English translation of transcript from presentations made by Chinese experts during the Technical briefing on China's experience in responding to COVID-19, 15:00, March 12, 2020

Dr Ma Xiaowei, Minister of NHC:

Respected representatives of the relevant countries and international organizations, respected representatives of the relevant provinces, ladies and gentlemen, friends. Good afternoon.

COVID-19 has now affected more than 100 countries and nearly 120,000 people, making it a serious threat to human health and economic and social development. All countries should fight it in solidarity. At this critical juncture, we are holding this international briefing to share China's experiences and lessons in responding to the outbreak, discuss countermeasures, and help maintain global public health security. I have noted that in his video message just now, Dr Tedros gave full recognition of this effort.

The rapid spread of COVID-19, the wide range of infections and the difficulty in prevention and control are unprecedented in the history of new China. Under the strong leadership of the CPC Central Committee led by Xi Jinping, the Chinese people united as one to fight against the disease. As a result of all the hard work, the trend of the spread of the epidemic and the epidemic curve have been changed for the better. As China-WHO Joint Mission pointed out, in face of this unknown virus, China has taken the most courageous, flexible and aggressive control measures. Within just 7 weeks, hundreds of thousands of cases have been averted by building up the strong first line of defense. In its response efforts, China has always put people at the center, taking into consideration of its social and economic systems and structure, public health capacity, public health resources and emergency response capacity, and following the classic principles in infectious disease prevention and control in a creative way to control the source of infection, interrupt the transmission and protect the susceptible population. These classic principles are practiced effectively in China in its globalization process, indicating that they are not lost in the light of time, but are still shining in the 21st century. I would summarize China's experiences into 8 major points:

First, there is a highly efficient commanding system. The CPC Central Committee led by Xi Jinping attaches great importance to outbreak responses by strengthening central and unified leadership. This is reflected in the leadership and deployment by himself in person, by organizing multiple high-level meetings of the Standing Committee of the Political Bureau of the CPC Central Committee and the Political Bureau of the CPC Central Committee to discuss and assess the epidemic, by clearly requiring "to work together with determination, evidence-based and precision strategies" and by making important decisions that balance between outbreak control and social economic development. President also visited Wuhan, Hubei in person a couple of days ago, requiring keeping outbreak responses as the top priority work. Premier Li Keqiang heads the Central Leadership Group for COVID-19 Responses himself to coordinate across different sectors and different provinces in implementing the control measures. The State Council Joint Prevention and Control Taskforce strengthens the coordination with the governments and Party Committees at all levels taking active actions, leading to rapid actions in mobilization and deployment across the country.

Second, evidence-based and precision prevention and control strategies in accordance with laws are in place. The State Council promptly included COVID-19 as a Category B infectious disease but managed as a Category A infectious disease, coordinated international and domestic exchanges, improved the information release mechanism, and kept the public informed of the epidemic situation. All provinces have launched and adjusted their emergency response mechanisms in a timely manner to bring prevention and control work into the “rule of law” framework. Four lines of defense have been set up nationwide.

The first line of defense is the prevention and control in Wuhan and Hubei Province. The Central Steering Group led by Vice premier Sun Chunlan stationed in Wuhan to guide Hubei Province to prevent exportation externally and spread internally. Decisive actions were taken following the instructions of Central Government to close down the outward ways of Wuhan city to stop exportation of cases with community control and patient treatment as two priorities. Efforts were made to ensure all cases in need to be admitted and treated; all suspect cases in need to be tested; all close contacts in need to be isolated. In addition to Wuhan, 16 prefectures were divided into three categories: those with widespread transmission; those with local outbreaks; and those with sporadic cases. 19 provinces of the country were paired up with a prefecture in Hubei to provide support.

The second line of defense is to prevent large outbreaks in Beijing by strengthening the joint control efforts among Beijing, Tianjin and Hebei Province. Strict control was put in place at the entrance to Beijing; outsiders coming to Beijing were provided with guidance on returning to Beijing in an orderly way; community joint prevention and control measures were implemented comprehensively to prevent importation of infection.

The third line of defense is to stop transmission in key areas. Joint prevention and control mechanisms were set up among Hubei Province and 6 surrounding provinces. Communication was strengthened between Hubei and Zhejiang, Guangdong Provinces. Measures were taken to prevent effectively the spread of transmission.

The fourth line of defense is to control the spread of the infection across the country by enhancing grassroots level personnel for individual and household tracing, taking measures to improve ventilation and disinfection in public transportation, passenger temperature checking and health screening, disseminating health educational information so that everyone in China knows what and how to do and takes actions.

Third, proactive prevention and control model is used by emphasizing the importance of the frontline. The principles of early detection, early reporting, early isolation and early treatment were practiced. The prevention and control protocols were revised and updated for 6 times; ensured every step and detail of prevention and control efforts was clarified, precise and doable; ensured all populations, all settings and communities were covered by the control efforts without gaps with focus on “early detection”. Healthcare facilities were required to report online any detected cases within 2 hours; labs were required to provide testing results within 12 hours; CDCs were required to complete epi-investigation within 24 hours and trace close contacts. 15 technical protocols were issued with specific and targeted measures for the elderly, children and other key populations as well

as public places such as train stations and malls and key settings such as businesses and schools. Clarified accountabilities to ensure orderly resumption of work.

Fourth, coordinate and deploy health resources. Designated hospitals in Wuhan were rapidly adjusted and expanded to accommodate the surge of patients with beds increased during a short period of time from 5000 to 23000, including over 9000 beds in ICU. A number of gyms, exhibition centers and training centers were modified into mobile cabin hospitals and isolation centers. The first 3 mobile cabin hospitals built up in 29 hours have 4000 beds. Accumulatively over 12000 mild patients were admitted to 16 mobile cabin hospitals. National labs, local labs and third-party labs were mobilized with 3 BSL3 labs deployed that helped increase the daily capacity of nuclear acid testing to 35000 per day. The above-mentioned measures expanded medical resources rapidly to ensure severe cases treated in the designated hospitals, mild cases treated in mobile cabin hospitals and suspect febrile patients and close contacts isolated in the isolation site to avoid community transmission.

Fifth, Close collaboration is carried out to improve treatment. More than 40,000 outstanding medical personnel across the country in over 340 medical teams and the National Emergency Medical Teams were deployed to Wuhan; of them, 15000 were professionals in critical care, infectious disease care, respiratory medicine, circulatory medicine and anesthesiology. We insisted on “four concentrations”, that is, concentration of patients, concentration of experts, concentration of resources and concentrated treatment with focuses on improving admission rate, cure rate and reducing infection rate and case fatality rate. Experts of multiples disciplines developed the Clinical Protocol for COVID-19 and have revised it for 7 times. In practice, clinical practice and pathology findings, frontline and rear supplies, doctors and nurses, management and clinical practice have been closely linked. Mechanisms were established including reporting critical cases within 24 hours, death case discussion, severe case inspection etc.

Sixth, High technology is widely used as a key to fight against COVID-19. We integrated scientific research with prevention and control efforts, used big data and information technology to help the implementation of people mobility restriction and traffic control, as well as help with epi-investigation. Multiple research institutions were coordinated to have the pathogen identified within 8 days and we shared with the international community the whole genome sequence of some of the viral strains. The test kits were optimized within 16 days. Key research projects were launched urgently; clinical trials were conducted with multiple lines of drug development going on. Traditional medicines were widely used in prevention, treatment and rehab services.

Seventh, the concept of for the people and relying on the people is observed. Historically the Chinese nation had been devastated by epidemics but always survived them with even stronger vitality. This is very closely related to the tradition that one would scarify oneself for the family and the nation and the tradition of mutual support. In face of the epidemic, the whole nation, home and abroad, stands together in weal and woe with 1.4 billion people consciously fulfill their civic duties by staying at home for self-protection. People of Wuhan and Hubei in particular, have made a lot of sacrifices. Healthcare workers in the face of danger, without hesitation, rushed to the first line of control and treatment and saved lives, and demonstrated their technical levels in specialty

development, professional development and emergency responses over the years.

Eighth, further international collaboration and exchange is conducted. China received wide support in COVID-19 responses with many countries and international organizations sending supportive messages to China, donating response materials. WHO has been collaborating and communicating with China. All these mental and material support was so timely for us and China will never forget these friends who reached out help hands in a critical time. China has announced to donate USD 20 million to WHO to support international collaboration against COVID-19 and help developing countries to improve response capacity. Upon invitation, China also dispatched experts and donated test kits and medical supplies to support response efforts. We will continue to provide assistance within our capacity to countries and regions in need to make our contribution to international responses.

Ladies and gentlemen, dear friends, viruses and diseases are the common enemies of mankind. It is the right choice to support each other and tide over the difficulties together. By fighting the epidemic at any cost and taking the virus by the throat, China is not only protecting its own population of 1.4 billion people, but also protecting the health and life of the 7.5 billion vulnerable people across the world. COVID-19 is still spreading rapidly around the world. The United Nations, WHO, the World Bank and other international organizations actively call for evidence-based response. The prevention and control strategies, methods, technologies, standards and case studies that China implemented in the previous stage have now been tested in practice. We are willing to share our experiences with the international community. To this end, we have compiled China's protocols into a collection for all to take after the briefing. Spring is coming in Wuhan while the global fight against COVID-19 enters a critical stage. But no infectious disease can stop the pace of human and society development. Let us work together, forge ahead, and jointly greet the dawn of victory. Thank you!

Dr. Li Zhongjie, to talk about the COVID-19 Control and Prevention Plan (the 6th Edition):

Dear guests, very honored to have the opportunity to introduce to you the prevention and control of COVID-19 in China.

Let's first look at the epidemic curve in the past 2 months. It is a typical acute epidemic curve. But the disease is different from most of the other diseases. The time and incidences varied greatly, with the highest incidences of nearly 4,000. I will briefly talk about how we changed the curve of such a disease with universal susceptibility, and how we almost achieved the goal of confinement.

Certainly, any control measures should be based on scientific knowledge of the disease. COVID-19 is a newly emerging disease, and initially we had very little knowledge about it. But in the past 2 months, we had intensive investigations on its transmission and clinical features, including surveillance, epidemiologic survey, and specific studies. We had some preliminary understanding of the disease, which provided us the guidance for planning control and prevention. COVID-19 is an infectious disease of the respiratory tract, spreading via air-borne droplets. This is key information for planning control and prevention. What's more, it is different from SARS in terms of transmission routes and timing. Patients with symptoms can spread the disease. Those patients with mild

symptoms or in latent period can also spread the disease, which makes it different from SARS. It saw greater transmissibility, with an average transmission interval of 6 days (latent period and secondary case included). All these key information guides our work on the control and prevention plan.

80% of the cases are mild to moderate ones, even though these cases see fatalities, 6% initially in Wuhan. However, the case fatality was below 1% in places other than Wuhan City, Hubei Province. This reminds us that it is key to have early diagnosis and timely medical interventions, in order to reduce case fatality.

We have adopted confinement strategy or containment strategy, because we know it's key to cut off the transmission. Non-medicine interventions are the choices, for there is no effective vaccine for such a newly emerging disease. Non-medicine interventions are the same globally, including detection, management, quarantine, and social distance rule, such as travel restriction, and measures of persona hygiene and environmental health. These measures are corelated, but effective implementation of these measures is the key. This will determine the epidemic trend.

Based on risk assessment results, we have taken tiered and stratified measures. For the low-risk areas, we stress on prevention, and strictly control these areas to prevent imported cases. For the areas with moderate risks, we adopted measures for both prevention of imported cases and control of transmission after scattered cases identified. For high-risk areas, our primary task is to stop local spreading, and secondary task is to prevent its spreading to other sites. That's why we took radical measure of closing down Wuhan on January 23. Certainly, we have to adopt strict measures of control and prevention in areas with high transmissibility. But a grading system has been introduced to stratify different localities dynamically. The first control and prevention plan was issued on January 15th, and the 6th version on March 10. 6 versions of the plan were developed, that means an update in less than 10 days. This is really something unprecedentedly ever done by the Chinese disease control and prevention. On one hand, we have ever fast gained more knowledge about it, on the other hand, it reflects flexibility. But we have also held to the strategy of "early detection, early reporting, early quarantine, and early treatment", as mentioned by Mr. Xiaowei Ma. This is the conventional strategy developed by the Chinese government. Each regimen has a plan for case surveillance and management, as well as cumulative epidemiologic survey and personal protection and disinfection.

