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The knowledge of COVID-19 prevention and control should be known.

Physician version (Trial Version)

Northern Jiangsu People's Hospital/ Clinical Medical
College ,Yangzhou University

Section 1 Know COVID-19

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What is Novel coronavirus?

The novel coronaviruses belong to the β genus. They have envelopes, and the particles are round or oval, often polymorphic, with diameter being 60 to 140 nm. Their genetic characteristics are significantly different from SARS-CoV and MERS-CoV. Current research shows that they share more than 85% homology with bat SARS-like coronaviruses (bat-SL-CoVZC45). When isolated and cultured in vitro, the 2019-nCoV can be found in human respiratory epithelial cells in about 96 hours, however it takes about 6 days for the virus to be found if isolated and cultured in Vero E6 and Huh-7 cell lines. The virus is sensitive to ultraviolet and heat. Exposure to 56° C for 30 minutes and lipid solvents such as ether, 75% ethanol, chlorine-containing



disinfectant, peracetic acid, and chloroform can effectively inactivate the virus. Chlorhexidine has not been effective in inactivating the virus.

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What are the sources of infection of COVID-19?

At present, the patients infected by the novel coronavirus (English name "Novel Coronavirus Pneumonia", referred to as "NCP"; "COVID-19") are the main source of infection; asymptomatic infected people can also be an infectious source.

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What is COVID-19's route of transmission?

Transmission of the virus happens mainly through respiratory droplets and close contact. There is the possibility of aerosol transmission in a relatively closed environment for a long-time exposure to high concentrations of aerosol. As the novel coronavirus can be isolated in feces and urine, attention should be paid to feces or urine contaminated environmental that leads to aerosol or contact transmission.

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Who are easily infected with COVID-19?

People are generally susceptible.

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How long is the incubation period for COVID-19?

Based on the current epidemiological investigation, the incubation period is one to 14 days, mostly three to seven days.

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What are the main symptoms of COVID-19?

Main manifestations include fever, fatigue and dry cough. Nasal congestion, runny nose, sore throat, myalgia and diarrhea are found in a few cases. Severe cases mostly developed dyspnea and/or hypoxemia after one week. It is worth noting that for severe and critically ill patients, their fever could be moderate to low, or even barely noticeable.

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What is asymptomatic infection?

There are no clinical symptoms, Novel coronavirus etiology samples from respiratory tract or serum specific IgM antibody are positive. It is found mainly through close contact screening, clustered epidemic investigation and source of infection tracking investigation.

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What is a cluster epidemic?

It refers to the discovery of 2 or more confirmed cases or asymptomatic infection in a small area (such as family, office, school class, workshop,



etc.) within 14 days, and there is the possibility of human-to-human transmission, or the possibility of common exposure and infection.

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Diagnostic criteria for epidemiological history of COVID-19?

- (1) History of travel to or residence in Wuhan and its surrounding areas, or in other communities where cases have been reported within 14 days prior to the onset of the disease;
- (2) In contact with novel coronavirus infected people (with positive results for the nucleic acid test) within 14 days prior to the onset of the disease;
- (3) In contact with patients who have fever or respiratory symptoms from Wuhan and its surrounding area, or from communities where confirmed cases have been reported within 14 days before the onset of the disease; or;
- (4) Clustered cases (2 or more cases with fever and/or respiratory symptoms in a small area such families, offices, schools etc within 2 weeks) .

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Diagnostic criteria for suspected cases of COVID-19?

Diagnostic criteria of suspected cases: A suspect case has any of the epidemiological history plus any two clinical manifestations or all three clinical manifestations if there is no clear epidemiological history.

- (1) Fever and/or respiratory symptoms;
- (2) The aforementioned imaging characteristics of NCP; (In the early stage, imaging shows multiple small patchy shadows and interstitial changes, apparent in the outer lateral zone of lungs. As the disease progresses, imaging then shows multiple ground glass opacities and infiltration in both lungs. In severe cases, pulmonary consolidation may occur while pleural effusion is rare)
- (3) Normal or decreased WBC count, normal or decreased lymphocyte count in the early stage of onset.

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Diagnostic criteria for confirmed cases of COVID-19?

