# HEALTH & SAFETY GUIDANCE DURING COVID-19

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2.0 INTRODUCTION

This guide supports supervisors, managers, and directors in developing a plan for their workspaces that will minimize the spread of infectious disease, in particular COVID-19. All measures presented here should be considered when developing your plan for re-starting work at University of Waterloo sites, however not everything here may be applicable for every work situation. It is up to the user to implement the pieces of this guide that are best suited to their work environment.

3.0 PURPOSE

This guide provides instructions on the processes to be implemented and personal protective equipment (PPE) to be used at the University upon re-entering the workplace to minimize the spread of infectious disease, primarily COVID-19.

4.0 SCOPE

This guide only contains protocols and PPE recommendations to minimize the spread of infectious disease. It does not provide procedures to minimize other types of safety risk.

Note: This guide assumes that workers and students are healthy and not showing any symptoms of COVID-19. If anyone begins exhibiting symptoms as described by Health Canada, they must immediately self-isolate and follow the University's instructions found at https://uwaterloo.ca/coronavirus/.

5.0 ROLES AND RESPONSIBILITIES

5.1 DIRECTORS/MANAGERS/SUPERVISORS

- Determine which measures from this guide are appropriate to be implemented in their workspace.
- Outline these measures clearly to any individuals who will be entering or working in the space.
- Ensure measures implemented are understood, followed and enforced using measures up to progressive discipline if needed.
5.2 WORKERS AND STUDENTS

- Undergo any training as required by the University and your supervisor.
- Follow procedures to minimize the spread of infectious disease, specifically COVID-19.
- Follow University of Waterloo procedures for disclosing COVID-19 symptoms.
- Wear personal protective equipment as required by your supervisor.
- Participate in medical surveillance programs, when appropriate.

5.3 SAFETY OFFICE

- Keep this guide updated with the latest and best information available.
- Provide interpretation of this guide where needed.
- Monitor adherence to this guide and public health directives.

6.0 PRIMARY CONTROL MEASURES

The following three primary controls are to be implemented to minimize the spread of infectious disease:

1. Physical distancing
2. Hand hygiene and respiratory etiquette
3. Surface cleaning

6.1 PHYSICAL DISTANCING – OCCUPANCY AND WORKFLOW

Designating occupancy limits for spaces to accommodate a 12.5 m² (2 m diameter) space per person is the most effective way of maintaining physical distancing. This can be achieved by scheduling work and staggering the time that workers are allowed to perform tasks.

Designation of a workflow within a workspace can also have a profound effect on minimizing incidental infringement on personal space. The diagrams below identify traffic-flow designations and occupancy reductions for both office and lab environments.
Figure 1A below depicts a typical office environment and Figure 1B shows a laboratory environment.

- Red arrows (↔) indicate the suggested one-way flow pattern.
- Circles with OL (OL-2) indicate an occupancy limit for the room.
- Red circles with x’s (⊗) indicate suggested reductions in occupancy.

When determining if the occupancy load can be reduced, consider the following factors:

- Workflow
- Equipment usage/sharing
- Equipment requirements and supplies
- Process requirements and supplies
- Creation of workstations to designate work and separate tasks
- Scheduling of work or equipment
- Non-essential tasks removed from high demand workspaces
- PPE requirements and availability

The decision tree below takes you through the process of determining if physical distancing is possible.
Figure 2: Decision tree for determining if physical distancing is possible

6.2 HAND HYGIENE AND RESPIRATORY ETIQUETTE

In most workplaces, hands are the most common vehicle for the transmission of microorganisms. By controlling this hazard, the transmission of microorganisms from person to person, environment to person, or person to environment can be reduced.

Hand hygiene can be accomplished by hand sanitizing using an alcohol-based hand rub (ABHR) or hand washing using soap and running water.
Frequency of hand hygiene

- Hands should be washed or sanitized upon entering and exiting any space (room to room).
- Hands must be washed or sanitized before beginning any procedure.
- Hands must be washed or sanitized after removing gloves and after performing any surface decontamination.

6.2.1 HAND WASHING STEPS:

1. Wet hands with warm water.
2. Apply soap to hands.
3. Lather soap and rub hands palm to palm.
4. Rub in between and around fingers.
5. Rub the back of each hand with the palm of the other hand.
6. Rub fingertips of each hand in the opposite palm.
7. Rub each thumb clasped in the opposite hand.
8. Rinse thoroughly under running water.
9. Pat hands dry with a disposable towel.
10. Turn off the water with the disposable towel.

