Lab-Based COVID-19 Testing:

Best Practices and Outbreak Protocol Review for Long-Term Care Homes

Wednesday, February 9, 2022 @ 9:30-10:30am

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Objectives

In this session, we will review:

- How to set up specimen collection for COVID-19 testing

- How to complete the requisition form for COVID-19 testing

- How to safely package and transport COVID-19 specimens to the lab

- How to prepare and send outbreak specimens for priority testing

Note: This document is intended to provide general information only to pharmacies on specimen collection and handling for lab-based PCR COVID-19 tests. It is not intended to provide medical or legal advice. This document is up to date as of the time of presentation. As guidelines changes, participants are encouraged to visit the Ministry of Health's COVID-19 website regularly for updates to COVID-19 symptoms and Public Health Ontario resources.

Testing Indications and Guidance

Ministry of Health

COVID-19 Guidance: Long-Term Care Homes and Retirement Homes for Public Health Units

Version 3 – January 21, 2022

Highlight of Changes:

- **Definition of "fully vaccinated individual"** to align with Ministry of Health's COVID-19 Fully Vaccinated Status in Ontario guidance.
- New sections on **IPAC audits** and **ventilation and filtration.**
- Emphasis on **COVID-19 and influenza vaccinations** as part of an overall public health approach to reduce the risk of respiratory infection outbreaks
- **Updates in context of the Omicron variant** to the following sections:
  - **Admissions and transfers:** COVID-19 testing and self-isolation on Additional Precautions required for all residents irrespective of COVID-19 vaccination status.
  - Test to work
  - Outbreak case definition
  - Inclusion of **rapid antigen testing**, where appropriate
  - **Updated contact management** to align with COVID-19 Integrated Testing & Case, Contact and Outbreak Management Interim Guidance: Omicron Surge.
- Guidance provided on how to take into consideration the possibility of **non-COVID-19 respiratory infections into the overall COVID-19 case, contact, and outbreak management strategy**, including the additions of:
  - **Appendix B:** Clinical Presentation for Respiratory Tract Infections; and
  - **Appendix D:** Algorithm for Testing and Management of Acute Respiratory Illness in LTCHs and RHs.

1 | Page

Make sure to follow the latest guidance on testing available online from the Ministry of Health and Ministry of Long-Term Care.

Ministry of Long-Term Care guidance:
https://www.ontario.ca/page/covid-19-guidance-document-long-term-care-homes-ontario

Ministry of Health guidance:
https://www.health.gov.on.ca/en/pro/programs/publichealth/coronavirus/docs/2019_LTC_homes_retirement_homes_for_PHUs_guidance.pdf

Ontario

Home > Health and wellness > Long-term care

COVID-19 guidance document for long-term care homes in Ontario

Learn more about requirements for long-term care homes with respect to COVID-19.

On this page

Highlight of changes	Admissions and transfers
Purpose	Absences
Layers of protection against COVID-19	Visitors
Omicron variant of concern	Access to homes
COVID-19 Vaccination	Surveillance testing
Infection prevention and control (IPAC)	Residents' councils
Activities	Outbreaks
Personal care services	Contact information
Screening	Resources
Staffing	Appendix: Regulation flexibility related to staffing

This page is currently being updated. This messaging will be removed once the updates have been completed. Thank you for your patience.

Highlight of changes

As of January 14, 2022, the following changes have been made to this document.

- In cases of serious staffing shortage, there is a new risk-based framework to guide homes in navigating return to work scenarios for fully vaccinated staff who are high risk **close contacts** with someone who is COVID-19 positive or who are **COVID-19 positive**. The framework outlines testing and isolation requirements for various risk of transmission levels (lowest risk, moderate risk and highest risk).
- Inclusion of a reference chart to inform homes of available flexibility that is provided through regulations under the Reopening Ontario (A Flexible Response to COVID-19) Act, 2020 related to staffing.
- Where a caregiver has not yet received a second dose of a COVID-19 vaccine, the visit should be restricted to the resident's room and every effort should be made to physically distance from other residents or individuals who are in the same room. Currently, all caregivers must have at least one dose of a COVID-19 vaccine to enter a long-term care home, and as of February 21, 2022, all caregivers must have at least two doses of a COVID-19 vaccine.

General principles of lab-based COVID-19 testing

- A specimen is collected from the patient and sent to the lab where polymerase chain reaction (PCR) testing occurs.

- PCR testing is highly sensitive when a good quality specimen is provided to the lab.
  - Proper specimen collection, labelling, packaging, and shipping are all essential steps for adequate testing.

Collection, storage, transport → Lab Testing → Resulting, communication

- Responsibility of the testing location to ensure sample quality is maintained and results are correctly acted upon.

Specimen collection for lab-based PCR testing

General considerations before specimen collection

Prior to handling a COVID-19 PCR test kit:

- Perform hand hygiene

- Check expiry dates on both the tube and the swab.

- Transport media in the tube should be clear and red, orange, pink, or colorless.

- Identify a suitable specimen collection area, ideally separated from other LTC home activities if available.
  - Maintain appropriate infection prevention and control measures in place at all times.

- Do NOT use a test tube if the transport media is bright yellow, green, or cloudy.

Step 1: Prepare specimen tube for collection

- Perform hand hygiene before interacting with the person.
  - Follow recommended infection prevention and control (IPAC) measures.*

- Always label the test tube with:
  1. Date of collection,
  2. Patient's full name,

  AND

  3. At least one additional unique identifier (e.g., Health Card number or date of birth)

- If using a sticker, affix the sticker to the tube longitudinally.
  - Do NOT affix sticker on the biohazard bag.
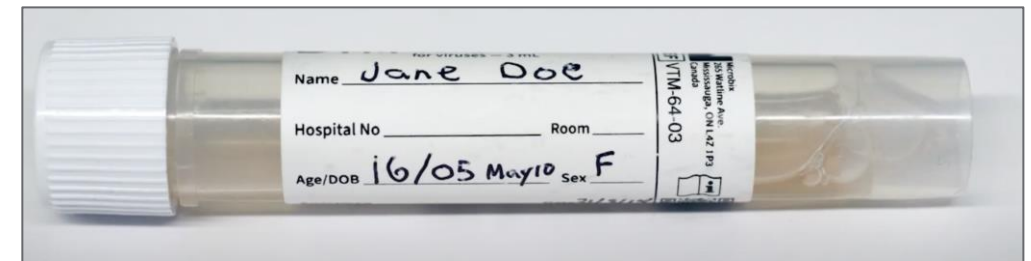
DO   **DON'T**
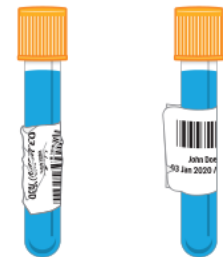
Acceptable specimen collection methods and expected performance

Collection Method	Approximate Sensitivity Range
Nasopharyngeal (NP) swabbing	**95-100%** [1,2,3,4,5,6,7,8]
Combined oral (buccal and/or oropharyngeal) and **nasal** (midturbinate) swabbing	**85-95%** [1,2,8]
Saliva (neat or saline rinse)	**85-95%** [1,2,3,4,5,6,7,8,9]
Nasal (midturbinate) swabbing	**80-85%** [1,5,6,7,9,10,11]
Throat (oropharyngeal) swabbing	**70-85%** [1,2,7,11]

Approximated from: [1] Tsang, Lancet 2021; [2] Kandel, ICHE 2021; [3] Butler-Laporte, JAMA 2021; [4] Kandel, Viruses 2020; [5] Kojima, CID 2020; [6] Teo, Nature 2021; [7] Lee, JCM 2021; [8] Gerler, IJID 2021; [9] Grijalva, OFID 2021; [10] Marais, medRxiv 2021; [11] Schrom, medRxviv 2022.

