WeDoctor

Handbook of Prevention and Treatment of the Pneumonia Caused by the Novel Coronavirus (2019-nCoV)

Cyberspace Administration of Tianjin
WeDoctor Digital General Hospital
WeDoctor Tianjin Digital Hospital

China Press of Traditional Chinese Medicine

Contents

Part I Pathogen Characteristics

What are coronaviruses? ······ 01
What are the physical and chemical characteristics of the coronavirus? ······ 01
What are the coronaviruses that can infect people? ······ 02
What is pneumonia caused by the novel coronavirus? ······ 02
What are the clinical manifestations of someone infected with the novel coronavirus? ······ 03
Is there a vaccine for the novel coronavirus? ······ 04
How to define whether a person is in close contact with the patients? ······ 04
Why should close contacts be observed for 14 days? ······ 04
If you are informed by the disease control department that you are a close contact, what should you do? ······ 05
Can the novel coronavirus infection be treated? ······ 05
What are the basic coping strategies for severe cases of novel coronavirus infection? ······ 07

Part II Epidemic Situation

What is the current situation of epidemic evolution? ·········· 08
Why are confirmed cases increasing so quickly in just a few days? ·········· 10
What is the key to prevent and control the outbreak? ·········· 10
What is the most effective way to prevent and control the outbreak at present? ·········· 11
What is the infection source of novel coronavirus? ·········· 11
Can novel coronaviruses be transmitted from person to person? ·········· 12
By which ways will people be infected? ·········· 12
Will the novel coronavirus mutate? ·········· 12
Will the novel coronavirus infection be as fierce as SARS? ·········· 13

Part III Prevention and Control Knowledge

What are the main monitoring measures for pneumonia caused by the novel coronavirus? ·········· 14
How to prevent the novel coronavirus infection? ·········· 15

What should be paid special attention to when coming into contact with animals? 19
When there are fever, cough, and other symptoms, do you have to go to the hospital? 19

Part I
Pathogen Characteristics

What are coronaviruses?

Coronavirus is a kind of virus widely existing in nature. It is the largest known RNA virus in the genome and is named coronavirus, as its form is similar to the crown under the electron microscope. Coronavirus only infects vertebrates and is related to many diseases of humans and animals. It can cause respiratory tract, digestive tract, and nervous system diseases of humans and animals.

What are the physical and chemical characteristics of the coronavirus?

Coronavirus is sensitive to ultraviolet (UV) light and heat, and can be effectively inactivated by 56 °C for 30 minutes, ethyl ether, 75% ethanol, chlorine-containing disinfectant, peracetic acid, and chloroform.

What are the coronaviruses that can infect people?

So far, in addition to the new coronavirus, we have found six kinds of coronaviruses such like HCoV-229E, HCoV-OC43, SARS-CoV, HCoV-NL63, HCoV-HKU1, and MERS-CoV that can infect humans. Four of them are common in the population, with low pathogenicity, generally only causing mild respiratory symptoms similar to the common cold. The other two are well-known SARS (Severe Acute Respiratory Syndrome) coronaviruses and MERS (Middle East Respiratory Syndrome) coronaviruses.

What is the pneumonia caused by the novel coronavirus?

Pneumonia caused by the novel coronavirus was found in central China' s Wuhan City, Hubei Province in December 2019. It has been proved to be an acute respiratory infectious disease caused by a new type of coronavirus. The new coronavirus is a new strain of coronavirus that has not yet been previously found in the human body. The World Health Organization

named the coronavirus 2019-nCov, namely a new coronavirus.

What are the clinical manifestations of someone infected with the novel coronavirus?

Fever, weakness and dry cough are the main manifestations. Nasal obstruction, runny nose and other upper respiratory symptoms are rare. About half of the patients develop dyspnea after one week, and the severe cases develop rapidly into ARDS (Acute Respiratory Distress Syndrome), septic shock, difficult-to-tackle metabolic acidosis and bleeding and coagulation dysfunction. It should be noted that the course of severe and critical patients can be moderate to low fever or even no obvious fever. Some patients have mild onset symptoms. These patients may have no fever and recover after 1 week. Most patients have a good prognosis, while a few patients are in critical condition or even death.

