2022 Respiratory Specimen Collection Checklist

Facilities must first perform a risk assessment to assess if collection or testing can be safely performed. *Collect one (1) Nasopharyngeal (NP) swab.* If a facility is unable to safely collect or perform multiplex PCR, see notes below. *Specimens should be collected as soon as possible once a case definition is identified regardless of the time of symptom onset.*

Proper Notification

- Contact testing location to order supplies provided specific to their test methodology:
  - NPHL supplies for laboratories – Saf-T-Pak products are provided for both ambient and insulated shipments. These products will be disinfected, refitted, and returned unless damaged.
  - NPHL supplies for other facilities (LTC, FQHC, Tribal, ICAP and Local Health Dept): https://cip-dhhs.ne.gov/redcap/surveys/?s=D9XWWCNDMY
- Use appropriate patient data entry system:
  - NPHL - register for NULirt account prior to collection. Instructions at http://nphl.org/
- Be proactive and call to make courier arrangements prior to collecting specimens:
  - NPHL Client Services at (866) 290-1406 to ask what the ground options are for your location. Hours are 24/7 Monday-Friday, and Saturday/Sunday from 7am to 3pm. Arrangements can be made after 3pm on Saturday or Sunday by calling the client services pager at 402-888-2086.
    - **Ground Couriers** - Specimens must be triple-packaged in UN3373 labeled Category B boxes and can be transported by any commercial ground courier outside of Lincoln and Omaha. Within the Lincoln/Omaha area, if the appropriate box is not available, an exclusive courier must be requested (ask for Pro-Med Logistics or Lab Logistics).
    - **FedEx or UPS** - Specimens must be triple-packaged in UN3373 labeled Category B boxes with adding a pressure compliant 95kPA secondary package, either a white Tyvek Envelope or other clear compatible biohazardous bag.
    - **Frozen specimens** – Regardless if using ground or air courier, boxes with Dry Ice require special markings, UN1845 label and weight in Kg. Couriers do not automatically carry Dry Ice; therefore, arrangements must be made to ship as such.

Proper PPE

Maintain proper infection control (https://www.cdc.gov/infectioncontrol/guidelines/isolation/index.html#a4) when collecting specimens or performing other aerosolizing procedures. Use appropriate PPE-following standard, contact, airborne precautions plus eye *protection including eye protection such as goggles and/or disposable face shield, respirator-preferably N-95, N-99 or Powered Air Purifying Respirator (PAPR), a long-sleeved gown, and gloves. The surgical mask can be used when triaging the patient, however CDC recommends the respirator when possible to collect actual specimen due to the risk of aerosolization.*

- ☐ Use ICAP approved PPE-following standard, contact, airborne precautions. Contact ICAP with questions at https://icap.nebraskamed.com
- ☐ A video on PPE donning and doffing is available at: https://www.youtube.com/watch?v=bG6zISnenPg

Proper Collection Supplies

- ☐ *Proper PPE as mentioned above*
- ☐ *Sterile Nasopharyngeal (NP) swab or naso-swab*
- ☐ *Transport media 1mL (Acceptable devices are VTM, UTM, VCM, M4 or PBS Saline). If multiple tests ordered (influenza season)??, collect 2 swabs*
- ☐ *Tissues and Gauze*
- ☐ *Patient Label with Last, then first name, DOB, date and time of collection, initials.(Do not place on collection devices prior to collection)*
- ☐ *One small biohazard bag per specimen collected*
- ☐ *Larger Biohazard bags to hold all smaller bags. Use 95kPA biobags if shipping by FedEx/UPS.*

- ☐ *Insulated Category B UN3373 Shipping box with inner Styrofoam or thermo envelope (provided by NPHL. Shipping by styrofoam is not permitted.*
- ☐ *Category B Shipping Paper (provided by NPHL or found on NPHL website)*
- ☐ *Frozen Gel-Packs to keep specimens at refrigerator temperature.*
- ☐ *Dry ice to keep specimens frozen* (required specific UN1845 labels on outer box).
- ☐ *Pre-arrange courier and request Dry Ice if needed.*
- ☐ *Specimens should be refrigerated or frozen until a courier arrives.*

Collection and packaging of nasopharyngeal specimens for respiratory virus

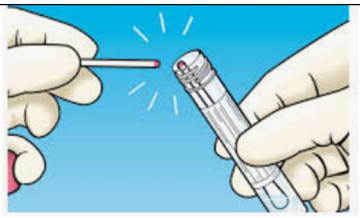
http://repository.netecweb.org/pdfs/COVID-19%20Lab%20Spec%20Coll%20Nasopharyngeal%20Swab.mp4
https://www.nejm.org/doi/full/10.1056/NEJMvcm2010260

- View videos above prior to collection. Exception to video: Do not label specimen before collection, instead after disinfecting tube (CLIA requirement). Do not use thumb to cover tube before breaking swap shaft, instead use cap or gauze. Discard gauze in medical waste.
- Collect additional NP swabs (2 swabs) if:
  - Multiple tests are required, and the transport medium contains only 1mL
  - Rapid detection tests require extracting reagent be added to the original specimen.
- Use only swabs designed for NP collection, usually a mini-tipped synthetic fiber swab with thin metal/plastic shaft. Acceptable collection devices are VTM, UTM, VCM, M4, saline, or PBS. Do not use calcium alginate swabs or swabs with wooden shafts used for bacterial cultures, as they may contain substances that inactivate some viruses and inhibit PCR testing. Any swab tip larger than the mini-tip flocked swab will make NP collection painful or impossible for the patient due to the size.
- Refrigerate specimen at 2-8°C immediately after collection or keep in temporary cooler with frozen gel-pack.

