Date Sent: 1/30/2020   Number of Pages: 14

To: Local Medical Community

Company:

Fax Number: sent blast fax

From: Iredell County Health Department

Title: Fax Number: 704-871-3474

Phone Number: 704-878-5300

Confidential: □Yes ☑No

Urgent: □Yes ☑No

Sending Division: □Executive □Administration
☑Clinical Services □Environmental Health
□Development & Promotion

Message from NC DHHS:

This memo is intended to provide the latest information to all North Carolina clinicians regarding the Middle-East Respiratory Syndrome Coronavirus or MERS-CoV, including specimen testing requirements. MERS-CoV infections are reportable in North Carolina. Physicians are required to contact their local health department or state Communicable Disease Branch. (919-733-3419) as soon as MERS-CoV infection is reasonably suspected.

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- Child Health Clinic
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- Women Infants and Children Nutrition Services

Physicals:

- Sports
- Work
- College
- DOT
- Women’s Health

Health Assessment and Planning:

- Evaluating County Health Status
- Monitoring & Reducing Health Hazards
- Reducing Specific Disease and Injury
- Providing Emergency Preparedness and Response
- Issuing Health Advisories & News Releases
- Implementing Policies, Processes, and Environmental Changes to Improve Health
- Providing Health Education & Information
- Planning Partnerships with Health Care Providers
- Improving Healthy Eating, Active Living and Tobacco-free Living
- Improving Access to Health Care

Environmental Health:

- Ensuring Water Quality
- Monitoring Waste Disposal
- Fighting Pollution
- Ensuring Sanitation
- Enforcing Health and Safety Codes

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January 27, 2020

All healthcare facilities (including hospitals and outpatient settings) and healthcare providers should be prepared to evaluate patients for many different respiratory infections such as Influenza (Flu), Respiratory Syncytial Virus (RSV), and most recently 2019 Novel Coronavirus (2019-nCoV).

Preventing transmission of respiratory pathogens in the healthcare setting requires adherence to, and application of, strong infection prevention practices and policies including environmental and engineering controls, administrative controls, safer work practices, and personal protective equipment (PPE). Measures that enhance early detection and prompt triage and isolation of patients who should be evaluated for 2019-nCoV are critical to ensuring effective implementation of infection control measures. Successful implementation of many, if not all, of these strategies is dependent on the presence of clear communication, administrative policies, and organizational leadership that promote and facilitate adherence to these recommendations among the various people within the healthcare setting, including patients, visitors, and healthcare providers (HCP).

Recommendations:

1. Minimize Opportunity for Exposures

Step 1: Provide Signage, Respiratory Hygiene Supplies

- Post signage for patients to encourage prompt notification of travel
- Provide respiratory hygiene supplies (e.g., hand hygiene agents, tissues, face masks, trash receptacle)
- Instruct persons with symptoms of a respiratory infection to adhere to respiratory etiquette and wear a face mask
- Instruct persons with symptoms of a respiratory infection to sit as far away from others as possible

2. Adhere to Infection Prevention Precautions

Step 2: Identify Patients at Risk for Novel Coronavirus (2019-nCoV) Infection

A. Identify signs and symptoms of 2019-nCoV:
   - Did/Does the patient have a fever or feel feverish?
   - Does the patient have symptoms of lower respiratory illness (cough, difficulty breathing)?

B. Determine potential for exposure:
   - In the past 14 days before symptom onset:
     - Did the patient travel to/from Wuhan City, China? OR
     - Have close contact with a person who is being evaluated for 2019-nCoV while that person was ill?
C. The 2019-nCoV outbreak is a rapidly evolving situation and the case definition may change as the CDC learns more about the disease. Please visit the following website for the most current case definition: https://www.cdc.gov/coronavirus/2019-nCoV/clinical-criteria.html

Step 3: Infection Prevention Precautions for Patients at Risk for Novel Coronavirus (2019-nCoV) Infection

A. Patient placement:
IMMEDIATELY:
- Place a surgical mask on the patient. If this is not possible (e.g. would further compromise respiratory status, difficult for patient to wear), have the patient cover their mouth/nose with tissue when coughing.
- Isolate patient in a private negative pressure room (airborne isolation room) with the door closed.
- Ensure that all healthcare personnel entering the room use contact, droplet, AND airborne precautions INCLUDING eye protection (e.g., goggles or face shield). Please note: Airborne precautions include use of NIOSH-approved fit-tested N95 mask or higher.
- When possible, limit the number of visitors and healthcare providers to minimize possible exposures.

