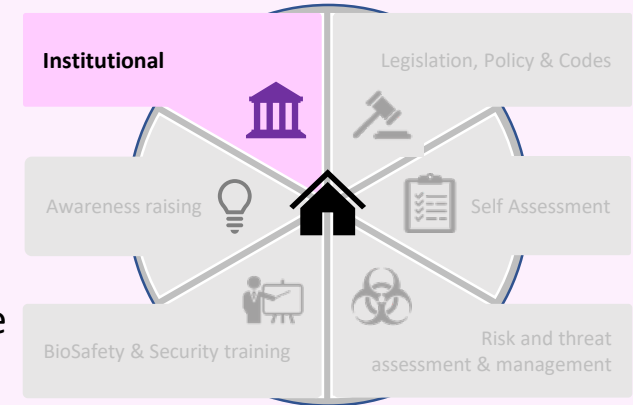


National level 



Institutional level

Back to Guidance & Best practices



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The resources in this category will guide you to tools and documents that can help to setup Guidance documents and Best practices regarding biosecurity at an institutional level.

The resources available in this category are primarily intended for researchers and biosafety officers. However, other interested parties will find interesting information here as well.

Guidelines for researchers on dual use and misuse of research

Guidelines for researchers on dual use and misuse of research

Institutions and funding bodies aim to raise researchers' awareness of the issues relating to dual use and misuse of research and help them to handle this appropriately. Researchers indeed have a legal and ethical obligation to prevent or mitigate as much as possible the risks and potential damage which may be caused by malicious use of their research results.

Guideline for Institutions and funding bodies who have the aim to raise researchers' awareness of the issues relating to dual use and misuse of research and help them to handle this appropriately.

To resource, click [here](#)

Proposed Framework for Oversight of Dual Use Research

NATIONAL SCIENCE ADVISORY BOARD FOR BIOSECURITY

Proposed Framework for the Oversight of Dual Use Life Sciences Research: Strategies for Minimizing the Potential Misuse of Research Information



This dual use framework describes strategies for Minimizing the Potential Misuse of Research Information.

To resource, click [here](#)

Laboratory biosecurity guidance

Biorisk management Laboratory biosecurity guidance

September 2008

This latest document provides more detailed guidance on biosecurity within a biological laboratory and addresses its basic principles and best practices.

To resource, click [here](#)

An introduction to biopreparedness

An introduction to biopreparedness

This book from CBB describes an effective way to investigate and respond to incidents involving hazardous biological substances, and offers some strategies for dealing with the aftermath.

To resource, click [here](#)

Biosecurity Challenges of the Global Expansion of High-Containment laboratories




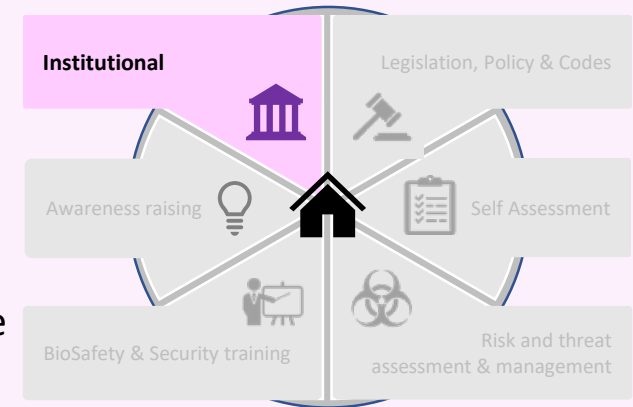
An international workshop examined biosafety and biosecurity issues related to the design, construction, maintenance, and operation of high-containment biological laboratories.

To resource, click [here](#)



Institutional level

Back to Guidance & Best practices 

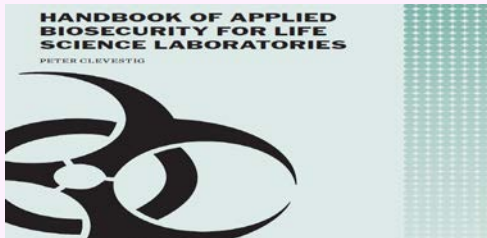


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The resources in this category will guide you to tools and documents that can help to setup Guidance documents and Best practices regarding biosecurity at an institutional level.

