

China's Experience in Controlling COVID-19

Shiliang Song^{1*} , Chun Zhou², Zengzhi Lian³, Xiaoli Zhu⁴, Ping Qian⁵, Qin Li⁶

¹Department of Internal Medicine, Taicang Hospital Affiliated to Suzhou University, Suzhou, China

²Department of Health, Taicang Hospital Affiliated to Suzhou University, Suzhou, China

³Department of Respiratory Medicine, Taicang Hospital Affiliated to Suzhou University, Suzhou, China

⁴Department of Medical Teaching, Taicang Hospital Affiliated to Suzhou University, Suzhou, China

⁵Department of Critical Care Medicine, Taicang Hospital Affiliated to Suzhou University, Suzhou, China

⁶Department of Nursing, Taicang Hospital Affiliated to Suzhou University, Suzhou, China

Email: *zll5404@suda.edu.cn

How to cite this paper: Song, S.L., Zhou, C., Lian, Z.Z., Zhu, X.L., Qian, P. and Li, Q. (2021) China's Experience in Controlling COVID-19. *Health*, 13, 347-353.
<https://doi.org/10.4236/health.2021.134028>

Received: March 3, 2021

Accepted: April 6, 2021

Published: April 9, 2021

Copyright © 2021 by author(s) and Scientific Research Publishing Inc.

This work is licensed under the Creative Commons Attribution International License (CC BY 4.0).

<http://creativecommons.org/licenses/by/4.0/>



Open Access

Abstract

Background: In less than a year, COVID-19 has swept the world and continued, too, seriously threatening the safety of all mankind, and caused great social panic and global economic and financial crisis. At the beginning, the epidemic was first diagnosed in China and the epidemic was severe. Under the strong command of the highest level of the Chinese government, the whole Chinese people united as one, and achieved initial results in the struggle against COVID-19 with scientific prevention and control. **Objective:** Summarizing China's experience and lessons in combating the epidemic is undoubtedly very beneficial to the people of the world in jointly combating the impact of the COVID-19 epidemic. **Measures:** The article shows the imminent Chinese experience in controlling the spread of SARS-CoV-2. It details the lines of action and the measures taken to control this epidemic in the country where the population is quite large. The most important experience is: strong organizational leadership, enhanced cooperation with the WHO, the establishment of a national anti-epidemic headquarters, responsible for the command and control of human, financial and material resources throughout the country, and local officials at all levels in the front line of the epidemic, Heart to heart with the people, breathing together and sharing a common destiny. Prevention is the first, prevention and treatment are combined. All measures were taken to control the source of infection, cut off the spread and protect susceptible people. **Conclusion:** As long as the people of the world unite, make scientific decisions and learn from the successful experience of countries around the world, especially the China's experience, combine the national conditions of each country, and use the wisdom of all man-kind to deal with the common enemy SARS-CoV-2 and COVID-19, we can definitely win this people's war against the disease.

Keywords

COVID-19, China, Control, SARS-COV-2, Prevention

1. Background and Purpose

At present, the epidemic situation of 2019 coronavirus disease (COVID-19) is raging rampantly in the whole world [1], affecting the hearts of billions of people. In less than a year, COVID-19 swept the world, seriously threatening the safety of all mankind, and caused great social panic and global economic and financial crisis [2]. In February 2021, the world had been an average of about 350,000 of new infections per day and about 10,000 deaths per day and continued. At the beginning, the epidemic was first diagnosed in China and the epidemic was severe. Under the strong command of the highest level of the Chinese government, the whole Chinese people united as one, and achieved initial results in the struggle against COVID-19 with scientific prevention and control. The number of new cases in China has been controlled below 20 per day. Summarizing China's experience and lessons in combating the epidemic is undoubtedly very beneficial to the people of the world in jointly combating the impact of the COVID-19 epidemic.

2. Experience and Lessons Learned

2.1. Organization and Leadership

The state establishes an anti-epidemic headquarters, which is responsible for the general command and dispatch of human, financial and material resources throughout the country, and holds regular press conferences to keep the people of the whole country informed of the true situation of the epidemic. Local officials at all levels went deep into the front line of the epidemic, connected with the people's hearts, breathed with them and shared their destiny. The Ministry of Health of the People's Republic of China established a think tank of senior experts to be responsible for the revision of disease diagnosis and treatment plans and to update them in practice in a timely manner. "COVID-19 Diagnosis and Treatment Program (Trial)" has been updated from the first edition to the seventh edition [3]. The diagnosis and treatment plan includes the etiology and epidemiological characteristics of COVID-19, pathological changes and clinical characteristics, diagnosis and differential diagnosis, clinical classification and early warning of critical illness, treatment principles and discharge standards, infection prevention and control in medical institutions [4]. It gives a detailed description in each aspect, and points out the direction for the diagnosis and treatment of medical workers across the country. It mobilized the nation's human, material, financial and medical resources to support the most severe epidemic in Wuhan, Hubei Province, and concentrated its superior forces to fight the epidemic.