B. Notify infection prevention and health department personnel:
- Notify your healthcare facility’s infection control personnel.
- Notify your local health department (http://www.nchalhd.org) and the NC DPH Communicable Disease Branch (919-733-3419; available 24/7) to discuss need for laboratory testing for 2019-nCoV

C. Monitor the CDC’s 2019-nCoV infection prevention guidance for changes as the outbreak evolves and comply with the most up-to-date recommendations: https://www.cdc.gov/coronavirus/2019-nCoV/infection-control.html

3. Management of Patient and Environment

Step 4: Manage Patients at Risk for Novel Coronavirus (2019-nCoV) Infection

A. Provide treatment according to standard protocols with the following considerations included:
- Use caution when performing aerosol-generating procedures
- Perform procedures only if medically necessary
- Limit number of healthcare providers to minimize possible exposures
- Conduct procedures in negative pressure (airborne isolation) room when feasible

Step 5: Laboratory Testing

A. Perform any clinically indicated respiratory and other diagnostic tests
- Respiratory testing:
  - Rapid Influenza: □ A □ B
  - Rapid Strep
  - Viral Respiratory Panel
  - Legionella
  - Other: ____________
  - Other: ____________
  - Other: ____________

Other clinically relevant testing:
- Chest X-Ray □ Not Done □ Pending □ Normal
- Abnormal: ________________________

- Other: ___________________________
- Other: ___________________________

North Carolina DHHS, Division of Public Health, Communicable Disease Branch
(adapted from WA State Department of Health)
B. Clinicians caring for patients who meet the CDC criteria for Person Under Investigation (PUI) with approval to test from the NC Communicable Disease Branch (919-733-3419; available 24/7) should contact the North Carolina State Laboratory of Public Health BTEP Duty Phone (919-807-8600; available 24/7) to coordinate the collection and shipment of specimens. Until testing is available at NCSLPH, all specimens will be sent via NCLSPH to CDC in Atlanta for 2019-nCoV testing.

- Collection of three specimen types: nasopharyngeal swabs, oropharyngeal swabs, and sputum for testing is recommended.

**Step 6: Manage Visitor Access and Movement within the Facility**

A. Limit the number of visitors to minimize possible exposures.

B. Manage visitors to rooms of patients at risk for Novel Coronavirus (2019-nCoV):

- Screen visitors for symptoms of acute respiratory illness before entering the hospital
- Evaluate risk to the health of the visitor (e.g., visitor might have underlying illness putting them at higher risk for 2019-nCoV) and ability to comply with precautions
- Provide instructions prior to patient room entry on: hand hygiene, limiting surfaces touched, and use of PPE according to current facility policy while in the patient’s room
- Exclude during aerosol-generating procedures
- Instruct visitors to limit movement within the facility
- Maintain log of all visitors who enter 2019-nCoV patient rooms

**Step 7: Environmental Infection Control**

A. Hand hygiene:

- Use standard FDA-approved hospital hand hygiene agents effective against coronavirus (e.g., alcohol foam or liquid soap)

B. Cleaning/disinfection:

- Use EPA-registered disinfectant appropriate for coronavirus in healthcare settings, including those patient-care areas in which aerosol-generating procedures are performed
- Manage laundry, food service utensils, and medical waste in accordance with routine procedures and category B waste handling

**4. Management of Healthcare Personnel**

**Step 8: Monitor Healthcare Providers**

A. Healthcare provider follow-up:

- Maintain log of all healthcare providers entering room (self-monitoring for symptoms for 14 days, even if wearing appropriate PPE)
- Healthcare providers who develop any respiratory symptoms after an exposure, whether protected or unprotected (i.e., not wearing recommended PPE at the time of contact) to a patient with 2019-nCoV should be excluded from work.

- These healthcare providers should notify their supervisor, implement respiratory hygiene and cough etiquette, seek prompt medical evaluation, and comply with work exclusion until they are no longer deemed infectious to others.
Asymptomatic healthcare providers who have had an unprotected exposure (i.e., not wearing recommended PPE at the time of contact) to a patient with 2019-nCoV should be excluded from work for 14 days to monitor for signs and symptoms of respiratory illness and fever.

