



Republic of the Philippines  
Department of Health  
**OFFICE OF THE SECRETARY**

January 21, 2020

**DEPARTMENT MEMORANDUM**

No. 2020 - 0034

**FOR : ALL UNDERSECRETARIES AND ASSISTANT SECRETARIES; CENTERS FOR HEALTH DEVELOPMENT (CHD) AND BUREAU DIRECTORS; MINISTER OF HEALTH - BANGSAMORO AUTONOMOUS REGION IN MUSLIM MINDANAO (MOH-BARMM); SPECIAL AND SPECIALTY HOSPITAL DIRECTORS; CHIEFS OF MEDICAL CENTERS, HOSPITALS AND SANITARIA; AND OTHER CONCERNED**

**SUBJECT : Interim Guidelines on the Preparedness and Response to Novel Coronavirus (2019-nCoV) from Wuhan, China (as of Jan 21, 2020)**

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**I. BACKGROUND**

On December 31, 2019, a clustering of pneumonia cases of unknown etiology was reported in Wuhan City, Hubei Province of China. Cases were identified between December 8, 2019 and January 2, 2020. As of January 5, 2020, there were 59 cases identified with remaining seven (7) severely ill.

On January 9, 2020 Chinese health authorities reported that the cause of this viral pneumonia was preliminarily identified as a novel (or new) type of coronavirus (2019-nCoV), which is different from any other human coronaviruses discovered so far. To date, there are a total of 139 2019-nCoV cases in China, especially in Wuhan, Beijing, and Shenzhen. Thailand, Japan and South Korea reported confirmed cases outside of China. Initially, the said disease was thought to be transmitted through animal contact but recent reports of health workers infected with the 2019-nCoV suggest human-to-human transmission.

The Department of Health hereby issues these interim guidelines to provide guidance to all national health security partners and stakeholders so as to take necessary precautions, prevent and immediately act in the event of entry of potential cases of 2019-nCoV into the country. Being a novel or new pathogen never experienced by humans, it is considered an emerging infectious disease and is currently being monitored and the details of the pathogen investigated. This point stated, WHO guidelines are closely followed and implemented and member states may adjust recommendations as per their respective context.

**II. IMPLEMENTING GUIDELINES**

**A. 2019- nCoV - novel coronavirus**

Coronaviruses are a large family of viruses, some causing illness in people and others that 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 MERS and SARS.

Current available information show that most patients present with fever, fatigue, little sputum and small number of patients with difficulty breathing. Chest X-ray finding of pneumonia described as infiltrative lung disease. The virus is mild in presentation as compared to SARS and MersCoV but have been 4 deaths declared in persons with other co-morbidities aside from the pneumonia.

The preparedness and response framework of the Department of Health, Philippines against the 2019 Novel Coronavirus is embodied in the Emerging and re-emerging Infectious Disease Manual of Operations and Procedures. Each of the partners and stakeholders, are part of the work force with their corresponding roles and responsibilities. Please see the link:

[https://mail.google.com/mail/u/0?ui=2&ik=784518f27c&attid=0.1&permmsgid=msg-f:1650775572605504542&th=16e8bba3190b0c1e&view=att&disp=safe&realattid=f\\_k382v8150](https://mail.google.com/mail/u/0?ui=2&ik=784518f27c&attid=0.1&permmsgid=msg-f:1650775572605504542&th=16e8bba3190b0c1e&view=att&disp=safe&realattid=f_k382v8150)

## B. Surveillance

Person Under Investigation (PUI) should meet and evaluated following the table below:

### Decision Tool for Novel Coronavirus Assessment for Bureau of Quarantine and Hospitals

Fever	Respiratory Infection	Travel History for the past 14 days		History of Exposure*	Case Category/ Intervention
		Hubei Province	others Provinces in China (aside from Hubei)		
≥38°C (current fever or with history of fever)	(cough AND/OR colds)				
+	+	+	+/-	+	<b>Category: Patient Under Investigation (PUI)</b>
-	+	+		+	<b>Bureau of Quarantine (BoQ)</b>
+	-	+		+	<ul style="list-style-type: none"> <li>Gives mask and isolate PUI</li> <li>Collects and evaluates the BoQ Health Declaration Card</li> <li>Endorses patient for admission in a hospital.</li> <li>Arranges transportation of PUI to hospital</li> </ul>
+	+	-		+	
+	+	+		-	<b>Hospitals</b>
+	-	-		+	<ul style="list-style-type: none"> <li>Completes the case investigation form (CIF)</li> <li>Trained hospital staff collects specimens (NPS and OPS) and sends to RITM. (NPS/OPS must be collected upon admission and after 24 to 48 hours)</li> <li>Coordinates with RESU for reporting and transport of specimens</li> <li>Manages PUI accordingly</li> </ul>
+	-	+		-	
-	+	-		+	
-	+	+		-	
+	-	-	+	-	<b>Category: Person for Monitoring</b>
-	+	-		-	<b>Bureau of Quarantine</b>
-	-	+		-	<ul style="list-style-type: none"> <li>Collects and evaluates the BoQ Health Declaration Card</li> <li>Advises person to go on home quarantine for 14 days, monitor body temperature daily, and observe any signs and symptoms of respiratory infection</li> <li>If symptoms worsen, immediately notify the nearest hospital for consultation and provide travel history</li> </ul>
-	-	-		+	
-	-	-		-	<b>Hospitals</b>
-	-	-	+	<ul style="list-style-type: none"> <li>Health Facility Quarantine for 14 days for the following scenario:               <ul style="list-style-type: none"> <li>(-) fever</li> <li>(-) cough and/or colds</li> <li>(+) rest of China</li> <li>(+) exposure History</li> </ul> </li> </ul>	

**\*Exposure History Includes:**

- a. close contact with a confirmed case of 2019-nCoV infection; or
- b. a healthcare facility in a country where 2019-nCoV infections have been reported; or
- c. visiting/working in a live animal market in **Hubei province, China**
- d. direct contact with animals in countries with circulating 2019-nCoV in human and animals

A checklist could be developed by hospital/offices using the above tool. For case definition see ANNEX 1: Surveillance case definitions for human infection with novel coronavirus (nCoV)

For close contact criteria and evaluation see ANNEX 2.