Is there a vaccine for the novel coronavirus?

There is no vaccine available for the new disease. It may take a long time to develop a new vaccine for it.

How to define whether a person is in close contact with the patient?

Close contacts refer to people who live, study, work or have close contact with the case; medical staff, family members or other people who have similar close contact with the case without taking effective precautions when diagnosing, treating, nursing or visiting the case; other patients and caregivers in the same ward with the case; people who take the same vehicle with the case and have close contact with the case; and people who are evaluated as the qualified by the field investigators.

Why should close contacts be observed for 14 days?

Referring to the incubation period of other diseases caused by coronaviruses, the new coronavirus case-related information, and current prevention and control practice, the medical observation period of close contacts was set as 14 days, and the close contacts should be observed at home.

If you are informed by the disease control department that you are a close contact, what should you do?

You can carry out home medical observation as required. Don't be panic. Don't go out casually, and do a good job of observing your physical condition. Receive regular follow-up visits from doctors. In case of abnormal clinical manifestations such as fever and cough, report to local disease prevention and control institutions in time, and under their guidance, go to designated medical institutions for troubleshooting, diagnosis, and treatment, etc.

Can the novel coronavirus infection be treated?

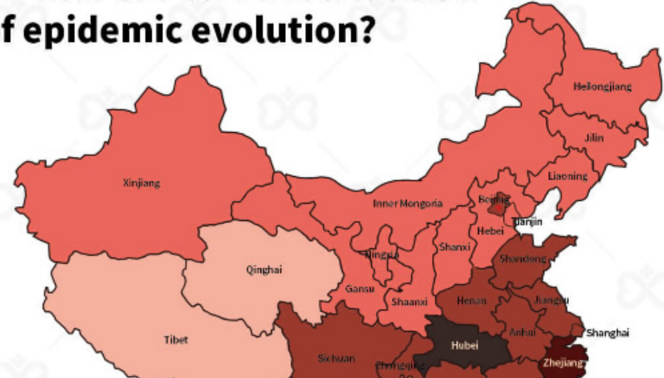
The World Health Organization (WHO) has released a clinical guideline for severe acute respiratory tract infection caused by suspected novel coronavirus infection. At present, there is no specific treatment for the disease caused by 2019-nCoV. But using the diagnosis and treatment launched by the National Health Commission, using some antiviral drugs to treat patients may have a certain effect. In addition, combined with the experience and lessons of SARS treatment, we can know that we could give play to the unique advantages of China's medical system by using the combination of traditional Chinese and Western medicine which may have important value. In addition, supplementary care for infected people may be very effective.

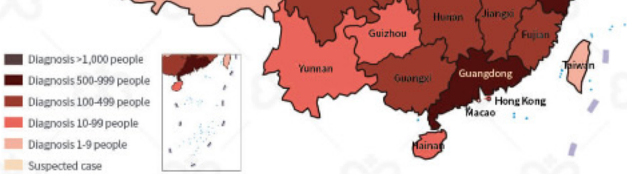
What are the basic coping strategies for severe cases of novel coronavirus infection?

Set up pre-examination triage, so that the patients with severe acute respiratory infection (SARI) can be identified and classified; immediately implement the correct infection prevention and control measures (IPC); early support treatment and monitoring; collect clinical specimens for laboratory diagnosis; deal with hypoxic respiratory failure and acute respiratory distress syndrome (ARDS); management of septic shock; prevention of complications; antiviral treatment; special precautions for pregnant patients.

Part II
Epidemic Situation

What is the current situation of epidemic evolution?





Recently, 2019-nCoV infected pneumonia outbroke in Wuhan City, Hubei Province, and other regions. As of at 24:00, January 31th, the National Health Commission received the information from 31 provinces (areas and cities) and Xinjiang Production and Construction Corps that there were 11,791 confirmed cases, of which 1,795 severe cases, 259 death cases, and 243 cases who have been cured. There are 17,988 suspected cases now. At present, there are 136,987 close contacts, and 6,509 people who have been removed from medical observation, 118,478 people who have been put under medical observation. 30 confirmed cases have been reported from Hong Kong, Macao and Taiwan, including 13 in Hong Kong Special Administrative Region, 7 in Macao Special Administrative Region, and 10 in Taiwan.