Preferred specimen collection type: Nasopharyngeal (NP) sampling

Anterior naris
Mid-inferior portion of inferior turbinate
Posterior pharynx

- Preferred specimen type for <u>all</u> patients.

  - Includes those hospitalized or at risk of severe disease*.

- NP swabs have a flexible shaft and a narrow tip to reach the posterior end of the pharynx.

- Specimen type with greatest sensitivity.

- Controlled act and can only be performed or delegated by certain healthcare providers (e.g., MD/Nurse Practitioner).
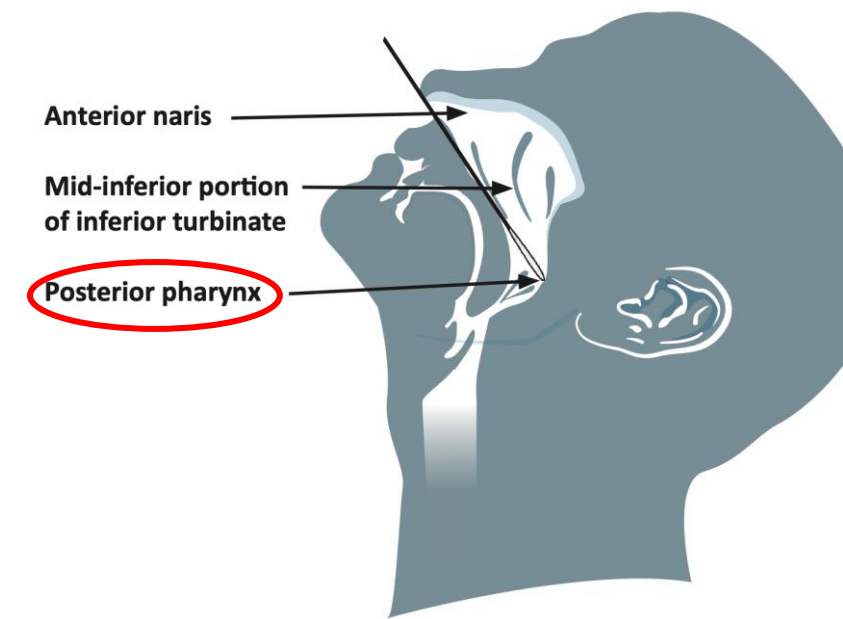
*Patients at risk of
severe COVID- 19 infection may include:
- Immunocompromised or age ≥ 60 years
  (or Indigenous and age ≥ 50 years) AND
    - Obesity (BMI ≥ 30)
    - Dialysis or stage 5 kidney disease
    - Diabetes
    - Cerebral palsy
    - Intellectual disability
    - Sickle cell disease
    - Receiving active cancer treatment
    - Solid organ or stem cell transplant recipients.

Preferred specimen collection type: Combined oral and nasal sampling

- Combined oral and nasal sampling is another preferred specimen type for non-hospitalized patients.

- Combined oral-nasal sampling provides adequate accuracy (~95%) compared to NP sampling in most settings.

- Collection can be performed by any individual.
  - *Step 1 (oral collection):* can be taken from both cheeks and the posterior tongue or throat.
  - *Step 2 (nasal collection):* insert all of the soft tip end into one nostril (*i.e.* up to 2.5 cm), rotate the swab 5-10 times against the inside wall of the nose, then remove and repeat into the other nostril.

- Limitations:
  - No drinking/eating 30 minutes before collection.

and /or

Anterior naris

Mid-inferior portion of inferior turbinate

Posterior pharynx
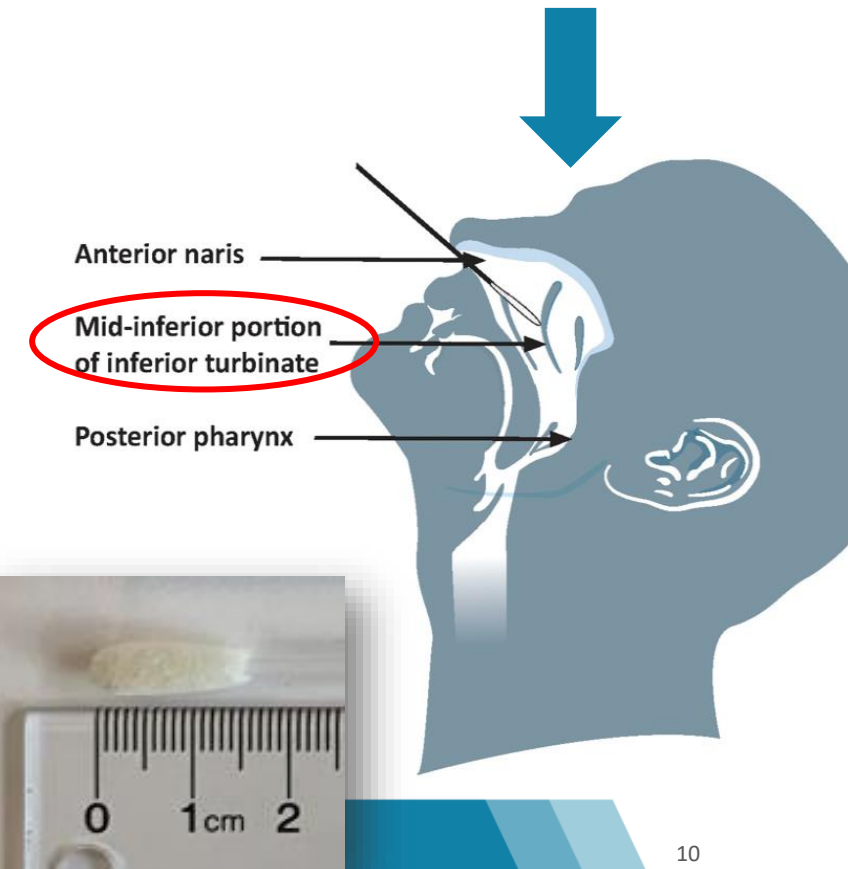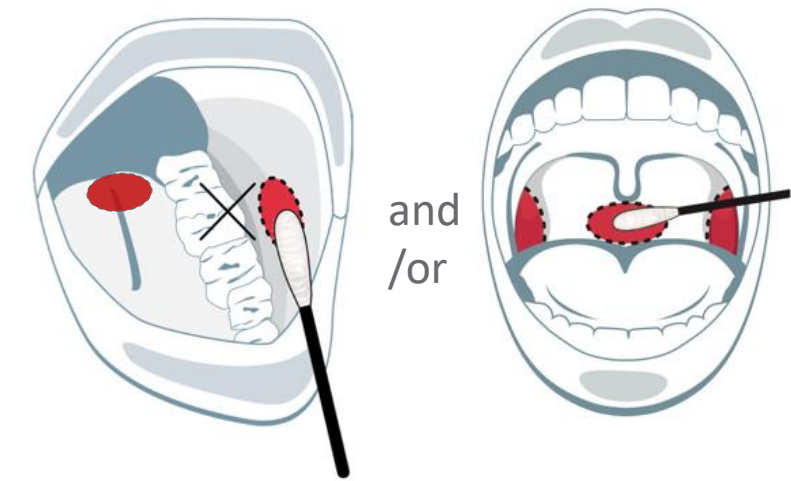
Preferred specimen collection type: Saliva

- Saliva sampling is another preferred specimen type for non-hospitalized patients.

