Novel Coronavirus Infection Control Protocol

(Edition 4)

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. Whether there exist aerosol and fecal-oral transmission still needs further investigation. All population is susceptible.

This Protocol is an update on the 3rd Edition of *Novel Coronavirus Pneumonia Prevention and Control Protocol* based on the policy that novel coronavirus pneumonia is classified as a category-B infectious disease but regulated as a category-A infectious disease, current epidemic situation across China and the latest findings in case epidemiology and clinical researches, in order to prevent and control the spread of novel coronavirus, strengthen the organization and coordination of prevention and control relevant institutions, improve the epidemic information surveillance and reporting to achieve the goal of "early detection, early reporting, early diagnosis, early isolation, and early treatment", reduce mortality rate, protect people's safety and health and maintain social stability.

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I. 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, effectively curb the spread in community and reduce the harm caused by novel coronavirus to public health.

II. 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.

III. 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. Case and emergence 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 *Novel coronavirus pneumonia case surveillance protocol* (4th Edition) (see Annex 1).

1) 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.

2) Case reporting.

When Suspect cases, clinically diagnosed cases (for Hubei Province only), 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 (4th edition),*

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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.

3) 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 (4th Edition)* 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.

3. 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 *Protocol of Epidemiological Investigation of Novel Coronavirus Pneumonia (Fourth Edition)* (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. At the same time, epidemiological investigation analysis reports should also be submitted to health administrative department of the county/district and disease control agency of higher level.

4. 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 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, alveolar lavage fluid, etc.), anticoagulation blood and serum specimens. Clinical specimens should preferably be respiratory specimens (especially from the lower respiratory tract) collected in early stage of the case, serum in the acute phase within 7 days after onset, and convalescent phase serum 3-4 weeks after the onset of disease.

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.

5. Case management and nosocomial infection prevention and control.

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

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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 (1st Edition)*, 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, clinically diagnosed cases (for Hubei Province only) and confirmed cases should be isolated and treated at designated hospitals with effective isolation and protection conditions. Suspect cases and clinically diagnosed cases (for Hubei Province only) should be isolated in single rooms. Asymptomatic infected persons should be isolated collectively for 14 days, or they can be released after a 7-day isolation if nucleic acid test result shows negative.

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.*

6. Close contact tracking and management.

Close contact tracing and management should be carried out by county/district health authorities in conjunction with relevant authorities. Closed contacts of suspect cases, clinically diagnosed cases (for Hubei Province only), confirmed cases and asymptomatic infected persons should go under medical observation in collective isolation. Where not feasible, they can be home quarantined (see *Novel coronavirus pneumonia case close contact management protocol (Version 4)* in Annex 3) and their body temperature should be 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.

7. 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 *Personal protection guidelines for certain populations* (Version 2) in Annex 5). 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. Teachers, students and migrant workers returning back to work should be well informed with health tips and health management methods.

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8. Strengthen training of health professionals in health and medical facilities.

Provide training to health professionals in medical and health facilities on new coronavirus pneumonia case detection and reporting, epidemiological investigation, specimen collection, laboratory testing, medical treatment, infection control and prevention, close contact management and personal protection in order to improve capacities in prevention and control as well as diagnosis and treatment.

9. Strengthen laboratory testing capacity and raise awareness of biosafety and protection.

Provincial CDCs, prefecture CDCs with laboratory testing capacity, and the designated health care facilities or the third-party testing agency should formulate laboratory diagnostic methods and have reagent and technology reserve and stand ready for lab testing at any time in accordance with laboratory biosafety regulations.

10. 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 6 ---*Technical Protocols for Disinfection in Certain Places* (second edition)).

11. 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, and closed vehicles such as cars, trains, and airplanes.

Strengthen the prevention and control work of collectively living units such as schools and child care institutions, to perform morning inspection and absence registration due to illness. Strengthen the prevention and control work in cities with large numbers of migrants and make preparations for the doubled pressure on prevention and control work due to migrants after the end of Spring Festival. Strengthen health education for rural migrant workers, students and business personnel who return home.

12. Categorized community prevention and control.

Different prevention and control strategies should be adopted for communities with different epidemic situations. For communities where no cases are reported, the strategy of "defense the external importation cases" should be implemented. For communities where there are cases or outbreaks, the strategy should be "preventing internal spread and importation from outside". For more information, please refer to "*Protocol of Community Prevention and Control of Novel Coronavirus Pneumonia (Trial)"* released in the *Notice on Strengthening Community Prevention and Control of Novel Coronavirus Pneumonia*" (Pneumonia Mechanism [2020] No. 5).

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Annexes:

1. Novel coronavirus pneumonia case surveillance protocol (Version 4)
2. Novel coronavirus pneumonia epi investigation protocol (Version 4)
3. Novel coronavirus pneumonia case close contact management protocol (Version 4)
4. Novel coronavirus pneumonia lab technical guidelines (Version 4)
5. Personal protection guidelines for certain populations (Version 2)
6. Technical protocols for disinfection in certain places (Version 2)

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