



## New Strategy to Monitor and Assess Laboratory Biosafety Programs

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# New Strategy to Monitor and Assess Laboratory Biosafety Programs

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## Objective

To develop a toolset to monitor and assess laboratory biosafety program performance and cost

## Introduction

Laboratory biosafety – a component of biosecurity – has specific elements that together, comprise a facility's capability to both protect employees and the surrounding public and environment. Measuring these elements permits assessment and the costing of program-specific safety interventions. In the absence of a strategy and toolset, we developed a conceptual framework and toolset that monitors and assesses laboratory biosafety programs (LBPs) and provides useful information (e.g., return on investment [ROI]) for decision makers.

## Methods

We conducted academic and open source literature reviews of LBPs and affiliated organizations laboratory manuals to identify objectives, goals, and indicators. These findings were aligned to laboratory biosafety-specific inputs, activities, outputs, and outcomes to create a strategic, conceptual framework (logic models) used to assess performance and measure the cost and ROI. Indicators were identified in existing literature or developed and mapped to the logic model elements.

## Results

Six logic models were created: laboratory biosafety, biosurety, procedural, biocontainment, information security, and training. The laboratory biosafety logic model served as the overall framework for the remaining five sub-logic models. We also established a database containing 161 indicators mapped to each of the logic model elements.

## Conclusions

We developed a strategic framework that monitors and evaluates LBPs. While evaluation of cost-impacts in LBPs provides business intelligence for resource planning, this integrated approach also provides information about gaps. We plan to pilot this toolset and refine indicators using principal component analysis.

## Keywords

Laboratory biosafety; Evaluate Laboratory; program performance

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