This is our case and close contact detection process. Here we consider about suspected cases and diagnosed case, as well as the distinctive characteristic of the disease—the infection by asymptomatic cases. Therefore, we quarantine both symptomatic and asymptomatic cases. Meanwhile, we tracked down those close contacts in a strict and timely way. Once diagnosed positive, they had to be quarantined as well. Proper care and case management have been provided to the diagnosed cases. This whole process is complete and close-end, ensuring effective head-to-tail management of the infection source.

For the disease surveillance, we have introduced a stratified management system, covering asymptomatic infection, clustering infection, and close contacts. Clinicians and CDC staff attend to these different cases. Soon it will see the publication of the latest English version of the control and

prevention plan in the journal of the National CDC. You can download it later on.

Here I would like to stress on some early detection methods. Different from the conventional disease surveillance, COVID-19 relied on hospitals to detect the patient. In our plan, we not only state the role played by the hospital in monitoring, but also some active case detection methods for the close contact. For those with symptoms or with suspected symptoms, we need to collect and test the sample as early as possible. What's more, you heard Mr. Ma's talk about screening for fever in main roads or places with traffic. This is also a way to detect cases.

We require for timely reporting of all cases, for the disease has been legalized as Category B infectious disease and managed as Category A infectious disease—the highest requirement for reporting. As a result, we ask for reporting of any case (symptomatic or asymptomatic) through online information system within 2 hours. Once the local hospital reports the case, city, provincial or national CDC will launch transportation investigation of the close contact. What's more, the reporting system can dynamically captures the status of the patient, such as suspected to confirmed, or negative. Each status will be updated fairly quickly in the system. Besides case reporting, we also require for reporting of any clustering infection in a specific setting—home or indoor setting, within 2 hours. In China, the first case in any county or city district is required to be reported as a public health emergency event. Such a high level of reporting ensures that the local governments will respond and handle the case timely. This is a reporting system we set up on the basis of disease control and prevention. These are all the cases, including clustering infection with data collected from the epidemiologic survey. We can soon realize rapid collection of all the information of close contact. This provides information for decision-making.

For case management, quarantine and care has been given in the designated hospital. Different case management measures have been provided for different cases. Suspected patients who cannot be mixed with other confirmed cases are managed and quarantined in the single-bed room, while the asymptomatic infection or positive cases can be mixed and quarantined together.

Discharge decision has to be managed in a clear and strict way. The suspected case can only be ruled out after two consecutive negative test results with a day's interval. In the latest plan, we added decision criteria based on antibody test. The suspected case can be ruled out on the basis of the negative antibody test on the seventh day. The asymptomatic infection case can only be discharged after getting recovery and negative etiologic diagnosis. Even after discharge, 14 days follow-up will be provided, to reduce transmission risk of the infection to the minimal level.

Here I'll talk about the close contact. At the early stage, we used infection contact as the criterion for defining the close contact. However, it was found in the investigation that the infection could happen at the late stage of latency. As a result, we adopted a new criterion for the close contact—2 days before the onset. This is a critical adjustment of decision criterion, reflecting the timely and flexible adjustment of the control and prevention measures through a process of updating the knowledge of the disease by conducting scientific studies. 14 days home-based or concentrated quarantine is required for the close contact. Their health status will be checked upon by the community worker and doctor, and body temperature measured twice a day. Once symptoms developed, sample

collection or other investigation will follow.

Case detection and testing cannot be done without testing of blood sample in the lab. Right after issuance of the pathogen on January 10th, we established nuclear acid testing method, rapidly manufactured test kits, and distributed test kits to all the counties and city districts, to enhance their case-detect capacity. This has backed the disease control and prevention efforts. It is key to require for the confirmed result in 12 hours.

Moreover, the communication and advocacy of public health information, as well as instruction on evidence-based and effective personal measures are all critical. Therefore, tailored education materials have been developed for different population groups, such as the elderly, patient with non-communicable disease, student, pregnant woman. There are also materials for different transportations or personal hygiene, such as hand washing and disinfection. This information has been disseminated properly.

Finally, I'd like to talk about what could have been if China had taken different responses. This is also applicable for the other countries. The upper line represents the natural incidence without any active interventions. Due to superior transmissibility of the disease, the line goes up sharply, with incidence climbing up rapidly. In such a situation, medical resources will be consumed heavily, as we could see from the early stage of outbreak in Wuhan. However, if we had taken early response and confinement measure right at the beginning of the outbreak, the situation would have been shown by the purple line down here. As you can see, we could have had a fairly flat summit here. Now the China's confinement strategy has almost achieved such a result. China may have more imported cased as one can find in many other countries. In such a situation, we can adopt more aggressive measures to reduce the imported cases, and continue to stress on the early detection and quarantine strategy. As you can see, the epidemic line can be like this—a low flat line with small fluctuation. However, on the contrary if we don't take strong measure, and don't manage some cases effectively, we may see the coming of a second summit. As a result, we need to stick to the very strict confinement measure, to ensure that we don't waste the previous confinement efforts.

Well, this is all about my brief introduction. Thank you!

Professor Wang Guiqiang, director of the Department of Infectious Diseases, Peking University First Hospital, to introduce the "COVID-19 Diagnosis and Treatment Plan (Seventh Edition)":

Okay, everyone, on behalf of the national team of experts, I will report to you on the seventh edition of the Chinese medical treatment plan. The seventh edition of the treatment plan was announced on March 3. There are 13 sections in this version, including etiology, epidemiology, etc. I just briefly report some points to you.

