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Evaluation of the Current Situation of Novel Coronavirus Infection, and Development of Surveillance and Medical Systems in Japan

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■ Evaluation of the Current Situation

The complete picture of the novel coronavirus infection detected in Wuhan, China, including the source and route of transmission, remains unknown. Information regarding the scale of the spread of infection in Wuhan city is important for determining domestic response measures; however, no official view has been expressed by Wuhan or WHO, at this time.

The reported age group of patients is mainly adults. However, one case, aged 10 years, has been identified in Guangdong Province as of January 21.

With respect to nosocomial infections in Wuhan, on January 21, the Western Pacific Regional Office of the WHO mentioned, for the first time, infections among such healthcare professionals.

In addition, we have not yet reached a stage where the severity of the novel coronavirus infection can be comprehensively assessed based only on the information published by Wuhan. In addition, sufficient information has not been disclosed regarding clinical features and treatment methods.

At present, only cases linked to Wuhan have been detected in China and other countries; however, we are not yet at a stage where it can be evaluated as to whether this is because only those who have stayed in Wuhan were tested, or whether there is any possibility of infection in any place other than Wuhan.

■ Domestic Response

Given the lack of information about the extent to which the novel coronavirus infection has occurred or become prevalent in Wuhan, it is necessary to assume that the novel coronavirus may be imported into Japan via mild cases, as a matter of course. However, in the current situation, where the pretest probability is not sufficiently high, it is not realistic to try to detect all novel coronavirus infection cases, including mild cases, at quarantine stations and domestic medical institutions.

Therefore, in the current situation where sufficient information has not been obtained from Wuhan, the most important issue to be addressed is the detection of cases of severe novel coronavirus infection in Japan.

- ◆ Case detection system: At present, the following three types of detection systems for the novel coronavirus infection have been prepared in Japan. The system in 1) below is planned to be used for detecting moderate level or higher novel coronavirus infections that are linked to Wuhan.
 - 1) In cases of patients with symptoms of pneumonia who have traveled to Wuhan, a framework has been set up where genetic tests for the novel coronavirus can be conducted under the surveillance system for suspected diseases (“Response to Novel Coronavirus Infection and Measures for Nosocomial Infection [updated on January 21]”).
 - 2) The “Guidelines for Active Epidemiological Investigation in Patients with Novel Coronavirus (nCoV) Infection (tentative version) (as of January 21)” were prepared, and a framework has been set up so that genetic tests for the novel coronavirus can be conducted under Article 15 of the Infectious Disease Law, at the onset of the novel coronavirus infection, in people in close contact with confirmed cases.
 - 3) In the surveillance system for suspected disease carriers, it is possible to detect severe infections of unknown cause, and take the necessary public health measures (including tests for the novel coronavirus), irrespective of a history of travel to Wuhan.

Incidentally, the first case in Japan was detected by the system in 1) and has undergone a regular active epidemiological investigation. At present, those in close contact with confirmed patients have been monitored.

- ◆ Test system: Based on the genomic information disclosed by China, preparations were made to conduct conventional PCR at the National Institute of Infectious Diseases (NIID) and, at present, preparations are underway so that local health institutes can conduct conventional PCR. The guidance on sample collection and transportation for conducting administrative inspections according to case detection systems 1) and 2), above was published on the website of the NIID on January 21.
- ◆ Actions for mild and suspected cases of novel coronavirus infection: For persons with symptoms and a history of travel to Wuhan, but without need of hospitalization, appropriate measures should be taken to prevent infection, including isolation at home. In addition, public health centers should appropriately monitor their symptoms and, if the symptoms deteriorate, consider responding to the case according to the above-mentioned case detection system in 1) (See the “Response to Novel Coronavirus Infection and Measures for Nosocomial Infection (updated on January 21)”) and “Hospital Discharge and Follow-up Policy for Patients with Novel Coronavirus Infection (draft) (to be published on January 21).”

- ◆ Infection control for confirmed cases, etc.: See “Response to Novel Coronavirus Infection and Measures for Nosocomial Infection (updated on January 21).”
- ◆ Discharge criteria for confirmed cases, etc.: See “Hospital Discharge and Follow-up Policy for Patients with Novel Coronavirus Infection (draft) (to be published on January 21).”
- Actions Required in the Future
 - ◆ Guidelines for treatment of novel coronavirus infection: In Japan, it is necessary to detect patients with severe novel coronavirus infection as early as possible, and prepare for appropriate treatment. As soon as information is disclosed from Wuhan, appropriate persons, including infectious disease specialists and intensive care physicians, should establish treatment guidelines.
 - ◆ Infection control: If information regarding nosocomial infection in Wuhan is disclosed, and it becomes necessary to strengthen existing infection control measures, the necessary documents should be prepared to respond thereto.
 - ◆ Consideration of the classification of Infectious Disease Law: Information regarding the infection sources and routes, and the severity of the novel coronavirus infection that is obtained from Wuhan and other places should be comprehensively considered, in order to make a determination.
 - ◆ Response to community outbreaks: Assuming that the novel coronavirus may be imported into Japan through mild cases, and outbreaks of the novel coronavirus may occur in the community, it is necessary to consider the detection route and response measures.
 - ◆ Response to outbreaks at medical institutions: Assuming that, starting with infections of the novel coronavirus that are not detected, outbreaks of the infection may occur in medical institutions, it is necessary to consider the detection route and response measures.
 - ◆ Test system: Testing the using existing test system takes a long time, and the number of samples that can be processed is limited. In the future, the number of cases that require testing is expected to increase. Therefore, the NIID will develop a new pathogenic genetic test system. If a new test system based on the real-time PCR method is successfully developed, preparations should be made so that local health institutes and quarantine stations can also implement the test system. At present, information about the samples that are suitable for testing is scarce, and it is recommended in the sample collection manual that various types of samples be collected. In the future, with an increase in the number of test cases, the handling of test samples may be changed. According to the circumstances, the “Manual for Collection and Transportation of Samples from Patients with Suspected 2019-nCoV (Novel Coronavirus) Infection (January 22)” will be updated.