

**CORONAVIRUS 2019-nCoV INFECTION:
Expert Consensus on Guidance and Prevention
Strategies for Hospital Pharmacists and
the Pharmacy Workforce
(1st Edition)**

Chinese Pharmaceutical Association

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Coronavirus 2019-nCoV Infection:
Expert Consensus on Guidance and Prevention Strategies for
hospital pharmacists and the pharmacy workforce
(1st Edition)

This guidance and management strategies aim to provide pharmacists and pharmacy workforce with relevant information and specific work guidance on prevention and control of novel coronavirus (2019-nCoV) outbreak.

1 Background

1.1 Epidemiology

The current outbreak of novel coronavirus was first reported on Dec 31, 2019 from Wuhan, China. It was named as 2019-nCoV by World Health Organization on Jan 12. Following the advice of the Emergency Committee, WHO Director-General has declared the outbreak of 2019-nCoV a Public Health Emergency of International Concern. As of February 6, 2020, 2019-nCoV has caused 28,120 infections and 564 deaths worldwide.

The sources of infection detected so far are mainly patients infected by the novel coronavirus. Respiratory droplets and contact transmission are the main routes of transmission. The transmission routes of aerosol and digestive tract are yet to be determined. People are generally susceptible to 2019-nCoV^[1-3]

1.2 Etiology

2019-nCoV is a novel beta coronavirus, which belongs to the sarbecovirus subgenus of Coronaviridae family. It has a capsule, and the particles are round or oval, often polymorphous, with a diameter of 60-140nm. Its genetic characteristics are distinct from SARSr-CoV and MERSr-CoV^[1, 4]. Recent study has shown that 2019-nCoV is 96% identical to bat coronavirus TG13 at the whole-genome level^[5].

2 Clinical manifestations and diagnosis

2.1 Clinical manifestation^[1]

- 1) Fever and / or respiratory symptoms;
- 2) It has the imaging characteristics of pneumonia: multiple small patchy shadows and interstitial changes appear early, which are obvious in the outer lung zone. Then it develops multiple ground glass shadows and infiltration shadows in the lungs. In severe cases, pulmonary consolidation and pleural effusion are rare;
- 3) The total number of white blood cells is normal or decreased, or the lymphocyte count is reduced in the early stage of onset.

Other symptoms include muscle pain, headache, confusion, chest pain, and diarrhea^[6, 7].

2.2 Clinical diagnosis^[1]

The diagnosis criteria of patients in Hubei Province is slightly different from those in other areas.

2.2.1 Suspected cases

Epidemiological history:

- 1) Travel history or residence histories of Wuhan and its surrounding areas, or other communities with case reports within 14 days before the onset of disease;
- 2) Contact history with patients infected by the 2019-nCoV (nucleic acid test showed positive results) within 14 days before the onset of disease;
- 3) Patients with fever or respiratory symptoms from Wuhan and its surrounding areas, or from communities with case reports, within 14 days before the onset of disease;
- 4) Cluster onset.

In areas outside of Hubei province, patients with epidemiological history who meets 1) and 2) or 2) and 3) of the clinical manifestations; patients without clear epidemiological history who meet all three clinical manifestations.

In Hubei province, patients with or without epidemiological history, and meet item 2) of the clinical manifestations.

2.2.2 Clinically diagnosed cases (For Hubei Province Only)

Suspected cases with imaging characteristics of pneumonia.

2.2.3 Confirmed cases

Suspected cases can be confirmed with one of the following etiology evidences:

- 1) Real-time fluorescent RT-PCR of respiratory specimens or blood specimens detected positive novel coronavirus nucleic acid;
- 2) Respiratory or blood specimens are genetically sequenced and highly homologous to the known 2019-nCoV.

2.3 Clinical typing^[1]

2.3.1 Mild

Clinical symptoms are mild, with no pneumonia manifestation on imaging.

2.3.2 Ordinary

Fever and other respiratory symptoms.

2.3.3 Heavy

Meet any of the following:

- 1) Respiratory distress, RR \geq 30 times / min;
- 2) At resting state, the oxygen saturation is \leq 93%;
- 3) Arterial blood oxygen partial pressure (PaO₂) / oxygen concentration (FiO₂) \leq 300mmHg (1mmHg = 0.133kPa);

2.3.4 Critical

Meet one of the following:

- 1) Having respiratory failure and requires mechanical ventilation;
- 2) Shock;

Combining with other organ failures which requires ICU monitoring and treatment.

3 Treatment

3.1 Characteristics and precautions of treatment options

At present, there is no targeted antiviral treatment for the 2019-nCoV infection. The

following drugs may be used in clinical practice and clinical trials. Due to ongoing studies, pharmacists should track the latest research evidences and updates. Pay attention to the risk of off-label usage under special circumstances.

3.1.1 Interferon^[1]

May try inhaling aerosolized interferon, 5 million IU for adults, adding 2mL of sterilized water for injection, twice a day. Common adverse reactions include fever, fatigue, headache, joint pain, loss of appetite, etc. Noting that patients with a history of antibiotic allergy should use with caution. The administration of first dose should be closely monitored. Be careful to avoid contact with eyes during atomization. Store at 2-8°C and protect from light during storage and transportation.

3.1.2 Lopinavir/ritonavir^[1]

Lopinavir/ritonavir capsules: 200 mg/50 mg per capsule, take 2 capsules at a time, 2 times daily, by mouth. Take the capsule as a whole. Do not chew, break or crush the capsule. May be taken with or without food.

Lopinavir/ritonavir oral solution: 80 mg/20 mg per mL, take 5 mL at a time, 2 times daily, by mouth. Must be taken with food and may use nasogastric feeding. The excipients contain ethanol and propylene glycol.

No need for dose adjustment in patients with mild to moderate liver dysfunction, renal insufficiency, and patients receiving alternative renal therapy. It is not recommended for patients with severe liver dysfunction. Common adverse reactions include diarrhea, nausea and vomiting, hypertriglyceridemia, upper respiratory tract infection, liver function impairment, etc. Be careful with potential drug-drug interactions.

3.1.3 Ribavirin^[1]

According to the *Clinical management of human infection with novel coronavirus(2019-nCoV)(5th edition)* from the National Health Commission National Health Commission of the People's Republic of China, ribavirin could be added to antiviral therapy. The recommended regimen is 8 mg/kg iv q8h. Patient with severe anemia and abnormal liver function should use with caution. Not recommended for the elderly patients. Ribavirin has reproductive toxicity, could pass through the placenta and into the breast milk, could be detected 4 weeks after discontinuation.

High dose ribavirin has been used clinically during the period of SARS and MERS. However, the dose-related anemia was observed, which may occur in 3 to 5 days after initiation. Patients with underlying heart diseases may suffer from the deterioration of cardiac function caused by anemia. In addition, electrolyte disturbance and central nervous system toxicity have also been reported. Hence the clinical use of ribavirin in 2019-nCoV should be cautious^[8, 9].

3.1.4 Antimicrobial agents

Avoid inappropriate use of antibiotics^[1].

According to the WHO guideline^[10], it is recommended to give empiric antimicrobials to treat all likely pathogens. For patients with sepsis, antimicrobials should be given within one hour of initial patient assessment. During drug administration, pay attention to the infusion rate and post-configuration stability, and monitor possible allergic reactions such as rashes. Oral antimicrobial preparations should be taken at 2-hour intervals with microecologic preparations and adsorbents.

