



Date: 27-1-2021

Issue: 28

# Views on the Crisis

## Follow-up on the Effects of COVID-19 on the Egyptian Economy

### The Health Sector



## General Introduction

The Egyptian Center for Economic Studies (ECES) provided an analysis of the impact of the Coronavirus pandemic on the various aspects and sectors of the Egyptian economy. The analysis was supported by multiple scenarios whose expectations varied with respect to the performance of these sectors according to the indicators and conditions prevailing at the time of their construction. To complement this effort, ECES is currently monitoring the performance of the sectors following their exposure to the COVID-19 pandemic, in light of the relevant official data recently published by the Central Agency for Public Mobilization and Statistics (CAPMAS), the Central Bank, relevant ministries or other concerned parties. The analysis assesses available data and monitors the situation on the ground through four main aspects, first: assessing published data and aspects of change on the ground; second, the extent to which they are consistent with previous trends and expectations in the studies of ECES and others, and reasons for that; third, future expectations; and fourth,

proposals to improve the performance of the sector when possible.

This report focuses on monitoring the performance of the health sector, on which ECES previously submitted a detailed report in April 2020.<sup>1</sup> This follow-up is particularly important in light of the global developments that the sector has been witnessing, whether related to the development of the virus and the race to produce vaccines around the world or local developments related to the second wave that Egypt is currently experiencing.

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<sup>1</sup> [Egyptian Center for Economic Studies, 2020, Health Sector, View on the Crisis, Issue 10, April 13, 2020.](#)

## **First: Assessing published data and aspects of change on the ground**

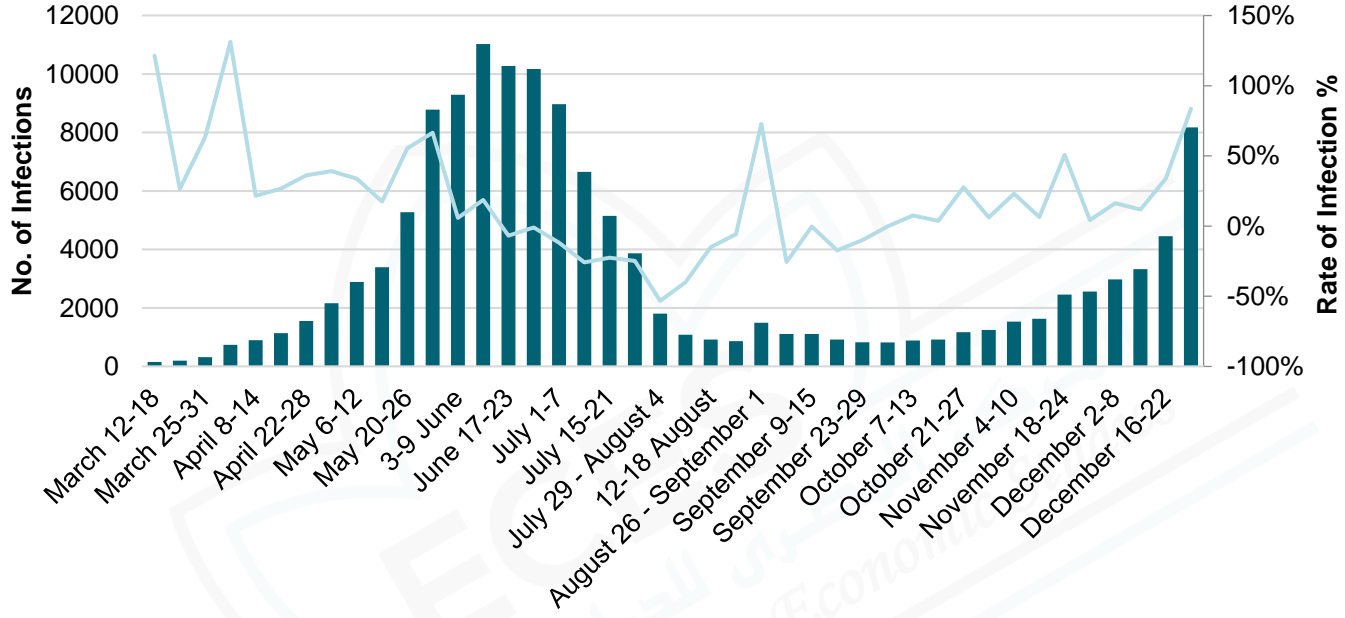
According to the World Health Organization data, the number of infected with the virus from the beginning of its emergence until December 29, 2020 has exceeded 82 million, and deaths are estimated at 1.8 million individuals around the world.

In Egypt, according to official data published by the Ministry of Health and Population, the total number of infected with the Coronavirus, as of December 29, 2020—since the first case appeared in February 2020—has reached more than 135,000 cases and about 7.5 thousand deaths.

