

# 2019 Novel Coronavirus Toolkit

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**JANUARY 29, 2020**

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**Planning documents for patients requiring  
Airborne Isolation + Contact Isolation + Eye  
Protection**



MASSACHUSETTS  
GENERAL HOSPITAL

CENTER FOR  
DISASTER MEDICINE

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# Resource Guide

## How to use this document:

This document is a compilation of resources to support your organization's planning for high consequence infectious diseases (HCIDs) requiring airborne isolation + contact isolation + eye protection for healthcare workers and other staff who encounter the patient. Pathogens that fall in to this category include Middle East Respiratory Syndrome (MERS), Severe Acute Respiratory Syndrome (SARS), and the 2019 Novel Coronavirus.

***“Easy to use resources and templates to enhance your organization’s ability to follow the CDC’s Identify, Isolate, and Inform algorithm.”***

Guidance from the Centers for Disease Control and Prevention and your state and local Departments of Public Health supersede the information in these documents. The information included is meant to serve as a template and facilitate planning and preparedness activities.

When developing plans, policies, and procedures for your organization we suggest including representatives from the following groups: clinicians (all levels), infection control, infectious disease, supply chain/materials management, emergency preparedness, laboratory, environmental services, occupational health, and key organizational leadership positions.

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# Planning Documents:

- *Identify, Isolate, and Inform Algorithm (page 5)*
  - This document guides healthcare workers in screening for recent travel history at portals of entry (Emergency Department, OB triage). This can be done by clinicians or others depending on decisions made at your institution. The goal is to establish an epidemiological risk (exposure to the pathogen) and couple that information with symptoms.
  - The *Inform* component of the algorithm should include both internal notification as well as notification to your state/local public health authority. **Early contact with public health can facilitate determining which patients do or do not meet person under investigation (PUI) criteria.**
- *Current Infectious Disease Outbreaks of Concern (page 7)*
  - This document should be maintained by an Infection Control Practitioner or an Infectious Disease Provider with specialty knowledge of HCIDs. It supports the information gathered in the travel history during screening.
- *Cough Etiquette and Travel History Signage (page 8)*
  - Having highly visible documents at portals of entry to the facility help patients and visitors with respiratory symptoms to self-isolate by applying a mask and washing their hands-- it is ideal to co-locate signage with access to masks and alcohol-based hand rub (ABHR). Additionally, asking patients to notify staff if they have traveled recently assists in the identification of possible cases.
- *Screening Tool (page 9)*
  - This tool is an example that can be used to guide/support clinician evaluation and captures information helpful when discussing the case with internal resources and public health authority to determine if further consideration/evaluation as a person under investigation (PUI) is warranted.
- *2019 Novel Coronavirus First Steps Guide (page 10)*
  - This document provides clinicians with easy access to CDC guidance (need to ensure it is updated as appropriate) with information on internal and external resources and references.
  - Creating First Steps Guides for other HCIDs is also a good idea
- *Policy for Managing Patients with HCIDs Requiring Airborne Isolation + Contact Isolation + Eye Protection (page 12)*
  - This policy template provides language for sections of a policy or procedure on managing confirmed or suspected cases and establishes a topical outline of sections that should be considered for inclusion in a policy.
  - This policy can be used to direct care in the Emergency Department and

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inpatient areas as well, should the patient require admission.

- *Evaluation and Management of High Consequence Infectious Diseases (page 17)*
  - This guide builds on the policy detailed above to provide detailed information on patient placement within your facility, management of multiple patients requiring admission, and proactive thinking with regards to surge planning, patient decompensation requiring immediate interventions, training, operational support, employee tracking and symptom monitoring, and demobilization.
- *Visitor Screening Tool (page 23)*
  - Management of visitors in persons with suspected or confirmed HCIDs should involve collaboration with your public health authority. Additionally, interdisciplinary perspectives should be included. However, screening of visitors facilitates the safety of staff and other patients and visitors. This is one example of a visitor screening tool.
- *PPE Doffing (N95) Checklist (page 24)*
- *PPE Doffing (PAPR) Checklist (page 25)*
  - *Doffing is the most important part of safely utilizing personal protective equipment (PPE) in these patients. These checklists demonstrate the appropriate doffing sequence when using either an N95 Respiratory or a Powered Air Purifying Respiratory (PAPR). Adaptation will need to be made based on your organization's PPE. Here we demonstrate single-use disposable gowns designed to break away.*
  - *Training of clinicians can be supported through the use of videos—here are links to example videos using the included checklists.*
    - Donning: <https://www.youtube.com/watch?v=52NqOvWygMY&list=PL0A-NKHLVrNEGCeEhTTTXsY7PHfWH7gxJ&index=2>
    - PPE Doffing: <https://www.youtube.com/watch?v=5orqrFCP3ss&list=PL0A-NKHLVrNEGCeEhTTTXsY7PHfWH7gxJ&index=3>
- *Testing Procedure (page 26)*
  - This document is used to guide clinicians in the procurement of specimens for testing. As these specimens will be transported to the state lab this is often an unfamiliar process to staff and having a toolkit with directions (including pictures) is beneficial. The swabs and collection tubes could be included in the toolkit as well.



# Identify - Isolate - Inform Algorithm

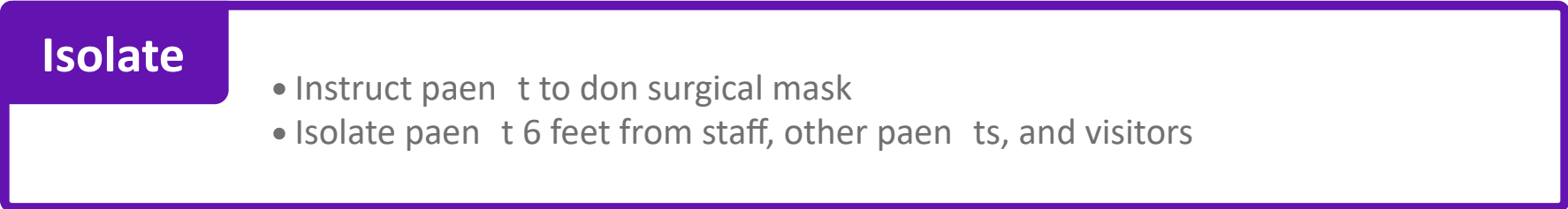
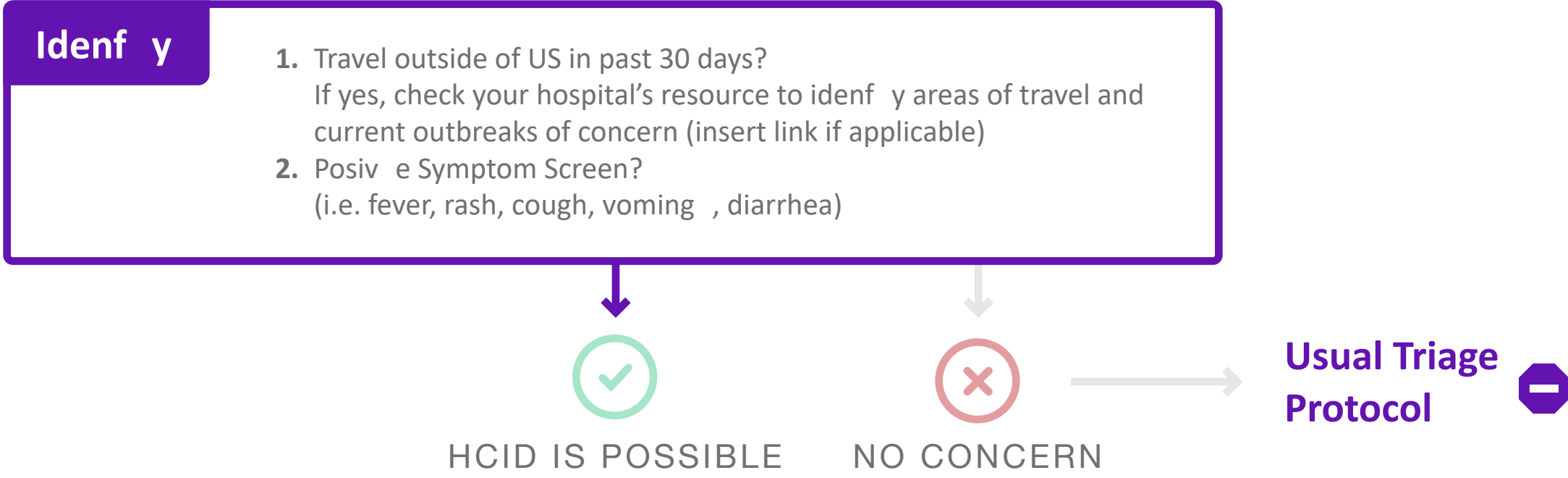
To be completed at inial paen   t contact