3.1.5 Corticosteroids

Do not routinely use systemic corticosteroids^[1, 10]. In situations of dyspnea and progress of chest imaging, corticosteroids could be used for a short period of time (3-5 days). The recommended daily dose is no more than 1-2 mg/kg/day equivalent to methylprednisolone^[1, 6]. Blood glucose and electrolyte level should be monitored, and central excitation symptoms such as insomnia may occur, which can be treated symptomatically.

3.1.6 Supportive treatment

Nonsteroidal anti-inflammatory drugs, antitussive, antiemetic, laxative agents, spasmolysis agents, intestinal microecological preparations may be used for supportive treatment.

3.1.7 Huoxiang Zhengqi Capsule (pills, tincture, oral solution)^[1, 11]

Resolving dampness, relieving exterior symptoms, and regulating Qi.

Soft Capsule: 2-4 pills once, p.o. bid; Dropping Pill: 2.6g once, p.o. bid; Solution, Oral Liquid: 5~10mL once, p.o. bid. Shake well before use.

Adverse reactions in the literature include drug rash, purpura, shock and other allergic

reactions and intestinal obstruction, upper gastrointestinal bleeding, allergic asthma, drunk appearance allergies, anaphylactic shock, topical intestinal obstruction, hypoglycemia in children, pediatric convulsions, disulfiram-like Reactions. Wind-heat type common cold are used with caution. Use with caution in pregnant women. People with severe chronic diseases such as hypertension, heart disease, liver disease, diabetes, and kidney disease should be used with caution. Huoxiang zhengqi Solution is forbidden for patients allergic to alcohol due to the ingredients in the preparation contain alcohol. Do not drive machines, cars, ships, or engage in high-altitude operations, mechanical operations, or precision instrument operations after taking the drug. Avoid concurrent use with tinidazole and metronidazole^[12].

3.1.8 Jinhua Qinggan Granule^[1]

Dispelling wind to ventilate the lungs, clearing heat and detoxifying.

1 packet once, p.o. tid. One course of treatment is three days.

Common adverse reactions include nausea, vomiting, diarrhea, stomach upset, heartburn, anorexia and other gastrointestinal adverse reactions. Dysfunctions of liver, palpitations, or rash can also occur occasionally after use. Patients who are allergic to this product are contraindicated. Athletes and patients with deficiency-cold of spleen and stomach should use with caution. Patients with a history of liver disease or abnormal liver function before taking the medicine should use with caution. Women who are pregnant or lactating, children and the elderly should use with caution or consult physicians before starting the medication. Additionally, the product contains ephedra, which can lead to the increase of blood pressure. Use with caution in patients with hypertension and monitor blood pressure while taking the medication^[13]. Do not use nourishing Traditional Chinese medicine concurrently.

3.1.9 Lianhua Qingwen Capsule (in granules)^[1, 11]

Heat-clearing and detoxifying, removing lung hotness.

Capsule: 4 pills once, p.o. tid; Granule: 1 packet once, p.o. tid.

Take by mouth. Capsule: 4 capsules at a time, three times a day; Granule: 1 packet at a time, three times a day.

Literature reported^[14, 15] that the drug can commonly cause adverse reactions in the

gastrointestinal system. It can also cause rash, itching and other skin and accessory damages. Not indicated for patient with wind-cold type common cold. The product contains ephedra, which can lead to the increase of blood pressure. Use with caution in patients with hypertension and heart disease. Patients with severe chronic diseases such as liver disease, diabetes, and kidney disease, and children, pregnant women, lactating women, those who are old and weak, and patients with spleen deficiency and loose stools should use this medication under the guidance of physicians. Avoid long-term use of this product. Patients who are allergic to this product are contraindicated. Patients with allergies and athletes should use it with caution. Store in a cool and dry place (no more than 20°C).

3.1.10 Shufeng Jiedu Capsule(in granules)^[1]

Dispelling wind, heat-clearing, detoxifying and relieving sore throat.

4 pills once, p.o. tid.

Occasionally nausea occurs. Use in sensitive patients and those who are allergic to this product are contraindicated. Consult a doctor before taking the medicine if you have conjunctival fever, herpetic angina, or if you are pregnant or lactating.

3.1.11 Fangfengtongsheng Pills (in granules)^[1, 11]

Relieving external symptoms, clearing interior disease, heat-clearing and detoxifying.

1 packet once, p.o. bid.

Adverse reactions include nausea, vomiting, abdominal pain or gastrointestinal discomfort, rash, itching, etc. Diarrhea can also occur occasionally. Patients with spleen deficiency and loose stools are contraindicated. The product contains ephedra, which can lead to the increase of blood pressure. Use with caution in patients with hypertension and heart disease. Use with caution in patients with severe chronic diseases such as liver disease, diabetes, and kidney disease. Pregnant women, athletes, children, lactating women, the elderly ,the frail and patients with allergies should use with caution. Patients who are allergic to this product are contraindicated.

3.1.12 Xiyanping Injection^[1]

Heat-clearing and detoxifying, relieving cough and dysentery.

i.m. (Adult: 50-100mg once, two or three times a day. Children reduce or follow

doctor's advice)

i.v.gtt (Adult: 250-500mg a day, dilute with 5% glucose injection or 0.9% sodium chloride injection; Or follow doctor's advice. Children: 5-10mg / kg (0.2-0.4mL/ kg) per day, the maximum dose does not exceed 250 mg. Dilute to 100mL or 250mL with 5% glucose injection or 0.9% sodium chloride injection. Control the dropping speed of 30-40 drops per minute, once a day.)

This product occasionally has skin rash, pruritus, fever, chills, pain, fidgety, rarely shortness of breath, cyanosis, palpitation, convulsion, etc. Those who are allergic to this product, pregnant women are prohibited. The patients with family allergy history, the elderly, infants using it for the first time need closer monitoring. The drip rate should be controlled strictly. 30-40 drops / minute is suitable for children, 30-60 drops / minute is suitable for adults. Store in a cool place (not more than 20°C).

3.1.13 Xuebijing Injection^[1]

Dissolving blood stasis and detoxifying.

i.v.gtt (100mL each dose bid.)

Adverse reactions include itching occasionally. People who are allergic to this product, the elder should use with caution^[16]. Pregnant women are prohibited. Store in a cool place (not more than 20°C).

3.1.14 Shenfu injection^[1, 11]

Reviving yang for resuscitation, Qi-boosting and exterior-securing.

i.m. (2-4 mL once, 1 to 2 times a day),

i.v.gtt (20-100 mL each time, diluted to 250 mL or 500 mL with 5% glucose injection solution), iv. push (each 5-20mL, diluted with 5% glucose injection 20mL)), in special cases such as diabetes, can be diluted with 0.9% sodium chloride injection and used within 4 hours after configuration, continuous use should not exceed 20 days. Common adverse reactions include itching, wind wheals, rashes and other skin and accessory damage^[17]. Occasionally tachycardia, allergic reactions, dizziness, headache, hiccups, tremors, dyspnea, visual abnormalities, abnormal liver function, urinary retention, etc. Allergies should be used with caution, pregnant women are prohibited. It is not suitable to be used at the same time with Chinese traditional

medicine Pinelliaternata, melons, caladium, white peony, Baiji, Wulingzhi, hellebore, etc. It is forbidden to use in combination with other injections. Intensive monitoring should be strengthened within 30 minutes of the initial infusion, and the drug should be discontinued in time if adverse reactions are found.

