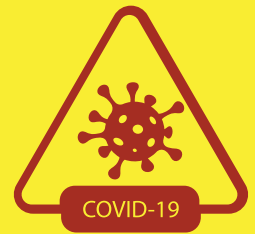




PERSONAL PROTECTIVE EQUIPMENT (PPE)

Suggested Best Practices for Pharmacies During the COVID-19 Pandemic

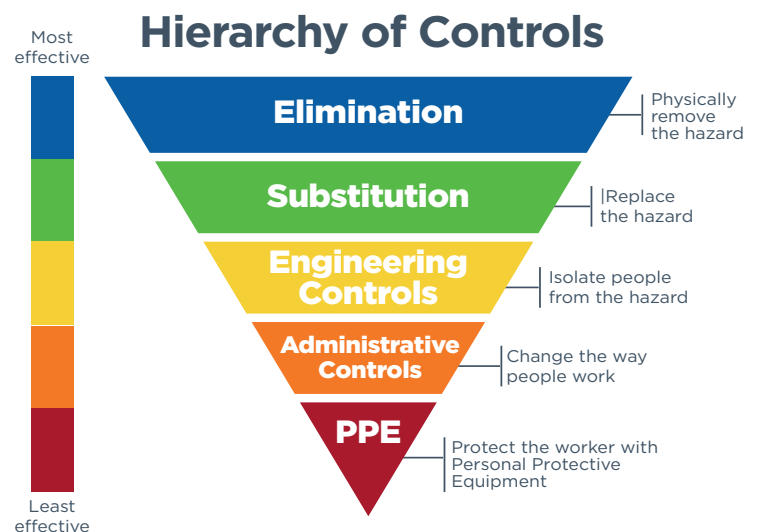


CPhA has developed suggested best practices on the use of personal protective equipment (PPE) for pharmacy staff during the COVID-19 pandemic. The suggestions contained in this document are not legal advice and may not cover all aspects pertaining the use of PPE by pharmacy staff. Before following any course of action, pharmacy staff should always refer first to their local, provincial and national public health authorities, their provincial regulatory authority and any corporate policies for up-to-date and specific guidance on use of PPE. Such guidance will always supersede the recommendations in this document.

Introduction

All workers have the right to be protected against infectious disease in the performance of their duties. During the time of a pandemic, these protection controls are even more critical.

The Hierarchy of Controls¹ defines and ranks the effectiveness of types of controls that can be put in place to protect workers. Elimination of exposure to the potential hazard is the most effective control to put in place. Personal Protective Equipment, or PPE, (while important) ranks as less effective than other controls due to the high incidence of user error.



The best way pharmacies can protect their pharmacy staff and reduce the spread of COVID-19 is by putting control measures in place at all levels, including:

- **Elimination controls** to eliminate opportunity for exposure, such as passive screening (e.g., signage instructing symptomatic patients to not enter the pharmacy).
- **Engineering controls** or physical or environmental protective measures, such as the installation of plexiglass shields in the dispensary or the establishment of a quarantine room.
- **Administrative controls** including policies and procedures that lower the risk of exposure to staff, such as changing workflow to minimize staff-to-staff contact or encouraging sick workers to stay at home.
- **Personal Protective Equipment** for pharmacy staff as determined by their level of risk.

**Substitution controls, such as replacing the hazardous substance with something else, are not possible during a pandemic situation.*

Protective measures and controls that pharmacies should implement before using PPE are described in more detail in CPhA's [Suggested Best Practices for Protecting the Front Line](#), which includes information on appropriate screening procedures, establishment of cleaning and disinfecting protocols, implementation of hand hygiene, setting up a quarantine room and other controls. This document will focus primarily on providing guidance to community pharmacy staff on the appropriate use of PPE during the COVID-19 pandemic.

What is PPE?

Personal protective equipment (PPE) generally refers to clothing or equipment designed to protect workers from physical hazards in their place of work.²

Pharmacy staff are front-line health care workers during the COVID-19 pandemic. Pharmacies are considered “essential services” that should remain open during the pandemic emergency. While priority is given to providing essential service workers with access to PPE, not all jurisdictions are providing, or are able to provide, government-issued PPE to pharmacies. The Public Health Agency of Canada does not currently provide any official guidance to community pharmacy staff regarding their use of PPE, and official guidance provided by provincial ministries of health/public health is fragmented.