The resources available in this category are primarily intended for researchers and biosafety officers. However, other interested parties will find interesting information here as well.

Handbook of Applied Biosecurity for Life Science Laboratories



It presents the basic components of applied biosecurity that are relevant to all laboratory employees.

To resource, click [here](#)

OECD Best practice guidelines for biological resource centres



This report presents the outcome of discussions held by the OECD member and partner countries and presents the best practices of biological resource centres

To resource, click [here](#)
En Español, haga clic [aquí](#)

Biological agents: Managing the risks in laboratories and healthcare premises



Guidelines on working in a laboratory with biological agents, containing information on legislation and requirements.

To resource, click [here](#)

Clinical Laboratory preparedness and response guide



This guide was developed to assist laboratories by providing guidance on the responsibilities and practices that are recommended when dealing with biothreat agents.

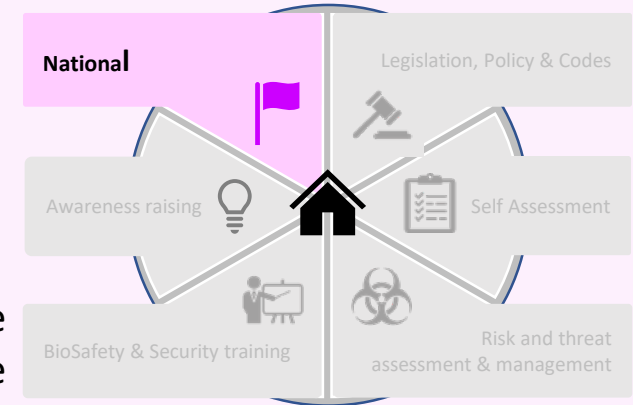
To resource, click [here](#)



Back to Guidance & Best practices



National level

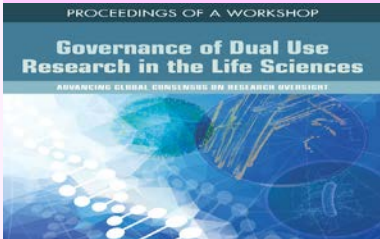


The resources in this category will guide you to tools and documents that can help to setup Guidance documents and Best practices regarding biosecurity at a National level. The resources available presented here are primarily intended for policy makers and biosafety officers. However, other interested parties will find interesting information here as well.

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Governance of Dual Use Research in the Life Sciences



Summary of International workshop: The Governance of Dual Use Research in the Life Sciences.

To resource, click [here](#)

Dual Use Research of Concern: A companion guide



Tools for the Identification, Assessment, Management, and Responsible Communication of Dual Use Research of Concern.

To resource, click [here](#)

Guidelines for implementation of Action B2 EU CBRN Action Plan

Guidelines for the implementation of Action B2 EU CBRN action plan

This document is a guide which was prepared in order to assist Member States to implement the B2 action and bring them into compliance with UNSCR1540 and BWTC

To resource, click [here](#)

Responsible life sciences research for global health security



The purpose of this guidance is to inform Member States about the risks posed by accidents or the potential deliberate misuse of life sciences research.

To resource, click [here](#)

An efficient and practical approach to biosecurity



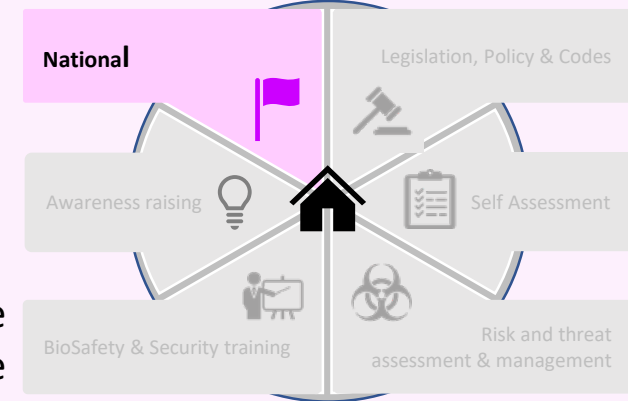
Book on the experiences of research and hard work on the preparation and implementation of the Biosecurity Law in Denmark to help other nations develop biosecurity laws