3.1.15 Shengmai injection^[1, 11]

Recovering pulses for resuciation, Qi-boosting and Yin nurturing.

i.m. (2-4mL once, once or twice a day)

i.v.gtt (20-60mL each time, dilute to 250mL or 500mL with 5% glucose injection)

Common ADRs are fever with systemic damage, skin and accessory damage, respiratory system damage, cardiovascular system damage, and gastrointestinal system damage, etc. Use in patients who are allergic to this product or pregnant, newborns, infants and young children are prohibited. The elderly and infirm, patients with severe heart and lung disease, abnormal liver or kidney function, and patients using Traditional Chinese medicine injection for the first time need closer monitoring. The infusion speed should be slow. In case of any abnormality, action needs to be taken immediately. Before and after the infusion of this product, the appropriate amount of diluent should be used to flush the infusion pipeline. Avoid mixing the product with other injections. Stored at no more than 20°C.

3.2 Pharmaceutical care

Pharmacists in all medical institutions should take an active part in the patients' treatment. According to the local situation, pharmacists should screen potential drug-drug interactions, adverse reactions, and duplicate medications etc., by doing chart review, dispensing, adverse reactions monitoring and medication reconciliation, to improve the safety, efficacy and rationality of clinical drug use.

3.2.1 Drug-drug interactions

Drug-drug interactions may occur in drug absorption, distribution, metabolism and excretion process that could cast negative effects on the treatment.

Avoid the concomitant use of lopinavir/ritonavir and other CYP3A4-metabolized drugs. Avoid concomitant use of oral antibiotics and microecologic agents.

Table 3.1 List of potential drug-drug interactions

Anti 2019-nCoV treatment	Potential interacting drugs	Clinical implications
lopinavir/ritonavir	Sedative/Hypnotics: triazolam, midazolam	Contraindicated due to potential for prolonged or increased sedation or respiratory depression.
	Ergot derivatives: dihydroergotamine, ergotamine, methylergonovine	Contraindicate due to potential for acute ergot toxicity characterized by peripheral vasospasm and ischemia of the extremities and other tissues.
	HMG-CoA reductase inhibitors: lovastatin, simvastatin, atorvastatin	Contraindicated: lovastatin, simvastatin; Use with caution: atorvastatin, use the lowest necessary dose and monitor carefully. Could use pravastatin and fluvastatin if needed.
	Dihydropyridine calcium channel blockers	Clinical monitoring of patients is recommended and a dose reduction of the dihydropyridine calcium channel blocker may be considered.
	Immunosuppressants	Therapeutic concentration monitoring is recommended for immunosuppressant agents when co-administered.
	Anticonvulsants: lamotrigine, valproate	A dose increase of lamotrigine or valproate may be needed when co-administered with lopinavir/ritonavir and therapeutic concentration monitoring for lamotrigine may be indicated; particularly during dosage adjustments.
	Antiarrhythmics: amiodarone	Caution is warranted and therapeutic concentration monitoring (if available) is recommended for antiarrhythmics when co-administered.
	Anticoagulants: rivaroxaban, warfarin	Avoid concomitant use of rivaroxaban. Concentrations of warfarin may be affected. Initial frequent monitoring

		of the INR during co-administration is recommended.
	Antifungals: itraconazole, voriconazole	High doses of itraconazole (>200 mg/day) are not recommended. The coadministration of voriconazole should be avoided unless and assessment of the benefit/risk to the patient justifies the use of voriconazole.
	Anticancer agents: dasatinib, nilotinib, venetoclax, ibrutinib, etc	A decrease in the dosage or an adjustment of the dosing interval of nilotinib and dasatinib may be necessary. Avoid concomitant use of venetoclax or ibrutinib.
	Herbal products: St. John's wort	Contraindicated due to potential for loss of virologic response and possible resistance to lopinavir/ritonavir.
lopinavir/ritonavir (oral solution)	Antibiotics: metronidazole etc.	Oral solution contains ethanol, which can produce disulfiram-like reactions when co-administered with disulfiram or other drugs that produce this reaction.
Oral antibiotics	microecologic agents	Should be taken at intervals.

3.2.2 Adverse drug reactions

Pharmacists should pay attention to the adverse reactions, especially those are still being assessed and under clinical trials. Analyze the causal relationship between adverse drug reactions and symptoms of disease. Pay attention to the potential adverse reactions of new drugs in clinical trials. Pharmacists should conduct active monitoring and surveillance according to local infrastructures, to ensure the safety of clinical medication.

3.2.3 Duplicate Therapy

Pharmacist should also pay attention to the risk of duplicate use of medications, especially those at home. For example, different antipyretic formulations may contain the same ingredients, which can easily cause liver and kidney injuries if taken together. It is important to clarify all medications use for each patient, especially the compounded preparations, through medication history screening, remote patient

education and consultation, and medication reconciliation.

3.2.4 Pregnant Women

Pregnant women are susceptible to the 2019-nCoV at all gestational ages^[18, 19]. During pregnancy, women's inflammatory stress response to viral respiratory infection is significantly increased, which can lead to a rapid progression of disease. The infection can easily develop into severe disease, especially in the middle and late stage of pregnancy. Pregnant women with suspected 2019-nCoV infection should be isolated with close monitoring in the hospital setting, and be co-managed with infectious diseases, obstetrics, ICU and other relative departments^[18, 19]. When treating pregnant women with suspected or confirmed 2019-nCoV infection, their physiological adaptations of pregnancy should be taken into account^[10]. It is recommended to use medications with FDA pregnancy safety class of B or C, and avoid using medications in class D.

Before using investigational therapeutic agents outside of a research study, consult obstetric specialists and the ethics committee to perform an individual risk-benefit analysis based on the potential benefit for the mother and the safety of the fetus^[10].

The decision of emergency delivery and pregnancy termination should be made based on multiple factors including gestational age, maternal condition, and fetal stability. Consultations with obstetric, neonatal, and intensive care specialists (depending on the condition of the mother) are necessary before making the decisions^[10].

3.2.5 Newborns

Till 5th February, the virus was positive in a newborn's throat swab whose mother was infected with 2019-nCov, and the chest radiograph showed a lung infection 30 hours after delivered in Wuhan. For 2019-nCov, the precise mode of vertical transmission is not yet known. All neonates born to mothers with 2019-nCoV should be admitted to the designated negative pressure isolation room for observation. Considered the potential risk of infection, all neonates shall be isolated for 10-14 days post-delivery^[20]. To prevent the spread of the novel coronavirus, breastfeeding is not recommended until the mother is cured^[20].

3.2.6 Children and Adolescents

The effectiveness and safety of antiviral medicines in children is unknown. For children with critical illness, refer to the treatment regimen for adults. Interferon atomization can be used in mild cases. Avoid inappropriate use of antimicrobials. The routine use of corticosteroids should be avoided unless for special reasons^[21].

3.2.7 The Elderly

The immune function of the elderly people is weakened, and their conditions are generally complicated with baseline chronic diseases. When being infected by the 2019-nCoV, the elderly patients can get critically ill easily, and most of the dead cases are elderly patients with chronic disease. It is recommended for the elderly patients to take their medications on time, regularly and properly, based on their individual chronic disease. Secondary prevention and treatment of related diseases shall also be performed. Adjust the dosage of medications according to the liver and renal function of patients, and pay attention to the potential drug-drug interactions.