CPhA has drafted these suggested PPE best practices from best available sources; however, pharmacy staff are always encouraged to refer first to their local, provincial and national public health authorities, their provincial regulatory authority and any corporate policies for up-to-date and specific guidance on use of PPE.

Where and When Should Community Pharmacy Staff Use PPE?

COVID-19 primarily spreads from person-to-person by respiratory droplets produced while coughing or sneezing. These droplets can land in the mouths or noses of people who are nearby (within 2 meters/6 feet) or possibly be inhaled into the lungs. It may also be possible that a person can get COVID-19 by touching a surface or object that has the virus causing COVID-19 on it and then touching their own mouth, nose or possibly eyes. Current epidemiologic information suggests that the majority of human-to-human transmission of COVID-19 occurs when an individual is in close contact with a symptomatic case. However, many people with COVID-19 can have mild or no symptoms at early stages of infection and some level of asymptomatic and presymptomatic transmission is occurring.³⁻⁵

The Public Health Agency of Canada recommends that health care workers in close contact with suspected or confirmed cases of COVID-19 follow **contact and droplet precautions** to protect themselves against infection, which includes the selection and use of PPE. PPE recommended for droplet/contact protection consists of a disposable surgical/procedure mask; a full-length, long-sleeved gown; disposable gloves; and eye protection, which can include a face shield or goggles⁶ (more description and specifics are provided in the “PPE Elements” chart below). Pharmacy staff should wear all recommended contact/droplet protection PPE when in close contact with individuals suspected of having or confirmed of having COVID-19. An N95 respirator is only required when performing aerosol-generating medical procedures (AGMPs) on a person under investigation for or diagnosed with COVID-19. Medical procedures that induce coughing, sneezing or vomiting are not in themselves AGMPs.²⁴

Hand hygiene should be performed whenever indicated, specifically before donning PPE, after doffing each PPE element, after disposing of PPE and after any patient encounters. PPE without appropriate hand hygiene is not effective!

HAND HYGIENE

Please refer to detailed guidance for pharmacy staff provided by the Alberta College of Pharmacists at <https://abpharmacy.ca/guidelines-hand-hygiene>



Community pharmacies are considered workplaces with medium exposure risk to COVID-19.⁷ These are workplaces and environments that require frequent and/or close contact with (i.e., within 2 meters/6 feet of) people who may be infected, but who are not known or suspected COVID-19 patients. **It is important to remember that infected individuals may show few or no symptoms.** Pharmacy staff are encouraged to follow a **point-of-care risk assessment** approach before and during each interaction where the patient’s COVID-19 status is unknown to evaluate the likelihood of exposure.^{8,9,10,26} Pharmacy staff are reminded to implement higher level elimination, engineering and administrative protective measures in their pharmacy to help minimize situations where pharmacy staff may unavoidably be in close contact with potentially infected patients (whether symptomatic or asymptomatic).

We provide the following to help pharmacy staff understand the scenarios where they may be at risk of exposure, and what appropriate PPE may be required:

ROUTINE ACTIVITIES WITHOUT CLOSE CONTACT WITH PATIENTS

Pharmacy team members are unlikely to be exposed to droplets during routine pharmacy activities that do not have close contact with patients (e.g., stocking inventory). PPE is not generally recommended for staff involved in routine activities without close contact with patients.

CLOSE CONTACT ACTIVITIES WITH SUSPECTED OR CONFIRMED CASES

Pharmacy team members who may be within close contact of a confirmed or suspected case of COVID-19 should consider wearing all PPE elements recommended for droplet or contact exposure.

For example, the following could be considered close contact situations with symptomatic individuals:

- Pharmacy staff screening patients at the front door of the pharmacy to prevent symptomatic individuals from entering
- Pharmacy staff escorting a patient who screens positive within the pharmacy to a quarantine room
- Pharmacy staff performing unavoidable activities or professional services putting them within 2 meters/6 feet of a symptomatic patient, such as medication injections, blood pressure monitoring or point-of care testing (*Note: Many pharmacies have reported suspending such services temporarily; pharmacists are asked to use their professional judgement.*)
- Personnel who may come in contact with a patient with a suspected or confirmed COVID-19 case when doing medication home delivery
- Other situations where close contact may be unanticipated (e.g., emergency situation warranting patient contact)
- Staff members who may become aware of an infection of a family member or someone they have been recently in contact with (e.g., being informed by public health that they have been contacted by someone who was in the pharmacy who screened positive)

CLOSE CONTACT WITH ASYMPTOMATIC INDIVIDUALS

Not all infected individuals exhibit symptoms. Despite screening and other controls designed to ensure symptomatic individuals (including staff) do not enter the pharmacy, there will be situations where pharmacy staff will unavoidably be within 2 meters/6 feet of other individuals, particularly in small pharmacies.