Upon approval from the State Council, the National Health

Commission includes 2019-nCoV-infected pneumonia into category B infectious disease specified in the ***Law of the People's Republic of China on the Prevention and Treatment of Infectious Diseases***, and prevention and control measures for category A infectious diseases are taken; quarantinable disease management specified in ***Frontier Health and Quarantine Law of The People's Republic of China*** are followed.

Why are confirmed cases increasing so quickly in just a few days?

Because a virus nucleic acid detection kit has been developed. Recently, the related national scientific research institutions developed a virus nucleic acid detection kit rapidly. The detection kit can confirm whether there is a specific gene sequence in case samples or not by using a PCR-based approach. In other words, the novel coronavirus can be identified by detection kit; samples of cases can be judged quickly by comparison.

What is the key to prevent and control the outbreak?

The key is to prevent “super spreaders”. Reducing the outflow of the people in Wuhan City is very important, and strict screening detection measures are taken in Wuhan City, especially body temperature detection. Those who have high body temperature are not recommended to leave Wuhan. The city limited inflow and outflow of people on January 23, 2020, which was the key measures to prevent and control the outbreak.

What is the most effective way to prevent and control the outbreak at present?

Early detection, early reporting, early diagnosis, early isolation, and early treatment are the most effective measures. It is extremely important for the confirmed cases to get an effective isolation treatment to decrease transmission.

What is the infection source of novel coronavirus?

The infection source of 2019-nCoV has not yet been found. The gene sequence of 2019-nCoV is similar to the SARS coronavirus. However, SARS coronavirus has been proved to stem from the coronavirus that wild animals (bat) carry. At present, most cases admitted have exposure history of "Huanan Seafood Market," where the wild animals were sold, and vendors and customers there have the chance to be in contact with wild animals-carried coronavirus.

Can novel coronaviruses be transmitted from person to person?

The cases by human-to-human transmission were found in Wuhan City and Guangdong Province; as of January 21, 2020, there were 15 health care workers infected in Wuhan City, which confirmed the virus could have human-to-human transmission.

By which ways will people be infected?

On January 27, 2020, ***the Diagnosis and Treatment of Pneumonia Infected by Novel Coronavirus (4th trial edition)*** pressed by the General Office of the National Health Commission and the General Office of the National Administration of Traditional Chinese Medicine points out that the main transmission route is droplet transmission, plus contact transmission.

Will the novel coronavirus mutate?

The 2019-nCoV is a new strain of coronavirus that has not yet been previously found in human body, so the virus mutation still needs to be monitored closely.

Will the novel coronavirus be as fierce as SARS?

The studies show that 2019-nCoV is homologous with SARS, with the similarity of about 70% and with MERS, about 40%. Compared with SARS, 2019-nCoV has weak infectivity, but a good affinity with human respiratory epithelial cells, indicating certain infectivity for humans.

Part III
Prevention and Control Knowledge

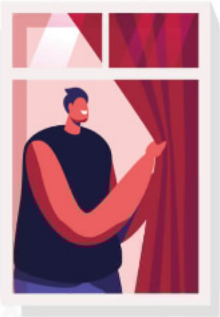
What are the main monitoring measures for the pneumonia caused by the novel coronavirus?

In the course of pneumonia monitoring and daily diagnosis and treatment of 2019-nCoV infection, medical institutions at all levels and of various types should enhance the awareness of diagnosis and reporting of pneumonia cases of 2019-nCoV infection. For cases with fever, cough and other symptoms of unknown causes, they should pay attention to inquiring about the suspected exposure history within 14 days before the onset of the disease, the history of contact with wild animals, and the history of close contact with similar cases.

How to prevent the novel coronavirus infection?

- **Make efforts to prevent respiratory infectious disease in winter and spring**

It is presently in the high-incidence season of the winter and spring infectious diseases, the public should enhance health awareness, do more exercise, have a regular work and rest to improve their immunity.

