

**COMMISSION ON SCIENCE AND TECHNOLOGY FOR DEVELOPMENT
(CSTD)**

Geneva, Switzerland

Contribution by

People's Republic of China

to the CSTD call for information sharing on initiatives against COVID-19

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China's Online Portals for Information Sharing on COVID-19

1. The Knowledge Center for China's Experiences in response to COVID-19

<https://covid19.alliancebrh.com/>

2. Global Coronavirus Data Sharing and Analysis System

<http://www.nmdc.cn/coronavirus>

3. 2019 Novel Coronavirus Resource (2019 nCoV)

<https://bigd.big.ac.cn/ncov>

4. Global MediXchange for combating COVID-19 by Alibaba Cloud

<https://covid-19.alibabacloud.com/>

Letter to UNCSTD for sharing Guangdong's experience in containing COVID-19 by the scientific and technological method

Confronting with the crisis of the COVID-19 epidemic, the Chinese science and technology experts and personnel are always working in utilizing science and technology to tackle the COVID-19 in the frontline. They reached some scientific and technological outcomes and breakthroughs. In this context, science and technology play a crucial role in preventing and containing epidemics. In respond to the call from the UNCSTD, according to our principle and philosophy of being openness, transparent and sincerity, I would like to introduce several successful practices of Guangdong province in providing technical support for preventing and containing COVID-19 and related medical treatment measures. I would like to express my willingness to share these experiences with our CSTD member states and strengthen the international collaboration in dealing with the COVID-19 epidemic through our joint efforts.

- I. **Invent the products for testing COVID-19 in a technological way.** Shenzhen BGI Group developed a new coronavirus nucleic acid detection kit (fluorescent PCR method) which has been applied in more than 70 countries all over the world. The BGI group maintain the competency of producing PCR detection kits for 300 000 persons per day and sequencing detection kits for 10 000 persons per day. BGI has fourteen "Fire Eye" COVID-19 testing laboratories which can test 50 000 persons per day. Daan Gene Co., Ltd of Sun Yat-sen University developed novel coronavirus nucleic acid detection kit and maintains the competency of producing 500 000 PCR detection kits (fluorescent PCR method) per person per day. Guangzhou Wondfo Biotech Co., Ltd developed novel coronavirus antibody detection (colloidal gold method) which was the first approved antibody detection reagent in China, with daily production for 600 000 persons, is able to test novel coronavirus antibody from human body's serum, plasma, and whole blood.
- II. **AI assisted novel coronavirus diagnosis system.** As we all know, videography testing is of great value as a reference when diagnosing novel coronavirus pneumonia and providing medical treatment. COVID-19 pneumonia is a new disease, the course of which develops very rapidly. It is necessary to take CT testing several times to confirm the disease for patients, monitor the development the disease, and evaluate the effectiveness of medical treatment. It is difficult to make comparison in a rapid way and identify the changes of lesion only with doctor's naked eyes. Guangzhou regenerative medicine and health laboratory in collaboration with the Sun Yat-sen Memorial Hospital of Sun Yat-Sen University has emergently developed the trying-out AI assisted COVID-19 diagnose system on a basis of chest CT test and X-ray videography through collecting and analyzing big data of clinic videography for 500 000 various types of pneumonia. The system can effectively and especially distinguish the COVID-19 patients from the non-COVID-19 patients including those infected by other virus, bacterial pneumonia and fever. The accurate COVID-19 CT image diagnosis rate reaches 90%, and it takes no more than 20 seconds to complete one CT image diagnosis case. Nowadays, the system has been allocated for many places via the Cloud platform and used in seven designated hospitals in China, is also undertaking clinical test in hospitals in Iraq.
- III. **Conduct the clinical test for COVID-19 treatment medicine.** Chloroquine phosphate (Abbreviation: Chloroquine) is effective to be anti-virus as well as anti-coronavirus. The scientific outcome of clinical testing shows that phosphate can probably increase the rate of success in treating and curing COVID-19 patients, shortening the time for patients staying in hospital and improving the situation after their recovering. No negative reaction

or impact has been discovered during the periods of medicine treatment. Chloroquine phosphate has been included into the sixth trying-out version of “Novel Coronavirus Pneumonia Diagnose and Treatment Action Plan” issued by the National Health Commission, National Administration of Traditional Chinese Medicine. (<http://www.nhc.gov.cn/yzygj/s7653p/202002/8334a8326dd94d329df351d7da8aefc2.shtml>) . To ensure the usage safety of the clinical medicine, Guangdong has published the “Common Consensus of Experts in Curing the COVID-19 Pneumonia” , reiterates that medicine dose and frequency should strictly obey the instruction set up by the Common Consensus and the Sixth Edition of Diagnose and Treatment Action Plan. The intensive observation is required when using medicine, when negative reaction comes out, necessary measures such as adjusting medicine dose, interruption of medicine usage, should be adopted to make sure the safety of the patients regarding the status of illness. Normal person should not or unnecessarily take medicine for prevention purpose.

- IV. **Research and develop new devices in sensing and preventing coronavirus.** Guangzhou Anjie Biosafety Technology Co., Ltd. (National Key laboratory on Respiration Disease and National Respiration System Disease Clinical Medical Research Center Enterprises) proposed the innovative idea of “Single Person Quarantine, Eliminate the Virus Immediately” in preventing and containing the COVID-19 epidemic. They also undertake research and develop a series of mechanic products for quarantine and disease control such as “negative pressure quarantine bed”, “medical quarantine clinic”, “purification quarantine chair”, “open quarantine bed”, “children quarantine bed”, etc. During the outbreak of epidemic, the series of products has been applied in several respiratory infection places such as fever clinics, respiratory/infectious beds, waiting halls, infusion halls, quarantine areas, airports and entry and exit boarder customs. The products are obviously effective which has gain recognition and won the praise from customers. The characteristics of the products are to continuously collect and deal with the pathogenic gas when single patient breathing, prevent and control the infection between patients and other infectious persons. These are effective in curbing the spread of pathogenic generated from respiratory infectious disease and reduce the infection rate consequently.
- V. **Research and develop the vaccine in many pathways.** We are devoting ourselves in researching and developing the COVID-19 vaccine in Guangdong province. We have made phrasal progress in finding the way for adenovirus vector vaccine, mRNA vaccine, and gene recombinant subunit vaccine research. Institutes and enterprises mandated in researching and developing vaccine in Guangdong province are willing to jointly promote the scientific and technological breakthrough in vaccine research through international collaboration and jointly efforts, we are committed to contribute to battling the novel coronavirus and increasing the human well-being.

Currently, although the outbreak of epidemic has been effectively contained in China, and China is recovering working and production in a steady speed, but there is still great pressure to prevent and contain the epidemic when confronting with the severe outbreak of epidemic worldwide. These exists no country boarder for the virus, we sincerely want to share the scientific and technological outcome with other countries, exchange our experience, strengthen the international collaboration in defeating the epidemic by the scientific and technological methods. We would like to express our empathy, carness and willingness to help each other under the flag of the United Nations. Let us overcome and survive the global health crisis in a great joint effort.

(Translated from the Chinese Version by Xinxin Pan)