

Protocol on Prevention and Control of Novel Coronavirus Pneumonia

(Edition 5)

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Novel coronavirus belongs to β -type coronavirus and its genetic characteristics are significantly different from SARSr-CoV and MERSr-CoV. The virus is sensitive to ultraviolet rays and heat. It can be killed by heating for a time period of 30 minutes at 56°C and lipid solvents such as ether, 75% ethanol, chlorine-containing disinfectant, peracetic acid and chloroform can also effectively inactivate the virus. Based on current epidemiological survey and research results, the incubation period is 1-14 days, mostly 3-7 days. The source of infection is mainly patients infected by novel coronavirus and asymptomatic infected persons may also become source of infection. Main transmission routes are droplet transmission and contact transmission. In a relatively closed setting exposed to high concentrations of aerosols for a long time, there exists the possibility of aerosol transmission, and other transmission routes still needs further investigation. All population is susceptible.

In order to prevent and control the spread of novel coronavirus, reduce mortality rate, protect people's safety and health and maintain social stability, we update the 4th Edition of *the Novel Coronavirus Pneumonia Prevention and Control Protocol* to this 5th Edition based on the policy that novel coronavirus pneumonia is classified as a category B infectious disease but regulated as a category-A infectious disease, tailored approaches for different regions and stages, current epidemic situation across China and the latest research findings from studies.

1. Purposes

Timely detect and report pneumonia cases caused by novel coronavirus, understand the disease characteristics and exposure history, standardize close contact management, instruct the public and specific groups on how to well protect themselves, strictly disinfect specific places, provide scientific evidence-based tailored guidance, effectively curb the spread in community and reduce the harm caused by novel coronavirus to public health.

2. Scope of application

It is applicable to guide prevention and control work in various places. This Protocol will be updated in a timely manner based on the changes in the epidemic situation and the assessment results.

3. Prevention and control measures

1) Improve prevention and control mechanism and strengthen organizational leadership.

Great importance should be attached to the prevention and control of pneumonia outbreaks caused by the new coronavirus. Under the leadership of the government at the corresponding level, the health authorities at all levels should strengthen their guidance on the prevention and control of epidemics, establish technical expert groups, organize the relevant departments to formulate and improve relevant work and technical protocols in accordance with the principles of "prevention first, integration of prevention and treatment, scientific guidance, and timely treatment" so as to

standardize the prevention and control measures against the pneumonia outbreak caused by the new coronavirus. Strengthen joint prevention and control as well as information communication and interaction of measures between departments, regularly discuss and determine the development trend of the epidemic and agree on prevention and control policies.

The health authorities at all levels are responsible for the overall guidance of epidemic control and ensuring the funds and supplies are in place. CDCs at all levels are responsible for organizing, coordinating, supervising and evaluating surveillance work, collecting, analyzing, reporting and feedbacking surveillance data; conducting field investigations, laboratory testing and technical training; conducting public health education and risk communication. CDCs at all levels should also guide the public and specific groups to well protect themselves and direct the disinfection work of specific place. Healthcare facilities at all levels are responsible for case finding and reporting, isolation, diagnosis, treatment and clinical management, collecting specimens and providing training for healthcare workers to curb nosocomial infection.

2) Science-based classification of epidemic risk levels, precise prevention and control measures for different regions.

In accordance with *the law of the People's Republic of China on the Prevention and Treatment of Infectious Diseases* and *the Regulations on Emergency Response to Public Health Emergencies*, precise tailored prevention and control measures were implemented for different regions and at different levels. Every county or district (as a unit), based on its population and epidemiological situation, shall classify its epidemic risk level, and determine its adapted prevention and control strategy.

In low risk areas, the strategy is to "strictly prevent importation". It includes strengthen the tracking and management of incoming people from areas with severe outbreaks and high-risk areas, and enhance health monitoring and services. Fever clinics should strengthen the monitoring, detection and reporting of outpatients with fever, and the CDCs should carry out timely epidemiological investigations and management of close contacts. The government should urge and provide guidance to the urban and rural communities, government agencies, enterprises and public institutions to strictly implement community prevention and control measures, improve environmental hygiene, and popularize knowledge and skills of disease prevention to the general public.

In middle risk areas, the strategy is "strictly prevent importation and exportation". It includes various measures taken for low-risk areas, and also the preparations for medical treatment, personnel, materials and venues required for disease prevention and control efforts, and isolated medical observation and management of close contacts. School class, building unit, factory workshop and workplace office will serve as the smallest unit, the resources such as location and personnel for prevention and control and tailored measures can be determined and implemented based on the case discovery clue, epidemiological investigation and epidemic analysis. The Townships, streets and urban and rural communities without confirmed cases can implement prevention and control measures with reference to low-risk areas.