How to use this document

This document is designed to serve as a template to be edited/updated with your instuonal-specific policies and plans. You can also link to internal and external resources to give your staff quick access to additional in   formaon. Consider adding pager numbers or other contact informaon t   o the diagram to make it easy for staff to idenf   y and contact the predesignated person/group quickly.

Legend

- **Nurse In Charge** is the designated nurse leader, posion is s   taffed/available 24/7.
- **ED/Clinic Administrator** is the designated administrator with vested instuonal authority t   o acv   ate Hospital Incident Command System
- **Personal Protec   e Equipment (PPE)** are gowns, gloves, respiratory protecon (sur   gical mask, N95, PAPRs), other protec   e devices as selected and detailed by your instuon
- **Surgical Mask** refers to a simple or procedural mask that does not require respiratory clearance or fit tesng t   o be worn
- **N95** is a respiratory protecon de   vice that, if properly fi   ed, blocks 95% of 0.3 micron parcles
- **PAPR** or a Powered Air Purifying Respirator uses a blower to move air through purifying filters; the filters selected determine the protecon c   onferred



Nurse in Charge:

No   y A   ending physician & appropriate clinicians

Contact ED/Clinic Administrator or appropriate individual

Secure an Airborne Infecon Isolaon (neg   av   e pressure) room for the paen   t

ED/Clinic Administrator:

Notify appropriate departmental leadership (examples to consider in your planning are Infectious Disease Attending Physician, Hospital Epidemiologist)

Notify public health authorities as early as practicable

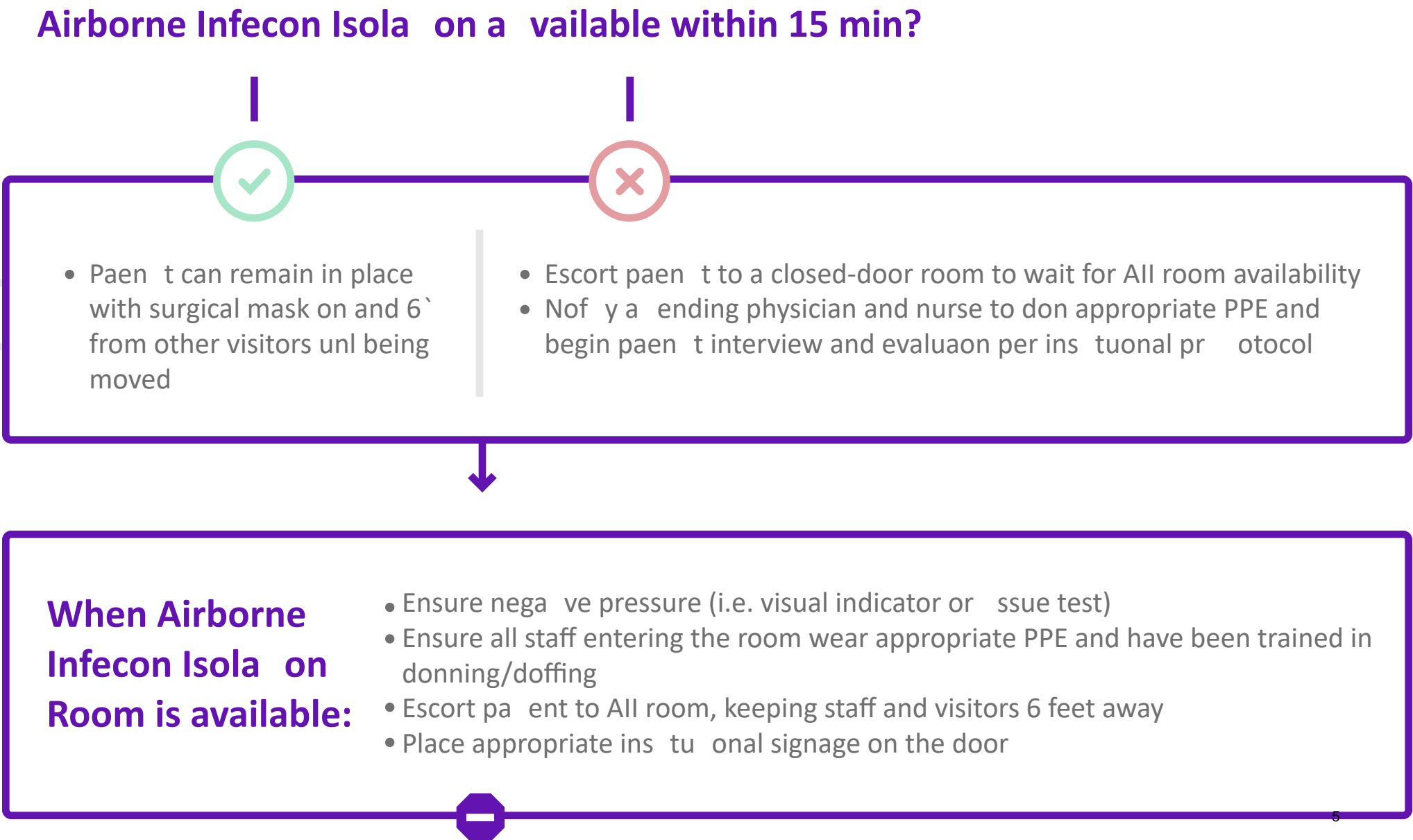
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Isolation Precautions Needed:

Viral Hemorrhagic Fever or Smallpox PPE precautions detailed on page 2.