To resource, click [here](#)



Back to Guidance & Best practices

National level



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The resources in this category will guide you to tools and documents that can help to setup Guidance documents and Best practices regarding biosecurity at a National level. The resources available presented here are primarily intended for policy makers and biosafety officers. However, other interested parties will find interesting information here as well.

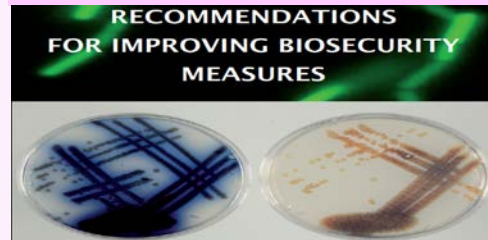
UK Biological Security Strategy



Outline of UK Biosecurity Strategy: building resilience to health threats

To resource, click [here](#)

Recommendations for improving biosecurity measures



Recommendations for improving biosecurity measures for Spain, based on the BWTC and UNSCR1540

For English, click [here](#)
En Español, haga clic [aquí](#)

Point of View: A transatlantic perspective on 20 emerging issues in biological engineering

POINT OF VIEW A transatlantic perspective on 20 emerging issues in biological engineering

Abstract: Advances in biological engineering are likely to have substantial impacts on global society. To explore these potential impacts we ran a horizon scanning exercise to capture a range of perspectives on the opportunities and risks presented by biological engineering. We first identified 70 potential issues, and then used an iterative process to prioritize 20 issues that we considered to be emerging, to have potential global impact, and to be relatively unknown outside the field of biological engineering. The issues identified may be of interest to researchers, business and policy makers in sectors such as health, energy, agriculture and the environment.

SONNIE C. WINTLE¹, CHRISTIAN R. BOEHM², CATHERINE RHODES, JENNIFER C. MOLLOY, PERS MILLETT, LAURA ADAM, RAINER BREITLING, BOB CARLSON, ROCCO CASAGRANDE, MALCOLM DANDS, ROBERT DOUBLEDAY, ERIC DREXLER, BRETT EDWARDS, TOM ELLIS, NICHOLAS G. EVANS, RICHARD HAMMOND, JIM HASELOFF, LINDA KAHL, TODD KUJIKIN, BENJAMIN R. LICHTMAN, CLYDE A. MATHEWMAN, JOHNATHAN A. NAPLES, SEAN S. O'HEIGARTAIGH, NICOLA J. PATRON, EDWARD PERELLO, PHILIP SHAPIRA, JOYCE TAIT, ERIKO TAKANO AND WILLIAM J. SUTHERLAND

To explore these potential impacts we ran a horizon scanning exercise to capture a range of perspectives on the opportunities and risks presented by biological engineering.

To resource, click [here](#)

Methods for collaboratively identifying research priorities and emerging issues in science and policy



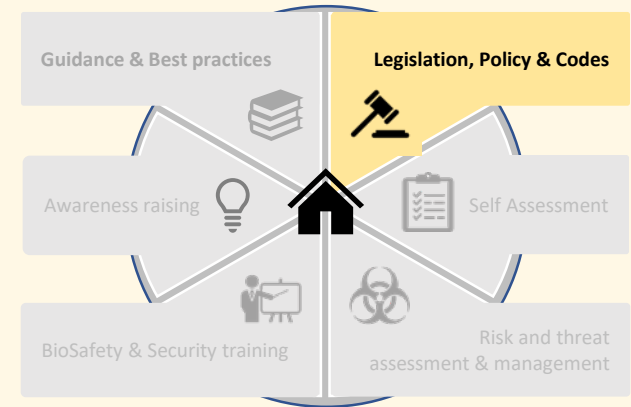
Summary
1. There is a widely recognized gap between the data generated by researchers and the information required by policy makers. In an effort to bridge the gap between conservation policy and science, we have convened in several countries multiple groups of policy makers, practitioners and researchers to identify and prioritize information needs that are most likely to be addressed by the scientific community.