Refer to these resources from Public Health Ontario:

- How to Hand Wash (video)
- Hand Wash Pocket Guide

6.2.2 HAND SANITIZING STEPS:

1. Apply 1 or 2 pumps of product to palms of dry hands.
2. Rub palms together palm to palm.
3. Rub in between and around fingers.
4. Rub the back of each hand with the palm of the other hand.
5. Rub fingertips of each hand in opposite palm.
6. Rub each thumb clasped in the opposite hand.
7. Rub hands until dry and do not use paper towels.
Refer to these resources from Public Health Ontario:

- [How to Hand Rub](#) (Video)
- [Hand Rub Pocket Guide](#)

If you wear rings (or other hand jewelry), removing the ring before washing and replacing when complete is not acceptable. You must either completely decontaminate the ring during each hand wash/sanitize or stop wearing hand jewelry altogether.

### 6.2.3 Respiratory Etiquette

Infectious diseases can easily spread when an individual coughs and sneezes. Manage this potential using the following etiquette:

- Cover your mouth and nose when you cough or sneeze, and immediately discard the tissue in the trash.
- If a tissue is not available, cough or sneeze into your elbow, not your hands.
- Perform hand hygiene immediately after blowing your nose, coughing or sneezing.
- If you are experiencing fever, cough, runny nose, or headache, isolate yourself at home or another suitable location and follow the University’s protocol for individual disclosures of COVID-19.

### 6.3 Surface Decontamination

Surface decontamination involves two stages, cleaning then disinfection.

#### 6.3.1 Stage 1: Surface Cleaning

Cleaning removes organic materials from the surface. This is because organic substances inhibit the effectiveness of any disinfectant used. Cleaning involves:

- Wearing nitrile or other similar gloves
- Removing organic materials with a disposable towel and discard
- Using a cloth and warm soapy water to wipe down surfaces
- Allowing the surface to dry

#### 6.3.2 Stage 2: Surface Disinfection

The three most important factors to consider when disinfecting a surface are:

- Disinfectant efficacy against whatever you are trying to kill
- Concentration of the disinfectant is strong enough to be effective
- Contact time is long enough to allow the disinfectant to perform its action

Some commonly used disinfectants include:
- Alcohol based (60% - 70% isopropanol or ethanol) for a contact time of 5 minutes
- Hydrogen peroxide at 3% for a contact time of 10 minutes
- Bleach at a 10% dilution for a contact time of 10 minutes

**6.3.3 PROCEDURE FOR USING DISINFECTANTS**

1. Put on gloves (nitrile gloves are normally sufficient, but check with manufacturer instructions).
2. Clean surface as described in 6.3.1 Stage 1: Surface Cleaning.
3. Spray or apply disinfectant onto the clean, dry surface.
4. Allow the disinfectant to sit on the surface for the duration of contact time (reapply if disinfectant evaporates prior to required contact time).
5. Allow the surface to dry.
6. Wipe off residue with a paper towel and discard.
7. Remove your gloves.
8. Perform hand hygiene.

**Note:** Appendix 1 contains instructions for using bleach, hydrogen peroxide, and/or alcohol as a disinfectant. It also contains a link to disinfectants deemed effective against COVID-19.

**6.3.4 SURFACE DISINFECTION FREQUENCY**

Surface disinfection should take place before beginning work or using a surface, and after work has concluded. High touch areas, such as doorknobs, handles on drawers and cupboards, and commonly used equipment should be disinfected twice daily.

Before returning to work, these criteria must be communicated to any workers that will be using the workspace. Ensure the following is clear:
- Clean a surface **before** disinfecting it.
- Ensure the disinfectant is used in the right concentration.
- Ensure the disinfectant remains in contact with the surface for the right amount of time.
- It is important to have designated individuals or maintained schedules to perform this decontamination.
7.0 SECONDARY CONTROL MEASURES - PPE

Personal protective equipment (PPE) is normally considered the last line of defence. It is a way to control hazards when other more effective options of control are not available.

This section focuses on the following:
- When PPE is required
- Glove considerations
- Lab coat considerations
- Order of Operations - putting on and taking off PPE

7.1 WHEN IS PPE REQUIRED?

If physical distancing is possible and hand hygiene and surface decontamination are both performed adequately, the risk of disease transmission will be low and minimal PPE or no PPE will be required.

7.2 FACEMASKS AND RESPIRATORS

There are numerous types of facemasks and respirators available. This section differentiates between these pieces of equipment.