In high risk areas, the strategy is "stopping transmission internally, prevent exportation, and strict prevention and control measure". In addition to measures for the middle risk area, stopping aggregation activities and implement regional traffic control with the approval in accordance with the law and procedures. Every county should conduct a comprehensive screening of patients with fever, timely admission and management of suspect cases, confirmed cases and asymptomatic infected patients, close contacts are isolated and put under medical observation. Disinfection shall be conducted in sites with community transmission or clustered outbreaks in urban residential areas or rural natural villages, and control measures shall be taken to restrict the gathering, entry and exit of people from the above sites.

Carry out the dynamic research and analysis, adjust risk level in a timely manner, reduce emergency response level or terminate emergency response after the case number keeps declining steadily and the risk of epidemic spread is effectively controlled.

3) Case and emergency event detection and reporting.

Health care facilities and CDCs at all levels and of all types should conduct surveillance, detection and reporting of pneumonia cases (including asymptomatic infected persons) due to novel coronavirus in accordance with the *NCP: case surveillance protocol* (see Annex 1).

a. Case detection

Health care facilities at various levels should be alerted when doing case diagnosis and reporting in the process of daily monitoring and treatment. For cases with fever and cough caused by unknown reasons, travel history or suspicious exposure history within 14 days before the onset of illness should be consulted, whether patients went to the city of Wuhan or its surrounding areas, whether patients traveled to or resided in a novel coronavirus outbreak community, or whether patients contacted with other who had fever and cough in the abovementioned areas or community, whether there exists the possibility of cluster caused illness or whether patients contacted with confirmed cases.

Primary level organizations should put more efforts on screening people who travelled to or resided in Wuhan and its surrounding areas within recent 14 days, people who travelled to or resided in communities where confirmed cases have been reported and people who have respiratory symptoms, fever, chills, fatigue, diarrhea, conjunctival congestion and so forth. These people are key risk groups for screening. Their sampling and testing should be performed by professional institutions.

b. Case reporting

When suspect cases, confirmed cases and asymptomatic cases of novel coronavirus pneumonia are detected, healthcare facilities should report cases immediately via online reporting system. Those without such capacity should make a prompt report to local county/district CDC and send out the notifiable disease reporting cards within 2 hours. Local county/district CDCs should make direct online report upon receiving the notification. According to *Novel coronavirus pneumonia case surveillance protocol*, healthcare facilities or CDCs which are responsible for case reporting shall

make corrections to information such as case classification and clinical severity in a timely manner based on laboratory test results and progress of disease.

c. Detection and reporting of emergencies

Index novel coronavirus pneumonia case in each county/district and case clusters meeting the case definition of clustered cases set out in the Protocol of *Novel Coronavirus Pneumonia Case Surveillance* should be reported online by the local CDC within 2 hours through the public health emergency reporting system with the severity level temporarily classified as “unclassified”. The severity level of the emergency shall be adjusted by the health authority adjust the later based on the investigation and follow up findings after the risk assessment done.

4) Epidemiological investigation.

County/district CDCs upon receiving reports of suspect cases, clinically diagnosed cases (for Hubei Province only), confirmed cases, asymptomatic cases and cluster epidemic from healthcare facilities or health care workers in their jurisdiction should conduct investigation according to the NCP: *Epidemiological Investigation Protocol* (See Annex 2) with 24 hours.

County/district CDCs shall submit individual case investigation forms to superior institutions via infectious disease online reporting information system within 2 hours after completing case investigation of confirmed cases and asymptomatic infection.

5) Specimen collection and testing.

Healthcare institutions receiving patients should collect relevant clinical specimens and send the specimens to local designated CDCs, medical facilities or third-party laboratories of testing institutions as soon as possible to carry out relevant pathogen detection (see Annex 4 for lab testing protocol). The laboratories that undertake the testing shall strengthen bio-safety protection and strictly follow the laboratory bio-safety regulations and procedures.

The clinical specimens include patient’s specimens from the upper respiratory tract (such as throat swabs, nasal swabs, etc.), lower respiratory tract (such as deep cough sputum, respiratory tract extracts, bronchial lavage fluid, airway extraction, etc.), stool/anal swab specimen, anticoagulation blood and serum specimens. In order to increase the positive rate of nucleic acid detection, clinical specimens should preferably be respiratory specimens in the acute phase after onset of disease, sputum and specimens from the lower respiratory tract collected during intubation. Collected specimens should be sent for testing as soon as possible.

Specimen collection, transportation, storage and testing are temporarily managed per the protocols for Class II highly pathogenic microorganisms, in accordance with the *Regulations on Biological Safety Management of Pathogenic Microbial Laboratories* and *Regulations on Transportation Management of Highly Pathogenic Microorganisms or Samples Infective to Humans* (MoH Order No. 45) and other relevant requirements.

6) Case management and nosocomial infection prevention and control.

Cases should be admitted for treatment to designated healthcare facilities where personnel,

medicines, facilities, equipment and protective supplies required for medical treatment should be ensured.