Outline of a horizon scan and the method explained

To resource, click [here](#)



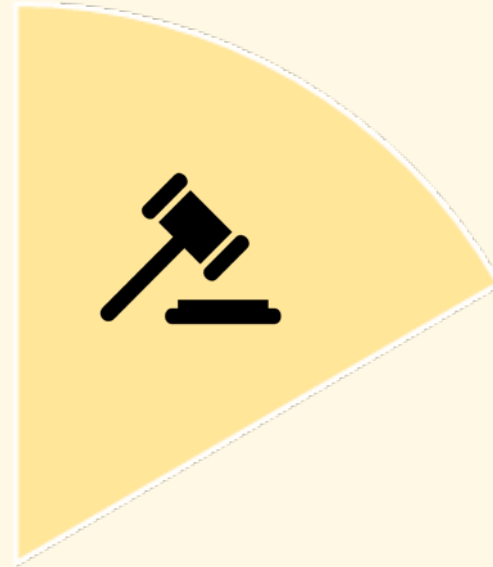
Legislation, Policy & Codes



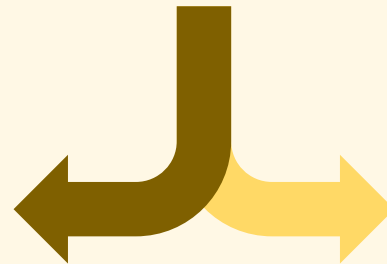
This category contains many resources regarding legislation, policies and codes (of conduct).

Therefore, this category is separated into a part covering Legislation, and a part that has an emphasize on policies and codes of conduct regarding Biosecurity.

You can click on the icons representing Legislation, or Policy & codes to navigate to the responding resources



Legislation 



 **Policy & Codes**



Back to Legislation, Policy & codes

Legislation



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The resources in this category will guide you to tools that can help to draw up legislation regarding biosecurity. The resources available in this category are primarily intended for legislators, policy makers, management, and biosafety officers. However, other interested parties will find interesting information here as well.

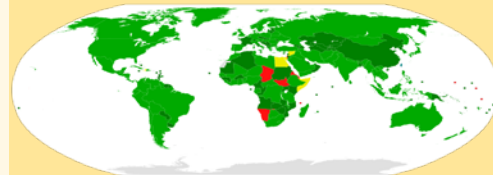
Council Regulation (EC) No 428/2009 on the Community regime for the exports control of dual-use items



European Community regime for the control of exports, transfer, brokering and transit of dual-use items.

For Resource, click [here](#)

Biological and Toxin Weapons Convention (BWTC)



The Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction

For Resource, click [here](#)

UN Security Council Resolution 1540



Non-proliferation of weapons of mass destruction

For Resource, click [here](#)

EU Regulation No.2009/43/EC regarding transfers of defence-related products within the Community



Directive 2009/43/EC of the European Parliament and of the Council of 6 May 2009 simplifying terms and conditions of transfers of defence-related products within the Community

For Resource, click [here](#)



Legislation

The resources in this category will guide you to tools that can help to draw up legislation regarding biosecurity. The resources available in this category are primarily intended for legislators, policy makers, management, and biosafety officers. However, other interested parties will find interesting information here as well.



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National Reports



Overview of country reports containing information about national biosecurity laws

For Resource, click [here](#)

Model law: the Biological and Toxin Weapons Crimes Act



An Act to implement obligations under the 1972 Biological and Toxin Weapons Convention and the 1925 Geneva Protocol

For Resource, click [here](#)

International Health Regulations (IHR)



A legally binding instrument of international law that aims to a) assist countries to work together to save lives and livelihoods endangered by the international spread of diseases and other health risks and b) avoid unnecessary interference with international trade and travel

For Resource, click [here](#)



Policy & Codes

Back to Legislation, Policy & codes



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The resources in this category will guide you to tools that can help to set up policies regarding biosecurity aspects, or a code of conduct. The resources available in this category are primarily intended for policy makers, management, researchers and biosafety officers. However, other interested parties will find interesting information here as well.