Where workflow and other processes cannot eliminate staff-to-staff and/or staff-to-patient contact in the pharmacy, pharmacy staff should carefully consider their PPE needs on a case-by-case basis, using a point-of-care risk assessment to determine their likelihood of exposure when providing care to patients who are not exhibiting COVID-19 symptoms.

In addition, even in situations where pharmacy staff judge that no PPE is required, pharmacy staff may also consider the use of cloth masks or face coverings by staff or by patients as a “source control” measure. While PPE is intended to protect a wearer from hazards, source control means preventing the spread of hazards (e.g., bacteria and viruses) from the wearer to others.²⁵ (Please refer to “Using Cloth Masks or Face Coverings for Source Control” below for more information.)

Note: The provision of **immunizations** is one primary example where pharmacists will be required to be in close contact with asymptomatic patients.¹¹ (Please see the end of this document for an application of these best practices in considering PPE requirements when providing immunizations.)

SURFACE CONTACT ACTIVITIES

Other situations where pharmacy staff should consider the use of droplet/contact PPE to protect themselves from possible surface transmission include:

- Cleaning/disinfecting all pharmacy areas as per sanitation protocols to prevent transmission to patients and other staff members
- Cleaning/disinfecting all pharmacy areas frequented by a positively-screened patient or staff member whether isolated in a quarantine room or not
- Cleaning/disinfecting all pharmacy areas frequented by confirmed COVID-19 case patient (Pharmacies may be contacted by their local public health units to inform them that an individual with confirmed or suspected COVID-19 infection was at their location; unless video footage is available to trace back areas the individual visited and/or touched, the entire facility may require deep cleaning and disinfecting.)

Donning and Using PPE

Personal protective equipment recommended for droplet/contact protection consists of a disposable surgical/procedure mask, a full-length, long-sleeved gown, disposable gloves and eye protection (which can include a face shield or goggles). There is no specific evidence regarding the effectiveness of PPE for droplet protection if not all recommended PPE elements are used. However, lack of evidence should not be equated with proven ineffectiveness of partial PPE. In the absence of clear evidence and in efforts to best reduce the spread of infection, pharmacy staff may consider prioritizing their use of selected PPE by using a point-of-care risk assessment approach.^{8, 9, 10}

Droplet/contact PPE is designed to be used by one individual for one close-contact encounter with suspected or confirmed COVID-19 patient before disposal.¹² When in close contact with patients who are asymptomatic (or whose COVID-19 infection status is unknown) rational use guidance for PPE in some settings states that fluid-resistant surgical masks, eye protection and long-sleeved gowns can be subject to “sessional use” rather than disposed of after each patient contact. A session is defined in acute health care settings as a period of time where a health care worker is undertaking duties in a specific care setting/exposure environment. A session ends when the health care worker leaves the setting/exposure environment.^{13, 14} The Public Health Agency of Canada has also recommended/encouraged that health care staff working in regions where there is community transmission of COVID-19 don masks and eye protection for the full duration of a shift of direct patient care.¹⁵ Pharmacy staff should consider similar sessional use of PPE elements (e.g., for a shift or for a defined set of continuous activities) when in close contact with asymptomatic patients, after taking a point-of-care risk assessment approach.

Pharmacies should set up an appropriate disposal bin (for single-use, potentially contaminated PPE) and a decontamination bin (for reusable PPE that requires cleaning and disinfecting) before using any PPE.