If hospital-specific protocols/procedures exist for specific HCIDs, refer to those here

Refer/link to CDC or appropriate institutional policies for guidance on level/type of isolation precautions to implement



# Ebola Virus Disease or other Viral Hemorrhagic Fevers *(Page 2)*

## Identify

The pa   ent has been iden   fied as a Person Under  
Inves   ga   on (PUI) or confirmed with Viral Hemorrhagic Fever

## Isolate

- The pa   ent has been masked
  - Staff not in PPE must remain >6.   ft from pa   ent
  - Transport to private room with bathroom or commode; Airborne Infec   on Isola   on (All) room preferred & required for aerosol genera   ng procedures
- Only staff trained in PPE will enter room
  - Discuss with iden   fied ins   tu   onal representa   ve (may be an assigned a   ending physician, or local or state public health) for guidance on determina   on of level of PPE required and plan for pa   ent

## Inform

### UNPLANNED ARRIVAL OF PATIENT

#### AMBULANCE EMS/REFERRAL/AMBULATORY WALK-IN ARRIVAL

- The **nurse in charge** will assign roles to ED/clinic staff as soon as pa   ent iden   fied:
  - Retrieve the ins   tu   onal EVD protocol including prepared checklist for plan and assign Site Manager
  - Page a nursing supervisor or other designated individual to coordinate the ini   al response
  - An appointed Site Manager receives appointment from the nurse in charge; obtains the hospital outlined EVD protocol and Site Manager checklist/toolkit

- Job Ac   on Sheets/Checklists should include:
- **A   ending physician** to contact appropriate ins   tu   onal leadership
  - No   fy **Hospital Security** to secure perimeter of the ED/Clinic and specified area of treatment.
  - Ensure **ED/clinic staff** are ready to safety receive the pa   ent in a designated nega   ve pressure room.
  - **Trained Observer:** Oversee PPE donning/doffing for ED staff
  - **Doffing Buddy** in doffing area in appropriate to assist with doffing
  - **ED/Clinic Administrator** no   fies necessary departments of the EVD

Pa   ent Arrival

### PLANNED ARRIVAL OF PATIENT

#### AMBULANCE ARRIVAL/TRANSFER

- Job Ac   on Sheets/Checklists should include:
- **A   ending physician** to contact appropriate ins   tu   onal leadership
  - A **Site Manager** is assigned per the hospital EVD protocol and retrieves Site Manager checklist/toolkit
  - No   fy **Hospital Security** to secure the perimeter of the ED/clinic and the specified area of pa   ent treatment
  - No   fy the appropriate ins   tu   onal and departmental **leadership**.
  - Ac   vate appropriate **personnel** to support management of pa   ent.

# Current Infectious Disease Outbreaks of Concern

Last Updated 08/01/2018

## How to use this document

This document provides front-line clinicians with the tools to take a targeted travel history for patients who may be at risk for HCIDs. It is not intended to be exhaustive or replace a full travel history, but is focused on HCIDs circulating as of the date above.

For the diseases listed below, clinicians should ask whether the patient has 1) a history of travel to an affected area within the appropriate time frame **and** 2) symptoms that are possibly consistent with the disease of concern. (Click on the link to the right to see the case definitions to be used for any of the infections listed).

➤ For questions or concerns regarding these diseases ➤ For routine (non-HCID) Infection Control guidance

[illegible]



## ATTENTION PATIENTS

If you have any of the following symptoms:

- Cough
- Fever

Please use hand sanitizer and put on a mask.

Have you traveled outside of the United States in the last 30 days? Please Tell the Nurse.

## AVISO A PACIENTES

Si tiene cualquiera de los siguientes síntomas:

- Tos
- Fiebre

Utilice un desinfectante de manos y póngase una mascarilla.

Avísele a la enfermera si usted viajó fuera de los EE. UU. en los últimos 30 días.

تنبيه للمرضى  
إذا كان لديك أي من الأعراض التالية :

- السعال
- الحمى

يرجى استخدام المطهر اليد ووضع على قناع  
هل سافرت خارج الولايات المتحدة في آخر 30 يوماً؟  
من فضلك أخبر الممرضة

## 病人請注意

如果你有任何以下症狀：

- 咳嗽
- 發燒

請使用洗手液並戴上口罩  
請告訴護士您過去30天有沒有在美國以外旅行？



## **Assessing Patient Risk of High Consequence Infectious Diseases for Frontline Providers**

These questions can be used during your history-taking for a patient with a suspected high-consequence infectious disease such as 2019 Novel Coronavirus (Wuhan), Avian flu, and Middle East Respiratory Virus (MERS). These details will provide helpful information when discussing the case internal Infectious Disease personnel and the State Epidemiologist, if required. *Gathering this information should not delay isolation of the patient. Consider using personal protective equipment consisting of airborne + contact + eye protection.*

### **Step 1. Timing is KEY. Use the timeline to add on the following dates.**

- ✓ Date arrived in country (i.e., China)
- ✓ Date departed country (i.e., China)
- ✓ Date arrived in US
- ✓ Date of symptom onset



### **Step 1a. For 2019-nCoV (Wuhan coronavirus), where in China have they traveled in the last month?**

- ✓ Use map below (can ask the patient to write down cities of recent travel and/or point to the map)



### **Step 2. Clinical details:**

- ✓ Brief past medical history and description of symptoms
- ✓ Have they taken any antipyretics?

### **Step 3. Exposure details are ESSENTIAL. While traveling, dates of any:**

- ✓ Animal exposures- chickens (including farms/live markets), bats, camels, birds, snakes...any animal!
- ✓ Healthcare exposures- hospitalizations or doctors visits (including as a visitor)
- ✓ Sick contacts- suspected or confirmed cases of 2019-nCoV, MERS, etc; or any other sick contacts

### **Step 4. Other important details we will often need:**

- ✓ Cell phone number so we can call the patient while in the room: \_\_\_\_\_
- ✓ What they do for a job \_\_\_\_\_
- ✓ Where they live and with whom \_\_\_\_\_

Updated **1/29/2020**

## **2019 Novel Coronavirus (2019-nCoV)** **INFORMATION**

The Centers for Disease Control and Prevention (CDC) continues to closely monitor an outbreak of a 2019 novel coronavirus (2019-nCoV) in Wuhan City, Hubei Province, China that began in December 2019. Coronaviruses are a large family of viruses. Some cause illness in people; numerous other coronaviruses circulate among animals, including camels, cats, and bats. Rarely, animal coronaviruses can evolve and infect people and then spread between people such as has been seen with Middle Eastern Respiratory Syndrome Coronavirus (MERS-CoV) and Severe Acute Respiratory Syndrome Coronavirus (SARS-CoV).



Chinese authorities report most patients in the Wuhan City outbreak have been epidemiologically linked to a large seafood and animal market, suggesting a possible zoonotic origin to the outbreak. Person-to-person spread may be occurring.

