

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

**Geneva, Switzerland**

Contribution by

**Iran (Islamic Republic of)**

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

DISCLAIMER: The views presented here are the contributors' and do not necessarily reflect the views and position of the United Nations or the United Nations Conference on Trade and Development

بِسْمِ اللّٰهِ الرَّحْمٰنِ الرَّحِیْمِ



ریاست جمهوری  
معاونت علمی و فناوری

---

**The role of science and technology in the management and treatment of Coronavirus disease (COVID-19)**  
*Using the capacity of knowledge-based companies and startups*

---

25 MAY, 2020

## Introduction

In the framework of containment and suppression of Covid-19, the development of the national health system was one of the important priorities of the Vice-Presidency for Science and Technology of the Islamic Republic of Iran. Relying on health system which was formed based on the strength and capacity of knowledge-based companies and startups, a variety of measures have been taken and are being pursued. The most important of these measures can be summarized in two sections:

1. Prevention, diagnosis and treatment of COVID-19 with the cooperation of responsible organizations:

By using the capacity of knowledge-based companies and research institutes in several main areas, several measures were taken, such as: enhancing of the capacity for production to more than 270,000 tests per day, manufacturing required equipment, such as: face masks, disinfectants and ventilators, support of dozens of clinical research projects, support of acquiring know-how of vaccine production and antiviral drugs for COVID-19, etc.

2. Managing the Corona Virus crisis by focusing on using capabilities and capacities of startups in the framework of “Corona Plus Campaign”: This initiative attempts to increase the support of startups to meet the needs of citizens and thus reduces their interactions with others to limit the transmission rate of the virus.

The abovementioned sections have been elaborated as follows:

**Prevention, diagnosis and treatment of COVID-19 with the cooperation of responsible organizations;**

Fields of activity	Supported products	Measures and results
Prevention	Vaccine	<ol style="list-style-type: none"> <li>1. Supporting vaccine production development plans</li> <li>2. Support (facilitating the acquisition of licenses and standards) for the production of face masks and disinfectants to the Food and Drug Administration</li> </ol>
	Consumable products	<ol style="list-style-type: none"> <li>1. Introducing to the National Development Fund to receive facilities for production of latex gloves and three-layer surgical masks</li> <li>2. Introducing to the Food and Drug Administration to expedite getting a quality license for producing domestic masks with replaceable multi-layer filters</li> <li>3. Introducing to the competent authorities to expedite the process of getting necessary permits and approvals for producing hand and surface</li> </ol>

		disinfectants
	Equipment	<ol style="list-style-type: none"> <li>1. Support in the form of a technology mega-project in order to manufacture 10 production lines of three-layer surgical mask</li> <li>2. Support manufacturing 5 machines and complete production line of N95 mask</li> <li>3. Support in the form of a technology mega-project in order to manufacture disinfection devices using vaporized hydrogen peroxide gas plasma sterilization system</li> <li>4. Put order for apparatus for disinfecting official letters using microwave</li> <li>5. Provide facilities to produce disinfectant devices and hand sanitizers</li> </ol>
<b>Diagnosis</b>	Diagnostic and extraction kits	<ol style="list-style-type: none"> <li>1. Supporting production of diagnostic (Real Time-PCR, ELISA, Serology) and extraction kits</li> <li>2. Reaching understanding with the board of trustees of foreign exchange savings to buy 250 Thousand-Reaction kits from the Manufacturer of diagnostic and extraction kits</li> <li>3. Getting quality approval from Pasteur Institute and production licenses from Food and Drug Administration by three local companies</li> <li>4. Producing prototypes of detection kits and sending them to the Pasteur Institute to obtain quality approvals by two companies</li> <li>5. Supporting production of ELISA kits</li> </ol>
	Medical Equipment	<ol style="list-style-type: none"> <li>1. Supporting development of big data analysis platform based on artificial intelligence and intelligent medical assistant to analyze medical images by emphasis on chest CT scans of patients with COVID-19</li> <li>2. Supporting production development of the required laboratory devices (Laminar hood, PCR workstation, centrifuge and ELISA reader)</li> <li>3. Manufacture and delivery of 5 thermal camera devices (display body temperature in public places)</li> <li>4. Supporting production of General SPECT device</li> </ol>
<b>Treatment</b>	Antiviral drugs	<p>Prototype production of Favipiravir tablet</p> <p>Production of antibodies for treatment of COVID-19</p>
	Medical Equipment	<p>Production of 5,000 Infrared Non-Contact Thermometer (Laser)</p> <p>Production of 5,000 finger pulse oximeter device</p> <p>Development &amp; production of special care ventilator and CT scan</p> <p>Development &amp; production of general C-Arm</p> <p>Development &amp; production of ventilator and flow pump of anesthesia machine</p> <p>Development &amp; production of vital signs monitor with polysomnography capability</p> <p>Development &amp; production of digital radiology</p> <p>Development &amp; production of vital signs monitor with switching capability to the hospital PACS system</p> <p>Supporting development of portable home Oxygen Generators</p> <p>Development &amp; production of Shahrekord Gamma multi-purpose radiation system</p> <p>Development &amp; production of Oxygen Generator</p> <p>Development &amp; production of ECMO device (ECMO)</p> <p>Development &amp; production of photoelectric UV sterilizer</p>