### **C. Laboratory Testing**

Rapid collection and testing of appropriate specimens from suspected cases is a priority. Respiratory material\* (nasopharyngeal and oropharyngeal swab) shall be collected in ambulatory patients and sputum (if produced) and/or endotracheal aspirate in patients with more severe respiratory disease). Serum for serological testing, acute sample and convalescent sample, shall be collected as well (this is additional to respiratory materials and can support the identification of the true agent, once serologic assay is available). Other specimens to consider in unresolved cases: blood for culture, urine for *Legionella* and pneumococcal antigen detection

For Samples to be collected see ANNEX 3 and for Safety procedures during sample collection and transport see ANNEX 4 & 5.

### **D. Clinical Management of PUI in a Health Facility**

This is intended for clinicians taking care of hospitalized adult and pediatric patient classified as PUI;

1. Triage: Recognize and sort all patients with Severe Acute Respiratory Infection (SARI) at first point of contact. Consider nCOV as a possible etiology of SARI based on surveillance criteria. Triage patients and start emergency treatments based on disease severity.

2. Immediate implementation of appropriate infection prevention and control (IPC) measure.

Activate your institutions' IPC committee. The Health Facility Development Bureau provides manuals and protocols on health facility IPC.

3. Early supportive therapy and monitoring; As there is still ongoing investigation on the details of the pathogen and precise mode of transmission of the virus, there are no prescribed medicines, vaccines and protocol for exact pathogen. Supportive therapy and management of concomitant co morbidities or other infections are advised

See ANNEX 6 for additional clinical management criteria and procedures

### **E. Risk Communication and Community Engagement (RCCE)**

One of the most important and effective interventions in public health response to the nCoV is to proactively communicate what is known, what is unknown and what is being

done to get more information with the objective of saving lives and minimizing adverse consequences.

RCCE should be initiated to help prevent infodemics (the spread of misinformation), builds trust in the response and increases the probability that health advice is followed. It minimizes and manages false rumors and misunderstanding that undermine response and may lead to further disease spread.

Community engagement strategies should start to involve communities in the response and develops acceptable yet effective interventions to stop further amplification of the outbreak and for individual and group protective measures.

See ANNEX 9 for detailed WHO recommendations on Risk Communication and Community Engagement


#### **F. Infection Prevention and Control**

1. Early recognition and immediate placement of patients in separate area from other patients is critical measure for rapid identification and appropriate care for suspected nCoV cases.
2. Ensure Standard Precautions are observed, including hand and respiratory hygiene, and use of personal protective equipment.
3. Implement empiric additional precautions for suspected nCoV infections, especially contact and droplet precautions, and airborne precautions for aerosol-generating procedures see ANNEX 7
4. Individual and community engagement is vital in stopping the virus circulation see ANNEX 8

Health human resources have been trained and are experienced to handle MERS-Cov and other SARI. There is Rapid Response Team created by each CHD which is composed of the EREID coordinator, HEMs Manager, HEPOs and RESUs. Logistics supplies include PPE sets, N95 masks, surgical masks, gloves and Oseltamivir for Influenza virus which are available at the central office and CHDs.

Further guidelines will be provided as new information evolves.

For information and guidance of all concerned.

  
**FRANCISCO T. BUQUE III, MD, MSc**  
Secretary of Health

# Surveillance case definitions for human infection with novel coronavirus (nCoV)

Interim guidance v2  
15 January 2020

WHO/2019-nCoV/Surveillance/v2020.2



This document summarizes WHO recommendations for surveillance of the novel coronavirus (nCoV) recently identified in Wuhan, China (2019-nCoV). WHO will update these recommendations as new information becomes available on the situation.

This interim guidance was adapted from WHO's guidance materials published for Middle East Respiratory coronavirus (MERS-CoV) and will be updated regularly.

## Surveillance

### Objectives of surveillance

The primary objectives of surveillance are to:

1. Detect cases/clusters of nCoV infection and any evidence of amplified or sustained human-to-human transmission;
2. Determine risk factors and the geographic risk area for infection with the virus.

Additional clinical and epidemiological investigations are needed to:

1. Determine key clinical characteristics of the illness, such as incubation period, spectrum of disease, and the clinical course of the disease.
2. Determine key epidemiological characteristics of nCoV infection, such as exposures that result in infection, risk factors, secondary attack rates, and modes of transmission.

The following people should be investigated and tested for nCoV infection

### Case definitions for surveillance

3. Severe acute respiratory infection (SARI) in a person, with history of fever and cough requiring admission to hospital, with no other etiology that fully explains the clinical presentation<sup>1</sup> (clinicians should also be alert to the possibility of atypical presentations in patients who are immunocompromised);

AND any of the following:

<sup>1</sup> Testing should be according to local guidance for management of community-acquired pneumonia. Examples of other etiologies include *Streptococcus pneumoniae*, *Haemophilus influenzae* type B, *Legionella pneumophila*, other recognized primary bacterial pneumonias, influenza viruses, and respiratory syncytial virus.

<sup>2</sup> Close contact<sup>2</sup> is defined as:

- Health care associated exposure, including providing direct care for nCoV patients, working with health care workers infected with nCoV,

- a. a history of travel to or a person who lived in Wuhan, Hubei Province China in the 14 days prior to symptom onset; or
  - b. the disease occurs in a health care worker who has been working in an environment where patients with severe acute respiratory infections are being cared for, without regard to place of residence or history of travel.
2. The person develops an unusual or unexpected clinical course, especially sudden deterioration despite appropriate treatment, without regard to place of residence or history of travel, even if another etiology has been identified that fully explains the clinical presentation.
  3. A person with acute respiratory illness of any degree of severity who, within 14 days before onset of illness, had any of the following exposures:
    - a. close physical contact<sup>2</sup> with a confirmed case of nCoV infection; or
    - b. a healthcare facility in a country where hospital-associated nCoV infections have been reported; or
    - c. visiting or working in a live animal market in Wuhan, China
    - d. [direct contact with animals (if animal source is identified) in countries where the nCoV is known to be circulating in animal populations or where human infections have occurred as a result of presumed zoonotic transmission.]<sup>3</sup>

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visiting patients or staying in the same close environment of a nCoV patient.