First look at epidemiology. Sources of infection for all patients with new COVID-19 infection, as well as asymptomatic infections can be used as the source of infection. The main route of transmission is droplet transmission and close contact transmission. Of course, aerosols can also be used as a route of transmission under relatively closed, high-concentration, and long-term exposure in a specific

environment. Of course, the virus particles found in stool and urine in recent times have found that feces and urine have polluted the environment and caused aerosol or close contact transmission. All populations are susceptible, including newborns and 108-year-olds. In this version of the treatment plan, we have added a pathology section. This pathology is derived from limited anatomical data and biopsy data. The most important hint to us is that it accumulates in the lungs, and of course it also damages the immune system. First look at the lungs, you can see the time change of the lungs; you can see the destruction of epithelial cells in the alveoli, and the changes in the transparent membrane.

In addition, this so-called mucus is composed of monocytes and aggregated cells, that is, immunologically active cells inside, suggesting that immunity is activated locally. This mucus in the alveoli and a lot of mucus and mucus acid in the bronchus remind us that we should treat the sputum congestion accordingly in clinical treatment.

An important finding is that in the death cases, many virus particles can be seen, suggesting that antiviral treatment is still critical. At the same time, we also saw some infarcts and necrosis, as well as lesions such as bleeding in the lungs.

The second very important finding was that in this patient the spleen was shrinking, and at the same time, there were very few lymphocytes in the spleen. In addition, lymphocytes are also reduced in lymph nodes. CD4, CD8 and other immune-active effector cells are also very low. At the same time, a decrease in the amount of cells is seen in the bone marrow. This suggests that this virus infection may affect the body's immunity. It can also be the result of a large amount of consumption through the activation of immunity, but this suggests that many of our patients in the late clinical stage die due to multi-disease infection, so the adjustment of body immunity is a very important issue.

In terms of clinical manifestations, Professor Li Zhongjie also mentioned that its incubation period is 1-14 days, most of which are 3-7 days. The clinical manifestations are mainly fever, fatigue, and dry cough. Of course, there are some symptoms of flu-derived symptoms and diarrhea. Severe cases quickly progress to respiratory distress. The severe patients that need to be raised can have no or only low fever, which also poses a challenge to clinical treatment.

In terms of clinical transition, elderly patients and those with underlying diseases, including tumors, hypertension, diabetes, etc. are at high risk of death. Of course, after the mother is infected, she is no different from other people from other people, and the child is relatively mild. Although it is the detection part, most patients can see leukopenia, especially lymphopenia, which is also a signal that the disease progresses and worsens. Of course, its inflammatory factors, including increased C-reactive protein, including erythrocyte sedimentation, etc. can also be increased. There are also some enzymatic tests, biochemical tests, including increases in lactate dehydrogenase, HDH, and creatine kinase. Severe patients can see increased coagulopathy.

There is also an increase in cadherin in severe and critically ill patients. Of course, if detected, inflammatory factors will increase in severe and critically ill patients, including leukocyte hormone 6 and so on. As for virology, we developed RN detection, viral RN detection, and we quickly developed

detection technology for diagnosis. However, there are often so-called false negatives in clinical tests, that is to say, when we collect specimens, we recommend removing sputum from the lower respiratory tract, or secretions from the lower respiratory tract, which will increase the sensitivity of the test. In the new version of the serum report, protection is an added content. In this case, IGM can be positive for 3 to 5 days after onset and IGG can be positive in the later stage. The disease mainly accumulates in the lungs, so imaging of the chest is very important for diagnosis. It can be seen from imaging that in the early days, some flaky shadows appeared in the area near the pleura. With the disease, some "frosted glass" appeared, and then developed toward the center as the disease progressed. In severe cases, both lungs show lesions like frosted glass or lung consolidation. This is a result of X-rays. It can be seen that its lesions were confined to the margins in the early days, and then began to develop toward the center as the disease progressed, and the lung consolidation appeared severely. In fact, two diffuse diseases can be seen. Erosion, so in severe cases there will be so-called white lungs, and the entire lung will erode. This is CT. It can be seen that it is the same. On the eighth days after the onset, you can see that his disease is relatively close to the periphery, but as the disease progresses, his disease begins to expand to the center, and some consolidation occurs in the periphery. At this time, the function of the lungs will be affected, and the metabolism of blood oxygen and the ability to oxygenate will be affected.

Take a look at the diagnostic criteria. We make diagnosis from two aspects: epidemiological and clinical manifestations. First look at the suspected cases, there are four aspects of epidemiology. One is a history of travel or residence in the affected area, which is 14 days before the onset. There is also close contact with infected patients 14 days and 2 weeks before onset. Then there was close contact with some patients with fever and respiratory symptoms within 14 days.

The last point is the onset of clustering, that is, 2 or more patients with fever and respiratory symptoms appear in a specific small area, including in the office, home, or classroom. More than 2 cases are called cluster onset. Clinically, it is mainly fever and respiratory symptoms, as well as lung manifestations, imaging findings, and lymphocyte reduction in peripheral blood. If it meets one of the epidemiological definitions and two of the clinical manifestations, we diagnose as suspected cases. If there is no epidemiology and all three clinical manifestations are met, a suspected case can also be diagnosed. The diagnosis is based on the suspected pathogenic positive or serologically positive. We can make a diagnosis. Specifically, if the suspected case is positive for nucleic acid RN, or the antibodies are positive for IGM and IGG, it can be diagnosed at the same time. Of course, when doing a retrospective diagnosis, one-way IGG conversion from negative to positive, or an increase of four times or more, can also be used as a basis for confirming the diagnosis.

Clinically we classify it as moderate, normal, severe and critical cases. Mild cases are mainly fever, and symptoms may be common, as the so-called typical symptoms, such as cough, respiratory tract symptoms and pneumonia. Professor Li Zhongjie also introduced just now that mild cases accounted for more than 80%, so most of them were mild cases. Severe cases include obvious shortness of breath, more than 30 breaths, or an oxygenation index of less than 93%, or an arterial partial oxygen pressure higher than the oxygenation index oxygen level of less than 300 levels can be diagnosed as severe. Of course, there are some patients did not meet this standard, but their rapid imaging progress can also be treated as severe cases. Critical cases include respiratory distress syndrome,

some with respiratory failure who need to be on the ventilator, or shock, and multiple organ functions.

