

# Manual for Public Protection against COVID-19

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## Specific population protection

### Periconceptual women and children protection

**41. Are pregnant women susceptible to 2019-nCoV? What are adverse effects of 2019-nCoV on pregnant women and fetuses?**

**Ans:** On Feb 2, 2020, the National Health Commission of People's Republic of China released *Notification on Prevention and Control of COVID-19 among Pregnant and Puerperal Women and Children*, which pointed out that both of them are susceptible to 2019-nCoV. However, currently we lack the clinical data from large-scale observational studies regarding COVID-19's pathogenesis and measures of diagnosis and therapy for pregnant and puerperal women, and have to refer to the infection characteristics of severe acute respiratory syndrome (SARS) and Middle East respiratory syndrome (MERS), which both of them are same congenetic with COVID-19. As the members of same corona virus family, SARS and MERS show significant susceptibility to pregnant and puerperal women, and result in severe adverse outcomes.

Pregnant women are in the immunosuppressive status, and intolerant of hypoxia due to the change of physiological adaptability during the pregnancy. Pregnant women are susceptible to respiratory pathogens, meanwhile more likely to develop the severe pneumonia, especially combined with chronic diseases, such as hypertension, heart disease and diabetes, or obstetric complications, which make pregnant women more susceptible to 2019-nCoV.

Due to increasing of organism burden, oxygen consumption and lung circulation, once pregnant women are infected by 2019-nCoV, it's more significant upon the contradiction between supply and demand wither pregnant women's bodies, as well hypoxia symptom would be more conspicuous. As a result, early pregnancy loss is easily to be caused, and the risk of obstetric complications, such as premature rupture of fetal membranes, premature delivery, fetal growth restriction and intrauterine fetal death, is increasing continuously. As well neonatal mortality keeps increasing. At present, there is lack of reliable evidence on vertical mother-to-child transmission of 2019-nCoV during the pregnancy.

Therefore, under the strategy to emphasis on prevention and management to the infection of 2019-nCoV, pregnant women and infants should be considered as the key high-risk groups, and more attention and management to them should be strengthened.

**42. How to prevent COVID-19 for pregnant and puerperal women? What are**

### **precautions when visiting the hospital?**

**Ans:** Keep house environment clean and hygienic, open windows regularly, and avoid cold. Pregnant women use personal necessities, like towel, bath towel, tableware and beddings, dedicated to avoid cross infection.

Maintain nutritional balance and regular life, and ensure adequate sleep, drink more water, avoid overeating, control weight, practice exercise properly, and strengthen own resistance.

Decline the visit by relatives and friends, and avoid contacting with people with respiratory infections and people who have travelled in pandemic high-risk areas within two weeks.

Perform self-monitoring, measure temperature and weight daily, pay attention to the symptoms of respiratory infection, and regularly monitor fetal movements. Pregnant women with mild symptoms such as nasal congestion and pharynx discomfort, and without fever, or without a travel or residence history to high-risk countries or regions, or without close contact of COVID-19 patients, could stay home for observation, take adequate rest and monitor the temperature daily.

Pregnant women with a travel or residence history to high-risk countries or regions, or with close contact of COVID-19 patients, should take medical observation according to the requirements. During observation, pregnant women should pay close attention to own symptoms and fetal movements, and seek medical attention once any discomfort symptoms. If with fever, first consultation should be fever department for identification; if without fever, and with non-obstetric conditions to visit the hospital, pregnant women should choose those close medical institutions that could meet the requirements and fewer outpatients. When visiting to hospital caused by obstetric conditions, except for emergencies, pregnant women should choose the hospital that they visited and set up pregnant record.

It is recommended to make an appointment in advance before visiting the hospital, to see the doctor in different time, to avoid waiting among the crowd, and to reduce the time staying in the hospital as possible. To avoid taking public transportation and wear masks throughout the process. To wash hands immediately after touching the surfaces of objects in the hospital, like doorknobs and curtains. Keep the distance of at least 1 meter with others during the visiting and in the hospital.

Pregnant and puerperal women should learn the knowledge of the pandemic and related information through official and formal resources, and keep relaxation through listening music, painting, reading, or other ways, have more conversation with families, friends and colleagues, and release the psychological stress. If self-adjustment doesn't work, they could seek psychological counseling from the professional through hotline or online.

**43. How to self-monitoring for the pregnant women during the pandemic? How to self-prevent when visiting to hospital for prenatal check-ups?**

**Ans:** (1)Self monitor: pregnant women should keep ventilation and washing hands frequently at home, and avoid touching source of infection. Pregnant women should continue self-monitoring, including weight, temperature, blood pressure, blood glucose and fetal movements, and concern the symptoms, like abdominal pain, bleeding or fluid from vaginal, or laboring. As well, if suspicious symptoms of COVID-19, such as fever, cough, sore throat, chest distress, dyspnea, fatigue, diarrhea, conjunctivitis, etc. occur, they should seek medical attention immediately.

(2)Online consultation and telemedicine: Patients, women & children healthcare institutions are encouraged to use Internet+ medical tools in a variety of ways during the pandemic, including we-chat, app, telephone, video and online school, as well remote fetal monitoring, online inquiry, medical alliance and telemedicine, which try to help the patients to accept promptly medical advice and consultation at home.

(3) Personal protection: When visiting to hospital for antenatal examination, pregnant women reduce the accompanists. Both the pregnant and accompanist should wear medical surgical or protective masks during the whole process. They should go to the hospital in different time, and avoid waiting among the crowd, one person one clinic when seeing the doctor, and reduce the time in clinic. Before entering the hospital, screen the temperature and wash hands. The accompanists don't enter the clinic. Before leaving the clinic, wash hands as soon as possible.

**44. Whether should pregnant women go on regular check-ups? Where can they go?**

**Ans:** It's recommended to accept antenatal examination for pregnant women according to the guidelines of pregnancy healthcare during the pandemic. Pay close attention to the changes of fetal movements in the late stage of pregnancy, and reduce appropriately the non-time-limited examination. But, once combined with pregnant complications or associated complications, pregnant women should increase appropriately the frequency of examination. During visiting the hospital for examination, take adequate personal protection.

Suspected and confirmed cases of COVID-19 in pregnant women should go to the designated hospital for antenatal examination, and evaluate the state of fetal with electronic fetal heart monitoring or ultrasound examination depending on gestational age. It's recommended for normal pregnant women to take antenatal examination in those hospitals without fever department and under adequate personal protection.

When conditions permit, it's recommended to set up greenway for pregnant women in those medical institutions providing maternal healthcare during the pandemic.

In order to reducing cross infection, those medical institutions providing perinatal healthcare, could conduct consultation and guide via online for pregnant women using the advantage of Internet+.

**45. What issues should be paid attention to during prenatal check-ups during the pandemic?**

**Ans:** General inspection: Measure the height of the uterine floor, abdominal circumference, check the gestational week and listen to the fetal heart rate. In addition, we should pay attention to the suspected symptoms of COVID-19, such as fever, dry cough, fatigue, nasal congestion, runny nose, sore throat, myalgia and diarrhea.

Fetal movement monitoring: Generally, conscious fetal movement begins at 18-20 weeks of pregnancy, and fetal movement is more active at night and in the afternoon. After 28 weeks of gestation, fetal movement counts <10 times / 2 h or a decrease of 50% suggest that fetal hypoxia may be present. Electronic fetal heart monitoring (> 32 weeks) : Recurrent late deceleration, fetal bradycardia, and sine wave patterns suggest that fetal hypoxia is possible.

Ultrasound examination: Color Doppler ultrasound fetal blood flow monitoring can be used to make objective judgments on the status of fetuses with high risk factors. Commonly used indicators include S / D ratio of umbilical artery and middle cerebral artery, RI index (resistance index), PI index (pulsation index), blood flow waveforms of umbilical vein and venous catheter.

**46. What conditions should pregnant women visit the fever department of hospital in? Which medical institutions should the suspected or confirmed cases of COVID-19 among pregnant women be referred to for further diagnosis and treatment?**

**Ans:** Fever and suspected cases of COVID-19 in pregnant women should make an appointment in advance, take a triage process when entering the hospital, measure the temperature, and then are leaded by designated specialists to see the doctor in designated fever department.

Designed hospitals for COVID-19 patients should be set up in different levels, including special for pregnant women who infected by 2019-nCoV. All suspected or confirmed cases of COVID-19 should be isolated immediately, and transferred to designated hospital for pregnant women with COVID-19 under safety condition and as soon as possible.

**47. Could the infection by 2019-nCoV be excluded that the results of 8 regular tests about respiratory virus infection are positive?**

**Ans:** No. According to existing clinical cases, COVID-19 patients can also be infected together with other pathogens, such as influenza A, B virus and pneumonia mycoplasma. As a result, it' s recommended for suspected

cases of COVID-19 or those with related epidemiological histories to accept ethological testing of 2019-nCoV promptly, even the results of 8 regular tests about respiratory virus infection are positive

**48. What are the precautions for suspected or confirmed cases among pregnant women during the referral?**

**Ans:** Transfer requirements: Personnel protection and ambulance vehicles should follow the requirements of guideline.

Communication and coordination: The head of medical affair unit or commander of COVID-19 prevention and control team should contact with the external.

Accompanist of referral: one obstetrician and one nurse.

Informed consent: notice the risks to the patients and relatives, and sign the informed consent forms.

Additional equipment: Doppler fetal heart rate stethoscope or electronic fetal heart rate monitor. If necessary, it is equipped with necessary delivery equipment, dressing and neonatal resuscitation equipment such as delivery kits, forceps or fetal head suction.

Obstetrics precautions: During the referral, pregnant women should keep left lateral or semi-seated position, oxygen inhalation and continuous monitoring of pregnant women and fetuses, including fetal heart auscultation, make records, and handle emergencies at any time.

**49. Can pregnant women accept chest CT examination? What are the precautions on radioactive examination for pregnant women?**

**Ans:** Whether the radiologic examinations induce the abnormal development of the fetus depends on the gestational age at the examination time and the radiation dose according to the radiologic examination technology. Theoretically, it is safe that radiation dose of chest CT received by fetus does not reach the teratogenic threshold. For the sake of safety, pregnant women are advised to do chest CT examination after informed consent and take measures to protect the abdomen. Precautions for radiology examination of pregnant women:

(1) Informed consent: Before chest radiology examination for pregnant women, we should follow the basic principles of medical ethics, respect the rights about autonomy, informed consent, confidentiality and privacy of pregnant women and their families, and fully tell them the known disease-related information, the importance of chest radiology examination and the potential possibility of fetal harm. Obtain the informed consent of pregnant women and their families and sign the informed consent form.

(2) Prevention of cross infection: If the conditions are available, it is suggested that the designated hospital should establish a greenway of radiologic examination for pregnant women, set up a special pathway, a

special examination room, and provide special examination instruments and technicians. If conditions could not be met, pregnant women should be instructed to wear protective clothing before entering the examination area.

(3) Radiation protection for pregnant women: The pregnant women's abdomen area should be protected by lead apron. Firstly, wrap a layer of disinfectant towel around the abdomen of the pregnant woman, and then lay a lead apron on the examination bed under the pregnant women, wrap and cover the pregnant women's abdomen.

**50. What are the therapeutic principles for pregnant women infected by 2019-nCoV with different gestational ages?**

**Ans:** It is suggested to establish a multiple disciplinary team (MDT), including obstetrician, pediatrician, infectious physician, respiratory physician, ICU physician, anesthesiologist, radiologists, laboratory technician and pathologist, to treat all confirmed and highly suspected pregnant women in the isolated wards.

**Gestational weeks <28 weeks:** The treatment was mainly driven by infection department. Take active anti-infection treatment, and prolong the gestational period as much as possible. Inhale oxygen and dynamically monitor the fetal condition. If the condition of pregnant women is stable, and there is no persistent fever or disease progression, the pregnancy can continue. If not, the pregnancy should be terminated promptly, and choose cesarean section if necessary.

**Gestational weeks  $\geq$  28 weeks:** Beside anti infection and dynamically monitor the fetal condition, use dexamethasone to promote fetal lung maturation. If there is persistent fever or disease progression, timely terminate the pregnancy. If the newborn is premature, transfer to the neonatal ward in time.

**Gestational weeks  $\geq$  34 weeks:** The pregnancy also has a greater impact on the treatment of pneumonia. Thus, obstetric intervention is very important. Consider terminating pregnancy as soon as possible, as appropriate.