Appendix: Donning and Doffing of Personal Protective Equipment (PPE)

Donning (Putting on):

- Perform hand hygiene before putting on any PPE
- General approach to putting on this PPE combination for respiratory pathogens:
  - gown
  - respirator
  - goggles or face shield
  - gloves

Doffing (Taking off):

- General approach to removing PPE for respiratory pathogens:
  - Gloves
  - goggles or face shield
  - gown
  - respirator
- Remove all PPE except respirator at doorway or in anteroom
- Perform hand hygiene
- Exit room
- Remove respirator after leaving patient room and closing door. Careful attention should be given to prevent contamination of clothing and skin during the process of removing PPE.
- Perform hand hygiene after removing all PPE
Patients confirmed to have, or being evaluated for, 2019-nCoV infection may be cared for at home based on public health and medical evaluation. Prior to a healthcare facility, healthcare provider, or public health professional approving home care, the following steps should be taken:

**Pre-requisites for home care:**

1. **Healthcare provider / local health department conduct remote telephone assessment to assure residential setting is appropriate for patient to self-isolate:**
   - Establish suitability of residential setting for home care self-isolation:
     - Separate room/living space (away from others in the home) with access to bathroom and kitchen facilities
     - Patient is able to adhere to recommended precautions (see included recommendations)
     - If patient is unable to perform self-care, another identified caregiver is available
       - Caregiver should be capable of performing all tasks listed in caregiver guidance, provided on pages 3-4.
       - Caregivers should not themselves be elderly or have compromised immune systems or chronic health conditions (e.g., chronic heart, lung, or kidney conditions, diabetes, or cancer) that would cause them to be considered high risk for complications if they were to get sick.

2. **Develop communication plan with the local health department**
   - Establish method of communication with healthcare provider and local health department until the patient fully recovers or has negative 2019-nCoV testing
   - Notify and local health department immediately of any change in the patients’ clinical status

3. **Educate patients and caregivers on the recommendations for home care infection prevention for 2019-nCoV**
   - See included documents for infection prevention recommendations for 2019-nCoV patients (page 2) and caregivers (pages 3-4).
   - View the CDC’s home care recommendations:
Infection prevention recommendations for individuals confirmed to have, or being evaluated for, 2019-nCoV infection who receive care at home

Individuals who are confirmed to have or are under evaluation for 2019-nCoV should follow the prevention steps below until a healthcare provider or local or state health department says they can return to normal activities.

Stay home except to get medical care
You should restrict activities outside your home, except for getting medical care. Do not go to work, school, or public areas, and do not use public transportation or taxis.

Call ahead before visiting your doctor
Before your medical appointment, call the healthcare provider and tell them that you have, or are being evaluated for, 2019-nCoV infection. This will help the healthcare provider’s office take steps to keep other people from getting infected.

Monitor your symptoms
Seek prompt medical attention if your illness is worsening (e.g., difficulty breathing). Before going to your medical appointment, call the healthcare provider and tell them that you have, or are being evaluated for, 2019-nCoV infection. This will help the healthcare provider’s office take steps to keep other people from getting infected. Ask your healthcare provider to call the local or state health department.

Wear a facemask
You should wear a facemask when you are in the same room with other people and when you visit a healthcare provider. If you cannot wear a facemask, the people who live with you should wear one while they are in the same room with you.

Separate yourself from other people in your home
As much as possible, you should stay in a different room from other people in your home. Also, you should use a separate bathroom, if available.

Avoid sharing household items
You should not share dishes, drinking glasses, cups, eating utensils, towels, bedding, or other items with other people in your home. After using these items, you should wash them thoroughly with soap and water.

Cover your coughs and sneezes
Cover your mouth and nose with a tissue when you cough or sneeze, or you can cough or sneeze into your sleeve. Throw used tissues in a lined trash can, and immediately wash your hands with soap and water for at least 20 seconds.