Let's take a look at this chart, the proportion of severe and different types of clinical types in the entire Wuhan region and the whole country. It can be seen that at the national level, mild and moderate disease accounts for nearly 80%, severe and critical illness add together 17.5%, and severe diseases can be seen in Wuhan. There are relatively more cases. Severe and critical illness add up to nearly 20%. Therefore, the mortality rate in Wuhan is relatively high, which is also related to its relatively high proportion of severe and critically ill. This is the distribution of different types of age. It can be seen that from high age to 90 years old, yellow is severe, and red is critical. You can see that the increase in age and the proportion of critical are increasing, so this is also our clinical observation. There are more elderly patients with severe patients, so the mortality rate is relatively high in the elderly. This is the proportion of people who are dead. It means that the older the age, the higher the proportion of death, regardless of gender.

We say clinical treatment, early diagnosis, early treatment, but there are also some very important indicators, which are early warning indicators, which tell us which patients may become sicker and we will refine some indicators that can be used as a reference for clinicians. Including the progressive decline of peripheral blood lymphocytes, the increase of inflammatory factors, including interleukin 6, C-reactive protein, etc., as well as the persistently high level of lactic acid, or the progressive progress, which indicates tissue ischemia and hypoxia. One is the rapid progress of lung imaging. With these changes, we must treat the patient as a serious disease clinically.

We say that the general treatment is rest, support, symptomatic treatment, including calories, fluid volume and so on. However, the more important measure is early oxygen therapy and oxygen inhalation, because the disease accumulates in the lungs and causes hypoxia. If the hypoxia is not corrected in time, it will induce a series of organ damage, especially the elderly with underlying diseases. The involvement of these organs is more obvious, and it is likely to cause severe illness or even death.

In general treatment, in our Chinese plan, we recommend some clinically effective drugs that have been marketed to be effective for this disease, including interferons, such as Kaletra, which are drugs for treating AIDS. There is also a chloroquine phosphate drug for the treatment of malaria, which is recommended for clinical trials. Recently we have all got a very good result of chloroquine phosphate, and we can see very good results from antiviral and hypothermia. Another point is antimicrobial treatment. Because many patients often have infections at the later stage, we emphasize the rational use of antibacterial drugs to prevent various infections.

The treatment of severe cases and critical cases is the key. We emphasize early intervention and hope that patients can be effectively controlled when their symptoms are mild or moderate and not become severe. Once it becomes serious, we must actively rescue for treatment, including respiratory support. Circulatory support, maintenance of the kidneys, and treatment of convalescent plasma, as well as blood purification treatments and immunity.

Different levels of oxygen therapy in actual respiratory therapy. If oxygen alone is not enough, then non-invasive ventilation can be used. Non-invasive ventilation can be used to enter invasive ventilation, and even for treatments such as ECMO, we will have detailed intensive care diagnosis and treatment programs. Revision of the third edition. The treatment of plasma in the recovery period has proved to be effective in many viral diseases, so in our diagnosis and treatment plan, we also recommended the recovery period and recommended plasma-like infection for the treatment of new crown virus infection, and achieved good results. And now we are working on it.

Blood purification treatment is also very important, because some patients suddenly deteriorate; often cytokine release syndrome causes inflammatory reactions throughout the body. Therefore, blood purification treatments can eliminate those inflammatory factors, control the progress of inflammatory storms, and effectively control the risk of disease to reduce mortality. So now we suggest that conditions such as plasma exchange, adsorption and perfusion can be used.

There are other treatments that are hormones and glucocorticoids. We recommend that glucocorticoids can be used in some rapidly progressing patients with obvious inflammation, but we have strict restrictions on the dosage and treatment course. Because especially in this disease, the immune function is often low in the later stage, and the risk of infection increases. The use of hormones will further increase these risks. Therefore, we can use hormones conditionally, of course, there are other such as intestinal microecology. These adjustments are also a very important act to prevent the occurrence and development of infection. Traditional Chinese medicine has played a very important role in this COVID-19, and a large number of patients have been treated with traditional Chinese medicine, which has very good results.

Finally, a brief introduction is summarized. COVID-19 is an unknown new infectious disease. Many issues need to be further clarified, including the pathogenesis. Early diagnosis and early treatment are essential to control this condition and reduce death. Of course, effective oxygen therapy is a key factor in determining recovery. Here our treatment plan is also continuously updated. According to the latest progress, we will continue to update our guide. Thank you all!

Director of the Shanghai Municipal Health and Health Committee, Wu Jinglei:

Dear Director Ma Xiaowei, distinguished guests, ladies and gentlemen, I will now brief you the situation of Shanghai COVID-19 Epidemic Prevention and Control.

Since the outbreak, under the strong leadership of the Municipal Party Committee, Shanghai has resolutely followed the important speech of President Xi Jinping. After reviewing the decision of the Party Central Committee and the State Council, Shanghai adheres to the prevention and control strategies of early detection, early reporting, early isolation, and early treatment, and is doing its best to prevent and control the outbreak. As of 24: 00 on March 11, the cumulative number of confirmed cases in Shanghai was 344, and 320 patients were discharged from hospital, with a cure rate of 93%. Medical staff has zero infection. Our main approach is: First, to quickly respond and unified command. On December 31, 2019, after Wuhan reported the pneumonia epidemic of unknown cause for the first time, Shanghai prepared a monitoring and prevention deployment plan

on the same day and deployed the fever clinics and designated hospitals to prepare. After the first case was found in Shanghai, the Secretary of the Municipal Party Committee and the Mayor acted as the head of the leading working group for the prevention and control of the epidemic, forming a prevention and control headquarters to implement integrated management. In accordance with the needs of epidemic prevention and control, we have established coordination mechanisms such as resumption of work and production to form a specific prevention and control situation.

