

Novel Coronavirus 2019-nCoV – What Public Safety/First Responders Can Do:

A novel coronavirus, just like almost any newly emerging disease, is of concern to governments, public health authorities, infection control preventionists, and health care workers. The novelty of any disease means that it's difficult to predict and manage because so much about the disease is unknown. As the answers to these unknowns are found, recommendations for the general public and affected industries (health care, including first responders, travel, education, etc.) may change. And, until ALL the answers are known, there is going to be an overabundance of caution applied to recommendations (can't afford to be wrong) and revision of them as conditions change. The easiest way to read and employ recommendations is to accept them as they are presented, seek application assistance (what pieces are applicable to us) from medical direction, local and state public health departments, infectious disease professionals, and from operational managers within your particular agency. The good news is that many of the recommendations are going to mirror previous as well as future outbreaks, so many of these recommendations may already be incorporated into your organization's SOPs.

The WHO and CDC have stated that the risk is low for the American public at large although there is limited person-to-person spread of the virus in China. That being said, since the amount of person-to-person transmission is unknown, and can always change, everyone needs to be aware of the risk and how to minimize it.

These links provide the latest guidance for the 2019-nCoV. Note: measures may be soon added or revised after the UN Emergency Committee completes their meetings regarding whether this outbreak meets the criteria for a Public Health Emergency of International Concern (PHEIC) and if the committee of experts have any recommendations to suggest. In initial guidance from the CDC, they recommended that interim guidance from the WHO be used until the CDC develops and publishes their recommendations. For the U.S., published CDC guidance will supersede other agency recommendations unless otherwise indicated by the CDC.

***CDC Home Page for 2019-nCov Information for Health Care Professionals that includes links to current recommendations from the CDC and WHO:**

<https://www.cdc.gov/coronavirus/2019-nCoV/guidance-hcp.html>

***CDC Interim Guidance for HCPs with Definition of a Suspect Case & Links to Other Resources:**

<https://www.cdc.gov/coronavirus/2019-nCoV/hcp/clinical-criteria.html#foot3>

***CDC Interim Recommendations for Prevention & Control of 2019-nCoV:**

<https://www.cdc.gov/coronavirus/2019-ncov/hcp/infection-control.html>

***WHO Draft Guidance for Prevention & Control of 2019-nCOV:**

[https://www.who.int/publications-detail/infection-prevention-and-control-during-health-care-when-novel-coronavirus-\(ncov\)-infection-is-suspected](https://www.who.int/publications-detail/infection-prevention-and-control-during-health-care-when-novel-coronavirus-(ncov)-infection-is-suspected)

CDC Home Page for Infection Control Training Sites:

<https://www.cdc.gov/infectioncontrol/training/index.html>

CDC Isolation Guidelines with 2017 Revisions (Disease Non-Specific):

<https://www.cdc.gov/infectioncontrol/guidelines/isolation/index.html>

An ASPR Infectious Disease Playbook for EMS including 911 Operations:

<https://files.asprtracie.hhs.gov/documents/aspr-tracie-transport-playbook-508.pdf>

What Public Safety, Including Those Providing ANY EMS/Transport Can Do:

1. All those potentially at risk for being in contact with 2019-nCoV should remain aware of the latest info and expect it to change as knowledge of the disease does. Plan to maintain an adequate inventory of all appropriate PPE & approved Disinfectant(s).
 2. With STANDARD Precautions in place, if the person has a fever and cough, difficulty breathing or SOB, put a surgical mask on the patient & ask about any travel history to China in the 14 days prior to start of symptoms OR close contact with someone confirmed or under investigation for 2019-nCoV.
 3. If there is information that it makes this a possible 2019-nCoV patient, even if from Dispatch, add Contact (gown, gloves unless already on) and Airborne Precautions (N95 respirator) PLUS eye protection (face shield or goggles)
2. At all times, but especially when there is any communicable disease in an area around you, your employer should assure that everyone knows the ABCs of the disease, appropriate PPE with the guidelines for use, including a requirement to practice donning and doffing, with a trained person watching for, and correcting, errors that risk contamination. Refresher training is also important so that each provider can maintain their knowledge and skills in order apply it in a clinical setting, without prior warning, should the need arise. Hand hygiene, utilizing both alcohol-based hand sanitizer and/or soap and water as indicated and available, must also be included in the training. PPE disposal as medical waste, patient compartment and equipment cleaning and disinfection policies & procedures, and using EPA-approved health care level disinfectants, should be available and used by all responders. Supervisors and the Designated Infection Control Officer should make sure that the training is conducted as needed to maintain readiness but also to spot check for compliance, reminding them that these procedures are to help keep them and their families safe, as well as protect their patients.
3. EMS agency officials should pre-determine and write into their policy and procedure, specifics to provide for the best control of patient's respiratory secretions within the transport vehicle, as possible and appropriate. It should include items such as closing the door between the cab and the patient compartment to limit the shared-air space, whether to turn off the A/C or heating system, if an exhaust system should be used, and/or to open windows, etc. Some direction should also be given for other infection control measures, such as to avoid opening internal compartments once the patient has been moved into the patient compartment and until, whenever possible, the patient compartment has been disinfected and the air space is considered clean again. Many of these decisions will be based on the type and options of a given transport unit and have to be decided locally. The goal is to limit the amount of exposure and risk of spread or recontamination of the air space or equipment. Responders should adhere to their agency's guidelines, and suggest other mitigations for consideration as well. If agency policies and procedures don't exist or cover a specific issue, consult with a supervisor for clarification.

4. Agency officials must also ensure that each individual who might be required to wear an N95 or better respirator is **medically cleared to use a respirator AND is fit tested, using the respirator that is going to worn by that individual**. This assures the individual HCP is medically capable of safety wearing a respirator and that it fits properly so it can provide adequate protection. In the event that it does not pass the prescribed testing, other sizes or types of respirators should be available to be fit tested, until one is found that passes and is wearable by the individual. Note: for firefighters that already have evaluation for medical clearance to wear a respirator, this will suffice to fulfil the medical portion, but the fit testing must still be done with each device (SCBA and N95 or better respirator). The proper methods for medical clearance and fit testing intervals are outlined in the OSHA Protection Standard 29 CFR 1910.134 found here:

<https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.134>

5. An adequate amount of PPE for all agency personnel, and any trainees or visitors, should be carried on response vehicles and stored in a way that prevents deterioration of the equipment's protective elements (e.g. a cone-type N95/100 respirator should not be "squished" so it fits in a bag or other storage place. This compression of the respirator will decrease the respirator's ability to catch and trap the organisms as designed. Manufacturer-provided flat or pre-folded respirators can be stored this way but should not be folded or otherwise adapted in other ways to maintain its integrity. Respirators should be donned, worn for patient care and, once removed, discarded as medical waste and not re-worn again. If necessary, a new respirator should be donned. Airborne precautions require an N95 or better respirator. A surgical or procedure mask should not be substituted for the proper level of PPE. Personnel should be instructed by agency leaders, what to do if N95 or better respirators are not available. Other PPE that should be available, even if not used often, should be eye protection (either as close-fitting goggles or as a face shield). A face shield/Tyvek mask combo does not replace the use of a respirator, but can be worn in addition to an N95 or greater respirator. Gowns and/or jumpsuits should be available for contact precautions or when there is a large amount of body fluids present. Tyvek or other impenetrable sleeves, head coverings, and foot booties should/may also be available but smaller amounts of some of these items may be appropriate since their use is not as common.

6. A policy and procedure should be developed, or updated, if not already done, to insure those that may come into contact with possible 2019-nCoV cases follow what the CDC provides as recommendations that apply to First Responders – particularly EMS. These include the following concepts as outlined by the CDC, and will be expanded upon below:

A. Establish an inventory list and assure an adequate amount of appropriate PPE, while aware that this list may change if recommendations for precautions do. During outbreaks, available supplies of PPE are rapidly depleted and may become unavailable for purchase. Inventory early and order if needed. Biohazardous bags (station storage and unit storage) and EPA approved disinfectants will be required as well.

B. Strictly follow CDC Recommended Precautions when assessing, treating or transporting a PUI, even if that information is relayed from the Dispatch Center. If a patient becomes a PUI after your arrival, step out, use hand sanitizer and then don appropriate PPE. Currently, those precautions are **Standard** (previously known as Universal) plus **Contact**, plus **Airborne** Precautions, **adding approved eye protection**, as well. This indicates a **gown, gloves, N95 respirator**, and either **goggles or face shield**. Eyeglasses are not adequate unless labeled as safety glasses.