## Clinical trials approved by the Ethics Committee

No.	Project Title
<b>1</b>	Evaluation of the safety and efficacy of hydroxychloroquine plus favipiravir drug regimen in comparison with hydroxychloroquine plus kaletra on the need for admission to intensive care unit in patients hospitalized with COVID-19, a randomized, multi-center, parallel groups, open label study
<b>2</b>	Evaluation of the safety and efficacy of hydroxychloroquine, azithromycin, naproxen, and prednisolone drug regimen in comparison with hydroxychloroquine, azithromycin and naproxen on the need for intensive care in patients with COVID-19 pneumonia, a randomized, multi-center, parallel groups, open label study
<b>3</b>	Comparison of safety and efficacy of four-drug treatment protocol (hydroxychloroquine, azithromycin, prednisolone and naproxen) and three-drug protocol (hydroxychloroquine, azithromycin and prednisolone) with two-drug protocol (hydroxychloroquine and azithromycin) on the rate of hospitalization in outpatients with COVID-19 pneumonia, a randomized, multi-center, parallel groups, open label study
<b>4</b>	The efficacy of azithromycin, prednisolone, naproxen, and kaletra four-drug regimen compared with treatment with national protocol (meropenem, levofloxacin, vancomycin, hydroxychloroquine, and oseltamivir capsules)
<b>5</b>	Evaluation of the therapeutic effect of azithromycin, corticosteroid and naproxen tri-drug regimen in comparison with the same drug regimen with kaletra
<b>6</b>	Evaluation of the efficacy of injectable beta-interferon in controlling the symptoms of COVID-19 patients
<b>7</b>	Evaluation of the safety and efficacy of Zufa syrup in controlling the clinical symptoms of COVID-19 patients
<b>8</b>	Evaluation of the safety and efficacy of Arbidol capsules in controlling the symptoms of COVID-19 patients
<b>9</b>	Evaluation of the efficacy of Newsha mouthwash in controlling the symptoms of COVID-19 patients
<b>10</b>	Use plasma from recovered COVID-19 patients in the treatment of COVID-19 patients
<b>11</b>	A comparative study of the safety and efficacy of repeated intravenous injection of allogeneic mesenchymal stem cells processed from different sources in patients with acute respiratory distress syndrome (ARDS): Phase II clinical trial, randomized, and double-blind study

## **Managing the crisis by focusing on using capabilities and capacities of startups**

In this section, the support of startups in the field of digital economy has been placed on the agenda with the goal of reducing interactions and increasing people's tolerance toward staying homes, longer. To this purpose, two main measures were taken into consideration in this area. In the first step, Sky Room Application, web conferencing and online training was supported. Since the beginning of Corona pandemic, the demand for this platform has grown rapidly. During this period, the number of customers of this startup has increased from 5,000 to 32,000, and the number of its users has increased from 800,000 to more than 3 million.

Moreover, the Corona Plus Campaign has been implemented with the aim of supporting startups active in the field of management and providing services during the transition from the Corona crisis. In this campaign, 376 projects have been reviewed so far, and among them 160 projects in the fields of online health, online education, online store and social responsibility, social innovation, online transportation of goods, online content production, online entertainment and tourism, online ideas, initiatives and online sports are supported. The program has defined and implemented 5 types of support, including financial facilities, providing technical infrastructure, supporting television advertising, supporting digital marketing and facilitating to remove barriers for these startups.

**The end**