The second is to govern by law and prevent and control by law. Shanghai has done a good job in preventing and controlling major epidemics. On February 7th, the Standing Committee of the Shanghai People's Congress approved efforts to prevent and control the COVID-19, and adopted temporary management measures in 11 areas to provide legal protection for epidemic prevention and control. At the same time, various departments of the city have formulated more than 100 industry prevention and control regulations or treatment plans to achieve effective, orderly and effective prevention and control of epidemics.

The third is precision prevention and control. We analyze the situation of the epidemic scientifically, do well in dynamic prevention and control, precise prevention and control, and scientific prevention and control in a strict and orderly manner. We implement full dynamic coverage of household information and management services. All personnel entering Shanghai will be measured for body temperature; medical observations will be conducted for personnel from key areas, and other personnel will be required to report relevant information to their employers and we carried out prevention and control in all communities, buildings and villages to achieve full coverage, local management and zero omissions, by building a joint mechanism for prevention and control. At the same time, we strengthened information sharing and deepened the joint prevention and control mechanism for major epidemic situations in the Yangtze River Delta. In response to overseas import risks, various departments in Shanghai and Shanghai Customs have strictly implemented the port joint prevention and control mechanism, optimized processes, closed-loop management, and achieved an orderly and efficient customs clearance process for travelers from overseas. In this prevention and control process, we conducted one website for communication management and one website for notification, which played a supporting role in epidemiological monitoring, prevention and control, resource allocation, etc., to achieve intelligent prevention and control and provide convenient public services.

Fourth, centralized treatment and scientific treatment. In accordance with the requirements of centralized patients, centralized experts, centralized resources, and centralized treatment, we strive to improve the cure rate, reduce the mortality rate, and strictly prevent nosocomial infections. All of our confirmed patients are classified and treated by the designated hospitals according to the condition with comprehensive treatment of traditional Chinese and western medicine. Through monitoring of inflammation indicators and immune function, strengthening the follow-up detection of pulmonary imaging, and intervention of traditional Chinese medicine, we reduced the progress from mild to severe symptoms. For severe cases, we specially set up a treatment team to adopt the mode of reporting to hospitals. At the same time, our diagnosis and experience in clinical treatment and nosocomial infection prevention and control have formed the consensus of experts on comprehensive treatment of coronavirus in Shanghai in 2019 and provide Shanghai experience for

clinical treatment. At present, we are paying close attention to the trend of epidemic situation overseas, and we will not slacken our work on preventing and controlling the epidemic situation. On the other hand, we are working on overall economic and social development. Thank you all.

Liu Dongru, Deputy DG of Hubei Health Commission:

Respected guests, Ladies and Gentlemen. Since the outbreak of COVID-19, Hubei Province has been seriously implementing the instructions from President Xi Jinping and important decisions made by CPC Central Committee and the State Council, following the requirement of the Central Guidance Group and NHC. Under the leadership of the provincial gov't and with the support from all parts of the society, we focused on patient treatment and transmission interruption by implementing measures including screening, community lockdown, control of public places, enhancing medical staff capacity, strengthening medical supplies and living supplies, improving basic public services. Now we have seen the epidemic situation is changing for the better. The number of low-risk areas in Wuhan city has increased from 11 in late Feb to 45; intermediate risk areas accounts for 84%.

I will brief you on our practice in the province from 4 aspects:

First, strengthening control measures. 1) strengthening community control with all villages, communities, blocks and residence areas on strict lockdown to minimize people's mobility and gathering. 2) strengthening screening and detection by screening every individual for suspect, confirmed cases and close contacts. 3) conducting epi-investigation with mobilized community personnel to trace each confirmed case. As of March 11, there are accumulatively 67781 confirmed cases and 37490 close contacts in the province. All people of the four categories are tested for virus nuclear acid. As of March 11, accumulatively 1215690 cases were tested in the province.

All confirmed cases are under concentrated treatment; suspect cases are concentrated for admission and treatment; febrile patients are under concentration observation; close contacts are under concentrated isolation and observation.

Secondly, sparing no efforts to treat patients by: 1) strengthening treatment services for patients including setting up 3920 isolation sites, 16 mobile cabin hospitals with over 91143 beds available; 2) strengthening coordination by prioritizing Wuhan and cities/counties. Deployed medical equipment and device, ventilators and ECOM in particular, in a well-coordinated way to ensure medical needs are met; 3) strengthening patient treatment by admitting severe patients to better general hospitals with about 9000 beds available for severe cases. By linking external medical teams from other provinces with specific departments in the hospitals, high quality medical resources and expertise were concentrated. Individualized treatment plans were developed with multi-disciplinary consultations and telemedicine in place. Use of traditional Chinese medicines was encouraged in clinical treatment. 4) enhancing efforts to prevent mild cases from changing to severe cases by improving treatment capacity of mobile cabin hospitals, equipping them with CT and other device, enhancing treatment capacity in isolation sites, deploying medical staff, medical equipment and medicines, conducting health monitoring and initial treatment, using traditional Chinese medicine in treatment. The occupancy rate of mobile cabin hospitals was over 99.93%.

Thirdly, strengthening information sharing and interlinkage by facilitating health screening among police officers, Party members and medical staff, improving data management and sharing to ensure seamless interlinkage between screening dataset and clinical dataset.

Fourthly, promote the development of COVID-19 free community. By now there are 135 (9.6%) such communities in Wuhan city, 3021 (20.5%) COVID-19 free blocks and 1350 (69.5%) COVID-19 free village.

Thank you.

Duan Yufei, DG of Guangdong Health Commission:

Respected Dr Ma Xiaowei, Ladies and Gentlemen. I am Duan Yufei, DG of Guangdong Health Commission. On Feb 19, the China-WHO Joint Mission on COVID-19 visited Shenzhen and gave very positive recognition of the control efforts in Qiaoxiang community. A, removing the source of infection; C, setting up fever clinic and triage to identify febrile and suspect patients and ensuring isolation and transfer of patients. T, community police officers setting up joint prevention and control group. Since the outbreak, there was zero infection and zero death among healthcare workers in Qiaoxiang community. ACT prevention and control model is practiced in Guangdong with people's health and safety placed at the center. We will follow the requirement of the government and WHO DG Dr Tedros, strictly implement the "four early's and four concentrations" strategies to stop the transmission and prevent importation and spread. So far there are only sporadic imported cases and few local cases.