2.2. Controlling the Source of Infection

The source of infection seen so far is mainly COVID-19 patients [4]. People with asymptomatic infection may also become a source of infection [4]. “Four early”, early detection, early isolation, early diagnosis and early treatment [5]. “Four concentration”, focus on patients, experts, resources and treatment [5]. In high-risk areas, the SARS-CoV-2 nucleic acid will be tested for the entire region, and the 2019 coronavirus infection (COVID-19) will be detected in time, and isolation and treatment will be carried out separately [2]. After diagnosis, he was transferred to square cabin hospital for mildly and severely transferred to ICU [6] [7]. Square cabin hospital: use stadiums, conference centers, exhibition halls and other large venues to be converted into temporary hospitals that can accommodate hundreds of patients [3]. The patients are admitted to mild patients who have been diagnosed as COVID-19 by nucleic acid detection. Its advantages are that it can be transformed in a short time of 2 to 3 days, it has a large capacity to accept patients, and there are medical staff for diagnosis and treatment and nursing and health education, while at home isolation, patients do not receive medical and nursing services, and are easily infected For family members and easy to cause community proliferation. On February 28, 2020, Xiaowei Ma, director of the National Health and Health Commission, said that Wuhan has built 16 square cabin hospitals, with more than 13,000 beds actually opened, accumulating more than 12,000 patients. 1/4 patient was treated in the shelter hospital. The square cabin hospital has achieved zero infections, zero deaths, and zero turning points, and is truly a “cabin of life” [4]. Establish a fever clinic. Establish fever clinics in counties and districts. Suspected patients were given SARS-CoV-2 nucleic acid test. It was found that the patient was sent to a designated hospital for isolation treatment. Watch out for infections by medical staff. In the early stage of the disease, due to lack of knowledge about the disease, a large number of patients flowed into the hospital to cause medical runs, coupled with the shortage of protective materials, extreme fatigue of medical staff, psychological tension and other reasons, local medical staff in Hubei Province (mainly Wuhan City) infected COVID-19 more than 3000 people [8]. However, since then, more than 42,000 national medical team members supporting Hubei Province (mainly Wuhan City) have taken measures such as strict personal protection, national medical supplies support, the combination of work and rest of medical staff, a balanced diet, adequate sleep, and intervention by psychologists. The implementation of the method has achieved zero infection [8], $P < 0.001$, and the two are significantly different. Facts have proved that as long as strict isolation and disinfection are carried out and attention is paid to protection, SARS-COV-2 can be prevented, and even close contact with medical staff can prevent cross-infection. All measures must be taken to control the initial areas of covid-19, such as searching for close contact, testing for SARS-COV-2, quarantine treatment for positive cases, close medical observation for 14 days for negative cases. There are fever, cough, shortness of breath and other symptoms [6]

[7], immediate nucleic acid testing, positive person turn quarantine ward. The patients have been to the relevant places, such as airports, wharfs, shopping malls, hotels, residential areas and families and other places, strict disinfection. It is also necessary to quarantine COVID-19 patients for about 14 days because it is also infectious, and isolation can only be terminated if all secondary nucleic acid tests are negative [2]. Put out the spark, not let it prairie fire, we must nip the epidemic in the bud! The treatment emphasizes the combination of Chinese and Western medicine. The “Four Anti and Two Balances” advocated by Academician Lanjuan Li’s team, and the “Three Drugs and Three Formulas” recommended by Chinese medicine experts of the National Health Commission, played a key role in improving the success rate of treatment. Four Anti: anti-virus, anti-shock, anti-hypoxemia and multiple organ dysfunction, anti-secondary infection. Two Balance: maintain the acid-base balance of water electrolytes and maintain the micro-ecological balance. Three kinds of medicine: Jinhua Qinggan Granules, Lotus Qingwen Capsules, Xuebijing Injection. Three prescriptions: Qingfei Paidu Decoction, Huashi Baidu Recipe, Xuanfei Baidu Recipe [4].

