Johns Hopkins Institutions
2019 Wuhan Novel Coronavirus
Preparedness and Response Plan

Version 2.0
Last Updated: January 22, 2020

This plan was developed by Johns Hopkins CEPAR and the Johns Hopkins Medicine Office of Epidemiology and Infection Prevention following guidelines from the U.S. Centers for Disease Control and Prevention.
Executive Summary

Within the Johns Hopkins Institutions (JHI), the Office of Critical Event Preparedness and Response (CEPAR) is charged with creating, maintaining and implementing a Johns Hopkins Institutions’ 2019-nCoV Preparedness and Response Plan and ensuring that all Johns Hopkins Health System (JHHS)/Johns Hopkins Medicine (JHM) and Johns Hopkins University (JHU) affiliates prepare, maintain and update their own plans as extensions of the JHI-level plan.

This plan gives guidance for Johns Hopkins Institutions’ response to the novel Coronavirus (2019-nCoV) outbreak currently centered in China, but with global cases. Early recognition of 2019-nCoV is critical for infection control. All health care workers should be alert for patients presenting with epidemiological link and signs or symptoms concerning for possible 2019-nCoV infection.

Faculty, staff, and, students who have traveled to Wuhan, China, and develop respiratory symptoms or a fever should contact student or occupational health for a telephone consultation prior to physically presenting at a Johns Hopkins affiliated clinic or emergency department. This will help to limit transmission by avoiding inadvertent exposures of others to the virus.

Patients presenting to the emergency departments or outpatient areas should be screened using the Wuhan Novel Coronavirus Screening Tool (Appendix A). For those with confirmed disease or identified as persons under investigation (PUIs) as defined by the U.S. Centers for Disease Control and Prevention (CDC) pending confirmation, control measures for 2019-nCoV include airborne precautions plus contact precautions with eye protection. Additionally, the patient should be placed in a private room with the door closed. The room should be a negative pressure isolation room or a room with a portable HEPA filter whenever these resources are available. Aerosol-generating procedures such as suctioning of the lower airway, should be avoided altogether or, if absolutely necessary, completed in an airborne isolation room. Routine lab specimens, i.e., CBC, electrolytes, etc., will be processed in the clinical laboratory after consult with the affiliate infection Control (IC) representative. The lab should be pre-notified if samples are sent from a patient screened as at risk for 2019-nCoV. Blood or respiratory samples to test for the presence of 2019-nCoV will be sent to the state lab for processing and eventual transport to the Centers for Disease Control and Prevention (CDC).
A communication protocol (page 8) has been developed and described in this document to ensure accurate and complete information is sent to the appropriate people in a timely manner.

Because of the evolving nature of the outbreak, this plan is considered a working document that will be revised as the situation evolves and/or in response to CDC guidelines.
Table of Contents

<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Executive Summary</td>
<td>2</td>
</tr>
<tr>
<td>Introduction</td>
<td>4</td>
</tr>
<tr>
<td>Background</td>
<td>5</td>
</tr>
<tr>
<td>2019 Novel Coronavirus Wuhan Summary</td>
<td>6</td>
</tr>
<tr>
<td>CDC Clinical Guidelines</td>
<td>6</td>
</tr>
<tr>
<td>Communications Protocol for People Under Investigation</td>
<td>8</td>
</tr>
<tr>
<td>2019-nCoV Control Measures In Health Care Settings</td>
<td>10</td>
</tr>
<tr>
<td>PPE for Patient Care</td>
<td>10</td>
</tr>
<tr>
<td>PPE for Obtaining Lab Specimens</td>
<td>11</td>
</tr>
<tr>
<td>Emergency Medicine and Ambulatory Areas</td>
<td>12</td>
</tr>
<tr>
<td>Admitted Patients</td>
<td>13</td>
</tr>
<tr>
<td>Environmental Cleaning</td>
<td>14</td>
</tr>
<tr>
<td>Waste and Linens</td>
<td>14</td>
</tr>
<tr>
<td>Exposed Staff</td>
<td>14</td>
</tr>
<tr>
<td>Laboratory Specimens</td>
<td>15</td>
</tr>
<tr>
<td>Confirmatory/Diagnostic Test</td>
<td>15</td>
</tr>
<tr>
<td>Guidance for the Safe Handling of Human Remains</td>
<td>17</td>
</tr>
<tr>
<td>Travel and Return from Designated 2019-nCoV Endemic Areas</td>
<td>18</td>
</tr>
<tr>
<td>Appendix A, 2019-nCoV Screening Tool</td>
<td>20</td>
</tr>
<tr>
<td>Appendix B, Johns Hopkins HEIC Contact Information</td>
<td>21</td>
</tr>
<tr>
<td>Appendix C, CDC PUI Screening Form</td>
<td>23</td>
</tr>
</tbody>
</table>
Introduction

The principles and specifics of this plan pertain to all Johns Hopkins affiliates and follow guidance and recommendations from the CDC and the World Health Organization (WHO). It was further developed with input from the Johns Hopkins Medicine Healthcare Epidemiology and Infection Control (HEIC) and the Johns Hopkins Medicine Office of Emergency Management (OEM).

This guidance is not meant to replace existing emergency management or infection control policies, signage or guidance materials, but it provides supplemental guidance specific to the current outbreak of Wuhan novel Coronavirus (2019-nCoV). This guidance will be updated as additional information from the current outbreak becomes available.
Background

The 2019–20 novel coronavirus (2019-nCoV) outbreak, also known as the Wuhan coronavirus, the Chinese pneumonia outbreak or the Wuhan pneumonia is a viral outbreak that was initially identified during mid-December 2019 in the city of Wuhan in central China, as an emerging cluster of people with pneumonia with no clear cause, which was linked primarily to stallholders who worked at the Huanan Seafood Market which also sold live animals. Chinese scientists subsequently isolated a new strain of the coronavirus, designated as 2019-nCoV, which has been found to be at least 70% similar in genome sequence to SARS-CoV. It is not clear however, whether the 2019-nCoV is of the same severity or lethality as SARS. There are no licensed treatments or vaccines for the 2019-nCoV virus. Experimental treatments and vaccines are in development.

For this virus, there is evidence of human to human transmission, however modes of transmission are not yet well understood. There is much more to learn about how the 2019-nCoV virus spreads, severity of associated illness, and other features of the virus. Investigations are ongoing. While CDC considers this is a serious public health concern, based on current information, the immediate health risk from 2019-nCoV to the general American public is considered low at this time.

The CDC clinical criteria for a 2019-nCoV patient under investigation (PUI) have been developed based on what is known about MERS-CoV and SARS-CoV and are subject to change as additional information becomes available. (see below for the current CDC PUI definition)

This document is designed to provide high-level guidance for Johns Hopkins Institutions based on standards and guidelines presented by the CDC, WHO and other health organizations.
2019-nCoV Summary

An outbreak of 2019-nCoV has been reported as widespread in Wuhan, China, with additional cases identified in Thailand, Taiwan, Hong Kong, South Korea, Japan, and the United States. As of January 22, 2020, 17 people have died from the virus. The onset of this outbreak was December 2019, and the situation is still evolving.

Health care worker infections have been associated with this outbreak, including one patient infecting 14 healthcare workers in Wuhan.

CDC Clinical Criteria for Persons Under Investigation (PUI)

<table>
<thead>
<tr>
<th>Clinical Features</th>
<th>And</th>
<th>Epidemiologic Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fever(^1) and symptoms of lower respiratory illness (e.g., cough, difficulty breathing)</td>
<td>And</td>
<td>In the last 14 days before symptom onset, a history of travel from Wuhan City, China. — or — In the last 14 days before symptom onset, close contact(^2) with a person who is under investigation for 2019-nCoV while that person was ill.</td>
</tr>
<tr>
<td>Fever(^1) or symptoms of lower respiratory illness (e.g., cough, difficulty breathing)</td>
<td>And</td>
<td>In the last 14 days, close contact(^2) with an ill laboratory-confirmed 2019-nCoV patient.</td>
</tr>
</tbody>
</table>

\(^1\) 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 health care 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.
Communication Protocol for People under Investigation for 2019-nCoV

All potential 2019-nCoV patients will be evaluated by a licensed medical provider. Patients are screened using the Screening Tool in Appendix A.

Faculty, staff and students who have traveled recently to Wuhan City, China (within the preceding 14 days) and develop fever or respiratory symptoms must report the illness and their travel risk to Occupational Health or the relevant student health center (see below) as appropriate. Unless they need to seek emergency care due to the severity of the illness, it is preferable for these faculty, staff and students to report the illness by phone so that an initial telephone assessment can be conducted by Occupational Health, the relevant student health center, or Infection Prevention personnel (see contact information below.) During this telephone assessment, questions will be posed about the nature of the travel, activities, and symptoms to determine the severity of the illness and whether the faculty, staff or student has epidemiologic risk factors and meets criteria for being a “person under investigation (PUI)” for 2019 Coronavirus. (see page 7 for current clinical criteria, Appendix A for screening algorithm and Appendix C for PUI form.) Recommendations will then be made about the most appropriate next steps for seeking treatment and testing if indicated.

Students from the following locations should contact the Homewood Student Health Center (410-516-5709):
- Carey School of Business
- Krieger School of Arts and Sciences (including Advanced Academic Programs)
- Peabody School
- School of Advanced International Studies
- School of Education
- Whiting School of Engineering (including Engineering for Professionals)

Students from the following locations should contact University Health Services (410-955-3250 or 410-283-3855 after hours):
- Bloomberg School of Public Health

Data to inform the definition of close contact are limited. Considerations when assessing close contact include the duration of exposure (e.g., longer exposure time likely increases exposure risk) and the clinical symptoms of the person with novel coronavirus (e.g., coughing likely increases exposure risk as does exposure to a severely ill patient). Special consideration should be given to those exposed in health care settings.
University Faculty and Staff should contact Occupational Health.

Regardless of whether screening is conducted in person or over the phone, the medical provider can consult with an infectious disease physician if needed. If the patient screens positive as a person under investigation (PUI) the following communications should occur:

- If screening is conducted over the phone, the patient should be instructed to present to the Johns Hopkins Hospital Emergency Department.
- Medical provider calls Healthcare Epidemiology and Infection Control (HEIC) (link to phone contact sheet in an appendix).
- HEIC calls the local and state health departments and notifies JHM HEIC.
- The state health department will call the CDC, as needed, and the CDC may ask to speak with the patient’s medical provider.
- If testing for 2019-nCoV is indicated, JHM HEIC notifies CEPAR and Johns Hopkins Medicine Office of Emergency Management (OEM).

If 2019 n-CoV cases are identified within the Johns Hopkins Institutions, CEPAR may activate the Joint Information System (JIS) and Joint Information Center (JIC) to manage communications, including with the media. As appropriate, the CEPAR website will be leveraged to centralize and maintain communications.

Contact information for all appropriate offices, including off hours information can be found in Appendix B
2019 nCoV Control Measures in Health Care Settings

Although the transmission dynamics have yet to be determined, CDC currently recommends a cautious approach to patients under investigation for 2019 Novel Coronavirus. Such patients should be asked to wear a surgical mask as soon as they are identified and be evaluated in a private room with the door closed, ideally an airborne infection isolation room if available. Healthcare personnel entering the room should use standard precautions, contact precautions, airborne precautions, and use eye protection (e.g., goggles or a face shield).

**Personnel Protective Equipment (PPE) for Patient Care**

As of January 22, 2020, the CDC recommends standard, contact and airborne precautions with eye protection for healthcare personnel caring for patients with known or suspected 2019-nCoV. Because the initial symptoms of 2019-nCoV patients are usually nonspecific, standard precautions must be applied consistently with all patients.

At a minimum, anyone entering the patient room should wear:

- Gloves
- Particulate respirator at least as protective as a NIOSH-certified N95, EU FFP2 or equivalent
- Fluid-resistant, long, non-sterile, fluid impermeable gown
- Eye protection, ideally a face shield

Currently, as of January 23, 2020, Johns Hopkins Medicine Healthcare Epidemiology and Infection Control (HEIC) recommends utilizing the same PPE ensembles, protocols and procedures that they implemented and have practiced and drilled for viral hemorrhagic fever preparedness. Because inpatient clinical teams already have training, supplies, and protocols in place for “enhanced” PPE protocols that were implemented for viral hemorrhagic fever, HEIC currently recommends that each inpatient team that has these protocols in place (e.g., each JHM entity’s Emergency Department and the JHH Biocontainment Unit (BCU) utilize these existing, familiar PPE protocols and procedures for any PUI or patient confirmed to have 2019 nCoV. These current PPE protocols are consistent with the recommendation for Airborne plus Contact with eye protection. The protocols have a bit more “contact” protection than might be needed for 2019 nCoV, but this approach has the advantage that each team is already familiar with what is provided, trained, and drilled. Using the same PPE protocol means that the teams are ready for either VHF or 2019 nCoV which helps to avoid creating confusion or new PPE protocols at this time. If and when 2019 nCoV transmission continues and advances to an epidemic or pandemic, the PPE ensemble and protocols will likely be adjusted to make it simpler and more sustainable on a large scale. Each entity’s **ED and ambulatory areas should**
ensure that they are ready to "Identify, Isolate, and Inform" for patients with the relevant travel history and fever or respiratory symptoms.

Ambulatory areas do not generally have respirators, so the current recommendation is that they utilize the identify, isolate and inform procedures to arrange for prompt transfer of the patient to another location for safe evaluation and treatment.

**Aerosol-generating procedures should be avoided except in highly controlled settings.** The number of people in the patient’s room during aerosol-generating procedures should be limited. Particular caution is required when the following procedures are medically indicated: intubation, extubation, bronchoscopy, sputum induction and airway suctioning. These procedures should be performed in an airborne infection isolation room (AIIR), if available. If performing these procedures, PPE must include a fit-tested N95 mask or equivalent respirator and face shield.

Appropriate PPE should be worn by anyone entering the patient’s room. Upon exit from the room, PPE should be removed carefully to avoid touching the eyes, mucous membranes or clothing. Ideally, doffing should be supervised (buddy system) to ensure there is no cross-contamination or breach of procedure. Doffing PPE is a very systematic and structured process.

All PPE should be single use (with exception if using a PAPR) and should be discarded into a red trash bag.

**Neither CEPAR nor the CDC recommends the use of nondisposable equipment when disposable equipment is available.** The concern is that cross-transmission risk increases when manipulating non-disposable equipment.

**PPE for Obtaining Lab Specimens**
The laboratory must always be called before any specimens are obtained.

**CDC PPE recommendations for specimen collection:** full face shield or goggles, particulate respirator at least as protective as a NIOSH-certified N95, EU FFP2 or equivalent, and fluid-resistant gown. The purpose of PPE remains to prevent direct accidental exposure.

**CDC recommendations for laboratory testing:** full face shield or goggles, masks to cover all of the nose and mouth, gloves, fluid-resistant or impermeable gown, AND use of a certified Class II
biosafety cabinet or Plexiglas splash guard, as well as manufacturer-installed safety features for instruments.

Before collecting any specimens, HEIC must be contacted. Following specimen collection, the outside of the tubes must be wiped down with disinfectant (quaternary ammonium and or chlorine-based solution) and allowed to dry, and then a patient label should be attached. Specimens should be transported in a rigid container and hand-delivered to the lab. At no time should any specimens go through the pneumatic tube system. All specimens must be clearly labeled on the outside as coming from a patient being evaluated for suspected 2019-nCoV.

To increase the likelihood of detecting infection, CDC recommends:

**Collection of three specimen types, lower respiratory, upper respiratory and serum specimens for testing is recommended.** If possible, additional specimen types (e.g., stool, urine) should be collected and should be stored initially until decision is made by CDC whether additional specimen sources should be tested. Specimens should be collected as soon as possible once a PUI is identified regardless of symptom onset. Maintain proper infection control when collecting specimens.

