

Infection prevention and control for the care of patients with 2019-nCoV in healthcare settings

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Scope of this document

This document aims to provide guidance to EU/EEA healthcare facilities and healthcare providers on infection prevention and control measures during the management of suspected and confirmed cases of 2019-nCoV infection.

Target audience

Hospital administrators and healthcare practitioners in EU/EEA Member States.

Background

On 31 December 2019, a cluster of pneumonia cases of unknown aetiology was reported in Wuhan, Hubei Province, China. The causative agent was identified as a novel coronavirus (2019-nCoV), which has since then infected thousands of people. The clinical presentation of 2019-nCoV infection ranges from asymptomatic to very severe pneumonia with acute respiratory distress syndrome, septic shock and multi-organ failure, which may result in death. Healthcare services in the EU/EEA are expected to encounter suspected and confirmed cases.

Coronaviruses are believed to be transmitted in most instances from person-to-person through inhalation or deposition on mucosal surfaces of large respiratory droplets. Other routes have also been implicated in the transmission of coronaviruses, such as contact with contaminated fomites and inhalation of aerosols, produced during aerosol generating procedures. The highest risk of healthcare-associated transmission is in the absence of standard precautions, when basic infection prevention and control measures for respiratory infections are not in place, and when handling patients where 2009-nCoV infection is yet to be confirmed. Although there is so far no evidence of airborne transmission, we recommend a cautious approach due to lack of studies excluding this mode of transmission [1].

Healthcare settings

The following sections provide a high-level outline of technical measures and resources for reducing the risk of transmission of 2019-nCoV in healthcare settings and laboratories in the EU/EEA. It draws on interim advice produced by WHO [2] and national agencies [3-6], or expert opinion. Relevant published sources of further detailed information and guidance on these measures, and the type or level of resources identified, are listed at the end of this document.

1. Initial contact and risk assessment (primary and emergency care)

Emergency services and primary care staff, including physicians, nursing and administrative staff with patient contact, should:

- 1.1 Be aware of: a) the current 2019-nCoV epidemiologic situation in their country and globally, b) known risk factors for infections, c) clinical symptoms and signs of 2019-nCoV cases, d) recommended infection prevention and control measures, e) procedures for reporting and transfer of persons under investigation and of probable and confirmed cases.
- 1.2 Be aware of the availability of case definitions for testing and reporting risk assessment and diagnostic purposes.
- 1.3 Perform a point of care risk assessment, including a review of travel, clinical and epidemiological history and the clinical presentation of the patient, to assess the likelihood of 2019-nCoV infection. The assessment should be based on the latest case definitions available. It aims at performing a rapid evaluation of the risk of transmission (based on signs, symptoms and procedures likely to result in exposure to respiratory droplets and aerosols).
- 1.4 Assess the on-site availability of appropriate personal protective equipment (PPE) for all personnel at the point of care to apply standard, contact and droplet precautions.
- 1.5 Be aware that the PPE components for clinical assessment of suspected 2019-nCoV cases in these settings are the same as the ones specified for care of confirmed patients described under (3.2.2).
- 1.6 Be aware that suspected cases of 2019-nCoV should be isolated or at least separated from other patients and instructed to wear a surgical mask. Unnecessary contacts should be avoided.
- 1.7 Contact a designated 24/7 response service to report the case, arrange diagnostic testing and, if the initial assessment indicates it is appropriate (e.g. symptoms and signs that increase risks of transmission), safe transfer to a designated acute care unit for diagnostic evaluation.

2. Patient transfer

- 2.1 For ambulance transfers of suspected or confirmed 2019-nCoV cases, ensure the use of personal protective equipment for healthcare staff, the decontamination of the ambulance after the transfer of the patient and safe waste management as per appropriate procedure as specified under 3.3.
- 2.2 Ensure the availability of a preparedness plan for ambulance transfers of suspected or confirmed 2019-nCoV cases, addressing the temporal and geographic coverage of adequately trained staff and equipment.