The CDC Person Under Investigation (PUI) criteria is for 2019 Novel Coronavirus (2019-nCoV) is [here](#) and should be reviewed in case there are updates. The link also includes information on submitting information needed for public health authorities.

**2019 Novel Coronavirus (2019-nCoV) Person Under Investigation (PUI).** *The criteria are intended to serve as guidance for evaluation. Patients should be evaluated and discussed with public health departments on a case-by-case basis if their clinical presentation or exposure history is equivocal (e.g., uncertain travel or exposure).*

Clinical Features		Epidemiological Risk Factor
<b>Fever<sup>1</sup> and symptoms of lower respiratory illness (e.g., cough, difficulty breathing)</b>	and	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 <sup>2</sup> with a person who is under investigation for 2019-nCoV while that person was ill.
<b>Fever<sup>1</sup> or symptoms of lower respiratory illness (e.g., cough, difficulty breathing)</b>	and	In the last 14 days, close contact <sup>2</sup> with an ill laboratory-confirmed 2019-nCoV patient.
<ol style="list-style-type: none"> <li>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.</li> <li>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. See CDC's Interim Healthcare Infection Prevention and Control Recommendations for Patients Under Investigation for 2019 Novel Coronavirus. 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.</li> </ol>		

## **2019 Novel Coronavirus (2019-nCoV) Infection Control Guidance**

1. Patients with suspected or confirmed 2019 Novel Coronavirus (2019-nCoV) are subject to **the hospital's Appropriate Isolation Policy**.
2. As soon as 2019 Novel Coronavirus (2019-nCoV) is suspected, the patient should be given a surgical mask to put on, and the patient placed in **an Airborne Infection Isolation Room**. Validate negative airflow (check airflow into the room with tissue or observe ping pong ball indicator if present). If no All room is immediately available, place the patient (wearing a surgical mask) in a room with the door closed and arrange for movement of the patient to an All room as soon as possible.
3. Immediately implement the following **Isolation Precautions**:
  - a. Airborne + Contact + Eye Projection (goggles or face shield).

- b. Clinicians must wear a respirator (either a fit-tested N95 mask or PAPR), gown, gloves and eye protection (e.g., goggles or a face shield) to enter the room for any suspected or confirmed case of the 2019-nCoV.
- 4. Limit staff in the room for any aerosol-generating procedures.
- 5. When removing protective equipment; remove in the following order and then perform hand hygiene. Use the doffing checklist provided.
  - o Gloves and Gown in a single step
  - o Goggles/Face shield
  - o N-95 Mask or PAPR (outside of the room)
- 6. Page the **[designated ID/IC MD or public health authority]** to review the case. Use the Assessing Patient Risk of High Consequence Infectious Diseases for Frontline Providers to gather information that will be needed to make a determination of patient risk.
- 7. If the patient is not on campus or is being seen in an ambulatory setting:
  - o Minimize contact with the patient
  - o Provide a mask for the patient to put on
  - o Escort the patient to a private room, maintaining a distance of 3-6 feet

### **2019 Novel Coronavirus (2019-nCoV) Testing Guidance and Submission Forms**

If the patient is determined to meet criteria for testing based on clinical presentation and epidemiological risk factors, **the State Epidemiologist must be contacted** to review the case and obtain approval for testing and recommendations on what samples to obtain. The ordering provider and treating nurse should coordinate with the appropriate hospital laboratory representative to coordinate shipment of the samples to the State Lab. With guidance from public health authorities, various specimens may be requested.

### **2019 Novel Coronavirus (2019-nCoV) LINKS AND FACT SHEETS**

- CDC 2019 Novel Coronavirus (2019-nCoV)

POLICY FOR HIGH CONSEQUENCE  
INFECTIOUS DISEASES REQUIRING  
**AIRBORNE + CONTACT + EYE PROTECTION**  
ISOLATION PRECAUTIONS

- I. Policy  
This policy directs the isolation and care for patients known or suspected to be infected with highly pathogenic organisms transmitted by both the airborne route and by direct or indirect contact with the patient, with environmental surfaces, or with contaminated patient care equipment. It utilizes a combination of **Airborne Isolation + Contact Isolation + Eye Protection**.
- II. Diseases that fall in this category include:  
Severe Acute Respiratory Syndrome (SARS)  
Middle East Respiratory Syndrome (MERS)  
2019 Novel Coronavirus (2019-nCoV)  
Avian Influenza  
Other pathogens, as directed by Infection Control
- III. Procedure  
When a patient meeting the criteria to be a person under investigation (PUI) for one of these conditions is identified, staff must contact **XXXXXX** to activate the appropriate response. **XXXXXX** will respond as needed to the location and provide support, review procedures with staff and provide just in time training (JIT).
- IV. Hand Hygiene  
**HAND HYGIENE IS THE SINGLE MOST IMPORTANT MEANS OF PREVENTING THE SPREAD OF INFECTION.** Hands must be disinfected with an alcohol-based hand rub before and after providing care that involves touching the patient or the patient's environment. Hands must also be disinfected after removing gloves, gowns, or respiratory protection devices and after touching inanimate objects in the immediate vicinity of the patient, or touching contaminated items or surfaces. If hands are visibly soiled, wash hands with soap and water, dry hands, and apply an alcohol-based hand rub.
- V. Patient Placement – Airborne Infection Isolation Room (All)  
Patients must be placed in an Airborne Infection Isolation Room (All), preferably with an anteroom. Doors into the room must be kept closed at all times to ensure adequate negative pressure. For rooms that require activation of negative pressure airflow, pressure conversion switches must be switched to "negative". **Negative pressure must be validated daily when in use and documented.** Methods of validation include use of a visual indicator e.g. tissue test, or observation of ball-in-tube device. Both ball-in-tube device, and tissue should be pulled into the room when the door(s) are closed. If there is an anteroom, air should flow from the corridor into the anteroom and from the anteroom into the patient room.
- VI. Personal Protective Equipment (PPE)  
Correct use of PPE is critical to preventing staff exposure. **XXXXXX** staff will be deployed to the unit to review correct donning and doffing procedures with



staff when this protocol is initiated and will periodically monitor staff to ensure compliance with donning and doffing protocols. Doffing checklists are available to guide correct doffing sequence.

A. Donning (putting on) PPE:

These requirements apply to all staff entering the room of a patient. The following PPE is required to be donned prior to entry into the patient room. Donning in the following order is recommended.

1. Gown  
A clean, nonsterile, disposable, isolation gown must be worn. Ensure that gown is tied in back and provides full coverage.
2. N-95 respirator or Powered Air Purifying Respirator (PAPR)\*
  - a. All staff must wear approved respiratory protection (N-95 respirator or PAPR).
  - b. Before using an N-95 respirator or PAPR, staff must be medically cleared and trained in how to wear/use each device.
  - c. For N-95 respirators, staff must have been fit-tested within the past year to ensure proper size and fit.
  - d. A “fit-check” (also known as a “seal check”) should be performed before each N-95 respirator use.
  - e. If staff is unable to be fit-tested for an N-95 respirator, they must wear a PAPR.
3. The N-95 respirator and PAPR hood and hose must be discarded after each use.
4. Goggles/Face shield  
All staff must wear goggles or face shield to protect mucous membranes from exposure due to splash or potential for hand contamination of eyes, nose or mouth. Goggles or face shield are not required if using a PAPR as the hood provides face protection.
5. Gloves  
All staff must wear clean, nonsterile gloves. Gloves must be pulled over the sleeves/cuffs of gown.

