The following guidelines are to be followed for determining the biosafety containment level for work at the University of Alberta (UA) with clinical specimens from human immunodeficiency virus (HIV)-positive patients who may or may not be co-infected with additional pathogens. These guidelines are based on the Canadian Biosafety Standards and the HIV and Mycobacterium tuberculosis complex (MTBC) Directives from the Public Health Agency of Canada which have been evaluated for best practices at the UA. Depending on the proposed research and the presence of co-infected pathogens, the containment level at which research with HIV clinical specimens may be conducted at the UA is based on the following:

1. **Local Risk Assessment**

To fulfill provincial and federal regulations, a local risk assessment must be conducted and documented by the Principal Investigator. The assessment must evaluate:

* Whether or not the HIV specimens are co-infected with another agent.
* Where the specimens are coming from and the likelihood that they may be co-infected with additional pathogen(s).
* The likelihood of the presence and/or the potential concentration of the pathogens in the primary sample.
* If the specimens are likely to be co-infected, the risk group rating of the additional pathogen(s) must be determined.
* What type of activities will be performed with the specimens. Specific attention must be paid to whether or not the activities require any propagation of the HIV virus or the co-infected pathogen(s), what types of equipment will be needed, and if the activities involve the production of aerosols.
1. **Containment Level**

When determining the appropriate containment level, if multiple hazards exist in the proposed research, the containment level must be appropriate to control for the greatest of the risks.

1. **Containment Level 2 (CL2)**

Research activities may be conducted in a CL2 facility if the following can be adhered to:

* Propagation of HIV, or any co-infected pathogen from the primary specimen or any of its derivatives is prohibited.
* Any co-infected pathogen present is of risk group 2 or lower.
* Universal Precautions and standard CL2 practices must be followed at all times.
* Research with HIV-positive materials, with or without co-infection of additional pathogens, must be declared to the Biosafety Officers.
* All UA Biosafety recommendations must be followed.
* All HIV-positive specimens and working samples must be kept locked and secured at all times.
* A real time, up-to-date inventory must be kept for all HIV positive specimens that are kept in storage for longer than one month.
* Personnel must be trained to report any incidents involving HIV-positive specimens immediately and self-declare what they work with if medical evaluation or treatment is required.
* Personnel training records must include specific training related to HIV and its handling.
* All colleagues working in proximity (i.e., in shared labs or utilizing shared equipment) must be informed of the work and the inherent risks involved.
1. **Containment Level 3 (CL3)**

Research activities are required to be upgraded to a CL3 facility if:

* Specimens are co-infected with a risk group 3 respiratory pathogen.
* Specimens are suspected or confirmed to be co-infected with a drug resistant risk group 3 pathogen.
* Propagation of the HIV or co-infected risk group 3 pathogen is required for the proposed work activities.
* Specimens are from a patient known to have multi-drug resistant strain(s) of the pathogens involved.

If the proposed research does not fit into these guidelines, contact the Biosafety Officers at biosafety@ualberta.ca.