3. Hospital

3.1. Administrative measures

- 3.1.1 Ensure the designation of units prepared for the diagnostic evaluation and units prepared for the treatment of 2019-nCoV patients.
- 3.1.2 Plan for surge capacity, addressing estimated needs for patient beds, PPE, staff, diagnostics, including laboratory capacity and therapeutics.
- 3.1.3 Ensure access to timely virological investigations in accordance with the algorithm for laboratory diagnosis of 2019-nCoV [3].
- 3.1.4 Be aware that the minimum requirements for designated units for the management of confirmed 2019-nCoV patients would be: the availability of isolation rooms with dedicated bathroom, staff adequately trained in the safe diagnostic evaluation and management of 2019-nCoV patients, availability of appropriate PPEs, adequate laboratory support, and appropriate cleaning and waste management procedures (3.3). Negative pressure isolation rooms are strongly recommended for the performance of aerosol generating procedures (see below point 3.2.3).

3.2. Patient management

- 3.2.1 Confirmed cases requiring admission should be placed in an isolation room with a dedicated bathroom. The placement in airborne precaution single rooms with negative pressure and ante-room, if available, is encouraged until more information about transmission routes is available.
- 3.2.2 Healthcare workers in contact with a confirmed case, or a suspected case of 2019-nCoV, should wear PPE for contact, droplet and airborne transmission of pathogens: FFP2 or FFP3 respirator tested for fitting, eye protection (i.e. goggles or face shield), long-sleeved water-resistant gown and gloves;
- 3.2.3 Aerosol generating procedures (AGS) include tracheal intubation, bronchial suctioning, bronchoscopy, and sputum induction have been linked to increased risk of transmission of coronaviruses and require particular protection measures [3]. AGS should be performed in a negative pressure isolation room. The number of persons in the room should be limited to a minimum during such procedures and all persons present should wear: a well-fitted FFP3 respirator; eye protection; long-sleeved impermeable protective gowns; and gloves.

- 3.2.4 Healthcare workers should strictly follow the procedures for putting on ('donning') of PPE and for safe removal in correct sequence ('doffing') of PPE [7]. These procedures should be performed with proper supervision by a trained observer. Active assistance during donning and doffing is an option for minimising the risk of accidental contamination.
- 3.2.5 Hand hygiene should be performed immediately after removal of PPE.
- 3.2.6 It is essential to ensure that the staff assigned to treat 2019-nCoV patients is trained in the proper use of PPE. Quality assurance should be promoted through appropriate systems, such as the requirement, before assigning staff to 2019-nCoV patient care, for a certificate of demonstrated competency in the correct use of PPE.
- 3.2.7 Personnel providing care to 2019-nCoV cases need to be actively followed-up for development of symptoms and provided occupational health support. A record of all staff providing care for confirmed 2019-nCoV cases must be maintained. Staff providing care to confirmed 2019-nCoV cases, and staff who have been exposed to cases before the implementation of infection control measures, should be vigilant for fever and any respiratory symptoms in the 14 days following the last exposure to a confirmed case, and should seek testing, and thereafter self-isolate if they become unwell.
- 3.2.8 The use of dedicated or, if possible, disposable medical equipment (e.g. blood pressure cuffs, stethoscopes and thermometers) is strongly recommended.
- 3.2.9 Visits to the patient should be limited to the absolute minimum. Visitors should be instructed to wear appropriate PPE. A register of visitors should be maintained and monitoring for symptoms of 2019-nCoV for 14 days after the last visit to a patient with confirmed 2019-nCoV is recommended.
- 3.2.10 The duration of infectivity for 2019-nCoV patients remains unknown but critically ill patients may shed 2019-nCoV for long periods. Confirmed 2019-nCoV cases should remain in isolation until recovery from clinical symptoms of 2019-nCoV and viral detection tests should assist in the decision on when to discontinue additional precautions for hospitalised patients.