2.3. Cut off the Transmission Route

COVID-19 is caused by SARS-CoV-2 and mainly invades the human respiratory system, and some cases of the disease are characterized by extensive lung inflammation [6] [7]. In these cases, autopsy reports reveal that COVID-19 mainly attacks the lungs [9]. COVID-19 through the respiratory tract droplets close contact transmission is the main transmission route. Since SARS-CoV-2 can be isolated in feces and urine, it should be noted that feces and urine cause aerosol or contact transmission of environmental pollution [3]. The COVID-19 epidemic occurred during the Spring Festival and the flow of people was huge. Due to the timely closure of the city of Wuhan in Hubei Province, the outbreak of the outbreak was effectively blocked, which won time for prevention and control at home and abroad. According to different epidemic situations in different regions, a hierarchical control strategy is adopted. In high-risk areas with severe epidemics, the strategy of “internal non-proliferation, external prevention, and strict control” is implemented [5]. In the medium-risk areas, implement the strategy of “importing external defense, preventing internal proliferation”. Implement the “External Defense Import” strategy in low-risk areas [5]. The city takes community as the unit, and the township takes the villager group as the unit for isolation, closed management, personnel and vehicle entry and exit gate registration, and personnel temperature measurement. If you have fever and other discomforts, go to Fever Clinic for medical treatment Drive publicity vehicles, shuttle through the streets and alleys, and repeatedly broadcast the prevention and treatment of COVID-19 and the medical treatment process, so that they are well known. Stop the rally tour, delay the school start, stop the large banquet, stop the large-scale cultural sports and religious activities Close public

places such as museums and large convention centers. Community and village committees, neighborhood committees, police, and community doctors carry out joint prevention and control.

2.4. Protection of Susceptible Groups

Men, women and children, regardless of national skin color, the elderly and patients with underlying diseases are particularly susceptible to infection and have a high mortality rate after infection, and protection should be strengthened. Wear masks. During the COVID-19 epidemic, people across the country need to wear masks in public places, even in the vast rural areas on the edge, even if there are no COVID-19 patients or asymptomatic carriers in the crowd [3]. With the double mask protection between people, the probability of mutual infection will be greatly reduced. Everyone wears a mask, the prevention and treatment efficiency is the highest, and the cost is the lowest. Countries in the world must pay great attention to this. Another benefit of wearing a mask is that it avoids the bad habit of scratching the mouth and nose. Masks are based on N95 or surgical masks, but ordinary masks can also achieve effective protection, provided that all people wear masks. The poorer regional governments organize the supply of masks and distribute them to every household. Wash hands frequently, especially after contact with suspicious patients. You must wash your hands before and after meals, and rinse them with running water repeatedly. Reduce and eventually eliminate bad habits. Washing hands frequently, hot bathing, individual serving, home office, going out to maintain a social distance of more than one meter, eating nutritious foods rich in protein and vitamins, don't eat wild animals, strengthening physical exercise and improving physical fitness are all effective ways to prevent COVID-19. Effective vaccine is a powerful weapon against COVID-19, we must strengthen the research, but because of the SARS-CoV-2 virus mutation, the vaccine research has brought challenges, on this basis, the traditional prevention and control measures are still effective.

3. Discussion and Summary

China's successful experience in controlling COVID-19 is mainly based on the idea of a chess game in the nationwide, strong organizational leadership, and close cooperation with WHO. The country has established an anti-epidemic command headquarters, which is responsible for the overall command and dispatch of the country's human, financial and material resources. Local officials at all levels have penetrated the frontline of the epidemic and connected with the people, breathing together and sharing destiny. Carry out prevention first and combine prevention with treatment. The treatment emphasizes the combination of Chinese and Western medicine. The "Four Anti and Two Balances" advocated by Academician Lanjuan Li's team, and the "Three Drugs and Three Formulas" recommended by Chinese medicine experts of the National and Health Commission, played a key role in improving the success rate of treatment. Take all

