Public Health and Healthcare Setting Strategies for Early Identification and Control of the Novel Coronavirus (2019-nCOV) (COVID-19)

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I have no disclosures



OBJECTIVES

- Summarize the national and local response to the novel coronavirus COVID-19
- Review the current CDC recommendations on the novel coronavirus COVID-19 as it pertains to infection control and prevention in the healthcare setting
- Describe ongoing collaborative activities within Carilion Clinic headed by the Infection Control Department





Source: Johns Hopkins University CSSE https://gisanddata.maps.arcgis.com/apps/opsdashboard/index.html#/bda7594740fd40299423467b4 8e9ecf6



2019 Novel Coronavirus (2019-nCoV) in the U.S. (COVID-19)

People Under Investigation (PUI) in the United States*†

Positive	14	02/12/2020
Negative	347	
Pending ^s	66	
Total	427	

*Cumulative since January 21, 2020.

[†]Numbers closed out at 7 p.m. the night of reporting.

[§]Includes specimens received and awaiting testing, as well as specimens in route to CDC.

Number of states and territories with PUI: 41





Source:CDC https://www.cdc.gov/coronavirus/2019-ncov/cases-in-us.html

Current Definition of Person(s) Under Investigation (PUI) for 2019-nCoV (COVID- 19)

Clinical Features	&	Epidemiologic Risk
Fever ¹ or signs/symptoms of lower respiratory illness (e.g. cough or shortness of breath)	AND	Any person, including health care workers, who has had close contact ² with a laboratory-confirmed ^{3.4} 2019-nCoV patient within 14 days of symptom onset
Fever ¹ and signs/symptoms of a lower respiratory illness (e.g., cough or shortness of breath)	AND	A history of travel from Hubei Province , China ⁵ within 14 days of symptom onset
Fever ¹ and signs/symptoms of a lower respiratory illness (e.g., cough or shortness of breath) requiring hospitalization ⁴	AND	A history of travel from mainland China⁵ within 14 days of symptom onset



Source:CDC https://www.cdc.gov/coronavirus/2019-ncov/cases-in-us.html

WDH VIRGINIA DEPARTMENT OF HEALTH To protect the health and promote the well-being of all people in Virginia

Information as of: 2/12/2020

	2019	Novel Coronavirus Te	st Result			
Region	Positive	Negative	Pending*	Patients Under Investigation (PUI)^		
Central	0	3	0	3		
Eastern	0	0	0	0		
Northern	0	3	0	3		
Northwest	0	0	0	0		
Southwest	0	0	0	0		
Total	0	6	0	6		

*Includes specimens obtained from Patients Under Investigation (PUI) that have been forwarded to CDC for testing

^Cumulative since 1/21/2020

Source - VDH http://www.vdh.virginia.gov/surveillance-and-investigation/novel-coronavirus/



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Guidance from Health and Human Services (HHS) and Centers for Disease Control and Prevention (CDC)

Effective February 2, 2020 at 5pm

Presidential Proclamation temporarily suspending entry into the US of foreign nationals who have visited mainland China in past 14 days

Federal travel restrictions from Hubei Province

Mandatory quarantine for US citizens, residents and family

- Federal travel restrictions from mainland China
 - Proactive entry screening and public health monitored self quarantine

Slide courtesy of Paige Bordwine, MPH, MT(ASCP) Southwest Regional Epidemiologist, Virginia Department of Health



Virginia Department of Health (VDH)

Effective 2/7/2020, State Health Commissioner declared the 2019-nCoV infection a Communicable Disease of Public Health Threat for Virginia

VDH has established an Incident Command System (ICS) structure to respond to this threat and the State Health Commissioner may issue orders of isolation and/or quarantine as necessary and appropriate to control this infection in Virginia

Receives/reviews list of travelers from China (twice daily)

Assigns travelers to appropriate local health district

Risk assessment for travelers conducted and risk level assigned by the public health personnel

Slide courtesy of Paige Bordwine, MPH, MT(ASCP) Southwest Regional Epidemiologist, Virginia Department of Health



CDC Exposure Risk Categories & Recommendation to Public Health Departments on Management