7.2.1 N95 RESPIRATORS

N95 respirators are classified as single-use or disposal respiratory protection devices. They are designed to form a tight seal around a wearer’s nose and mouth and must be fit test to provide the intended efficiency (95% efficiency of removing particles 0.3 um). N95 masks are NIOSH certified to meet their labelled efficiency.

Surgical N95’s are fluid resistant to some degree, but not fluid-proof. Once soiled, deformed, or damaged they should be discarded. Industrial N95 respirators can come in oil-resistant and non oil-resistant models. Regardless of the type, N95 masks undergo rigorous testing to certify their intended efficiency. Stated efficiencies can only be achieved if the wearer has been:
- Sized properly for a mask
- Trained on its care, use, and limitations; and,
- Been fit test to verify the wearer’s ability to use an N95 mask.
The Safety Office does not recommend the use of N95 masks at UW to protect against the risk of infectious disease, except in specific situations (i.e. health care). Furthermore, the use of N95’s must be approved by the Safety Office before use.

N95 masks found in work areas that have not been approved for their use will be removed and work may be suspended in this area.

7.2.2 SURGICAL MASKS AND NON-SURGICAL FACEMASKS

Both surgical and non-surgical face masks are loose-fitting coverings that cover the nose and mouth area. The most common design has a piece of fabric with two ear loops that stretch around the ears to hold the mask in place.

Surgical masks may be labelled as “isolation”, “dental”, or “medical” procedural masks. Surgical masks undergo testing for particle filter efficiency, bacterial filter efficiency, and fluid resistance. These masks may have a filter efficiency rating which provides a guide to the quality of the mask, but these are not strict numbers as the masks do not fit with a tight enough seal to provide consistent performance. Non-surgical masks are those that have not been FDA approved and thus have no indication of quality on them.

To be clear, the primary purpose in using these masks is to protect others from anything the wearer exhales or expels from their mouth or nose. They do not have a tight enough seal to protect against infectious aerosols and therefore have not been proven to protect the wearer from disease.

Currently, the Safety Office does not recommend using surgical or non-surgical masks while working at the University.

7.2.3 OPTIONAL USE OF A FACEMASK

Anyone who chooses to wear a facemask must use the following precautions:

- Consistent and strict adherence to hand hygiene, physical distancing, and respiratory etiquette as described in section 6.0 Primary Control Measures.
- Wash hands immediately before putting it on and immediately after taking it off (in addition to practicing good hand hygiene while wearing it).
- Individuals should be careful not to touch their eyes, nose and mouth when removing their mask and wash hands immediately or use hand sanitizer after removing.
▪ When removing the mask, grasp the ties or ear loops carefully without touching the front of the mask.
▪ Cover your nose and mouth with the mask.
▪ Make sure the mask fits snugly but comfortably against the side of the face
▪ Do not share the mask with others.
▪ Avoid touching the mask while using it.

The Centre for Disease Control (CDC) published the following instructions for wearing and making homemade cloth masks:

CDC- Use of Cloth Face Coverings to Help Slow the Spread of COVID-19

7.3 GLOVES

Nitrile or latex gloves are used to provide a non-absorbent barrier between a contaminated surface and the skin. Gloves that are made of cloth or other absorbent materials will not provide adequate protection from any contaminant.

Gloves are not a replacement for hand hygiene, must be changed frequently, and must never be re-used.

7.4 LAB COATS

Use of lab coats is an excellent way of protecting street clothing from contamination, spills and injury from a host of hazardous substances. There are many different kinds of lab coats, but the most common are made of cotton or polyester (either type is sufficient to protect against COVID-19).

7.4.1 LAB COAT STORAGE

▪ Lab coats should be made available on hooks at the main entrance of the lab or workshop.
▪ There should be separate rack/hooks for lab coats.
▪ Storing street clothes, backpacks, and other common items in labs is not recommended for any lab, but strictly prohibited in BSL2 permitted labs.

7.4.2 LAUNDERING

▪ Lab coats should be laundered when contamination is suspected or evident.
▪ To launder a lab coat – don gloves, place the lab coat in a plastic bag and seal it with a twist tie or other secure means. Now it can be transported.
▪ Dirty lab coats can be laundered with regular laundry (unless contaminated with hazardous materials) using the highest heat settings possible in the wash and dry cycles.

▪ Use hand hygiene after handling soiled lab coats.