3.2.8 Nutrition Support Therapy

Nutritional risk screening shall be performed for inpatients using the NRS2002 scoring system upon admission. For patients with NRS2002 score of no less than 3 points, nutritional support therapy needs to be given as soon as possible^[22].

For severe patients who cannot eat by mouth, a nasogastric tube or a nasal jejunum tube shall be placed, and nutrition solution shall be pumped in by gravity drip or enteral nutrition infusion pumps^[23]. For patients with severe gastrointestinal dysfunction, parenteral nutrition is needed to meet the basic nutritional needs^[24].

According to the recommendations for adults from ASPEN, stable patients shall be provided with protein 0.8-1.5g/kg/d, and a total energy of 20-30 kcal/kg/d^[25, 26]. As for critically ill or sepsis patients, a nutrition plan with protein 1.2-2.5g/kg/d and a total energy of 20-30 kcal/kg/d is needed. In the early stages, the permissive low-calorie scheme is recommended to reach 60% to 80% of the nutritional intake. When the disease is alleviated, energy and nutrients shall be gradually added to reach the full amount.

During the remission of the disease, semi-liquid food could be provided as it is easy to chew and digest. Take multiple meals in small amount, 5-6 times a day,

supplementing with sufficient high-quality protein. Transition to the regular diet shall be gradually made with improvement of the disease.

3.2.9 Traditional Chinese medicine injections

Traditional Chinese medicine injections are prohibited to be used in combination with other injections. Before and after the infusion of the medicine, appropriate diluent shall be used to wash the infusion pipeline. When infusing the drug, dripping slowly and monitor carefully. Close monitoring is needed in the first 30 minutes at the beginning of the infusion. Stop medication in time in case of adverse reactions.

3.2.10 Food interactions of Chinese patent medicines

Avoid tobacco use, alcohol, spicy and greasy food, and seafood when taking Chinese patent drugs. Medicines with antipyretic and detoxicate effects shall not be used with nourishing traditional Chinese medicines concurrently.

3.3 Traditional Chinese medicine treatment^[1]

The disease belongs to the category of traditional Chinese medicine pestilence. Based on the progress of illness, local climate characteristics and different patients' physical conditions, the following treatment options can be selected for syndrome differentiation and treatment.

3.3.1 Medical observation period

Clinical manifestation 1: Fatigue with gastrointestinal upset

Recommended Chinese patent medicine: Huoxiangzhengqi Capsule (in pills, liquid, oral Liquid)

Clinical manifestation 2: Fatigue with fever

Recommended Chinese patent medicine: Jinhuaqinggan Capsule (in granules), Lianhuaqingwen Capsule (in granules), Shufengjiedu Capsule (in granules), Fangfengtongsheng Pills (in granules)

3.3.2 Clinical treatment stage

1) First stage: Cold and dampness stasis in the lung

Clinical manifestation: Averse to cold, with or without fever, dry cough, dry throat, lassitude, chest tightness, stasis in stomach, or nausea, vomiting, loose stools. Pale or

pale red tongue, white greasy tongue fur, with soft pulses.

Recommended prescription of traditional Chinese medicine: *Atractylodis Rhizoma* 15g, *Citri Reticulatae Pericarpium* 10g, *Magnoliae Officinalis Cortex* 10g, *Pogostemonis Herba* 10g, *Tsaoko Fructus* 6g, *Ephedrae Herba* 6g, *Notopterygil Rhizoma et Radix* 10g, *Zingiberis Rhizoma Recens* 10g, *Arecaesemen* 10g

2) Middle stage: Epidemic toxin blocks the lung from functioning

Clinical manifestation: Lingering fever or fevers and chills alternating, cough with little sputum or with yellow sputum, abdominal distension, constipation, chest tightness, shortness of breath, cough and wheezing, gasp with movements. Red tongue, yellow greasy or dry tongue fur, with rapid and slippery pulses.

Recommended prescription of traditional Chinese medicine: *Armeniacae Semen Amarum* 10g, *Gypsum Fibrosum* 30g (decoct first), *Trichosanthis Fructus* 30g, *Rhei Radix et Rhizoma* 6g (decoct later) 6g, *Ephedrae Herba* 6g, *Ephedrae Herba* (honey-fried) 6g, *Descurainiae Semen Lepidii Semen* 10g (wrap-decoct), *Persiae Semen* 10g, *Tsaoko Fructus* 6g, *Arecaesemen* 10g, *Atractylodis Rhizoma* 10g

3) Critical stage: Depletion of yang and qi

Clinical manifestation: Dyspnea, gasp with any movement or need assisted ventilation, coma, agitation, sweating with cold limbs, dark purple tongue, thick greasy or dry tongue fur, with floating pulses.

Recommended prescription of traditional Chinese medicine: *Ginseng Radix et Rhizoma* (single decoction) 15g, *Aconitilaterialis Radix Praeparata* (decoct first) 10g, *Corni Fructus* 15g, take with *Suhexiang Pills* or *Angong Niu Huang Pills*

4) Recovery stage: Deficiency of qi in the lungs and the spleen

Clinical manifestation: Shortness of breath, lassitude, nausea, vomit, stasis in stomach, no strength to stool, or loose stool, pale fat tongue, white greasy tongue fur.

Recommended prescription of traditional Chinese medicine: *Pinelliae Rhizoma Praeparatum* 9g, *Citri Reticulatae Pericarpium* 10g, *Codonopsis Radix* 15g, *Astragali Radix Praeparata Cummelle* 30g, *Poria* 15g, *Pogostemonis Herba* 10g, *Amomi Fructus* 6g (decoct later)

4 Preventive measures

4.1 Develop emergency plans and work flow

To ensure the effective implementation of the epidemic prevention and control at the pharmacy department, as well as providing effective pharmaceutical care guarantee, a pharmaceutical work leading group shall be established under the unified leadership of medical institutions, and corresponding emergency plans and working procedures should be established. The contents may include but not limited to: human resource management, drug supply guarantee, drug dispensing management, clinical pharmaceutical care management, medication consultation management, drug quality control management, pharmaceutical education and scientific research management, epidemic prevention and control, management of donated drugs, and related information reporting^[27].

4.2 Conduct all- staff training

Provide training for all staff on the knowledge of the 2019-nCoV infection prevention and control. Determine the training contents for different personnel according to the responsibilities. In particular, provide key training for the high-risk departments (outpatient pharmacies of the fever clinic, emergency department or at the isolated area) and pharmacy personnel participated in high-risk operations (such as contact with confirmed or suspected patients, aerosol or body fluid exposure that may result from patient specimen processing). Multiple ways can be used to improve the efficiency and effect of training, such as combining on-site training with online continuing education training. Supervise and urge staff to complete the training in time to ensure that they are proficient in the prevention and control knowledge, methods and skills of the 2019-nCoV infections, and to achieve effective prevention with early detection, early reporting, early isolation, early diagnosis, early treatment and early disease control^[28].

4.3 Pay attention to the health of pharmacists^[28-30]

The pharmacy department should allocate human resources and arrange shifts reasonably to avoid overwork of pharmacists. Pharmacists shall be recommended to keep a healthy diet.