- Saliva provides adequate accuracy (~90-95%) compared to NP sampling in most settings.

- Collection can be performed by any individual:
  - Neat (without any other liquids) or saline rinse liquid.
  - Using either a funnel or a straw to transfer the saliva.

- At least 2-3 ml of saliva should be collected not counting potential bubbles. This may take 2-5 minutes.

- Limitations:
  - No drinking/eating 30 minutes before collection.
  - **Testing of other respiratory viruses (including influenza) not available.**

Optional:

| SWISH
5 seconds | GARGLE
5 seconds | SWISH
5 seconds | GARGLE
5 seconds | SWISH
5 seconds |

or

Tip: Mark a 2 ml line with a sharpie for the patient if the tube does not come with a visual indicator.

2-3 ml
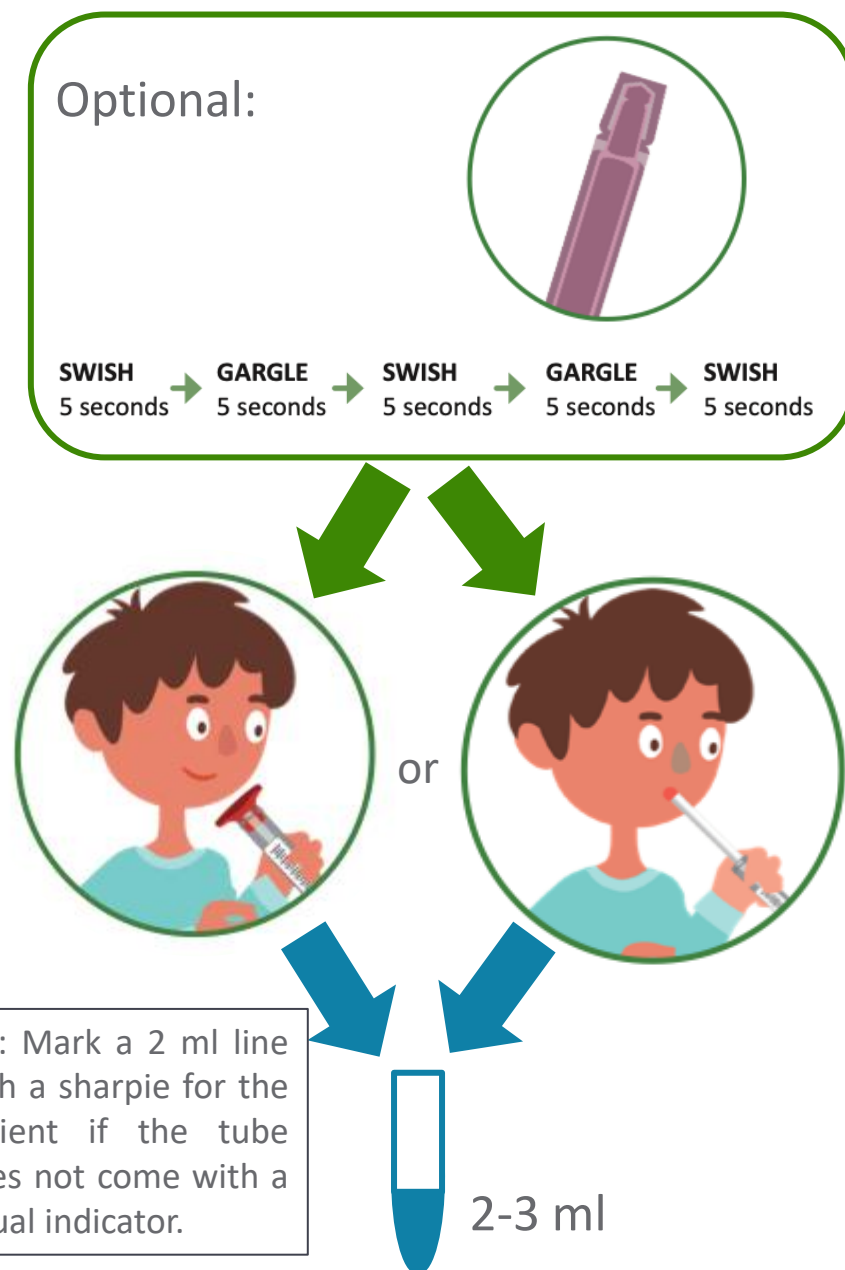
Specimen collection type NOT preferred: Nasal sampling

- Nasal sampling is **<u>not</u>** a preferred specimen type.

- Combining this method with oral sampling is <u>preferred</u> as sensitivity is lower (~85%) using nasal sampling alone compared to combined oral-nasal sampling (~90-95%).

  - **See earlier slide on combined oral and nasal sampling for further instructions.**

Anterior naris

Mid-inferior portion of inferior turbinate

Posterior pharynx
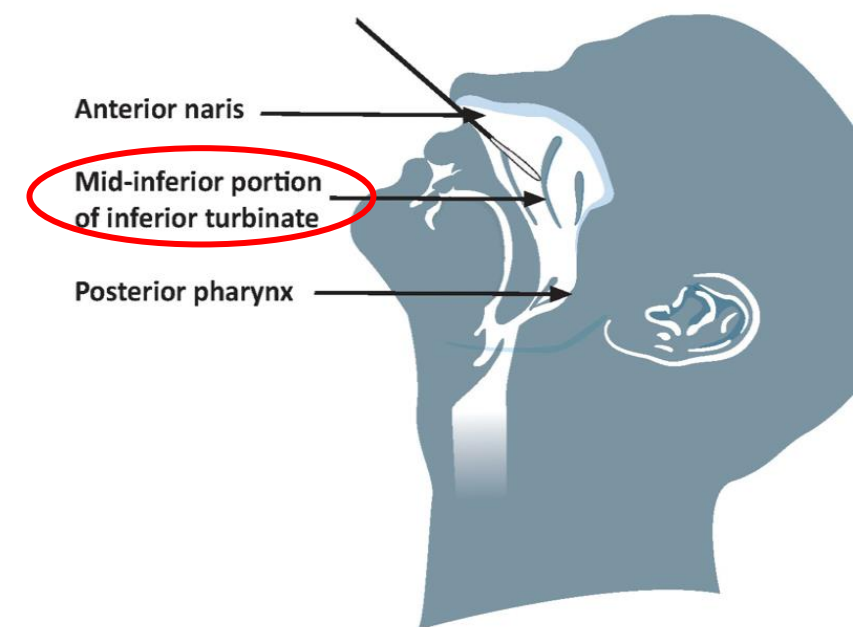
*Note: inserting the swab up to shorter distances (e.g., anterior nares) is **discouraged**, especially if not combined with oral sampling.

