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 Controls 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 errors.

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

1. **Elimination controls** such as passive screening to eliminate exposure.
2. **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.
3. **Administrative controls** such as policies and procedures that lower the risk of exposure to staff, such as encouraging sick workers to stay at home and encouraging appropriate hand hygiene.
4. **Personal Protective Equipment** for pharmacy staff as determined by their level of risk.

*Substitution controls, 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 able to provide, government-issued PPE to pharmacies. The Public Health Agency of Canada does not currently provide any official guidance to 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 SARS-CoV-2 virus on it and then touching their own mouth, nose, or possibly their 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 pre-symptomatic 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 protection consists of four elements: a disposable surgical/procedure mask, a full-length, long-sleeved gown, disposable gloves and eye protection (which can include a face shield or goggles).3 (Please refer to the chart below for more information.)

Community pharmacies are considered workplaces with medium exposure risk to COVID-19.6 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 little or no symptoms. Pharmacy staff are encouraged to follow a point-of-care risk assessment approach before and during each patient interaction to evaluate the likelihood of exposure. 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 these rare scenarios where they may be at risk of exposure, and what appropriate PPE may be required:

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

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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. (Please see also “Close Contact with Asymptomatic Individuals” below.)

CLOSE CONTACT ACTIVITIES WITH SUSPECTED OR CONFIRMED CASES

Pharmacy team members in frequent or close contact with patients may be at risk for droplet or contact exposure and should carefully assess their risk and need for droplet protection PPE on a case-by-case basis, including the need to provide essential care and services to vulnerable populations.

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 potentially symptomatic patient, such as immunizations, 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 (such as being informed by public health that they have been contacted by someone who was in the pharmacy who screened positive)

For additional guidance regarding selected specific pharmacy scenarios, consider consulting “PPE used by community pharmacy for prevention of COVID-19” (NZ Ministry of Health).7

CLOSE CONTACT WITH ASYMPTOMATIC INDIVIDUALS

Droplet protection PPE is recommended for health care workers in close contact with symptomatic individuals. However, 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 staff-to-patient contact in the pharmacy, PPE (or some elements thereof) should be considered as a protective measure. (Please also refer to “Donning and Using PPE” below.)

SURFACE CONTACT ACTIVITIES

Other situations where pharmacy staff should consider the use of 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 protection consists of the use 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.³⁸

The US Centers for Disease Control now recommend that all pharmacists and pharmacy technicians “wear face masks while in the pharmacy for source control.”⁹ 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.¹⁰ Pharmacy staff should consider this guidance in determining their case-by-case requirements for PPE, or elements thereof.

For the most part, PPE is designed to be used by one individual for one encounter with a symptomatic patient before disposal.¹¹ Rational use guidance for PPE in some settings states that fluid-resistant surgical masks, eye protection and long-sleeved disposable 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.¹² Pharmacy staff may consider similar sessional use (i.e., for a shift, or for a defined set of continuous activities) for certain PPE elements, 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.

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

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The following chart provides suggestions for pharmacy staff on appropriate PPE for droplet protection, suggested direction for sessional and partial use, and information regarding donning, usage, doffing and disposal.⁸, ¹¹-²³

<table>
<thead>
<tr>
<th>Item</th>
<th>Characteristics</th>
<th>Donning</th>
<th>Doffing</th>
<th>Disposal/Decontamination</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gown</strong></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Consider sessional use</td>
<td>Single use (disposable) fluid resistant preferred or washable, dedicated garment</td>
<td>Put on first</td>
<td>Remove second</td>
<td>Disposable gowns should be removed after every patient encounter and placed in disposal bin</td>
<td>If no uniform laundry facilities are used, gowns can be transported home in closed bag, laundered separately from other clothing at high temperature and tumble dried.</td>
</tr>
<tr>
<td>Risk Assessment: Use if skin/clothing at risk for exposure to splashes, items contaminated with blood, body fluids, excretions, secretions and non-intact skin</td>
<td>Long-sleeved, cover from neck to knees</td>
<td>Tie at back of neck and waist</td>
<td>Unfasten ties, grab outside of gown from back of shoulders and pull down over arms</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Thumb or finger loops to anchor in place</td>
<td>Light colours allow better contamination detection</td>
<td>Turn inside out, place in disposal or decontamination bin</td>
<td>Perform hand hygiene</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Light colours</td>
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</tbody>
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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.

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<tr>
<td>Surgical/Procedural Mask</td>
<td>Single use (disposable) high fluid resistance, breathable</td>
<td>Put on second Cover mouth and nose with no gaps between face and mask</td>
<td>Remove last Bend forward, touching only ties/elastic, start with bottom tie and move up, remove carefully Place in disposal bin Perform hand hygiene</td>
<td>Remove and dispose mask in disposal bin when it becomes damp or after every patient encounter</td>
<td>The use of N95 masks are only required when performing aerosol generating medical procedures (stimulate coughing) which will not take place in a pharmacy setting. Masks are effective only when used in combination with frequent hand cleaning (alcohol-based rub or soap and water).</td>
</tr>
<tr>
<td>Examination Gloves</td>
<td>Single-use, non-sterile, powder free Long cuffs, ideally reaching to mid-forearm</td>
<td>Put on third Pull cuffs of gloves over cuffs of gown</td>
<td>Remove first Grasp outside near each wrist, peel away from hand, turning inside out Hold removed glove in opposite gloved hand, slide un gloved finger under wrist of remaining glove, peel second glove off and over the first, making a bag Place in disposal bin Perform hand hygiene</td>
<td>Gloves must be removed and disposed in disposal bin after every patient encounter</td>
<td>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. While sessional use is not recommended, it should be noted that sanitizing gloves does not appear to degrade their integrity.</td>
</tr>
<tr>
<td>Eye Protection (Face Shields or Goggles)</td>
<td>Face Shields (reusable or disposable) Clear plastic, must provide good visibility, fog resistant Should completely cover sides and length of face Goggles (reusable or disposable) Clear plastic, fog resistant (indirect venting to avoid fogging), flexible frame Should enclose eyes and surrounding areas</td>
<td>Put on last 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</td>
<td>Remove third Handle only by headband or earpieces, pull away from face Place in disposal or decontamination bin Perform hand hygiene</td>
<td>Reusable eye protection must be placed in decontamination bin after every patient encounter and decontaminated before reuse Disposable eye protection must be disposed in disposal bin</td>
<td>Eyeglasses are not an appropriate substitute. To clean: while wearing gloves, use clean cloth with detergent solution/cleaner wipe; wipe inside first, then outside Follow by wiping outside with water or alcohol to remove residue, air or towel dry.</td>
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</table>
Obtaining PPE

Widespread or inappropriate use of PPE may exacerbate supply challenges. Pharmacies will need to consider their own supply needs based on their staffing levels, patient population and individual risks. However, some potential guidelines for volume of use are:

• Disposable gloves (S, M, L, XL): 3 pairs of gloves per person per day, in sizes most appropriate to team members
• Gowns: 2 per person per day
• Masks: 8 hours (maximum) per mask per person per day
• Eye protection: 8 hours (maximum) per shield/goggles per person per day

The need 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 symptomatic customers/patients can help to prevent the spread of respiratory droplets and reduce the risk of transmission to others.

QUARANTINE SPACE

Pharmacies should designate a quarantine room; a space in the pharmacy intended to serve as a quiet and private place, away from public access that could be used to isolate an individual who enters the pharmacy and is suspected to have COVID-19. The space must not be in an area of the pharmacy that has access to medications.

The intention of isolating the individual is to mitigate contact of a possible infected individual with customers, employees and public in general. Given that wait times for Public Health phone lines may be longer than usual, the individual can either choose to call Public Health from their home, or to do so in the designated quarantine room at the pharmacy. When communicating this message, ensure you do so professionally and with empathy.

• Please note, it would be inappropriate to force an individual to stay in the quarantine room instead of their choice to directly go home and contact Public Health privately or vice versa.
• Choose a room in your pharmacy that if used by an infected individual can be shut down without impacting the everyday operations of your pharmacy. The room can be put back to everyday use only after detailed sanitization takes place following Public Health guidelines.
• Do NOT post a sign on the door of the quarantine space, but ensure that all staff are aware which room could be in use, if ever required.

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

References

1. https://www.cdc.gov/niosh/topics/hierarchy/default.html
22. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5700156/?fbclid=IwAR1AXULcXJHNgqply7ZWFV9_cWgThFTbPBxAA7xI7qTKit60HT4ddpXZleVLLg