According to the post characteristics and risk assessment results, perform active health status monitoring, including checking body temperature and respiratory symptoms. Take multiple measures to ensure pharmacists stay healthy while providing pharmacy services to patients.

Pay attention to the mental health of pharmacists and their emotional management. According guidance, evaluate the mental status of pharmacists if necessary, and conduct mental counseling for pharmacists in need. You may visit the website of the Sixth Hospital of Peking University (the Institute of mental health of Peking University) at www.pkuh6.cn.

4.4 Protect pharmacy staff from the infection

The pharmacy department shall standardize the disinfection, isolation and protection work procedures, and stock sufficient protective materials with qualified certificates, including disinfection products and medical surgical masks, medical protective masks, isolation gowns, eye masks and other protective supplies, to ensure adequate protection for the pharmacy staff. On top of strict implementation of standard prevention, emphasize the prevention of contact transmission, droplet transmission and air transmission. Selecting and wearing the masks correctly and hand hygiene are key measures for the prevention and control of infections^[28]. During the epidemic of the novel coronavirus infection, pharmacy staff shall perform safety protection according to the guideline^[31] issued by the National Health and Medical Commission and other guidelines^[32] according to the post, operations and exposure risk.

4.5 Monitor pharmacists' infection closely^[28, 33]

Pharmacists should strengthen their awareness of self-warning and prediction in the early stage of infection prevention and control. When a pharmacist is suspected of the

2019-nCoV infection, it must be reported within 2 hours following relevant requirements, and the corresponding disposal and referral shall be made.

Additional monitoring shall be performed for pharmacists working in high-risk departments (pharmacies in the fever clinic, emergency department and the isolated areas) and pharmacists participating in high-risk operations (such as contact with confirmed or suspected patients, contact with aerosol or body fluid exposure that may be generated by patient specimen processing).

4.6 Strengthen the management of cleaning and disinfection^[1, 33-37]

As the 2019-nCoV can be transmitted through droplets and contact, the corresponding areas of the pharmacy department in hospitals shall be disinfected. Previous studies on SARS-CoV and MERS-CoV has shown that the virus was sensitive to ultraviolet and heat, 56°C for 30 minutes, ether, 75% ethanol, chlorine containing disinfectant, peracetic acid, chloroform, and other fat solvent could effectively inactivate the 2019-nCoV. Chlorhexidine cannot inactivate the 2019-nCoV.

The pharmacy department shall clean and disinfect the working environment, relevant objects and equipment in accordance with the relevant cleaning and disinfection guidelines and regulations.

4.7 Strengthen the management of patient visits^[28]

Patient visits shall be managed properly to minimize the crowding of patients, and to reduce the risk of infection in medical institutions. For patients receiving on-site pharmaceutical service, ask if they have 2019-nCoV infection-related symptoms and epidemiological contact history. If patients with suspected or confirmed infection with the 2019-nCoV are found, the pharmacist shall report to the relevant department of the medical institution immediately and shall cooperate with the isolation and other measure to prevent disease transmission.

4.8 Strengthen patient education^[27]

Pharmacists shall actively participate in the education of patients and their

accompanying persons through outpatient pharmacies and consultation, to help them understand the preventive and pharmaceutical knowledge of the 2019-nCoV infections. Pharmacists can also strengthen the knowledge popularization of medications for preventing and treating the 2019-nCoV infections if possible. Provide pharmaceutical services for self medical observers by the internet and telephones.

4.9 Strengthen the management of infection exposure^[37]

Strictly implement the rules and regulations on the infection prevention and control in medical institutions. Reduce the exposure to potential infection vectors (such as paper prescriptions, medication transportations, etc.) when providing pharmacy services, and minimize the risk of infection exposure. If the 2019-nCoV infection exposure occurred, it should be immediately reported to the relevant departments of the medical institution. Emergency plans should be initiated in accordance with relevant standards and procedures, and cooperation should be made with investigation and disposal.

4.10 Strengthen the management of medical waste^[38]

Incorporating the medical waste generated by the confirmed or suspected patients of the 2019-nCoV infection into the management of infectious medical waste. Medical waste generated for providing pharmacy services shall be collected in accordance with relevant regulations of the health administrative department or medical institutions, and then coordinated with relevant departments for standardized disposal. In order to do this, we need to manage by specially-assigned persons, collect and make records in a timely manner, make classified storage, transport by special vehicles, and dispose them at designated locations.

5 Guidance for providing hospital pharmacy services

5.1 Risk and management of infection exposure^[39]

The personal protection of pharmacists and pharmacy workforce should follow the requirements of infection prevention and control in their hospital strictly. Based on the

principle of standard precautions and according to clinical high-, medium-, and low-level exposure risk, most of the pharmaceutical posts are considered as low-risk exposure, and some are at moderate to high risk exposure.

5.1.1 High-risk:

Pharmacy services in the fever clinic or isolation wards. Exposure to aerosols and body fluids (including blood) of the suspected or confirmed patients with the 2019-nCoV infection, such as therapeutic drug monitoring and genetic testing of the patients suspected or confirmed of the 2019-nCoV infection. If the pharmacy laboratory does not meet the requirements of the Biosafety Level 2 or above, it is not recommended to conduct therapeutic drug monitoring and genetic testing of the patients suspected or confirmed with the infection.

5.1.2 Moderate-risk:

Direct contact with patients, such as physical examination when providing pharmaceutical care, patient's body fluid (including blood) contact and transfer, and therapeutic drug monitoring or genetic testing of the patients who was not confirmed or suspected of the 2019-nCoV infection.

5.1.3 Low-risk:

Indirect contact with patients, such as dispensing, medication consultations, pharmacy clinics, pharmaceutical care, drug delivery in wards, pharmacy intravenous admixture, management of drug, and etc.

5.2 Personal protective equipment (PPE)

Personal protective equipment may include medical protective masks, latex examination gloves, goggles, safety glasses, face shields, fluid resistant aprons, gown, coverall, fluid-resistant and impermeable gowns and coveralls, etc.^[31, 39]. PPE should meet National Standards^[31]. PPE should be replaced immediately when they are contaminated by patients' blood, body fluids, secretions, etc., and should be coped to meet with the requirements of Infection Prevention and Control Department in hospital^[28, 40].

5.3 PPE in different infectious exposure positions^[1, 39, 40]

5.3.1 High risk:

Gowns, coveralls, fluid-resistant and impermeable gowns and coveralls, medical protective masks, disposable work caps, goggles / face shields, respirators, double gloves, boots/ shoe covers, and hand hygiene.

5.3.2 Moderate risk:

Coveralls and gowns, medical protective masks, disposable work caps, goggles / face shields, gloves, and hand hygiene.

5.3.3 Low risk:

Coveralls or gowns, medical surgical masks, disposable work caps, and hand hygiene. Pharmacists should follow the PPE donning/doffing protocol strictly. Avoid leaving the contaminated area on PPE to prevent cross-infection in different work zones.

5.4 Management of work facilities and the environment^[1, 40]

5.4.1 Management of work facilities

Drug delivery equipment and containers: The drug delivery equipment and containers in the isolation and non-isolation area must not be mixed. The transportation equipment and containers should be disinfected according to the requirements of the environment.