Suspect cases with one of the following etiological or serological evidences:

- (1) Real-time fluorescent RT-PCR indicates positive for new coronavirus nucleic acid;
- (2) Viral gene sequence is highly homologous to known new coronaviruses.
- (3) NCP virus specific Ig M and IgG are detectable in serum; NCP virus specific IgG is detectable or reaches a titration of at least 4-fold increase during convalescence compared with the acute phase.

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Clinical Classification of COVID-19.

Mild cases, Moderate cases, Severe cases, and Critical cases.

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What are the discharge criteria of COVID-19?

Body temperature is back to normal for more than three days; Respiratory symptoms improve obviously; Pulmonary imaging shows obvious absorption of inflammation; Nuclei acid tests negative twice consecutively on respiratory tract samples such as sputum and nasopharyngeal swabs (sampling interval being at least 24 hours).

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Which samples can be collected and sent for etiological detection?

Novel coronavirus nucleic acid can be detected in nasopharyngeal swabs, sputum, lower respiratory tract secretions, blood, feces and other specimens using RT-PCR and/or NGS methods. It is more accurate if specimens from lower respiratory tract (sputum or air tract extraction) are tested. The specimens should be submitted for testing as soon as possible after collection.

Section 2 The diagnosis and treatment process of COVID-19.

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Which part of the patients must be tested for nucleic acid?

1) Patients before surgery; 2) suspected cases and reexamined cases.

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What are the requirements for the collection and transportation of patients' etiological samples, and how to feedback the test results?

Medical Advice: ① Qualitative detection of pathogen ribonucleic acid amplification (fever); ② Qualitative detection of pathogen ribonucleic acid amplification (Preoperative) .

Source of patients	Approval	Purpose of examination	Medical Advice	Sample collector	Collection location
Hospitalized non-operative patients	Expert group	Differential diagnosis	①	Bedside doctor	Single isolation ward
Fever outpatients; emergency internal	Expert group	Differential diagnosis	①	Fever Clinic doctor	Fever outpatient treatment room



medicine patients; general outpatients					
Rescue room patients	Director of the emergency room	Differential diagnosis	①	Rescue room doctor	Rescue room
Emergency surgery patients	No approval	Preoperative examination	②	Surgical doctor	Temporary Disposal Room ,5th Floor, Building 9 (original address:Medical Imaging Department)
Operative patients from the admission center	No approval	Preoperative examination	②	Doctor on duty in the physical examination center	Examination center treatment room
Other hospitalized operative patients	The Medical department	Preoperative examination	②	Surgical doctor	Ward or examination center treatment room

Reporting time and feedback channels:

- (1) Primary screening specimens in the hospital: the specimens will be sent to the laboratory before 9:00 every day, and the preliminary screening results will be released at 2:00 in the afternoon.
- (2) Suspected case specimens: the Prevention and Health Service uniformly collects samples and sends them to the municipal CDC. 48 hours later, the test results are uniformly fed back to the Prevention and protection office by the CDC.

