Biosafety News

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Risk Assessment—What it is and how to do it well

A cornerstone of the practice of biosafety is the concept of "Risk Assessment." Properly conducted, risk assessment can help prevent exposure to biohazards and minimize the potential for laboratory acquired infection. Remember that prior planning prevents poor performance. In order to do this, the principal investigator is required to:

1) Identify the risk. This can be done by considering the following:

- Pathogenicity of the materials used
- Route of transmission of infectious agents, including human sourced materials and some viral vectors
- Stability of any infectious agents
- Concentrations of cultures of infectious agents
- Infectious dose of infectious agents
- Availability of prophylaxis or therapeutic intervention
- Experience and skill level of laboratory personnel
- Procedures conducted with hazardous agents
- Hazardous waste management

2) Assess the risk (see chart below)

3) Determine the method for mitigating risk (ex: engineering controls and PPE)

Risk mitigation strategy is a dynamic process which requires repeated assessment and possible modification over time. Engineering controls (ex: BSC, negative airflow to the hallway), administrative controls (ex: training, SOPs) and personal protective equipment should all be sufficient to reduce risk of exposure or injury.

Laboratories with biohazards are required to be registered with UK's Institutional Biosafety Committee (IBC). This registration requires a written summary of the work with biohazards performed in the laboratory. Before approval of the registration the IBC evaluates what has been submitted and will issue approval based on the risk assessment and mitigation methods described in the registration. When completing an IBC registration, the author should include the above considerations in the summary. Attention should be paid to any procedures that could result in exposure to biohazards via parenteral inoculation, spills/splashes, accidental ingestion, animal bites/scratches, and inhalation of infectious aerosols.

Risk Matrix:

Probability x Consequence = Risk

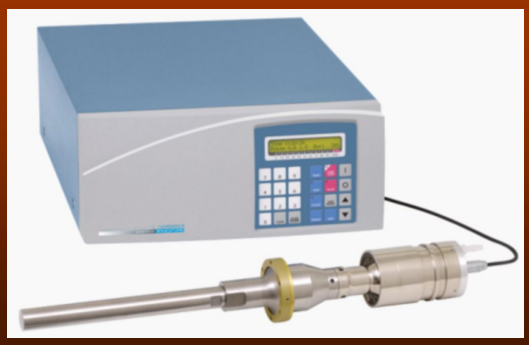
Consequence \ Likelihood	Rare	Unlikely	Possible	Likely	Almost Certain
Severe e.g. Potential fatality or injury or illness with permanent disability	Medium	Medium	High	Extreme	Extreme
Major e. g. Potential lost time injury (but non-permanent diability)	Low	Medium	Medium	High	Extreme
Moderate e.g. Potential medical treatment injury or illness (but no lost time)	Low	Low	Medium	Medium	High
Minor e.g. Potential first aid treatment	Low	Low	Low	Low	Medium
Minimal e.g. Hazard or near miss requiring reporting and follow up action	Low	Low	Low	Low	Low

The Dept. of Biological Safety would like to thank the following labs for setting a shining example of lab housekeeping and maintenance. Well done!

Burgess lab (BPC)
Feola lab (BPC)
Graf lab (BPC)
Suzuki lab (Med Sci)
Zaytseva lab (BBSRB)

Biosafety Reminder:

Hazardous aerosols are created by most laboratory operations involving blending, mixing, stirring, grinding, or disrupting biohazardous materials. Homogenization or sonication of human cells /tissue or other materials containing potentially infectious agents should be performed in a BSC. If a BSC is not available, homogenization should be double bagged in a Stomacher, or in a sealed homogenizer.



Good Bye 2016!

Thanks to all who attended the 2016 Laboratory Safety Fair.

This year's fair had more attenders than ever before! The UK Department of Biological Safety wishes everyone an enjoyable and safe holiday season.

See you at next year's fair!

University of Kentucky

Department of Biological Safety

As part of the Division of Environmental Health & Safety, the Department of Biological Safety is responsible for programs concerning the safe use of recombinant and synthetic nucleic acids, infectious agents, and potentially infectious materials such as human sourced materials in the research and teaching laboratories at the University of Kentucky. This includes training, auditing, and consulting with researchers, laboratory personnel and teaching staff concerning compliance with the federal and state laws and regulations in these areas.

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