- Working together in close proximity or sharing the same classroom environment with a with nCoV patient
- Traveling together with nCoV patient in any kind of conveyance
- Living in the same household as a nCoV patient

The epidemiological link may have occurred within a 14-day period before or after the onset of illness in the case under consideration.

<sup>3</sup> To be added once/if animal source is identified as a source of infection

## ANNEX 2

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).

Close contact is defined as:

1. Persons visiting patients or staying in the same close environment of a nCoV patient.
  - 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.
2. Working together in close proximity or sharing the same classroom environment with a nCoV patient
3. Traveling together with nCoV patient in any kind of conveyance
4. Living in the same household as a nCoV patient
5. Health care associated exposure, including providing direct care for nCov patients, working with health care workers infected with nCov
6. Once the animal source is identified, exposure to the animals or animal products

The epidemiological link may have occurred within a 14 day period before or after the onset of illness in the case under consideration.

Healthcare providers should immediately notify both infection control personnel at their healthcare facility and their local or state health department in the event of a PUI for 2019-nCoV. Likewise, quarantine officers and community surveillance officers should alert the Epidemiology Bureau, DOH immediately.

The surveillance of influenza-like illness (ILI) under the Philippine Integrated Disease Surveillance and Response (PIDSRS) will continue to be implemented. However, the event based surveillance will be primarily used for this 2019-nCov event.

The laboratory-based ILI surveillance maintained by RITM shall be utilized to facilitate the collection, storage and transport to RITM of specimens from suspected cases of nCoV.

The BOQ shall be responsible for the early screening and preliminary investigation of all suspected nCoV cases identified in all points of entry. These cases shall be reported within 24 hours to the corresponding RESU.

Designated disease surveillance officers in hospitals and other facilities shall be responsible for doing the preliminary assessment of suspected cases in their respective health facility.

Information obtained from above systems shall follow their usual reporting and feedback mechanism.

## ANNEX 3

### Specimens to be collected from symptomatic patients and asymptomatic contacts

Specimen type	Collection materials	Transport to laboratory	Storage till testing	Comment
Nasopharyngeal and oropharyngeal swab	Dacron or polyester flocced swabs*	4 °C	≤5 days: 4 °C >5 days: -70 °C	The nasopharyngeal and oropharyngeal swabs should be placed in the same tube to increase the viral load.
Bronchoalveolar lavage	sterile container *	4 °C	≤48 hours: 4 °C >48 hours: -70 °C	There may be some dilution of pathogen, but still a worthwhile specimen
Tracheal aspirate, nasopharyngeal aspirate or nasal wash	sterile container *	4 °C	≤48 hours: 4 °C >48 hours: -70 °C	
Sputum	sterile container	4 °C	≤48 hours: 4 °C >48 hours: -70 °C	Ensure the material is from the lower respiratory tract
Tissue from biopsy or autopsy including from lung	sterile container with saline	4 °C	≤24 hours: 4 °C >24 hours: -70 °C	
Serum (2 samples acute and convalescent possibly 2-4 weeks after acute phase)	Serum separator tubes (adults: collect 3-5 ml whole blood)	4 °C	≤5 days: 4 °C >5 days: -70 °C	Collect paired samples: • acute – first week of illness • convalescent – 2 to 3 weeks later
Whole blood	collection tube	4 °C	≤5 days: 4 °C >5 days: -70 °C	For antigen detection particularly in the first week of illness
Urine	urine collection container	4 °C	≤5 days: 4 °C >5 days: -70 °C	

\*For transport of samples for viral detection, use VTM (viral transport medium) containing antifungal and antibiotic supplements. For bacterial or fungal culture, transport dry or in a very small amount of sterile water. Avoid repeated freezing and thawing of specimens.

Aside from specific collection materials indicated in the table also assure other materials and equipment are available: e.g. transport containers and specimen collection bags and packaging, coolers and cold packs or dry ice, sterile blood-drawing equipment (e.g. needles, syringes and tubes), labels and permanent markers, PPE, materials for decontamination of surfaces.

Serum for serologic tests for the detection of nCoV antigen and/or antibodies against nCoV should also be saved/extracted. For this, paired serum samples are required for confirmation of infection. Single acute samples with high titers may also be of value for identifying probable cases. Paired serum samples should ideally be collected 14-21 days apart, with the first being taken during the first week of

illness. If only a single sample can be collected, this should be done at least 14 days after the onset of symptoms.

Laboratory testing for nCoV is performed by the Molecular Biology Laboratory of the Research Institute for Tropical Medicine. The turn-around time is usually 48 hours upon receipt of the specimen. All specimens sent to RITM shall be coordinated with the Surveillance Unit at (02) 994-1887.

## **ANNEX 4**

### **Safety Procedure during Sample Collection**

Infection prevention measurements for a novel coronavirus (route of transmission unknown but suspected to be respiratory)

Ensure that Health Care workers (HCWs) who collect specimens follow the following guideline and use the adequate PPE: Infection prevention and control during health care when novel coronavirus (nCoV) infection is suspected, interim guidance, January 2020 (11) and other IPC guidance (10, 15-17).

Ensure that HCWs performing aerosol-generating procedures (i.e. aspiration or open suctioning of respiratory tract specimens, intubation, cardiopulmonary resuscitation, bronchoscopy) use additional precautions (for details see detailed guidelines mentioned above).

Respirators (NIOSH-certified N95, EU FFP2 or equivalent, or higher level of protection).

When putting on a disposable particulate respirator, always check the seal/fitness. Be aware that the presence of facial hair (e.g. beard) may prevent a proper respirator fit for the wearer.