1. For Airborne Infection Isolation (All) room with anteroom:  
**Remove all PPE in anteroom.** Make sure the door from the anteroom into the patient room is closed and negative airflow into patient room has been confirmed.
2. For All room without anteroom

Except for respiratory protection, remove and discard PPE (gloves, gown, face shield or goggles) just inside doorway before exiting to hall. **Remove respiratory protection (N-95 or PAPR) after leaving the patient room and closing door.**

3. **Doffing sequence if N-95 respirator is worn - See Doffing Checklist- N-95 Respirator (link here)** for removal sequence. Avoid touching face.

4. **Doffing sequence if PAPR is worn - See Doffing Checklist- PAPR (link here)** for removal sequence.

- a. PAPR hood and hose are discarded after use.
- b. The PAPR belt and blower motor must be wiped down with a hospital-approved disinfectant and be stored (plugged into charging cord). Don clean gloves to perform this step, then remove and discard and disinfect hands with an alcohol-based hand rub.

C. Strict Isolation PPE Donning and Doffing Video Link (**Link here**)

## VII. Patient Care Equipment/Supplies

- A. Equipment (e.g., stethoscope, blood pressure cuff, thermometers) should be single-use or dedicated to use of the patient to avoid sharing with other patients. Reusable patient care equipment must be disinfected with a hospital-approved disinfectant before use for another patient.
- B. Supplies in the room of a patient should be kept to a minimum. Disposable items (e.g. adhesive tape, gauze etc.) must be discarded on discharge.

## VIII. Patient Transport: Strict Isolation Requirements

- A. **Limit patient transported for essential purposes only.** Notify the receiving department that the patient is on **Airborne Isolation + Contact Isolation + Eye Protection.**
  1. If transport or movement outside of an All room is necessary, place a regular surgical mask on the patient for transport.
  2. If the patient is intubated, place a bacterial filter on the endotracheal tube or on the expiratory side of the breathing circuit of a ventilator or anesthesia machine.
  3. All staff involved should wear appropriate PPE in the isolation room while preparing the patient for transport. PPE should be removed per doffing procedures above when leaving the room.
  4. Wounds must be covered, and body fluids contained. The patient should wash or disinfect his or her hands before leaving the room if possible. The patient should wear a clean gown or robe or be covered by a clean sheet or drape for transport to another department or area.

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5. The patient chart will be transported in a manner that prevents contact with the patient and/or contaminated linen.
6. **PPE should not routinely be worn when transporting the patient.**  
**Exception** – If patient contact and/or contact with contaminated equipment will occur during transport (e.g., for ICU patients or patient transported in their bed) full PPE must be worn by those having direct contact with the patient and/or the bed or equipment during transport. PPE is removed per doffing procedure when contact with patient and/or contaminated equipment is completed. Every effort will be made not to touch clean surfaces (e.g., elevator buttons) with gloved or contaminated hands by team members in PPE. **There must be a member of the transport team, not wearing PPE, who has clean hands to interact with the environment.**

#### IX. Specimen Collection (all types)

##### A. Preparation

1. Collect appropriate tubes/containers, labels, plastic specimen transport bags, a clean chux (do not use one already in the room) and 2 clean emesis basins.
2. Place all items except chux into one of the clean emesis basins.
3. Disinfect hands and don personal protective equipment (PPE) as required.

##### B. Procedure

1. Bring emesis basin containing equipment and second emesis basin into room. Place chux on a clean, clear horizontal surface; do not place on patient bed. Place emesis basin with supplies and second emesis basin on the clean chux.
2. Follow standard procedures for patient identification and specimen collection.
3. Place specimen containers/tubes in one emesis basin.
4. Label all specimens at patient bedside.
5. Remove gloves and disinfect hands with alcohol-based hand rub, then don clean gloves.
6. With clean gloves, place labeled specimens into the clean specimen transport bag.
7. Wipe outside of bag with hospital-approved disinfectant wipe and place bag into the second clean emesis basin.
8. Carry bagged specimens out of room in the second emesis basin. Emesis basin may be placed on surface in anteroom or surface outside of room.
9. Remove PPE per doffing protocol and disinfect hands.
10. Bagged specimens may be transported to the lab per standard processes.

**Note: If specimen is being sent to test for confirmation or rule out of diagnosis (e.g. 2019 n-CoV/MERS/SARS or Avian Flu), specimen should be delivered directly to the lab to avoid delays in processing.**

#### X. Visitors

##### A. A policy for the management of visitors should be developed. Points to consider include:

1. Screening of visitors for symptoms of illness
2. Limiting number of visitors
3. PPE for visitors
4. Written instructions for patient and visitors

## XI. Healthcare Worker Monitoring

- A. A list of healthcare workers entering the room of a patient will be maintained.
- B. Healthcare workers caring for a patient, and those that perform tasks associated with risk of exposure (e.g. staff involved in room cleaning) will be monitored for fever and other relevant symptoms for the length of the incubation period, specific to the infection, from their last date of potential exposure.
- C. They will be provided with a thermometer and written instructions after their first shift caring for the patient. They will be required to measure their temperature twice per day and document relevant symptoms. In the event of a temperature  $\geq 100.4$  or positive symptom screen, they are required to contact OHS immediately.
- D. HCW Exposure
  - 1. HCWs who report an unprotected exposure (i.e., entering the room without appropriate PPE) or possible exposure should be assessed by OHS as to whether exposure has occurred.
  - 2. If it is determined that an exposure did occur; post exposure follow-up will be conducted based on direction from public health authorities.

## XII. Room Turnover Time and Discharge Cleaning

- A. After a confirmed case patient vacates room or is discharged, the room must remain in negative pressure with the door closed for 30-60 minutes, based on the number of air changes per hour (ACH) for the room, before staff enters the room without PPE or another patient is admitted to the room.
- B. Cleaning staff must wear respiratory protection and other PPE required for Strict Isolation when cleaning during this airing time. If cleaning is performed after the required airing time, respiratory protection is not required but gown, gloves and face protection are. Cleaning staff must follow correct doffing sequence when removing PPE.
- C. See [Airborne Infection Isolation Room List](#) for documentation of Airborne Infection Isolation Room (All) air changes per hour (ACH).
  - 1. Rooms with  $\geq 6$  air changes per hour (ACH) = 60 minutes
  - 2. Rooms with  $\geq 12$  ACH = 30 minutes



## ***Evaluation and Management of High Consequence Infectious Diseases Requiring Airborne Isolation + Contact Isolation + Eye Protection***

### **Overview and Background**

For the purposes of this document, HCID refers to pathogens such as 2019 Novel Coronavirus, Middle East Respiratory Virus Syndrome, Severe Acute Respiratory Syndrome, and Avian/Novel Influenza. This document details the response plan for suspect or confirmed patients with HCIDs requiring airborne isolation + contact isolation + eye protection.