✓ *Donn PPE prior to collection.*
✓ *Prepare workflow by organizing supplies in orderly and logical manner on disinfected bedside table. Loosen cap on vial, partially open swab packaging, and remove backing on label.*

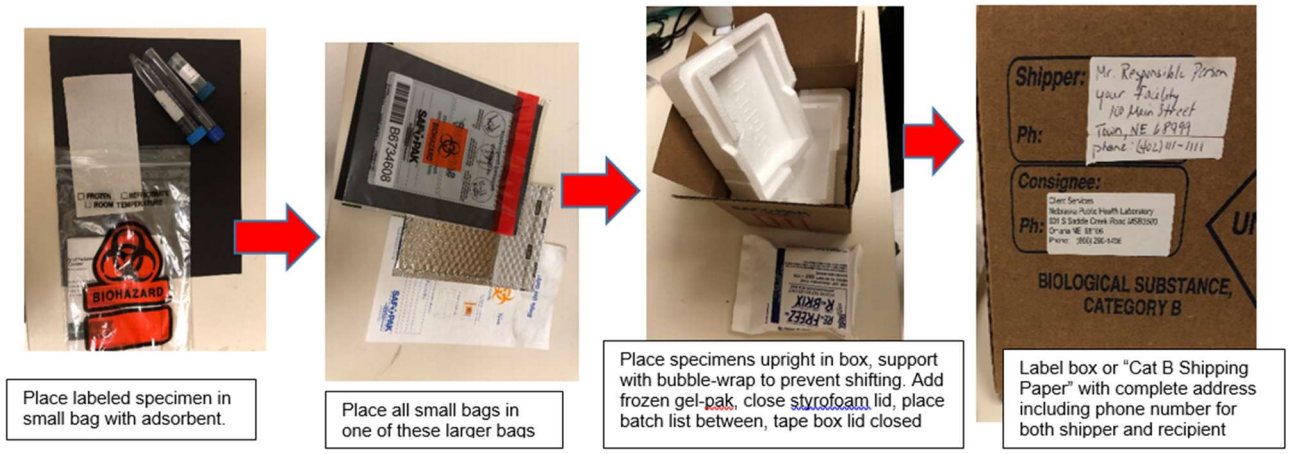
✓ *Appropriately donn PPE according to facility policy.*
✓ *Explain procedure to patient.*
✓ *Confirm NP labels with patient ID or verbally.*
✓ *Stand to the side, not directly in front of the patient when collecting to avoid aerosols.*
✓ *Ask patient to lean head back, close eyes. Hold patient forehead back firmly.*
✓ *Insert mini-tip swab with a flexible shaft through the nostril parallel to the palate (not upwards) until resistance is encountered or the distance is equivalent to that from the ear to the nostril of the patient, indicating contact with the nasopharynx. Swab should reach depth equal to distance from nostrils to outer opening of the ear.*
✓ *Gently rub and roll the swab.*
✓ *Leave swab in place for several seconds to absorb secretions.*
✓ *Slowly remove swab while rotating it.*
✓ *Specimens can be collected from both sides using the same swab, but it is not necessary to collect specimens from both sides if the mini-tip is saturated with fluid from the first collection. If a deviated septum or blockage create difficulty in obtaining the specimen from one nostril, use the same swab to obtain the specimen from the other nostril. Do not sample the nostrils or tonsils.*
✓ *Gently hold, then rotate swab to absorb secretions.*
✓ *Slowly withdraw the swab. Entire process may take 30 seconds*
✓ *Place swab immediately into a sterile tube containing 1 ml of media.*

Cover Tube with Cap or Gauze



✓ *If the swab has a break line, cover vial opening with cap or gauze and hold away from HCPs and patients, to break off swab handle. If score line not available, aseptically cut swab stick off below lid line. Discard gauze in medical waste.*
✓ *Tighten cap straight on vial, make sure shaft of swab is short enough not to be in contact with lid, thus preventing a secure seal and leakage in transport.*
✓ *Lay tube(s) down on new disinfectant wipe, hand sanitize gloves.*
✓ *With another disinfectant wipe, disinfect tube thoroughly. Let dry.*
✓ *Label specimen container with the following 5 items: patient full name, DOB, time and date of collection, source (NP) and collector initials.*
✓ *Place each specimen in small bio-hazard bag (i.e., secondary container) with absorbent material. Seal.*