Prescriptions: Use of electronic prescriptions and delivery of prescriptions via Internet, fax, etc. in outpatient pharmacy of the fever clinic and inpatient pharmacy of isolation area should be given priority, in an effort to reduce paper prescriptions. Paper prescriptions should be collected regularly, fumigated with formaldehyde, sterilized with ethylene oxide and stored properly in a sealed container. The hospital or pharmacy should set up a special area for prescription storage.

5.4.2 Management of the environment

Environment: The pharmacy department shall perform disinfection of the working environment. The pharmacy should keep the dispensing window clean and free of debris. During the epidemic, wipe and disinfect the dispensing window twice a day, or four times a day for the dispensing windows of the fever pharmacy and infectious

disease pharmacy. 75% alcohol, a chlorine-containing disinfectant with chlorine concentration of 250mg/L - 500mg/L or an effective disinfecting wipes can be used for the wiping.

5.5 Management for Patients using Pharmacy Services^[28]

5.5.1 Clinic visits and filling prescriptions:

The pharmacy department shall try to reduce clinic visits of patients by multiple means, such as allowing long-term prescriptions according to local medical insurance requirements, providing consulting services via internet, or providing delivery of medicines to home, to reduce unnecessary clinic visits and the risk of cross-infection.

5.5.2 Patient consultation:

Pharmacists who provide pharmacy services directly to patients shall ask patients about fever, respiratory symptoms, and the epidemiological history. If the 2019-nCoV infection is suspected, patients should be referred to a fever clinic immediately.

5.5.3 Pharmacy service:

If normal pharmacy service cannot be performed during the epidemic, it can be conducted via the Internet, phone or video. Pharmacists shall provide guidance on the safety use of medications for the infection caused by the 2019-nCoV, and monitor and report the adverse reactions, provide scientific guidance and promote rational drug use.

5.5.4 Patient education:

Pharmacists shall actively educate patients and accompanying persons to help them understand the knowledge of protection from 2019-nCov, and guide them to use medications properly, as well as avoiding unnecessary use of preventive medication. During the epidemic, non-face-to-face methods for patient education and medication consultation can be actively performed.

5.5.5 Home pharmacy services:

Pharmacists can provide medication consultation and remote home pharmacy services for people at home isolation and self-medical observation via the online consultation application.

5.5.6 Humanistic care:

Pharmacy services should convey humanistic care by various means, such as providing encouraging words on the material of medication education. Pharmacists can encourage patients to maintain active attitudes to overcome the disease.

6 Guarantee of key drugs, facilities and equipment

6.1 Reference list of key therapeutic drugs and the guarantee of inventory

Aiming at the prevention and disease control of 2019 n-coronavirus infections, the pharmacy department of medical institutions should guarantee the supply of therapeutic drugs related to clinical diagnosis and treatment.

The key therapeutic drugs are used for disease prevention, diagnosis and treatment in medical institutions, as well as for supplying the medical support teams. The pharmacy department should be authorized by the pharmacy administrative and therapeutic committee of each medical institution to formulate a list of key therapeutic drugs. Establish the list from the perspective of pharmacy based on the demand of clinical diagnosis and treatment progress, and epidemic prevention and control, see Table 6.1 for reference.

Designate a pharmacist to take charge of the procurement, storage and distribution of key therapeutic drugs. Adjust the inventory as needed to guarantee the supply for clinical practice, according to the diagnosis and treatment protocol, clinical treatment demands, and drug reserves.

Table 6.1 Reference list of key therapeutic drugs for 2019-nCoV related pneumonitis

Function	Drug name	Dosage form and specifications ^[41]	References
Antiviral treatment	Recombinant Human Interferon	Recombinant Human Interferon α -1b Injection: 10 μ g: 0.5mL, 30 μ g: 1mL; Recombinant Human Interferon α -2a Injection, Recombinant Human Interferon α -2a Injection: 3 million IU,	[1, 22]

		5 million IU; Recombinant Human Interferon α -2b Injection, Recombinant Human Interferon α -2b Injection (P.putida): 3 million IU, 5 million IU	
	Lopinavir/ritonavir	Tablet: Lopinavir 200mg, Ritonavir 50mg	[1, 22]
	Ribavirin	Tablet, capsule: 0.1g; Injection: 1mL: 0.1g	[1]
Antimicrobial agents	According to the existing drug list of the medical institution		[1, 22]
Antipyretic analgesia treatment	Ibuprofen	Tablet, Granules: 0.1g,0.2g; Capsule: 0.2g; Slow release (Tablet, Capsule):0.3g; Suspension: 60mL:1.2g,100mL:2g	[22]
	According to the existing drug list of your medical institution		
Corticosteroids	Methylprednisolone	Tablet: 4mg (Sodium succinate) Sterile powder for injection: 40mg, 500mg	[1, 22]
Intestinal microecological preparations	According to the existing drug list of your medical institution		[1]
Other gastrointestinal treatment	According to the existing drug list of your medical institution		[42]
Antitussive treatment	According to the existing drug list of your medical institution		
Sputum Removal Treatment	According to the existing drug list of your medical institution		
Anti-asthmatic treatment	According to the existing drug list of the medical institution		
Chinese patent medicine	Huoxiangzhengqi Capsule (Pills, Tincture, Oral Solution)	Soft capsule: 0.45g; Tincture : 10mL; Pills: 2.6g Pills Drops: 8 pills	[1, 11]

		drops are equivalent to 3g pieces; Tincture: 10mL; Oral Solution: 10mL;	
	Jinhua Qinggan Granule	Granules: 5g (Equivalent to 17.3g pieces)	[1]
	LianhuaQingwen Capsule (Granule)	Capsule: 0.35g; Granule: 6g	[1, 11]
	ShufengJiedu Capsule	Capsule: 0.52g	[1]
	Fangfengtongsheng Pills (Granule)	Pills: 9g, 8 pills equivalent to 6g pieces, 20 pills equivalent to 1g pieces; Granules: 3g	[1, 11]
	Xiyanping Injection	Injection: 5mL:125mg,2mL:50mg	[1]
	Xuebijing Injection	Injection: 10mL	[1]
	Shenfu Injection	Injection: 10mL	[1, 11]
	Shengmai Injection	Injection: 10mL, 20mL	[1, 11]

Note: This drug list is for reference only, medical institution can make adjustments according to their specific conditions.

6.2 Reference list of disinfectants and consumable and the guarantee of inventory

Aiming at the prevention and disease control of the 2019-nCoV infections, the pharmacy department of each medical institution shall negotiate with the infection management department to determine the list of disinfection drugs, as shown in Table 6.2, and complete the disinfection and protection work of each department in time.

The pharmacy department shall disinfect the potential contaminated objects periodically ,including object surfaces, the air, hands and prescriptions. And, report the disinfection drugs and disinfection consumable are required for supply to the medical institution.

All disinfection drugs, disinfection consumable and protective supplies should meet the management requirements of the national health department.

