



SOCIEDADE BRASILEIRA
DE BIOSSEGURANÇA
E BIOPROTEÇÃO

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Biosecurity, Risk Perception, and Governance: Technical Reflections in the Brazilian Context

Implications for Biosafety, Biosecurity, and Institutional Management of CBRN Risks

Recent news regarding the actions of the **Civil Police of the states of Rio de Janeiro and São Paulo**¹, which prevented violent acts involving improvised explosive devices, deserves special attention from the **biosafety and biosecurity community**, not only due to the explosive/incendiary component, but also because of the **potential implications for biosecurity**, whether in the **biological or chemical** domain.

Historically, episodes of collective radicalization or individual violent actions—both in Brazil and internationally—have shown that the use of improvised means may evolve into the deployment of **toxic chemical agents, biological materials, or combined CBRN threats**, particularly in contexts where instructional materials, digital support networks, and **low risk perception** are present. Such low risk perception is not limited to the perpetrators of these actions, but is often also observed at **institutional, organizational, and managerial levels**, where **low-probability, high-impact risks** tend to be underestimated or treated as abstract.

For those of us who work directly with **biosafety, biosecurity, and high-containment biological environments**, the issue of low risk perception is especially critical and manifests concretely across multiple dimensions of institutional practice. It affects, among other aspects, the **selection and assessment of personnel to be trained**, particularly for **high- or maximum-containment biological facilities and equivalent settings**, the **inadequate definition of access profiles**, the **limited understanding of individual and institutional responsibilities** associated with the handling of agents, sensitive information, and critical infrastructures, as well as **management models that prioritize immediate operational demands over a sustained culture of safety and biosecurity**.

In this context, **biological and chemical risks** are often treated as unlikely events when, in reality, they represent **low-frequency, high-impact risks**, which may lead to the normalization of deviations, the undue relaxation of controls, and an incomplete understanding of the **institutional, social, and legal consequences** of an adverse event.

¹ Available: https://istoe.com.br/o-que-se-sabe-sobre-os-atentados-a-bomba-planejados-para-o-rio-e-sao-paulo#google_vignette



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From the perspective of **international reference frameworks**, both **ISO 35001:2019 (Biorisk Management for Laboratories and Related Organizations)** and the **WHO Laboratory Biosafety Manual, 4th edition (WHO LBM4)**, as well as the **WHO Laboratory Biosecurity Guidance**, converge in affirming that effective management of **biological and chemical risks** depends on a **systematic, risk-based, and people-centered approach**, rather than solely on physical barriers or technical procedures. These documents emphasize the need for **rigorous personnel assessment**, clear definition of **roles, responsibilities, and access levels**, strengthening of **organizational culture**, and integration between **biosafety, biosecurity, and incident response**, in alignment with international instruments such as the **Biological Weapons Convention (BWC)**, **United Nations Security Council Resolution 1540**, the **International Health Regulations (IHR, 2005)**, and related **CBRN guidance**. Taken together, this normative framework reinforces that the prevention of **deliberate or accidental events** in laboratories and other sensitive environments requires **institutional governance, continuous capacity building, and interagency coordination**, recognizing that failures in **risk perception and people management** constitute critical vectors of vulnerability.

In Brazil, although there are relevant frameworks for **public security and the control of explosives**, significant gaps remain in the **legal and regulatory framework specific to biosecurity**, particularly with regard to **laboratories, research funding, institutional responsibilities, and effective integration among health, security, science, and technology agencies**. From a **criminal law perspective**, certain violent actions may not formally fall under the current anti-terrorism legislation and may instead be classified as **incitement to crime, criminal association, or the manufacture or preparation of explosive or incendiary devices**. However, from a **technical, preventive, and risk management perspective**, events of this nature—especially when they involve **organized planning, dissemination of instructional materials, and potential use of biological or chemical agents**—should be analyzed and addressed under the logic of **bioterrorism and CBRN threats**, adopting an **anticipatory, systemic, and risk-based approach** focused on **prevention, institutional protection, and impact mitigation**. This analysis is **independent of ideological affiliation, political positioning, or partisan spectrum**, as the technical focus of biosecurity lies in **means, capabilities, vulnerabilities, and consequences**, rather than in declared motivations or politically attributed perceptions.

This context reinforces the need for **continuous capacity building**, strengthening of **biosafety and biosecurity governance**, greater clarity regarding the roles of **funding agencies, research institutions, and managers**, and **operational integration among different sectors of the State**. More than reacting to events, the challenge lies in **preventing higher-impact scenarios**, recognizing that **risk management begins long before an incident occurs**, in how people are selected, processes are structured, and **institutional culture is built**.



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This raises a key question for **institutions, professionals, and public policy makers**: **how can we advance, in a technical and responsible manner, toward the consolidation of a national culture of biosecurity that effectively addresses real, current, and future risks?**