High Risk

- Living in the same household as, being an intimate partner of, or providing care in a nonhealthcare setting (such as a home) for a person with symptomatic laboratory-confirmed 2019-nCoV infection *without using recommended precautions* for home care and home isolation
 - The same risk assessment applies for the above-listed exposures to a person diagnosed clinically with 2019nCoV infection outside of the United States who did not have laboratory testing.
- Travel from Hubei Province, China

Medium Risk

- Close contact with a person with symptomatic laboratory-confirmed 2019-nCoV infection, and not having any exposures that meet a high-risk definition.
 - The same risk assessment applies for close contact with a person diagnosed clinically with 2019-nCoV infection outside of the United States who did not have laboratory testing.
 - On an aircraft, being seated within 6 feet (two meters) of a traveler with symptomatic laboratory-confirmed 2019-nCoV infection; this distance correlates approximately with 2 seats in each direction (<u>refer to graphic</u> <u>above</u>)
- Living in the same household as, an intimate partner of, or caring for a person in a nonhealthcare setting (such as a home) to a person with symptomatic laboratory-confirmed 2019-nCoV infection *while consistently using recommended precautions* for <u>home care</u> and <u>home isolation</u>
- Travel from mainland China outside Hubei Province AND not having any exposures that meet a high-risk definition

Low Risk

- Being in the same indoor environment (e.g., a classroom, a hospital waiting room) as a person with symptomatic laboratory-confirmed 2019-nCoV infection for a prolonged period of time but not meeting the definition of close contact
- On an aircraft, being seated within two rows of a traveler with symptomatic laboratory-confirmed 2019-nCoV
 infection but not within 6 feet (2 meters) (refer to graphic above) AND not having any exposures that meet a
 medium- or a high-risk definition (refer to graphic above)

No Identifiable Risk

• Interactions with a person with symptomatic laboratory-confirmed 2019-nCoV infection that do not meet any of the high-, medium- or low-risk conditions above, such as walking by the person or being briefly in the same room.

SYMPTOM	ATIC		
Risk Category	Movement Restrictions and Public Activities	Medical Evaluation	Travel
High risk	Immediate isolation.	Medical evaluation is recommended; diagnostic testing for 2019-nCoV should be guided by COCS <u>PUI definition</u> but is recommended for symptomatic people with a known high-risk exposure. If medical evaluation is needed, it should occur with pre-notification to the receiving HCF and EMS, if EMS transport indicated, and with all recommended infection control precautions in place.	Controlled; air travel only via air medical transport. Local travel is only allowed by medical transport (e.g., ambulance) or private vehicle while symptomatic person is wearing a face mask.
Medium risk	Immediate isolation.	Medical evaluation and care should be guided by clinical presentation; diagnostic testing for 2019-nCoV should be guided by CDC's PUI definition If medical evaluation is needed, it should occur with pre-notification to the receiving HCF and EMS, if EMS transport indicated, and with all recommended infection control precautions in place.	Controlled; air travel only via approved air medical transport. Local travel is only allowed by medical transport (e.g., ambulance or private vehicle while symptomatic person is wearing a face mask.
Low risk	Recommendation to avoid contact with others and public activities while symptomatic	Person should seek health advice to determine if medical evaluation is needed. If sought, medical evaluation and care should be guided by clinical presentation; diagnostic testing for 2019-nCV should be guided by CDC's <u>PUI definition</u>	Recommendation to not travel on long-distance commercial conveyances or local public transport while symptomatic
No Identifiable Risk ²	No restriction	Routine medical care	No restriction
ASYMPTO	MATIC		
Risk Category	Movement Restrictions and Public Activities	Monitoring	Travel
High risk	Remain quarantined (voluntary or under public health orders on a case-by- case basis) in a location to be determined by public health authorities. No public activities.	Daily active monitoring	Controlled
Medium risk	To the extent possible, remain at home or in a comparable setting, Avoid congregate settings, limit public activities, and practice social distancing.	Travelers from mainland China outside Hubel Province with no known high-risk exposure: Self- monitoring with public health supervision All others in this category: Active monitoring	Recommendation to postpone additional long- distance travel after they reach their final destination. People who intend to travel should be advised that they might no be able to return if they become symptomatic during travel.
Low risk	No restriction	Self-observation	No restriction
No Identifiable Risk	No restriction	None	No restriction

CDC has assigned a medium-risk level to travelers from mainland China outside Hubei Province who have no known high-risk exposures, with recommendations for public health management



Source CDC

https://www.cdc.gov/coronavirus/2019-ncov/php/risk-assessment.html#table-risk-management

Virginia Department of Health Risk Assessment Process

Based on the Exposure Risk Category and presence/absence of symptoms, public health officials will contact and/or visit the traveler to asses the potential for developing symptoms.