**51. Can the confirmed cases of COVID-19 among pregnant women take antiviral drugs?**

**Ans:**(1) Interferon alpha: Early use of interferon alpha has the risk of affecting growth and development of the fetus, which should be fully informed.

(2) Lopinavir / ritonavir: The drug has been listed as the first choice of medication for HIV during pregnancy. Based on animal studies and limited human reports, the drug does not appear to increase the risk of adverse pregnancy outcomes. The medical professionals should fully inform the pregnant women and their families about the benefits to the pregnant

and the potential risks to the fetus when using the drug, weigh the balance, and choose the drug while the potential benefits are greater than the risks to the fetus.

(3) Ribavirin: The drug is forbidden during pregnancy due to the obvious fetal lethality and teratogenicity observed in animal experiments.

(4) Chloroquine phosphate: Animal experiments have shown that the drug can be transferred to the fetus through the placenta of mice and monkeys. Whether the drug has caused retinal degeneration or ocular toxicity in human pregnancy remains controversial. It is generally safe to use the recommended dose to prevent malaria or to treat malaria with a three-day regimen during pregnancy. No teratogenic effect was found in the treatment of systemic lupus erythematosus and rheumatoid arthritis. However, there are cases of congenital deafness, mental retardation, hydrocephalus, limb defects and other abnormalities in the offspring of high-dose drug users. In addition, the drug can be secreted with a small amount of breast milk during lactation. Therefore, it is not recommended for pregnant women and lactating women to use the drug. When it is necessary to use this medicine, the medical professionals should fully inform the pregnant women and their families of the benefits of using the benefits to the pregnant and the potential risks to the fetus when using the drug, weigh the balance, and choose the drug while the potential benefits are greater than the risks to the fetus, and the pregnant women and their families sign the agreement.

(5) Arbidol: The safety of this drug in pregnancy and lactation is not clear, so it should be used with caution.

## **52. Can traditional Chinese medicine be used for suspected cases and mild/moderate cases among pregnant women? How to take?**

**Ans:** First of all, pregnant women are not recommended to use traditional Chinese medicine for prevention. Second of all, with informed consent, the suspected cases and mild/moderate cases of pregnant women can be treated with traditional Chinese medicine for one week under the guidance of physician. For those who have asthenia and fever can use Jinye Baidu Granules (one bag at a time, three times a day), or Lianhua Qingwen Capsules (four capsules at a time, three times a day). For those with asthenia and gastrointestinal discomfort, Huoxiang Zhengqi (concentrated honey pill or oral liquid) can be selected, eight capsules or one bottle at a time, three times a day. The patients with diarrhea can be treated with berberine 0.3g once, 2-3 times a day. It can also be treated according to the prescription based on syndrome differentiation by traditional Chinese gynaecologist. There is no pregnancy safety data of the traditional Chinese medicine mentioned above at present, but the antiviral effect of traditional Chinese medicine has been recognized. Pregnant women can choose to use the medicine after considering the advantages and disadvantages. Since pregnant women with COVID-19 are not

recommended for breastfeeding, it should be safe to take traditional Chinese medicine.

**53. What are the precautions for the pregnant women at termination of pregnancy during the pandemic?**

**Ans:** The decision should be made after a comprehensive analysis about disease severity, gestational age and intrauterine condition of the fetus.

(1) Indications for pregnancy termination

1) Obstetric indications: The obstetric indications of pregnancy termination should be judged according to the specific obstetric situation.

2) Severe and critical cases: Considering that continuing pregnancy may endanger the safety of the pregnant and the fetus, pregnancy can be terminated under informed consent.

Severe cases refer to patients who meet one of the following criteria: respiratory rate  $\geq 30$  breaths/min; oxygen saturation  $\leq 93\%$  at a rest state; arterial partial pressure of oxygen (PaO<sub>2</sub>)/oxygen concentration (FiO<sub>2</sub>)  $\leq 300$  mmHg.

Critical cases refer to patients who meet one of the following criteria: respiratory failure requiring mechanical ventilation; shock; other organ failure that requires monitoring and treatment in the ICU.

(2) Timing and method for pregnancy termination.

1) Vaginal delivery can be considered when the condition of the disease is mild, the condition of cervix is good and the patient is in labor without any contraindications to vaginal delivery.

2) Indications for surgical termination of pregnancy: same as above.

(3) Place of pregnancy termination for suspected or confirmed cases  
Dedicated isolation delivery room or dedicated operating room for respiratory infectious diseases in the fever ward.

(4) Staffing for pregnancy termination in suspected or confirmed cases  
A MDT consists of the department of obstetrics, neonatology, infectious diseases, respiratory medicine, anesthesiology and operating room should be set up and dedicated surgical and anesthetic supplies should be prepared. We should pay attention to the protection of the newborn after delivery, cut off the umbilical cord and clean up the newborn as soon as possible.

**54. What are the precautions for puerperal women about postpartum fever?**

**Ans:** Postpartum fever may occur due to the decreased immunity caused by maternal exhaustion during prolonged labor and bleeding, as well as physiological characteristics of pregnant women, such as anatomy of female genitalia, puerperium sweating and postpartum lactation. Thus, particular attention should be paid to this kind of clinical manifestation,



and differential diagnosis must be performed to distinguish postpartum fever from breast swelling, mastitis, urinary tract infections, common colds and reproductive tract infections, etc. Most importantly, those who have symptoms related to COVID-19 infection should undergo routine blood tests, respiratory virus screening, nucleic acid amplification tests and antibody tests for 2019-nCoV, and chest CT examination. Additionally, postpartum women who have a postpartum fever after being discharged should go to a Fever Clinics in time, and obstetricians and gynecologists should be consulted immediately to rule out postpartum fever cause (including puerperal infections, mastitis, etc.).

**55. What are the criteria of discharge for maternal women with COVID-19? What are the precautions after discharge?**

**Ans:** The postpartum women infected with 2019-nCoV could discharge when they have good general condition, less vaginal bleeding, regular uterine contraction, and pneumonia cured to the following criteria: (1) Body temperature remains normal for at least 3 days; (2) Respiratory symptoms improved significantly; (3) Imaging of lungs showed significant improvement of acute exudative lesions; (4) The results of nucleic acid tests are negative for respiratory tract specimens (such as sputum and nasopharyngeal) twice consecutively (sampling interval more than 24 hours).

Precautions for pregnant women infected by 2019-nCoV after being discharged: (1) Designated COVID-19 hospitals should make contact and share medical records of COVID-19 patients to the community medical health institutions, also, close communication between community medical health institutions and patients is required. (2) Due to the suppressed immune function during the recovery period, discharged maternal women and newborn are both recommended to be isolated with health monitoring for 14 days and wear masks, in a well-ventilated single room conditionally. Also make sure to contact few with family, keep separate dining, wash hands promptly and avoid outdoor activities; (3) It is recommended that outpatient follow-up should be carried in the 2nd and 4th weeks after being discharged.

**56. What are the precautions of breastfeeding during the pandemic?**

**Ans:** Breastfeed is not recommended for suspected cases and confirmed cases but uncured in COVID-19 patients.

Breastfeed is not recommended when taking lopinavir / ritonavir for COVID-19 treatment, because these drugs can be secreted in the breastmilk of rats, and it is uncertain in human breastmilk. During breastfeeding breaks, it is recommended that the maternal empty her breasts regularly. Make sure hands and breasts clean during breastfeed.

**57. Are children susceptible to 2019-nCoV? Is it fatal if infected?**

**Ans:** 2019-nCoV is a novel pathogen for human beings. Humans have no immunity to it, and all the people could be infected by it. Children (from 0 to 18 years old) could be divided into different groups, including neonatal period, infancy period, pre-school age, school age and adolescence. Judging from the current cases of infection, children of all ages, including newborns, are susceptible to this virus.

The symptoms of children infected were mostly mild, even few is asymptomatic. Very few children infected, especially those with chronic underlying diseases, can progress from mild to severe, or even fatal. According to the current information, there are no more than 5 cases of children who have died from this virus in mainland of China. Although deadly cases are rare, we shouldn't take the threat of COVID-19 lightly.

**58. How to prevent COVID-19 for infants and children?**

**Ans:** (1) During the pandemic period, families with infants and children should minimize the frequency of going out. If it's necessary to go out, wear a mask to avoid the peak of crowds. Try not to take public transportations, to avoid crowded places, and not to touch public facilities. In addition, try to avoid receiving visitors and visiting relatives and friends, and avoid outsiders' close contact with infants and children.

(2) Family members should first sterilize their hands with quick-drying hand disinfectants before entering the door, and wash their hands immediately after entering the door. Families with infants and young children should wash hands before touching them, and also wash their hands frequently. Care should be taken to avoid contact with infants and young children when using quick-drying hand disinfectants.

(3) Ensure that the child intakes adequate nutrition every day and avoid eating too many snacks and junk foods. Meat and eggs should be cooked thoroughly before feeding.

(4) Combine work and rest, strengthen interaction with children, urge children to do exercise appropriately, ensure adequate sleep, and improve resistance.

(5) Infants and children have a natural curiosity about animals. Avoid them contacting with wild or farmed animals without protection, never eat wild animals.

(6) Parents should measure the temperature of infants and children every day, and observe the children's daily performance. They will need medical attention and should wear masks to go to the fever clinic of pediatric department of the hospital when respiratory symptoms such as fever and cough occur.

**59. What are the manifestations of children infected by 2019-nCoV? How**

**to treat them?**

**Ans:** Fever is the most common manifestation of children infected by 2019-nCoV, with the type of moderate low-fever or high fever above 39°C. The duration of fever usually was not long. Most of children returned to normal temperature within 1 to 2 days, and few can achieve fever for more than 1 week. Cough is the second most common manifestation, and it is usually a dry cough at the onset of illness. Some children can develop digestive symptoms such as nausea, vomiting, abdominal pain, diarrhea, or even just only gastrointestinal symptoms without fever or cough. In addition, some children can also appear fatigue, myalgia, sore throat, runny nose, dizziness, headache and other symptoms. Very few children with underlying diseases may have severe manifestations such as depression, dyspnea, and even coma.

There are no specific-effect drugs for COVID-19. Treatments should be determined according to the severity of the disease. Quarantine in hospital is the basic strategy for all children with COVID-19 infection if medical conditions permitting. Asymptomatic or mild children do not need special medicine treatment, and the focalpoints of treatment are monitoring the condition, giving adequate nutrition, and maintaining the their immunity. Children with moderate symptoms need symptomatic and supportive treatment according to the symptoms and related laboratory tests and examination results. Children with severe and critical diseases should be admitted to the pediatric intensive care unit of the designated hospital for treatment. Antiviral drugs, convalescent patients' plasma, hormones, etc. are used depending on the situation. Life support treatment should be conducted by ventilator, blood purification apparatus, or even Extracorporeal Membrane Oxygenation (ECMO), if necessary.

**60. What circumstances are considered that children might be infected? What examinations should be done to confirm the infection of children?**

**Ans:** COVID-19 is a kind of respiratory contagious disease, which can be transmitted by droplets, contact and aerosols. If a child has close contact with a suspected or confirmed case of COVID-19 within 14 days, or there are aggregation cases of COVID-19 in child' s residence area or community, or the child has travelled to the pandemic areas, the child has to be observed closely about the manifestations mentioned in Q&A 59. Once those symptoms occur, the child should be sought medical attention immediately to confirm whether infected.

To confirm whether infected, the first thing is to test the viral nucleic acid, and nasopharyngeal is the most common area of sampling. Given that the test results are false negative to some extent within the samples from the nasopharyngeal of children , it' s commended to sampling from feces or anal-swabs at the same time to test viral nucleic acid, especially for those children with digestive tract symptoms, like diarrhea. Test of viral

antibodies in blood is helpful for auxiliary diagnosis. In addition, lung imaging examinations can help clarify the situation in the lungs of children.

**61. What is the nutrition supplement suggestion for children infected by 2019-nCoV?**

**Ans:** Currently there are no specific-effect drugs for COVID-19. On the whole, the immunity system does a remarkable job of defending host against the pathogen. Taking a reasonable diet and nutritional supplements is good to maintaining the immunity of hosts, and accelerating the recovery of the disease of COVID-19.