Using Cloth Masks or Face Coverings for Source Control

The US Centers for Disease Control and Prevention recommend that all pharmacists and pharmacy technicians “wear face masks while in the pharmacy for source control.” Where available, medical/surgical face masks are generally preferred for health care professionals.¹⁶ Such use is not considered to be PPE. The Public Health Agency of Canada also recommends that Canadians consider donning non-medical masks (including homemade masks), in addition to handwashing and physical distancing, to protect those around them from their own respiratory droplets. Such masks have not been proven to protect the wearer, have limitations and must be used safely.¹⁷ Pharmacy staff should consider this guidance in determining staff policies to reduce the spread of infection.

For the same reasons, pharmacies may wish to require that all patients entering the pharmacy wear a face covering as a source control measure. Pharmacies may choose to provide masks to patients in some circumstances.

Hand hygiene MUST be performed before donning all PPE and after doffing each individual PPE element, after disposing of or cleaning of any PPE and after all patient encounters.

The following chart provides suggestions for pharmacy staff on appropriate PPE when interacting with patients during the COVID-19 pandemic, suggested direction for sessional and partial use, and information regarding donning, usage, doffing and disposal.^{8-10, 18-23, 26}

PPE Elements

Item	When to Don	How to Don	When to Doff	How to Doff and Dispose	How to Decontaminate	Notes
<p>Gown</p> <p>Single use (disposable) fluid resistant or washable, dedicated garment</p> <p>Long-sleeved, cover from neck to knees</p> <p>Thumb or finger loops to anchor in place</p> <p>Light colours allow better contamination detection</p>	<p>Don for all activities in close contact with suspected/confirmed COVID-19 patient</p> <p>Otherwise, consider donning if skin/clothing at risk for exposure to splashes, items contaminated with blood, body fluids, excretions, secretions and non-intact skin</p> <p>Sessional use can be considered</p>	<p>Perform hand hygiene and don first</p> <p>Tie at back of neck and waist</p>	<p>Doff after all activities in close contact with suspected/confirmed COVID-19 patient</p> <p>Otherwise, doff at end of session or after 8 hours of continuous use</p>	<p>Doff after gloves</p> <p>Unfasten ties, grab outside of gown from back of shoulders and pull down over arms, turn inside out, place in disposal bin (disposable gowns) or decontamination/laundry bin (washable gowns)</p> <p>Perform hand hygiene</p>	<p>Laundry washable gowns separately from other clothing a high temperature and tumble dry</p>	<p>If no uniform laundry facilities are used, gowns can be transported in closed bag and laundered at home</p>

Item	When to Don	How to Don	When to Doff	How to Doff and Dispose	How to Decontaminate	Notes
Surgical/Procedural Mask Single use (disposable) high fluid resistance, breathable Internal/external faces clearly indicated Duckbill, cup-shape or other structured design that does not collapse against mouth	Don for all activities in close contact with suspected/confirmed COVID-19 patient Otherwise, consider donning if face at risk for exposure to splash, spray, cough or sneeze or if within 2m/6ft of coughing patient Sessional use can be considered	Don after gown Cover mouth and nose with no gaps between face and mask	Doff after all activities in close contact with suspected/confirmed COVID-19 patient Otherwise doff if mask becomes damp, soiled or damaged, at end of session, or after 8 hours of continuous use	Doff after eye protection/Doff last Bend forward, touching only ties/elastic, start with bottom tie and move up, remove carefully Place in disposal bin Perform hand hygiene	n/a	The use of N95 masks are only required when performing aerosol-generating medical procedures (stimulate coughing) Masks are effective only when used in combination with frequent hand cleaning (alcohol-based rub or soap and water)
Eye Protection <u>Face Shields</u> Reusable or disposable Clear plastic, must provide good visibility, fog resistant Should completely cover sides and length of face <u>Goggles</u> Reusable or disposable Clear plastic, fog resistant (indirect venting to avoid fogging), flexible frame Should enclose eyes and surrounding areas	Don for all activities in close contact with suspected/confirmed COVID-19 patient Otherwise, consider donning if face at risk for exposure to splash, spray, cough or sneeze or if within 2m/6ft of coughing patient Sessional use can be considered	Don after mask Adjustable band must fit snugly against forehead Fit all contours of face with even pressure, good seal with skin Must accommodate wearers of prescription glasses	Doff after all activities in close contact with suspected/confirmed COVID-19 patient Otherwise doff at the end of session or after 8 hours of continuous use	Doff after gown Handle only by headband or earpieces, pull away from face Place in disposal or decontamination bin Perform hand hygiene	Reusable eye protection can be cleaned, while wearing gloves, with clean cloth and detergent solution/cleaner wipe Wipe inside first, then outside Follow by wiping outside with water or alcohol to remove residue Air or towel dry	Eyeglasses are not an appropriate substitute Available guidance suggests that risk assessment for use of masks and eye protection is similar
Examination Gloves Single-use, non-sterile, powder free Long cuffs, ideally reaching above wrist or mid- forearm	Don for all activities in close contact with suspected/confirmed COVID-19 patient Consider donning if hands are exposed to blood, excretions, secretions, non- intact skin or if hands in contact with contaminated items in the environment Not recommended for sessional use	Don after Face protection/Don last Pull cuffs of gloves over cuffs of gown	Doff after every patient encounter	Doff first Grasp outside near each wrist, peel away from hand, turning inside out Hold removed glove in opposite gloved hand, slide ungloved finger under wrist of remaining glove, peel second glove off and over the first, making a bag Place in disposal bin Perform hand hygiene	n/a	Double-gloving or use of sterile gloves is not required Gloves do not offer any additional protection if they are not combined with other recommendations, such as not touching one's face when wearing them