Enhancing Responsible Science – Considerations for the Development and Dissemination of Codes of Conduct for Dual Use Research Vulnerability scan



This report provides a toolkit for individuals and groups interested in formulating codes of conduct for dual use research and an educational module on dual use research.

For Resource, click [here](#)

Dual Use Potential of Life Sciences Research



Code of conduct for risk assessment and risk mitigation

For resource, click [here](#)

United States Government Policy for Institutional Oversight of Life Sciences Dual Use Research of Concern



This policy articulates the practices and procedures required to ensure that dual use research of concern is identified at the institutional level and risk mitigation measures are implemented as necessary.

For resource, click [here](#)

A Code of Conduct for Biosecurity



6 Types of Rules of conduct described for which target group.

For resource, click [here](#)



Policy & Codes

The resources in this category will guide you to tools that can help to set up policies regarding biosecurity aspects, or a code of conduct. The resources available in this category are primarily intended for policy makers, management, researchers and biosafety officers. However, other interested parties will find interesting information here as well.



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GHSA Action Package



Overview of 11 GHSA Action Packages'

For resource, click [here](#)

EU CBRN Action Plan



Council conclusions on strengthening chemical, biological, radiological and nuclear (CBRN) security in the European Union -an EU CBRN Action Plan'

For resource, click [here](#)

Code of Conduct on Biosecurity for Biological Resource Centres: procedural implementation

Code of Conduct on Biosecurity for Biological Resource Centres: procedural implementation

Christine Rohde,^{1,2} David Smith,³ Dunja Martin,¹ Dagmar Fritze¹ and Joost Stalpers⁴

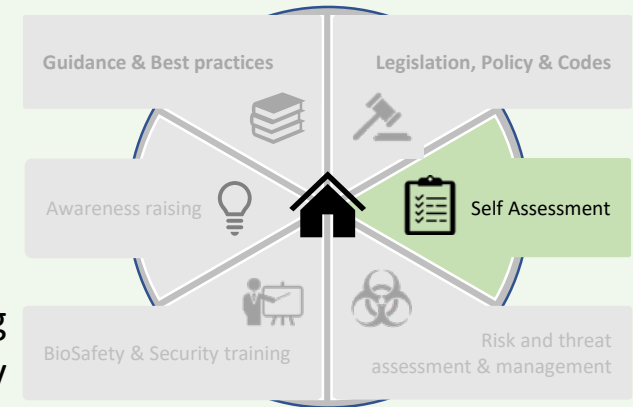
¹Leibniz-Institut DSMZ-Deutsche Sammlung von Mikroorganismen und Zellkulturen GmbH, Braunschweig, Germany
²MIRRI, Microbial Resource Research Infrastructure, a Pan-European Distributed Infrastructure: Coordination and Contact, Leibniz Institute DSMZ, Braunschweig, Germany
³CAB International, Surrey, United Kingdom
⁴CBS-KNAW Fungal Biodiversity Centre, Utrecht, Netherlands

A globally applicable code of conduct dedicated to biosecurity (of microbiologics) and guidance for implementation.

For resource, click [here](#)



Self Assessment



The resources in this category will guide you to tools that can help to draw up legislation regarding biosecurity. The resources available in this category are primarily intended for researchers and biosafety officers. However, other interested parties will find interesting information here as well.

Prior assessment tool

The Chatham House Sustainable Laboratories Initiative
Prior assessment tool

David R Harper, Emma Ross and Ben Wakefield



A tool for building laboratory capacity based on a local (Afrika) risk assessment, whereby laboratories are appropriately and optimally tailored to the local risks and to the resources available, both in the short and longer term, without compromising biosafety and biosecurity.