- ✓ *Disinfect outside of bag with appropriate disinfectant wipe. Hand off to other staff who can complete final packaging outside of patient's room.*
- ✓ *Appropriately doff PPE and tend to patient*
- ✓ *Staff on clean side can place all small bags into one or more larger bags to double bag. Use larger 95kPA bag or white Tyvek envelop if shipping by FedEx or UPS.*
- ✓ *Disinfect outside of larger bag.*
- ✓ *Before or after collection, enter each patient NPHL's NUlirt Order Entry system, with complete documentation of patient demographics and symptoms.*
- ✓ *Print a batch list from NUlirt after all patients entered.*
- ✓ *Place batch list above inner Styrofoam or silver lining of box but below the box lid.*
- ✓ *Seal Category B box with shipping tape.*
- ✓ *Complete all highlighted areas of NPHL Category B Shipping Paper, tape to top of box or place in pouch.*
- ✓ *Category B boxes are required if transported by all non-exclusive ground couriers outside of Lincoln/Omaha.*
- ✓ Category B shipped by FedEx or UPS must be placed into a FedEx "OverPack".
- ✓ Keep a copy of all shipping paperwork for 2 years.
- ✓ Make arrangement for courier pickup. If ground transport required, call NPHL Client Services to arrange at (866) 290-1406
- ✓ *See images below for more detailed packaging instructions.*



Specimens shipped by FedEx or UPS must go into pressure compliant 95kPA bag (white Tyvek envelop), placed into Styrofoam or silver liner with frozen gel-pack, and sealed in box with shipping tape. Rigid box must go into "OverPack"

Figure 1 White Tyvek Envelop

Figure 2 FedEx OverPack

Point-of-Care Testing at Patient Bedside for COVID-19, Influenza, and other pathogens

Multiple point-of-care assays have been or are being marketed for rapid testing of potentially infected patients. Follow closely the manufacturer's instructions when using these types of assays and recognize the performance characteristics of each assay to be sure that they are being used appropriately for the population tested. Facilities must first perform a Risk Assessment to identify the tasks that create aerosols and mitigate prior to testing in clinical settings. These tests can easily aerosolize the specimen and should be performed using additional protection. The person testing should wear an N-95 mask and goggles or face shield and work behind a Plexiglass tabletop splashguard when performing any POC test.

Point-of-Care Testing in Laboratory Settings

Laboratories must first perform a Risk Assessment to identify the tasks that create aerosols (below) and mitigate prior to testing in a lab setting. To use the BSC, work slowly and methodically, from dirty to clean, and remove gloves immediately after every exit. See BSC just-in-time training at: https://www.youtube.com/watch?v=96-aZLom340
If a BSC is not available in the lab, work behind a Plexiglass tabletop splashguard wearing an N-95 mask and goggles or face shield when performing any POC test.

Not all enhancements may be possible, but all conceivable measures must be taken to protect the HCP. The following activities that involve manipulation of potentially infected respiratory specimens should be performed in a certified Class II BSC:

- ✓ Performing rapid diagnostic test kits such as those used for RSV, Strep A, and influenza kits (all respiratory specimens testing should be manipulated inside the BSC).
- ✓ Adding specimen aliquots to test analyzers ie) multiplex PCR cartridges.
- ✓ Aliquoting, vortexing and/or diluting specimens.
- ✓ Inoculating bacterial or mycological culture media.
- ✓ Nucleic acid extraction procedures.
- ✓ Preparation and chemical- or heat-fixing of smears for microscopic analysis.
- ✓ Opening of sealed rotor centrifuge cups or centrifuged specimen containers in unsealed rotor cups.

BSC NOTE: Remove gloves upon every exit of the cabinet, use good glove-glove technic, move slowly not to aerosolize what has contaminated the gloves.

Facilities performing the following activities causing aerosolization but are unable to use a BSC must consider enhancing precaution when working on the bench. Upon performing a risk assessment consider using face shield or goggles and N95 or N-99 (or surgical mask if N95 are not available or in short supply although this is not as protective), and performed behind a Plexiglass tabletop splashguard if possible:

- ✓ Performing any rapid diagnostic test kit such as those used for RSV, Strep A, influenza, or COVID-19 kits in a laboratory, clinic settings or doctor's office where a BSC is not available.
- ✓ Vortex specimens without caps on an open bench top
- ✓ Loading and unloading of automated tests ie) multiplex PCR panel
- ✓ Working with multi-plex instruments when kits or panels lodge, are stuck or broken and require additional manipulation
- ✓ Laboratorian is immunosuppressed or has a co-morbidity

Notes:

- If a facility is unable to safely collect specimens, notify the LHD for directions to alternate collection locations.
- Questions regarding testing or other usual circumstances should go through email at nphl@unmc.edu. However, NPHL will not give out results. Results can be found on the NUlirt system.
- If a laboratory test confirms the presence of another respiratory pathogen such as the influenza virus, RSV, or *Streptococcus pneumonia*, but clinical suspicion remains high for either a co-infection or a secondary infection, then consideration for COVID-19 testing *should* be discussed with public health officials.
- Laboratory waste can be handled as all other medical waste. Use two red liner bags, tie with an overhand balloon knot, place waste and sharps waste inside double bags. Contact medical waste courier for specific requirements. Specimen couriers are not trained to transport medical waste. Do not throw in regular trash.