Step 2: Place collected specimen swab in test tube
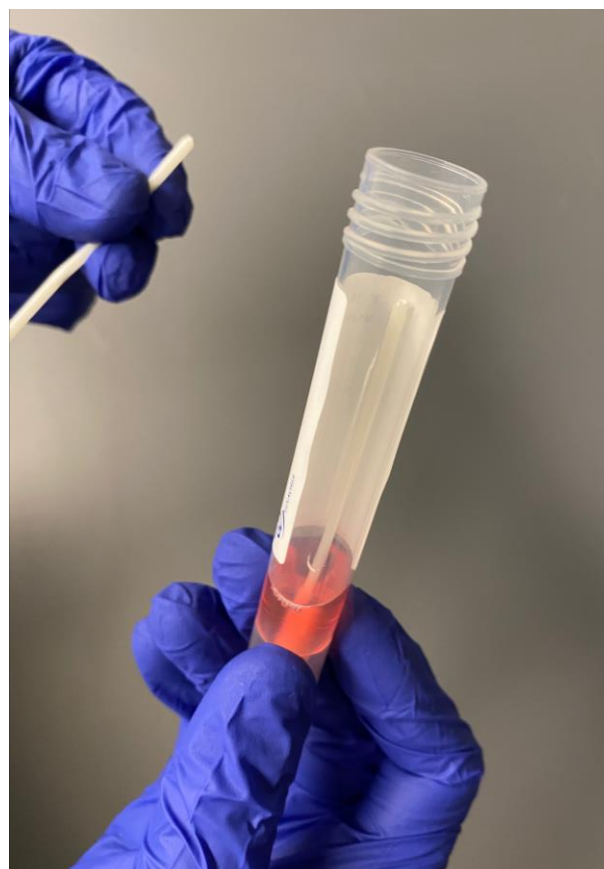
Once the sample is collected, break the swab handle at the breakpoint before closing the cap tightly.

- Do NOT fold the swab instead of breaking it at the breakpoint.
  - If the swab is folded instead of broken, the test tube cap may not close properly and cause leakage.
  - It can also be a safety risk when opening the tube in the lab.

Step 3: Place test tube in the biohazard specimen bag

Confirm the test tube cap is closed tightly and properly to avoid leakage.

- Leaking specimens will be **rejected** by the laboratory.
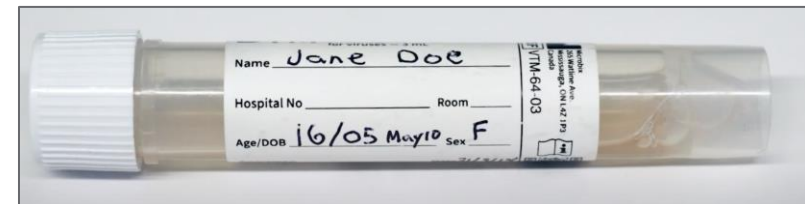
Confirm the test tube is properly labelled.

- Unlabelled tubes will be **rejected** by the laboratory.

Step 4: Add absorbent material inside the main compartment of the biohazard bag next to the test tube
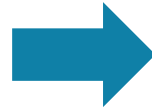
Absorbent material must be sufficient to absorb the entire content of the tube in the event of spillage (paper towel can be used).

Do NOT process the specimen further if leakage is found.

- Leaking specimens will be **rejected** by the laboratory.
- Recollect specimen **ASAP** if leakage occurs.

Step 5: Insert *COVID-19 Virus Test Requisition* sheet into the external pouch of the biohazard bag
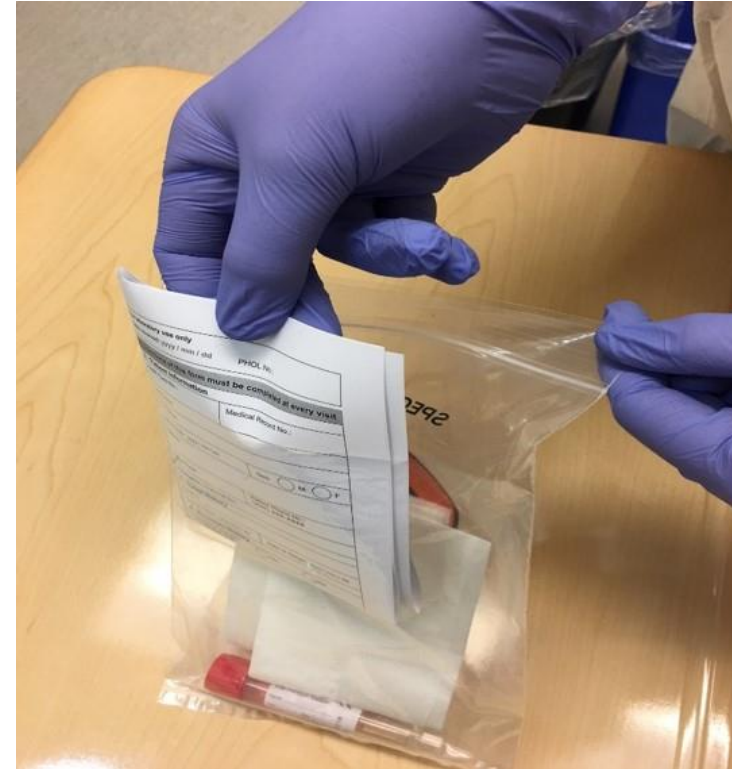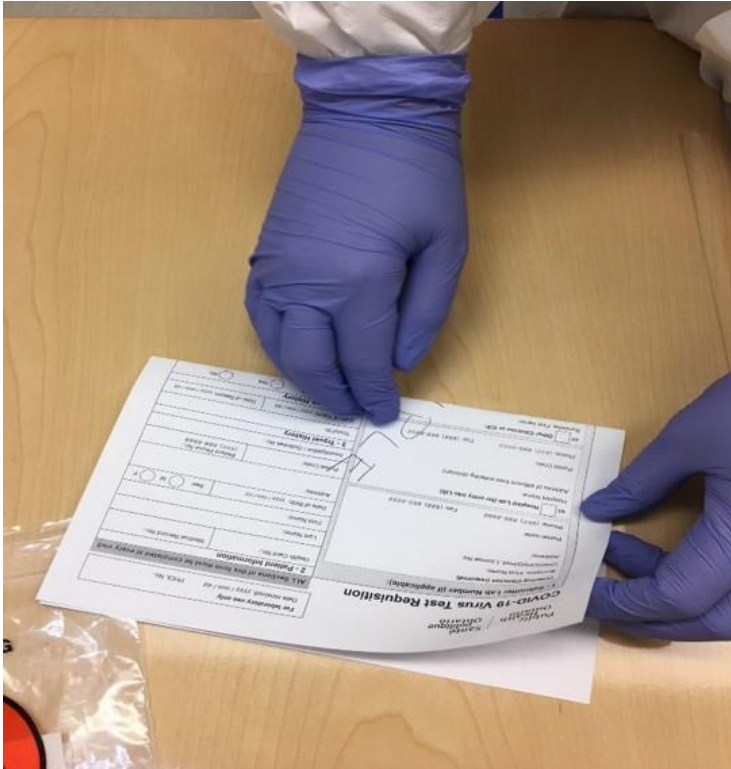
⚠ Confirm ALL required fields are filled in the requisition.