**7.5 ORDER OF OPERATIONS: DONNING AND DOFFING PPE (LABS AND WORKSHOPS ONLY)**

In order to prevent self-contamination, PPE should be “donned” (put on), and “doffed” (taken off) in the following order.

### 7.5.1 DONNING PPE

1. Perform hand hygiene with ABHR.
2. Put on a face mask.
3. Put on eye/face protection.
4. Put on a lab coat.
5. Put on gloves.

### 7.5.2 DOFFING PPE

1. Remove your gloves.
2. Perform hand hygiene with ABHR.
3. Remove eye/face protection and wipe with disinfecting cloth.
4. Perform hand hygiene with ABHR.
5. Remove face mask by grasping bands that go around head or ears – do not touch the front of the mask. Dispose of the face mask.
6. Perform hand hygiene with ABHR.
7. Remove lab coat and place on hook, or if done for the day into a plastic bag for laundering.
8. Perform hand hygiene with ABHR.

Refer to CDC’s [PPE Sequence handout](#) for more information.
8.0 WORKPLACE PLAN DEVELOPMENT – GENERAL

1. Ensure that physical distancing of 2 m is maintained in the work area. Refer to Figures 1 and 2.
   a. Determine max occupancy based upon 12.5 m²/person.
   b. Indicate maximum occupancy on all entrances.
   c. Remove extraneous seating from space.
   d. Designate workstations as single-person use (use tape or other markings).
   e. Develop workflow patterns for one-way travel.
   f. Document and communicate all changes to all occupants/workers.

Special Considerations

▪ Public-facing units must consider installing physical barriers around workstations if physical distancing is not possible.

▪ Laboratories shall not allow the storage of personal or street items within the lab. This means coats, bags, and other belongings. An arrangement should be made for locker or office space.

▪ Vehicle use – review this guide from the Infrastructure Health and Safety Association.

▪ Fieldwork – physical distancing must be implemented in plans to perform fieldwork. Considerations are found in Appendix 2.

2. Hand Hygiene
   a. Ensure there are hand hygiene stations appropriate for the type of work being conducted, in or near the workspace. For example:
      i. If the work will result in dirt and debris soiling hands, a handwashing sink is required (e.g., vehicle shop, laboratories, kitchens, workshops).
      ii. If the work will not cause soiling of hands, hand sanitizing stations are sufficient (e.g., office work).
   b. Hands should be washed/sanitized upon entering any space, before starting any procedure, upon completion of any procedure, and whenever removing gloves.
   c. Document and communicate these policies to all occupants/workers.
3. Surface Decontamination
   a. Ensure the disinfectant chosen is appropriate for the surface being disinfected.
   b. Ensure there is enough disinfectant to last the workweek.
   c. All work surfaces should be decontaminated twice daily. In most situations, this means before work, and once work has concluded.
   d. All high-touch surfaces should be disinfected twice daily. Designate responsible persons and a schedule for this to be done. High-touch surfaces include:
      i. Entry and exit points (doorknobs, push bars, and handles)
      ii. Cupboard knobs and handles
      iii. Light switches, power switches, keyboards, etc.
      iv. Equipment related controls that are accessed in high frequency (several times per day)
      v. Devices that come into close contact with the face (phones)

4. PPE
   a. Any PPE that is normally worn can be continued to be worn. For example:
      i. Lab work requires lab coats, wrap-around safety glasses, closed-toed shoes, and gloves.
      ii. Carpentry shop workers use gloves, safety glasses, and aprons. Nitrile gloves may be worn under cloth or leather gloves.
   b. Face or surgical masks are not recommended for normal use.
   c. Respirators cannot be used unless they have been authorized by the Safety Office.

5. Waste Disposal
   a. Non-hazardous should be removed daily to containers located in public areas.
   b. Hazardous waste should be removed according to the hazardous waste guidelines.
9.0 APPENDIX 1: SURFACE DECONTAMINATION – COMMON EFFECTIVE DISINFECTENTS

The following disinfectants have found to be effective against COVID-19:

- Bleach diluted to get a final hypochlorite concentration of 500 ppm or higher
- Alcohol at 60% - 80%
- Hydrogen Peroxide at 3% - 6%

9.1 BLEACH

Precautions

1. Wear the following PPE for preparation: gloves, wrap-around safety glasses, goggles, or a face shield, and rubber apron.
2. Do not mix bleach with ammonia or acids. Bleach with ammonia forms chloramines which will cause respiratory distress. Bleach with acids will form chlorine gas which is extremely toxic.
3. Some surfaces are not compatible with bleach. Use a different disinfectant if the surface you are decontaminating is not compatible. Common bleach incompatible surfaces:
   a. Stainless steel
   b. Aluminum
   c. Painted surfaces

Preparation

1. Ensure you are in a well-ventilated area.
2. Fill a container with 900 mL of cold water.
3. Add 100 mL of household bleach to the water.
4. Mix them gently.