**General Guidelines**

Store specimens at 2-8°C and ship overnight to CDC on ice pack. Label each specimen container with the patient’s ID number (e.g., medical record number), unique specimen ID (e.g., laboratory requisition number), specimen type (e.g., serum) and the date the sample was collected. Complete a CDC Form 50.34 (Appendix C) for each specimen submitted. In the upper left box of the form, 1) for test requested select “Respiratory virus molecular detection (non-influenza) CDC-10401” and 2) for At CDC, bring to the attention of enter “Stephen Lindstrom: 2019-nCoV PUI”.

**Emergency Medicine and Ambulatory Areas (including occupational and relevant student health areas – see below)**

While patient care activities will differ in the emergency departments and outpatient centers, all patients will be screened for travel to an affected area (Appendix A) symptoms or contact with an ill person with suspected or known 2019 nCoV infection using the CDC definitions. If the patient meets CDC criteria described above (see page 7), they are now considered patients under investigations (PUIs). A surgical mask should be placed on the patient, and the patient should be moved to a private room with the door closed. This room should be an airborne isolation room or a room with a portable HEPA filter when available. Airborne precautions and
contact precautions with eye protection will be implemented. The patient should be informed about the reason for isolation and provided with a means for communication. In the ED, staff will don the PPE ensemble that they have prepared and practiced for care of patients known or suspected to have viral hemorrhagic fever. In the ambulatory setting, staff will don a surgical mask, fluid barrier gown, face shield and gloves if they must interact with the patient but this should not be worn to provide direct patient care because it does not protect against possible airborne transmission of the virus. Providers will interview the patient using the 2019-nCoV Screening Tool (Appendix A). An infectious disease physician may be consulted as needed. If the patient meets the criteria for a “person under investigation” HEIC will be called. HEIC will contact the local and state health department for consultation and guidance at this point. This contact is required before any specimens are collected for laboratory testing.

**Admitted Patients**

Patients who are admitted to the hospital with suspected or confirmed 2019 nCoV **MUST** be placed in a private, airborne isolation room (with negative pressure and a private bathroom) with the door closed at all times. Rooms with an anteroom are preferred, as this is required for a true airborne isolation room and it allows a place for staff members to don and doff PPE. The Johns Hopkins Biocontainment Unit (BCU) leadership should be notified upon identification of a patient under investigation for 2019 nCoV and the patient may be transported to the BCU as appropriate.

In preparation for the possibility of epidemic or pandemic spread of 2019 nCoV, hospitals should predesignate a specific unit or area for care of patients infected with 2019-nCoV, and staff members in these designated areas should be trained to safely care for these patients, including the proper use of PPE.

If more than one 2019-nCoV patient is admitted to a hospital, that hospital should consider cohorting these patients on the same floor to minimize staffing and training needs.

To the extent possible, only disposable equipment should be used to care for the patient, e.g., disposable stethoscopes. If reusable equipment must be used, such as portable X-ray machines, it should remain with the patient throughout their hospitalization (dedicated medical equipment) and then cleaned per hospital policy. Procedures using needles and aerosol generating procedures should be limited to the minimum necessary.
The duration of precautions and hospitalization will be determined on a case-by-case basis in conjunction with local and state health departments and the CDC, as necessary.

If any “rule-out” 2019-nCoV patients are accepted as transfers for admission into any of the Johns Hopkins acute care hospitals, Infection Control and JHM HEIC should be included in the decision. Once the patient arrives, Infection Control will notify CEPAR.

**Environment Cleaning**
Staff members performing environmental cleaning and disinfecting should wear recommended PPE when in the patient’s room. A hospital-based disinfectant with an effectiveness claim against coronaviruses should be used for cleaning equipment and surfaces.

**Waste and Linens**
Linens should be placed in appropriate receptacles, bagged, and identified appropriately. Waste does not have to be autoclaved or incinerated before discarding.