- Requisitions with missing information will be **rejected** by the laboratory.

Completion and verification of the requisition

COVID-19 and respiratory virus test requisition form

- For <u>routine</u>, non-outbreak specimens (e.g., admissions, transfers, isolated cases):
  - Print requisition on **white** paper

- For <u>outbreak</u> specimens:
  - Print requisition on **green** (or coloured) paper

⚠️ Do NOT use coloured paper for **non-outbreak** specimens as it may negatively impact test prioritization and turnaround times.

Make sure to use the most current version of Public Health Ontario's COVID-19 test requisition available at:

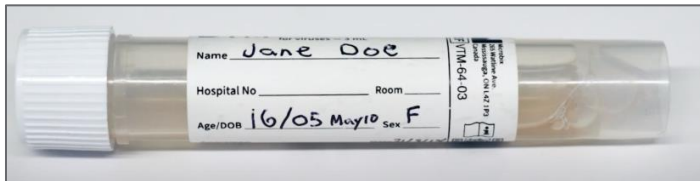https://www.publichealthontario.ca/-/media/documents/lab/2019-ncov-test-requisition.pdf?la=en

Section 1: Submitter information

- Ordering clinician should be a qualified health care provider who has responsibility to notify the patient of their results.

- Fax numbers require registration and authorization through PHO's Customer Service Centre.
  - Non-validated fax numbers will result in report delivery by Canada Post.

- If your site is associated with a hospital laboratory, please fill in the **'cc Hospital Lab'** subsection.

- If results will be forwarded to an additional health care provider (e.g. primary care provider), please fill in the **'cc Other Authorized Health Care Provider'** subsection.

1 - Submitter Lab Number (if applicable):

Ordering Clinician (required)
Surname, First Name:
OHIP/CPSO/Prof. License No:
Name of clinic/facility/health unit:
Address: Postal code:
Phone: Fax:

cc ☐ Hospital Lab (for entry into LIS)
Hospital Name:
Address (if different from ordering clinician):
Postal Code:
Phone: Fax:

cc ☐ Other Authorized Health Care Provider:
Surname, First name:
OHIP/CPSO/Prof. License No.:
Name of clinic/facility/health unit:
Address: Postal code:
Phone: Fax:

Section 2: Patient information

- Provide full patient details including name, date of birth, address, postal code, phone number, and Health Card number (if available).
  - Middle names may be entered in the 'first name' section.
  - Important to use the individual's current address and postal code for contact tracing (may differ from permanent address)
  - Information should match the information on the patient's Health Card (if available)

2 - Patient Information

Health Card No.:	Medical Record No.:
Last Name:	
First Name:	
Date of Birth (yyyy/mm/dd):	Sex: ◯ M ◯ F
Address:	
Postal Code:	Patient Phone No.:
Investigation or Outbreak No.:	

Confirm the information on the <u>requisition</u> matches the <u>label</u> on the test tube.

- Mismatched information will be **rejected** by the laboratory.

Include the investigation number or outbreak number if applicable for the individual being tested.

Sections 3, 4, and 5: Travel history, exposure history, and test(s) requested

- Provide any recent international travel history, or exposure to a probable or confirmed case of COVID-19.

- Include the date of symptom onset for probable or confirmed cases if available.

3 - Travel History

Travel to:

Date of Travel (yyyy/mm/dd):	Date of Return (yyyy/mm/dd):

4 - Exposure History

Exposure to probable, or confirmed case?   ◯ Yes   ◯ No

Exposure details:

Date of symptom onset of contact (yyyy/mm/dd):

5 - Test(s) Requested

◯ COVID-19 Virus   ◯ Respiratory Viruses   ◯ COVID-19 Virus AND Respiratory Viruses

- Select **'COVID-19 Virus'** or **'COVID-19 Virus AND Respiratory Viruses'** if indicated*.

*Testing for respiratory viruses other than COVID-19 is indicated in the following groups:

➢ Symptomatic children in emergency departments

➢ Symptomatic hospitalized patients

➢ First four symptomatic patients in outbreak

➢ **Symptomatic patients in institutional outbreaks**

When to select COVID-19 and other respiratory viruses

	COVID-19	**Other respiratory viruses**
No outbreak	Select for **ALL** symptomatic residents	Select for **ALL** symptomatic residents
Outbreak	Select for **ALL** symptomatic residents	Select first <u>FOUR</u> symptomatic residents

Follow the guidance from your local Public Health Unit on further indications and modalities for testing.

Sections 6, 7, 8, and 9: Specimen type, patient setting/type, COVID-19 vaccination status, and clinical information

- Provide as many details as possible regarding each of the required sections below.

- **Do not forget to fill the "Specimen Collection Date" subsection (highlighted** <mark>yellow</mark> **here) once the specimen has been collected.**

Details on outbreak numbers versus investigation numbers

Number Identification	Outbreak Number	Investigation Number (e.g., screen testing)
Number provided by	Public Health Unit	Ontario Health and Public Health Ontario
Number format	**XXXX-YYYY-#####** XXXX - PHU code YYYY – Year when outbreak was declared ##### – sequential number for this episode	**LTS-####** (Long-Term Care STAFF) **LTR-####** (Long-Term Care RESIDENT) **RHS-####** (Retirement Home STAFF) **RHR-####** (Retirement Home RESIDENT) **EDU-ZZZZ-P-####** (Education PUPIL) **Other** numbers as assigned for the facility
Used for	Outbreaks only, as directed by the PHU	Screen testing for routine activities
Validity of number	For the duration of the active outbreak Do not re-use number after outbreak is over	Ongoing, can be used repeatedly for the purpose of screen testing
Tests ordered	COVID-19 on all patients Respiratory viruses if required by PHU* *Up to 4 *symptomatic* patients per outbreak	COVID-19 on all patients

For a current list of investigation numbers, contact OH or your local LHIN.
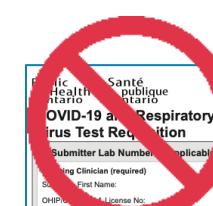
Expediting COVID-19 specimens for outbreak testing

- Print test requisition on **green** paper (or other **colored** paper).

- Confirm and add **outbreak number** on the test requisition.

- Send in a **separate** bag/container from non-outbreak specimens.

- Clearly identify the transport bag/container as containing **"outbreak specimens".**

- Transport directly via urgent courier or taxi.

Refer to PHO's Respiratory Outbreak Testing Protocol for further details.