Wash your hands
Wash your hands often and thoroughly with soap and water for at least 20 seconds. You can use an alcohol-based hand sanitizer if soap and water are not available and if your hands are not visibly dirty. Avoid touching your eyes, nose, and mouth with unwashed hands.
Prevention steps for caregivers and household members of patients confirmed to have, or being evaluated for, 2019-nCoV infection and being cared for in the home

If you live with, or provide care at home for, a person confirmed to have, or being evaluated for, 2019-nCoV infection please follow these guidelines to prevent infection:

**Follow healthcare provider’s instructions**
Make sure that you understand and can help the patient follow any healthcare provider instructions for all care.

**Provide for the patient’s basic needs**
You should help the patient with basic needs in the home and provide support for getting groceries, prescriptions, and other personal needs.

**Monitor the patient’s symptoms**
If they are getting sicker, call his or her medical provider and tell them that the patient has, or is being evaluated for 2019-nCoV infection. This will help the healthcare provider’s office take steps to keep other people from getting infected. Ask the healthcare provider to call the local or state health department.

**Limit the number of people who have contact with the patient**
- If possible, have **only one caregiver** for the patient.
- Other household members should stay in another home or place of residence. If this is not possible, they should stay in another room, or be separated from the patient as much as possible. Use a separate bathroom, if available.
- **Restrict visitors** who do not have an essential need to be in the home.

**Keep elderly, very young, and other sick people away from the patient**
Keep elderly people, very young children, and those who have compromised immune systems or chronic health conditions away from the patient. This includes people with chronic heart, lung, or kidney conditions, diabetes, and cancer.

**Ensure good ventilation**
Make sure that shared spaces in the home have good air flow, such as from an air conditioner or an opened window, weather permitting.

**Wash your hands often**
- **Wash your hands often and thoroughly with soap and water for at least 20 seconds.** You can use an alcohol-based hand sanitizer if soap and water are not available and if your hands are not visibly dirty.
- Avoid touching your eyes, nose, and mouth with unwashed hands.
- **Use disposable paper towels** to dry your hands. If not available, use dedicated cloth towels and replace them when they become wet.
Wear a facemask and gloves

- **Wear a disposable facemask and gloves** when you touch or have contact with the patient’s blood, body fluids and/or secretions, such as sweat, saliva, sputum, nasal mucus, vomit, urine, or feces. Ensure the mask fits tightly, and do not touch it during use.
- Throw out disposable facemasks and gloves after using them. **Do not reuse.**
- **Wash your hands immediately** after removing your facemask, gown, and gloves.
- Place all used disposable gloves and facemasks and other waste in a lined container before disposing them with other household waste. Wash your hands immediately after handling these items.

Do not share dishes, glasses, or other household items with the patient

- Avoid sharing household items. You should not share dishes, drinking glasses, cups, eating utensils, towels, bedding, or other items with a patient who is confirmed to have, or being evaluated for, 2019-nCoV infection.
- After the patient uses these items, you should wash them thoroughly with soap and water.

Wash laundry thoroughly.

- Immediately remove and wash clothes or bedding that have blood, body fluids and/or secretions, or excretions, such as sweat, saliva, sputum, nasal mucus, vomit, urine, or feces, on them.
- **Wear gloves** when handling laundry from the patient.
- Read and follow directions on labels of laundry or clothing items and detergent. In general, wash and dry with the warmest temperatures recommended on the clothing label.

Clean areas the patient has used often

- **Clean all “high-touch” surfaces**, such as counters, tabletops, doorknobs, bathroom fixtures, toilets, phones, keyboards, tablets, and bedside tables, every day. Also, clean any surfaces that may have blood, body fluids and/or secretions or excretions on them.
- **Wear gloves** when cleaning surfaces the patient has come in contact with.
- Read labels of cleaning products and follow recommendations provided on product labels. Labels contain instructions for safe and effective use of the cleaning product including precautions you should take when applying the product, such as wearing gloves or eye protection and making sure you have good ventilation during use of the product.
- Use a **diluted bleach solution** or a household disinfectant with a label that says “EPA-approved” for coronaviruses. To make a bleach solution at home, add 1 tablespoon of bleach to 1 quart (4 cups) of water. For a larger supply, add ¼ cup of bleach to 1 gallon (16 cups) of water.

Monitor yourself for signs and symptoms of illness

Caregivers and household members are considered “close contacts” and should monitor their health. Follow the monitoring steps for close contacts listed on the symptom monitoring form.