To resource, click [here](#)

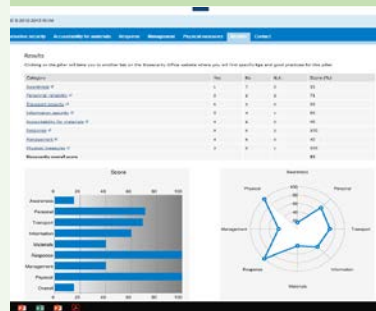
Vulnerability Scan



Identify vulnerabilities in your organization, questionnaires provide insight into eight key areas of biosecurity.

To resource, click [here](#)

Biosecurity Self-scan Toolkit



Questionnaire on eight pillars of biosecurity to give an indication of the current level of biosecurity in your organization.

To resource, click [here](#)

Joint External Evaluation Tool (JEE)



Tool to assess country capacity to prevent, detect, and rapidly respond to public health threats. Missions reports available.

To resource, click [here](#)

Laboratory Mapping Tool (LMT)



A pertinent tool in evidencing and understanding where diagnostic laboratory gaps and strengths are.

To resource, click [here](#)

Laboratory leadership competency framework



The purpose of the Framework is to outline the essential competencies needed by laboratory leaders to build and direct sustainable national laboratory systems for disease detection, control and prevention in health systems

To resource, click [here](#)



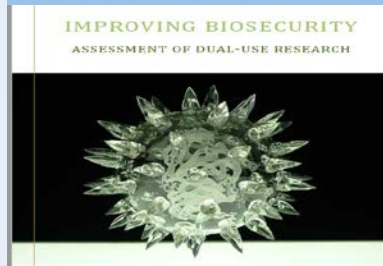
Risk and threat assessment & management

The resources in this category will guide you to tools that can help to perform Risk identification regarding biosecurity aspects. The resources available in this category are primarily intended for management, researchers and biosafety officers. However, other interested parties will find interesting information here as well.



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Improving biosecurity assessment of dual-use research



Dutch Advisory Report (EN): The Academy hopes its advice will help to bridge the gap between two worlds: the world of researchers in the life sciences and the world of security specialists.
To resource, click [here](#)

Harmonization of European Networks by Implementing CWA 15793



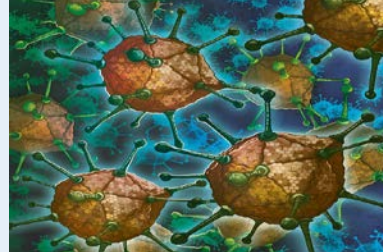
A gap analysis was performed to establish the current compliance status of biosafety and laboratory biosecurity management with CWA 15793 in 5 AniBioThreat partner institutes.
To resource, click [here](#)

Strengthening Risk Governance in Bioscience Laboratories



This report is intended to help facility managers and policy makers better understand risk governance approaches for laboratories that handle dangerous pathogens.
To resource, click [here](#)

Bioagents education



App with information of bioagents on status, ways of transmission, treatment options, lethality, contagious and biosafety
To resource, click [here](#)

Pathogen Safety Data Sheets



Pathogen Safety Data Sheets (PSDSs) are technical documents that describe the hazardous properties of a human pathogen and provide recommendations for work involving these agents in a laboratory setting.
To resource, click [here](#)



Risk and threat assessment & management

The resources in this category will guide you to tools that can help to perform Risk identification regarding biosecurity aspects. The resources available in this category are primarily intended for management, researchers and biosafety officers. However, other interested parties will find interesting information here as well.



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Biorisk Management for Clinical and Public Health Laboratories



Biorisk Management for Clinical and Public Health Laboratories
The Association of Public Health Laboratories, Centers for Disease Control and Prevention, and (Other Public Health) Labs are enhancing support to clinical and local health department laboratories to reduce risk in the areas of laboratory biosafety and biosecurity. As such, new programmatic support has been developed and conversations around biorisk management will be incorporated into ongoing outreach programs. This document provides an overview of a comprehensive, systematic approach to laboratory biorisk management. It includes a list of essential elements laboratories can use to assess their operations and better integrate and enhance programs for biosafety and biosecurity.