3.3. Environmental cleaning and waste management

- 3.3.1 Staff engaged in environmental cleaning and waste management should wear appropriate PPE, as indicated in the ECDC Tutorial on critical aspects of the safe use of PPE [7].
- 3.2.11 Regular cleaning followed by disinfection of patients' rooms, furniture and frequently touched surfaces with hospital disinfectants active against viruses is recommended.
- 3.2.12 Waste should be treated as infectious clinical waste Category B (UN3291) [8] and handled according to healthcare facility policies and local regulation

3.4. Laboratory testing

- 3.4.1 All specimens collected for laboratory investigation should be regarded as potentially infectious, and healthcare workers who collect or transport clinical specimens should adhere rigorously to Standard Precautions to minimise the possibility of exposure to pathogens. The WHO Aide-memoire on Standard Precautions in Health Care is available from:
http://www.who.int/csr/resources/publications/EPR_AM2_E7.pdf.
- 3.4.2 Laboratories should adhere to the guidance in these two documents: The European Committee for Standardisation: CWA15793 Laboratory Biorisk Management, 2011, available from:
https://www.uab.cat/doc/CWA15793_2011 and, Laboratory testing for 2019 novel coronavirus (2019-nCoV) in suspected human cases of January 2020, available from:
<https://www.who.int/health-topics/coronavirus/laboratory-diagnostics-for-novel-coronavirus>

References

1. World Health Organization. Infection prevention and control of epidemic-and pandemic prone acute respiratory infections in health care. WHO guidelines 2014 [17 January 2020]. Available from: https://www.who.int/csr/bioriskreduction/infection_control/publication/en/.
2. World Health Organization. Infection prevention and control during health care when novel coronavirus (nCoV) infection is suspected. Interim Guidance Geneva2020. WHO/2019-nCoV/IPC/v2020.1:[Available from: [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).
3. Tran K, Cimon K, Severn M, Pessoa-Silva CL, Conly J. Aerosol generating procedures and risk of transmission of acute respiratory infections to healthcare workers: a systematic review. PLoS One. 2012;7(4):e35797-e.
4. Haut Conseil de la santé publique. Avis relatif à la définition et au classement des cas possibles et confirmés d'infection à MERS-CoV ainsi qu'aux précautions à mettre en oeuvre lors de la prise en charge de ces patients 2015 [updated 24 April 2015]. Available from: https://www.hcsp.fr/Explore.cgi/Telecharger?NomFichier=hcspr20150424_infectionMersCovdefcasmodpec.pdf.
5. Centers for Disease Control and Prevention. Interim Infection Prevention and Control Recommendations for Patients with Known or Patients Under Investigation for 2019 Novel Coronavirus (2019-nCoV) in a Healthcare Setting: CDC; 2020 [updated 28 January 2020]. Available from: <https://www.cdc.gov/coronavirus/2019-nCoV/hcp/infection-control.html>.
6. Public Health England. Wuhan novel coronavirus (WN-CoV) infection prevention and control guidance 2020 [updated 15 January 2020]. Available from: <https://www.gov.uk/government/publications/wuhan-novel-coronavirus-infection-prevention-and-control/wuhan-novel-coronavirus-wn-cov-infection-prevention-and-control-guidance>.
7. European Centre for Disease Prevention and Control (ECDC). Safe use of personal protective equipment in the treatment of infectious diseases of high consequence Stockholm: ECDC; 2014. Available from: <https://www.ecdc.europa.eu/sites/default/files/media/en/publications/Publications/safe-use-of-ppe.pdf>.
8. World Health Organisation (WHO). Guidance on regulations for the Transport of Infectious Substances 2013–2014 2012. Available from: https://apps.who.int/iris/bitstream/handle/10665/78075/WHO_HSE_GCR_2012.12_eng.pdf?sequence=1.