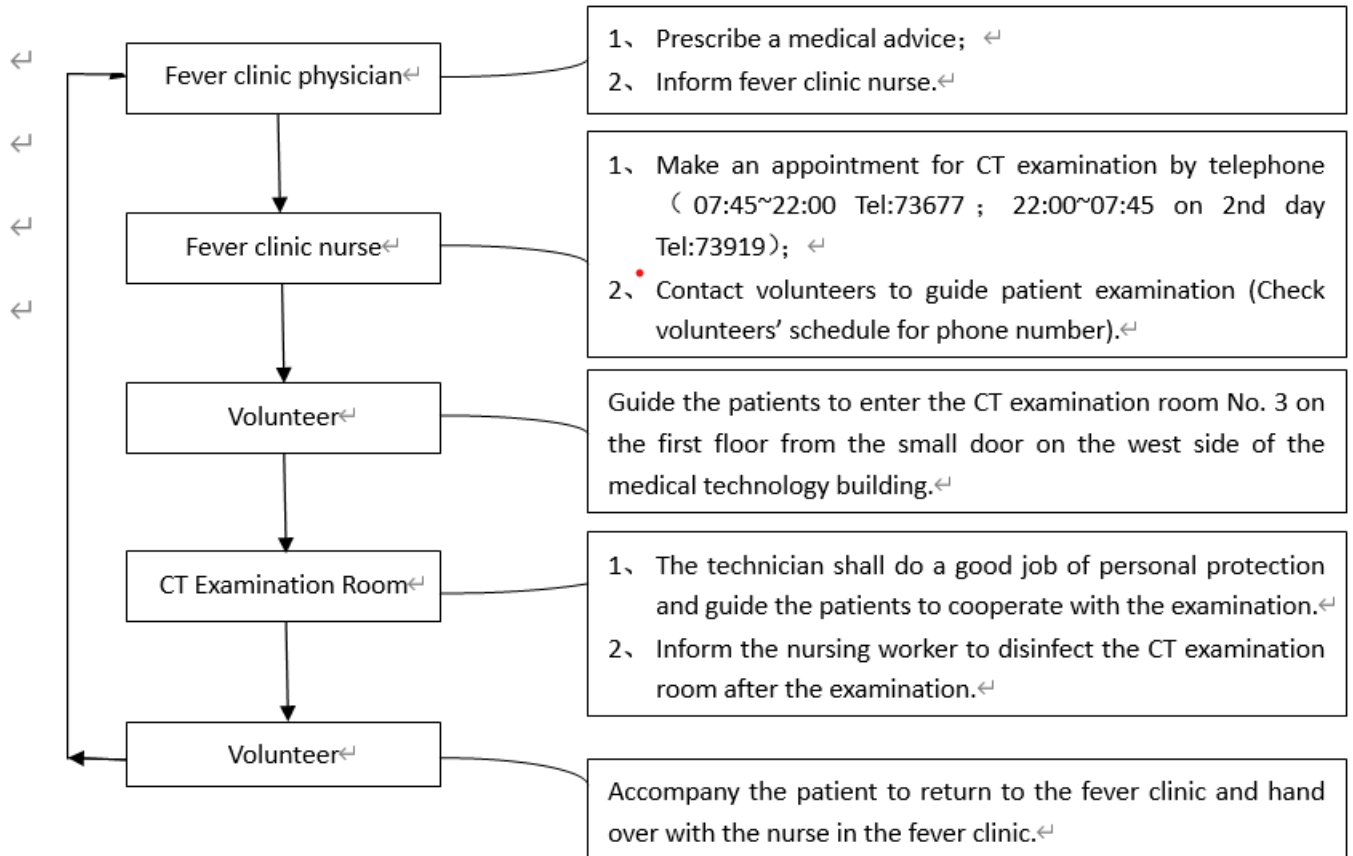
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What is the storage time and storage conditions of pharynx swabs?

The pharynx swab is stored in a 4 °C refrigerator for no more than 24 hours.