To use (spray bottle)

1. Spray evenly onto the surface and allow to sit for 5 minutes.
2. Once time has elapsed, use a paper towel to absorb the liquid.
3. Wipe the surface down with a wet disposable towel to remove any residue.
9.2 ALCOHOL BASED SOLUTIONS (CONCENTRATION OF 60% – 80%)

Precautions
1. Isopropyl alcohol and ethanol at 70% are highly flammable, store in a cool and dry place.
2. Use on small surface areas (because it is flammable), unless you are in a well-ventilated space.
3. Evaporates quickly, so you may need to reapply to ensure contact time is met.
4. Prolonged and repeated use of alcohol as a disinfectant can also cause discoloration, swelling, hardening and cracking of rubber and certain plastics.

To use (spray bottle)
1. Spray evenly onto the surface and allow to sit for 5 minutes.
2. If required, spray again to ensure minimum contact time is achieved.
3. Once dry, the surface is ready to use.

For specifically purchased disinfectants, instructions provided by the manufacturer take precedence over the directions provided here.

9.3 HYDROGEN PEROXIDE BASED SOLUTIONS (CONCENTRATIONS OF 3% - 6%)

Precautions
1. Store away from heat and light
2. In low concentrations (< 10%) may cause skin and eye irritation. At higher concentrations causes more severe problems.
3. Hydrogen peroxide can corrode many metals (e.g., aluminum, copper, brass, zinc) and may decolour fabrics, hair and skin.

To use (spray bottle)
1. Follow the manufacturer’s instructions.
2. Spray evenly onto the surface and allow to sit for 5 minutes.
3. Wipe off with a disposable towel when appropriate contact time has been met.

Once dry, the surface is ready to use

For specifically purchased disinfectants, instructions provided by the manufacturer take precedence over the directions provided here.
9.4 OTHER DISINFECTANTS

There are many other brand name disinfectants that can be used to disinfect surfaces. When using a purchased material, ensure you follow the manufacturer’s guidelines on the application, use, and storage.

View the CDC approved disinfectants for COVID-19.
10.0 APPENDIX 2: FIELDWORK PROTOCOL CONSIDERATIONS

Fieldwork controls

▪ Suitable pandemic safety precautions must be in place at all times which includes physical distancing. As of March 30, this includes providing a distance of at least two meters between individuals and not more than 5 people being together in a group.

▪ All research must be conducted in accordance with applicable safety requirements and best practices. Disinfect and avoid sharing equipment. Use hand sanitizer regularly.

▪ No operation or fieldwork should be carried out without adequate training and supervision.

▪ The University’s Working Alone guideline must be followed when deploying employees in any operation or fieldwork.

▪ Fieldwork requiring the use of a boat is not permitted unless rationale can be provided that outlines how physical distancing of at least two meters can be maintained while also adhering to existing safety protocols.

▪ Lists of emergency contacts must be up to date and held by each team member.

▪ Shared travel and accommodations must be avoided to ensure physical distancing requirements are followed.

▪ Limit time and activity in the field only to what is required. Wherever possible, travel directly from home to the field site and back home.

Procedures for those exhibiting symptoms of COVID-19

▪ Note: If a member of your team begins to exhibit COVID-19 symptoms during field research and that member is a student:
  ▪ You should advise them to contact their health care provider or Telehealth Ontario.
  ▪ You must contact the University Medical Doctor (Clark Baldwin) and Associate Provost, Students (Chris Read) and inform the student you have done so.

▪ If a member of your team begins to exhibit COVID-19 symptoms during field research and that member is an employee:
  ▪ You should advise them to contact their health care provider or Telehealth Ontario.
You must contact Occupational Health and inform the employee you are doing so.

At all times, you must follow Waterloo pandemic response protocols as well as guidelines from the Region of Waterloo Public Health and Waterloo Safety Office, including for physical distancing. As well, familiarize yourself with Manager Toolkit and with the protocols as outlined in the Waterloo Coronavirus document. This contains important information and is updated regularly.