**Exposed Staff**
Each entity’s employee health service should develop a plan for the management of potentially exposed workers. This plan should include immediate work stoppage, medical evaluation to determine if they are low- or high-risk, self-assessments, daily fever screens and symptom reporting for 14 days, psychological support and possible work exclusion depending on the exposure as recommended by Occupational Health Services. See JHM Guidance for Exposure of Faculty/Staff for further details.
Laboratory Specimens

2019-nCoV Confirmatory Test

For 2019-nCoV testing, Infection Control will call the local and state health departments. The state health department will give guidance for collecting the sample (current guidance below.) The state will not accept specimens without prior consultation. The state health department will consult with the CDC regarding the appropriate place to perform the test. If the specimen is transported to the state lab for testing, the state lab may also send a repeat specimen to the CDC. **CDC guidelines for specimen collection are described below.**

Respiratory Symptoms

*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.

Shipping

Specimens PUI’s must be packaged, shipped, and transported according to the current edition of the International Air Transport Association (IATA) Dangerous Goods Regulations. Store specimens at 2-8°C and ship overnight to CDC on ice pack. If a specimen is frozen at -70°C ship overnight to CDC on dry ice. Additional useful and detailed information on packing, shipping, and transporting specimens can be found at Interim Laboratory Biosafety Guidelines for Handling and Processing Specimens Associated with 2019 Novel Coronavirus (2019-nCoV).

For additional information, consultation, or the CDC shipping address, contact the CDC Emergency Operations Center (EOC) at 770-488-7100.

Any lab specimens should be handled with the highest degree of caution. Specimens should be transported in a rigid container and hand-delivered to the lab. No specimens of any kind should be sent through the pneumatic tube systems. Prior to sending any specimens, the laboratory staff must be alerted by phone and the conversation documented in the patient’s medical record.
Guidance for Safe Handling of Human Remains

Handling of human remains should be kept to a minimum. Enhanced PPE should be worn when doing postmortem care. The body should be wrapped in a plastic shroud. Wrapping of the body should be done in a way that prevents contamination of the outside of the shroud. Leave any intravenous lines or endotracheal tubes that may be present in place. Avoid washing or cleaning the body. After wrapping, the body should be immediately placed in a leak proof plastic bag not less than 150 micrometers thick and zipperred closed.

Prior to transport of the body, surface decontamination of the bags should be performed with EPA-registered disinfectants that can kill a wide range of viruses. Transportation of the remains should be minimized to the extent possible; patient remains should not be transported to the morgue but removed directly from the patient’s room.
Travel and Return from Designated 2019-nCoV Endemic Areas

The CDC urges all U.S. residents to avoid nonessential travel to Wuhan, China. Detailed guidance for faculty, staff and student travel is covered in a separate document.

Pretravel
Prior to travel, please review the State Department Travel Advisories website. All Johns Hopkins employees, faculty, staff, students and trainees planning travel to a Level-3 Travel Advisory country must preregister with the Johns Hopkins International Travel Registry. Additionally, we recommend that any individual planning to travel to the region schedule a pretravel appointment with the Johns Hopkins Travel and Tropical Medicine Clinic (410-955-8931) or other local travel health provider to ensure you have selected appropriate preventive measures. These include vaccines, medications and other strategies to prevent acquiring infections associated with fever. Use of recommended prevention strategies can reduce risk of common causes of fever in the returning traveler and will allow for a more efficient and effective screening upon return from high risk regions.

University Faculty and Staff (excluding School of Medicine)
All faculty and staff must notify their dean and department chair prior to departure. In addition, they must register in JHITR. Faculty and staff should not participate in direct clinical care for 21 days following their return from healthcare work in any country with an active CDC Level-3 advisory.

Health System and School of Medicine Faculty, Staff, Students and Trainees
All faculty, staff, students and trainees must request permission from their dean, department chair or supervisor prior to departure. In addition, everyone must register in JHITR. Johns Hopkins Health System and School of Medicine faculty, staff, students and trainees may not participate in direct clinical care or be in a clinical care environment until cleared by Occupational Health.

Graduate Students/Trainees (not School of Medicine and not involved in clinical care)
Graduate students must notify their dean and department chair. In addition, they must sign a waiver, complete a travel checklist and register in JHITR.
Undergraduate Students (not including medical students)
Undergraduate students must petition for approval to travel to all countries with travel warnings or advisories. Such travel requires preapproval from the student’s parents, advisor, school dean, director of study abroad and JHU chief risk officer. Undergraduate students must register their trip in JHITR.