Children with COVID-19 should obey the basic principles of nutritional diet for the children of different age stages and children with special diets, including advocating breastfeeding, if not available, special milk for premature infants, regular infant formula milk for full-term neonates and hydrolytic protein formula milk for the infants with allergy high risk. No new supplementary food or alteration of feeding during the illness. To intake adequate calories and high quality proteins daily are very important for the children infected. They need sufficient nutrients, diverse foods and mixing of meats and vegetables. High quality protein foods are essential, such as fish, meat, eggs, milk, beans and nuts (avoiding for infants under 3 years old). More fresh and clean vegetables and fruits are recommended. Three meals should be planned on time, and additional meals can be added on morning and afternoon according to gastrointestinal function of kids. Enteral nutrition components, fruits, milk, nuts, etc. can be used as inter or extra meal. Supplement of vitamins, minerals and cod oil also can be administered as needed.

**62. How to protect children from infection if a family member was infected by 2019-nCoV?**

**Ans:** If a member of family is infected by 2019-nCoV, the family should send him/her to seek medical attention at designated medial institution as soon as possible, and completely clean up and sanitize the whole house and surrounding environment. If the member infected has to leave home, the following measures have to be ensured:

(1) The infected person should live relatively independently, use a separate bedroom and toilet, eat and drink separately, discard paper towels wrapped oral and nasal secretions in into the garbage with cover, treat the clothing with chlorine disinfectant before washing, flush the lavatory after closing the lid, and keep the sewers unobstructed. (2) The infected person should not contact with the child. If it' s necessary, he/she should wear a mask, keep hands clean, avoid direct contacting with the child' s mouth, nose and eyes; When coughing or sneezing, cover mouth and nose with a tissue paper or handkerchief, or elbow. (3) Open windows

regularly for more ventilation, improve the cleaning and clean rooms, toilets, tableware, and so on, to prevent cross infection. (4) Pay close attention to hand hygiene. See Q&A64 for details. (5) Improve the child's immunity. See Q&A71 for details. (6) Enhance daily surveillance, including children's temperature, respiratory and gastrointestinal symptoms, mental state and appetite changes, and make records carefully.

### **63. How to protect children during the pandemic?**

**Ans:** During the pandemic of COVID-19, the daily protection of children is very important. Parents can start from the following aspects:

(1) Wash hands frequently. Parents need to urge children to wash hands frequently and don't touch everywhere. Children shouldn't pick nostrils or rub eyes with dirty hands. The frequency of hand washing should be increased for infants who like to put hands into mouth. Details instructions and timing of hand washing are answered in detail in Q&A 64.

(2) Wear masks. Children have low tolerance and adaptability, which only need to wear masks when they go out. They should choose a mask of appropriate size according to the age to ensure the sealing of the masks. When family members have suspected symptoms or other physical discomfort before isolation, they should keep a distance of more than 1 meter from children and wear masks.

(3) Stay at home When you have to go out, you should wear a mask, walk the stairs as much as possible, reduce the contact with public goods in public places, do not go to the enclosed space where people gather more, do not stay outside for too long, keep a distance of more than 1 meter from others, and carry the alcohol hand sanitizer or disinfectant towel. Change the coat and shoes before entering the room, and put them in the outdoor ventilation place, and handle the masks according to the correct methods. Wash hands and face after entering the room.

(4) Children's utensils need to be disinfected The surfaces of objects, such as mobile phones, iPads, stationery and other items can be wiped daily with alcohol cotton chips or disinfectant wipes. Plush toys can be soaked and washed with chlorine disinfectant. Children's bowls, chopsticks, milk bottles, nipples, toys that may be chewed and with thermo-stable materials, can be disinfected for 30 minutes by boiling in a sterilizer or boiling water.

(5) Cough / sneeze etiquette should be implemented When coughing or sneezing, don't face others. Cover your mouth and nose with a tissue or elbows. Try not to cover with hands. Fold the tissue immediately and throw it into the garbage can. After covering with elbow, spray disinfectant on corresponding parts. Wash hands immediately after covering with hands and do not touch any other objects before washing hands.

### **64. Have the children's hands been washed clean?**

**Ans:** 2019-nCoV can be transmitted through contact, and kids might be infected by touching the surface of the object contaminated by the virus. Therefore, parents must pay attention to children's hand washing. Parents should also guide children to wash their hands well in these situations: (1) After coughing or sneezing. (2) Before and after taking food. (3) Before and after defecation. (4) Before and after playing with toys. (5) After contact with animals. (6) After returning home. (7) After contact with objects that may have been contaminated.

Correct procedures of washing hands include the following steps: (1) Before washing hands, trim your child's nails if possible, help the child to pull up his sleeves, take off his watch, and adjust the water temperature and water flow. For smaller children, parents can let children stand on stools and stand behind children to protect them with arms around.

(2) Wash hands with running water, apply soap or hand sanitizer to the entire palm, back of hand, fingers and finger joints. (3) Carefully rub your hands for at least 15 seconds. The specific operations are as follows: Palms are opposite, fingers are close together, rubbing each other; The palm of the hand rubs with the back of the hand along the finger joint and exchanges;

The palms are opposite, and the fingers are crossed and rubbed with each other; Hold the thumb of the left hand with the right hand, rotate and knead, and exchange; Bend the fingers to make the joints rotate and rub in the palm of the other hand, and exchange; Put the five finger tips together in the palm of the other hand, rotate and rub, and exchange.

(4) Wash hands thoroughly under the running water. (5) Dry hands with a clean towel or paper towel.

If it is inconvenient to wash hands when you go out, you can fully wipe the whole palm, back of hand, fingers and finger seams of your child with alcohol disinfection products.

#### **65. How to deal with the discomforts of children during the pandemic?**

**Ans:** Fever, cough, vomiting and diarrhea are the most common symptoms of children. For children without chronic diseases, if their symptoms are mild, parents need not be nervous. To choose symptomatic measures or consultation online first, it's not necessary to seek medical attention immediately. (1) Fever: If at low heat temperature, the symptomatic measures are available, like reducing clothing, drinking more water and take a shower with warm water. If the child's temperature exceeds 38.5 °C, antipyretics drugs can be considered, such as paracetamol or ibuprofen. When temperature is back normal and the child has good mental and appetite status, he can stay at home for observing. (2) Cough: The most common reason of cough without fever is allergy, such as rhinitis, wheezing, asthma or other allergic conditions. Leave child away allergic food and environment, and conduct treatments ever used before, such as

nebulization, antiallergic agents for children, etc. (3) Digestive symptoms: First of all, digestive discomforts are usually relate to the diet. Stop adding new supplement food and alteration of the milk, eat less and more frequently, give fresh and clean foods, and ensure the supply of liquid and nutrition.

However, seeing a doctor in time if the following conditions occur: (1) The child appears mental disorder, poor appetite, drowsiness, dyspnea, etc., which matches the temperature. If seizure or coma occurs, call emergency immediately. (2) Acute aggravation of the original chronic disease occurs. (3) The younger the child is, the faster the condition changes. If a newborn has fever or hypothermia, or poor feeding, or not crying, as well infants under 3 months have fever, or children of all ages have fever for more than 3 days companied with poor appetite, drowsiness and convulsion, under all these situations should seek medical attention in time.

**66. How to diagnose and treat chronic diseases for children during the pandemic?**

**Ans:** During the pandemic of COVID-19, following suggestions are given to the children with chronic diseases, such as blood tumor, chronic kidney disease, chronic liver disease, chronic gastrointestinal disorders, metabolic diseases, and so on. (1) If the chronic disease is stable, keep staying home and self-surveillance. Adhere to the doctor's orders. Take the medicine on time according to the doctor's plan. Do not stop or reduce the medicine arbitrarily. Make a detailed record of the daily condition, surveillance and medications. (2) If there is any change of the condition or any question, online consultations are available, and some chronic diseases can also be prescribed through video consultation and medicines can be delivered by express parcel. (3) If the condition changes rapidly or greatly, it's strongly recommend to see a doctor in time or go to the emergency department if necessary, and pay attention to the protection in the hospital.

**67. How to take care of the children's mental health during the pandemic?**

**Ans:** Because healthy children, infants and preschool children cannot understand fully COVID-19, the psychological impact of the pandemic to them is very limited. However, changes from living environment, including the regular daily life, physical and mental health status of caregivers, are more likely to affect them. It is suggested that parents play parent-child games with infants and young children at home in order to divert their attention smoothly; briefly explain the measures of prevention and control on COVID-19 in a way that young children can understand, and set up some learning or activity goals and accomplish them together with their children. Adolescents' psychological stress

performance is similar to that of adults. Although their cognitive level increases with ages, lack of professional medical knowledge may lead them to pay too much attention to the disease and fear of death which is similar to adults. It is recommended that parents adapt their communication style according to their children's age and cognitive level to help alleviate their stress response.

For the children who are infected by 2019-nCoV, psychological adjustment is needed during experiencing physical symptoms such as fever, cough, diarrhea and fatigue. Children who are hospitalized will confront even more significant changes in their living environment. Strict disinfection and quarantining measures may increase the distance between medical personnel and children, which make children to feel lonely and insecure. It is suggested that the parents pay close attention to children by more and plenty of communication and interaction. For young children who are hospitalized, parents need to prepare pacifying items such as pacifying towels, sleeping toys, etc. Parents can also provide video or audio chatting with children, in order to relieve children's emotional stress response such as anxiety, fear, and promote the recovery process.

**68. How to quarantine the neonatal whose mother is a confirmed or suspected case of COVID-19? Could the neonatal be breastfed? What are the precautions of home nursing for the neonatal after discharge?**

**Ans:** The neonates born from mothers who are confirmed COVID-19 should be transferred to quarantining observation or treatment areas immediately for at least 14 days.

For the neonates born from mothers who are suspected cases of COVID-19, it could be determined according to their health condition that whether they should be transferred to quarantining observation or treatment areas. Before the mother and the baby could stay together or nurse at home, the baby should meet the discharge criteria and the mother's consecutive two results of viral nucleic acid tests (24 hours apart) are negative, as well the family would sign the informed consent.

Although the nucleic acid of 2019-nCoV is not yet found in the breast milk of maternal women who are confirmed or suspected cases of COVID-19, it's not recommended for maternal women to breastfeed during quarantine, as well to pump milk is encouraged to maintain lactation. After the quarantine period ending, with all the results of examinations and tests normal, including throat swab, anal swab, breast milk nucleic acid, blood antibody and lung CT images, neonates can be fed with pumped breast milk, or even through direct breastfeeding.

Following precautions should be taken during the period of the newborn's home stay. Proper room temperature and humidity should be set in the single room. Infants' care should be assigned to fixed person. The room should be opened regularly for ventilation. The caregivers should wash their



hands and face frequently. The newborn's items should be disinfected correctly. It is recommended to use disinfectant water with 75% alcohol or chlorine containing to wipe the floor and furniture. Heat-resistant milk bottle and nipple should be sterilized by boiling. If parents or caregivers are suspected cases of COVID-19, they should be quarantine immediately until consecutive two results of viral nucleic acid tests (24 hours apart) for suspected cases are negative. Pay close attention to the temperature, mental reaction, respiratory status and milk intake of the newborns.

**69. How to perform follow-up of the neonatal during the pandemic?**

**Ans:** All the high-risk infants, including preterm babies with gestational age <34 weeks and/or birth-weight <2000g, or newborn babies that suffered from severe diseases at postnatal early days, such as asphyxia, severe hyperbilirubinemia with exchange transfusion therapy, severe pneumonia received mechanical ventilation, severe infection, intracranial hemorrhage, should receive follow-up according to medical advice when discharge.. Follow-up duration could be extended appropriately during the pandemic of COVID-19. It is recommended that online consultation first, then to make the appointment for face-to-face visiting after the pandemic. Generally, first follow-up is initiated on the 2nd week after discharge. Detailed information including the discharge summary should be prepared before visit, in order that the doctor establishes follow-up record and make a customized plan for the baby. Contents of follow-up include physical examination, growth assessments, and neuro-developmental/motor assessments, feeding consultation, nutrient recommendation and early-stage development promotion guidance. Multiple subspecialty follow-up should be scheduled. For example, follow-up plan of retinopathy of prematurity should be attended with an ophthalmologist, and hearing problems should be scheduled with a pediatric otolaryngologist. As for these infants who suffered from congenital heart disease, congenital hip dysplasia, surgical operation, inherited metabolic disease, they need to be referred to relative specialists for more close follow-up if necessary. Vaccination procedures of the preterm are as same as mature infants. However, vaccination of BCG should be delayed once preterm's weight <2.5kg. Vaccination can be postponed appropriately during the pandemic of COVID-19 and supplemental vaccination can be arranged after the pandemic.