First, we have done everything possible to find infected people as early as we can, control the source of infection in a timely manner, and build three lines of defense to prevent proliferation.

The first line of defense measures the temperature of all personnel at the bus station, airport, port, and dock, and quickly transfers people with suspected symptoms such as fever to designated hospitals for investigation.

The second line of defense has been expanded to full screening for all hotspots, full nucleic acid testing, screening of patients with suspected cases or fever plus epidemiological history, and full epidemiological investigation of hospitalized patients.

The third line of defense is to organize street and village cadres to carry out major inspections, investigations screenings to ensure that close contacts are segregated for observation, and personnel from Hubei and Guangdong will all be investigated. Once found, the person will be transferred to the designated hospital immediately for inspection, confirmation, and admission on the same day. A three-level mechanism for the province's civil servants' service and expert patrol guidance will be established to play the role of scouts and improve the effectiveness of epidemiological investigation.

We do everything possible to protect susceptible people and reduce the risk of infection. We have

strengthened the protection of susceptible groups such as children, pregnant women, and the elderly, implement hierarchical classification management, and return to work in an orderly manner, issue 108 hospital infection guidelines, protect the health and safety of medical personnel, and implement a 3 + 1 rescue mechanism, that is, front-line on duty and third-line on patrol, improve the first and special diagnosis work system, establish an information time reporting system and dynamically update, accurately grasp the situation of each case, and improve the level of medical treatment. Guangdong's epidemic prevention and control mainly has five aspects of experience and understanding. The first is speed, which is sensitive monitoring response and quick response. Strengthen monitoring and early warning in real time, find out infected people and close contacts as soon as possible, and take corresponding measures. Master the initiative to prevent and control the epidemic. Guangdong has earlier detected child infections and human-to-human transmission in individual cases.

The second is strength, that is, strong organizational leadership and social mobilization capabilities. The province's party and government agencies, enterprises and institutions, social organizations, and industry associations have performed their respective functions, covering the system of mass and joint prevention and control.

The third is to give full play to the role of experts, timely deployment and adjustment of prevention and control strategies, and strictly implement them in place.

The fourth is transparency, that is, open and transparent information disclosure and full-scale knowledge and science popularization. We reported first time the situation of the epidemic situation, and held 40 press conferences in succession to create a human and social atmosphere that helps each other and overcome difficulties.

The fifth is the whole transparent process of treatment and rescue. At the same time, 4,838 healthcare workers were sent to support Hubei. Thank you.

He Yanzheng, director of the Sichuan Provincial Health Committee:

Sichuan is located in southwestern China. In 2019, the population of the province is 90.99 million, with an area of 486,000 square kilometers, with a GDP of more than 4.60 billion yuan. It has 183 counties, nearly 3000 towns, and 449 streets. Since the outbreak of the COVID-19, under the strong leadership of Comrade Xi Jinping's Party Central Committee, with daily new case index, the outbreak can be divided into three stages. Cases gathered from January 26th to 30th, and the disease showed a wave decline on January 30th. Since February 11, the epidemic prevention and control has continued to improve, and there have been no new cases for a week. As of March 10, a total of 539 new cases and 3 deaths were reported. The following measures were taken.

First, we responded quickly, established and improved the joint defense and control, group defense and control organization system. The first case was found on January 14, and a headquarters was set up on the 27th, with 12 working groups, and cities and counties established corresponding command systems and working mechanisms. Although there were not many cases in the province at this time,

in view of the large number of returnees at the village level, we seized the important window period of prevention and control, and used big data and grid management to investigate more than 13 million mobile populations, including 380 thousand people from Hubei. We found out the possible source of infection and served well

Second, adhere to the Four Concentration principle, and make every effort to strengthen medical treatment. The economic and social development between Sichuan regions is very different. In accordance with the Four Concentration principle, we identified 226 designated hospitals in time and prepared 10,000 beds. We carried out full hospitalization and treatment, established a five-level remote consultation platform dedicated to standardize diagnosis and treatment and carried out integrated Chinese and western medicine treatment, COVID-19 No. 1 and No. 2 Chinese medicine preparations were used and obtained good results.

The third is to make the walking path of fever patients perfect and open, and regulate the disposal of medical waste. None of the 663 medical staff was infected with COVID-19. We strengthened material security, increased the production capacity of masks from 400,000 at the beginning of the epidemic to 2.7 million. We have two scientific research projects in Sichuan. Animal tests have shown good results and will soon enter the clinical stage.

The fourth is the differentiated management of districts to establish a suitable social order. Our province is divided into local epidemic areas, introduced 100 prevention and control measures, and merged the four types of areas into three areas with high, medium and low risks. Sichuan has 25 million migrant workers. In order to do a safe and orderly return of migrant workers, a total of more than 11 million people have been issued free certificates, and one-third of migrant workers have returned to work, and the rate of return to work at key provincial projects has reached 97.2%, and the economic and social order is gradually being restored.

Under the leadership of the CPC Central Committee, Sichuan will further improve its targeted prevention and control measures, minimize the impact of the epidemic, win the battle against poverty, and strive to achieve the economic and social development goals for the year. And this concludes the presentation.

Moderator: Thank you, Director He. Just now, Minister Ma Xiaowei of the National Health Commission and the experts from CDC, as well as the provincial officials from the health commissions of Shanghai, Hubei, Guangdong and Sichuan have shared with us China's experience on COVID-19 response in the recent months, especially the principles of "four early" and "four concentration". We have been gaining knowledge in doing while assessing and improving various measures in practice.

Before this briefing we collected many questions raised by the embassies in China, some of which related to the responsibilities of other ministries and commissions. We have transferred them to relevant departments. On this occasion, the experts from the health agencies will focus on answering the questions pertain to epidemic prevention, diagnosis and treatment.

There are two questions about prevention and control:

1. What are the key indicators that can show the outbreak is put under control in China? When will the outbreak end?
2. China asks its people to wear face masks in public places. But many other countries have not taken similar steps. Please brief us on China's consideration.

