

How to write your Lab-Specific Biosafety manual:

A Lab-Specific biosafety manual is a user guide for those working under your biohazard permit. It's a document to communicate technical information to aid the personnel working in your biosafety lab. It's a summary of experiments, a collection of your SOPs, safe lab practices that will be followed while handling and/or manipulating biohazards. To process your permit application, the biosafety officer and biosafety committee members review your lab specific biosafety manual to evaluate appropriateness of the incorporated safety measures for protection of the lab workers and the environment based on the work involved. Please note that [University Biosafety manual](#) is a guidance document which can be used as a foundation to develop your lab-specific biosafety manual.

Note: The University Biosafety manual, [Canadian Biosafety Standard](#) (CBS) or [Canadian Biosafety Handbook](#) (CBH) can be used as reference material, but do not meet the requirements for lab-specific procedures. FAQs that list relevant biosafety information on [biosafety webpage](#) can also be used as references to assist in development of lab specific procedures.

Lab-Specific Biosafety manual should include below listed elements:

- **Description of the containment lab:** Location i.e. building, dept. room # and physical and operational requirements that are being fulfilled in accordance with CBS. (For guidance, review [How will my CL2 lab be inspected](#) checklist to understand the physical and operational requirements of level 2 lab). If you intend to work with pathogens and/or infectious materials that require enhanced containment, include an addendum to the manual or an SOP including lab photos fulfilling the physical requirements dedicated room housing the required equipment that will be used to achieve [Enhanced Containment - CL2+](#).
- **Physical Lab security and operation:**
 - Include the types of access control i.e. e-access or key controlled
 - When is lab access granted? Is it only upon mandatory EHS (4 training completion, see below), who grants and revokes it? Is it PI or your dept. admin.? Which scenarios demand access cancellation for instance., when workers leave the University, or students are no longer actively enrolled? Are there particular actions that can deny lab access e.g. non-compliance to safety procedures?

- After hours procedures .e.g. no afterhours work is allowed at all, or work is permitted only through buddy system etc. as applicable.
- Any equipment or conduct of procedure that requires sign-in. For instance., mostly floor standing centrifuges in shared equipment room requires sign- in. How are these sign-in documents retained? Is it electronic or paper?
- List equipment on backup power such as freezer, biosafety cabinet, etc. It should include location of storage freezer or nitrogen tanks if used for storing biohazards.
- If storage is outside containment lab/zone, then list access controls in place such as individually locked freezer through key, code, or storage room housing freezer and/or liquid nitrogen tank is always locked. Please note that the freezer and/or liquid nitrogen tank must have relevant emergency contact information and biohazard signage.
- Include locations of PPE/supplies, who needs to be contacted for supplies/transportation.
- How laundry is prepared, picked up, send-off etc. If its contaminated, how to decontaminate prior sending for laundry
- Who is responsible for flushing of eyewashes weekly?
- If there is an exposure, what first response procedures are required to be followed.
- **Program overview:** Provide brief description of the program intent
- **Lab Specific Training:** Include lab or project specific training. required for personnel who would be working with biohazards or accessing your CL2 labs. (For guidance, review [How to do training needs assessment](#). [Please note that EHS 4 trainings are mandatory and are not required to be listed in the lab specific manual such as: Lab safety (also offered in-class), Online Biosafety for Principal investigator or Investigative Staff, Workplace Hazard Management Information System (WHMIS), Health Safety Awareness training for Supervisors or Workers. For biosafety training info, refer to [How to register and access Biosafety Training](#)] In addition to EHS mandatory training, you need to identify trainings required to operate equipment, procedures, or tasks regarding biohazardous materials.
 - Training should include a lab tour accompanied with hands-on training for specialized procedures or use of equipment. For instance, biosafety cabinet,

centrifuge and/or autoclave use, conduct any dry runs under supervision to confirm acquired training.

- Additionally, identify how this pre-operational training will be documented and signed by trainer and trainee.

- **Risk assessment:**

- For guidance, refer to step 1 Classify in FAQ [How to apply for new Biohazard Permit](#).
- List **Experimental procedures** used: a descriptive summary of experiments with biohazard and potential for aerosol generation should be included. Include use of equipment and barrier protection (such as Biosafety cabinets (BSCs), safety cups in centrifuge; frequency or threshold for cleaning equipment in the labs such as water bath or Sonicator); PPE & practices required to prevent exposure, lab policies and procedures. For guidance, review module **2.0 - CL2 Procedures and Practices** from Online biosafety. If using BSC, include BSC set up, before working and after working protocols in BSC, review **6.1 Ventilated Equipment** from Online Biosafety training for more info. Emphasize hand washing as its strongly recommended in CL2 lab after pulling off gloves, (videos can be reviewed here [Proper handwashing](#), [How to remove gloves safely](#).)

- **Waste management:** Include:

- type of waste,
- how it will be collected
- what tabletop containers for bench work or BSC will be use
- how each type of waste will be treated.
- how each type of waste will be transported outside of the containment zone prior to treatment (if applicable)include SOP or procedure for autoclaving (if applicable). Is there any sign up for centralized autoclave use, list the details. Include the frequency of Biological Indicators (BIs) used and any waste disposed via contractor through University of Guelph Biohazardous waste management procedures. For guidance, review [How to dispose of Biohazard waste](#) and SOP [Autoclave Biohazard Waste](#).

- **Medical Surveillance:** How can infection or disease be prevented by medical intervention i.e. vaccinations required (by lab personnel prior working with biohazards of interest, as applicable) and available treatment, upon exposure. (Refer to the

Occupational Health Surveillance – [Biosafety module](#) for more information. Completion of [Agreement on Biosafety \(AOB\)](#) aligns with Medical Surveillance.)

- **Decontamination:** List Chemical name of disinfectants used, their concentration, efficacy, time of contact. For dilutions, list their frequency (You can review module 3.2 Disinfectants from Online biosafety training course.)
- **Biohazard movement:** No write up is required but should review and can provide links [How to transport waste onsite \(not involving public roads\)](#) and [Quick Reference Guide](#) for off campus movement.
- **Emergency failures:** No write up is required as these SOPs are available on Biosafety page; links can be provided upon review for [Biological Spill Response Plan](#), [Emergency Procedure for Exposure](#) and [Loss or Failure of Containment](#); [Spill clean-up outside Biosafety cabinet](#) - The disinfectant to be used and the associated contact time should be reflected in the applicable biological spill plan. [Proper use of an eyewash station](#). [ARER - Annual Refresher Emergency Response Certification](#) can be reviewed and a link provided. Please note all SOPs/safety videos must be reviewed by the author of the manual prior providing links.
- You can include reference to your College/Department , fire/emergency procedures, drills, etc.
- include PI name, emergency contact details, date of issue and frequency of review of lab manual
- Include link to University biosafety webpage for easy access to all biosafety info (Forms, links, SOPs etc.):

