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February 3, 2020 (*replaces version dated January 21, 2020*)

To: All North Carolina Clinicians and Laboratories
From: Zack Moore, MD, MPH, State Epidemiologist
Scott Shone, PhD, HCLD (ABB), Laboratory Director
Re: 2019 Novel Coronavirus (4 pages)

This memo is intended to provide the latest information to all North Carolina clinicians and laboratory staff regarding the 2019 Novel Coronavirus (2019-nCoV). This version includes the following updates:

- Updated criteria to guide evaluation for patients under investigation for 2019-nCoV,
- A new requirement for N.C. physicians and laboratories to report all suspected cases of 2019-nCoV infection, and
- Specimen collection and laboratory testing guidance for suspected cases of 2019-nCoV.

Summary

An outbreak of pneumonia of unknown etiology in Wuhan City was initially reported to the World Health Organization (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) coronaviruses, identified as the cause of illness. Numbers of cases have continued to increase and cases have been reported in multiple countries, including the U.S. WHO announced a Public Health Emergency of International Concern on January 30 and the U.S. Department of Health and Human Services declared a public health emergency on January 31, 2020.

This is a rapidly evolving situation. The most up to date information and guidance can be found at <https://www.cdc.gov/coronavirus/2019-ncov/index.html> and <https://epi.dph.ncdhhs.gov/cd/diseases/2019nCoV.html>.

Case Investigation and Testing

- Clinicians are encouraged to screen for possible 2019-nCoV infection by asking:
 - Does the person have fever¹ OR symptoms of lower respiratory infection, such as cough or shortness of breath?
AND
 - Has the patient traveled to mainland China within 14 days of symptom onset?
AND
 - Has the patient had close contact² with a person confirmed with 2019-nCoV infection?
- CDC has provided an algorithm to assist with screening, available at <https://www.cdc.gov/coronavirus/2019-ncov/hcp/2019-nCoV-identify-assess-flowchart-508.pdf>.

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AN EQUAL OPPORTUNITY / AFFIRMATIVE ACTION EMPLOYER

- Patients who meet the following criteria should be evaluated as a Patient Under Investigation (PUI) in association with the outbreak of 2019-nCoV.
 - 1) Fever¹ OR signs/symptoms of lower respiratory illness (e.g., cough, shortness of breath) in any person, including healthcare workers, who has had close contact with a patient with a confirmed 2019-nCoV infection within 14 of symptom onset.
 - 2) Fever¹ AND signs/ symptoms of lower respiratory illness (e.g., cough, shortness of breath) in any person with history of travel from Hubei Province, China within 14 days of symptom onset.
 - 3) Fever¹ AND signs/ symptoms of lower respiratory illness (e.g., cough, shortness of breath) requiring hospitalization in any person with a history of travel from mainland China within 14 days of symptom onset.

Reporting

- **Effective February 3, 2020, physicians and laboratories in North Carolina are required to immediately report when novel coronavirus infection is reasonably suspected to exist.**
- Clinicians caring for patients with possible 2019-nCoV should immediately contact their local health department or the state Communicable Disease Branch (919-733-3419; available 24/7) to review the risk assessment and discuss laboratory testing and control measures.
- Persons in whom 2019-nCoV infection is suspected should also be evaluated for common causes of community-acquired respiratory illness, if not already done. (Note: For biosafety reasons, viral culture should not be attempted in cases meeting the PUI criteria.) The state or local health department should still be consulted if the patient tests positive for another respiratory pathogen as information is limited on the likelihood of coinfections in patients with 2019-nCoV.
- Any cluster of severe acute respiratory illness in healthcare workers in the United States should prompt immediate notification of local or state public health for further investigation and testing.

Infection Control

- CDC currently recommends a cautious approach to management of known or suspected cases, including the following:
 - 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 as having symptoms of respiratory illness
 - Isolate patients in a private room with the door closed (use an airborne isolation room, if possible).
 - Patients with known or suspected 2019-nCoV infection should continue to wear the mask if placed in a private, non-airborne isolation room 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/hcp/infection-control.html>.

Treatment

- No vaccine or specific treatment for 2019-nCoV infection is available; care is supportive.

- Corticosteroids should be avoided unless indicated for other reasons (for example, chronic obstructive pulmonary disease exacerbation or septic shock).

Testing

- Testing is available at the CDC through the N.C. State Laboratory of Public Health (NCSLPH). Prior approval is required. **CONTACT THE BIOTERRORISM AND EMERGING PATHOGENS UNIT (919-807-8600) PRIOR TO ANY SHIPMENT OR IF YOU HAVE QUESTIONS.**
- Specimens should be collected and packaged on ice as UN3373 Category B for pickup by DASH or other prearranged courier 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://slph.ncpublichealth.com/bioterrorism/2019-ncov.asp> and <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 upper respiratory (nasopharyngeal and oropharyngeal swabs) and lower respiratory specimens (sputum, if possible).
 - Upper respiratory tract
 - Nasopharyngeal AND oropharyngeal swabs (NP/OP swabs)
 - Use only synthetic fiber swabs with plastic or metal 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 swabs should be placed and kept in separate vials. Refrigerate specimen at 2-8°C and coordinate prompt shipping to NCSLPH through the BTEP duty phone.
 - *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.
 - Lower respiratory tract
 - Sputum if possible when a productive cough is present. Sputum should not be induced.
 - 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 coordinate prompt shipping to NCSLPH through the BTEP duty phone.
 - All specimen submissions **must** have a completed NCSLPH [BTEP Specimen Submission Form](#) and a [NC Interim PUI form](#).
 - This is a novel emerging coronavirus and the performance characteristics to detect 2019-nCoV using current assays that target human coronavirus, SARS, or MERS are not established. Therefore, it is important that local or state public health officials be notified of PUI, so that arrangements can be made for testing at CDC where a qualified assay is currently available. **All submissions to CDC MUST be routed through NCSLPH.**
 - **For more information and updated information, please see [NCSLPH 2019-nCoV Clinical Laboratory Guidelines](#).**

Notes:

¹Fever may be subjective or confirmed. 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.

²Close 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.