7.0 STANDARD MICROBIOLOGICAL PRACTICES

Standard microbiological practices must be used in all laboratories with biohazardous agents, regardless of risk group or biosafety level. These practices are standard safety behaviors for every biological laboratory. See the BMBL section on Laboratory Biosafety Level Criteria for the most current requirements. Listed below are the Standard Microbiological Practices required for all labs and additional requirements for BSL 2 labs, these are taken from the BMBL 5th Edition, 2007.

All Laboratories (BSL 1 & BSL 2)

1) The laboratory supervisor must enforce the institutional policies that control access to the laboratory.

2) Persons must wash their hands after working with potentially hazardous materials and before leaving the laboratory.

3) Eating, drinking, smoking, handling contact lenses, applying cosmetics, and storing food for human consumption are not be permitted in laboratory areas. Food must be stored outside the laboratory area in cabinets or refrigerators designated and used for this purpose.

4) Mouth pipetting is prohibited; mechanical pipetting devices must be used.

5) Policies for the safe handling of sharps, such as needles, scalpels, pipettes, and broken glassware must be developed and implemented. Whenever practical, laboratory supervisors should adopt improved engineering and work practice controls that reduce risk of sharps injuries. Precautions, including those listed below, must always be taken with sharp items. These include:

   a. Careful management of needles and other sharps is of primary importance. Needles must not be bent, sheared, broken, recapped, removed from disposable syringes, or otherwise manipulated by hand before disposal.
   b. Used disposable needles and syringes must be carefully placed in conveniently located puncture-resistant containers used for sharps disposal.
   c. Non disposable sharps must be placed in a hard walled container for transport to a processing area for decontamination, preferably by autoclaving.
   d. Broken glassware must not be handled directly. Instead, it must be removed using a brush and dustpan, tongs, or forceps. Plasticware should be substituted for glassware whenever possible.

6) Perform all procedures to minimize the creation of splashes and/or aerosols.

7) Decontaminate work surfaces after completion of work and after any spill or splash of potentially infectious material with appropriate disinfectant.
8) Decontaminate all cultures, stocks, and other potentially infectious materials before disposal using an effective method. Depending on where the decontamination will be performed, the following methods should be used prior to transport:

   a. Materials to be decontaminated outside of the immediate laboratory must be placed in a durable, leak proof container and secured for transport.
   b. Materials to be removed from the facility for decontamination must be packed in accordance with applicable local, state, and federal regulations.

9) A sign incorporating the universal biohazard symbol must be posted at the entrance to the laboratory when infectious agents are present. The sign may include the name of the agent(s) in use, and the name and phone number of the laboratory supervisor or other responsible personnel. Agent information should be posted in accordance with the institutional policy.

10) The laboratory supervisor must ensure that laboratory personnel receive appropriate training regarding their duties, the necessary precautions to prevent exposures, and exposure evaluation procedures. Personnel must receive annual updates or additional training when procedural or policy changes occur. Personal health status may impact an individual’s susceptibility to infection, ability to receive immunizations or prophylactic interventions. Therefore, all laboratory personnel and particularly women of child-bearing age should be provided with information regarding immune competence and conditions that may predispose them to infection. Individuals having these conditions should be encouraged to self-identify to the institution’s healthcare provider for appropriate counseling and guidance.

**Additional Practices for BSL 2 Laboratories**

1) All persons entering the laboratory must be advised of the potential hazards and meet specific entry/exit requirements.

2) Laboratory personnel must be provided medical surveillance and offered appropriate immunizations for agents handled or potentially present in the laboratory.

3) When appropriate, a baseline serum sample should be stored.

4) A laboratory-specific biosafety manual must be prepared and adopted as policy. The biosafety manual must be available and accessible.

5) The laboratory supervisor must ensure that laboratory personnel demonstrate proficiency in standard and special microbiological practices before working with BSL-2 agents.

6) Potentially infectious materials must be placed in a durable, leak proof container during collection, handling, processing, storage, or transport within a facility.

7) Laboratory equipment should be routinely decontaminated, as well as, after spills, splashes, or other potential contamination.
8) Spills involving infectious materials must be contained, decontaminated, and cleaned up by staff properly trained and equipped to work with infectious material.

9) Equipment must be decontaminated before repair, maintenance, or removal from the laboratory.

10) Incidents that may result in exposure to infectious materials must be immediately evaluated and treated according to procedures described in the laboratory biosafety safety manual. All such incidents must be reported to the laboratory supervisor. Medical evaluation, surveillance, and treatment should be provided and appropriate records maintained.

11) Animals and plants not associated with the work being performed must not be permitted in the laboratory.

12) All procedures involving the manipulation of infectious materials that may generate an aerosol must be conducted within a BSC or other physical containment devices.