**70. How to deal with the common problems of newborns during the pandemic?**

**Ans:** Newborns are susceptible population for 2019-nCoV. During the pandemic, newborns should be strictly prohibited from contacting high-risk groups, including confirmed or suspected cases and close-contact case. Avoid visiting newborns and mix the caregivers.

Common problems about infants includes feeding problems, such as emesis, vomiting, stooling irregular, etc., nutrition inappropriate, jaundice and problems of the skin such as severe eczema, diaper rash, abnormality of the umbilical cord. Follow regular principle of newborns to care these newborns, if necessary, perform counseling and consultation online. It's worth noting that newborns' diseases are lack of specificity, and once newborns occur the following manifestations, including temperature fluctuation (hyperthermia or hypothermia), lethargic or inactivating to stimulation, milk refusal, recurrent vomiting, dyspnea, obvious jaundice and skin infection, etc., seek medical attention immediately and pay attention to protection during the visiting hospital.

**71. How to improve children's immunity?**

**Ans:** Immunity system is the body's defense system. The following measures can be taken to improve children's immunity, which help to prevent infection or recovery after infection. (1) Establish and maintain a healthy routine, especially at home, sleeping and eating on time. (2) Diet: Insist exclusive breastfeeding within 6 months, continue breastfeeding to one year or longer and gradually add complementary food between 4-6 months. Provide children with comprehensive and diverse nutrition, stay away from junk food, limit high sugar and fat food intake, and increase healthy fruit and vegetable options. (3) Exercise: Find some exercise programs that the child can actively participate in, and maintain appropriate frequency and intensity. (4) Keep the child's optimistic and healthy mentality, first of all, manage your own stress stable, pay attention to the child's psychological state, encourage child to express emotions, and relieve bad emotions in time. (5) Keep good hygiene habits, please refer to Q&A 63 and 64 for details. (6) Get vaccinated following the recommended child and adolescent immunization schedule, when situation permits.

**72. What are the precautions for children when returning to school?**

**Ans:** (1) Follow the arrangement of government and school: Returning to school is related to the physical and mental health and study work of every child, especially in this special period, parents should actively cooperate with the government and school arrangement, wait for the notice of school opening, and carry out physical examination, medical history inquiry, epidemiological investigation, etc. and provide information truthfully without reservation or concealment.

(2) Personal articles preparation: The articles are prepared to provide children with diaphragms, sterilized wet paper, warm boiled water; the clothes should be easy to wear and take off, with cotton and loose.

(3) Outgoing preparation: On the way to school, children should wear a mask, it would be first choice to take a private car, bike or walk to the

school. When taking public transportation, keep a distance of more than 1 meter from others, reduce conversation, don't eat food and follow the coughing and sneezing etiquette. Open windows if possible, don't touch face after touching the handrail and other public areas, and especially don't rub eyes, mouth and nose, and wash hands or wipe hands with sterilized wet tissue in time when getting off bus or subway. Parents who shuttle children from school should be in good health and wear masks.

(4) Health observation: Take temperature of children before leaving home and after returning home every day, observe whether the child have cough, fever, diarrhea, and how is the mental reaction, etc. In case of any situations mentioned above, call the teacher and see a doctor in time. At the same time, parents should tell children that at school, they should report to the teacher immediately if they feel fever, cough and other discomfort, or find that some students have physical abnormalities.

(5) Reasonable diet and adequate nutrition.

(6) Proper activities and adequate sleep.

## **The elderly protection**

### **73. What are the precautions for the elderly during the pandemic?**

**Ans:** Because the elderly suffer the decreasing about defense in whole body and partial respiratory tract and immunity function, the reducing about reserve function of important organs, and a variety of chronic diseases at the same time, the elderly are not only susceptible to 2019-nCoV, but easy to develop severe infection.

During the pandemic of COVID-19, the elderly should first pay attention to diet and sleep patterns, maintain a happy mood, and avoid immunity decreasing which caused by irregular life or psychological pressure. It is recommended to keep moderate exercise to boost immunity, but avoid catching cold after strenuous activity.

The elderly with chronic diseases should continue to take medication and monitor the changes of condition. If the condition is stable, the elderly should take the medicine on time. Check the amount of the medicine left regularly, make an appointment to buy the medicine at the hospital or pharmacy in advance, to avoid the interruption of treatment due to the lack of medicine, and return to the hospital for follow-up after the pandemic is under control. If it is necessary to go to the hospital for medical treatment due to the change of the condition, try to avoid taking public transport if possible, wear a mask, and try to keep a distance of more than 1 meter from other patients, avoid touching the mouth, eyes, nose with hands, pay attention to timely changing coat and washing hands after return from the hospital.

**74. How to prevent the elderly from COVID-19? What are the precautions for them to treat COVID-19?**

**Ans:** (1) Try not to go out, don't gather to have meals or party. You must wear a mask all the time when you are out. It is best to walk or drive if you want to go out, choosing a place with few people and good ventilation. Avoid shaking hands, and it is recommended to keep a distance of more than 1 meter and not to talk too close when meeting acquaintances.

(2) When visiting the elderly, you should wear a mask, change shoes, take off coat, and wash hands as soon as entering the gate. You should disinfect the items with alcohol to prevent the frail elderly living at home from being infected by foreign visitors.

(3) Open the window regularly for ventilation. It is recommended to increase the number of ventilations and reduce the ventilation time. At the same time, keep warm to avoid colds caused by excessive indoor and outdoor temperature differences in winter.

(4) Pay attention to personal hygiene and do daily disinfection. Wash hands frequently. Pay attention to the deterioration of sebaceous glands in the elderly, and their skin is prone to dryness and chapped skin. It is recommended to put a hand cream by the hand wash basin and apply hand cream after washing to protect the skin of the hands. For disinfectants, products with small respiratory tract irritation should be selected. 75% alcohol is preferred for disinfection. Chlorine-containing disinfectants can also be used. However, those who are allergic to chlorine or may have respiratory irritation symptoms should not use chlorine-containing disinfectants.

(5) Maintain good habits. Balanced diet, reasonable diet, and multiple nutrition could increase immunity. Exercise moderately, without strenuous exercise, it is recommended to do Tai Chi, radio exercises, Baduanjin and other sports. Get information through the official media, don't listen to rumors, and communicate online with relatives and friends to keep your body and mind happy.

(6) Elderly patients with chronic diseases should take medicine regularly, and medicines can be purchased through substitution instead of directly purchase. If you experience cold symptoms during the pandemic, first consider whether you have a history of contact with patients of COVID-19 within 14 days. If there is no history of contact and the condition does not worsen, you can follow the general cold treatment without going out to the doctor. If the condition worsens, and COVID-19 symptoms appear, immediately contact the community and relevant medical institutions for testing, investigation, isolation or treatment.

**75. How to deal with when the elderly have suspected symptoms?**

**Ans:** The following measures should be taken if the elderly have the suspicious symptoms, such as fever, cough, sore throat, chest distress,

dyspnea, fatigue, nausea, vomiting, diarrhea, conjunctivitis, muscle soreness, etc., during the pandemic:

- (1) Avoid close contact with others
- (2) Healthcare providers assess their health status, send them to medical institutions depending on their condition, during the way to medical institution wear a mask and try to avoid taking public transportation.
- (3) Those close contacting with suspected cases should be recorded immediately and conducted medical observation.
- (4) Avoid mass activities, such as parties and dinners, don't arrange meal together.
- (5) If the elderly with suspected symptoms is confirmed to be infected by 2019-nCoV, the people close contacting with the elderly should accept the medical observation lasting 14 days. Once the patient leaving, the house and circulation should be disinfected in time.

**76. What are the protective measures for the elderly at home during the pandemic? How to keep healthy diet?**

**Ans:** For the elderly at home, it's necessary to strengthen the dissemination of knowledge about the prevention and control of pandemic, and guide the elderly and their families to recognize and prevent the disease scientifically, increase the awareness of prevention and control, and improve the ability of protection. Avoid going out, if need going out, make sure good personal protection. Due to weak physique of the elderly, it's worth noting especially the basic diseases, including hypertension, diabetes, coronary heart disease, chronic obstructive pulmonary disease, and so on. Diet: Because the body's nutrients of the elderly are easy to miss, the dietary diversity needs to attract attention, keep nutrition balance, and increase the resistance to prevent COVID-19 infection. As well, avoid food oily, too sweet and too salty, and eat more coarse fiber food, and drink more water.

**77. How to monitor the health status of the elderly through community organization?**

**Ans:** During the pandemic, the community staff should arrange the management of the elderly health records, and perform daily health registration.

**78. What are the protective measures for the elderly in nursing centers?**

**Ans:** Reduce visiting, protect the infection, under the guidance of CDC, and screen the elderly with fever. Early finding, early reporting, and make the registration and deal with related processing work. Stop organizing aggregation activities, implement strict disinfection, and maintain environmental health, and properly disposal garbage and sewage. Timely procure and distribute daily protective supplies, and provide

psychological adjustment. Once a suspected case of COVID-19 occurs, it should be immediately referred to designated hospital for treatment.

**79. What are the precautions to visit the elderly in nursing centers during the pandemic?**

**Ans:** Visits should be reduced and strictly managed during the pandemic. Staff should establish a registration system for visitors. If the visitors have suspicious symptoms of COVID-19, staff could refuse the visitor. All visitors should wear masks.

**80. How to keep healthy psychological status for the elderly? How should the family concern about the elderly?**

**Ans:** When facing to the pandemic, it is normal for the elderly to feel nervous, upset, confused, afraid, or irritable, and the elderly could have more conversation with families and friends. It is particularly important to maintain a normal diet, sleep and exercise, keep a good attitude and enhance self immunity. It needs strains that playing cards, drinking, staying up late, and focus on the information of COVID-2019 released by the official resources, no rumors and no disinformation. During the pandemic, the families and friends of the elderly should give more companionship, greetings and tolerance to them, and provide specific and effective assistance to the problems from the elderly. As well, pay more patience and respect to the elderly, and help, reminder and encourage the elderly in the ways they accept.

## **People with concomitant diseases protection**

### **Cardiovascular and cerebrovascular patient protection**

**81. How to prevent cardiovascular and cerebrovascular diseases during the pandemic?**

**Ans:** First, the patients cannot stop taking medicine. The pandemic has last for a long time, and many patients with chronic diseases keep the medicine decreasing, but would not go to the hospital for prescribed medicine due to the risk of infection in the hospital. For those patients of chronic cardiovascular and cerebrovascular diseases need to take medicine in a long term to control the condition, they cannot stop taking medicine. For instance, those coronary heart disease patients cannot stop taking anti-platelet drugs, especially for patients with stent implantation. Otherwise, they would suffer thrombosis in the stent. It's similar with statin, anti-hypertensive, anti-sugar drugs. If the medicine

reserves are insufficient, the patients have to storage in advance. Second, monitoring should be strengthened. Patients with cardiovascular and cerebrovascular diseases must be well aware of their own symptoms and related signs, and should measure daily blood pressure, heart rate, temperature, weight and make a record, if there is a sudden or rapid increasing in blood pressure, heart rate or body weight, it's to be considered the possibility of cardiovascular disease aggravation. In addition, we should maintain good living habits. Diet reasonably, don't overeat, but don't go on a diet too much. Especially to be reminded, during the holidays, people may eat a variety of foods with high salt content, so it is important to limit salt intake, or it is likely to lead to high blood pressure and heart failure. No live poultry, game, or fresh birds. Meat and eggs should be cooked well. Add proper amount of meat, eggs, fruits and vegetables, keep nutrition balance. If it is take-out food, it should wait and no to carry until the courier leaving, which can reduce the risk of contact. For items from outdoor, it must be wiped with medical alcohol, and its packing should be disinfected before touching them by hands directly.

**82. How to distinguish chest distress and short breath caused by cardiovascular diseases from those caused by COVID-19?**

**Ans:** During acute attacking of many cardiovascular diseases, the symptoms of palpitation, chest distress and short breath would occur, and it's more obvious especially after heart failure is induced, even lead to severe dyspnea. The manifestations of COVID-19 patients, especially severe cases, are dyspnea and short breath. How to distinguish them? First of all, chest distress and short breath caused by cardiovascular diseases is often associated with activity and will be accompanied by more obvious aggravation of basic diseases, such as significantly increasing blood pressure and weight gain, and sunken edema of lower limbs and so on. However, palpitation, chest distress and short breath in COVID-19 patients are often caused by pulmonary infection, and accompanied by fever, cough, sputum, fatigue, muscle soreness and other related symptoms. Infection is an important cause of the aggravation of cardiovascular diseases, and the most common infection is upper respiratory tract infection, commonly known as cold. The symptoms of a cold are very similar to those early symptoms of COVID-19, but there are clear differences. The common cold is usually characterized by runny nose, sneezing, coughing and phlegm, while the early symptoms of COVID-19 are mainly dry cough, fever, fatigue and soreness. When it's hard to distinguish the reason to cause chest distress and short breath, it's recommended to seek medical attention as soon as possible, and conduct the identification of diagnosis and treatment, to avoid delaying.