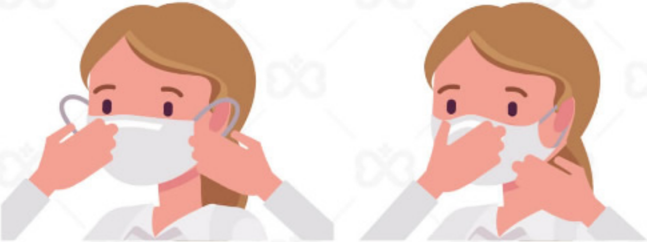


Keep proper indoor ventilation, avoid poorly ventilated and crowded places; medical masks shall be worn when going out.

Wash hands and nose when coming home. If fever and other respiratory symptoms, especially persistent fever occurs, go to hospitals as soon as possible.

• Wear medical masks correctly

Wearing medical masks is an effective way of interrupting respiratory droplets transmission. Medical masks can prevent respiratory diseases properly. When wearing disposable medical masks, fully unfold folded surface, and cover mouth, nose, and lower jaw entirely, then compress nose clip, so masks and face are in full contact with each other.



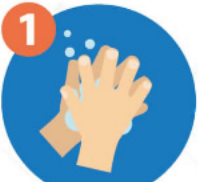
Wash hands before wearing medical masks or avoid touching the inner side of masks while wearing masks to reduce masks pollution risk. Distinguish the inside and outside and up and down of masks, i.e., the light surface is the inside of masks, which closes to mouth and nose, and the dark surface is the outside of masks; the metal strip (nose clip) side is the upside of masks.

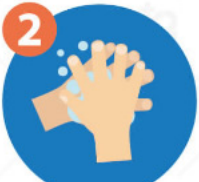
Replace masks regularly; avoid wearing reversely, and even both sides.

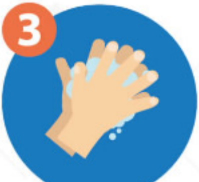
- **Wash hands properly**

Remember to wash hands before eating, after toilet, coming home, coming into contact with garbage and touching animals. When washing hands, use running water and soap (liquid soap), with no less than 15 seconds for rubbing hands.

For the convenience of memory, rubbing steps are as follows.



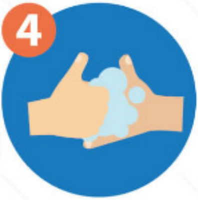




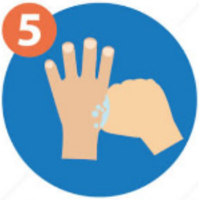
Both hands
rub with
palm to palm

Both hands cross
and rub with
palm to hand back

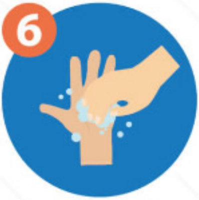
Fingers cross and
rub with
palm to palm



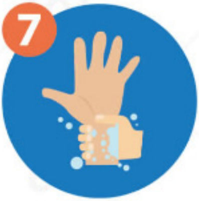
Fingers entwine
and rub
rotationally



Rub hands rotationally
with thumb
in the palm



Rub hands
with fingertip
in the palm



Wash wrist

What should be paid special attention to when coming into contact with animals?

Avoid coming into contact with wild livestock, wildlife, and their droppings and secretions, and avoid the purchase of live poultry and wildlife. Avoid visiting animal farms and slaughterhouses, live poultry and animal markets or stalls, wildlife habitats and so forth. People, especially occupationally exposed persons must take precautions when having to go the places mentioned above. Avoid eating wild animals.

When there are fever, cough and other symptoms, do you have to go to the hospital?

The symptoms such as pharyngeal pain, cough, nasal congestion, runny nose, sneezing, and so on may occur in the common cold, influenza, acute upper respiratory tract infection, pharyngitis, bronchitis, and tonsillitis. When the above symptoms appear, it is generally a common respiratory tract infection. However, the patients infected with the 2019-nCoV mainly have fever, fatigue, and dry cough with less symptoms of the upper respiratory tract such as nasal congestion, runny nose.

When a person has fever, cough, and other symptoms, and cannot accurately judge by himself, it is recommended to make a decision based on the WeDoctor's Digital general hospital online consultation. At present, hospitals in some cities gather a large number of patients with respiratory diseases. If they go to the hospital directly, they cannot effectively obtain useful information and are prone to get cross-infection.

WeDoctor