Healthcare facilities shall attach great importance to and strengthen the work of isolation, disinfection and protection according to the requirements of the *Technical Guidelines for Novel Coronavirus Infection Control and Prevention in Healthcare Facilities*, fully implement nosocomial infection control and prevention measures, improve triage of patients, and strengthen infection control and prevention in fever clinics, emergency rooms and all other general wards (rooms). Suspect cases and confirmed cases should be isolated and treated at designated hospitals with effective isolation and protection conditions. Suspect cases should be isolated in single rooms, and can be released from hospital when the criteria of discharge are all met according to *the Diagnosis and Treatment Protocols for Patients with Novel Coronavirus Pneumonia (6th Edition)*. Asymptomatic infected persons should be isolated collectively for 14 days, they can be released after their nucleic acid tests showing negative twice consecutively (with at least one day interval between two samplings).

Healthcare facilities shall strictly clean and disinfect medical equipment, contaminated articles, surfaces and floors, etc. in accordance with the *Technical Guidelines for Disinfection in Healthcare Facilities*; perform air disinfection in accordance with the requirements of the *Hospital Air Purification Management Regulations*. Medical waste generated during the diagnosis and treatment of patients with new coronavirus pneumonia should be disposed of and managed in accordance with the relevant provisions in the *Medical Waste Disposal Regulations* and the *Measures for Medical Waste Management in Healthcare Facilities*.

7) Close contact tracking and management.

Close contact tracing and management should be carried out by county/district health authorities in conjunction with relevant authorities. Close contacts should go under medical observation in collective isolation. Where not feasible, they can be home quarantined with their body temperature taken at least twice a day and they should be asked about whether they have any acute respiratory symptoms or other relevant symptoms or disease progress. The medical observation should last for 14 days after the last contact with the case or asymptomatic infected person. For detailed requirements, see *NCP: close contact management protocol (Annex 3)*.

8) Strengthen prevention and control measures targeting at key settings, institutions and populations.

Strengthen the multi-sectoral joint prevention and control mechanism to minimize public gathering activities, and implement measures such as ventilation, disinfection and temperature taking in places with large population flow such as train stations, airports, ports, shopping malls, public toilets and closed vehicles such as cars, trains, and airplanes.

The health authorities should guide the enterprises to organize their employees to return to work in phases and batches, strictly conduct the ventilation, disinfection, temperature detection and other prevention and control work, provide the employees with necessary personal protective equipment, and adopt the approaches of partition operation and scattered dining, to effectively reduce the

concentration of people; also provide health education among migrant workers from rural areas and strengthen temperature screening before their returning to work. Once abnormal situation is detected, timely reporting, screening and identification and response measures should follow to stop the risk people from going out.

After the school and kindergarten institutions re-open, the health authorities shall provide the health tips to and guide the health management of returning teachers and students and supervise the implementation of prevention and control measures such as morning /afternoon check, tracing and registration of illness absence/attendance. When an epidemic report is received, epidemiological investigation, response measures, guidance to the disinfection work in affected region should be carried out quickly.

For special institutions such as nursing homes, welfare institutions for the disabled, detention places, the government should further standardize the management of personnel entry and exit, strict ventilation, daily cleaning, disinfection and other health measures, and strengthen personal protection measures, health monitoring, and the daily management of incapacitated and semi-incapacitated people.

9) Timely disinfection of certain settings.

Specific places such as residences of patients and asymptomatic infected persons, isolation wards in medical institutions, transfer vehicles and rooms where medical observation takes place should be disinfected in a timely manner. If needed, disinfection effects of object surfaces, air and hands should be evaluated timely as well (see Annex 5).

10) Public education and risk communication.

Actively carry out public opinion monitoring, disseminate knowledge on epidemic prevention and control, promptly respond to concerns and questions of the public and conduct risk communicating in relation to epidemic prevention and control. Health education and risk communication shall be enhanced for key populations, settings and mass gathering events. In particular, guide the public and specific groups of personal protection through a variety of ways to reduce possible contact or exposure (see Annex 6). At different stages of epidemic development, health education strategies should be adjusted timely by analysing psychological changes of the public and key information, and corresponding scientific public education should also be timely organized.

11) Strengthen training of health professionals in health and medical facilities.

Provide training to health professionals in medical and health facilities on novel coronavirus pneumonia case surveillance, epidemiological investigation, specimen collection and testing, medical treatment, infection control and prevention, and personal protection. Medical and health institutions can carry out investigations and studies on the characteristics of disease transmission, clinical characteristics and policy assessment to provide scientific evidences for optimizing prevention and control strategies.

Annexes:

1. NCP: case surveillance protocol

2. NCP: epidemiological investigation protocol
3. NCP: close contact management protocol
4. NCP: lab testing guideline
5. Guideline for site-specific disinfection
6. Guideline for personal protection of specific groups

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