

Checklist for Biosafety Level 2 Laboratory Operations

Department _____ Building _____ Room # _____
 Principal Investigator _____ Net ID _____ Phone # _____
 Laboratory Contact _____ Net ID _____ Phone # _____
 IBC Member(s) Present _____ Date Completed _____

The following statements are based primarily on the Biosafety Level 2 section of *Biosafety in Microbiological and Biomedical Laboratories, 4th edition, 1999*. Check the appropriate box for each statement. Please provide comments or an explanation for “No” or “NA” (Not Applicable) responses. This checklist may be used for in-house assessment or as part of a review completed by the Institutional Biosafety Committee. Contact the Biological Safety Officer (fac2@cornell.edu, 254-4888) if you have any questions or require assistance.

A. Standard Microbiological Practices

	Yes	No	NA
1. Access to the laboratory is limited or restricted at the discretion of the Principal Investigator or laboratory supervisor when experiments are in progress.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Personnel wash their hands after they handle viable materials and animals, after removing gloves, and before leaving the laboratory.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Eating, drinking, handling contact lenses, and applying cosmetics are not permitted in the laboratory. Persons who wear contact lenses in laboratories should also wear safety glasses, goggles or face shield. Food is stored outside the laboratory in cabinets or refrigerators designated for this purpose only.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Mouth pipetting is prohibited; mechanical pipetting devices are used.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. All procedures are performed carefully to minimize the creation of splashes or aerosols.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Work surfaces are decontaminated at least once a day and after any spill of viable material with a disinfectant effective against the agents of concern.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Cultures, stocks, contaminated plasticware, and other regulated non-sharps wastes are discarded in red biohazard bags and treated as regulated medical wastes (RMW).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Policies are established for the safe handling of sharps. Sharps, including hypodermic syringes and needles, Pasteur pipettes, razor blades, contaminated broken glass, and blood vials are discarded in puncture-resistant sharps disposal containers and treated as RMW.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Culture fluids and other contaminated liquid wastes are autoclaved or decontaminated with a suitable disinfectant before disposal down the sanitary drain.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Materials to be decontaminated outside of the immediate laboratory are placed in a durable, leak-proof container and closed for transport from the laboratory.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. An insect and rodent control program is in effect.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments/Explanations for Standard Microbiological Practices

B. Special Practices

	Yes	No	NA
1. The Principal Investigator has the final responsibility for the safety of all personnel within his/her laboratory. In general, persons who are at an increased risk of acquiring infection or for whom infection may be unusually hazardous (e.g., immunocompromised, immunosuppressed, pregnancy) may require special conditions or precautions before being allowed to work in the laboratory or animal rooms. If applicable, personnel should consult with their own personal physician or Gannett Health Services.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. The Principal Investigator establishes policies and procedures whereby only persons who have been advised of the potential hazard and meet specific entry requirements (e.g., immunization) may enter or access designated areas of the laboratory or animal rooms.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. A hazard warning sign (e.g., biohazard symbol, HASP) is posted on the access door to the laboratory. The sign may identify the infectious agent, and should list the name and the telephone number of the Principal Investigator or other responsible person(s), special requirements (e.g., immunization), or personal protective equipment required for entry.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. A biohazard symbol is placed on equipment (e.g., incubators, freezers) where biohazardous materials are used or stored.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Laboratory personnel receive appropriate immunizations or tests for the agents handled or potentially present in the laboratory (e.g., hepatitis B vaccine, TB skin testing).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. When appropriate, considering the agent(s) handled, baseline serum samples for laboratory and other at-risk personnel are collected and stored. Additional serum specimens may be collected periodically, depending on the agents handled or the function of the facility.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Projects that utilize biohazardous and/or recombinant DNA materials are registered with the Institutional Biosafety Committee.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. A biosafety manual or standard operating procedures is/are prepared or adopted. Personnel are advised of hazards and handling procedures, and are required to read and follow instructions on practices and procedures. Procedures and policies are routinely reviewed and updated.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. The Principal Investigator provides specific training on the potential hazards associated with the work involved, the necessary precautions to prevent exposures, and the exposure evaluation procedures (e.g., symptoms of a disease) to all laboratory personnel. Personnel receive regular updates or additional training as necessary. Training is documented.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. A high degree of precaution is always adopted with any contaminated sharps item, including needles and syringes, slides, pipettes, capillary tubes, broken glass, razor blades, and scalpels.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
a. Needles and syringes or other sharp instruments are restricted for use only when there is no alternative, such as parenteral injection, or aspiration of fluids from laboratory animals and diaphragm bottles. Sharps items are kept in full view at all times and are not left unattended. Plasticware is substituted for glassware whenever possible.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Needle-locking syringes or disposable syringe-needle units (i.e., needle is integral to the syringe) are used for injection or aspiration of infectious materials. Used disposable needles are not bent, sheared, broken, recapped, removed from disposable syringes, or otherwise manipulated by hand before disposal; rather, they are carefully placed in conveniently located, puncture-resistant sharps disposal containers. Re-usable sharps are placed in a hard-walled container for transport to an autoclave.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Syringes that re-sheath the needle, needle-less systems, and other engineered safety devices are used when appropriate.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Broken glassware is not handled directly by hand, but is removed by mechanical means such as a brush and dustpan, tongs, or forceps.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Yes	No	NA
11. Cultures, tissues, or specimens of body fluids are placed in a container that prevents leakage during collection, handling, processing, storage, or transport.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Laboratory equipment and work surfaces are decontaminated with an appropriate disinfectant on a routine basis, after work with infectious materials, and especially after spills, splashes, or other contamination by infectious materials. Contaminated equipment is decontaminated before removal from the facility, sent for repair or maintenance, or packaged for transport.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Spills and accidents that result in exposures to infectious materials are immediately reported to the Principal Investigator and the Biosafety Officer. Medical evaluation, surveillance, and treatment are provided as appropriate and written records are maintained. An accident report form is completed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Animals and plants unrelated to the work being performed are not permitted in the laboratory.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. On campus transport (between laboratories, buildings) of cultures, tissues, or specimens is accomplished in closed, leak proof, break resistant containers, lined with absorbent material and labeled with the biohazard sign and contact information. Off campus transport complies with domestic (US DOT) and/or international regulations (ICAO), including <u>required training</u> .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Red biohazard bags are pre-treated in an autoclave prior to final disposal as RMW.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Regulated medical wastes (pre-treated or untreated) are transported by self (if within the Vet College) or EH&S to the CVM Waste Management Facility for final transport and disposal.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Stock cultures of infectious agents are secured against unauthorized access.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Hypodermic syringes and needles, when not in use, are secured (i.e., locking cabinet, drawer) against unauthorized access. A log of stock materials and their distribution is maintained. A Certificate of Need from the NYS Department of Health is on file.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments/Explanations for Special Practices