Figure 1 shows the evolution of the number of infected and the rate of infection per week from the beginning of the emergence of the virus until the writing of this report. As seen from the Figure below, the infection curve during the first wave of the virus began to increase at a low rate and then picked up speed until reaching its peak in the first half of July. It then declined and rose again with the beginning of September (fall 2020). The increase continued at a faster rate than in the first wave, until the number

of infections during the last week of December 2020 alone exceeded 8,172—according to the Ministry of Health data.

**Figure 1. Evolution of the number of coronavirus infections in Egypt**



Source: Egyptian Center for Economic Studies calculations, based on daily announced data of the Ministry of Health and Population.

- There are many reservations about accuracy of the official data issued by the Ministry of Health and Population about the number of infections and deaths, which makes it lower than actual data. This was confirmed by the Minister of Health, stating that the number of declared infections ranges between 10-15% of the total number of infections in Egypt.

- The low official number of infections compared to reality is due to several factors, most importantly:
  - The limited conduct of PCR swabs that are carried out by the Ministry's laboratories, which is the body reporting to the Ministry of Health. This limitation is due to the high cost of the swab and the long waiting time for its results.<sup>2</sup>
  - The tendency of the majority of citizens to rely on the results of analyzes, x-rays and examination to prove the positivity of the case more than relying on the swabs. The Egyptian Center for Public Opinion Research "Baseera" indicated that 85% of infections depended in their diagnosis on methods other than swabs.
  - The numbers mentioned in the report represent only a limited percentage compared to the number of calls the hotline receives per day.<sup>3</sup>
  - Family isolation and receiving treatment at home or follow-up with a private doctor without notifying the Ministry of Health.

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<sup>2</sup> The Egyptian Center for Public Opinion Research "Baseera" conducted an opinion poll for a sample of 3017 individuals from all governorates during the period June 8-18. For more information about results of the opinion poll, please refer to: <http://www.baseera.com.eg/>

<sup>3</sup> For example, the calls were in the range of 3650 in the month of May 2020, while the number of registered infections reached about 14,000, according to the Ministry of Health.

- According to the estimates of the Ministry of Higher Education and Scientific Research, the figures announced by the Ministry of Health represent one-fifth of actual numbers.

## **Second: Extent of data consistency with previous trends and expectations from mid-April to mid-May**

The Egyptian Center for Economic Studies (ECES), in its report on the [health sector](#) issued last April, took the initiative to estimate the number of expected infections during the period from the second week of April until mid-May 2020 in light of three scenarios and based on specific assumptions.

ECES then compared the assessment of health service needs and their distribution with the supply services available at the time, according to what the Ministry of Health announced at the time, and indicated the size of the gap between available capabilities and needs.

The next section attempts to shed light on the extent of the discrepancy between ECES estimates and official data

regarding the number of infections, whether those issued by the Ministry of Health or those issued by the Ministry of Higher Education. It then assesses the size of the gap between the demand for health services and their supply, as follows:

### ***2.1. Regarding the number of infections from mid-April to mid-May***

The following table shows estimates of the numbers of new infections from the second week of April until the second week of May 2020 in light of ECES scenarios as well as the statistics announced by the Ministry of Health and Population, and finally, the estimates that the Ministry of Education and Scientific Research expected during April 2020.

**Table 1. Number of new weekly infections during the comparison period**

	Scenarios of the Egyptian Center for Economic Studies			Statistics of the Ministry of Health	*Estimates of the Ministry of Higher Education
	Optimistic	Intermediate	Pessimistic		
Second week of April	919	1132	1558	900	4500
Third week of April	1196	1814	3436	1140	5700
Fourth week of April	1557	2909	7582	1552	7760



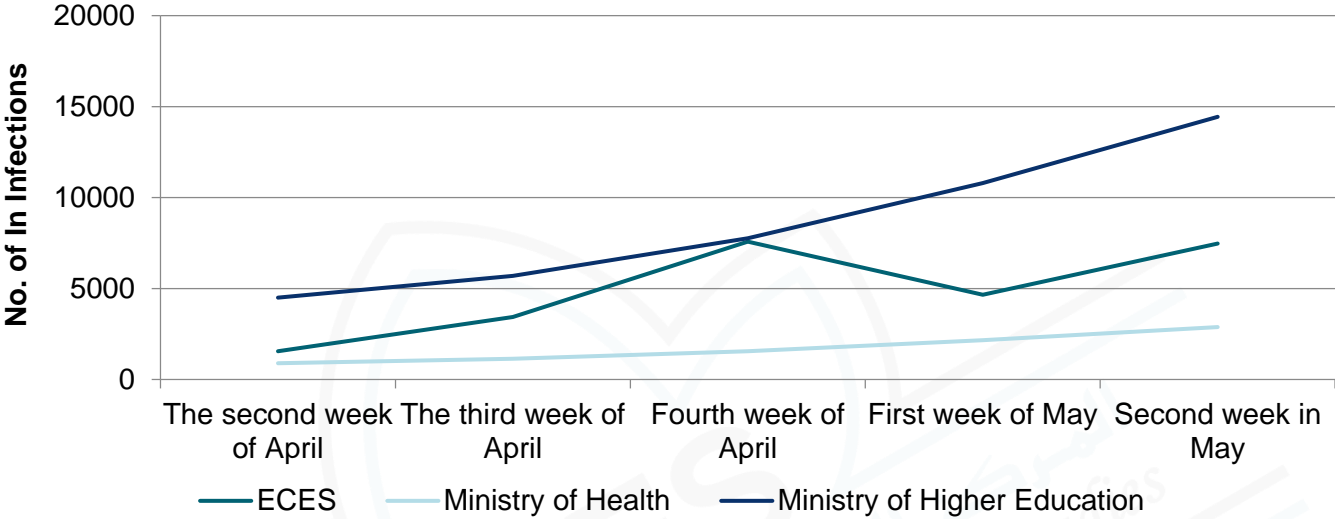
First week of May	2026	4663	16727	2159	10795
Second week of May	2637	7476	36904	2887	14435