- If you have additional questions, contact your local health department or call the epidemiologist on call at 919-733-3419.
- This guidance is subject to change. For the most up to date guidance from CDC, please refer to their website: https://www.cdc.gov/coronavirus/2019-ncov/guidance-home-care.html
Interim Healthcare Facility Preparedness Checklist for 2019 Novel Coronavirus (2019-nCoV)

All healthcare facilities should be prepared to evaluate patients for new and emerging infectious disease threats such as the 2019 Novel Respiratory Syndrome Coronavirus (2019-nCoV). All healthcare facilities should be equipped and ready to care for a limited number of infected patients as part of routine operations and also to potentially care for a larger number of patients in the context of escalating transmission. Facilities should begin preparing now by reviewing their emerging infectious disease/highly infectious disease plans.

The following checklist highlights some key areas for healthcare facilities to review in preparation for 2019-nCoV. The checklist format is not intended to set forth mandatory requirements or establish national standards.

- Monitor the situation at CDC’s 2019-nCoV website, North Carolina Division of Public Health website, and your local health department.
- Ensure facility infection control policies are consistent with the CDC’s 2019-nCoV infection prevention guidance.
- Review procedures for rapidly implementing appropriate isolation and infection prevention practices for potential 2019-nCoV.
  - For example:
    - Immediately place patient in airborne isolation room OR
    - If isolation room unavailable: Provide patient with surgical mask and place immediately in a private room with a closed door.
- Review hand hygiene policies and supplies (e.g., accessible alcohol-based hand rub).
- Review supplies of appropriate personal protective equipment (PPE):
  - NIOSH-approved respirator such as an N-95 respirator or Positive Air Purifying Respirator (PAPR)
  - Surgical Masks
  - Eye protection (e.g. face shield or goggles)
  - Isolation Gowns
  - Patient Exam Gloves
- Ensure healthcare providers who will provide patient care have been medically cleared, fit-tested, and trained for respirator use.
- Ensure that negative-pressure airborne infection isolation rooms are functioning correctly and are appropriately monitored for airflow and exhaust handling.
- Review policies and procedures for screening and work restrictions for exposed or ill healthcare personnel (HCP) including ensuring that HCP have ready access, including via telephone, to medical consultation.
- Review procedures for laboratory submission of specimens for coronavirus testing posted on NC State Lab of Public Health website.
- Provide education and training to healthcare providers regarding 2019-nCoV diagnosis, how to obtain specimen testing, appropriate PPE use, and triage procedures including patient placement, healthcare provider sick leave policies, and how and to whom suspected 2019-nCoV
cases should be reported within your facility along with procedures to take following unprotected exposures (e.g. not wearing recommended PPE).

- Regularly check the CDC’s 2019-nCoV information for HCP to ensure awareness of the most recent case definitions and infection prevention recommendations.
- Review plans for implementation of surge capacity procedures and management of scarce resources.
- Develop plans for visitor restriction if 2019-nCoV is circulating in the community.
- Ensure that specific persons have been designated within the facility who are responsible for communication with public health officials and dissemination of information to other healthcare providers and staff members at the facility.
- Assure ability to implement triage activities based on public health guidance including at the facility and using remote (i.e., phone, internet-based) methods where appropriate to minimize demand on the health care system.
- Ensure that cleaning and disinfection procedures are followed consistently and correctly.

These include:

- Availability of EPA-registered disinfectant appropriate for MERS-CoV or coronavirus in healthcare settings, including those patient-care areas in which aerosol-generating procedures are performed.
- Management of laundry, food service utensils, and medical waste should also be performed in accordance with routine procedures and category B waste handling.
January 21, 2020

To:       All North Carolina Health Care Providers  
From:  Erica Wilson, MD, MPH, Medical Epidemiologist  
       Scott Shone, PhD, HCLD(ABB), Laboratory Director  
Re:       2019 Novel Coronavirus in Wuhan, China (3 pages)  

This memo is intended to provide the latest information to all North Carolina clinicians regarding the 2019 Novel Coronavirus (2019-nCoV) in Wuhan, China, including specimen testing requirements.