Definitions
Key terms used in this document are defined as follows:
• **Biorisk:** combination of the probability of occurrence of harm and the severity of harm
• **where the source of harm is:** a biological agent or toxin
• **Biosafety:** laboratory biosafety describes the containment principles, technologies and practices that are implemented to prevent the unintentional exposure to biological agents and toxins, or their accidental release
• **Biosecurity:** laboratory biosecurity describes the protection, control and accountability for biological agents and toxins within laboratories, in order to prevent their loss, theft, misuse, diversion or unauthorized access or intentional unauthorized release

Introduction
Clinical and public health laboratories should develop and maintain biorisk management systems that address laboratory biosafety and biosecurity tailored to the unique operations and risks of each laboratory. There is no one-size-fits-all biorisk management system. However, each federal, state or local laboratory should...

This document provides an overview of a comprehensive, systematic approach to laboratory biorisk management..

To resource, click [here](#)

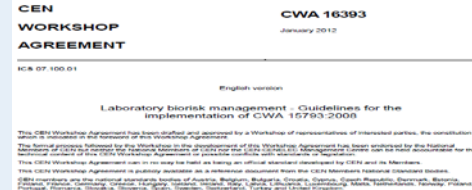
Laboratory biorisk management standard CWA 15793



This CWA will enable organizations to establish and maintain a biorisk management system to control or minimize risk to acceptable levels.

To resource, click [here](#)

Guidelines for the implementation of CWA 15793:2008



This document was developed as a voluntary standard by an international consortium of biosafety and biosecurity experts through a CEN Workshop (WS 31).

To resource, click [here](#)

ISO35001 Biorisk management for laboratories and other related organisations



ABSTRACT [PREVIEW](#)
This document defines a process to identify, assess, control, and...

The biorisk management system: establishes the biorisk management principles that enable laboratories and related facilities to achieve their biosafety and biosecurity objectives.

To resource, click [here](#)



BioSafety & Security Training



The resources in this category will guide you to tools that can help to setup a training program for aspect of Biosafety and Biosecurity. The resources available in this category are primarily intended for management, researchers and biosafety officers. However, other interested parties will find interesting information here as well.

Case studies in dual use biological research



Case studies to help define the issues associated with dual-use research and security in the research lab.

For resource, click [here](#)

Next Generation Biosecurity: Responding to 21st Century Biorisks



6-weeks training: Learn about biosecurity, biosafety and bioethics, and why they're vital - inside and outside of the lab

For resource, click [here](#)

Laboratory Biosafety and Biosecurity portal



The materials on this portal are provided to be used as part of a biosafety training program specific to your facility.

For resource, click [here](#)

Training Materials for Practical Implementation of Laboratory Biosafety, Biosecurity, and Biorisk management



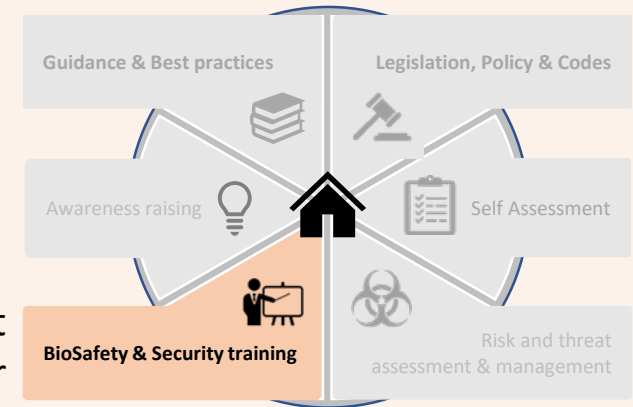
Training materials including mock reviews, a training game, and other interactive exercises to teach participants active learning concepts and approaches for teaching their colleagues and students about laboratory biosafety and biosecurity.