measures to cut off the spread. Take all measures to protect susceptible people. Special emphasis is placed on three points: First, all measures must be taken to control COVID-19 initiating areas, follow close contacts, conduct SARS-CoV-2 testing, positive patients should be isolated and treated, and negative patients must be closely observed for 14 days. Strictly disinfect the relevant places visited by patients, such as airports, docks, shopping malls, hotels, residential quarters and families. Extinguishing the fire of the stars will not let it catch fire, and the epidemic must be wiped out in a budding state! This is of great significance to the prevention and control of the epidemic situation in the country where COVID-19 was first released and the region where it was first released in the same country. Second, wearing a mask is simple and convenient, and its prevention and treatment effectiveness is the first, especially medical personnel should be strictly in place. In Europe and the United States, the incidence rate is high, and the reluctance to wear a mask is the main reason. The painful lessons must be remembered and corrected. In the European and American countries, why the incidence rate is low, in addition to being taught by relatives and friends in the mainland, getting used to wearing mouth is the primary reason. Everyone wears a mask, the prevention and treatment efficiency is the highest, and the cost is the lowest. Countries in the world must pay great attention to this. Third, strengthen the protection of medical personnel. Medical personnel is the main force in the fight against COVID-19 and the main cause of cross-infection in hospitals, so they must be strictly protected and protected. It is necessary to provide qualified and sufficient protective materials, abide by strict disinfection and isolation regulations, ensure adequate rest time, maintain good physical and mental health, and create an atmosphere of respecting doctors. Pay tribute to the healthcare workers of the world to fight COVID-19. Tribute to the healthcare workers who died in the fight against COVID-19 around the world!

4. Conclusion

As long as the people of the world unite, make scientific decisions and learn from the successful experience of countries around the world, especially the China's experience, combine the national conditions of each country, and use the wisdom of all mankind to deal with the common enemy SARS-CoV-2 and COVID-19, we can definitely win this people's war against the disease. Dr. Tedros Director-General of WHO: "National unity and world unity. We are all united and will be able to defeat COVID-19" [10]. People all over the world unite to fight against COVID-19. The world will have a better tomorrow. Wish the world peace and people happiness!

Acknowledgements

I thank Professor Xiaojian Yao, an international virologist, Professor Jian Jin, a member of China's COVID-19 Expert Group and Chao Zhao, chief physician, put forward some good suggestions for this article. Dr. Ning Xu, contributed to

the revision of this article, and my wife Fenglan Huang, deputy director of the nurse to do a good job of logistics support work. I want to thank all the experts who fought against COVID-19 and the Chinese doctors and nurses, your hard work has successfully prevented the popularity of COVID-19 in China.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

References

- [1] WHO Director-General Tedros Adhanom Ghebreyesus's Remarks at the Media Briefing on 2019-nCoV on 11 February 2020. https://www.sohu.com/a/373089347_727964
- [2] Song, S. (2020) COVID-19 Is Further Subdivided into COVIP-19 and COVII-19. *Front Public Health*, **8**, 301. <https://doi.org/10.3389/fpubh.2020.00301>
- [3] The Official Website of National Health Commission of the People's Republic of China. <http://www.nhc.gov.cn/>
- [4] The General Office of the National Health Council of China and the Office of the Administration of Traditional Chinese Medicine (2020) Diagnosis and Treatment of COVID 19 (Trial Version 7). <http://www.nhc.gov.cn/yzygj/s7653p/202003/46c9294a7dfe4cef80dc7f5912eb1989.shtml>
- [5] The COVID-19 Prevention and Control Plan of the General Office of the National Health Commission of the People's Republic of China (Trial Version 6). <http://www.nhc.gov.cn/>
- [6] Chen, N., Zhou, M., Dong, X., Qu, J., Gong, F., Han, Y., *et al.* (2020) Epidemiological and Clinical Characteristics of 99 Cases of 2019 Novel Coronavirus Pneumonia in Wuhan, China: A Descriptive Study. *Lancet*, **395**, 507-513. [https://doi.org/10.1016/S0140-6736\(20\)30211-7](https://doi.org/10.1016/S0140-6736(20)30211-7)
- [7] Huang, C., Wang, Y., Li, X., Ren, L., Zhao, J., Hu, Y., *et al.* (2020) Clinical Features of Patients Infected with 2019 Novel Coronavirus in Wuhan, China. *Lancet*, **395**, 497-506. [https://doi.org/10.1016/S0140-6736\(20\)30183-5](https://doi.org/10.1016/S0140-6736(20)30183-5)
- [8] The Novel Coronavirus Pneumonia Emergency Response Epidemiology Team (2020) The Epidemiological Characteristics of an Outbreak of 2019 Novel Coronavirus Diseases (COVID-19) in China, 2020. *China CDC Weekly*, **2**, 113-122. <https://doi.org/10.46234/ccdcw2020.032>
- [9] Qian, L., Wang, R., Qu, G., Wang, Y., Liu, P., Zhu, Y., *et al.* (2020) A Report of General Observation on the Systematic Dissection of the Corpses of Novel Coronavirus Pneumonia Death. *Journal of Forensic Medicine*, **2**, 21-23.
- [10] Speech by the Director-General of WHO at the Media Briefing of the 2019 Coronavirus Disease (COVID-19) Outbreak on May 6, 2020. <https://www.who.int/>