### **83. How to nurse cardiovascular patients during the pandemic?**

**Ans:** How to carry out effective care for the patients with cardiovascular and cerebrovascular chronic diseases, who are in bed for long term or accept treatment at home? How do the families take care of them? The following are the precautions to nurse them.

(1) Limit the number of caregivers to one family member with no underlying illness and refuse all visitors.

(2) Wear a mask in the same room. Wash hands before wearing the mask. Fully expand the folding surface, completely wrap mouth, nose, and jaw, and press the nose clip so that the mask fits completely to the face. The mask must be exchanged immediately when becoming wet and dirty because of the secretions. After removing and discarding the mask, wash hands.

(3) Pay attention to the change of the patient's condition, especially the body temperature, respiratory status, mental state, and the symptoms of chest distress, fatigue, diarrhea and other symptoms. If the symptoms do not improve or worsen, seek medical attention with personal protection. Caregivers are required to take their own temperature daily for self-observation.

(4) Patients with symptoms should be "home quarantine" before the symptoms disappear, and whether the quarantine can be removed depends on clinical symptoms evaluation and/or laboratory test results (negative results of two RT-PCR tests at least 24 hours apart).

### **84. How can patients with heart failure manage themselves during the pandemic?**

**Ans:** Once heart failure patients are infected by 2019-nCoV, 30-day mortality can be as high as about 25%. The treatment and management of heart failure is a long - term process. Both stop taking medicine and irregular taking medicine may lead to significant increases in heart failure. So be sure to do the following points:

(1) Actively prevent and treat the infection: During the pandemic of COVID-19, prevent the infection of 2019-nCoV, as well actively prevent and treat the common cold and other infections, and any type of infection is the factor for heart failure worsening.

(2) Strengthen self-management of patients with heart failure: carefully record the uncomfortable symptoms and possible causes, such as dyspnea and edema; Record blood pressure and pulse; Weight daily (on fixed time), and maintain normal weight (patients or family members with experience can increase or decrease diuretics); Take medicine according the prescriptions; A proper low-salt diet with limited water and beverages; Quit smoking and limit alcohol; Keep moderate activities; When the condition changes, find consultation and consultation online, once the condition obviously aggravates, seek emergency to the medical institution.



(3) Continue to treat primary cardiovascular and cerebrovascular diseases which cause the heart failure, including controlling hypertension, diabetes, coronary heart disease, rheumatic heart disease and so on.

(4) If it's needed to take relevant therapeutic drugs due to infection-related pandemics, be sure to take medicine under the guidance of doctors, and to prevent the occurrence of drug interactions that may lead to complications. Meanwhile, it should be alert that the toxic and side effects of COVID-19 on the heart.

**85. What are medication precautions for patients infected 2019-nCoV and combined with hypertension?**

**Ans:** For hypertension patients with long-term medicine treatment, if blood pressure is controlled well ((blood pressure < 140/90 mmHg), it is not recommended to replacing medicine prescription. Severe and critical cases should be managed by individually. For patients with large fluctuation range of blood pressure, or obvious uncomfortable symptoms, or significant increasing in blood pressure, it's recommended to consultation online or hotline, or visit the outpatient to adjust treatment options. For hypertension patients newly diagnosed but no medicine treatment, if non-medicine treatment invalid, individual therapy could be determined under the guide of doctors. About medicine against hypertension, despite of the potential threat from COVID-19, the medicine recommended by guidelines of hypertension control currently can be safely used and does not affect the efficacy, which include calcium channel blocker (CCB), diuretics, ACEI or ARB and  $\beta$  blocker, and so on. When drug adverse reactions occur, it's recommended to consult doctors to exchange medicine, not to replace by self. To avoid the spread of COVID-19, only with the emergency and critical changes of hypertension condition, going to designated medical institution could be considered. It has been controversial in academia about whether hypertension patients combined with COVID-19 could take the medicine of angiotensin converting enzyme inhibitor (ace inhibitors) or angiotensin II receptor 1 inhibitor. But presently existing clinical data indicate that the two kinds of medicine are still safe and effective for hypertension patients combined with COVID-19, and those hypertension patients, who have been taking these medicines for a long time, do not need to change the prescription.

**86. Which cardiovascular patients can be isolated at home during the pandemic?**

**Ans:** Patients of cardiovascular diseases with clear diagnosis and stable condition should try to reduce or avoid returning the hospital and reduce the risk of cross infection during the pandemic. Patients with long-term medication plan or lasting medication plan should take the medicine

regularly, and avoid reducing or stopping medicine by self, and monitoring the changes of condition within medication. For example, when patients with atrial fibrillation should take anticoagulant medicine, like warfarin and liverasaban, they could not reduce the doses by themselves, as well be alert to the complications such as gastrointestinal bleeding. For patients with cardiovascular diseases after radiofrequency ablation, cardiac pacemaker implantation and coronary artery stent implantation, the follow-up time can be extended if there is no discomfort, or only palpitations and panics that do not affect daily life.

For patients who plan to receive elective surgical treatment for cardiovascular diseases, hospital treatment should be avoided as possible and surgery would be chosen after the pandemic is controlled. For example, patients with paroxysmal supraventricular tachycardia or idiopathic premature ventricular beats who may be treated with radiofrequency ablation of the heart, or patients with atrial fibrillation who may be treated with radiofrequency ablation or left auricular occlusion, or may have bradycardia (pathological sinus node syndrome, which does not require emergency treatment), could be treated with medication during the pandemic. Paroxysmal supraventricular tachycardia may be terminated by vagus nerve stimulation, instead of elective surgical intervention.

For emergency patients with fatal attacks of cardiovascular diseases, such as ventricular tachycardia and ventricular fibrillation combined with organic heart diseases, rapid cardiovascular diseases merged heart failure, bradycardia (sick sinus syndrome, atrioventricular block) with syncope, or a sudden attack of supraventricular tachycardia need to emergency treatment, all these are still needed to go to hospital for treatment. Those patients of acute or critical cardiovascular disease should see a doctor as soon as possible, and it is not suitable for home treatment.

#### **87. How to conduct safe home isolation? How to ensure safety of cardiovascular patients during isolation?**

**Ans:** World health organization (WHO) guidelines state that the use of alternative isolation methods, including home isolation, should be considered when hospitalization conditions are inadmissible or unsafe, such as treatment capacity and/or medical resources insufficient. Among them, the patients without contact history of pandemic area, and with mild symptoms (low fever, cough, nasal discharge, pharyngeal pain without signs) and without chronic disease (such as lung disease, heart disease, kidney failure, immunity disease), can be considered to home quarantine. Opening windows for ventilation helps to reduce the amount of virus perhaps existed in the room, and also helps to update the indoor air. As well, it should be paid attention to add clothes in time and avoid a cold. Isolation residence is best to a single room, if conditions not permit,

keep 1 meter at least away from other family members.

Prevent droplets transmission: when coughing or sneezing, wear a surgical mask, or cover with tissue paper or bent elbows. Paper towels and other disposable products should be discarded directly after using, and towels can be used after the correct cleaning, as well wash hands immediately. Use disposable gloves to nurse the mouth and respiratory of the quarantine patient, and to handle feces, urine and waste, which avoid direct contact with patient's secretions and contaminated surfaces.

Prevent contact transmission: wash hands with running water after any direct or indirect contact with the isolates or their secretions. Clean and disinfect household items, the surfaces of bathroom and toilet at least once a day with a household disinfectant containing diluted bleach. Wash clothes and sheets of the isolator with ordinary laundry soap and water, or wash them with 60–90°C hot water and ordinary household laundry detergent in washing machine, and then dry them completely. Minimize the share areas and items of family members. If they are share, ensure disinfection or ventilation after usage.

For patients suffering chronic cardiovascular and cerebrovascular diseases, the following precautions should be paid special attention during home isolation: (1) Continue to monitor blood pressure, blood sugar, heart rate and other important indicators. (2) Continue to stick to the original drugs for chronic diseases, make a drug reserve when necessary, and learn the drug access channels during the pandemic. (3) Avoid isolation alone and get medical assistance in time when necessary. (4) Prepare enough first-aid medicines.

### **88. How to prevent myocardial infarction during home isolation?**

**Ans:** How to prevent heart attack for patients at home isolation? The precautions including:

(1) Add water in time, and give priority to with boiled water, which the beverage such as coffee, functional drinks cannot replace boiled water.

(2) Avoid sitting for a long time. Usually, you must change your position every 1 hour or stand up for distance investigate, or do some exercise.

(3) Quit smoking, especially smoking at night would be easy to increase risk of cardiovascular accidents.

(4) Keep warm, be careful the cold back. Keep head, neck, chest and abdomen warm. Avoid temperature changing sharply lead to blood vessels tightening and cause accidents.

(5) Keep a good sleep, but not sleep too much, and remain live regularly. Some indoor exercises are commended to keep body active.

(6) Keep a good attitude and don't panic. There is no winter insurmountable, and there is no spring will miss.

(7) Regular meals, less fried or high-salt food, keep meat and vegetable balance.

(8) Patients with hypertension and hyperglycemia should be monitored and controlled regularly. If feeling uncomfortable, seek medical attention at hospital or consultation on line.

**89. What to do when suffering sudden myocardial infarction during home isolation?**

**Ans:** Psychological panic, irregular sleep schedule, smoking, lack of exercise are likely to occur when isolated at home. In addition, sharply dropping of temperatures, as well, poor control of existing hypertension and diabetes would increase the risk of heart attacks. During the home isolation, the following symptoms should be alert for heart attack: (1) Pain: Mainly stuffiness and colic around the area of heart anterior, sometimes even the pain about shoulder armor or back pain, which can't be careless. (2) Chest distress: Feeling a heavy weight on the chest and dyspnea. (3) Sweat: It is usually manifested as dry mouth, accompanied with sweat profusely, mainly cold sweat. (4) Dizziness: Insufficient blood supply of cardiovascular often leads to insufficient blood supply of the blood vessels in the brain. The golden time of treatment for acute myocardial infarction is 120 minutes after the onset. If the above situation cannot be alleviated, please immediately call 120, lie down in a safe place and wait for rescue. While waiting for the rescue, immediately lie the patient down and let him rest, unfasten the collar, keep the ventilation and warm, take 1 tablet of nitroglycerin under the patient's tongue. It was recommended to chew and swallow 300 mg of aspirin and clopidogrel for each.

**90. How to maintain a good state of mind for cardiovascular disease patients in the pandemic?**

**Ans:** During the pandemic of COVID-19, most people have to stay at home instead of going out, which can lead to a variety of changes in personal mood and mindset. Stress, anxiety and other bad moods may cause the immunity system to be inhibited and body resistance reducing. So, people need to overcome negative emotions and react positively. There are many kinds of negative emotions, such as depression, anxiety, tension, fear, loss, sorrow, injustice, tangle, suspicion, grief, sadness, and so on, all of these feelings can lead to the central nervous system disorders, endocrine disorders, viscera function abate, immune function inhibited, and even collapse, which could make all kinds of bacteria and viruses to spread and outbreak under the monitoring of body's immune system ineffective, even invalid.

Keeping an optimistic and positive attitude can not only get rid of diseases, but also live a long life, because optimistic and cheerful personality, positive attitude can improve human immunity. To be infected by COVID-19 should be the immune system loses the battle. So keep

optimistic, believe in own self, the pandemic would be able to be defeated.

## **Patients with liver diseases protection**

### **Precautions for patients with hepatitis B during the pandemic**

**91. If I am on oral antiviral treatment and the condition is stable, can I just continue taking the medicine and delay the follow-up?**

**Ans:** If you're a chronic hepatitis B patient with the treatment of oral antiviral medicine, it's recommended to continue taking the medicine, not stopping, and accept further consultation until the pandemic is under control. In the case of insisting on the treatment, the majority of patients is in a stable condition and will not get worse suddenly. If the treatment is being stopped at will, the condition may rebound and the hepatitis may break out, or even progress to liver failure. So insisting on oral antiviral medicine treatment is very important. In order to avoid missing taking the medicine, to set an alarm clock to remind is a good choice. In addition, it is recommended to check the amount of medicine remaining regularly. In order to avoid the treatment interruption due to lack of medicine, make an appointment in advance to the hospital or pharmacy.