VDH will also look at Exposure Risk Categories when receiving calls from providers, hospitals and public

Some of the restrictions may be:

- Movement restrictions
- Active Public Health monitoring
- Travel restrictions
- Isolation / Quarantine Orders
- Daily symptom monitoring
- No public health action indicated

Slide courtesy of Paige Bordwine, MPH, MT(ASCP) Southwest Regional Epidemiologist, Virginia Department of Health



Goal is to optimize patient care while minimizing any exposures to other patients and healthcare providers

Work closely with the emergency management team to leverage the needed resources

1. Surveillance	9. Triage
2. Communications – internal,external	10. Surge capacity
3. Education	11. Bed capacity & Bed Control
4. Infection Control (inpatient & outpatient)	12. Environmental Services
5. Facility access / visitation	13. Technology Services Group EPIC, PerfectServe
6. Facility Security	14. Consumable Supplies & Equipment
7. Human Resources / Employee health	15. Postmortem Care
8. Pharmacy	16. Laboratory, EMS



Prevention and Control Recommendations for Patients with Confirmed 2019 Novel Coronavirus (2019-nCoV) or Persons Under Investigation for 2019-nCoV in Healthcare Settings

(COVID-19)

The Eight Elements of Hospital & Outpatient Facility Infection Control

1. Minimize Chance for Exposures

2. Adherence to Standard, Contact, and Airborne Precautions, Including the Use of Eye Protection

3. Manage Visitor Access and Movement Within the Facility

- 4. Implement Engineering Controls
- 5. Monitor and Manage III and Exposed Healthcare Personnel
- 6. Train and Educate Healthcare Personnel
- 7. Implement Environmental Infection Control
- 8. Establish Reporting within Healthcare Facilities and to Public Health Authorities



Infection Prevention and Control Recommendations for Patients with Confirmed 2019 Novel Coronavirus (2019-nCoV) or Persons Under Investigation for 2019-nCoV in Healthcare Settings (COVID-19)

Minimize Chance for Exposures (before arrival and/or upon arrival)

	Disease Screenin			
Yes	No / Unsure	Unable to assess		
o you have any of	the following sympton	ms?		
None of these	Unable to ass	ess 🔲 Abdominal pain	Bruising or ble	D
Cough	Diarrhea	E Fever	Joint pain	
Muscle pain	Rash	Red eye	Severe headac	
Vomiting	Weakness			
Yes		ust month? Unable to assess		
Ave you traveled in Yes Enter a location () No Docume	No Add Travel nted Travel			
Ave you traveled in Yes Enter a location () No Docume	No Add Travel nted Travel	Unable to assess		No more travel to load

Symptom and travel screening should be done with all patient scheduling and at initial point of contact to the health care system (triage or registration

		ne and contact isolation precautions, including eye protection urgical/procedural mask and placing them in a sing	
preferably a negat			ie room
Then call:			
For CRMH, Velocity C Prevention and Contro		nics - call 540-981-7760 or use PerfectServe to call the Infec	ction
For CFMH – Call Pan	n Katt at (540) 529-3	3991	
For CNRV – call Bets	y Allbee at 540-250	-8835	
For CTCH & CGCH -	call Katrina Burda	at 540-400-4064	
For CSJH – call Hayle	ey Penix at 423-213	-0644	
		nfection Control & Prevention or call 981-7760	
f no answer use Pe		mection control & Frevention of call 301-1760	
f no answer, use Pe	nectServe to call I		
f no answer, use Pe Order	Do Not Order	Initiate airborne isolation (CONTACT AND AIRBORNE I (INPATIENT))	SOLATIONS
Order	Do Not Order Do Not Order	(INPATIENT))	
Order Order	Do Not Order Do Not Order avirus guidance	(INPATIENT))	