Table 6.2 Reference list of disinfectants and consumable for commonly contaminated objects of 2019-nCoV infections ^[33, 36, 40]

Object of disinfection	Type of disinfection drugs	Disinfection consumable
Environmental object surface	Chlorine-containing disinfectant (1000mg/L), chlorine dioxide (500mg/L), 75% alcohol, etc.	Disposable absorbent material
Hands	Alcohol-containing quick-drying hand disinfectant, chlorine-containing disinfectant, hydrogen peroxide.	
Skin	0.5% iodine-based disinfectant, hydrogen peroxide.	
Mucosa	0.05% iodine-based disinfectant	
Indoor air	Peracetic acid, chlorine dioxide, hydrogen peroxide, etc.	
Pollutant	Chlorine-containing disinfectant (5000-20000mg/L), disinfectant powder or bleach powder containing water absorption	
Textiles such as clothes, bedding	Chlorine-containing disinfectant(500mg/L), ethylene oxide	
Prescriptions	Ethylene oxide	

6.3 The list and management of key facilities and equipment

For the prevention and control of 2019 n-cCoV, the pharmacy department of medical institutions should develop a catalogue of equipment, facilities and personal protective equipment related to the epidemic prevention and control, as shown in Table 6.3. Equipment shall be provided with national qualification certificates, and qualified personnel shall be designated to operate and maintain the equipment in accordance with the standard operation process. Personal protective equipment shall be provided with national qualification certificates.

Table 6.3 Reference list of key facilities, equipment and personal protective equipment for the 2019-nCoV infections.^[31, 36, 40]

Classification		Name
Facilities	Essential	Isolated dispensing window
	Optional	Biological safety cabinet
Equipment	Essential	UV Lamp
		Air sterilizer

		Body temperature measuring equipment
		High-pressure steam sterilizer
		Transfer box
	Optional	Intelligent distribution equipment
Personal protective equipment	Essential	Medical protective mask
		Disposable work cap
		Disposable gloves
		Coverall
	Optional	Medical surgical mask
		Medical protective mask (N95 mask or equivalent mask)
		Face shield
		Power-supply air-supply respirator with optional dust filter box or filter tank
		Goggles
		Long sleeve thick rubber gloves
		Work shoes
		Rubber boots
		Waterproof boot cover
		Disposable shoe cover
		Medical gown
Waterproof apron		
Waterproof isolation gown		

7 Management and use of drugs under epidemic situation

7.1 Management and use of donated drugs^[40, 43]

The donated medicines refer to drugs voluntarily provided to medical institutions by domestic and foreign suppliers, manufacturers and other organizations for the prevention, treatment and health care of pneumonia caused by the 2019-nCoV. All donated drugs shall be those needed by medical institutions for diagnosis and treatment, epidemic prevention and control, and shall be qualified marketed medicines that comply with the provisions of the Chinese Food and Drug administration, the health administration and other government departments. Donated medicines should also pass the review of the designated management department of the medical institution, and complete the qualify examination and approval records filling. The validity period of donated medicines shall be within a reasonable executive period.

When accepting donations, medical institutions shall abide by national laws and regulations. When using donated medicines, the pharmacy department shall follow the procedures and requirements prescribed by the medical institution strictly, and shall not accept or use the donated medicines privately or engage in profit-making activities. Set up a special person, a special library, and a special account to manage the donated drugs under the supervision and audit of designated management department of the medical institution.

7.2 Management and use of drugs for clinical trials^[44, 45]

In the relevant clinical trials for the prevention and control of the 2019-nCoV infections, the researchers are responsible for the drug use involved in the trials on the basis of principles of medical ethics. The pharmaceutical department shall cooperate with the researchers to manage the drugs being used.

The dosage and instructions of related drug use shall follow the clinical trial protocol. Drug-related information needs to be documented include the quantity, shipment, delivery, acceptance, distribution, recovery and destruction of the remaining drug when being used. The supply, usage, storage, and disposal of remaining drugs for clinical trials shall comply with relevant national regulations.

8 Reliable sources of information and other resources

Num.	Organization	Title	Time	Resource
1	World Health Organization	Novel Coronavirus (2019-nCoV) technical guidance. refer to country readiness, patient management, risk community engagement, surveillance and case definitions, infection prevention and control in health care facilities, disease commodity package, laboratory guidance, early investigations, reduction of transmission from animals to humans. https://www.who.int/emergencies/diseases/novel-coronavirus-2019/technical-guidance		
1.1		Global Surveillance for human infection with novel coronavirus (2019-nCoV) (Interim guidance v3)	Jan. 31 st , 2020	Attachment 1.1
1.2		Surveillance case definitions for human infection with novel coronavirus (2019-nCoV) (Interim guidance v2)	Jan. 15 th , 2020	Attachment 1.2
1.3		Infection prevention and control during health care when novel coronavirus (2019-nCoV) infection is suspected (Interim guidance)	Jan. 25 th , 2020	Attachment 1.3
1.4		Clinical management of severe acute respiratory infection when novel coronavirus (2019-nCoV) infection is suspected (Interim guidance)	Jan. 28 th , 2020	Attachment 1.4
1.5		Home care for patients with suspected novel coronavirus (2019-nCoV) infection presenting with mild symptoms and management of contacts (Interim guidance)	Jan. 20 th , 2020	Attachment 1.5
2	The United States Centers for Disease Control and Prevention	Information about 2019-nCoV for Health Professionals, including interim guidance for healthcare professionals, infection control, clinical care, preparedness checklists, implementing home care.		

		https://www.cdc.gov/coronavirus/2019-nCoV/hcp/clinical-criteria.html		
2.1		What you need to know about 2019-nCoV	Jan., 2020	Attachment 2.1
2.2		What to do if you are sick with 2019-nCoV	Jan., 2020	Attachment 2.2
2.3		What the public should do to prevent 2019-nCoV	Jan., 2020	Attachment 2.3
2.4		Flowchart to identify and assess 2019-nCoV	Jan., 2020	Attachment 2.4
2.5		Interim clinical guidance for management of patients with confirmed 2019 novel coronavirus (2019-nCoV) infection	Jan. 30 th , 2020	https://www.cdc.gov/coronavirus/2019-ncov/hcp/clinical-guidance-management-patients.html
2.6		Interim guidance for healthcare professionals on the evaluation and testing of patients under investigation (PUIs) for 2019-nCoV	Feb. 2 nd , 2020	https://www.cdc.gov/coronavirus/2019-nCoV/hcp/clinical-criteria.html
2.7		Interim infection prevention and control recommendations for patients with known or patients under investigation for 2019 novel coronavirus (2019-nCoV) in a healthcare setting	Jan. 28 th , 2020	https://www.cdc.gov/coronavirus/2019-nCoV/hcp/infection-control.html
3	National Health Commission of the People's Republic of China	Information about Disease Control and Prevention for 2019-nCoV. http://www.nhc.gov.cn/xcs/zhengcwj/list_gzbd.shtml		
3.1		Prevention and control of human infection with novel coronavirus (2019-nCoV) (guidance v3)		Attachment 3.1
3.3		Case surveillance for human infection with novel	Jan. 22 nd , 2020	Attachment 3.2

		coronavirus (2019-nCoV) (guidance v2)		
3.3		Epidemiological investigation for human infection with novel coronavirus (2019-nCoV) (guidance v2)	Jan. 22 nd , 2020	Attachment 3.3
3.4		Management for suspected exposure and close contacts of human infection novel coronavirus (2019-nCoV) (guidance v2)	Jan. 22 nd , 2020	Attachment 3.4
3.5		Technical guidelines for laboratory testing of human infection novel coronavirus (2019-nCoV) (guidance v2)	Jan. 22 nd , 2020	Attachment 3.5
3.6		Technical guidelines for prevention and control of novel coronavirus (2019-nCoV) infection in medical Institutions (guidance v1)	Jan. 23 th , 2020	Attachment 3.6
3.7		Work program for prevention and control of novel coronavirus (2019-nCoV) infection in communities (trial version)	Jan. 25 th , 2020	Attachment 3.7
3.8		Clinical management of human infection with novel coronavirus(2019-nCoV) (trial guidance v5)	Feb. 4 th , 2020	Attachment 3.8
3.9		Guidance for the use of common medical protective equipment in the prevention and control of human infection with novel coronavirus(2019-nCoV) (trial version)	Jan. 27 th , 2020	Attachment 3.9
3.10		Notice on management of medical waste in medical institutions during the outbreak of human infection with novel coronavirus(2019-nCoV)	Jan. 28 th , 2020	Attachment 3.10
3.11		Guidance for protection of people with different risks of infection with novel coronavirus(2019-nCoV)	Jan. 31 st , 2020	Attachment 3.11