Precautions of living should be focused during home quarantine (see Q&A95).

**92. Do I have to accept follow-up as scheduled if I haven't received antiviral treatment at present?**

**Ans:** If you are a chronic hepatitis B patient without antiviral treatment temporarily, it's recommended to keep observing the symptoms until the pandemic is under control. The patients who don't need to undertake the antiviral treatment are those results of liver function and ultrasound are normal for many times. The immunity systems of these patients are in the immunity tolerance period to hepatitis B virus, as well no obvious inflammatory damage in their liver tissues, so antiviral treatment is not necessary for them.

Precautions of living should be focused during home quarantine (see Q&A95).

**93. What can I do if I'm accepting interferon treatment?**

**Ans:** If you are a chronic hepatitis B patient with interferon treatment, it is recommended to continue interferon therapy, and accept further consultation until the pandemic is under control. The merit of interferon

treatment is mainly shown in the multiple effects of interferon. Interferon can not only counter against hepatitis B virus and tumor, but also have the effects to adjust immunity system and keep immunity monitoring. Therefore, interferon also has the ability to resist 2019-nCoV, and it's perhaps able to prevent the infection of 2019-nCoV if to continue interferon treatment. If you used to visit to the clinic for injection regularly, it is recommended to learn the injection by self and at home instead. Also, set an alarm clock to avoid missing shots. Check the remaining drug quantity regularly, and make an appointment in advance to the hospital or pharmacy to avoid the treatment interruption due to lack of drugs.

Drug side effects of Interferon treatment should be closely monitored. If the treatment is just started, most of patients will appear fever or symptoms like influenza, but these symptoms will gradually reduce or disappear as the treatment going on, while the symptomatic treatment just needed, such as physical cooling, or taking antipyretic when temperature is more than 38.5°C. Leukopenia and thrombocytopenia may also occur while long-term medication, but it is difficult to detect early without taking blood test. If you are weak and have rash, stop medication first, then go to the hospital for blood test, and generally recover by the self after stopping medicine. When some symptoms appear like insomnia, anxious, depressed, excited, irritable, palpitation, chest distress, dyspnea, arthralgia, etc., stop medicine immediately, and to decide whether to continue interferon treatment again after going to the hospital and checking.

Precautions of living should be focused during home quarantine (see Q&A95).

**94. What can I do that I have the onset signs of hepatitis B presently?**

**Ans:** First of all, to be aware of the onset symptoms of hepatitis B. (1) Constitutional symptoms: physical exhaustion, fatigue and poor spirit. (2) Gastrointestinal symptoms: Loss of appetite, nausea, oil aversion, upper abdominal discomfort, abdominal distension, etc. (3) Jaundice: Yellow staining of sclera, skin and urine. And the skin would be itchy when jaundice is particularly serious. (4) Discomfort or pain in the liver area: For part of patients, discomfort and dull pain appears right upper abdomen or right quarter rib. When the symptoms are mild, first rest and observe at home. If the symptoms continue to worsen and increase, go to the hospital immediately.

**95. What are the life precautions?**

**Ans:** First, emphasize lifestyle management, maintain diet and sleep regular, leave appropriate time for entertainment, and avoid staying up late leading to poor rest and missing sleep. Overwork and staying up late

may destroy the function of human immunity system, which will result in the onset of liver diseases, as well unhelpful to prevention of COVID-19 and influenza.

Second, do moderate exercise. The basic principal is step-by-step and could-be-tolerated. Avoid suddenly excessive exercise which perhaps caused the injury of body.

Drinking does harm to liver, and is risky to induce the onset of liver disease for people suffered chronic hepatitis B. It's recommended to leaving away drinking and avoiding the liver worse.

Close monitor the symptoms, including fatigue, loss of appetite, nausea, yellowing of urine, bloating and other discomforts when at home.

At last, make understanding and treat correctly the pandemic, reduce mental stress and keep happy attitude.

#### **96. What can I do if I or my spouse is pregnant now?**

**Ans:** (1) In general, the part of the couple without hepatitis B infection, needs to take blood test for hepatitis B five items of liver function before ready to pregnancy. If there is no surface antibody, it is necessary to get hepatitis B vaccine to ensure that the pregnancy is protected under the surface antibody of hepatitis B. During the pandemic, if be pregnant without the above preparation, the part of the couple should take the test 3 months later to clarify whether being infected.

(2) If the man of the couple suffers from hepatitis B, in general, when the man accepts regularly the evaluation of hepatitis B condition and the liver function test result is normal, to be pregnancy is acceptable. During the pandemic, when the man's condition is stable and the woman is pregnant, she can complete the necessary obstetric examination according to the opinion of the obstetrician.

(3) If the woman suffers from hepatitis B, most of requirements needed could not be omitted during the pandemic. Before the pregnancy, the first thing is to complete the assessment of hepatitis B condition, including liver function, Doppler ultrasound of liver, gallbladder and spleen, etc, and the doctor will help to decide the treatment plan. The possible conditions include: ① direct pregnancy preparation and regular obstetric examination, ② antiviral treatment and / or other treatment for liver function abnormalities, ③ replacing antiviral drugs, ④ delay pregnancy or it is not suitable for pregnancy. If an unexpected pregnancy occurs during the pandemic, and it's temporarily unable to go to the hospital for examination, to consulate online with a recent examination result.

After pregnancy, there are two important time points when the pregnant woman should visit and consult a doctor: ① If no antiviral drugs treatment before pregnancy, within 24-28 weeks of pregnancy age, the hepatitis B virus quantity would be tested to determine the method of mother-child

blocking; ② When the baby is born, the baby need to get vaccine and immune globulin of Hepatitis B, pregnant woman should consult a doctor whether she should stop using antiviral drugs and could breastfeeding.

(4) Other special circumstances: If the patient is accepting interferon treatment or stop interferon within six months, as well the patient or the spouse accidentally become pregnant, it' s recommended to promptly consult the doctor online how to deal with it. If the man is taking oral antiviral medicine, there is no need to worry about the impact on the baby.

If you are not sure exactly what kind of situation you are, it is recommended to contact the doctor with various methods such as online, video, which it' s better to be judged by the doctor.

## **Precautions for patients with hepatitis C during the pandemic**

**97. I' m on the treatment of oral antiviral medicine. Can I just continue to take the medicine and delay the follow-up?**

**Ans:** Antiviral therapy for hepatitis C generally includes two methods, one is interferon injection and the other is direct oral antiviral small molecule compounds (DAAs). Because of relatively few side effects, DAAs are currently the preferred choice for antiviral treatment of hepatitis C. The treatment scheme is simple and easy to operate, and the course of treatment is relatively short. Generally, to take oral drugs can achieve the ideal therapeutic effect within 12 weeks. For DAAs, patients are required to undergo a series of examinations at the beginning, 4 and 12 weeks to monitor therapeutic efficacy and possible side effects. These examinations included hepatitis C antibody, HCV-RNA quantification, hepatitis C genotyping, liver and kidney function, AFP quantification, blood routine, Ultrasonography or CT of liver, electrocardiogram, and Fibroscan (liver fiber scan) test.

During the pandemic of COVID-19, it is a little difficult for patients with hepatitis C to regular follow-up. For mild patients, if they do not have uncomfortable reactions, do not have the underlying diseases or complications, and have the continuous normal results of liver and kidney function and blood routine, they can appropriately delay the examinations or cancel the tests at 4 weeks. However, stopping medicine before the end of treatment is prohibited. Patients should maintain communication with their doctors in advance to avoid treatment interruption and poor efficacy due to lack of medicine. Once the course is over, patients were advised to go to the hospital for full tests as soon as possible depending on the severity of pandemic. For patients with adverse reactions or with underlying diseases or definite complications, regular follow-up must be carried out strictly in accordance with the requirements of the doctor during oral antiviral medicine treatment. Side effects of different drugs



are quite different, some affect liver function, and some affect renal function. Under the premise of complying with the regulations on pandemic prevention, patients can go to the department of infectious disease, gastroenterology department or emergency medicine department for rechecking the tests or examinations to avoid serious adverse reactions resulting in irreparable consequences.

**98. Whether do I have to accept follow-up as scheduled while I am already cured after anti-viral medicine treatment?**

**Ans:** Considering the possibility of HCV recurrence, the patients must go to the hospital regularly for check-ups after the cure, and it's best to last for the whole lifetime. In general, the items of checkups include HCV antibody, HCV-RNA quantification, liver and renal function, AFP, blood routine, ultrasonography or CT of liver, fibroscan, etc., and the time interval for checkups is 3 to 6 months. In addition, even if hepatitis C virus has been negative, there is still a risk to develop to liver cancer, and the original manifestations of liver, such as inflammation, liver fibrosis and cirrhosis, will not disappear completely. These conditions should remain close surveillance and follow-up.

During the pandemic, it's difficult to follow-up for HCV patients due to the restrictions of pandemic prevention and insufficient staff support in outpatient departments caused by COVID-19. For mild patients who have been cured for HCV and have no more any symptoms and complications, the time interval of follow-up could be delayed appropriately. However, the patients have to strictly keep rest rules regular, avoid staying up late and alcohol drinking, and take liver protective drugs on time. Once the symptoms occur, like fatigue, yellow urine, lack appetite or liver discomfort, and so on, the patients must seek medical attention immediately and the delay is strictly forbidden. For severe HCV patients, or patients with obvious liver cirrhosis, abnormal liver function or any complications, follow-up must be conducted on time. Under the premise of complying with the regulations on pandemic prevention, patients can go to the department of infectious disease, gastroenterology department or emergency medicine department for rechecking the tests or examinations to avoid serious adverse reactions or serious complications.

**99. What can I do if I'm accepting interferon treatment?**

**Ans:** At present, there are few patients still to choose interferon injection to treat hepatitis C, and it's mainly long-lasting interferon, and few are short-lasting. Interferon treatment is usually used in combination with oral ribavirin. Compared with DAAs, the treatment of interferon combined with ribavirin would last longer, generally from 6 to 12 months, and the negative conversion rate is relatively low, and more patients have recurrence after negative conversion. In addition, the side

effects of interferon combined with ribavirin treatment are significantly higher than DAAs, including injection pain, early injection fever, white blood cell decrease, platelet decrease, hemoglobin decrease, liver function abnormalities, etc. Therefore, when interferon combined with ribavirin is used to treat hepatitis C, the patients are required to follow-up at least every 4 weeks for those tests or examinations, which including blood routine, liver and kidney function, alpha-fetoprotein quantification, and fundus examination. HCV-RNA quantification and liver B-ultrasound are used to monitor the effects of drugs and possible side effects during treatment.

During the pandemic of COVID-19, it is a little difficult for patients with hepatitis C to regular follow-up. For patients with mild side effects of interferon, or who have taking interferon for more than 3 months and the side effects have been reduced, the time interval of follow-up could be extended appropriately. In general, the time interval between follow-ups has to fewer 3 months, and during the treatment, once significant side effects occur, such as repeated fever, nosebleeds, nausea, vomiting, lack appetite, yellowing of eyes and urine, and so on, the patients should seek medical attention immediately and the delay is strictly forbidden. For patients who are initially treated with interferon or those who suffer from side effects during the treatment or those with poor interferon resistance in the underlying disease, it is recommended that they should be revisited every 4 weeks to avoid serious adverse reactions during treatment. Under the premise of complying with the regulations on pandemic prevention, patients can go to the department of infectious disease, gastroenterology department or emergency medicine department for rechecking the tests or examinations.

**100. What can I do if I haven't started the treatment for hepatitis C yet?**

**Ans:** According to the requirements of the guidelines for hepatitis C treatment, once patients have been confirmed to be infected by hepatitis C virus, the treatment should be started as soon as possible. The treatment of hepatitis C generally includes two parts, one is antiviral treatment, including interferon injection and oral administration of direct-acting antivirals (DAAs), and the other is the treatment of liver inflammation, fibrosis, cirrhosis and complications.

