



Epidemiological Alert:

Human infection caused by novel coronavirus

10 May 2013

The Pan American Health Organization / World Health Organization (PAHO/WHO) recommends that Member States strengthen surveillance activities to detect any unusual health event, including those that might be associated with novel coronavirus.

Member States are also urged to implement and follow infection control procedures to reduce or minimize the occurrence of infections in health care settings including those associated with novel coronavirus. Clinicians should be alert of the possibility of occurrence of novel coronavirus infection; for this reason information on clinical management should be accessible to them.

The PAHO/WHO does not advise health screening at points of entry in relation to this event, nor that any travel or trade restrictions be applied.

As of May 9th of 2013, a total of 33 laboratory-confirmed cases of human infection with novel coronavirus (nCoV), including 18 deaths (case fatality rate 55%) have been reported to WHO. Cases were reported from France (1), Jordan (2), Qatar (2), Saudi Arabia (25), the United Arab Emirates (1) and the United Kingdom (2). The onset of the cases' symptoms occurred in late March and early April 2012 and on May 1st 2013.

Out of 31 of 33 cases which have available information, 25 (81%) are males and 6 (19%) are females. The age range is 24 to 94 years old (median = 56) for the 29 cases for which this information is available. Most patients presented with severe acute respiratory disease requiring hospitalization and eventually required mechanical ventilation or other advanced respiratory support.

Of the confirmed cases, three clusters were registered, one in Jordan, one in the United Kingdom and one in Saudi Arabia, respectively. The cluster in Jordan was registered in April 2012 in a health care setting (including 2 confirmed and 11 probable cases; 10 were health care workers). The cluster in the United Kingdom was registered among family members of an infected patient who had recently arrived from Saudi Arabia. The third cluster was reported in Saudi Arabia in May 2013 (15 cases including 7 deaths). There was no transmission to the community in any of the aforementioned instances.¹

Due to the small number of cases reported so far globally, there is very limited information on transmission and other features of nCoV. Currently, there is evidence of limited human-to-human transmission.² The nCoV itself has not yet been detected in an animal; however, field work investigation is ongoing to determine the presumed animal reservoir of the virus.¹

¹ Novel coronavirus summary and literature update. Published on 8 May 2013 and available at: http://www.who.int/csr/disease/coronavirus_infections/update_20130508/en/index.html

² The Health Protection Agency (HPA) UK Novel Coronavirus Investigation team. Evidence of person-to-person transmission within a family cluster of novel coronavirus infections, United Kingdom, February 2013. Euro Surveillance. 2013; 18(11);pii=20427. Available online: <http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=20427>

Recommendations

In light of this situation, PAHO/WHO encourages Member States to strengthen surveillance activities to detect any unusual health event including those that might be associated with novel coronavirus. Clinicians should be alert of the possibility of the occurrence of novel coronavirus infection and should have access to information on clinical management of patients who have acute respiratory failure and septic shock as a consequence of severe infection due to novel coronavirus.

PAHO/WHO urges Member states to implement and follow infection control procedures to reduce or minimize the occurrence of infections in health care setting including those associated with the novel coronavirus.

Epidemiological surveillance

PAHO/WHO encourages all Member States to strengthen surveillance for severe acute respiratory illness (SARI) and to carefully review any unusual patterns.

Based on the WHO interim surveillance recommendations for human infection with novel coronavirus,³ an epidemiological investigation and laboratory testing for novel coronavirus should be undertaken for persons with the following criteria:

- a) A person with an acute respiratory infection, which may include history of fever and cough and indications of pulmonary parenchymal disease (e.g. pneumonia or the acute respiratory distress syndrome (ARDS)), based on clinical or radiological evidence of consolidation, who requires admission to hospital.

And one or more of the following:

- The disease occurs as part of a cluster⁴ that occurs within a 10-day period, without regard to place of residence or history of travel, unless another etiology has been identified.⁵
- The disease occurs in a health care worker who has been working in an environment where patients with SARI are being cared for, particularly patients requiring intensive care, without regard to place of residence or history of travel, unless another etiology has been identified.⁴
- Develops an unexpectedly severe clinical course despite appropriate treatment, without regard to place of residence or history of travel, even if another etiology has been identified, if that alternate etiology does not fully explain the presentation or clinical course of the patient.

³ Updated as of 18 March 2020 and available at:

http://www.who.int/csr/disease/coronavirus_infections/InterimRevisedSurveillanceRecommendations_nCoVInfection_18Mar13.pdf

⁴ A "cluster" is defined as two or more persons with onset of symptoms within the same 10-day period and who are associated with a specific setting, such as a classroom, workplace, household, extended family, hospital, other residential institution, military barracks or recreational camp.

⁵ 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, and respiratory syncytial virus.

- b) A person with an acute respiratory illness of any degree of severity who, within 10 days before onset of illness, had close contact⁶ with a confirmed or probable case of novel coronavirus infection, while the case was ill.
- c) For countries where the novel coronavirus has already been detected, the minimum standard for surveillance should be testing of patients with severe respiratory disease requiring mechanical ventilation. The minimum standard should include all those in three categories listed above patients with unexplained pneumonia or ARDS occurring in clusters; health care workers requiring admission for respiratory disease and patients with unusual presentation or clinical course.

The newest cases⁷ identified, re-emphasize the need for surveillance in recent travelers presenting with symptoms compatible with novel coronavirus who are returning from areas where the virus has been circulating and the need to use lower respiratory tract specimens for diagnosis when they can be obtained.