3.12		Guidelines for the use of masks to prevent infection with novel coronavirus(2019-nCoV)	Jan. 31 st , 2020	Attachment 3.12
3.13		Principles for psychological crisis intervention during the outbreak of human infection with novel coronavirus(2019-nCoV)	Jan. 27 th , 2020	Attachment 3.13
4.1	Beijing Municipal Health Commission Beijing Medical Security Bureau	Notice on issues related to outpatient prescriptions during the epidemic of novel coronavirus infected pneumonia	Jan. 26 th , 2020	京卫医[2020]8号
4.2	Beijing Municipal Health Commission	Guidelines for the protection of medical personnel in face of novel coronavirus induced pneumonia in Beijing	Feb 3 rd , 2020	NA
4.3	Beijing Medical Affairs Management Center	Notice on optimizing the management and service of medical insurance during the breakout of novel coronavirus infected pneumonia	Jan 27 th , 2020	京医保中心发[2020]6号
5.1	Chinese Society for Parenteral and Enteral Nutrition	Expert opinion on diet and nutrition for the prevention and treatment of novel coronavirus infections	Jan. 27 th , 2020	NA
5.2	Science Popularization Department of Chinese Medical Association	Recommendations on the diagnosis, prophylaxis and treatment of the 2019-nCoV infection or pneumonia in children	Jan. 29 th , 2020	NA
5.3	Health Management Branch of Chinese Medical Association	Twelve recommendations for the prevention and control of novel coronavirus infected pneumonia	Jan. 31 st , 2020	NA
6.1	Pediatric Branch of Hubei Medical Association;	Recommendations for diagnosis and treatment of novel coronavirus infection in children in Hubei (Trial	Feb, 2020	Chinese Journal Of

	Pediatric Branch of Wuhan Medical Association; Pediatric Medical Quality Control Center of Hubei	version 1)		Contemporary Pediatrics, 22(2):96-99.
6.2	Beijing Pharmacy Center for Quality Control and Improvement	Recommendations for management of Novel coronavirus-infected pneumonia in pharmaceutical department of medical institutions.	Jan 31 st , 2020	京药质控 [2020]1 号
6.3	Beijing Hospital Infection Management Quality Control and Improvement Center	Beijing's recommendations for cleaning and disinfection of respiratory-borne diseases (novel coronavirus-infected pneumonia) (trial vision)	Jan 26 th , 2020	NA
6.4	Beijing Administration of Traditional Chinese Medicine	Prevention and treatment program with TCM for novel coronavirus-infected pneumonia in Beijing	Jan 29 th , 2020	NA
6.5	Sichuan Pharmacy Administration & Quality Control Center	Recommendations for management of novel coronavirus-infected pneumonia by SiChuan Pharmacy Administration & Quality Control Center	Jan 22 nd , 2020	川药事[2020-1号]
6.6	China International Exchange and Promotive Association for Medical and Healthcare (CPAM)	A rapid advice guideline for the diagnosis and treatment of 2019 novel coronavirus (2019-nCoV) infected pneumonia (Standard version)	Feb 2 nd , 2020	Medical Journal of Chinese People's Liberation Army, 45(1):1-20.
6.7	Editorial Board of Chinese Journal of Contemporary Pediatrics	Perinatal and neonatal management plan for prevention and control of 2019 novel coronavirus infection (1st Edition)	Feb, 2020	Chinese Journal Of Contemporary

				Pediatrics, 22(2):87-90.
6.8	Pediatric Committee of the Chinese People's Liberation Army; Editorial Committee of Chinese Journal of Contemporary Pediatrics	Emergency response plan for the neonatal intensive care unit during epidemic of 2019 novel coronavirus	Feb, 2020	Chinese Journal Of Contemporary Pediatrics, 22(2):91-95.
6.9	The First Affiliated Hospital of Zhengzhou University	Recommendations for management of novel coronavirus (2019-nCoV) infected maternal women in Henan Province, China	Mar, 2020	Journal of Zhengzhou University (Medical Sciences), 55(2):1-3.
6.10	Zhejiang Hospital Pharmacy Administration & Quality Control Center	Diagnosis and clinical management of novel coronavirus-infected pneumonia: Recommendations for pharmacists	Jan 29 th , 2020	浙药质字[2020]第1号 http://www.zjyszk.com/tzgg/ShowContent_11605.htm
7.1	Tongji Hospital Affiliated to Tongji Medical College, Huazhong University of Science & Technology	Rapid guideline for the diagnosis and treatment of novel coronavirus-infected pneumonia (3rd Edition)	Jan 30 th , 2020	Herald of Medicine
7.2	Emergency Department, Union Hospital Affiliated	Strategies and instruction for Management of 2019 novel coronavirus infection of Union Hospital	Jan 21 st , 2020	NA

	to Tongji Medical College, Huazhong University of Science & Technology	Affiliated to Tongji Medical College of HUST		
7.3	Working Group of 2019 Novel Coronavirus, Peking Union Medical College Hospital	Diagnosis and Clinical Management of 2019 Novel Coronavirus (2019-nCoV) Infection: An Operational Recommendation of Peking Union Medical College Hospital (V2.0)	Jan 30 th , 2020	Medical Journal of Peking Union Medical College Hospital
7.4	West China Hospital, Sichuan University	Prevention and control of 2019-novel coronavirus infection in hospital: Urgent recommendation of West China Hospital	March, 2020	Chinese journal of evidence-based medicine,20(3): 1-9.
7.5	Peking University Third Hospital	Diagnosis, treatment and prevention plan for novel coronavirus infected pneumonia of Peking University Third Hospital	Feb 1 st , 2020	NA
7.6	Department of Pharmacy, Zhongnan Hospital of Wuhan University	Prevention and control of novel coronavirus infection for pharmacists and logistician	NA	http://www.zgys.org/ch/reader/view_news.aspx?id=20200128200338001&category_id=zxxx
7.7	The Second Xiangya Hospital of Central South University	Prevention and control of novel coronavirus infection: Recommendations for pharmacists in the hospital.	NA	NA
7.8	Sichuan Academy of Medical Sciences &	Rational Use and Pharmaceutical Care of Antiviral Drugs for Novel Coronavirus Pneumonia	Feb 3 rd , 2020	Herald of Medicine

	Sichuan People's Hospital & Affiliated Hospital of University of Electronic Science and Technology of China			
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Conflicts of interest

This guidance and management strategies aim to provide pharmacists and pharmacy workforce with relevant information and specific work guidance on prevention and control of novel coronavirus (2019-nCoV) outbreak. The authors and consensus experts declare that they have no conflicts of interest.

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