- Eye protection (i.e. goggles or a face shield).
  - Clean, non-sterile, long-sleeved gown and gloves. Note that some procedures require sterile gloves. If gowns are not fluid resistant, a waterproof apron should be used for procedures where it is expected that high fluid volumes might penetrate the gown
- Perform procedures in an adequately ventilated room: at a minimum natural ventilation with at least 160l/s/patient air flow, or negative pressure rooms with at least 12 air changes per hour and controlled direction of air flow when using mechanical ventilation
  - Limit the number of persons present in the room to the minimum required for the patient's care and support; and
  - Follow guidance for steps of donning and doffing PPE. Perform hand hygiene before and after contact with the patient and his or her surroundings and after PPE removal.
  - Waste management and decontamination procedures:  
Ensure that all materials used is disposed appropriately. Disinfection of work areas and decontamination of possible spills of blood or infectious body fluids should follow validated procedures, usually with chlorine-based solutions.

#### Specifics for transport of samples to laboratory:

- Ensure that personnel who transport specimens are trained in safe handling practices and spill decontamination procedures.
- Follow the requirements in the national or international regulations for the transport of dangerous goods (infectious substances) as applicable (14).
- Deliver all specimens by hand whenever possible. Do not use pneumatic-tube systems to transport specimens. • State the full name, date of birth of the suspected SARI case clearly on



the accompanying request form. Notify the laboratory as soon as possible that the specimen is being transported.

<b>Specifics for biosafety practices in the laboratory</b>
Ensure that health laboratories adhere to appropriate biosafety practices. Any testing on clinical specimens from patient meeting the case definition should be performed in appropriately equipped laboratories by staff trained in the relevant technical and safety procedures. National guidelines on the laboratory biosafety should be followed in all circumstances. General information on laboratory biosafety guidelines, see the WHO Laboratory Biosafety Manual, 3 <sup>rd</sup> edition (8).
It is recommended that all manipulations in laboratory settings of samples originating from suspected or confirmed cases of novel coronaviruses can be conducted according to WHO recommendations available at: <a href="https://www.who.int/csr/disease/coronavirus_infections/Biosafety_InterimRecommendations_NovelCoronavirus2012_31Oct12.pdf?ua=1">https://www.who.int/csr/disease/coronavirus_infections/Biosafety_InterimRecommendations_NovelCoronavirus2012_31Oct12.pdf?ua=1</a> Information on biosafety levers for SARS, a Betacoronavirus that can cause severe respiratory disease can be consulted at <a href="https://www.who.int/csr/sars/biosafety2003_04_25/en/">https://www.who.int/csr/sars/biosafety2003_04_25/en/</a> and other guidance.

## ANNEX 5

### Packaging and shipment to another laboratory

Transport of specimens within national borders should comply with applicable national regulations. International Transport Regulations. Novel coronavirus specimens should follow the UN Model Regulations, and any other applicable regulations depending on the mode of transport being used. More information may be found in the WHO Guidance on regulations for the Transport of Infectious Substances 2019-2020 (Applicable as from 1 January 2019) (14). A summary on transport of infectious substances can also be found in Toolbox 4 of the Managing epidemics handbook (1).

Patient specimens from suspected or confirmed cases should be transported as UN3373, “Biological Substance, Category B”, when they are transported for diagnostic or investigational purposes. Viral cultures or isolates should be transported as Category A, UN2814, “infectious substance, affecting humans”. All specimens being transported (whether UN3373 or UN2814) should have appropriate packaging, labelling and documentation, as described above.

## ANNEX 6:

### CLINICAL MANAGEMENT

The nCoV may present with mild, moderate, or severe illness; the latter includes severe pneumonia, ARDS, sepsis and septic shock. Early recognition of suspected patients allows for timely initiation of IPC. Early identification of those with severe manifestations allows for immediate optimized supportive care treatments and safe, rapid admission (or referral) to intensive care unit according to institutional or national protocols. For those with mild illness, hospitalization may not be required unless there is concern for rapid deterioration. All patients discharged home should be instructed to return to hospital if they develop any worsening of illness.

**There is no current evidence from RCTs to recommend any specific anti-nCoV treatment for patients with suspected or confirmed nCoV.**

[https://www.who.int/docs/default-source/coronaviruse/clinical-management-of-novel-cov.pdf?sfvrsn=bc7da517\\_2](https://www.who.int/docs/default-source/coronaviruse/clinical-management-of-novel-cov.pdf?sfvrsn=bc7da517_2)

#### Clinical syndromes associated with nCoV infection

<b>Uncomplicated illness</b>	Patients with uncomplicated upper respiratory tract viral infection, may have non-specific symptoms such as fever, cough, sore throat, nasal congestion, malaise, headache, muscle pain or malaise. The elderly and immunosuppressed may present with atypical symptoms. These patients do not have any signs of dehydration, sepsis or shortness of breath.
<b>Mild pneumonia</b>	Patient with pneumonia and no signs of severe pneumonia. Child with non-severe pneumonia has cough or difficulty breathing + fast breathing: fast breathing (in breaths/min): <2 months, $\geq 60$ ; 2–11 months, $\geq 50$ ; 1–5 years, $\geq 40$ and no signs of severe pneumonia.
<b>Severe Pneumonia</b> rate >30	Adolescent or adult: fever or suspected respiratory infection, plus one of respiratory breaths/min, severe respiratory distress, or SpO <sub>2</sub> <90% on room air. Child with cough or difficulty in breathing, plus at least one of the following: central cyanosis or SpO <sub>2</sub> <90%; severe respiratory distress (e.g. grunting, very severe chest in drawing); signs of pneumonia with a general danger sign: inability to breastfeed or drink, lethargy or unconsciousness, or convulsions. Other signs of pneumonia may be present: chest in drawing, fast breathing (in breaths/min): <2 months, $\geq 60$ ; 2–11 months, $\geq 50$ ; 1–5 years, $\geq 40$ . <sup>2</sup> The diagnosis is clinical; chest imaging can exclude complications.

#### Supportive Therapy

- Give supplemental oxygen therapy immediately to patients with SARI and respiratory distress, hypoxemia, or shock
- Use conservative fluid management in patients with SARI when there is no evidence of shock.
- Give empiric antimicrobials to treat all likely pathogens causing SARI. Give antimicrobials within one hour of initial patient assessment for patients with sepsis.
- Do not routinely give systemic corticosteroids for treatment of viral pneumonia or Acute Respiratory Distress Syndrome (ARDS) outside of clinical trials unless they are indicated for another reason.

