



Interim guidance on infection prevention and control during health care when novel coronavirus (nCoV) infection is suspected –Updated January 28, 2020

Introduction

This is an update of guidance on infection prevention and control (IPC) strategies for use when infection with a novel coronavirus (2019-nCoV) is suspected. This guidance is intended for healthcare workers (HCWs) at the facility level but it is also relevant for the national level.

Principles of IPC strategies associated with health care for suspected nCoV infection

IPC strategies to prevent or limit transmission in healthcare settings include the following:

1. ensuring triage, early recognition, and source control (isolating patients with suspected nCoV infection);
2. applying standard precautions for all patients;
3. implementing empiric additional precautions (droplet and contact and, whenever applicable, airborne precautions) for suspected cases of nCoV infection;
4. implementing administrative controls;
5. using environmental and engineering controls.

1. Ensuring triage, early recognition, and source control

Clinical triage includes a system for assessing all patients at admission allowing early recognition of possible 2019-nCoV infection and immediate isolation of patients with suspected nCoV infection in an area separate from other patients (source control). To facilitate the early identification of cases of suspected nCoV infection, healthcare facilities should:

- encourage HCWs to have a high level of clinical suspicion;

- establish a well-equipped triage station at the entrance of health care facility, supported by trained staff;
- institute the use of screening questionnaires according to the updated case definition;
- post signs in public areas reminding symptomatic patients to alert HCWs.

The promotion of hand hygiene and respiratory hygiene are essential preventive measures.

2. Applying standard precautions for all patients

Standard precautions include hand and respiratory hygiene, the use of appropriate personal protective equipment (PPE) according to risk assessment, injection safety practices, safe waste management, proper linens, environmental cleaning and sterilization of patient-care equipment.

Ensure that the following respiratory hygiene measures are used:

- ensure that all patients cover their nose and mouth with a tissue or elbow when coughing or sneezing;
- offer a medical mask to patients with a suspected 2019-nCoV infection while they are in waiting/public areas or in cohorting rooms;
- perform hand hygiene after contact with respiratory secretions.

HCWs should apply the WHO's My 5 Moments for Hand Hygiene approach before touching a patient, before any clean or aseptic procedure is performed, after exposure to body fluid, after touching a patient, and after touching a patient's surroundings.

- hand hygiene includes either cleansing hands with an alcohol-based hand rub (ABHR) or with soap and water;
- alcohol-based hand rubs are preferred if hands are not visibly soiled;
- wash hands with soap and water when they are visibly soiled.

The rational, correct, and consistent use of PPE also helps to reduce the spread of pathogens. The use of PPE effectiveness strongly depends on adequate and regular supplies, adequate staff training, appropriate hand hygiene and specifically appropriate human behavior.

It is important to ensure that environmental cleaning and disinfection procedures are followed consistently and correctly. Thoroughly cleaning environmental surfaces with water and detergent and applying commonly used hospital-level disinfectants (such as sodium hypochlorite) are effective and sufficient procedures. Medical devices and equipment, laundry, food service utensils and medical waste should be managed in accordance with safe routine procedures.

3. Implementing empiric additional precautions

3.1 Contact and droplet precautions

- in addition to using standard precautions, all individuals, including family members, visitors, and HCWs, should use contact and droplet precautions before entering the room where suspected or confirmed nCoV patients are admitted;
- patients should be placed in well ventilated single rooms. For general ward rooms with natural ventilation, adequate ventilation is considered to be 60 L/s per patient;
- when single rooms are not available, patients suspected of being infected with nCoV should be grouped together;
- all patients' beds should be placed at least 1 m apart regardless of whether they are suspected to have nCov infection;
- where possible, a team of HCWs should be designated to care exclusively for suspected or confirmed cases to reduce the risk of transmission;
- HCWs should use a medical mask;
- HCWs should wear eye protection (goggles) or facial protection (face shield) to avoid contamination of mucous membranes;
- HCWs should wear a clean, non-sterile, long-sleeved gown;
- HCWs should also use gloves;
- the use of boots, coverall, and apron is not required during routine care;
- after patient care, appropriate doffing and disposal of all PPE's and hand hygiene should be carried out. Also, a new set of PPE's is needed, when care is given to a different patient;

- equipment should be either single-use and disposable or dedicated equipment (e.g., stethoscopes, blood pressure cuffs, and thermometers). If equipment needs to be shared among patients, clean and disinfect it between use for each patient (e.g. by using ethyl alcohol 70%);
- HCWs should refrain from touching eyes, nose or mouth with potentially contaminated gloved or bare hands;
- avoid moving and transporting patients out of their room or area unless medically necessary. Use designated portable X-ray equipment and/or other designated diagnostic equipment. If transport is required, use predetermined transport routes to minimize exposure for staff, other patients and visitors, and have the patient using a medical mask;
- ensure that HCWs who are transporting patients perform hand hygiene and wear appropriate PPE as described in this section;
- notify the area receiving patient of necessary precautions as early as possible before the patient's arrival;
- routinely clean and disinfect surfaces which the patient is in contact;
- limit the number of HCWs, family members and visitors who are in contact with a suspected and confirmed 2019-nCoV patient;
- maintain a record of all persons entering the patient's room, including all staff and visitors.