Upon Return
People returning to the U.S. from a country or region designated as Warning Level 3, Avoid Nonessential Travel, by the CDC, will be cleared before returning to work or classes. They will be screened by Occupational Health Services or their appropriate student health services (see table above) for risk. Individuals should monitor themselves for 14 days for fever and/or other symptoms and report any symptoms that arise to occupational health.
Appendix A
2019-nCoV Screening Tool

2019 Novel Coronavirus (2019-nCov) Travel Screening

**ASSESSMENT QUESTION**
In the last 14 days, have you travelled outside of the continental United States?

**YES**

**ASSESSMENT QUESTION**
Have you travelled to Asia?

**YES**

**ASSESSMENT QUESTION**
Have you travelled to Wuhan City in China?

**YES**

**ASSESSMENT QUESTION**
Do you have any of the following: fever, cough, or other respiratory symptoms?

**NO**

**STOP SCREENING**
No action

**YES**

**ACTION REQUIRED**

STOP! Please complete the following steps immediately:

1. Place surgical mask on patient.
2. Isolate patient in a single room with door closed, when possible use a negative pressure room or a portable HEPA filter.
3. Provide patient with information about their isolation.
4. Implement Contact Precautions plus Airborne Precautions with eye protection.
5. Employee dons N95 respirator and eye protection or PAPR for direct patient care, for locations without access to respirators, isolate the patient and inform as per step six.
6. Inform the Providers, Infection Control and other appropriate staff.
## Appendix B
### Johns Hopkins Health System Infection Control Contacts

<table>
<thead>
<tr>
<th>Hospital/Medical Center</th>
<th>Contact Information</th>
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<tbody>
<tr>
<td>Howard County General Hospital</td>
<td>301-655-9973 and 301-580-5095</td>
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| Johns Hopkins All Children’s Hospital | 727-767-8677  
Pager 727-767-0233 |
| Johns Hopkins Bayview Medical Center | 410-550-0515  
After hours, 410-283-7641 |
| Johns Hopkins Hospital, Johns Hopkins Outpatient Center, David M. Rubenstein Child Health & Harriet Lane Clinic | 410-955-8384  
Pager 410-283-3855 |
| Johns Hopkins Medicine nonhospital practice sites/clinics (e.g., Johns Hopkins Community Physicians, White Marsh, Green Spring Station, Odenton, freestanding ASCs) | 410-955-8384  
Pager 410-283-3855 |
| Sibley Memorial Hospital | 202-660-5865  
Pager 301-483-1011 |
| Suburban Hospital | 301-896-4014  
Pager 301-896-3100 #548 |
| Homewood Student Health Center University Health Services | 410-516-4786  
410-955-3250  
After hours, 410-283-3855 |
| Kennedy Krieger Institute | 443-923-9452  
After hours, 443-520-9629 |

### Additional Resources

<table>
<thead>
<tr>
<th>Resource</th>
<th>Contact Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provider Hotline (24 hour)</td>
<td>1-800-765-5447</td>
</tr>
</tbody>
</table>
| CEPAR | 410-735-6450  
Pager 410-283-0027  
443-668-5121 (after hrs.) lsauer2@jhmi.edu |
| CEPAR website | [hopkins-cepar.org](http://hopkins-cepar.org) |
Appendix C

Interim 2019 novel coronavirus (2019-nCoV) patient under investigation (PUI) form

As soon as possible, notify and send completed form to: 1) your local/state health department, and 2) CDC: email (eisreport@cdc.gov, subject line: nCoV PUI Form) or fax (770-488-7107). If you have questions, contact the CDC Emergency Operations Center (EOC) at 770-488-7100.

Today’s date_________________ State patient ID_________________ NNDS (local record ID) / Case ID_________________ State_________________ County_________________

Interviewer’s name_________________ Phone_________________ Email_________________

Physician’s name_________________ Phone_________________ Pager or Email_________________

Sex □ M □ F Age___ yr □ mo Residency □ US resident □ Non-US resident, country_________________

PUI Criteria

Date of symptom onset

Does the patient have the following signs and symptoms (check all that apply)?