C. Make all responders aware of proper respiratory hygiene and cough etiquette for use at all times, and ensure that they have the knowledge (training, practice, signage, etc.) and equipment necessary to make it part of their practice.

D. Quickly identify and isolate any patient(s) meeting the CDC case definition for a patient (aka PUI) or those with known disease (previously diagnosed). Currently, that is:

Patients in the United States who meet the following criteria should be evaluated as a PUI in association with the outbreak of 2019-nCoV in Wuhan City, China.

Signs and Symptoms	&	Travel or Contact Risk
Fever ¹ AND symptoms of lower respiratory illness (cough, difficulty breathing, etc.)	AND	Within 14 days of the onset of symptoms has a history of travel from Wuhan, China ⁵
Fever ¹ AND symptoms of lower respiratory illness (cough, difficulty breathing, etc.)	AND	Within 14 days of the onset of symptoms, has a history of travel from Mainland China ⁵
Fever ¹ OR symptoms of lower respiratory illness (cough, difficulty breathing, etc.) requiring hospitalization ⁴	AND	Within 14 days of onset, close contact with a lab-confirmed ^{3, 4} case of a 2019-nCoV patient, including health care workers.

Note 1: **Fever may not be present in some patients who are taking fever suppressing drugs (i.e. acetaminophen, aspirin, ibuprofen or other NSAID), or are very young, elderly, septic, or immunosuppressed (i.e. undergoing cancer treatment, taking immunosuppressing drugs to combat rejection after transplant or to control an autoimmune disease, have a primary immunologic disease, or are taking long term or high dose steroids). Use or seek clinical judgment to apply the definition in those cases. In the pre-hospital environment, when these exceptions are known, it may be appropriate to contact medical direction with the specifics of the case or consider the patient a suspect case, and transport with precautions, letting the receiving facility know there is no fever. Medical Direction may also write a list of those conditions and medications that may cause immunosuppression for responding & transport units to use.**

Note 2: **Close contact is defined as being within about 6 feet (2 meters) OR within the room or area of care of a case of novel coronavirus for a prolonged period of time without wearing the recommended level of PPE (i.e. gowns, gloves, NIOSH-certified disposable N95 respirator, approved eye protection). Close contact can also include living with, caring for, visiting, or sharing a health care waiting area or room with a novel coronavirus case.**

OR

Having direct contact with infectious secretions of a novel coronavirus case (i.e. being coughed on, providing suctioning, positive pressure ventilation, CPR) while not wearing the recommended PPE.

Note 3: Documentation of a lab-confirmed case of 2019-nCoV may not be possible for travelers or persons who were caring for patients in other countries.

Note 4: Category also includes any member of a cluster of patients with severe acute lower respiratory illness (i.e. pneumonia, ARDS) of unknown origin in which 2019-nCoV is being considered that requires hospitalization. These individuals should be evaluated in consult with local & state health departments regardless of travel history.

Note 5: For persons travel to China within 14 days that are being regularly monitored by local health departments or have been referred for evaluation from border screening, testing for nCoV can be considered at the discretion of the health officials for all persons with illnesses with fever and lower respiratory symptoms (those that are at home or in hospital).

E. Minimize potential exposure. Evaluate and quickly identify patients with suspected or known 2019-nCoV and isolate them as much as possible. Minimize personnel exposed to shared space with the patient (this includes the place where the patient is initially found as well as the patient care compartment). Reducing risk includes rapidly providing for appropriate precautions for all personnel who are present/attending the patient (see “B” above) **and** placing a surgical or procedure mask (**not** an N95 or N100) on the patient, if tolerated and condition allows. Monitor O₂ sat and ETCO₂, if available. If not tolerated, a non-rebreather O₂ mask may be substituted if not contraindicated and allowed by protocol. *Another mask/respirator should not be placed over an oxygen mask and an O₂ mask should not be put on the patient without having an adequate amount of oxygen flowing, unless otherwise directed by medical control.* A mask on the patient is preferred but not required, if it is not tolerated, and/or protocol does not provide for O₂ therapy.