- Closely monitor patients with SARI for signs of clinical deterioration, such as rapidly progressive respiratory failure and sepsis, and apply supportive care interventions immediately.
- Understand the patient's co-morbid condition(s) to tailor the management of critical illness and appreciate the prognosis. Communicate early with patient and family.

### **Management of hypoxemic respiratory failure and acute respiratory distress syndrome (ARDS)**

- Recognize severe hypoxemic respiratory failure when a patient with respiratory distress is failing standard oxygen therapy.
- High-flow nasal oxygen (HFNO) or non-invasive ventilation (NIV) should only be used in selected patients with hypoxemic respiratory failure. The risk of treatment failure is high in patients with MERS treated with NIV, and patients treated with either HFNO or NIV should be closely monitored for clinical deterioration.
- Endotracheal intubation should be performed by a trained and experienced provider using airborne precautions.
- Implement mechanical ventilation using lower tidal volumes (4–8 ml/kg predicted body weight, PBW) and lower inspiratory pressures (plateau pressure <30 cmH<sub>2</sub>O).
- In patients with severe ARDS, prone ventilation for >12 hours per day is recommended
- Use a conservative fluid management strategy for ARDS patients without tissue hypoperfusion.
- In patients with moderate or severe ARDS, higher PEEP instead of lower PEEP is suggested.
- In patients with moderate-severe ARDS (PaO<sub>2</sub>/FiO<sub>2</sub> <150), neuromuscular blockade by continuous infusion should not be routinely used.
- In settings with access to expertise in extracorporeal life support (ECLS), consider referral of patients with refractory hypoxemia despite lung protective ventilation

Avoid disconnecting the patient from the ventilator, which results in loss of PEEP and atelectasis. Use in-line catheters for airway suctioning and clamp endotracheal tube when disconnection is required (for example, transfer to a transport ventilator).

- Management of septic shock
- Prevention of complications
- Specific anti-nCoV treatments

### **Special considerations for pregnant patients**

Pregnant women with suspected or confirmed nCoV should be treated with supportive therapies as described above, taking into account the physiologic adaptations of pregnancy.

The use of investigational therapeutic agents outside of a research study should be guided by individual risk-benefit analysis based on potential benefit for mother and safety to fetus, with consultation from an obstetric specialist and ethics committee.

Emergency delivery and pregnancy termination decisions are challenging and based on many factors: gestational age, maternal condition, and fetal stability. Consultations with obstetric, neonatal, and intensive care specialists (depending on the condition of the mother) are essential.

### **How to implement infection prevention and control measures for patients with suspected or confirmed nCoV infection**

**At triage** Give suspect patient a medical mask and direct patient to separate area, an isolation room if available. Keep at least 1 meter distance between suspected patients and other patients. Instruct all patients to cover nose and mouth during

coughing or sneezing with tissue or flexed elbow for others. Perform hand hygiene after contact with respiratory secretions

**Apply droplet precautions** Droplet precautions prevent large droplet transmission of respiratory viruses. Use a medical mask if working within 1-2 metres of the patient. Place patients in single rooms, or group together those with the same etiological diagnosis. If an etiological diagnosis is not possible, group patients with similar clinical diagnosis and based on epidemiological risk factors, with a spatial separation. When providing care in close contact with a patient with respiratory symptoms (e.g. coughing or sneezing), use eye protection (face-mask or goggles), because sprays of secretions may occur. Limit patient movement within the institution and ensure that patients wear medical masks when outside their rooms.

**Apply contact precautions** Droplet and contact precautions prevent direct or indirect transmission from contact with contaminated surfaces or equipment (i.e. contact with contaminated oxygen tubing/interfaces). Use PPE (medical mask, eye protection, gloves and gown) when entering room and remove PPE when leaving. If possible, use either disposable or dedicated equipment (e.g. stethoscopes, blood pressure cuffs and thermometers). If equipment needs to be shared among patients, clean and disinfect between each patient use. Ensure that health care workers refrain from touching their eyes, nose, and mouth with potentially contaminated gloved or ungloved hands. Avoid contaminating environmental surfaces that are not directly related to patient care (e.g. door handles and light switches). Ensure adequate room ventilation. Avoid movement of patients or transport. Perform hand hygiene.

IPC is a critical and integral part of clinical management of patients and should be initiated at the point of entry of the patient to hospital (typically the Emergency Department). Standard precautions should always be routinely applied in all areas of health care facilities. Standard precautions include hand hygiene; use of PPE to avoid direct contact with patients' blood, body fluids, secretions (including respiratory secretions) and non-intact skin. Standard precautions also include prevention of needle-stick or sharps injury; safe waste management; cleaning and disinfection of equipment; and cleaning of the environment.

# Infection prevention and control during health care when novel coronavirus (nCoV) infection is suspected

Interim guidance

January 2020



WHO/2019-nCoV/IPC/2020.1

## Introduction

This is the first edition of infection prevention and control (IPC) guidance when a novel coronavirus (nCoV) is suspected. It has been adapted from WHO's IPC recommendations for MERS-CoV (Infection prevention and control during health care for probable or confirmed cases of Middle East respiratory syndrome coronavirus [MERS-CoV] infection, interim guidance October 2019, WHO/MERS/IPC/15.1 Rev 1<sup>1</sup>), based on our current knowledge of the situation in Wuhan, China and experiences with SARS-CoV and MERS-CoV<sup>2</sup>.

WHO will update these recommendations as new information becomes available on the situation in Wuhan, China.

This guidance is intended for health-care workers (HCWs), health-care managers, and IPC teams. Full guidelines are available at *Infection prevention and control of epidemic- and pandemic-prone acute respiratory infections in health care*<sup>2</sup>.

Principles of infection prevention and control strategies associated with health care with suspected nCoV

IPC strategies to prevent or limit infection transmission in health-care settings include the following:

1. Early recognition and source control
2. Application of Standard Precautions for all patients
3. Implementation of empiric additional precautions (droplet and contact and whenever applicable airborne precautions) for suspected cases
4. Administrative controls
5. Environmental and engineering controls

### 1. Early recognition and source control

Clinical triage including early recognition and immediate placement of patients in separate area from other patients (source control) is an essential measure for rapid identification and appropriate isolation and care of patients with suspected nCoV infection. To facilitate early identification of suspect cases, healthcare facilities should:

- Encourage HCWs to have a high level of clinical suspicion
- Institute screening questionnaire and
- Post signage in public areas reminding symptomatic patients to alert HCWs.