During the pandemic of COVID-19, the treatment of patients with hepatitis C encountered some difficulties due to the requirements of pandemic prevention, and it is not convenient to see a doctor. In this way, for those patients who have not yet started the treatment of hepatitis C, it is necessary to adopt different treatment strategies according to the stage of illness condition.

First, for asymptomatic patients, those who only test result positive for

HCV, but without any discomfort, or liver fibrosis, cirrhosis, liver tumors and other complications, they can wait until the pandemic is over before starting antiviral treatment. Because the progress of hepatitis C is very slow, and it is not easy to develop into acute liver inflammation, patients can wait patiently.

Second, for mild patients with mild liver dysfunction, or with mild liver fibrosis or early liver cirrhosis without serious complications, some liver-protecting and enzyme-lowering drugs and anti-cirrhosis drugs can be taken orally first. These drugs can be purchased through an online hospital after consultation with a doctor. And patients can wait for the end of the pandemic before antiviral treatment. Of course, patients need to be alert to changes in their condition, and they still need to see a doctor in time if their symptoms worsen.

Third, for severe patients with abnormal liver function, jaundice, liver cirrhosis, ascites, liver tumors, gastrointestinal bleeding or with other serious complications, patients must seek medical attention in time to avoid danger to their lives.

Under the premise of complying with the regulations on pandemic prevention, patients can go to the department of infectious disease, gastroenterology department or emergency medicine department for checking-up.

#### **101. What can I do if I or my spouse is pregnant now?**

**Ans:** In general, no matter who of the couple is infected by HCV, both the couple should wait until the treatment for HCV is completed before the pregnancy. So, if HCV have been cured already and the patient has finished the treatment with interferon injection for more than half a year, then after being pregnant, the pregnant woman just need to accept necessary prenatal examination according to the advice of the obstetrician. But if the couple or the spouse is receiving DAAs or interferon antiviral treatment, or the end of interferon treatment is less than half a year, when suffering the pregnancy accidentally, it' s recommended to consult the doctor online in time how to deal with. If the wife is infected by HCV and pregnant before starting antiviral treatment, the baby should accept the test for hepatitis C virus quantification after born, which can clarify whether the baby is infected. Whoever of the couple is infected by HCV, if the pregnancy is before the starting of antiviral treatment, the party without HCV infection should accept the check for hepatitis C antibodies after 3 months to clarify whether the body is infected. If you are not sure exactly what kind of situation you are, it is recommended to contact the doctor with various methods such as online, video, which it' s better to be judged by the doctor.

#### **Precautions for patients with cirrhosis during the pandemic**

**102. I'm on the treatment of oral medicine and the condition is stable. Can I just continue to take the medicine and delay the follow-up?**

**Ans:** Patients with cirrhosis need to go to the hospital regularly for follow-up. In general, test items including pathogen examination, liver and kidney function, alpha fetoprotein (AFP) quantification, blood routine, Ultrasonography or CT of liver, Fibroscan, etc. and the time interval for checkups is 3 to 6 months. If you are a cirrhosis patient with the treatment of oral antiviral medicine, and with stable conditions and no obvious symptoms or sudden complications, it's recommended to continue taking the medicine, not stopping, and accept further consultation until the pandemic is under control. However, the patients have to strictly keep rest rules regular, avoid staying up late and alcohol drinking. And in the case of adherence to treatment, the vast majority of patients are stable and do not suddenly worsen. Patients combined with esophagogastric varices need quarantine at home to self-monitor blood pressure and heart rate. Once the symptoms occur, like fatigue, yellow urine, lack appetite or liver discomfort, and so on, the patients must seek medical attention immediately and the delay is strictly forbidden. In order to avoid missing taking the medicine, to set an alarm clock to remind is a good choice. Furthermore, make an appointment to buy the medicine at the hospital or pharmacy in advance, to avoid the interruption of treatment due to the lack of medicine.

**103. What can I do if I have complications of liver cirrhosis?**

**Ans:** Common complications of cirrhosis include: ascites, esophagogastric varices, hepatic encephalopathy, hepatorenal syndrome, spontaneous peritonitis, etc. When the patient get obvious abdominal distension, abdominal pain, oliguria or even anuria, gastrointestinal bleeding, confusion or even coma, the patients should soon be sent to the department of infectious disease, gastroenterology department or emergency medicine department under the premise of complying with the regulations on pandemic prevention, and to avoid the danger of life.

**104. What any special precautions for daily life?**

**Ans:** First all, Patients with cirrhosis should pay attention to the management of lifestyle, maintain regular diet and sleep, avoid fatigue and stay up late. Fatigue and staying up late may reduce the body's immunity function, which easily lead to liver disease attacks, and are not conducive to the prevention of COVID-19 and flu. Secondly, proper exercise is needed. We should follow the principle of step by step and individual tolerance. Patients with cirrhosis should give up alcohol to avoid liver damage, and those who already have chronic hepatitis B are

at high risk of inducing liver disease. Stay away from alcohol and don't "adding insult to injury" for the liver. Patients combined with esophageal and gastric varices should have soft food. Pay attention to fried and hard food, to avoid inducing gastrointestinal bleeding. While at home, closely observing symptoms such as fatigue, loss of appetite, nausea, yellow urine, and bloating is needed. Finally, please correctly understand and treat the pandemic situation, reduce mental pressure, and maintain a happy mood.

### **Tuberculosis (TB) patients protection**

**105. I'm on the treatment of oral anti-TB medicine and the condition is stable. Can I just continue to take the medicine and delay the follow-up?**

**Ans:** If you are a tuberculosis patient just starting to take oral anti-tuberculosis medicine, it is recommended to closely monitor the possible side effects of the drugs. If occur the symptoms, such as fatigue, poor appetite, urine color and urine volume changes, hearing and vision abnormalities, skin rash, limb numbness, etc., it is recommended to stop taking the drug first, and go to the hospital and make the examinations to decide whether to adjust the drug. If you have been taking oral anti-tuberculosis drugs for a few weeks, and the condition is stable within last 3 months and not special discomfort, it is recommended to continue taking oral drugs, and then go to the hospital for examinations after the pandemic is under control. Under the condition of adherence to treatment, the condition of the vast majority of patients is stable. If the drug is stopped arbitrarily, the condition will be repeated and even bacterial resistance will be induced, which will increase the difficulty of retreatment. Therefore, medication must be continuous to take. To avoid missing medication, set an alarm clock to reminder. In addition, it is recommended to regularly check the amount of remaining medicine, make an appointment to the hospital or pharmacy in advance to obtain medicine, to avoid treatment interruption due to lack of medicine.

**106. Whether do I have to accept follow-up as scheduled while I am already cured after anti-TB medicine treatment?**

**Ans:** If you have finished the treatment of anti-tuberculosis, and be confirmed the cure, it is recommended to continue the observation, and go to the hospital for examination until the pandemic is under control.

### **AIDS patients protection**

**107. Whether do I have to accept follow-up as scheduled while I just started antiviral treatment?**

**Ans:** Patients who just start antiviral therapy need to monitor closely for the efficacy and side effects of antiviral drugs. It is suggested to keep in touch with the specialists actively, meanwhile following the prescription strictly to take the antiviral medicine, and weigh the risks carefully, make a reasonable plan for follow-up and implement.

**108. I'm on the treatment of oral antiviral medicine and the condition is stable. Can I just continue to take the medicine and delay the follow-up?**

**Ans:** If you are taking oral antiviral therapy and the condition is stable, it is recommended to continue the original antiviral treatment plan and visit to the hospital after the pandemic is under control. At the same time, it is recommended to regularly check the amount of remaining medicine, make an appointment to the designated medical institution or local CDC in advance to obtain medicine, to avoid treatment interruption due to lack of medicine. Remember not to stop the medicine without permission! Unauthorized discontinuation one or more of the antiviral drugs could not only perhaps lead viral replication to rebound, but also even induce drug resistance and increase the difficulty of subsequent treatment. In the case of insisting on treatment, you should closely observe your health status. If the condition changes, you should timely contact with the specialists through the online or hotline consultation platform, and update the next treatment plan according to the condition.

**109. What can I do if I have AIDS complications?**

**Ans:** If the symptoms like fever, cough, headache, diarrhea and other physical discomforts occur, you should contact a specialist to conduct consultations through a telemedicine platform via online or hotline first, and formulate treatment measures based on the condition. It's suggested to avoid going to the hospital, which reduce the risk of infection. If you must go to the hospital for diagnosis and treatment, it is recommended to wear a mask, avoid going to the places crowd and with many respiratory patients, as well avoid staying in hospital for a long time. At the same time, wash hands frequently, and do not touch your eyes, nose and mouth before washing hands.

**110. What can I do if I or my spouse is pregnant now?**

**Ans:** Fertility management for HIV infection is very complex in normal situation, and involves many processes, including early antiviral therapy, pre-exposure prophylaxis for unprotected sexual intercourse, antiviral treatment of artificial insemination, antiviral treatment during pregnancy, obstetric management, baby's antiviral treatment and

monitoring and breastfeeding. Among these, each process requires the professionals to participate. It's highly recommended for HIV infection patients not to choose to prepare for pregnancy during the pandemic. Because once medical services cannot be provided as the same level as normal, the spouse and the baby would be in a high risk to be infected. What can you do if you or your spouse has been an unintended pregnancy? For the couple with male positive and female negative, if the male has accepted standard antiviral treatment and achieved sustained virus suppression, the possibility of female infection is very small, and the female receives HIV antibody testing three months later to clarify whether being infected. In any other condition, it's recommended to consult the doctors online with the latest treatment plan and examination results. If you or your spouse has been pregnant before the pandemic, and had consulted with your doctor before pregnancy and followed standard management requirements for antiviral treatment and spouse exposure prevention, keep regular prenatal check-ups according to the advice from the obstetricians during the pregnancy, and make an appointment with the delivery hospital in advance. If antiviral treatment and/or spouse exposure prevention has been implemented, it is just necessary to consult the doctors online with the latest treatment plan and examination results. When a baby was born by an HIV-infected mother, based on the mother's antiviral treatment, the baby should take antiviral drugs as early as possible. So, it's very important to make an appointment in advance with an obstetric hospital capable of providing services before baby production. About baby feeding, promote artificial feeding, avoid breastfeeding, and prevent mixed feeding. If insist on breastfeeding, antiviral therapy of pregnant period should be last to the whole lactation period, and only feeding for 6 months. After birth, the baby should accept the tests of HIV RNA and antibody as planned, and monitoring of blood routine and liver function to evaluate drug safety. If you are not sure exactly what kind of situation you are, it is recommended to contact the doctor with various methods such as online, video, which it's better to be judged by the doctor.

### **Cancer patients protection**

**111. Are cancer patients susceptible to 2019-nCoV?**

**Ans:** Cancer patients are more susceptible to 2019-nCoV, and the risk for cancer patients to be infected by 2019-nCoV is 2.31 times more likely than for general population.

**112. Why cancer patients are susceptible to 2019-nCoV?**

**Ans:** On the one hand, most cancer patients would suffer the hypimmunity after large-scale surgery operation, chemotherapy or radiotherapy, which

leading to greater susceptibility to 2019-nCoV. On the other hand, to visit to hospital frequently could increase the possibility to be infected.

**113. Which type of cancer patients are more susceptible to 2019-nCoV?**

**Ans:** Lung cancer patients and patients undergoing chemoradiotherapy are more susceptible to 2019-nCoV.

**114. What are the susceptible pathways for cancer patients?**

**Ans:** To visit to hospital repeatedly and frequently for examination and treatment during follow-up would increase the possibility to be infected.

**115. How do cancer patients avoid to be infected by 2019-nCoV during follow-up?**

**Ans:** On the one hand, cancer patients should priority to accept follow-up at home through online consultation. On the other hand, patients with stable medical conditions could appropriately extend the interval between visits.

**116. How do cancer patients avoid to be infected by 2019-nCoV during treatment?**

**Ans:** For patients with stable medical conditions, the treatment can be appropriately postponed to reduce the risk of infection; for patients in need of treatment, the treatment must be performed under appropriate isolation conditions, such as the complete designed ward with three-zones and two-channels.

**117. What are the precautions for cancer patients after treatment during the pandemic?**

**Ans:** It' s best for patients to perform home quarantine for 14 days when returning home, and keep reasonable diet and regular rest.