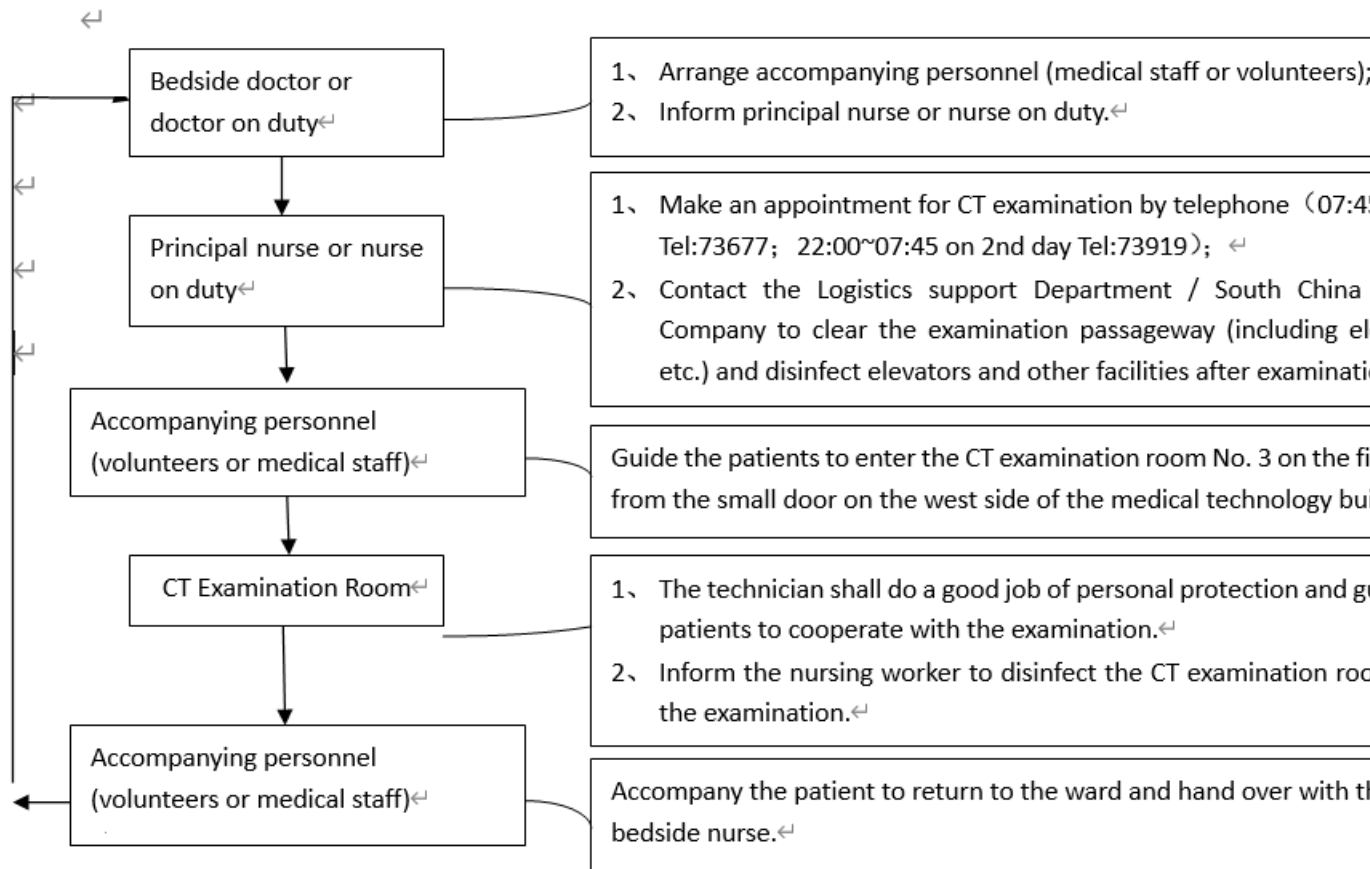
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What is the procedure of CT examination for fever outpatients?



Q

What is the procedure of CT examination for fever inpatients with a history of epidemiology?



Q

What kind of patients are required to sign 《Letter of commitment for medical treatment during the COVID-19 epidemic》 ?

All outpatients and inpatients are required to sign 《Letter of commitment for medical treatment during the COVID-19 epidemic》 (hereinafter referred to as “《Letter of Commitment》”) and be included in the medical records of hospitalization.

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What is the admission process of inpatients during the epidemic prevention and control period?

The outpatient and emergency doctors carefully inquired about the patient's epidemiological history and related clinical symptoms, then the doctor and patient sign the 《Letter of Commitment》 in accordance with the conditions for admission. Non-emergency patients make an appointment at the admission service center with the 《Letter of Commitment》 and relevant hospitalization certificates, while emergency patients take the 《Letter of Commitment》 and relevant hospitalization certificates to be hospitalized in the ward.



Admission service centers and ward nurses are not allowed to make hospital appointments or beds for patients who have not signed the 《Letter of Commitment》 .

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What is the management process of fever inpatients with a history of epidemiology?

- 1) Move the patient to a single ward for quarantine, and the accompanying family members were also quarantined at the same time.
- 2) Special personnel are designated for treatment and nursing, and Secondary protection is required when entering the single ward.
- 3) Ask the expert group to guide the diagnosis and treatment, according to the consultation procedure.
- 4) Report to the Medical Department, Nursing Department, Prevention and Health Care Department, Hospital Infection-Control Department.
- 5) Conduct a survey of close contacts.
- 6) Abide by the system of information confidentiality and shall not release information without authorization.