Source: CDC

https://www.cdc.gov/coronavirus/2019nCoV/hcp/infectioncontrol.html?deliveryName=USCDC_511-DM19049



Determination of a Patient Under Investigation (PUI) For Evaluation and Testing

Regional Epidemiologist or VDH Epidemiologist on call contacted

Determination of PUI status made by Public Health using CDC criteria

Approval or denial for specific 2019nCoV testing made by VDH/CDC

Other studies that would be performed in the usual management of the patient should be done and not delayed e.g influenza testing etc



Commonwealth of Virginia Department of General Services

Slide courtesy of Paige Bordwine, MPH, MT(ASCP) Southwest Regional Epidemiologist, Virginia Department of Health



Infection Prevention and Control Recommendations for Patients with Confirmed 2019 Novel Coronavirus (2019-nCoV) or Persons Under Investigation for 2019-nCoV in Healthcare Settings (COVID-19)

Minimize Chance for Exposures

- Infection preventionist (IP) will instruct healthcare provider on any further actions to take to decrease exposure to themselves and other patients based on the specific location
- Surgical mask for patient and remove from other patients

Adherence to Standard, Contact, and Airborne Precautions, Including the Use of Eye Protection

- IP will advise unit/clinic to maintain log of all healthcare workers who interact with PUI patient
- Gloves, disposable gowns, N95 or PAPR and eye protection
- Duration of isolation for PUIs and confirmed COVID-19 cases determined by public health

Establish Reporting within Healthcare Facilities and to Public Health Authorities

- After IP is notified → reaches out to local health department/regional epidemiologist → determines if patient meets PUI criteria.
- If PUI criteria is met-> IP escalates notification system to include the Emergency Mgt team (for other human and resource management



Source: CDC

https://www.cdc.gov/coronavirus/2019nCoV/hcp/infectioncontrol.html?deliveryName=USCDC_511-DM19049

Infection Prevention and Control Recommendations for Patients with Confirmed 2019 Novel Coronavirus (2019-nCoV) or Persons Under Investigation for 2019-nCoV in Healthcare Settings (COVID-19)

Implement Environmental Infection Control

- Dedicated medical equipment should be used for patient care.
- All non-dedicated, non-disposable medical equipment used for patient care should be • cleaned and disinfected according to manufacturer's instructions and facility policies.
- Ensure that environmental cleaning and disinfection procedures are followed consistently • and correctly.
- Routine cleaning and disinfection procedures (e.g., using cleaners and water to pre-clean ٠ surfaces prior to applying an EPA-registered, hospital-grade disinfectant to frequently touched surfaces or objects for appropriate contact times as indicated on the product's label) are appropriate for 2019-nCoV in healthcare settings, including those patient-care areas in which aerosol-generating procedures are performed.



Infection Prevention and Control Recommendations for Patients with Confirmed 2019 Novel Coronavirus (2019-nCoV) or Persons Under Investigation for 2019-nCoV in Healthcare Settings

Implement Environmental Infection Control

- Products with EPA-approved emerging viral pathogens claims are recommended for use against 2019-nCoV. These products can be identified by the following claim:
 - "[Product name] has demonstrated effectiveness against viruses similar to 2019-nCoV on hard non-porous surfaces. Therefore, this product can be used against 2019-nCoV when used in accordance with the directions for use against [name of supporting virus] on hard, non-porous surfaces."
 - In Carilion all general use cleaning wipes (light purple top, purple top, grey top, orange top) are
 effective in nonporous surface disinfection and should be used according to item's manufacturer's
 instructions for use and the specific cleaning product's label instructions.
- Management of laundry, food service utensils, and medical waste should also be performed in accordance with routine procedures.





Infection Prevention and Control Recommendations for Patients with Confirmed 2019 Novel Coronavirus (2019-nCoV) or Persons Under Investigation for 2019-nCoV in Healthcare Settings

(COVID-19)

Implement Engineering Controls

Consider designing and installing engineering controls to reduce or eliminate exposures by shielding HCP and other patients from infected individuals.

E.g physical barriers or partitions to guide patients through triage areas, curtains between patients in shared areas, closed suctioning systems for airway suctioning for intubated patients, as well as appropriate air-handling systems (with appropriate directionality, filtration, exchange rate, etc.) that are installed and properly maintained

Monitor and Manage III and Exposed Healthcare Personnel

IP will advise unit/clinic to maintain log of all healthcare workers who interact with patient during initial call

Movement and monitoring decisions for HCP with exposure to 2019nCoV should be made in consultation with public health authorities.