⚠ Do NOT use coloured paper or add outbreak numbers on requisitions for **non-outbreak** specimens as it may overload the testing system and negatively impact test prioritization and turnaround times.

Test packaging, storage and transport
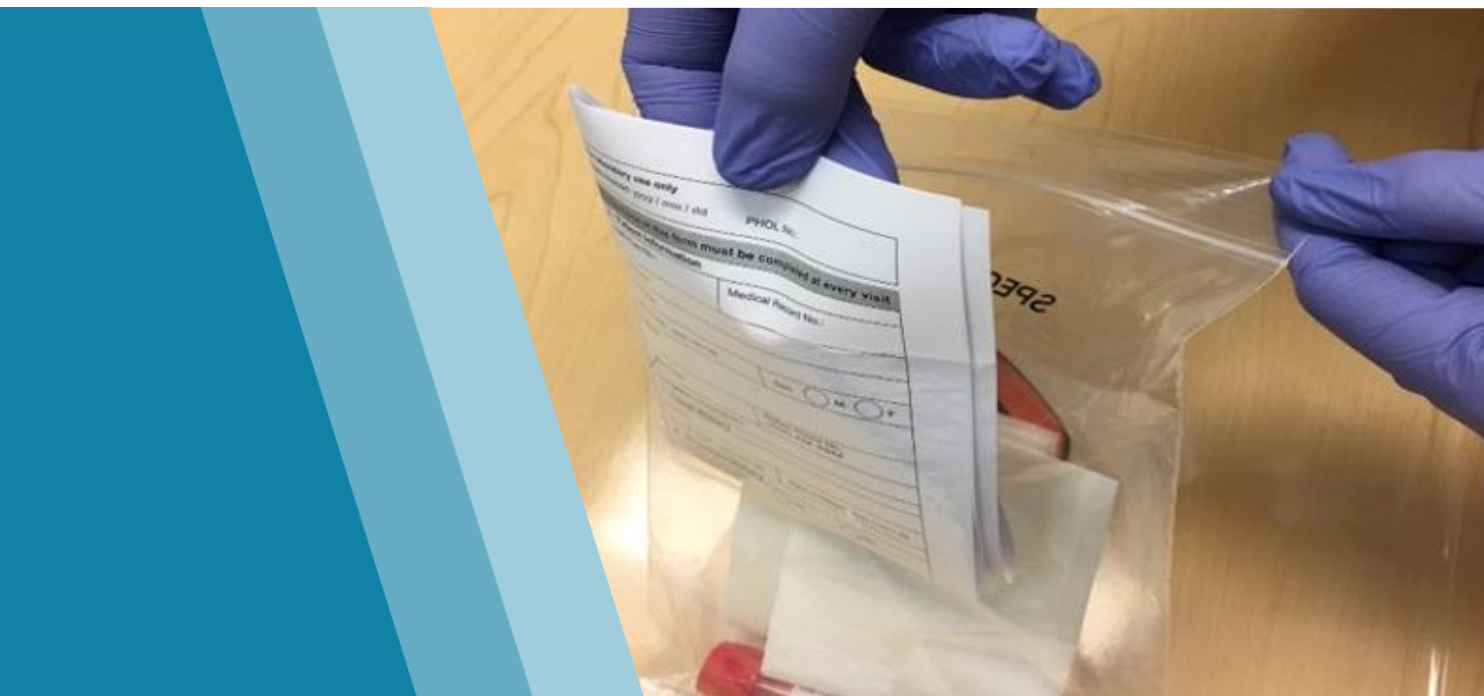
Storage requirements and expected transport timelines

- Specimens collected on site should be kept **refrigerated (2-8◦C)** and ideally transported the same day to the lab.

⚠ Specimens should not be stored in refrigerators with vaccines, medications, unused supplies, or any food products to limit cross-contamination.

- If no dedicated refrigerator available, specimens may be stored in clean rigid outer container (e.g., Styrofoam cooler box) with an ice pack.

- If expected duration of storage or shipment is greater than 72 hours, specimens should be kept **frozen (-20 to -70◦C)** if a freezer is available.

Packaging of specimens for ground transportation to the lab

The following packaging instructions are:

- Valid under section 1.39 of the *Transportation of Dangerous Goods (TDG) Regulations;*

- Valid for ground transportation between two points within Canada only;

- Suggested guidelines only.

Always refer to the latest edition of the *Transportation of Dangerous Goods Regulations* (TDGR) and additional requirements listed in the *Temporary Certificate TU-0764.*

Additional supplies for ground transportation to the lab

Sealable plastic bag

Rigid packaging
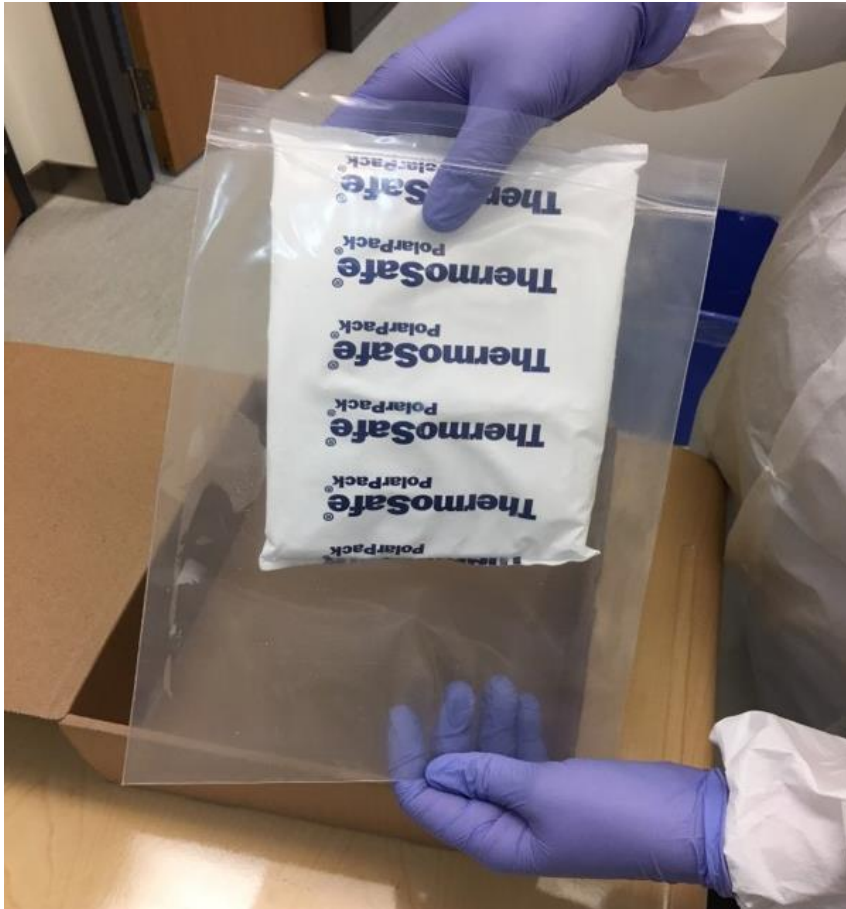(e.g., cardboard box)