C. Safety Equipment (Primary Barriers)

	Yes	No	NA
1. Properly maintained biological safety cabinets, preferably Class II, or other appropriate physical containment devices are used whenever:			
a. Procedures with a potential for creating infectious aerosols or splashes are conducted. These may include centrifuging, grinding, blending, vigorous shaking or mixing, sonic disruption, opening containers of infectious materials whose internal pressures may be different from ambient pressures, intranasal inoculation of animals, and harvesting infected tissues from animals or eggs.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. High concentrations or large volumes of infectious agents are handled. Such materials may be centrifuged in the open laboratory if sealed rotor heads, centrifuge safety cups, or gasket-containing centrifuge tubes are used. These rotors, safety cups, or tubes are packaged and opened only in a biological safety cabinet.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Biological safety cabinets are certified annually, when cabinets are moved, or when HEPA filters are changed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- | | Yes | No | NA |
|---|--------------------------|--------------------------|--------------------------|
| 3. Face protection (goggles, mask, face shield or other platter guards) is used for anticipated splashes or sprays of infectious or other hazardous materials to the face, when the microorganisms must be manipulated outside the biological safety cabinet. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Protective laboratory coats, gowns, smocks, or uniforms designated for laboratory use are worn while in the laboratory. This protective clothing is removed and left in the laboratory before leaving for or travel through non-laboratory areas (e.g., cafeteria, library, administrative offices, public corridors). All protective clothing is disposed of in the laboratory, laundered by the institution, or autoclaved and laundered at home by personnel. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Suitable gloves (e.g., latex, nitrile, vinyl) are worn when hands may contact infectious materials, contaminated surfaces or equipment, or when handling infected animals. Wearing two pairs of gloves may be appropriate in certain circumstances. Gloves are disposed of when contaminated, removed when work with infectious materials is completed, and are not worn outside the laboratory. Disposable gloves are not washed or reused. Hands are washed after glove use. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Comments/Explanations for Safety Equipment

D. Laboratory Facilities (Secondary Barriers)

- | | Yes | No | NA |
|---|--------------------------|--------------------------|--------------------------|
| 1. Each laboratory contains a sink for hand washing. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. The laboratory is designed so that it can be easily cleaned and decontaminated. Carpets, rugs, and cloth furniture are not appropriate. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Bench tops are impervious to water and resistant to moderate heat, acids, alkalis, organic solvents, and chemicals used to decontaminate the work surface. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Laboratory furniture is sturdy and capable of supporting anticipated loads and uses. Spaces between benches, cabinets, and equipment are accessible for cleaning. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Whenever possible, biological safety cabinets are located deep within the laboratory away from doors, high traffic areas, supply and exhaust vents, and other disruptive equipment such as fume hoods. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. Vacuum lines are protected with liquid disinfectant traps, or HEPA or hydrophobic filters. Portable vacuum pumps may also be used (also properly protected with traps or filters). | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. If the laboratory has windows that open, they are fitted with fly screens. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. Laboratory doors are kept closed whenever work with biohazardous materials is conducted. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 9. An autoclave for pre-treatment of laboratory wastes is available. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 10. An eyewash facility is readily available within the laboratory. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Comments/Explanations for Laboratory Facilities