### **Location of Care**

The location of care for patients with suspected or confirmed HCIDs depends upon the age of the patient (adult or pediatric), the patient's clinical care needs (i.e., whether they require care in an intensive care unit or general ward), and whether there are special circumstances such as would occur in a pregnant patient.

For adult, non-critically ill, non-pregnant patients, care under airborne isolation + contact isolation + eye protection will be delivered in an Airborne Infection Isolation (AII) room in [a specified location], as well as patients at less than 22 weeks' gestation. All rooms provide the negative pressure ventilation required to isolate patients with airborne spread infections. All rooms with ante-rooms may be preferentially considered for the purposes of donning and doffing Personal Protective Equipment (PPE).

Critically-ill adult patients with HCIDs will be cared for in AII rooms in intensive care units, preferably ones with an anterooms. Non-critically ill pediatric patients will be cared for on a pediatric floor with an AII room, critically ill pediatric patients will be cared for in the Pediatric Intensive Care Unit. Pregnant patients greater than 22 weeks gestation will be cared for in an AII room on the Labor and Delivery floor.

### **Special Pathogens Care Locations**

[Consider describing here the patient care areas in further detail that patients with HCIDs could be treated and how these rooms/locations are activated and who may be involved with an activation at the hospital leadership level.]

### **Activation: Personnel, Staffing, and Leadership**

During activation of a special pathogens [room/area/unit], clinical, administrative, and support departments will continue to be unit-based, with additional support provided by [Consider: Emergency Management, Infection Control (IC), Infectious Diseases (ID) and others as needed]. [Define here who will coordinate communications with local, state, and national authorities as needed and required].

The Attending of Record for care of the HCID patient will be from XXX service. [Consider restricting trainees from direct care of the HCID patient].

Staff assigned to the care of this patient will include:

- Attending physicians from the XXX Service
- Patient Care Services including Registered Nurses (RNs), Respiratory Therapists (RTs), Patient Care Associates (PCAs), and other clinical therapies (i.e., Occupational Therapy), as indicated.

Other care team members, such as Case Management, may consult without direct patient contact.

- Infectious Disease Attending will be drawn from the ID Consult Service general teams
- Staff who are fit-tested for N95 respirators

### **HCID Patient Admissions and Daily Operations**

When non-critical beds are used to deliver care for a patient with suspected or confirmed HCIDs, unit clinical and administrative leadership remains intact. Additional support will be provided from Infection Control and the Emergency Management upon admission of a PUI or confirmed HCID patient requiring airborne isolation + contact isolation + eye protection.

When the Emergency Department, any ambulatory care setting, or inpatient provider identifies a patient or a group of patients for rule-out of an HCID, the patient(s) will be immediately isolated under airborne isolation + contact isolation + eye protection where they are located, and communications regarding the admission will occur as outlined [per established hospital communication chains]. Immediate determination will be made as to whether the patient's clinical status requires ICU-level care.

### ***Adult Inpatient General Care Unit Level Admission to the Special Pathogens Unit***

- [An identified infectious disease clinician or delegate, or appropriate public health authority] will be contacted by the attending physician treating the patient to determine if the patient meets criteria as a PUI or is confirmed as having an HCID based on current public health guidance.
- If the patient meets PUI criteria or is confirmed to have an HCID, the infectious disease clinician or delegate will initiate a huddle among the treating attending physician and other identified parties to discuss the following:
  - Overview of the patient's presentation
  - Discussion about risks of the potential pathogen
  - Develop a proposed patient care plan and identify care team
  - Determine type of Isolation indicated (i.e. Airborne alone or Airborne + Contact + Eye Protection)
  - Discuss notifying Emergency Management as appropriate
  - Discuss conversations with public health authorities that have occurred
- If the patient is an outpatient, it is expected that the patient will generally require evaluation and care in an Emergency Department prior to admission to the hospital.
- If the patient is in the Emergency Department and the huddled group decides to admit the patient, the ED will place an admission order and a delegated party will page the floor nursing supervisor to notify them of the decision to admit.
- If the patient is already admitted to the hospital outside of the designated admitting area for a patient with an HCID, Infection Control will consider placing a monitor at door of current patient location to provide "just in time" training (JIT) in airborne isolation + contact isolation + eye protection to staff entering the room until patient is moved.
- Once the nursing supervisor has been contacted regarding the HCID patient admission, the following actions will take place:
  - The Nursing Supervisor will call Admitting Services to initiate the bed search, and coordinate placement.
  - Patients fourteen years of age or older may be admitted to an adult general unit bed or adult ICU bed, with support from other services, including pediatric nurses and physicians.
  - When a surge of HCID patients exceeds available ICU capacity, those patients stabilized in ICUs on ventilators may be transferred to designated general beds in All rooms.

### *Clinical Decompensation, Rapid Responses and Codes in the SPU*

After a patient is admitted to the SPU, it may become clear that their clinical trajectory is worsening. In this case, there should be a low threshold to transfer the patient to a higher level of care before clinical decompensation occurs. Early involvement of the critical care attending and the nursing supervisors can aid in triage decision making, and every effort should be made to transfer a patient to a higher level of care if they are decompensating. If a Rapid Response is needed, activate the rapid response team through the usual process. If a rapid response is called, the goal is to provide the necessary care with only essential personnel physically in the room. One of the nursing supervisors will be designated at the door to the anteroom to ensure that only essential team members enter the room and to ensure proper doffing when the rapid response is completed. Infection control will provide Just in Time precaution training for essential team members at the time of HCID patient admittance.

- A. Essential team members for Rapid Response team in the room:
  - a. Medical senior resident (if applicable)
  - b. Attending of record (to provide clinical information and act as back up for the senior resident)
  - c. Primary nurse
  - d. Nursing supervisor
  - e. Respiratory therapy
- B. Rapid response team members outside the room:
  - a. Pharmacy
- C. Special considerations for rapid responses in an HCID patient room:
  - a. If a Rapid Response is called, the patient should be transferred to the MICU when stabilized
  - b. If the rapid response is due to a respiratory decompensation, consider intubation on the floor prior to transfer to the MICU depending on clinical status and oxygen requirements at the time of transfer.

As above, every effort should be made to identify a patient requiring a higher level of care and transfer early in the clinical course. If a patient is clinically decompensating, goals of care should be addressed daily. If a patient undergoes a sudden cardiac or respiratory arrest, the goal as above should be to provide necessary care with only essential personnel in the room. As above, one of the nursing supervisors will be designated at the door of the anteroom to ensure that only needed personnel enter and that proper donning/doffing procedures are followed.

- A. Essential team members for Code Team who may be present in room:
  - a. Medical senior resident (if applicable)
  - b. Attending of record
  - c. Primary nurse
  - d. Nursing supervisor
  - e. Respiratory therapy
  - f. Anesthesia attending MD
  - g. Critical care attending MD
  - h. Additional floor RN as needed for chest compressions
- B. Code team members outside the room:
  - a. Pharmacy
  - b. Back up senior resident
- C. Special considerations for codes in an HCID patient room:
  - a. To minimize people in the room, code team members will be expected to rotate to provide chest compressions.