Ice pack

Printable label sheet

Step 1: Place sealed biohazard bags containing specimens into sealable plastic bag and place in outer rigid packaging
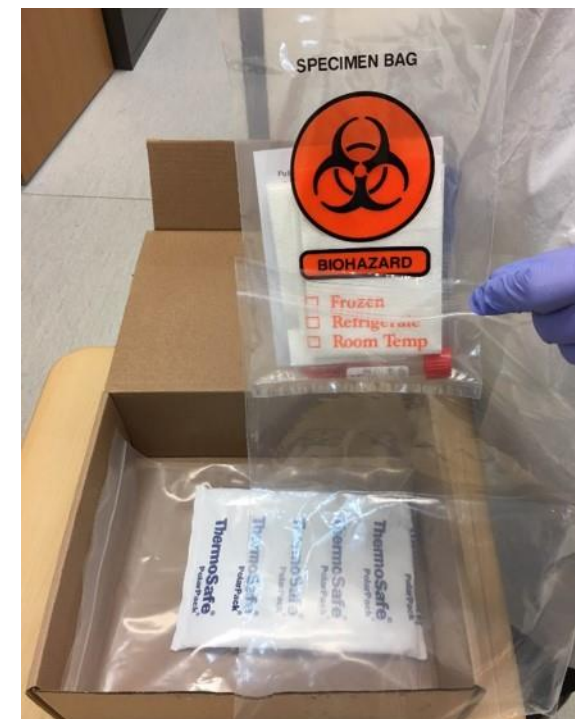

Each outer rigid packaging should have a maximum of 800 test samples (4 L total volume).

Step 2: Place ice pack in outer packaging

- Ice packs should placed in the outer rigid packaging to preserve specimen during transport.

- Ensure the ice pack is placed in a sealable plastic bag to prevent wetness due to condensation.

- The ice pack should be of appropriate size and placed in the box in a way to limit movement of the pack during transport (otherwise it may hit and damage the sample tubes).

- Couriers are not required to use refrigerated trucks for shipping as long as specimens are transported with an ice pack.

Step 3: Print PDF of labels and tape on sealed cardboard box
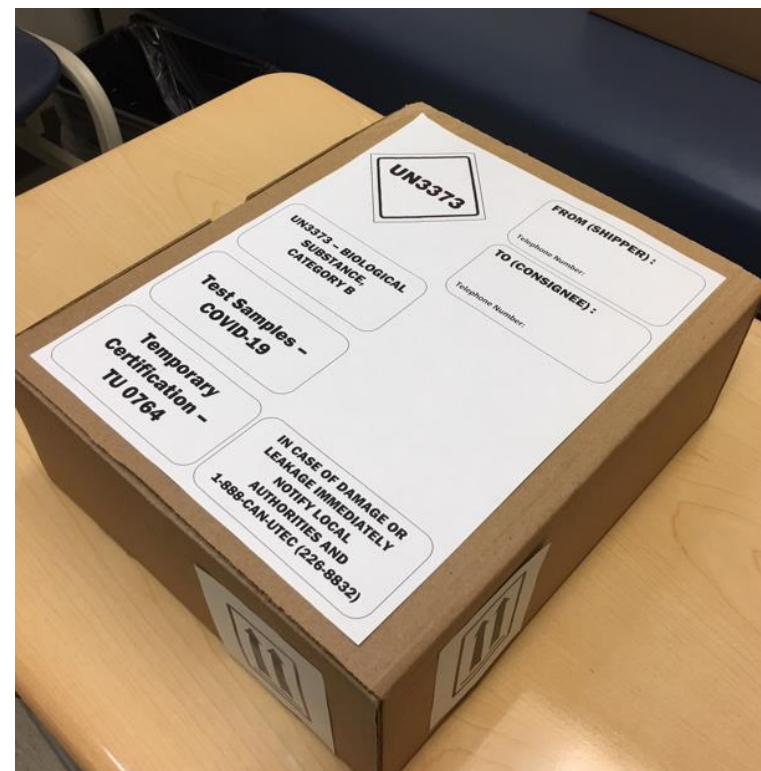
Step 4: Complete the address (To/From)
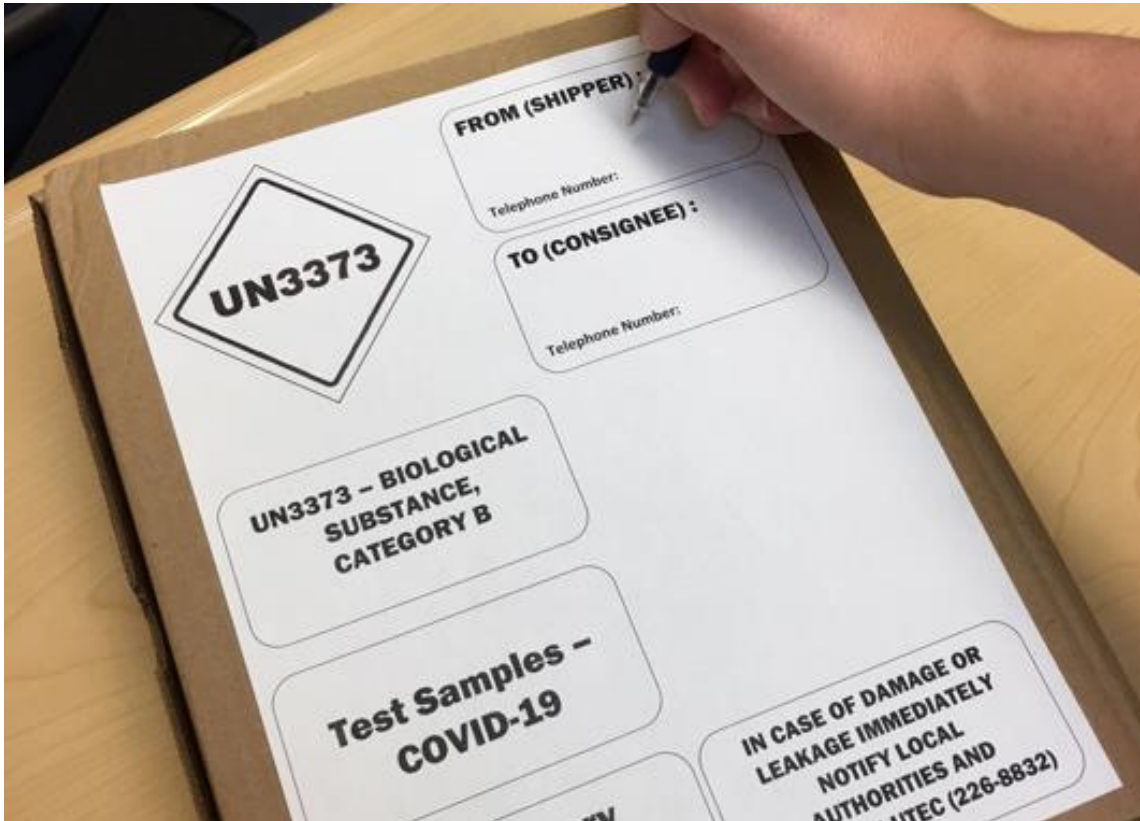
Complete the address and telephone number for both labels:
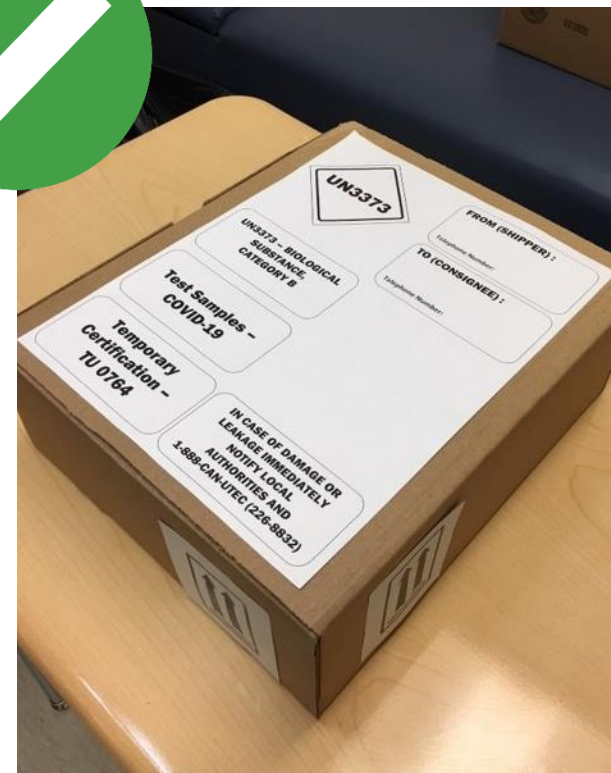
- From (shipper)

