Determination of Risk Group and Containment Level

Pathogen Name:

Risk Level is the level of risk associated with each Risk Factor. There are 10 Risk Factors, which, together, are used to determine the Risk Group.

Kingdom:
Family:
Genus:
Species:

Pathogen Description:
Risk Group Assessment

Risk Factors

1. Pathogenicity/Virulence

Risk Level 1 - unlikely to cause disease in healthy lab workers
- low individual and community risk

Risk Level 2 - mild or moderate disease/ moderate individual risk, low community risk
- any pathogen that can cause disease but, under normal circumstances, is unlikely to be a serious hazard to healthy laboratory workers, the community, livestock, or the environment

Risk Level 3 - serious livestock, poultry or wildlife disease / high individual risk, low community risk
- any pathogen that usually causes serious disease or can result in serious economic consequences but does not ordinarily spread by casual contact from one individual to another

Risk Level 4 - severe livestock, poultry or wildlife disease / high individual risk, high community risk
- also causes human disease
- any pathogen that usually produces very serious and often fatal disease, often untreatable, and may be readily transmitted from one individual to another, or from animal to human or vice-versa, directly or indirectly, or by casual contact.

Comments:
2. **Infectious dose**

Risk Level 1 - not applicable (not known to cause disease)
Risk Level 2 - variable or high (1000-5000 organisms or greater)
Risk Level 3 - medium (10-1000 organisms)
Risk Level 4 - low (1-10 organisms)

Comments:
3. Mode of Transmission/Route of Infection

Risk Level 1 - not applicable (not known to cause disease)
Risk Level 2 - primary exposure hazards are through ingestion, inoculation and mucous membrane route (not generally through the airborne route)
Risk Level 3 - may be transmitted through airborne route; direct contact; vectors
Risk Level 4 - readily transmitted, potential for aerosol transmission

Comments:
4. Ability to Spread/Transmission/Communicability

Risk Level 1 - not applicable (not known to cause disease)

Risk Level 2 - geographical risk of spread if released from the laboratory is limited
- direct animal to animal or human to human transmission is relatively limited
- very limited or no transmission between different animal species

Risk Level 3 - geographical risk of spread if released from the laboratory is moderate
- direct animal to animal or human to human transmission occurs relatively easily
- transmission between different animal species may readily occur

Risk Level 4 - geographical risk of spread if released from the laboratory is widespread
- direct animal to animal or human to human transmission occurs very easily
- transmission between different animal species may occur very readily
- transmission from animal to human or vice-versa may occur readily, directly or indirectly, or by casual contact

Comments:
5. **Survival in the environment** (*Related to “Ability to Spread” above*)

Risk Level 1  - Not applicable
Risk Level 2  - short term survival (days); can survive under ideal conditions
Risk Level 3  - resistant (days to months)
Risk Level 4  - highly resistant (months to years) e.g. spores

Agents that can survive outside the host present a higher risk.

Questions to ask:
- is it stable outside the host?
- can it survive for long periods of time outside the host, i.e, on laboratory equipment or surfaces?
- can it survive harsh environmental conditions?
- can it survive in laboratory effluent?

Comments:
6. **Host Range**

Risk Level 1  - not applicable (not known to cause disease)
Risk Level 2  - infects a limited number of species
Risk Level 3  - infects multiple species
Risk Level 4  - infects many species of animals and humans

Points to consider:
- is the organism zoonotic, or does it infect only animals or humans?
- are the host species present in Canada?
- are the host species economically important in Canada?

Comments:
7. Endemicity

Risk Level 1 - enzootic
Risk Level 2 - generally enzootic (some low-risk exotics or reportable diseases)
Risk Level 3 - exotic or enzootic but subject to official control
Risk Level 4 - exotic

Comments:
8. **Economic aspects of introduction and/or release into the environment or the Canadian public**

Risk Level 1 - no economic and/or clinical significance
Risk Level 2 - limited economic and/or clinical significance
Risk Level 3 - severe economic and/or clinical significance
Risk Level 4 - extremely severe economic and/or clinical significance

Comments:
9. Availability of prophylactic and therapeutic treatments.

Risk Level 1 - not applicable (not known to cause disease)
Risk Level 2 - effective treatment and preventive measures are available
Risk Level 3 - prophylactic and/or therapeutic treatments may or may not be readily available (or of limited benefit)
Risk Level 4 - prophylactic and/or therapeutic treatments are not usually available

Questions to ask:
- are antibiotics or antivirals available to treat the disease?
- are there effective vaccines available?

Comments:
10. **Vectors**

Risk Level 1 - not applicable (not known to cause disease)
Risk Level 2 - do not depend on vectors or intermediate hosts for transmission
Risk Level 3 - may depend on vectors or intermediate hosts for transmission
Risk Level 4 - depend on vectors or intermediate hosts for transmission

Questions to ask:
- is vector present in Canada?
- is intermediate host present in Canada?
- does climate or other environmental factors lower chance of survival?
- can the pathogen survive in surrogate or alternate vectors? (Usually difficult to answer this question)

Comments: