Staff

Laboratory Onboarding Safety Workbook

Disclaimer

This workbook is designed for use in clinical and public health laboratories, and its content is intended for informational purposes only. The inclusion of specific resources does not imply endorsement or recommendation by the Department of Health and Human Services or the Centers for Disease Control and Prevention (CDC).

CDC is not responsible for any errors or omissions that may occur by individuals using this toolkit. Each laboratory must comply with applicable federal, state, territorial, and local requirements and ensure its onboarding manual contains the correct information specific to the laboratory's processes and procedures. Each laboratory should determine how often their onboarding processes and procedures should be updated. Best practices include making updates on a predetermined regular basis, such as annually.

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Introduction

About This Workbook

This laboratory onboarding workbook contains essential information to equip new staff members to work productively in clinical or public health laboratories. It streamlines the onboarding process for laboratory directors and staff alike. This comprehensive guide provides the essential knowledge, resources, and tools required to join a new laboratory.

Audience for This Workbook

This workbook serves new laboratory staff as well as laboratory supervisors. The topics provide enough depth to give new employees a strong foundation of knowledge for laboratory work. Supervisors benefit from this workbook by having a helpful guide to provide a consistent onboarding experience. Experienced laboratory staff may also benefit from this workbook by reviewing it and refreshing their knowledge on important concepts.

In today's fast-paced and dynamic scientific landscape, efficient onboarding is paramount. Whether you are a seasoned laboratory supervisor or a new laboratory staff member, this workbook is for you.

Importance of This Workbook

The goal of this laboratory onboarding workbook is to support laboratory supervisors with tools for a structured, effective onboarding process, while providing new staff members with the knowledge and support they need to thrive in their new roles.

Developed by experienced laboratory professionals, this workbook provides a thorough body of knowledge for new laboratory professionals. This workbook covers topics including laboratory hazards, laboratory safety resources, risk management, laboratory work practices, incidents and near misses, emergency procedures and reporting, and handling medical incidents.

Using This Workbook

New laboratory staff should read through this workbook and complete its exercises as assigned by their supervisor. Supervisors can help new staff apply the information from the workbook in specific situations and workflows in their laboratories.

Working together, staff and supervisors can use this workbook to reinforce a laboratory culture of collaboration, innovation, safety, and integrity. This workbook serves as both a road map and a reference that can be used frequently.

Laboratory Symbols Job Aid

A hazard is any potential source of harm or adverse health effect. Laboratories can be hazardous workplaces. It is important to be aware of the hazards before working in a laboratory. This document identifies symbols for common laboratory hazards.

Animal Hazard

Animal hazards are associated with the care and use of research animals. Specific animal hazards in the laboratory include bites, scratches, allergens, and zoonoses.

Biological Hazard

Biological hazards are biological substances that harm the health of living organisms. Specific biohazards in the laboratory include human blood or bodily fluids, and infectious pathogens, such as SARS-CoV-2, *Staphylococcus aureus*, *Haemophilus influenzae*, and *Neisseria meningitidis*.

Chemical Hazards

A hazardous chemical is any chemical that fits in any of these categories:

- Health hazards (it is toxic or an irritant)
- Physical hazards (it is flammable or corrosive)
- Simple asphyxiants (replaces normal oxygen levels in the air)
- Combustible dust (can catch fire when it meets the air)
- Pyrophoric gases (can spontaneously combust in temperatures less than 130°F [54°C])
- Hazards not otherwise classified

Hazardous chemicals in the laboratory include formaldehyde, dichloromethane, acetonitrile, hydrochloric acid, methanol, and many disinfectants.

Laser Hazard

Laser hazards in the laboratory include industrial lasers and medical device lasers. Exposure to lasers can damage the eyes and skin. Lasers also have the potential to start fires.

Physical Hazards

Physical hazards include environmental hazards that may cause harm with or without contact. Specific physical hazards in the laboratory include robotic equipment, poor ergonomic conditions, extreme heat, extreme cold, sharps, and high-voltage electricity.

Sharps, such needles and scalpels, can transmit biological hazards when they have contacted blood, tissues, or other potentially infectious materials. A contaminated sharp could infect someone with a biological hazard.

Radioactive Hazard

Radioactive hazards typically refer to radiation caused by unstable atoms that give off particles and energy to reach more stable states. These particles and energy cause changes in the exposed cells, specifically to the DNA molecules inside the cells. Radioactive hazards in the laboratory include irradiators and various radionuclides used in biomedical research.