Q

What kind of patients need expert group consultation, and what is the procedure for consultation?

The patient needs the consultation from the expert group if he or she has any one of the following conditions:

- ① The epidemiological history accords with the diagnostic criteria of suspected cases listed in the 《Diagnosis and Treatment Protocol for COVID-19 (Trial Seventh Version)》 ;
- ② The epidemiological history accords with any of the provisions listed in 《Letter of commitment for medical treatment during the COVID-19 epidemic (Second Version) 》 , and the clinical manifestation conforms to any two of the diagnostic criteria of suspected cases.
- ③ There is no history of epidemiology but meets all three clinical manifestations in the diagnostic criteria of suspected cases.

Patients with fever with a clear cause do not need to consult an expert group.

Procedures for inpatients applying for consultation: The bedside doctor / duty doctor reports to the superior doctor (Diagnosis and treatment team Leader / Section Director or Grade II / III Duty Doctor with the title of Deputy Director or above) . ——> The superior doctor examines the patient and confirms that the above conditions are met. ——>The superior doctor fills in the consultation form. ——> The superior doctor notifies the expert on duty of the expert group to consult on the same day by telephone. ——>The



expert puts forward and writes the guidance, and reports to the expert (deputy) leader and leading group if necessary.

Procedures for outpatients, emergency and fever outpatients applying for consultation: The first physician contacts the expert group on duty by telephone. ——> The expert puts forward and writes the guidance, and reports to the expert (deputy) leader and leading group if necessary.

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What is the procedure of transferring patients from other hospitals to our hospital?