Summary
An outbreak of pneumonia of unknown etiology in Wuhan City was initially reported to WHO on December 31, 2019. On January 12, 2020 Chinese health officials publicly posted the genetic sequence of a novel coronavirus, related to Severe Acute Respiratory Syndrome (SARS) and Middle East Respiratory Syndrome (MERS), identified as the cause of illness. Numbers of reported cases have continued to increase and exported cases in travelers in multiple countries have been reported.

Initial cases reported a link to a large seafood and animal market, suggesting a zoonotic origin; however, increasing numbers of patients have not reported exposure to animal markets suggesting limited person-to-person spread.

The U.S. is currently actively screening incoming travelers from Wuhan, China and the Centers for Disease Control and Prevention (CDC) released Health Alert Notice (HAN) Advisories on January 8 and January 17. As the situation continues to evolve the most up to date information can be found at https://www.cdc.gov/coronavirus/2019-ncov/index.html.

Case Investigation and Testing
- Patients who meet the following criteria should be evaluated as a Patient Under Investigation (PUI) in association with the outbreak of 2019-nCoV in Wuhan City, China.

1) Fever¹ AND symptoms of lower respiratory illness (e.g., cough, shortness of breath)
   - and in the last 14 days before symptom onset,
     - History of travel from Wuhan City, China
     - or-
     - Close contact² with a person who is under investigation for 2019-nCoV while that person was ill.

2) Fever¹ OR symptoms of lower respiratory illness (e.g., cough, shortness of breath)
   - and in the last 14 days before symptom onset,
     - Close contact² with an ill laboratory-confirmed 2019-nCoV patient.
Clinicians caring for patients meeting these criteria should immediately contact their local health department or the state Communicable Disease Branch (919-733-3419; available 24/7) to discuss laboratory testing and control measures.

Persons who meet criteria should also be evaluated for common causes of community-acquired pneumonia, if not already done. (Note: Viral culture should not be attempted in cases with a high index of suspicion.) The state or local health department should still be consulted if the patient tests positive for another respiratory pathogen as information on possible 2019-nCoV infections is still unknown.

Any cluster of severe acute respiratory illness in healthcare workers in the United States should be thoroughly investigated. Occurrence of a severe acute respiratory illness cluster of unknown etiology should prompt immediate notification of local public health for further investigation and testing.

Infection Control

Although the transmission dynamics have yet to be determined, CDC currently recommends a cautious approach to patients under investigation for 2019-nCoV.

- Standard, contact, and airborne precautions are recommended for management of patients in healthcare settings with known or suspected 2019-nCoV infection. These include:
  - Use of fit-tested NIOSH-approved N95 or higher level respirators
  - Use of gowns, gloves and eye protection (e.g., goggles or face shield)
  - Use of negative-pressure airborne infection isolation rooms if available
- Patients should be asked to wear a surgical mask as soon as they are identified. The patient should continue to wear the mask if an airborne isolation room is not available or if they must be moved from their room.

As the situation continues to evolve, please find updated guidance at https://www.cdc.gov/coronavirus/2019-nCoV/infection-control.html.

Treatment

Limited information is available to characterize the spectrum of clinical illness associated with 2019-nCoV. No vaccine or specific treatment for 2019-nCoV infection is available; care is supportive.

Testing

Testing is available at the CDC through the N.C. State Laboratory of Public Health Bioterrorism and Emerging Pathogens (BTEP) unit. CONTACT THE BTEP UNIT (919-807-8600) PRIOR TO ANY SHIPMENT OR IF YOU HAVE QUESTIONS.

Specimens should be collected as soon as possible once a PUI is identified regardless of time of symptom onset. Additional guidance for collection, handling, and testing of clinical specimens is available at https://www.cdc.gov/coronavirus/2019-nCoV/guidance-laboratories.html.

To increase the likelihood of detecting an infection, CDC recommends collecting and testing multiple clinical specimens from different sites, including lower respiratory, upper respiratory, and serum specimens. Additional specimen types (e.g., stool, urine) may be collected and stored.