F. Minimize the use of non-disposable equipment on/near a PUI patient without compromising their care. If 2019-CoV is in/near your community, consider positioning disposable and durable equipment behind barriers (doors, slides, sealed containers) whenever possible, since surfaces and items within 6 feet of the patient may be considered contaminated and may need to be discarded or decontaminated, depending on the equipment. Consult Medical Direction for assistance, if desired.

G. The Policy and Procedure (P&P) should define how to notify the receiving hospital and appropriate agency staff of the possible case, as well as meet the CDC’s charge to immediately notify local and state health authorities of a patient meeting the criteria. The CDC also states that the criteria are intended to serve as a guide for evaluation, “but 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).” The P&P should include what should occur if the case is not clear and, at the EMS level, may include a call for Medical Direction or a Supervisor within the agency or someone at the Receiving Facility.

H. Notify the receiving facility early of a possible 2019-nCoV patient and follow instructions regarding arrival and transfer of the patient. Note: all hospital EDs should be readily able to quickly accept and take over care of potentially infectious patients, but there may be a specific entrance and

pathway to a room they may prefer to decrease the risk to others. Early notification allows them to efficiently receive the patient. Repeat that 2019-nCoV is suspected upon arrival at the hospital and at

initial contact with the hospital staff and physician, including what PPE and precautions are in place, in case the pre-arrival notification was not transferred to all. If transferring a patient from one facility to another, the patient should be ready with a mask in place, all paperwork complete, and ready for transport. An Interfacility Infection Control Transfer Form may be a good tool to use for some agencies: Make sure that the hospital has each First Responder's name and contact information for their records. The local, state and federal public health authorities will require it if a patient is confirmed with 2019-nCoV.

I. Now that specific guidelines have been recommended for cleaning and disinfection of the transport vehicle or the equipment used on a confirmed or PUI patient, follow your agency guidelines and, per the CDC, use only those EPA-registered/approved disinfectants that say,

“Product XX 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.” And, *“This claim or a similar claim, will be made only through the following communication outlets: technical literature distributed exclusively to health care facilities, physicians, nurses, and public health officials, 1-800 consumer information services, social media sites and company websites (non-label related). Specific claims for ‘2019-nCoV’ will not appear on the product or master label.”* Lastly, *“If there is no available EPA-registered products that have an approved emerging viral pathogen claim for the 2019-CoV, products with label claims against human coronaviruses should be used according to label instructions.”* Note: it has been previously stated by Chinese authorities and the CDC, that the 2019-nCoV is different, but a viral relative of the SARS coronavirus.

If delivering the patient to the entrance way only, avoid touching non-contaminated items while transferring, then return to the rig and doff PPE and discard according to local policies and procedures. Or, after delivering the patient, and immediately upon leaving the patient's room in the ED (or in the vestibule, if there is one), carefully doff PPE according to SOP, and discard in a biohazardous bag. Perform hand hygiene with antibacterial soap and running water, using friction to clean your hands and forearms. Contaminated PPE must be left in the room and not carried throughout the hallways. Before entering the patient compartment of the vehicle, don full PPE again, discard disposable materials in the red bags, and complete the cleaning and disinfection process per your protocol, using an EPA-approved disinfectant and the prescribed time frame for a complete pathogen kill. Remember to clean and disinfect all durable equipment that was potentially contaminated, per policy and manufacturers' guidelines, as well as wipe surfaces, walls, the floor, and anything else that has potential contamination.

J. At the conclusion of the call, after appropriate disinfection has been completed, and each person has washed well again (consider showering and changing clothes, when possible), consult your Supervisor, Designated Infection Control Officer, and/or Medical Director for guidance, according to your agency's policy, for follow-up. Fill out appropriate paperwork, as directed, and follow their instructions, which should be based on agency policy and CDC guidelines. If you transported to a hospital, their Infection Prevention Practitioner and/or your local public health department may be very helpful with follow-up on the patient, as well as what you should do. Share this with the appropriate person in your chain-of-command. This will protect you and your family, as well as coworkers and patients. If symptoms consistent with the PUI definition develop (fever, respiratory

symptoms), isolate yourself, put on a surgical mask, and notify the appropriate person, through channels.

If potentially exposed personally (while not working) or you develop symptoms consistent with the PUI off duty, immediately notify the appropriate person per your policies & procedures and follow instructions.