**118. What are the precautions for cancer patients if they have to go to hospital during the pandemic?**

**Ans:** Since leaving house, all exposed parties should be protected, including wearing protective glasses, mask and gloves. Throughout the visit, hand hygiene should be paid more attention to, and after the visit, to wash hand as soon as possible, completely and until the wrist. If possible, driving or calling for ambulance to visit to hospital, and to avoid going crowd places, which help to reduce or avoid the possibility infected by 2019-nCoV. When seeking medical attention, to avoid the fever department of hospital.

**119. How to choose whether to accept the surgery operation recently for cancer patients during the pandemic?**



**Ans:** For patients with benign tumors which are limited impact on the body, to postpone surgery operation could be considered. For patients with malignant tumors which are advanced or progressive, it's recommended to evaluate the patient's physical status and surgery risk firstly, and then to operate the surgery with controlled risk.

**120. What are the special manifestations when cancer patients are infected by 2019-nCoV?**

**Ans:** The manifestations when cancer patients are infected by 2019-nCoV are as same as those of ordinary people, including fever, cough, fatigue, dyspnea, etc., and no any special symptoms.

**121. How to treat when cancer patients are infected by 2019-nCoV?**

**Ans:** The treatment for cancer patients infected by 2019-nCoV are as same as those of ordinary people. It's worth nothing that, treatment gateway should be properly advanced to avoid that the disease develops into the severe condition.

**122. How to prevent 2019-nCoV for cancer patients in daily life?**

**Ans:** It's recommended to maintain regular life and moderate exercise, to keep indoor ventilation, to try to reduce going out, and to avoid presenting the places crowd or air-free. If having to be out, it's best to wear disposable hat, surgical or N95 mask, goggles and disposable gloves, and wash hands frequently.

**123. What should cancer patients do to prepare for online medical consultation during the pandemic?**

**Ans:** Before logging online, patients should collect all information related to individual disease and document of testing, examination and checks. Before consultation, patients should upload those files of medical records, image and other related, which help the professionals to fully understand the background and status of disease.

**124. How to adjust the diet of cancer patients during the pandemic?**

**Ans:** Cancer patients should pay attention to reasonable meals and mixed balance in daily diet, eating protein-rich foods, such as fish, shrimp and eggs, and ingesting in fresh fruits and vegetables, as well reducing the intake of spicy foods, like pepper and pickles.

**125. How to choose the way of exercise for cancer patients during the pandemic?**

**Ans:** Cancer patients could do exercise with Tai-Chi.

## **Rehabilitation support**

**126. What circumstances do patients need to see a rehabilitation doctor when infected by COVID-19?**

**Ans:** When infected by COVID-19, besides of the treatment like medicine, you need the help from the rehabilitation doctor. Proper rehabilitation training can facilitate recovery in many ways, help patients recover to their original status and return to normal life and work as soon as possible. Early treatment of rehabilitation can prevent the emergence of many complications caused by long-term bed, such as hemorrhoids, lower limb venous thrombosis, muscle atrophy, etc., as well promote the recovery of breathing and other functions, such as enhancing the capability of coughing and sputtering sputum. For patients discharged, to accept actively rehabilitation treatment can further reduce breathing difficulties symptoms, functional disorders and complications, relax anxiety and depression, decrease disability rate, maximize recovering the ability of daily life activities and improve the quality of life.

**127. How to assess the extent of respiratory functional disorder of patients with COVID-19?**

**Ans:** If available, it is recommended to go to the hospital for a lung function examination, which is one of the best ways to assess the level of respiratory function. However, this examination is not yet available for those patients of COVID-19 in many areas. In such condition, an assessment of dyspnea index can be performed by a rehabilitation professional, even by the patient himself. Level 0 is that dyspnea during laborious exercise; Level 1 is that shortness of breath when walking on the flat or climbing a small slope; Level 2 is short of breath with walking slower than your peers, or needing to stop and rest; Level 3 is that needing to stop to breathe after walking on the flat for about 100 meters or after a few minutes; Level 4 is that being unable to leave the house due to severe dyspnea or breathing difficultly while wearing or undressing. It's recommended to communicate the results of self-assessment with the physician or rehabilitation doctor. If dyspnea index is level 1 or 2, home rehabilitation exercise under the guidance of a doctor is acceptable, but if dyspnea index is level 3 or 4, it is recommended to go to a hospital for professional rehabilitation. In additional, particular attention should also be paid to sudden increasing in the level of the dyspnea index. In this case, communicate with the doctor in a timely manner.

**128. How to assess the extent of physical functional disorder of patients with COVID-19?**

**Ans:** If feeling obvious weakness and limb weakness, it is recommended to

go to the hospital for professional evaluation by a doctor, such as muscle test, 6-minute walking experiment, etc. In addition, patients can assess their body function level using the Borg Self-Conscious Fatigue Scale. Point 0 is no dyspnea or fatigue, Point 0.5 is very slight about dyspnea or fatigue, which is almost imperceptible; Point 1 is very mild dyspnea or fatigue; Point 2 is mild dyspnea or fatigue; Point 3 is moderate dyspnea or fatigue; Point 4 is slightly more severe dyspnea or fatigue; Point 5 is serious dyspnea or fatigue; Point 6-8 is very severe dyspnea or fatigue; Point 9 is very very severe dyspnea or fatigue; Point 10 is extreme dyspnea or fatigue, which is the extremes. If self-assessment result is 0.5-2, it's recommended to rehabilitation at home according to the doctor's guidance. If the fatigue level reaches 3 points or more, it is recommended to go to the hospital, receiving the professional rehabilitation treatment, even other treatment like medication.

**129. How to assess the extent of psychological disorders of patients with COVID-19?**

**Ans:** If you feel obvious anxiety, depression, fear, panic attacks, falling asleep in difficulty, multiple dreams, frequent waking after falling asleep, or difficulty falling asleep again after waking up early, it is recommended to go to a professional institution for a psychological assessment. At present, a variety of psychological self-assessment scales can be retrieved on the Internet, which can also be very good to help patients to carry out their own psychological assessment of anxiety and depression. Recommended self-assessment scales include anxiety self-assessment scale (SAS), depression self-assessment scale (SDS), Hamilton Anxiety Scale (HAMA), and Hamilton Depression Scale (HAMD). Patients can download these scales from the Internet for self-assessment and communicate the results with the doctors in a timely manner.

**130. What functional disorder or sequela may occur in the patients infected COVID-19? How to rehabilitate?**

**Ans:** Patients infected by COVID-19 is most likely to appear respiratory functional disorder, which usually perform as coughing, coughing sputum, dyspnea, shortness of breath after movement, sputum difficulties, and accompanied by respiratory muscle weakness and impaired lung function. Physical functional disorder often performs as general fatigue, fatigue, muscle aches, partly accompanied by muscle atrophy, muscle strength decline. Heart functional disorder often performs as panic, pre-cardio-area discomfort, with increasing after activity, decreased physical endurance, and severe cases also have dyspnea at night. Psychological functional disorder often appears fear, anger, anxiety, depression and other emotional problems. For daily activity disorder, patients may fail in the independent completion of wearing clothes, toilet,

bath, walking, etc. due to respiratory and physical functional disorder, which is impossible, as a result, to achieve normal interpersonal communication and return to work.

**131. Are breathing exercises and pectoral stretch helpful to patients infected COVID-19 after discharging?**

**Ans:** Well-designed breathing exercises can improve not only the ability of aerobic activity, but also the muscle strength of the limbs and torso, and the balance ability, and reduce a variety of complications about the bed-ridden, reduce the body's inflammatory response and improve immunity. Stop at any time once dyspnea occurs, and absorb oxygen if necessary. Pectoral stretch can improve breathing function by increasing the breathing amplitude.

**132. What to do if patients infected COVID-19 feel still short of breath, wheezing and dyspnea after discharged?**

**Ans:** It's encouraged to maintain a frontal tilt of about 30 degrees when the patient is seated, which this position can reduce breathing work and increases lung capacity, thereby improving discomfort. If cannot stand, it is recommended to take more rest in the seat when not sleeping, such as raising the head of the bed up 60 degrees, or cushioning upper body with a pillow quilt, and avoid long-term flatting. Regulating breathing mode is an effective way to improve dyspnea, and the regulation of breathing mode needs to be achieved through training. It is recommended to breathe in through the nose as much as possible and then exhale out with your mouth. The training should be conducted in a quiet and comfortable environment.

**133. What to do if patients infected COVID-19 still have coughing, coughing sputum and Sputum handicap after discharged?**

**Ans:** After recovery, a considerable number of patients infected by COVID-19 still have the symptoms of coughing and coughing sputum. In the condition, besides of sputum-removing drugs could be taken following the prescription, it's recommended a method called "active circulating breathing technology", which can effectively help to drain the sputum smoothly, improve breathing function, and be easy to learn. Step one, breathe control. This phase requires normal breathing with a relaxed manner, keep the shoulders and upper chest relax, and actively contract the lower chest and abdomen. The point of this phase is to consciously feel and control the breath, after 2-3 times, and then move on to the next step. Step two, chest expansion. Take a deep breath to the extreme, hold breath for 1-2 seconds, and then breathe passively and easily. Step three, exhale out. Open mouth, fast, but no need to exhale with maximum effort, and in this process keep the sound door open, while with the upper body

forward. The feeling of exhaling is like the process of slightly and rapidly blowing onto the glass to produce water mist.

**134. What problems occur, and then patients infected COVID-19 have to stop rehabilitation immediately after discharged?**

**Ans:** It is recommended to stop rehabilitation treatment immediately if one of the following occurs. (1) Heart rate at rest  $> 120$  times / minute. (2) Blood pressure at rest  $< 90/60$ mmHg or  $>180/110$  mmHg, or blood pressure fluctuates above 20mmHg than the baseline. (3) Breathing frequency  $> 25$  times / minute. (4) Blood oxygen saturation  $\leq 95\%$ . (6) Combine other diseases that are not suitable for exercise. Regarding the balance of the above standards, it is recommended to consult a physician to decide. If there is significant fatigue during or after exercise, and the feeling of this fatigue is still not relieved after 5-10 minutes of rest, stop treatment immediately and consult a rehabilitation physician to adjust the treatment plan. If during treatment occur the symptoms, such as chest tightness, chest pain, dyspnea, severe cough, dizziness, headache, vision, palpitations, sweating, standing instability, etc., rehabilitation treatment should also be stopped immediately and re-evaluated by the rehabilitation physician.

**135. Can patients infected COVID-19 perform physical activity after discharged? What are the precautions for living?**

**Ans:** Under the scientific guidance, proper physical activity training, that is aerobic exercise, can not only effectively promote the recovery of heart and lung function impaired, but also improve weakness, fatigue and other discomfort. Many kinds of activities could be chosen, including step, slow walk, fast walk, jog, cycling, swimming and other sports forms, according to personal preferences, many Chinese traditional activities can also choose, like tai chi, eight pieces of jin, five birds play. The intensity of exercise should be based on the feeling without obvious fatigue in the second day after exercise. Especially for severe or critical patients and elderly patients, a certain degree or even more severe of post-movement shortness of breath and general fatigue may still occur after discharging from the hospital.

The following is the precautions for living:

(1) Turn over: bend the knees to 90 degrees, don't force the abdominal muscles in this process, to prevent breathing with exhaling to complete the turn. During the process of turning over, maintain even breathing, do not stop breathing. (2) Wear and take off clothes: it is recommended to wear cardigan clothing, to prevent wheezing after lack of oxygen during wearing hood. During the process of dressing, avoid hands lifting over shoulders. When wearing hood, the clothing should be place in advance of forearm, and organize the oxygen line, remove oxygen, quickly wear

one-time. After completing clothing, wear oxygen straw first, and then organize the clothes to reduce the oxygen-off time. (3) Wear shoes: avoid bending to wear shoes. Patients should sit on a solid and stable support surface, which is slightly 10 cm higher than the calf, and use long shoe puller to wear shoes. (4) Brush teeth: avoid bending down and bowing. If unable to stand, keep sitting when brushing teeth, and support the upper limbs on the table to reduce oxygen consumption. (5) Wash face: avoid bending. It is recommended to take a seat in order to reduce oxygen consumption, support the upper limbs on the table, and wipe the face instead of washing to avoid oxygen-off. (6) Bath: choose a non-slip shower stool, anti-slip mat and long handle bath brush to help when bathing. (7) Wash head: wear a special shower cap, to block the water flow into the eyes, nose and ears, which has a good protective role to ensure smooth breathing. (8) Eat: try to ensure that each inlet food does not exceed 10 mL (about half a spoon 1 time). At the end of inhale to complete swallowing, and swallowing with the head down rather than looking up to avoid coughing.