Promotion of respiratory hygiene is an important preventative measure.

Suspected nCoV patients should be placed in an area separate from other patients, and additional IPC (droplet and contact) precautions promptly implemented.

### 2. Application of Standard Precautions for all patients

Standard Precautions include hand and respiratory hygiene; use of Personal protective equipment (PPE) depending on risk; prevention of needle-stick or sharps injury; safe waste management; environmental cleaning and sterilization of patient-care equipment and linen.

Ensure the following respiratory hygiene measures:

- Offer a medical mask for suspected nCoV infection for those who can tolerate it
- Cover nose and mouth during coughing or sneezing with tissue or flexed elbow for others
- Perform hand hygiene after contact with respiratory secretions.

*Personal protective equipment (PPE)*. Rational, correct<sup>3</sup>, and consistent use of available PPE and appropriate hand hygiene<sup>4</sup> also helps to reduce the spread of the pathogens. PPE effectiveness depends on adequate and regular supplies, adequate staff training, proper hand hygiene and specifically appropriate human behaviour<sup>2</sup>.

Ensure that environmental cleaning and disinfection procedures are followed consistently and correctly. Thorough cleaning of environmental surfaces with water and detergent and applying commonly used hospital level disinfectants (such as sodium hypochlorite) is an effective and sufficient procedure. Manage laundry, food service utensils and medical waste in accordance with safe routine procedures<sup>2</sup>.

### 3. Implementation of empiric additional precautions for suspected nCoV infections

#### 3.1 Contact and Droplet precautions for suspected nCoV infection:

- In addition to Standard Precautions, all individuals, including family members, visitors and HCWs should apply Contact and Droplet precautions
- Place patients in adequately ventilated single rooms. For naturally ventilated general ward rooms this is considered to be 160 L/second/patient<sup>5</sup>.
- When single rooms are not available, cohort patients suspected of nCoV infection together;

- Place patient beds at least 1m apart;
- Where possible, cohort HCWs to exclusively care for cases to reduce the risk of spreading transmission due to inadvertent infection control breaches;
- Use a medical mask (for specifications please see <sup>2,6</sup>);
- Use eye/facial protection (i.e. goggles or a face shield);
- Use a clean, non-sterile, long-sleeved fluid resistant gown;
- Use gloves;
- Use either single use disposable equipment or dedicated equipment (e.g. stethoscopes, blood pressure cuffs and thermometers). If equipment needs to be shared among patients, clean and disinfect between each patient use (e.g. ethyl alcohol 70%);
- Refrain from touching eyes, nose or mouth with potentially contaminated hands;
- Avoid the movement and transport of patients out of the room or area unless medically necessary. Use designated portable X-ray equipment and/or other important diagnostic equipment. If transport is required, use pre-determined transport routes to minimize exposures to staff, other patients and visitors and apply medical mask to patient;
- Ensure that HCWs who are transporting patients wear appropriate PPE as described in this section and perform hand hygiene;
- Notify the receiving area of necessary precautions as soon as possible before the patient's arrival;
- Routinely clean and disinfect patient-contact surfaces;
- Limit the number of HCWs, family members and visitors in contact with a patient with suspected nCoV infection;
- Maintain a record of all persons entering the patient's room including all staff and visitors.

### 3.2 Airborne precautions for aerosol-generating procedures for suspected nCoV infection:

Some aerosol generating procedures have been associated with increased risk of transmission of coronaviruses (SARS-CoV and MERS-CoV) such as tracheal intubation, non-invasive ventilation, tracheotomy, cardiopulmonary resuscitation, manual ventilation before intubation and bronchoscopy<sup>7,8</sup>.

Ensure that HCWs performing aerosol-generating procedures:

- Use a particulate respirator at least as protective as a NIOSH-certified N95, EU FFP2 or equivalent <sup>2,6</sup>; when putting on a disposable particulate respirator, always perform the seal-check<sup>6</sup>. Note that if the wearer has facial hair (beard) this can prevent a proper respirator fit<sup>6</sup>.
- Eye protection (i.e. goggles or a face shield);
- Clean, non-sterile, long-sleeved gown and gloves;
- If gowns are not fluid resistant, use a waterproof apron for procedures with expected high fluid volumes that might penetrate the gown<sup>2</sup>;

- Perform procedures in an adequately ventilated room; i.e. at least natural ventilation with at least 160 l/s/patient air flow or negative pressure rooms with at least 12 air changes per hour (ACH) and controlled direction of air flow when using mechanical ventilation
- Limit the number of persons present in the room to the absolute minimum required for the patient's care and support.

### 4. Administrative controls<sup>2</sup>

Administrative controls and policies that apply to prevention and control of transmission of nCoV infections include establishment of sustainable IPC infrastructures and activities; HCWs training; patients' care givers education; policies on early recognition of acute respiratory infection potentially due to nCoV, access to prompt laboratory testing for identification of the etiologic agent; prevention of overcrowding especially in the Emergency department; provision of dedicated waiting areas for symptomatic patients and appropriate placement of hospitalized patients promoting an adequate patient-to-staff ratio; provision and use of regular supplies; IPC policies and procedures for all facets of healthcare provisions - with emphasis on surveillance of acute respiratory infection potentially due to nCoV among HCWs and the importance of seeking medical care; and monitoring of HCW compliance, along with mechanisms for improvement as needed.

### 5. Environmental and engineering controls

These include basic health-care facility infrastructures<sup>9</sup>. These controls address ensuring adequate environmental ventilation<sup>5</sup> in all areas within a health-care facility, as well as adequate environmental cleaning. Spatial separation of at least 1-meter distance should be maintained between each suspect patient and others. Both controls can help reduce the spread of many pathogens during health care<sup>10</sup>.