Reporting cases

National authorities are requested to report all probable and confirmed cases within 24 hours of classification, through the Regional Contact Point for International Health Regulations at the appropriate WHO Regional Office. Current definitions for probable and confirmed cases are available at:

http://www.who.int/csr/disease/coronavirus_infections/case_definition/en/index.html

Laboratory testing for infection caused by novel coronavirus

PAHO/WHO encourages Member States to follow the WHO interim recommendations for laboratory testing for novel coronavirus. The recommendations are available at:

http://www.who.int/csr/disease/coronavirus_infections/LaboratoryTestingNovelCoronavirus_21Dec12.pdf

Any laboratory testing for the presence of this virus should be performed within the capacity of the national laboratory system, in appropriately equipped laboratories by staff trained in the relevant technical and biosafety procedures.

If Member States consider developing diagnostic capabilities for detecting novel coronavirus, real-time RT-PCR assays that are specific for the novel coronavirus, those that have been developed and published, should be considered for this purpose. Further information on these assays is available at the website of the Institute of Virology, Bonn, Germany: <http://www.virology-bonn.de/index.php?id=40>.

If diagnostic capability is not available at the national level, PAHO/WHO recommends that samples of any unusual or unexpected SARI case or SARI cluster with unexplained etiology should be forwarded, immediately, to the WHO Collaborating Center for influenza and other respiratory virus, at the United States Centers for Disease Control and Prevention (US CDC) for additional testing.

⁶ Close contact is defined as:

- Anyone who provided care for the patient, including a health care worker or family member, or who had other similarly close physical contact;
- Anyone who stayed at the same place (e.g. lived with, visited) as a probable or confirmed case while the case was ill.

⁷ Disease Outbreak News. Available at: http://www.who.int/csr/don/2013_05_08_ncov/en/index.html

Clinical management and infection prevention and control in health care

To date, the clinical features of novel coronavirus infection is limited and no virus-specific prevention or treatment (e.g. vaccine or antiviral drugs) is available. An international network of clinical experts has been convened to discuss therapeutic options. WHO and the International Severe Acute Respiratory and Emerging Infection Consortium have developed and shared a set of research protocols and case report forms to help clinical investigators establish studies of pathogenesis and pharmacology. These are available at: <http://www.prognosis.org/isaric/>.

Infection prevention and control during health care for probable or confirmed cases of nCoV infection should be applied rigorously; interim guidance is available on the WHO website at: http://www.who.int/csr/disease/coronavirus_infections/IPCnCoVguidance_06May13.pdf

International travel and trade

PAHO/WHO does not advise the implementation of health screening at points of entry in relation to this event, nor that any travel or trade restrictions be applied.

References

1. Disease Outbreak News. Available at: <http://www.who.int/csr/don/en/index.html>
2. Novel coronavirus summary and literature update – as of 8 May 2013. Available at: http://www.who.int/csr/disease/coronavirus_infections/update_20130508/en/index.html
3. Corman VM, Eckerle I, Bleicker T, Zaki A, Landt O, Eschbach-Bludau M, van Boheemen S, Gopal R, Ballhause M, Bestebroer TM, Muth D, Müller MA, Drexler JF, Zambon M, Osterhaus AD, Fouchier RM, Drosten C (2012) Detection of a novel human coronavirus by real-time reversetranscription polymerase chain reaction. Euro Surveill 17: pii=20285.
4. Corman VM, Müller MA, Costabel U, Timm J, Binger T, Meyer B, Kreher P, Lattwein E, EschbachBludau M, Nitsche A, Bleicker T, Landt O, Schweiger B, Drexler JF, Osterhaus AD, Haagmans BL, Dittmer U, Bonin F, Wolff T, Drosten C. Assays for laboratory confirmation of novel human coronavirus (hCoV-EMC) infections. Euro Surveill. 2012;17(49):pii=20334

For more information, consult the following links:

- **Novel coronavirus summary and literature update**, available at: http://www.who.int/csr/disease/coronavirus_infections/update_20130508/en/index.html
- **Infection prevention and control during health care for probable or confirmed cases of novel coronavirus (nCoV) infection**, available at: http://www.who.int/csr/disease/coronavirus_infections/IPCnCoVguidance_06May13.pdf
- **Interim recommendations for novel coronavirus surveillance**, available in Spanish at: http://www.who.int/entity/csr/disease/coronavirus_infections/InterimRevisedSurveillanc eRecommendations_nCoVinfection_18Mar13_es.pdf
- **Interim recommendations for the clinical management of acute respiratory infection in suspected novel coronavirus infection**, available at: http://www.who.int/entity/csr/disease/coronavirus_infections/InterimGuidance_Clinical Management_NovelCoronavirus_11Feb13u.pdf
- **Interim recommendations on laboratory testing for novel coronavirus**, available at: http://www.who.int/entity/csr/disease/coronavirus_infections/LaboratoryTestingNovelCo ronavirus_21Dec12.pdf
- **Interim recommendations for Laboratory Biorisk Management**, available at: http://www.who.int/entity/csr/disease/coronavirus_infections/NovelCoronavirus_Interim RecommendationsLaboratoryBiorisk_190213/en/index.html
- **Prevention and control of epidemic and pandemic infection-prone acute respiratory diseases during health care**, available in Spanish at: <http://www.paho.org/Spanish/AD/DPC/CD/vir-flu-prev-ctl-irag-epi-pan-6-2007.pdf>