3.2 Airborne precautions for aerosol-generating procedures

Some aerosol-generating procedures have been associated with an 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.

Ensure that HCWs performing aerosol-generating procedures:

- perform procedures in an adequately ventilated room – that is, natural ventilation with airflow of at least 160 L/s per patient or in negative pressure rooms with at least 12 air changes per hour and controlled direction of airflow when using mechanical ventilation;

- use a particulate respirator at least as protective as a US National Institute for Occupational Safety and Health (NIOSH)-certified N95, European Union (EU) standard FFP2, or equivalent. When HCWs put on a disposable particulate respirator, they must always perform the seal check. Note that if the wearer has facial hair (i.e., a beard) it may prevent a proper respirator fit;
- use eye protection (i.e., goggles or a face shield);
- wear a clean, non-sterile, long-sleeved gown and gloves. If gowns are not fluid-resistant, HCWs should use a waterproof apron for procedures expected to have high volumes of fluid that might penetrate the gown;
- limit the number of persons present in the room to the absolute minimum required for the patient's care and support.

4. Implementing administrative controls

It includes, but may not be limited to:

establishing sustainable IPC infrastructures and activities; educating patients' caregivers; developing policies on the early recognition of acute respiratory infection potentially caused by 2019-nCoV; ensuring access to prompt laboratory testing for identification of the etiologic agent; preventing overcrowding, especially in the emergency department; providing dedicated waiting areas for symptomatic patients; appropriately isolating hospitalized patients; ensuring adequate supplies of PPE; ensure the adherence of IPC policies and procedures for all facets of health care.

4.1. Administrative measures related to healthcare workers

- provision of adequate training for HCWs;
- ensuring an adequate patient-to-staff ratio;
- establishing surveillance for acute respiratory infections potentially caused by nCoV among HCWs;
- ensuring that HCWs and the public understand the importance of promptly seeking medical care;

- monitoring HCW compliance with standard precautions and providing mechanisms for improvement as needed.

5. Using environmental and engineering controls

These controls address the basic infrastructure of the health care facility. These controls aim to ensure there is adequate ventilation in all areas in the healthcare facility, as well as adequate environmental cleaning.

Additionally, spatial separation of at least 1 meter should be maintained between all patients. Both spatial separation and adequate ventilation can help reduce the spread of many pathogens in the healthcare setting.

Ensure that cleaning and disinfection procedures are followed consistently and correctly. Cleaning environmental surfaces with water and detergent and applying commonly used hospital 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.

Duration of contact and droplet precautions for patients with nCoV infection

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

Collecting and handling laboratory specimens from patients with suspected 2019-nCoV infection

All specimens collected for laboratory investigations should be regarded as potentially infectious. HCWs who collect, handle or transport any clinical specimens should adhere rigorously to the following standard precaution measures and biosafety practices to minimize the possibility of exposure to pathogens.

- ensure that HCWs who collect specimens use appropriate PPE (i.e., eye protection, a medical mask, a long-sleeved gown, gloves). If the specimen is collected with an

aerosol-generating procedure, personnel should wear a particulate respirator at least as protective as a NIOSH-certified N95, an EU standard FFP2, or the 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 (i.e., secondary containers) 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 (i.e., the primary container), and a clearly written laboratory request form;
- ensure that laboratories in health care facilities 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;
- clearly document each patient's full name, date of birth and suspected nCoV of potential concern on the laboratory request form. Notify the laboratory as soon as possible that the specimen is being transported.

Recommendation for outpatient care

The basic principles of IPC and standard precautions should be applied in all health care facilities, including outpatient care and primary care.

For 2019-nCoV infection, the following measures should be adopted:

- triage and early recognition;
- emphasis on hand hygiene, respiratory hygiene and medical masks to be used by patients with respiratory symptoms;
- appropriate use of contact and droplet precautions for all suspected cases;
- prioritization of care of symptomatic patients;
- when symptomatic patients are required to wait, ensure they have a separate waiting area;

- educate patients and families about the early recognition of symptoms, basic precautions to be used and which health care facility they should refer to.

References

- Interim Healthcare Infection Prevention and Control Recommendations for Patients Under Investigation for 2019 Novel Coronavirus, CDC
<https://www.cdc.gov/coronavirus/2019-nCoV/infection-control.html>
- Infection prevention and control during health care when novel coronavirus (nCoV) infection is suspected, Interim guidance, 25 January 2020.
[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)