

## **Biomedical research biosecurity leads to improvements in applied biosecurity and its assessment**

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Biosecurity is evolving and when designing or assessing one health biosecurity system we must shift the paradigm and reach beyond the original definition of biosecurity as a set of measures designed to prevent the spreading of infectious diseases between humans and/or animals. In the biomedical research setting, infectious diseases must be maintained contained while immunologically compromised, and subjects must be shielded from biological risks. If the goal is health management, we must think beyond disease prevention or biosecurity measures that strive to break the connection between the infectious **agent for a specific** or environment. Rethinking, biosecurity means shifting the paradigm to include bio-risk assessments in terms of multiple threats in a complex environment. Bioexclusion, surveillance, isolation and quarantine are not enough. In rethinking biosecurity design, a comprehensive approach is a paradigm shift that creates a mechanism for biosecurity protocols that can be applied from the micro to the macro environment in any setting. This systematic approach involves these key steps: 1) Define and fortify the health of the target population; 2) Define the perimeter and its permeability for health maintenance and health threats; and 3) Evaluate the environment and environmental controls. In the biomedical setting, these risks are changing every day from increasing biological safety level work to the opposite end of the spectrum with gnotobiotic animals. This presentation will review examples across the biosecurity range to demonstrate a biosecurity audit system and its application.

**Key words:** biosecurity, infectious diseases, measures