For resource, click [here](#)



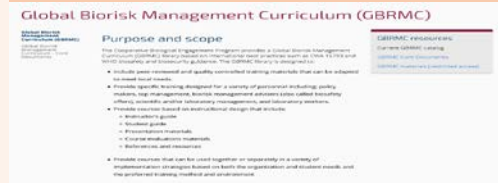
BioSafety & Security Training

The resources in this category will guide you to tools that can help to setup a training program for aspect of Biosafety and Biosecurity. The resources available in this category are primarily intended for management, researchers and biosafety officers. However, other interested parties will find interesting information here as well.



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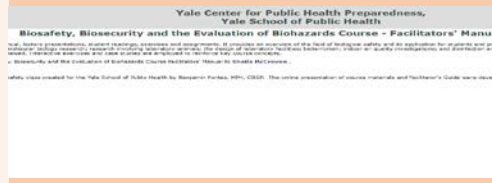
Global Biorisk Management Curriculum (GBRMC)



Global Biorisk Management Curriculum (GBRMC) library based on international best practices such as CWA 15793 and WHO biosafety and biosecurity guidance

For resource, click [here](#)

Biosafety, Biosecurity and the Evaluation of Biohazards Course - Facilitators' Manual



This resource is comprised of an instructor's manual, lecture presentations, student readings, exercises and assignments.

For resource, click [here](#)

An Analytical Approach (Biosecurity)

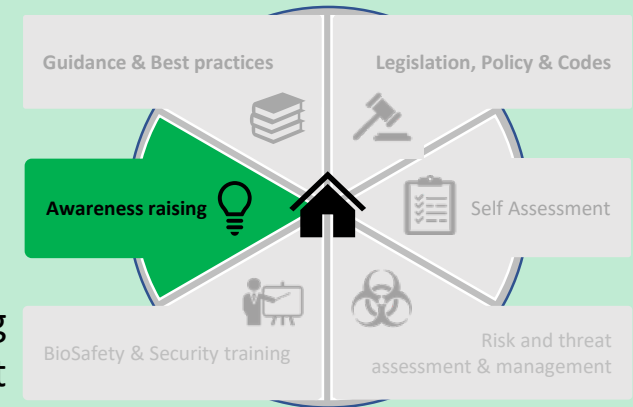


The Analytical Approach is a tool developed to assist countries or regions build, modernize, or strengthen their national or regional biosafety and biosecurity systems to mitigate the risks of a natural, accidental or deliberate release of biological agents.

For resource, click [here](#)



Awareness raising



The resources in this category will guide you to tools that can assist in raising awareness regarding various aspects of biosecurity. The resources available in this category are intended for a broad target audience, ranging from policy makers to researchers. All parties interested in raising awareness regarding biosecurity will find interesting information here.

On the Dual Uses of Science and Ethics, Principles, Practices, and Prospects
Vulnerability scan

ON THE DUAL USES OF SCIENCE AND ETHICS
PRINCIPLES, PRACTICES, AND PROSPECTS

edited by **Brian Rappert** and **Michael J. Selgelid**

This report examines the potential for the skills, know-how, information, and techniques associated with modern biology to serve contrasting ends.

For resource, click [here](#)

Preventing Biological Threats: What You Can Do

Preventing Biological Threats:
What You Can Do
Editors

Simon Whitby
Tatyana Novossiolova
Gerald Walther

This book, Preventing Biological Threats, is intended to raise awareness and knowledge of biological security of everyone active in the life sciences, ranging from those engaged in research to those engaged in management and policy-making, both nationally and internationally.

For resource, click [here](#)

Education and Ethics in the Life Sciences Strengthening the Prohibition of Biological Weapons

EDUCATION AND ETHICS
IN THE LIFE SCIENCES

STRENGTHENING THE PROHIBITION OF BIOLOGICAL WEAPONS
edited by **BRIAN RAPPERT**

[Education and Ethics in the Life Sciences](#) examines a variety of attempts to bring greater awareness to security concerns associated with the life sciences.

For resource, click [here](#)

Understanding Biosecurity

UNDERSTANDING BIOSECURITY
Protecting Against the Misuse of Science in Today's World

Protecting the world against the misuse of science in today's world: The challenge and the role of different stakeholders

For resource, click [here](#)