- To (consignee)

The information should be in letters of at least 6 mm size.

Package is ready to be transported!
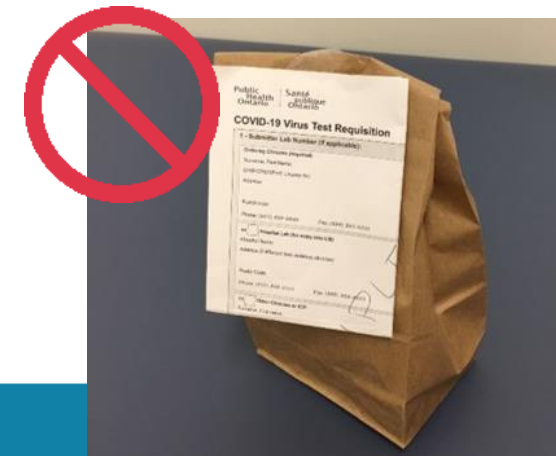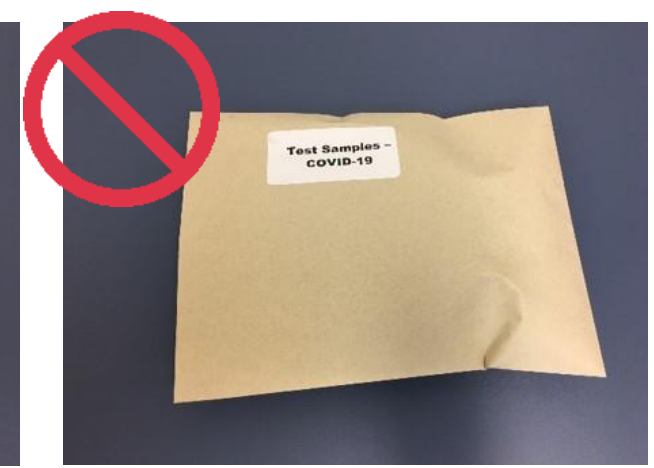
Unacceptable packaging

Do not use:

- Grocery bags
- Garbage bags
- Paper bags
- Envelopes
- File folders
- Gloves

Risks:

- Samples could get lost/delayed
- Risk to public if sample leaks
- Risk of fine by Transport Canada

Further identification of transport containers for outbreak specimens

- Sites can add a marking on the external transport container to facilitate prioritization of outbreak specimens.

- A template printout tag is available in PHO's Respiratory Outbreak Testing Protocol PDF document.

Transportation bag tag template

Print on green paper or another paper colour other than white. Fill-in Outbreak Number details and fold on dashed lines. Insert in clear pocket of transport bag.

Outbreak Specimens:
XXXX-YYYY-#####

OB# ☐☐☐☐–☐☐☐☐–☐☐☐☐☐

Respiratory Outbreak Testing Prioritization Protocol   3

Key Contacts

- To obtain COVID-19 swab kits, you may use the following portal: https://ehealthontario.on.ca/en/health-care-professionals/digital-health-services

- For questions regarding specific test results or testing process you may contact Public Health Ontario Customer Service Centre: CustomerServiceCentre@oahpp.ca

- For questions regarding testing policies and guidance you may contact Ministry of Long-Term Care: MLTCpandemicresponse@ontario.ca

- For specific situations regarding case and contact management you may contact your local Public Health Unit: https://www.health.gov.on.ca/en/common/system/services/phu/location

Resources

- Ontario Ministry of Long-Term Care. COVID-19 guidance document for long-term care homes in Ontario [Internet]. Toronto, ON: Queen's Printer for Ontario; 2022 [cited 2022 Feb 9]. Available from: https://www.ontario.ca/page/covid-19-guidance-document-long-term-care-homes-ontario

- Ontario Ministry of Health. COVID-19 Guidance: Long-Term Care Homes and Retirement Homes for Public Health Units, version 3 [Internet]. Toronto, ON: Queen's Printer for Ontario; 2022 [cited 2022 Feb 9]. Available from: https://www.health.gov.on.ca/en/pro/programs/publichealth/coronavirus/docs/2019_LTC_homes_retirement_homes_for_PHUs_guidance.pdf

- Ontario Agency for Health Protection and Promotion (Public Health Ontario). Coronavirus disease 2019 (COVID-19) – PCR [Internet]. Toronto, ON: Queen's Printer for Ontario; 2021 [cited 2021 Nov 29]. Available from: https://www.publichealthontario.ca/en/laboratory- services/test-information-index/covid-19

- Ontario Agency for Health Protection and Promotion (Public Health Ontario). COVID-19 PCR collection kits [Internet]. Toronto, ON: Queen's Printer for Ontario; 2021 [cited 2021 Nov 29]. Available from: https://www.publichealthontario.ca/en/laboratory-services/covid-19-pcr-collection-kits

- Ontario Agency for Health Protection and Promotion (Public Health Ontario). Respiratory Outbreak Testing Prioritization [Internet]. Toronto, ON: Queen's Printer for Ontario; 2020 [cited 2022 Feb 9]. Available from: https://www.publichealthontario.ca/-/media/Documents/Lab/respiratory-outbreak-testing-prioritization-protocol.pdf?la=en&sc_lang=en&hash=6E19DC4745E12FEF59FAA279B273DBC6

- Transport Canada. Temporary certificates [Internet]. Ottawa, ON: Government of Canada; 2020 [modified 2021 Jan 22; cited 2022 Feb 9]. Available from: https://tc.canada.ca/en/dangerous-goods/temporary-certificates

For More Information About This Presentation, Contact:

CustomerServiceCentre@oahpp.ca

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