### Duration of contact and droplet precautions for nCoV infection

Standard precautions should always be applied at all times. Additional contact and droplet precautions should continue until the patient is asymptomatic. More comprehensive information on the nCoV infection mode of transmission is required to define duration of additional precautions.

### Collection and handling of laboratory specimens from patients with suspected nCoV

All specimens collected for laboratory investigations should be regarded as potentially infectious, and HCWs who collect, or transport clinical specimens should adhere rigorously to Standard Precautions to minimize the possibility of exposure to pathogens<sup>11,12</sup>.

- Ensure that HCWs who collect specimens use appropriate PPE (eye protection, medical mask,

long-sleeved gown, gloves). If the specimen is collected under aerosol generating procedure, personnel should wear a particulate respirator at least as protective as a NIOSH-certified N95, EU FFP2 or equivalent

- Ensure that all personnel who transport specimens are trained in safe handling practices and spill decontamination procedures.
- Place specimens for transport in leak-proof specimen bags (secondary container) that have a separate sealable pocket for the specimen (i.e. a plastic biohazard specimen bag), with the patient's label on the specimen container (primary container), and a clearly written laboratory request form.
- Ensure that health-care facility laboratories adhere to appropriate biosafety practices and transport requirements according to the type of organism being handled.
- Deliver all specimens by hand whenever possible. DO NOT use pneumatic-tube systems to transport specimens.
- Document patients full name, date of birth of suspected nCoV of potential concern clearly on the accompanying laboratory request form. Notify the laboratory as soon as possible that the specimen is being transported.

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## ANNEX 8

### General Public Health Prevention Measures

DOH is recommending these measures for the following:

- Caregivers and household members of a person confirmed to have, or being evaluated for, 2019-nCoV infection
- Other people who have had close contact with a person confirmed to have, or being evaluated for, 2019-nCoV infection

#### Prevention Steps for People who may have 2019-nCoV Infection

If you are feeling sick and are confirmed to have, or being evaluated for, 2019-nCoV infection you should follow the prevention steps below until a healthcare provider or local or state health department says you can return to your normal activities.

Stay home except to get medical care

You should restrict activities outside your home, except for getting medical care. Do not go to work, school, or public areas, and do not use public transportation or taxis.

Separate yourself from other people in your home

As much as possible, you should stay in a different room from other people in your home. Also, you should use a separate bathroom, if available.

Call ahead before visiting your doctor

Before your medical appointment, call the healthcare provider and tell them that you have, or are being evaluated for, 2019-nCoV infection. This will help the healthcare provider's office take steps to keep other people from getting infected.

Wear a facemask

You should wear a facemask when you are in the same room with other people and when you visit a healthcare provider. If you cannot wear a facemask, the people who live with you should wear one while they are in the same room with you.

Cover your coughs and sneezes

Cover your mouth and nose with a tissue when you cough or sneeze, or you can cough or sneeze into your sleeve. Throw used tissues in a lined trash can, and immediately wash your hands with soap and water for at least 20 seconds.

Wash your hands

Wash your hands often and thoroughly with soap and water for at least 20 seconds. You can use an alcohol-based hand sanitizer if soap and water are not available and if your hands are not visibly dirty. Avoid touching your eyes, nose, and mouth with unwashed hands.

Avoid sharing household items

You should not share dishes, drinking glasses, cups, eating utensils, towels, bedding, or other items with other people in your home. After using these items, you should wash them thoroughly with soap and water.



## Monitor your symptoms

Seek prompt medical attention if your illness is worsening (e.g., difficulty breathing). Before going to your medical appointment, call the healthcare provider and tell them that you have, or are being evaluated for, 2019-nCoV infection. This will help the healthcare provider's office take steps to keep other people from getting infected. Ask your healthcare provider to call the local or city/provincial health department.

## Prevention Steps for Caregivers and Household Members

If you live with, or provide care at home for, a person confirmed to have, or being evaluated for, 2019-nCoV infection, you should:

- Make sure that you understand and can help the person follow the healthcare provider's instructions for medication and care. You should help the person with basic needs in the home and provide support for getting groceries, prescriptions, and other personal needs.
- Have only people in the home who are essential for providing care for the person.
  - Other household members should stay in another home or place of residence. If this is not possible, they should stay in another room, or be separated from the person as much as possible. Use a separate bathroom, if available.
  - Restrict visitors who do not have an essential need to be in the home.
  - Keep elderly people and those who have compromised immune systems or chronic health conditions away from the person. This includes people with chronic heart, lung or kidney conditions, and diabetes.
- Make sure that shared spaces in the home have good air flow, such as by an air conditioner or an opened window, weather permitting.
- Wash your hands often and thoroughly with soap and water for at least 20 seconds. You can use an alcohol-based hand sanitizer if soap and water are not available and if your hands are not visibly dirty. Avoid touching your eyes, nose, and mouth with unwashed hands.
- Wear a disposable facemask, gown, and gloves when you touch or have contact with the person's blood, body fluids and/or secretions, such as sweat, saliva, sputum, nasal mucus, vomit, urine, or diarrhea.
  - Throw out disposable facemasks, gowns, and gloves after using them. Do not reuse.
  - Wash your hands immediately after removing your facemask, gown, and gloves.
- Avoid sharing household items. You should not share dishes, drinking glasses, cups, eating utensils, towels, bedding, or other items with a person who is confirmed to have, or being evaluated for, 2019-nCoV infection. After the person uses these items, you should wash them thoroughly (see below "Wash laundry thoroughly").
- Clean all "high-touch" surfaces, such as counters, tabletops, doorknobs, bathroom fixtures, toilets, phones, keyboards, tablets, and bedside tables, every day. Also, clean any surfaces that may have blood, body fluids and/or secretions or excretions on them.
  - Read label of cleaning products and follow recommendations provided on product labels. Labels contain instructions for safe and effective use of the cleaning product including precautions you should take when applying the product, such as wearing gloves or aprons and making sure you have good ventilation during use of the product.
  - Use a diluted bleach solution or a household disinfectant with a label that says "EPA-approved." To make a bleach solution at home, add 1 tablespoon of bleach to 1 quart (4 cups) of water. For a larger supply, add ¼ cup of bleach to 1 gallon (16 cups) of water.
- Wash laundry thoroughly.
  - Immediately remove and wash clothes or bedding that have blood, body fluids and/or secretions or excretions on them.
  - Wear disposable gloves while handling soiled items. Wash your hands immediately after removing your gloves.
  - Read and follow directions on labels of laundry or clothing items and detergent. In general, wash and dry with the warmest temperatures recommended on the clothing label.