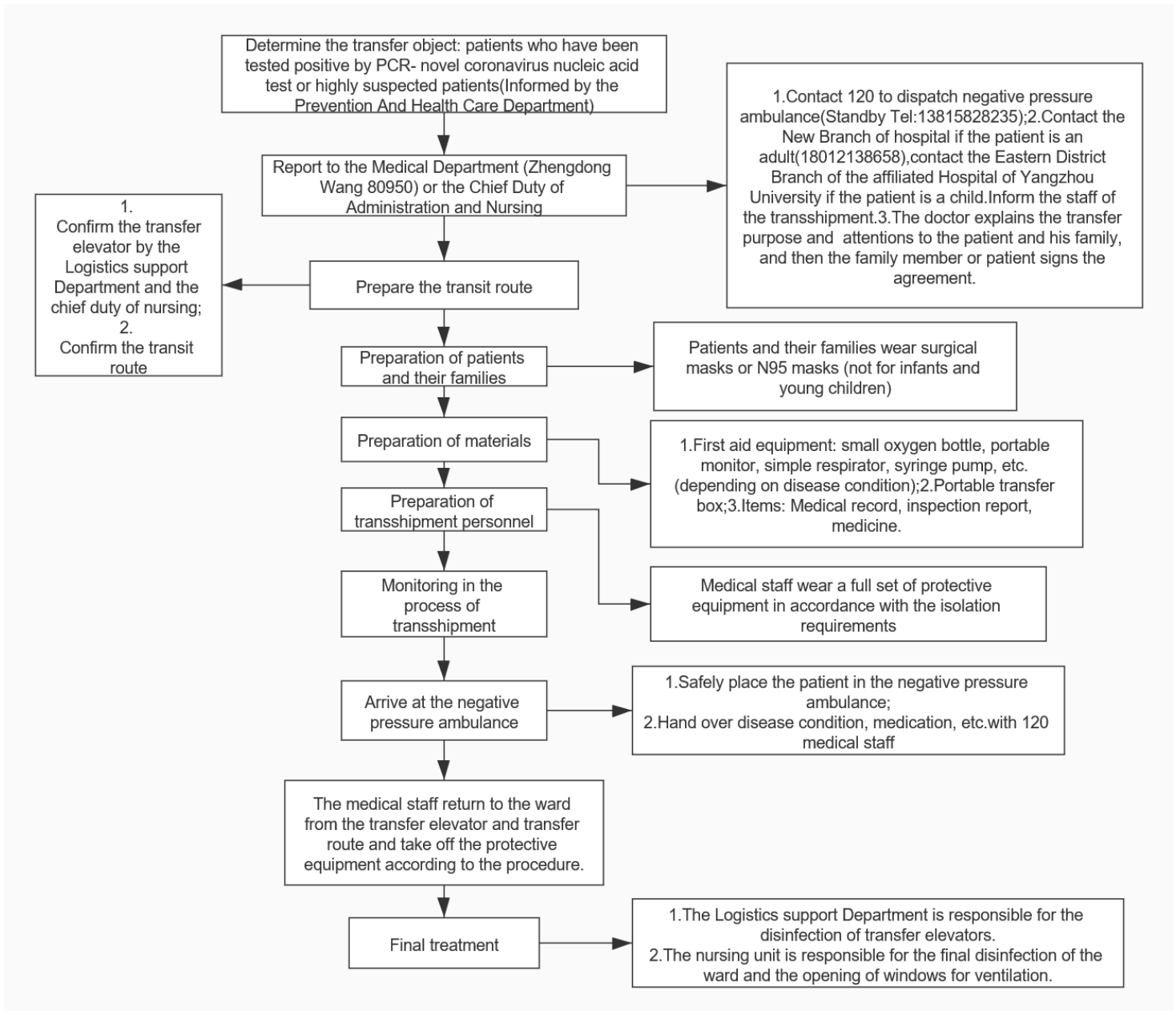
1. Referrals of suspected and confirmed cases of COVID-19 and asymptomatic novel coronavirus infection cases must be approved by the Municipal Health Committee, Patients shall be transferred to the new branch of the hospital (the third hospital) for centralized treatment;
2. Patients with viral pneumonia and pneumonia infected by special pathogens are required by the Municipal Health Committee to stay in local medical institutions for treatment. If it is really necessary to transfer the patient to our hospital, it should be approved by the specialist consultation of our hospital and reported to Hospital Prevention and Control leading Group for approval.
3. When patients with other diseases need to be referred to our hospital for treatment, the referral process is as follows:
 - 1) The local medical institution contacts the Medical Department of our hospital (Working days; Tel 87373025) or Administrative Chief Duty (Non-working days; Tel 87373018: 87373019)
 - 2) Hospital Prevention and Control leading Group organizes members of the hospital prevention and control expert group to consult patient and assess the risk of novel coronavirus infection.
 - 3) The patient shall sign 《Letter of commitment for medical treatment during the COVID-19 epidemic》, and the local medical institution shall seal it and fax it to the Medical Department of our hospital.
 - 4) Patient can be referred to our hospital with the consent of the Hospital Prevention and Control leading Group.
 - 5) The original promise of 《Letter of commitment for medical treatment during the COVID-19 epidemic》, blood cell analysis report, chest CT film and report, novel coronavirus nucleic acid test report, medical records of local medical institutions and other materials should be brought with the referral. Patient and attendants must strictly abide by the management regulations of our hospital during epidemic prevention.



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What is the process of transferring fever patients with a history of epidemiology to other hospitals?

Refer to 《Notice on Printing and Issuing Plans (Procedures) Related to the Prevention and Control of COVID-19》 [2020] No. 13



Q

What is the procedure of pre-examination and triage in outpatient and emergency department?



Initial screening of patients with fever, personnel in the epidemic area and personnel in contact with the epidemic area.

Find patients with fever and ask about the history of epidemiology. Patients who may suffer from infectious diseases shall be immediately taken to the fever clinic in accordance with the designated route.

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What are the duties of a fever clinic physician?

- 1) Implement the first diagnosis responsibility system, diagnose and treat fever patients according to the diagnosis and treatment standards, inquire about the epidemiological history and condition in detail and also record them in detail, the doctor and patient sign the 《Letter of Commitment》 ;
- 2) Implement the consultation system strictly and record the opinions of experts in detail;
- 3) Fill in the 《Registration Book of Fever patients》 , the information and fever clinic data of the patients transferred to the new branch of the hospital (the third hospital) should be filled in the according to the requirements of the superior at the same time;
- 4) Make rounds at least twice a day to patients in the fever clinic, and record body temperatures, etc., cooperate with nurses to do a good job in the management of patients in the fever clinic.
- 5) Implement the reporting system strictly, the cases that need to be admitted to the New Branch of hospital should be promptly reported to the Chief Executive on duty (Tel: 73018 ; 73019), the Medical Department (contact Zhengdong Wang 80950), the Prevention and Health Care Department (contact Jianying Luo 81696) and the Experts Group (contact Hui Chen 81071).
- 6) Complete other tasks assigned by the leading group for the prevention and control of COVID-19 in the hospital.

