

Animal experiments in a bio safety level 3 laboratory – practice and occupational safety

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The emergence of new pathogens has speeded up in the modern world due to increased travel, food production and cattle rearing taking up new areas, and the ever-increasing population. This places new challenges for microbiologists and medical researchers to quickly identify and characterize these new threats. One component of such research is animal experiments. These are often necessary and important for defining pathogenesis and evaluating the effectiveness and safety of therapies and vaccines. The urgency of this workplace's special demands on study design, choice of animal models, and most importantly the know-how and stress tolerance of personnel working with these pathogens. Working with animals infected with dangerous pathogens demands not only the common skills of animal maintenance, handling, and health evaluation but how to do these when the animal is shedding dangerous pathogens. It also requires specialist skills on how to properly use personal protective gear, how to manoeuvre and operate in a BSL-3 laboratory, how to handle samples, and how to exit the laboratory in a safe manner. Time constraints and other stressors will require self-diagnosis from the staff on wellbeing and ability to do the job. A few case studies on hantavirus and coronavirus research will be used to demonstrate the challenges of animal experimentation at a high-level bio safety laboratory.