UV Hazard

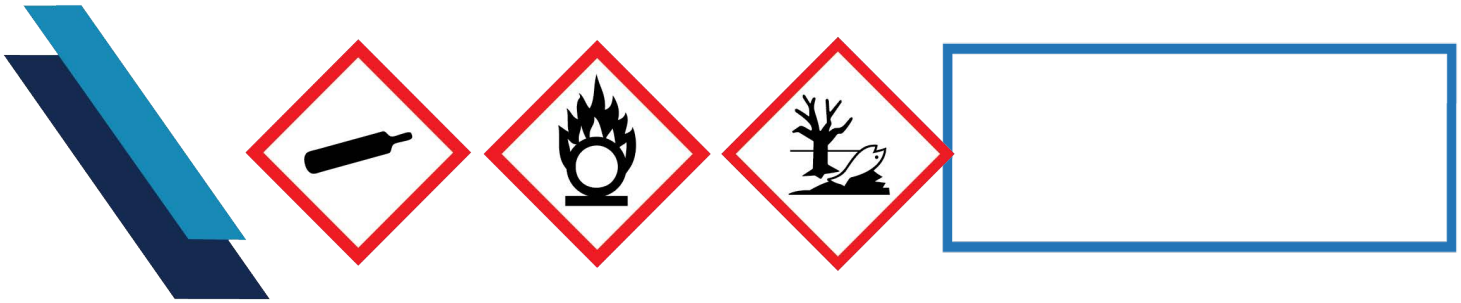
UV hazards include ultraviolet lights in the laboratory, such as those in biological safety cabinets, germicidal lamps, and transilluminators. These lights can harm the skin and eyes without any initial pain, and the damage may not appear until hours later.

Worksheet 1: Identifying Hazards in the Laboratory

This worksheet tests your knowledge of hazard signs.

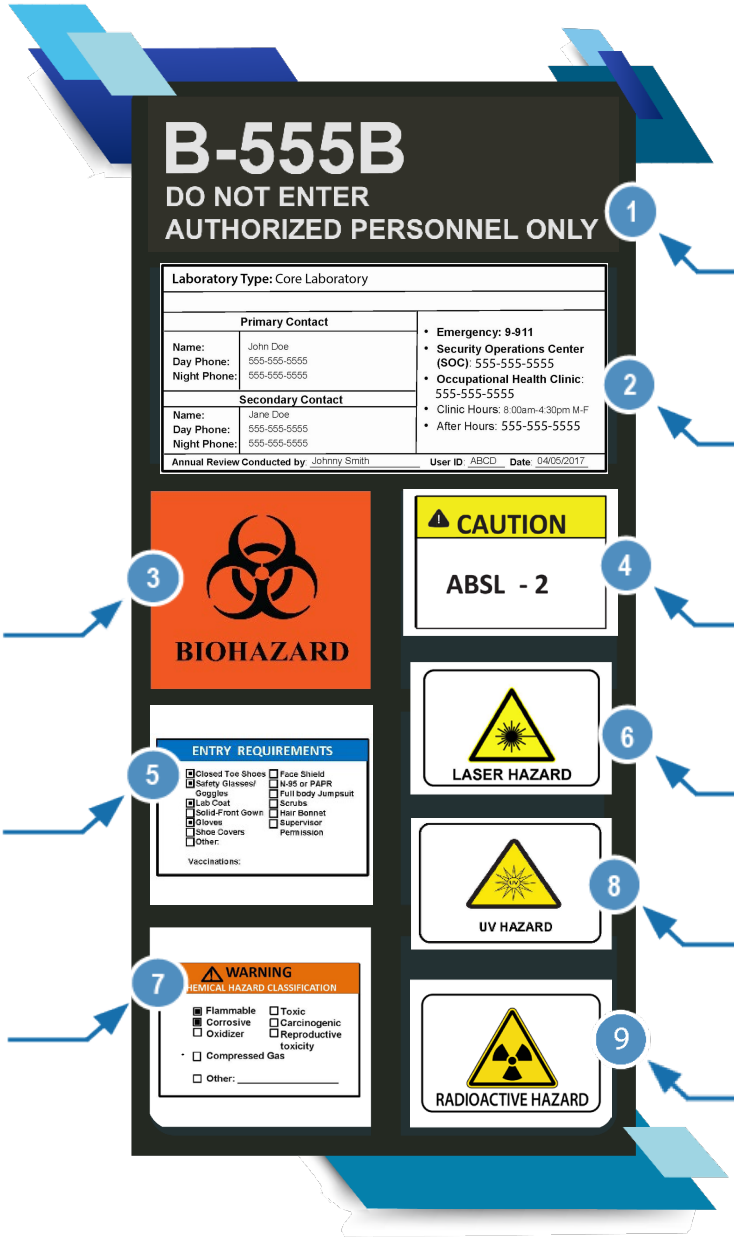
Laboratory Hazards

A hazard is any potential source of harm or adverse health effect. Identify each laboratory hazard pictured below by writing the name of the hazard above the image.



Laboratory Hazards Signage

This job aid identifies the information and hazard symbols typically posted outside laboratory doors.



1. Laboratory room number
2. Emergency contact Information
3. Presence of a biological hazard
4. Animal biosafety level of the laboratory
5. Requirements that must be met before entering the laboratory
6. Presence of lasers in the laboratory
7. Hazard class of chemicals in the laboratory
8. Presence of UV light hazards in the laboratory
9. Presence of Radioactive hazards in the laboratory

Notes

Worksheet 2: Identify Key Signs in the Laboratory

Laboratory Signs

Your laboratory likely has a sign at the entry door. It may show the categories of hazards inside the laboratory. It may list the requirements to enter the laboratory, such as special personal protective equipment (PPE), permission, or training. Your supervisor can give you more information about the specific hazards in the laboratory and additional requirements you will need for your work.

The signage may differ for your designated laboratory. However, laboratory signage often includes the elements in the list below. Locate signs with the information below that are present in your laboratory. Note what the signs look like and where they are located:

1. Room number:

2. Emergency contacts with names and phone numbers:

3. Biological safety level (BSL) or animal biological safety level (ABSL) designation and biohazard symbol:

4. Major chemical hazard classifications:

5. Entry requirements, such as PPE and vaccinations:

6. Additional hazards, including physical hazards like high voltage, laser, ultraviolet (UV) light, and radiation:

Worksheet 3: Document the Requirements for Entering the Laboratory

Now that you are familiar with the signs in your designated laboratory, find out what you need to do to enter the laboratory. Your supervisor can give you more information about the laboratory entry requirements.

List the requirements that must be met before entering your designated laboratory below:

Worksheet 4: Identify Locations of Shared Equipment

Laboratories may share equipment and space in common areas.

To avoid risks such as injuries or specimen contamination in shared spaces, it is important to maintain good housekeeping and follow best practices and standard operating procedures (SOPs) for laboratory safety. This is especially important when sharing equipment or space that many employees can access.

Identify shared locations that contain equipment that may be used by multiple laboratories in a facility. Complete the following checklist for areas and equipment used by your designated laboratory.

Table 1: Laboratory Shared Locations

Laboratory Shared Locations	Yes	No
Corridors with longitudinal or linear equipment rooms (LERs)	☐	☐
Dry ice and liquid nitrogen storage areas	☐	☐
Walk-in freezers and refrigerators	☐	☐
Chemical storage rooms (inside and outside labs)	☐	☐
Compressed gas storage	☐	☐
Autoclave rooms	☐	☐
Freezer rooms	☐	☐

Laboratory Safety Resources

Laboratory staff members face a wide range of hazards on the job, including infectious agents, sharps, and hazardous chemicals. The risk, injury, or exposure is never eliminated. A culture of safety helps to prevent or reduce harm from these hazards.

Laboratory staff members have access to laboratory supervisors, team leads, and safety representatives or managers who serve as immediate resources to answer questions and provide feedback and guidance.

Laboratory staff also have important documentation available in their laboratory. Staff should know where to find these documents and review them with you as part of their orientation. As the supervisor, you should remind staff to review these safety documents every year and whenever safety protocols change.

Typical Laboratory Safety Resources

Resources that are typically available in a laboratory are listed below. Please note, not all laboratories will have all the following resources:

Laboratory Standard Operating Procedure (SOP): SOPs are written instructions documenting how to safely perform work within your laboratory. SOPs are required documents.

Laboratory-Specific Safety Manual: A manual that includes any laboratory specific emergency information, related personnel information, risk management information, safety drill information, information on laboratory specific personal protective equipment, specific spill-cleanup procedures, disinfection and decontamination information, any laboratory specific forms, and any other laboratory specific safety information.

Laboratory-Specific Chemical Hygiene Plan (CHP): The CHP informs laboratory staff members about the harmful properties of these substances, and appropriate control measures necessary to reduce the risk of exposure.

Facility Laboratory Chemical Hygiene Plan: For facilities with multiple laboratories, this document describes guidance and procedures for reducing exposures to hazardous chemicals in all your facility's laboratories.

Laboratory Biosafety Manual: This is a document designed to assist all laboratory staff in assessing the risks posed by biological agents and in evaluating the mitigation steps that can reduce these risks.

Laboratory Radiation Safety Manual: Radiation safety manuals are located only in laboratories that use radioisotopes for their testing procedures. They detail radiation safety requirements for laboratories handling radioisotopes in accordance with the U.S. Nuclear Regulatory Commission.

Safety Data Sheets (SDS): Laboratories should have an SDS provided by the manufacturer or distributor of each hazardous chemical stored in the laboratory. The SDS includes information such as the properties of each chemical; the physical, health, and environmental health hazards; protective measures; and safety precautions for handling, storing, and transporting the chemical. SDS were previously known as material safety data sheets (MSDS).

Worksheet 5: Document Safety Resources in Your Laboratory

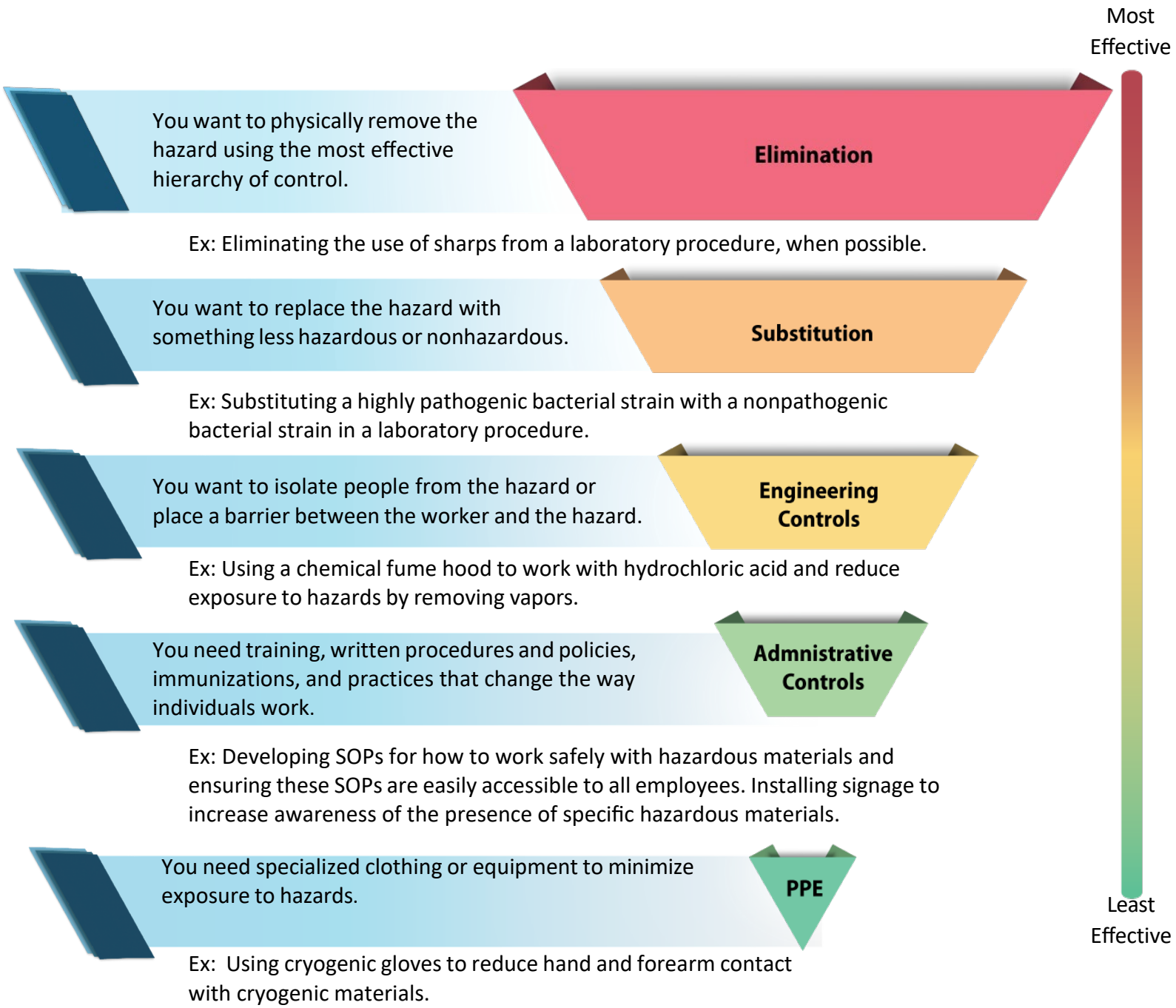
You should know where to find important documents in your laboratory. Take time to review them with your supervisor as part of your orientation. Document the location of the following safety resources for your laboratory.

1. Name and contact information for person who can address laboratory safety questions, concerns, and suggestions:
2. Laboratory Standard Operating Procedures (SOP):
3. Laboratory-Specific Safety Manual:
4. Laboratory-Specific Chemical Hygiene Plan (CHP):
5. Facility Laboratory Chemical Hygiene Plan (if applicable):
6. Laboratory Biosafety Manual:
7. Laboratory Radiation Safety Manual (if applicable):
8. Safety Data Sheets (SDS; was Material Safety Data Sheets or MSDS):

Risk Management

Risk management is a system or process that includes risk assessment, risk mitigation, and risk evaluation. There are five control measures used to mitigate risk. They are listed here in order of relative effectiveness in reducing risks and are referred to as the hierarchy of controls.

Figure 1: Hierarchy of Controls Decision Table



Worksheet 6: Identify Control Measures

Review the hierarchy of controls terms, definitions, and decision table**.** Identify control measures in your laboratory that fit into the following categories of controls:

1. Elimination (ex: eliminating the use of sharps from a laboratory procedure, when possible):

2. Substitution (ex: substituting a highly pathogenic bacterial strain with a nonpathogenic bacterial strain in a laboratory procedure):

3. Engineering (ex: using a chemical fume hood to work with hydrochloric acid and reduce exposure to hazards by removing vapors):

4. Administrative (ex: developing SOPs for how to work safely with hazardous materials and ensuring these SOPs are easily accessible to all employees):

5. Personal Protective Equipment (ex: Using cryogenic gloves to reduce hand and forearm contact with cryogenic materials):

Common Work Practices in the Laboratory

You are the first line of defense for protecting yourself, others, and the public from exposure to hazards. One of the most important decisions you can make is to follow safe work practices to reduce the likelihood of personal exposure. The following are common safety work practices that may be required by your laboratory.

Personal Safety Work Practices

Common personal safety work practices in the laboratory include:

- Do not recap needles or re-sheath scalpels.
- Do not eat, drink, or store food or drinks in the laboratory.
- Do not apply makeup or lip moisturizer, or handle contact lenses in the laboratory.
- Do not pipette using your mouth.
- Wear proper PPE, such as safety glasses and a laboratory coat upon entering the lab.
- Wash your hands after removing your gloves and before exiting the laboratory.
- Wear appropriate clothing, such as closed-toe shoes and long pants.
- Tie back loose hair.
- Stay up to date on your vaccinations.

Facility Safety Work Practices

Common facility safety work practices in the laboratory include:

- Ensure that emergency equipment, fire extinguishers, and emergency exits are not blocked.
- Know the location and protocols for fire extinguisher and Automated External Defibrillator (AED) use.
- Know the location and procedures to use eyewashes, safety showers, first aid kits, biological spill kits, chemical spill cabinets, and exits.
- Maintain proper airflow by keeping laboratory doors closed.
- Clean up spills, loose paper, and clutter on the floor to reduce slips and falls.
- Use easily cleanable laboratory furniture (for example, laboratory chairs cannot be cloth covered).

General Safety Work Practices

Common general safety work practices in the laboratory include:

- Discard anything that can puncture skin into sharps containers; do not re-sheath or recap needles before putting them in the sharps container.
- Discard biohazardous broken glass, like capillary tubes, in the sharps container.
- Place non-biohazardous broken glass in a separate waste container, not the sharps container.
- Place chemicals in assigned storage areas.
- Label all containers.
- Escort visitors at all times.

Worksheet 7: Common Work Practices in the Laboratory

Now that you are familiar with some common work practices in most laboratories, discuss the common work practices in your laboratory with your supervisor. Document them below in the category where they fit best.

Personal Safety Work Practices

What personal safety work practices do you need to follow for your laboratory?

Facility Safety Work Practices

What facility safety work practices do you need to follow for your laboratory?

General Safety Work Practices

What general safety work practices do you need to follow for your laboratory?

Waste Disposal Practices

You and your staff are the first line of defense for protecting themselves, others, and the public from hazards. You can follow best practices to dispose of hazardous waste. Below are common laboratory disposal practices for biological waste, chemical waste, and wastewater.

Biological Waste Disposal

Biological waste contains a biohazardous agent, or it includes material contaminated or potentially contaminated by a biohazardous agent. General waste from biosafety level (BSL)-1 and -2 laboratories is considered safe. Staff must decontaminate all other waste removed from a laboratory.

Decontaminate these example items:

- Pipette tips, pipettes, plastic tubes, vials, and petri dishes
- Biological cultures, specimens, and tissue samples
- Sharps in a sharps container
- Disposable gloves and gowns

Chemical Hazardous Waste Disposal

Chemicals are hazardous waste if they meet the EPA characteristics for ignitability, corrosivity, reactivity, toxicity. Chemicals on the U-list or P-list are also hazardous. Items on the U- or P- lists are pure or commercial formulations of unused chemicals.

DO NOT wash chemical hazardous waste down the drain. Follow the steps in your laboratory's SOP to dispose of chemicals safely.

Ask your supervisor and laboratory safety staff about disposing of chemical and regent bottles. Empty reagent bottles can be used to collect compatible chemical waste, or they may be recycled.

DO NOT use chemical fume hoods to evaporate chemical waste. These are common examples of chemical waste:

- Chemical waste from a procedure
- Spent media collected from a vacuum collection flask
- Expired reagent chemicals
- U-listed and P-listed chemicals, such as sodium azide and sodium cyanide

Wastewater Disposal

Laboratory substances in wastewater have specific disposal requirements. Do not dispose of hazardous wastes (biological, radiological, or chemical) down the drain. Also, do not dilute chemicals to dispose them down the drain.

Prevent chemicals from going down the drain:

- Do not store hazardous chemicals in or over the drain.
- Cover drains to protect them from hazardous material. When in doubt, do NOT put waste down the drain! Ask your supervisor or laboratory safety staff what you may dispose down the drain.

Universal Waste Disposal

Universal waste is a category of hazardous waste that contains common items.

These are common examples of universal waste:

- Batteries (excluding alkaline batteries)
- Fluorescent or ultraviolet lamps
- Items that contain mercury (thermometers, thermostat switches)

Universal waste comes from consumer products containing mercury, lead, cadmium, and other substances that are hazardous to human health and the environment. Do not discard these items in the municipal waste stream or landfills. Instead, collect these items so professionals can reclaim some parts of them and dispose of the rest.

Contact your supervisor or laboratory safety staff to find out how to properly dispose of these items.

Nonhazardous Waste Disposal

Nonhazardous waste is any material in a BSL-1 or -2 laboratory without biohazardous, radiological, or chemical agents. Nonhazardous waste can usually be discarded in your general waste stream.

Note: BSL-3 and BSL-4 laboratories do not generate nonhazardous waste and do not have general waste streams.

These are examples of nonhazardous waste:

- Paper towels used to dry your hands
- Boxes and inserts
- Unused laboratory supplies ONLY if they are in their original packaging

Do not dispose of gloves, vials, caps, test tubes, filters, instrument columns, syringe barrels, or pipette tip boxes as general waste at any time. Ask your supervisor how to dispose of these items correctly.

Worksheet 8: Waste Disposal Practices in the Laboratory

It's important to understand how your specific laboratory disposes different types of waste. Identify how your laboratory disposes of specific waste using this worksheet as a reference..

1. Document how the following biological waste is disposed of in your laboratory:
    a. Pipette tips, pipettes, plastic tubes, vials, and petri dishes

    b. Biological cultures, specimens, and tissue samples

    c. Sharps in a sharps container

    d. Disposable gloves and gowns

2. Document how the following chemical waste is disposed of in your laboratory:
    a. Chemical waste from a procedure

    b. Spent media collected from a vacuum collection flask

    c. Expired reagent chemicals

    d. U-listed and P-listed chemicals, such as sodium azide and sodium cyanide

3. Document how the following non-hazardous waste is disposed of in your laboratory:
    a. Paper towels used to dry your hands

    b. Boxes and inserts

    c. Unused laboratory supplies in their original packaging

4. Universal waste comes primarily from consumer products containing mercury, lead, cadmium, and other substances that are hazardous to human health and the environment. These items cannot be discarded in the municipal waste stream or disposed of in landfills. Rather they are collected, so components of them can be reclaimed and other parts disposed by professionals. Document how the following universal waste items are disposed of in your laboratory:
    a. Batteries (excluding alkaline batteries)

    b. Fluorescent or UV lamps

    c. Items that contain mercury (thermometers, thermostat switches)

5. Document how the following potentially recyclable items are disposed of in your laboratory:
    a. Water bottles
    b. Phosphate buffered saline (PBS) bottles
    c. Cell culture media bottles
    d. Unused Falcon or conical tubes
    e. Pipette tip boxes and inserts

6. Document who in your laboratory is responsible for ensuring hazardous materials (e.g., specimens, cultures, or chemicals) are transported safely on campus or between floors:

7. Document who in your laboratory is responsible for ensuring hazardous materials (e.g., specimens, cultures, or chemicals) are shipped properly to other laboratories:

Worksheet 9: Safety Training in the Laboratory

To work in the laboratory, you are required to successfully complete all relevant safety training. The needed safety training is determined by:

- Your job description
- Specific equipment and materials you use
- Specific tasks and procedures you perform in the laboratory

A current list of the available laboratory safety training can typically be found in your laboratory SOP. Your laboratory supervisor will help you determine the required safety trainings before you begin working in the laboratory. List the required training below and check the box next to each training when you have completed it:

Table 2: List of required trainings

Name of Required Training	Date Training was Completed

Incidents and Near Misses

Recognizing and reporting incidents and near misses is an important part of laboratory safety. An incident is any circumstance that causes injury or illness to you, your coworkers, or damage to property, products, or the environment. A near miss is an event or situation that does not result in injury, illness, or damage but has the potential to cause a serious incident. Most laboratories require reporting of all incidents and near misses to continually improve laboratory safety.
Examples of incidents include:

- An exposure to an infectious agent or hazardous chemical
- Tripping over a box of supplies left on the floor

Examples of near misses include:

- A technician finds a broken flask in the laboratory
- A technician punctures their glove without injury to the skin

To report an incident or near miss, notify your supervisor immediately and follow the procedures on your laboratory's specific standard operating procedures (SOPs). Your supervisor or laboratory safety staff will determine if what happened was a near miss or an incident. Your incident response may vary based on your laboratory's SOPs.

When an incident or near miss is not reported:

- It may happen again and with more severe consequences.
- If an injury later becomes more severe, the person may not be able to claim worker's compensation, or other entitled medical and financial benefits.
- Exposure to pathogens that are not reported immediately may result in the person becoming ill later and exposing others during the incubation period.

Worksheet 10: Reporting Incidents and Near Misses

Refer to your laboratory SOP for guidelines on Reporting Incidents and Near Misses. Use these guidelines to complete the following exercises.

1. **Document your laboratory's procedure for reporting near misses.**
   Consider this scenario: You are working in the laboratory and wearing gloves. While removing a hypodermic needle from the original packaging, where no organism is present, your glove is punctured. There is no injury to the skin. How would you report this incident?

   Use the space below to document your labs procedure for reporting incidents.

2. **Document your laboratory's procedure for reporting safety incidents.**
   Consider this scenario: You are working in the laboratory and drop a glass tube containing an infectious microorganism. The tube breaks and, though nobody cuts their skin on the broken glass, a few people in the laboratory were splashed with liquid from the tube and one person becomes ill. How would you report this incident?

   Use the space below to document your labs procedure for reporting incidents.

Emergency Procedures: Weather and Facilities

Emergencies can happen in the laboratory. It's important to be familiar with and practice emergency response procedures for emergencies that could occur while working in the laboratory.

Examples of potential emergencies include:

- Facility-related emergencies
- Weather-related emergencies

Facility-Related Emergencies

Facility-related emergencies include electrical issues, water leaks, HVAC or directional airflow issues, and fires.

Follow these steps for facility-related emergencies:

1. Stop what you are doing.
2. Secure hazardous materials or dangerous equipment.
3. Follow your laboratory's exit procedures.
4. Notify your supervisor and laboratory staff office as soon as possible.

Weather-Related Emergencies

Weather-related emergencies include tornadoes and earthquakes.

Follow these steps for weather-related emergencies:

1. Stop what you are doing.
2. Secure hazardous materials or dangerous equipment only if you have enough time to leave safely.
3. Follow your laboratory emergency procedures.

Worksheet 11: Documenting Weather and Facility Related Emergencies

Document your laboratory's procedure for weather-related and facility-related emergencies: Each facility has a process for addressing weather-related and facility-related emergencies. Contact your supervisor or laboratory safety staff to learn more about specific evacuation procedures including how to secure hazardous and infectious materials. Be sure to complete emergency procedures and reporting training as required by your laboratory.

1. Weather-related Emergencies

Weather-related emergencies include tornadoes and earthquakes.

What types of weather emergencies are likely to occur in your lab's area?

What are your laboratory emergency procedures for a weather-related emergency?

2. Facility-related Emergencies

Facility-related emergencies include electrical issues, water leaks, HVAC and/or directional airflow issues, and fires.

How does your lab handle facility-related emergencies?

Emergency Procedures: Medical Emergencies

You and your staff are the first line of defense for protecting themselves, others, and the public from hazards. Following best practices can help avoid exposure to blood or potentially infectious materials.

Use the space below to document your laboratory's emergency medical procedures for the following types of exposures: ingestion, percutaneous injury, inhalation, and direct contact/dermal absorption.

If you are exposed to blood or other potentially infectious materials (OPIM), follow these steps first:

- If possible, notify your coworkers in the laboratory about the exposure so they can assist.
- Remove contaminated personal protective equipment.
    - Wash needlestick injuries and cuts with soap and water for at least 15 minutes.
    - Flush splashes to the nose, mouth, or skin with water for at least 15 minutes.
    - Irrigate eyes with clean water, saline, or sterile wash for at least 15 minutes.
- Promptly report all exposures to your supervisor to ensure you receive appropriate follow-up care.

Types of Exposure-Incident Responses

Ingestion Exposure

- Remove contaminated personal protective equipment (PPE).
- Flush splashes to mouth with water for at least 15 minutes.
- If possible, notify your coworkers in the laboratory about the exposure so they can assist.
- Promptly report all exposures to your supervisor to ensure you receive appropriate follow-up care.

Percutaneous Injury

A percutaneous injury is an injury through the skin.

- Remove contaminated personal protective equipment (PPE).
- Wash needlestick injuries and cuts with soap and water for at least 15 minutes.
- Promptly report all exposures to your supervisor to ensure you receive appropriate follow-up care.
- Always follow your laboratory's SOPs to clean up blood or OPIM spills.
- Make every effort to limit the spread of the blood or OPIM spill and protect others from exposure by isolating the spill area.

Inhalation Exposure

Laboratory activities may expose employees to air contaminants that can be dangerous if inhaled.

- If you are not wearing respiratory protection, hold your breath to avoid inhaling air from contaminated area.
- All persons must leave affected area.
- Remove contaminated personal protective equipment (PPE).
- Wash hands thoroughly with soap and water.
- Post a spill sign at the laboratory entrance, if applicable.
- Do not enter the contaminated area for at least 30 minutes.
- Follow your laboratory's procedure to notify your coworkers in the laboratory about the exposure.
- Always follow your laboratory's SOPs to clean up blood or OPIM spills.
- Promptly report all exposures to your supervisor to ensure you receive appropriate follow-up care.

Direct Contact/Dermal Absorption

- Remove contaminated personal protective equipment (PPE).
- Flush splashes to the nose, mouth, or skin with water for at least 15 minutes.
- Irrigate eyes with clean water, saline, or sterile wash for at least 15 minutes.
- Use the nearest eyewash station for eyes, nose, and mouth.
- Use the nearest sink for other areas of skin.
- For larger exposures, use safety shower.
- Follow laboratory exit procedures.
- Post a spill sign at the laboratory entrance, if applicable.
- Follow your laboratory's procedure to notify your coworkers in the laboratory about the exposure.
- Always follow your laboratory's SOPs to clean up blood or OPIM spills.
- Make every effort to limit the spread of the blood or OPIM spill and protect others from exposure by isolating the spill area.
- Promptly report all exposures to your supervisor to ensure you receive appropriate follow-up care.

Worksheet 12: Documenting Laboratory Emergency Medical Procedures

Use the space below to document your laboratory's emergency medical procedures for the following types of exposures: ingestion, percutaneous injury, inhalation, and direct contact/dermal absorption.

Write your lab's procedures for the following medical emergencies:

Ingestion:

Percutaneous injury:

Inhalation:

Direct contact and dermal absorption:

Medical Emergency Response: Life-Threatening vs. Non-Life-Threatening Emergencies

Non-Life-Threatening Emergencies

Non-life-threatening emergencies include injuries or illnesses that occur at work.

Follow these steps in case of a non-life-threatening emergency:

- Provide first aid to yourself or your coworker if trained to do so.
- Notify your supervisor and laboratory safety staff as soon as possible.
- Go to a healthcare provider or accompany your coworker to a healthcare provider.
- Have a coworker call the healthcare provider to notify them that you are coming.

Life-Threatening Emergencies

Life-threatening emergencies include severe injuries or unconsciousness.

Follow these steps in the case of a life-threatening emergency:

- When you call 911, notify the appropriate people in your facility (e.g., front desk, security, public safety) so they can direct first responders to your exact location.
- Notify your supervisor and laboratory safety staff as soon as possible.

Before you have to face an emergency, locate your facility's emergency contact list and SOPs for responding to a medical emergency.

Incident Forms

After an incident in the laboratory, you will likely have to complete an incident form. Incident forms document the facts around an event in the laboratory.

You will likely need to complete an incident form if you seek medical treatment. You may need to complete an incident form even if no one was injured in the incident.

Refer to your laboratory's SOPs, ask your supervisor, or contact laboratory safety staff if you have questions about completing incident forms.

Reporting Medical Incidents

Exposure incidents in the laboratory requiring medical attention can occur at any time. Knowing and practicing the proper response and reporting procedures for incidents involving blood and other potentially infectious materials (OPIM) is important. These procedures are described below.

- Workers exposed in the following ways must follow relevant steps immediately:
  - Needlestick and Cut Exposures: Wash needlesticks and cuts with soap and water for at least 15 minutes.
  - Splash Exposure: Flush splashes to the nose, mouth, or skin with water for at least 15 minutes.
  - Eye Exposure: Irrigate eyes with clean water, saline, or sterile wash for at least 15 minutes.
- All Exposures: Promptly report all exposures to your supervisor to ensure that you receive appropriate follow-up care.

Notes

Worksheet 13: Documenting Your Laboratory's Reporting Process for Medical Emergencies

Your laboratory will have specific procedures for reporting medical emergencies. Complete the exercises below to learn more about your laboratory's processes.

1. Your facility's emergency contact list. List the names and numbers need when responding to an emergency in the space below.

Table 3: Facility Emergency Contact List

Name	Phone Number

2. Following an exposure and reporting, what are your next steps? Refer to your laboratory's SOPs, ask your supervisor, or contact laboratory safety staff to determine what forms you will need to complete and where to find them. List the forms you will need to complete if you seek outside medical care after an incident in the laboratory in the space below.

3. Document the steps to take if a life-threatening medical emergency happens in your laboratory. Life-threatening emergencies include severe injuries or unconsciousness.

4. Consider this scenario: Your coworker seriously cuts their hand on a piece of broken glass while getting ready for a procedure. According to your laboratory's SOP, what should you do?

Staff Tips by Section

Laboratory Symbols Job Aid:

- Know the proper emergency response procedures for accidents or injuries in the laboratory.
- Use equipment and hazardous materials only for their intended purposes.

Laboratory Safety Resources:

- Know the location of safety resource documents like SDS's, SOP, CHP, laboratory biosafety manual and ensure to use current versions.
- Follow proper laboratory safety procedures.

Personal Safety Work Practices:

- Wear proper lab attire and never eat or drink in a laboratory.
- Review and update your risk assessments as needed.

Facility Safety Work Practices:

- Know where your laboratory's safety equipment is located — including first aid kit, fire extinguisher, eye wash station, and safety shower — and how to properly use it.
- Always be alert and proceed with caution in the laboratory. Immediately notify the supervisor of any unsafe conditions.

Incidents and Near Misses:

- Must report all workplace incidents, hazardous conditions, near misses, property, and environmental damage to their immediate supervisor as soon as possible.

Emergency Procedures: Weather and Facilities:

- Practice safety drills.
- Report to your supervisor any accident, injury, or uncontrolled release of potentially hazardous materials; no matter how trivial the accident, injury, or release may appear.

Emergency Procedures: Medical Emergencies:

- A good incident report is complete and accurate, so be precise and document as much information as possible.
- Make sure that you and others are safe from further danger.

Resources

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