The following questions are on diagnosis and treatment.

1. On February 12, there was a significant increase in the number of the confirmed cases. Why did China change the criteria for confirmed cases and then change it again a week later?
2. Please brief us on treatment and medication of the COVID-19 patients.

Now, we will have Dr. Li Qun, Director of the Health Emergency Center of China Center for Disease Control and Prevention at the Wuhan venue, and Dr. Qiu Haibo, Vice President of the Affiliated Hospital of Southeast University, to answer the above questions respectively.

Dr. Li Qun: On the first question, we need to take a number of factors into consideration to decide whether COVID-19 has been put under effective control in China, including the followings:

The first indicator is there is a sustained and distinct decline after the peak of the epidemic.

The second is there is a sustained decline in the number of new confirmed cases each day.

And the third is all the new cases that we confirm every day are the suspected cases that we have been diagnosing and treating, or close contacts or other people under medical observation. In other words, we have put the confirmed cases under control within our reach.

The fourth is how we are treating the patients in critical condition. In addition, we have to evaluate how is the social life going including national economy and people's daily life, especially how are the things going in terms of people returning to their workplace, resuming production and students going back to school. On the whole, we believe that the peak time of the outbreak of COVID-19 in China has passed since the number of confirmed cases has dropped every day and the disease is basically under control.

On the second question, according to our current knowledge, the main transmission route of COVID-19 is droplet and reception transmission through respiratory tract so protection of respiratory tract is one of the important decisions for us to cut off the transmission route. According to or investigations, we have found some cases of infection caused by no protection of respiratory tract. For example, we found a cluster outbreak where eight people were not wearing masks when they got infected. Besides, we found in a department store that a salesperson got infected because she/he did not wear a mask when she/he talked with customers closely. So we think these cases show that wearing a mask is an effective protection against respiratory infectious diseases and can reduce the risk of infection from COVID-19. By wearing masks, we can not only protect ourselves, but also others. By wearing masks, we can prevent the patient from spraying droplets or reduce the amount and speed of droplets, blocking the transmission of droplets.

In general, we are sure that we can effectively reduce the risk of infection and transmission through our disease prevention practices, including wearing masks, paying more attention to personal hygiene and remaining social distancing. Thank you.

Dr. Qiu Haibo: I'll give my answer to the two questions about diagnosis and treatment. There has been a huge increase in the number of confirmed cases since February 12th. The first question is why have we changed the criteria for confirmed cases? I'll answer this question from two aspects.

First of all, we have actually not made change to the criteria for the confirmed cases of COVID-19 from the first to the seventh version of the diagnosis and treatment protocol. Or in other words, we have been continuously completing the criteria. In the first version, we prescribed the criteria from all the three aspects of epidemiology, clinical features and pathogenic microorganisms or viruses. The only difference is that in the first version we focused on nucleic acid sequencing, and from the second version we added the nucleic acid detection of RTPCR in addition to nucleic acid sequencing while in the seventh version we added the antibody detection. So the diagnosis of confirmed infections is becoming more and more comprehensive with the progress of technology. And for the dramatic increase in confirmed cases on February 12th, it was because we added a clinical diagnostic standard in Hubei province, but not in other provinces. During that period, the number of clinical cases in Hubei province was increasing rapidly. A large number of patients had epidemiological history, clinical characteristics and imaging manifestations. But at that time, our nucleic acid testing capacity was limited, which meant without nucleic acid testing, many patients could not get confirmed timely. So we were facing difficulty in the management of a large number of suspected cases. Therefore, to deal with this problem, the NHC panel adds clinical cases in the fifth version. Since then, we could quickly admit those dignosed patients with epidemiological history, clinical characteristics and imaging manifestations but no positive nucleic acid testing, which would effectively stop spread to their families and the communities. In this case, we were able to hospitalize and treat all the patients as early as possible based on our principle of early medical intervention and treatment. On the other hand, our nucleic acid testing capacity was significantly increased, so the backlog was basically completed by February 16th and we became able to do timely diagnosis or exclusion of cases. In this case, we canceled the clinical diagnosis cases specifically for Hubei province in the sixth version, which made the diagnostic criteria across the country the same, including suspected cases and confirmed cases. This is my answer to the first question.

The second question is about the situation of clinical treatment and medication. COVID-19 is caused by a new virus, whose clinical characteristics and clinical process are not the same as the previous viral pneumonia we have seen. So we have gained our understanding of the disease step-by-step, based on the accumulation of experience, the observation of treatment, and the formation of the treatment process. So in the latest version of the diagnosis and treatment protocol issued on March 3, we put emphasis on early detection early treatment of the mild cases while strengthening the concentrated management of the critically ill patients as much as possible to improve the cure rate and reduce the case fatality rate. For the treatment of mild and moderate patients we generally recommend rest in bed, with support treatment and close observation, especially monitoring of

blood oxygen protection, because we know that these patients show hyoxemia though the clinical manifestations are not typical. At the same time, we may offer timely effective oxygen therapy antiviral treatment, including alpha interferon, Kaletra and Chloroquine. On the other hand, we also pay special attention to observe the possible adverse reactions caused by these drugs. For the severely and critically ill patients, in addition to symptomatic treatment and antiviral therapy, we have been actively preventing complications and infection and treating the underlying diseases. We have also been performing organ support, which supports internal respiratory function, especially oxygen therapy, high flow oxygen, noninvasive ventilation, invasive ventilation, and ICOM, which we believe is a very important whole process of treatment.

In addition to the antiviral treatment we mentioned earlier, we use resistant and convalescent plasma especially for patients in the convalescent, patients with rapid disease progression, or patients with severe and critical disease. For patients with rapid progression and severe inflammatory response, we have been prescribed the antibody to the interlein receptor, and for seriously ill children and critically ill adult patients, we may use r-globulin when necessary. We have also noticed that the combination of the Chinese Traditional and Western medicine has been effective in treating mild cases, severe and critical cases. That’s all what I would like to say. Thank you.

[end]