Section 3 Protection of medical staff

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What is standard prevention?

Standard prevention is a set of measures to prevent infection for all patients and medical staff in the hospital. It mainly includes measures such as hand hygiene, isolation, environmental cleaning and disinfection, sterilization of diagnosis and treatment instruments, safe injection and so on.

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What is the scope of use of surgical masks?



During the epidemic period of novel coronavirus infection, it can be used in the diagnosis and treatment area of the whole hospital and should be worn correctly.

Q

What is the scope of use of medical protective masks (commonly known as N95 masks)?

In principle, it is used in fever clinic, isolation observation ward, isolation ward and intensive care unit, as well as the collection of respiratory tract samples, endotracheal intubation, tracheotomy, non-invasive ventilation, sputum suction and other operations that may produce aerosols. It is usually replaced in 4 hours, and can be replaced at any time when it is contaminated or wet. In other areas (including diagnosis and treatment operations), it is not used in principle.

Q

What is the scope of use of latex gloves?

It is used in areas such as pre-examination and triage, fever clinic, isolation observation ward, isolation ward and isolation intensive care unit, but it needs to be worn and taken off correctly, and gloves should be changed in time. It is forbidden to leave the diagnosis and treatment area with gloves. Wearing gloves is no substitute for hand hygiene.

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What is the scope of use of quick-drying hand disinfectant?

In the course of diagnosis and treatment of medical staff, when there are no obvious pollutants in the hands, it is used in the whole hospital. It must be equipped for pre-examination clinic, fever clinic, isolation observation unit, isolation ward and isolation intensive care unit.

Q

What is the scope of use of the medical goggles / protective masks?

It is used in areas such as isolation detention ward, isolation ward and isolation intensive care unit, as well as the collection of respiratory tract samples, endotracheal intubation, tracheotomy, non-invasive ventilation, sputum suction and other spatter operations when blood, body fluids and secretions may be spattered. It is forbidden to leave the above area with goggles. If the goggles are reusable, they should be disinfected and reused. In the emergency case of insufficient supply of disposable goggles, they can be reused after strict disinfection. In other areas (including diagnosis and treatment operations), it is not used in principle.

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What is the scope of use of isolation gown?



Ordinary isolation gowns are used in pre-examination clinic and fever clinic. Disposable anti-seepage gowns are used in isolation detention wards, isolation wards and isolation intensive care units. Other departments or areas should use isolation gowns according to whether they are in contact with patients or not. Disposable isolation gowns shall not be reused. If reusable isolation gown is used, it shall be disinfected according to the regulations before reuse. It is forbidden to leave the above area with gowns.

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What is the scope of use of protective clothing?

It is used in isolation observation wards, isolation wards and isolation intensive care units. Protective clothing must not be reused. It is forbidden to leave the above areas wearing medical protective mask and protective clothing. In other areas (including diagnosis and treatment operations), it is not used in principle.

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What protective equipment should medical staff use when collecting nasopharyngeal swabs from patients who are about to undergo confine operation?

Work cap, medical protective mask (commonly known as N95 mask), gown plus cloth isolation clothes, goggles / protective masks, latex gloves.

Q

What protective equipment should medical staff use when collecting nasopharyngeal swabs from suspect patients?

Work cap, medical protective mask (commonly known as N95 mask), protective clothing, goggles / protective masks, latex gloves.

Q

What protective equipment should medical staff add when performing emergency operation on suspect patients or confirmed cases?

Medical protective mask (commonly known as N95 mask), protective clothing, goggles / protective masks.

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What are the medical wastes of COVID-19 patients and how to dispose of them?