All staff should be trained in the proper use of all PPE that they may be required to wear. A [PPE training video](#) provided by the Nova Scotia Health Authority may be suitable for use by pharmacy staff.

DONNING ORDER → Gown → Mask → Eye Protection → Gloves

DOFFING ORDER → Gloves → Gown → Eye Protection → Mask

Volume of PPE

Widespread or inappropriate use of PPE may exacerbate supply challenges. Pharmacies will need to steward PPE responsibly and consider their own supply needs based on their staffing levels, patient populations, individual risks, professional activities and comfort with sessional use (e.g. for masks). However, some potential and very general guidelines for minimum volume of use during the COVID-19 pandemic are:

- Disposable gloves (S, M, L, XL): Minimum 3 pairs of gloves per person per day, in sizes most appropriate to team members
- Masks: Minimum of 1 mask per every 4-8 hours per person (maximum use is 8 hours)
- Eye protection: Minimum of 1 disposable shield/set of goggles per every 8 hours per person or 1 reusable shield per person
- Gowns: 1 disposable gown per person per day or 2 washable gowns per person

The decision to provide a surgical/procedural mask to a patient in the pharmacy suspected of COVID-19 should also be considered when obtaining PPE supplies. While not considered PPE, surgical/procedural masks for asymptomatic customers/patients can help to prevent the spread of respiratory droplets and reduce the risk of transmission to others.

Applying Suggested Best Practices to Immunizations

Even if all suggested levels of protective controls are in place, pharmacy staff will be unavoidably in close contact with asymptomatic, but potentially COVID-19 infected, patients when providing immunizations. Here are how our suggested best practices (including risk assessment and length of use suggestions) can be applied to this scenario:

- Screen all patients and only offer immunization services to asymptomatic patients
- Suggest all patients requesting immunizations wear a facemask (cloth or medical/procedural); provide patients with medical/procedural mask if they have none
- Schedule and deliver vaccinations in clusters/by appointment to accommodate sessional use of PPE
- Consider differential risks of contamination of injectable or nasal formulations; use point-of-care risk assessment to determine need for PPE elements for session of use
- Suggested PPE (as guided by PPE Elements Chart and Point-of-Care Risk Assessment considerations):
 - o Wear eye protection (face shield or goggles) for duration of session, disinfect or dispose after each session
 - o Wear surgical/procedural mask for duration of session; replace sooner if it becomes damp, soiled or damaged
 - o Gowns may not be required; if used, dispose or disinfect after session
 - o Gloves may not be required; if worn, they must be replaced after each immunization (sessional use is not recommended)
 - o Follow all donning, doffing and hand hygiene best practices

CPhA gratefully acknowledges the pharmacists, other health care professionals and additional subject matter experts who contributed to the review and development of this document.

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Version 1: March 27, 2020

Version 2: March 30, 2020 (Correction of embedded links)

Version 3 April 20, 2020 (Addition of information on sessional use, explainer video on donning and doffing)

Version 4: May 29, 2020 (Revised chart of PPE Elements, use of cloth masks as source control, application of best practices for immunizations)