- Lower respiratory tract
  - Bronchoalveolar lavage, tracheal aspirate
    - Collect 2-3 mL into a sterile, leak-proof, screw-cap sputum collection cup or sterile dry container. Refrigerate specimen at 2-8°C and ship overnight to CDC on ice pack.
  - Sputum
    - Have the patient rinse the mouth with water and then expectorate deep cough sputum directly into a sterile, leak-proof, screw-cap sputum collection cup or sterile dry container. Refrigerate specimen at 2-8°C and ship overnight to CDC on ice pack.
- Upper respiratory tract
  - Nasopharyngeal swab AND oropharyngeal swab (NP/OP swab)
- Use only synthetic fiber swabs with plastic shafts. Do not use calcium alginate swabs or swabs with wooden shafts, as they may contain substances that inactivate some viruses and inhibit PCR testing. Place swabs immediately into sterile tubes containing 2-3 ml of viral transport media. NP and OP specimens should be kept in separate vials. Refrigerate specimen at 2-8°C and ship overnight to CDC on ice pack.

- **Nasopharyngeal swab**: Insert a swab into the nostril parallel to the palate. Leave the swab in place for a few seconds to absorb secretions. Swab both nasopharyngeal areas with the same swab.

- **Oropharyngeal swab (e.g., throat swab)**: Swab the posterior pharynx, avoiding the tongue.
  - Nasopharyngeal wash/aspirate or nasal aspirate
    - Collect 2-3 mL into a sterile, leak-proof, screw-cap sputum collection cup or sterile dry container. Refrigerate specimen at 2-8°C and ship overnight to CDC on ice pack.

- **Serum**
  - Minimum volume required:
    - *Children and adults*: Collect 1 tube (5-10 mL) of whole blood in a serum separator tube.
    - *Infant*: A minimum of 1 mL of whole blood is needed for testing pediatric patients. If possible, collect 1 mL in a serum separator tube.
  - Serum separator tubes should be stored upright for at least 30 minutes, and then centrifuged at 1000–1300 relative centrifugal force (RCF) for 10 minutes before removing the serum and placing it in a separate sterile tube for shipping (such as a cryovial). Refrigerate the serum specimen at 2-8°C and ship overnight to CDC on ice-pack.

- All specimen submissions **must** have a completed BTEP Specimen Submission Form.

- This is a novel emerging coronavirus and data is not currently available on the performance of current assays which target human coronavirus, SARS, or MERS. Therefore, it is important that local or state public health officials be notified so that arrangements can be made for testing at CDC where a specific assay is currently available.

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**This is an evolving situation and recommendations are likely to change as new information becomes available.**

Updated information and guidance are available from the CDC at [https://www.cdc.gov/coronavirus/2019-nCoV/](https://www.cdc.gov/coronavirus/2019-nCoV/).

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**Notes:**

1. Fever may not be present in some patients, such as those who are very young, elderly, immunosuppressed, or taking certain fever-lowering medications. Clinical judgment should be used to guide testing of patients in such situations.

2. Close contact is defined as:
   - a) being within approximately 6 feet (2 meters), or within the room or care area, of a novel coronavirus case for a prolonged period of time while not wearing recommended personal protective equipment or PPE (e.g., gowns, gloves, NIOSH-certified disposable N95 respirator, eye protection); close contact can include caring for, living with, visiting, or sharing a healthcare waiting area or room with a novel coronavirus case.
   - or –
   - b) having direct contact with infectious secretions of a novel coronavirus case (e.g., being coughed on) while not wearing recommended personal protective equipment.
North Carolina Division of Public Health
2019 Novel Coronavirus Personal Protective Equipment Guidance
Healthcare Personnel and Visitor Patient Care Access and PPE Monitoring Log

**Instructions:** This log should be completed by the person designated to maintain this log for every healthcare worker and visitor accessing the immediate 2019 novel coronavirus patient care area. The person designated to maintain this log is to complete each column, assess appropriate PPE donning and doffing procedures, and assist to identify and evaluate any exposures or breaches in infection prevention.

<table>
<thead>
<tr>
<th>Healthcare Personnel or Visitor Name</th>
<th>Date</th>
<th>Time In</th>
<th>PPE Donning Checklist Completed by Monitor?</th>
<th>Monitor Initials</th>
<th>Time Out</th>
<th>PPE Doffing Checklist Completed by Monitor?</th>
<th>Any identified exposures or breaches in infection control? (If Yes, explain in Comments)</th>
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*PPE donning and doffing checklist available in the NC DPH Interim 2019 Novel Coronavirus (2019-nCoV) Guidance for Healthcare Facilities*