Facilities and organizations providing healthcare should implement sick leave policies for HCP that are non-punitive, flexible, and consistent with public health guidance.

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Exposure log also available on the infection control website –Inside Carilion



Source: CDC

https://www.cdc.gov/coronavirus/2019nCoV/hcp/infectioncontrol.html?deliveryName=USCDC_511-DM19049

Infection Prevention and Control Recommendations for Patients with Confirmed 2019 Novel Coronavirus (2019-nCoV) or Persons Under Investigation for 2019-nCoV in Healthcare Settings (COVID-19)

Manage Visitor Access and Movement Within the Facility

- Establish procedures for monitoring, managing and training visitors.
- Restrict visitors from entering the room of known or suspected 2019-nCoV patients (i.e., PUI).
- Alternative mechanisms for patient and visitor interactions, such as video-call applications on cell phones or tablets should be explored.
- Facilities can consider exceptions based on end-of-life situations or when a visitor is essential for the patient's emotional well-being and care.



Infection Prevention and Control Recommendations for Patients with Confirmed 2019 Novel Coronavirus (2019-nCoV) or Persons Under Investigation for 2019-nCoV in Healthcare Settings

(COVID-19)

Manage Visitor Access and Movement Within the Facility

- Visitors to patients with known or suspected 2019-nCoV (i.e., PUI) should be scheduled and controlled to allow for:
 - Screening visitors for symptoms of acute respiratory illness before entering the healthcare facility.
 - Facilities should evaluate risk to the health of the visitor (e.g., visitor might have underlying illness putting them at higher risk for 2019-nCoV) and ability to comply with precautions.
 - Facilities should provide instruction, before visitors enter patients' rooms, on hand hygiene, limiting surfaces touched, and use of PPE according to current facility policy while in the patient's room.
 - Facilities should maintain a record (e.g., log book) of all visitors who enter patient rooms.
 - Visitors should not be present during aerosol-generating procedures.
 - Visitors should be instructed to limit their movement within the facility.
 - Exposed visitors (e.g., contact with 2019-nCoV patient prior to admission) should be advised to report any signs and symptoms of
 acute illness to their health care provider for a period of at least 14 days after the last known exposure to the sick patient.
- All visitors should follow respiratory hygiene and cough etiquette precautions while in the common areas of the facility.
- The need to involve the infection preventionist upfront to help co-ordinate these issues with the emergency management team cannot be overemphasized.



Infection Prevention and Control Recommendations for Patients with Confirmed 2019 Novel Coronavirus (2019-nCoV) or Persons Under Investigation for 2019-nCoV in Healthcare Settings (COVID-19)

Train and Educate Healthcare Personnel

- Provide HCP with job- or task-specific education and training on preventing transmission of infectious agents, including refresher training.
- HCP must be medically cleared, trained, and fit tested for respiratory protection device use (e.g., N95 filtering facepiece respirators), or medically cleared and trained in the use of an alternative respiratory protection device (e.g., Powered Air-Purifying Respirator, PAPR) whenever respirators are required.
- Ensure that HCP are educated, trained, and have practiced the appropriate use of PPE prior to caring for a patient, including attention to correct use of PPE and prevention of contamination of clothing, skin, and environment during the process of removing such equipment.

Infection Prevention and Control Recommendations for Patients with Confirmed 2019 Novel Coronavirus (2019-nCoV) or Persons Under Investigation for 2019-nCoV in Healthcare Settings (COVID-19)

The Eight Elements of Hospital & Outpatient Facility Infection Control

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- **Implement Environmental Infection Control**
- Establish Reporting within Healthcare Facilities and to Public Health Authorities



Disposition of a Suspected or Confirmed 2019-CoV patient

Again this is an evolving condition with interim guidance at this time.

Decision to discharge is based on clinical picture (e.g as used in influenza or other respiratory infections and home situation/setting).

At the time of discharge either from the outpatient, ED or inpatient setting, the infection preventionist (IP) and health department will need to be notified to provide advise on what the patient needs to do or avoid while at home.







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