- Place all used disposable gloves, gowns, facemasks, and other contaminated items in a lined container before disposing them with other household waste. Wash your hands immediately after handling these items.
- Monitor the person's symptoms. If they are getting sicker, call his or her medical provider and tell them that the person has, or is being evaluated for, 2019-nCoV infection. This will help the healthcare provider's office take steps to keep other people from getting infected. Ask the healthcare provider to call the local or city/ provincial health department.

#### Prevention Steps for Close Contacts

If you have had close contact with someone who is confirmed to have, or being evaluated for, 2019-nCoV infection, you should:

- Monitor your health starting from the day you first had close contact with the person and continue for 14 days after you last had close contact with the person. Watch for these signs and symptoms:
  - Fever. Take your temperature twice a day.
  - Coughing.
  - Shortness of breath or difficulty breathing.
  - Other early symptoms to watch for are chills, body aches, sore throat, headache, diarrhea, nausea/vomiting, and runny nose.
- If you develop any of these symptoms, follow the prevention steps for caregivers and household members described above, and call your healthcare provider as soon as possible. **Before** going to your medical appointment, call the healthcare provider and tell them about your close contact with someone who is confirmed to have, or being evaluated for, 2019-nCoV infection. This will help the healthcare provider's office take steps to keep other people from getting infected. Ask your healthcare provider to call the local or city/provincial health department.
- If you do not have any symptoms, you can continue with your daily activities, such as going to work, school, or other public areas.

#### **Reduce risk of transmission of emerging pathogens from animals to humans in live animal markets**

In light of available evidence and past experience, WHO makes the following general recommendations:

- As a general precaution, anyone visiting live animal markets, wet markets or animal product markets, should practice general hygiene measures, including regular hand washing with soap and potable water after touching animals and animal products, avoiding touching eyes, nose or mouth with hands, and avoiding contact with sick animals or spoiled animal products. Any contact with other animals possibly living in the market (e.g., stray cats and dogs, rodents, birds, bats) should be strictly avoided. Attention should also be taken to avoid contact with potentially contaminated animal waste or fluids on the soil or structures of shops and market facilities
- The consumption of raw or undercooked animal products should be avoided. Raw meat, milk or animal organs should be handled with care, to avoid cross-contamination with uncooked foods, as per good food safety practices.

## Recommendations for at-risk groups

- Until more is understood about the 2019-nCoV, people with underlying medical conditions are considered at higher risk of severe disease. Therefore, individuals with these underlying medical conditions should avoid contact with live animal markets, stray animals and wild animals, should not eat animal raw meat. Such recommendations should also be disseminated to travelers and tourists with underlying medical conditions.
- Slaughterhouse workers, veterinarians in charge of animal and food inspection in markets, market workers, and those handling live animals and animal products should practice good personal hygiene, including frequent hand washing after touching animals and animal products. They should consider wearing protective gowns, gloves, masks while professionally handling animals and fresh animal products. Equipment and working stations should be disinfected frequently, at least once a day. Protective clothing should be removed after work and washed daily. Workers should avoid exposing family members to soiled work clothing, shoes, or other items that may have come into contact with potentially contaminated material. It is therefore recommended that protective clothes and items remain at the workplace for daily washing.
- Based on available information, it is not known if the 2019-nCoV has any impact on the health of animals and no particular event has been reported in any species. As a general recommendation, sick animals should never be slaughtered for consumption; dead animals should be safely buried or destroyed and contact with their body fluids should be avoided without protective clothes. Veterinarians should maintain a high level of vigilance and report any unusual event detected in any animal species present in the markets to veterinary authorities.

## ANNEX 9

### RCCE initial response checklist for countries where one or more cases have been identified

#### Goals

|| Adapt and apply action steps from readiness checklist above if not already completed || Establish, build and/or maintain trust with population through regular two way communication and engagement that regularly addresses misunderstanding, misinformation, rumors and frequently asked questions || Encourage people to adopt protective behaviors || Manage expectations and communicate uncertainties || Coordinate and encourage collaboration among response partners || Assess initial risk perception of affected and at risk populations || Provide information and guidance

#### Action steps

##### Risk Communication Systems

□ Adapt existing RCCE plan to the response, and activate the RCCE response team and plan □ Identify and activate spokespeople for the emergency || Draw up timelines for communication activities and products || Monitor RCCE response by identifying processes that delay information release and create confusion among affected populations

##### Internal and partner coordination

|| Activate SOPs for RCCE coordination with other response agencies and partners □ Link national, regional and local RCCE operations || Assign responsibilities for internal (to each response agency) and external (to the public) communication || Coordinate message preparation, consistency and dissemination

## Public communication

|| Announce the health threat early and often and update after a risk assessment and an analysis of risk perception || Provide information as soon as it is received, even if it is not complete and openly explain the degree to which information is uncertain (manage uncertainty), provide the public regular channels to get updated information (e.g. hotlines, website, etc.) || Use trusted and effective communication channels that target audiences regularly use || Identify and activate trusted influencers for the audiences

## Communication engagement with affected communities

|| Conduct a rapid risk perception analysis based on existing formal and informal information || Segment the audiences for the communication response (e.g. affected people, health care workers, political leaders, donors, etc.) || Translate materials into relevant languages and adapt to literacy levels  
Addressing uncertainty, perceptions and misinformation management

|| Communicate what is known and what is not known - explain degree to which uncertainty still exists || Activate rumour monitoring, verification and response mechanisms || Monitor mass and social media, hotlines, health care worker feedback from patients and community concerns and continually apply feedback into adapted RCCE strategy  
Capacity building

|| Plan regular updated guidance to all RCCE responders || Train surge staff || Consider training leaders, responders and spokespeople on RCCE guidance as needed