☐ Fever
☐ Cough
☐ Sore throat
☐ Shortness of breath

In the 14 days before symptom onset, did the patient:

☐ Spend time in Wuhan City, China? □ Y □ N □ Unknown

☐ Date traveled to Wuhan City: □ Date traveled from Wuhan City: □ Date arrived in US: □

☐ Have close contact with a person who is under investigation for 2019-nCoV while that person was ill? □ Y □ N □ Unknown

☐ Have close contact with a laboratory-confirmed 2019-nCoV case while that case was ill? □ Y □ N □ Unknown

Additional Patient Information

Is the patient a health care worker? □ Y □ N □ Unknown

Is patient a member of a cluster of patients with severe acute respiratory illness (e.g., fever and pneumonia requiring hospitalization) of unknown etiology in which nCoV is being evaluated? □ Y □ N □ Unknown

Is patient a member of a cluster of patients with severe acute respiratory illness (e.g., fever and pneumonia requiring hospitalization) of unknown etiology in which nCoV is being evaluated? □ Y □ N □ Unknown

Is patient a member of a cluster of patients with severe acute respiratory illness (e.g., fever and pneumonia requiring hospitalization) of unknown etiology in which nCoV is being evaluated? □ Y □ N □ Unknown

Does the patient have these additional signs and symptoms (check all that apply)?

☐ Chills
☐ Headache
☐ Muscle aches
☐ Vomiting
☐ Abdominal pain
☐ Diarrhea
☐ Other, Specify_________________

Diagnosis (select all that apply):

☐ Pneumonia (clinical or radiologic) □ Y □ N
☐ Acute respiratory distress syndrome □ Y □ N
☐ Chronic pulmonary disease □
☐ Chronic kidney disease □
☐ Chronic liver disease □
☐ Immunocompromised □
☐ Other, specify_________________

Is/was patient: Hospitalized? □ Y □ N

Admitted to ICU? □ Y □ N

Intubated? □ Y □ N

On ECMO? □ Y □ N

Patient died? □ Y □ N

Does the patient have another diagnosis/etiology for their respiratory illness? □ Y, Specify_________________ □ N □ Unknown

Respiratory diagnostic results

<table>
<thead>
<tr>
<th>Test</th>
<th>Pos</th>
<th>Neg</th>
<th>Pending</th>
<th>Not done</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rhinovirus/enterovirus</td>
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<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>Coronavirus (OC43, 229E, HKU1, NL63)</td>
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<td>□</td>
<td>□</td>
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<tr>
<td>M. pneumoniae</td>
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<td>□</td>
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<tr>
<td>C. pneumoniae</td>
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<td>□</td>
<td>□</td>
<td>□</td>
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<tr>
<td>Other, Specify</td>
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</tbody>
</table>

Specimens for 2019-nCoV testing

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<tr>
<th>Specimen type</th>
<th>Specimen ID</th>
<th>Date collected</th>
<th>Sent to CDC?</th>
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<tbody>
<tr>
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</tr>
<tr>
<td>Urine</td>
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</tr>
<tr>
<td>Serum</td>
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<td></td>
</tr>
<tr>
<td>Other, specify</td>
<td>□</td>
<td></td>
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</tr>
</tbody>
</table>

1 For nCoVIS reporters, use GenBank or NCBI patient identifier.
2 Fever may be present in some patients, such as those who are very young, elderly, immunosuppressed, or taking certain medications. Clinical judgement should be used to guide testing of patients in such situations.
3 Close contact is defined as: a) being within approximately 6 feet (2 meters) of or within the room or case area for a prolonged period of time (e.g., healthcare personnel, household members/units, or nursing recommended personal protective equipment (i.e., gowns, gloves, respirator, eye protection); or b) having direct contact with infectious secretions (e.g., being coughed and while not wearing recommended personal protective equipment. Data to inform the definition of close contact are limited. At this time, brief interactions, such as shaking hands by a person, are considered low risk and do not constitute close contact.