All wastes from fever clinics and wards where suspected or confirmed patients are treated, including: Medical waste, domestic waste, any other waste equipment, waste materials and other wastes that patients have come into contact with; and other high-risk waste such as pathogen culture medium, specimens and strains, virus seed preservation solution from COVID-19 related to clinical, teaching, research and other medical activities.



The medical wastes are covered with a yellow garbage bag before leaving the contaminated area, and the red "highly infectious waste" sign is pasted on the outside of the garbage bag.

Section 4 Relevant laws and regulations

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How do the staff from outside the Yangzhou cooperate with the prevention and control of the epidemic?

All people from outside the city must report and register with their village (neighborhood) committees or units within 1 hour, and consciously carry out 14 days of home medical observation, and are not allowed to go out before the end of medical observation. All enterprises, institutions and employers shall immediately inform their own units that those who return to their hometown from Yangzhou during the holidays shall not return before the specified time. People must make an appointment through the "Health dynamic observation system of personnel in Yangzhou" 2 days in advance before going back.

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What if the patient does not truthfully provide the condition and medical history, does not cooperate with treatment, isolation, and transfer to hospital?

According to the law, patients should provide their illness and medical history truthfully, cooperate with treatment, isolation, transfer, etc. In particular, contagious and suspected patients who conceal their illness and medical history and refuse to cooperate with treatment, isolation, and transfer to hospital, resulting in the spread, aggravation, and damage consequences of the epidemic, will bear legal liability in accordance with the law. If you encounter such a situation, you can contact the police to deal with it.

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What legal liability should the patient bear if he has the clinical symptoms of COVID-19, but deliberately conceals or refuses to admit the history of living and traveling in the epidemic area and the history of close contact with people in the epidemic area? What should doctors do?

Patients have the obligation to truthfully provide medical staff with information such as their residence history, contact history, travel history and so on. In the diagnosis and treatment of COVID-19 prevention and control, if the patient deliberately conceals or refuses to admit the medical history of living and traveling in the epidemic area, then the related consequences



such as the delay in diagnosis and treatment should be borne by the patient, rather than the hospital. Due to the concealment, false report, late report and omission of COVID-19's medical history, it may also lead to the spread of the epidemic and cause great difficulties in the prevention and control of infectious diseases. According to the law, if patients conceal their medical history and deliberately spread pathogens and endanger public security, they will be suspected of constituting crimes such as endangering public security by dangerous means.

The doctor may inform the patient of the legal liability and adverse consequences of refusing to provide or deliberately concealing medical history, which shall be confirmed by the patient's signature. If the patient still denies it, relevant imaging and laboratory examinations can be carried out. If the diagnosis can be made according to the clinical symptoms and examination results according to the diagnosis and treatment standards, it shall be diagnosed and treated in isolation, and the patient's behavior of concealing the disease can be reported to the police.

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For Critical cases, can medical institutions operate on patients in case of emergency when they are unable to obtain the authorization of the patients themselves or their relatives?

Due to emergency situations such as rescuing critically ill patients, it is really necessary to perform surgery. You can contact close relatives by telephone and keep records. If the opinions of the patients or their close relatives cannot be obtained, the corresponding medical measures may be implemented immediately with the approval of the person in charge of the medical institution or the authorized person in charge. However, it is necessary to make good medical records and retain relevant evidence.

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How to bear the medical expenses of diagnosed and suspected patients?

How does the hospital respond?

1. Patients diagnosed with COVID-19 do not need to bear the cost of treatment on their own.
2. Even if the patient is unable to pay the medical expenses, the medical institution should ensure that the patient is treated first. The expenses paid by medical insurance in different places shall be paid in advance by the medical insurance departments in the place where they seek medical treatment, and medical institutions should record the information of insured patients and keep accounts of medical expenses in different places, and organize the settlement after the end of the epidemic.



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How to dispose of corpses infected by novel coronavirus and contaminated medical waste?

In the course of the epidemic, corpses and medical wastes should be properly disposed in strict accordance with the National Law and 《Guidelines for the disposal of the remains of patients with COVID-19》 (Trial Version), which jointly issued by the General Office of the State Health Commission, the General Office of the Ministry of Civil Affairs and the General Office of the Ministry of Public Security on February 1, 2020.