<b>Table 2. All rooms with ICU care capabilities</b>			
<b>Dedicated ICU</b>		<b>Other ICU-level</b>	
Location	Number of beds	Location	Number of beds

## Management of Family and Visitors

Visitors will be limited to 2 designated persons who are necessary for the support of the patient. Visits must be scheduled and controlled to allow for screening for symptoms of acute respiratory illness before entering the unit. See airborne isolation + contact isolation + eye protection policy for detailed procedures for managing visitors. All visitors must report to Nurses Station to ensure that visitors have been screened before entering patient room. Public health authorities may impose restrictions on movement of family and visitors to the patient.

## Training in Infection Control Principles and Practice

The purpose of training in Infection Control principles and practice is to ensure that staff can safely care for patients with a suspected or confirmed HCID, including maintaining competency in the donning and doffing of PPE. Training will include both didactic and practical sessions (Table 3).

<b>Table 3. Training Methods and Content</b>	
<b>Type</b>	<b>Skill</b>
Didactic	Infection Prevention for Emerging and Re-emerging Infectious Diseases, including Airborne isolation + contact isolation + eye protection Policy
	Occupational Exposure and Symptom Monitoring
	Online training on PAPR use and PAPR cleaning (for those staff requiring use of PAPR)
Practical	Donning and Doffing for PPE used for airborne isolation + contact isolation + eye protection observed and verified by Infection Control Unit staff or unit-based trainers



## Initial Training

Training will include an overview of infection control principles and airborne isolation + contact isolation + eye protection paired with live demonstration of donning and doffing of required PPE, with return demonstration by all staff. Verification of proficiency will be by either Infection Control Unit staff or Unit-based trainers. Initial training may include a combination of on-line in addition to in-person training and education.

An online training module on PAPR use will be required for healthcare workers (HCWs) unable to be fit-tested. Additional training will be conducted to include PAPR cleaning. Staff will be educated regarding symptom monitoring and reporting to Occupational Health.

## Ongoing Training

Staff from the floors where an HCID patient may be admitted may receive ongoing training as needed. Staff may participate in trainings, drills, and exercises, as indicated.

## JIT Training

With low frequency, high risk events, periodic training after initial training is necessary to ensure proficiency. Infection Control will deploy and execute JIT training when admitting an HCID patient.

JIT Training will include the following:

- Overview of specific disease
- Review of airborne isolation + contact isolation + eye protection including Visitor Policy, Staff Entry Log and Tracking, and Symptom Monitoring
- Review of Donning and Doffing PPE and demonstration/observation
- Review response to occupational exposure
- Review available resources
- Review infection control aspects in setting of emergent resuscitation
- Confirmation of fit-testing of staff involved in care within the year

## Operations

### Supply of Personal Protective Equipment

Initial response supplies will be available from unit daily par levels. Resupply of PPE will be coordinated by Clinical Support Services as per usual operations, with support from Materials Management, as needed.

### Staffing Considerations

Staffing will be at the discretion of local clinical leadership. The PPE required and donning and doffing procedures for airborne isolation + contact isolation + eye protection may impact the patient:nurse ratio.

Use of staff who are able to wear N-95 respirators for patient care may be favored over staff who require PAPRs due to challenges associated with doffing and management of used equipment. Staff who can be fit-tested for an N-95 respirator will be preferentially assigned to patients on airborne isolation + contact isolation + eye protection. If there are HCWs who need to wear a PAPR and there are patients in rooms without an anteroom, those HCWs will be preferentially assigned to rooms with an anteroom.

## Surge Capabilities/Considerations

In the event of an outbreak creating a surge of PUI or confirmed HCID patients, there will be an increased requirement for All rooms beyond the capacity of the pre-identified beds potentially utilizing other ICU beds. Consider spaces where entire units can be converted to negative airflow space as a last resort in a full-scale infectious disease outbreak.

## Occupational Health

Public health authorities may require active monitoring of HCWs caring for HCID patients. If HCW symptom monitoring is required, the frequency, duration and follow-up will be the responsibility of Occupational Health Services. If exposure is suspected for any HCWs involved in patient care, Occupational Health will investigate in consultation with the Infectious Diseases Attending MD. Staff interacting with HCID patients will be required to document their daily interaction on a Room Entry Log or other tracking method.

## General Approach to Clinical Care

Clinical care for patients with diseases such as 2019 n-CoV, MERS, SARS, and Novel Influenza may be, for the most part, supportive therapy. Experimental therapeutics may be considered and internal and external subject matter experts may relay updates with respect to treatment.

Early consultation with public health authorities and early diagnostics to either confirm or rule out patient with HCID are essential.

Patients should receive standard diagnostics as relevant to their clinical needs. When possible, patient transport should be kept to a minimum, but if needed, should follow the airborne isolation + contact isolation + eye protection policy guidance.

## Demobilization

Discontinuation of airborne isolation + contact isolation + eye protection will be determined after consultation with Infectious Diseases, Infection Control, and public health authorities, as required. Demobilization of the unit in settings of multiple admissions and patient discharge will involve the same consultative groups.

**VISITOR SCREENING TOOL**  
**Disease: MERS, SARS, novel Coronavirus**

**Policy:**

1. Visitors are limited to 2 designated persons necessary for support of the patient.
2. Patient/family should identify 2 persons who may visit. Patient should give permission to discuss suspected diagnosis with the 2 designated visitors.
3. **Visitors must call the unit on the day of the visit before coming to the hospital to be screened for symptoms that could be consistent with the infection (see header for specific disease).**
4. If visitors arrive without having been screened via phone; a **Face-to-Face Screen** will be completed

**Instructions for the nurse caring for the patient on Contact + Airborne + Eye Protection:**

1. The 2 designated visitors must be told to call the unit and speak with the patient's nurse BEFORE coming to the facility. The nurse (or designee) completes the **Phone Screen** below for each visitor.
2. The visitors will be told to report directly to the unit Nurses' Station immediately after arriving at the hospital.
3. If visitors arrive without calling in, the patient's nurse (or designee) will complete the **Face to Face Screening screen** below for each visitor before allowing entry into the patient room.
4. Complete a separate form for each visitor on each visit. Keep completed screening tools in patient's chart for the duration of hospitalization.

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**Part 1: Phone Screen**

Today's date \_\_\_\_\_ Time \_\_\_\_\_ Visitor Name: \_\_\_\_\_

1. Have you had a fever during the past 24 hours (e.g.,  $\geq 100^{\circ}\text{F}$ )? Yes\_\_\_ No\_\_\_
2. Do you have a new cough or difficulty taking a deep breath? Yes\_\_\_ No\_\_\_

If "yes" to either question #1 or #2, tell the visitor that he/she should not visit the hospital. Tell the visitor that they should expect a call from the healthcare facility or Public Health authorities re: instructions for evaluation to determine next steps.

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**Part 2: Face-to-Face Screen**

Today's date \_\_\_\_\_ Time \_\_\_\_\_ Visitor Name: \_\_\_\_\_

1. Have you had a fever during the past 24 hours (e.g.,  $\geq 100^{\circ}\text{F}$ )? Yes\_\_\_ No\_\_\_
2. Do you have either a cough or difficulty taking a deep breath? Yes\_\_\_ No\_\_\_







If "yes" to either question, instruct the family member to don appropriate PPE and wait in the patient's room. Page the Biothreats Pager MD immediately (#26876) to evaluate visitor.

Patient Name/MRN: \_\_\_\_\_

Nurse: \_\_\_\_\_



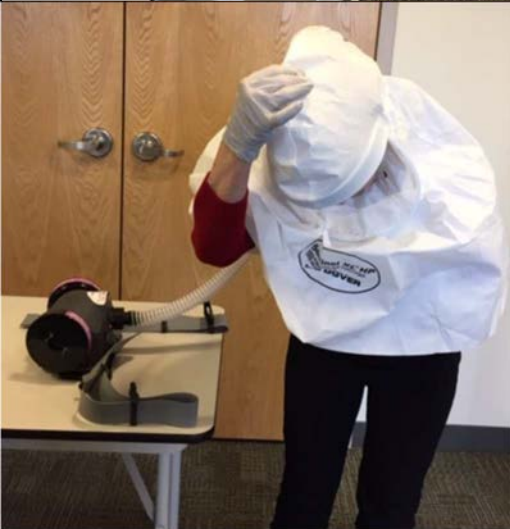
# DOFFING CHECKLIST DISPOSABLE GOWN AND N-95 RESPIRATOR

Except for Respirator, remove PPE at doorway or in anteroom if present.  
Remove PPE in the following sequence. Avoid touching face.

#	Step	Location	Detail
1	Remove gown & gloves first - in a single step.  Roll gown into itself, peeling off gloves at the same time.  Hold gown away from your body and discard*.	Doorway  (inside or outside patient room- with door closed)  or Anteroom	
2	Remove and discard* face shield or goggles	Doorway  (inside or outside patient room- with door closed)  or Anteroom	<div> <p>Avoid touching front of face shield. Remove by grasping sides or back of strap then pull forward over head</p>  </div> <div> <p>Avoid touching front of goggles. Remove by grasping sides and pull away from your face</p>  </div>
3	Remove and discard* N-95 Respirator	Outside room	<div>  <p>Do NOT touch front of mask</p> </div> <div>  <p>Pull bottom strap first then top strap over head- without touching respirator</p> </div> <div>  <p>Discard in trash</p> </div>
4	Perform Hand Hygiene	Outside room	Alcohol-based hand rub (ABHR) or wash with soap and water (if indicated), dry, then disinfect with ABHR.
<b>*Discard all PPE in regular waste</b>			

**DOFFING CHECKLIST**  
**DISPOSABLE GOWN AND PAPR**

Except for PAPR, remove PPE at doorway or in anteroom if present.  
Remove PPE in the following sequence. Avoid touching face.

#	Step	Location	Detail
1	<b>Gown and Gloves</b> To facilitate gown and glove removal, remove belt from waist. Do not turn off blower.  Hang blower motor & belt on a hook or place on stable surface.	<b>Doorway</b> (inside or outside patient room- with door closed)  <u>OR</u>  <b>in Anteroom</b> (with patient room door closed)	
2	<b>Gown and Gloves</b> Once blower motor & belt are secured, remove gown & gloves in a single step.  Roll gown into itself, peeling off gloves at the same time.  Hold gown away from your body and discard*.	<b>Doorway</b> (inside or outside patient room- with door closed)  <u>OR</u>  <b>in Anteroom</b> (with patient room door closed)	
3	<b>PAPR – Outside room or in Anteroom</b> Perform hand hygiene - don clean gloves. Lean forward, do not touch front of hood.  Remove hood by reaching between inner and outer layers of hood aprons with one hand. Push within layers with one hand and pull from back of hood with other.  Disconnect breathing tube from blower unit, shut off blower. Discard hood and hose.  Belt and blower unit must be wiped down with hospital-approved disinfectant and stored. Plug blower into charging cord		
4	Remove gloves perform Hand Hygiene	Outside room	Wash hands with soap and water (if indicated), dry, then disinfect with 56°C F







# 2019 Novel Coronavirus (2019-nCoV) Testing Kit

If the patient is determined to meet criteria for testing based on clinical presentation and epidemiological risk factors, the State Epidemiologist must be contacted by the treating provider (State Epi Hotline: XXX-XXX-XXXX). If testing is approved by the State Epidemiologist, the treating provider and nurse will coordinate with the [Appropriate hospital laboratory point of contact] and request the 2019-nCoV Testing Kit to be delivered to the primary team.

**Testing for 2019-nCoV be processed at the State Lab must be collected using the contents of this kit. DO NOT USE ANY OTHER SUPPLIES FOR TESTING FOR THIS PURPOSE. All other laboratory testing will proceed using standard testing supplies.**

## Follow these instructions.

1. Specimen collection and decontamination guidance for clinical staff are described in the [Strict Isolation Policy](#) and should be reviewed by clinical staff prior to beginning collection. Ensure that you have patient labels in the room.
2. Determine which specimens will be collected upon order of the treating provider.
3. Use the table below to collect the appropriate specimen in the correct collection devices.
4. Order should be entered for each sample in the hospital electronic system as per institutional protocol with the type of specimen clearly labeled, and "For State Lab for r/o 2019-nCoV."
5. **It is critically important to label each specimen, specifically the NP and OP swabs need to be labeled as such.**
6. The [State Lab submission form](#) should be filled out by the treating provider with the information required. This form is required prior to sending out the specimen. Please put the name and pager # of the appropriate hospital MD (i.e. treating provider or hospital ID MD) and Phone #.

Sample	Collection device	Instructions	Notes
<b>Expectorated sputum</b>  <i>Additional respiratory specimens that may be collected are:</i> <b>BAL, NP aspirate or washing.</b>		<p><i>For Expectorated sputum:</i> 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.</p> <p>Click <a href="#">here</a> for NP aspirate or washing collection instructions.</p>	If patient cannot produce, we will not send this sample. I.e. we will not induce sputum collection.
<b>NP swab</b>		Insert 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. Insert swab into the 3 mL UTM tube and break swab off at the scored mark.	Label UTM tube with epic label and hand write NP swab on the specimen container
<b>OP swab</b>		Swab the posterior pharynx, avoiding the tongue. Insert swab into the 3 mL UTM tube and break swab off at the scored mark.	Label UTM tube with epic label and hand write OP swab on the specimen container
<b>Serology</b>		<p><u>For Children and Adults:</u> Collect 1-2 tubes (5-10mL) of whole blood in a serum separator tube.</p> <p><u>For Infants:</u> A minimum of 1 mL of whole blood is needed for testing pediatric patients. If possible, collect 1 mL in a serum separator tube</p>	