*Sources:* The Egyptian Center for Economic Studies, the Ministry of Health and Population website, the statement of the Minister of Higher Education and Scientific Research on May 21, 2020.

\* According to the estimates of the Ministry of Higher Education and Scientific Research, the number of infections declared by the Ministry of Health constitutes a fifth of actual infections.

It is evident from the table that ECES estimates, in its intermediate and pessimistic scenarios, are consistent with the those of the Ministry of Higher Education, but both of which are far from what the Ministry of Health announced. The number of infections witnessed a significant increase at the beginning of the study period to the point that the Ministry of Higher Education estimates exceeded the pessimistic scenario during the second and third week of April, but converged with it in the fourth week. The intermediate scenario was the closest during the first and second week of May 2020, as shown in Figure 2 below.

**Figure 2. Evolution of the number of infections during the period from the second week of April until the second week of May 2020**



*Sources:* Egyptian Center for Economic Studies, Ministry of Health and Population website, and the statement of the Minister of Higher Education and Scientific Research on May 21, 2020.

The discrepancy between the estimates of the pessimistic scenario and those of the Ministry of Higher Education can be attributed to the difference in estimation methodology. The pessimistic scenario assumed a constant rate of infection, which is the same as the rate of increase in the first week of April. The Ministry of Higher Education estimates, however, relied on a variable rate that started at a rate that is 4 times the rate used

by the pessimistic scenario and then turned to using a lower rate of infection.

## ***2.2. Regarding the gap between the demand for health services and available capabilities from mid-April to mid-May***

ECES tried to estimate the health service needs and distribution thereof based on the needs structure that the Ministry of Health observed for the first 1000 infections.<sup>4</sup> It then compared those needs with the available capabilities announced by the Ministry of Health at the time,<sup>5</sup> using the number of infections estimated by ECES and the estimated number according to the Ministry of Higher Education (Table 2).

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<sup>4</sup> The Ministry of Health analyzed the nature of the health needs of the first 1000 cases. It was found that about 91% needed only a bed, 5% needed intensive care rooms, and 4% needed intensive care rooms and a respirator.

<sup>5</sup> The equipment included 24,000 beds, 704 intensive care beds, and about 612 intensive care and respirators, according to the report of the Ministry of Health and Population (about the current situation of the novel Coronavirus, April 8, 2020, and what was announced in the joint press conference of the ministries of health and higher education on April 10, 2020).

**Table 2. Estimation of the gap between health service needs and available capacities from mid-April to mid-May**

		The number of infected, according to ECES	The number of infected according to the Ministry of Higher Education
The total number of infected during the study period		24,714	43,190
Distribution of health services needs of the infected (ECES estimate)	Beds	22,490	39,303
	intensive care	1,236	2,160
	Intensive care and respirator	989	1,728
The gap between available capabilities and needs (ECES estimate)	Beds	1,632	-15,181
	intensive care	-532	-1,456
	Intensive care and respirator	-377	-1,116

*Source:* Prepared by the Egyptian Center for Economic Studies and estimates of the Ministry of Higher Education.

The table shows a deficit in the medical services provided to the infected during the period from mid-April to mid-May, especially with the spread of the virus among medical service providers, as mentioned by ECES in its previous report.

It is certain that the increase in the spread of the virus after that, reaching according to the estimates of the Ministry of Higher Education and Scientific Research, 70 thousand by the end of June 2020, has been coupled with a higher deficit in medical

services, especially in intensive care beds and respirators, compared to the figures indicated in the above table.

### **Third: Expectations for the coming period**

The next part of the report begins with presenting the most important developments of the second wave of the virus globally and locally. This will be followed by ECES estimates of the number of infections expected in the coming period (January and February 2021), the size of the gap between available capabilities and needs of health services. The difficulty to make accurate estimates over the coming period should be noted in light of the ambiguity of the virus's development and uncertainty about the measures that the government will take, whether with regard to precautionary measures or availability of a vaccine.

#### ***3.1. Developments of the second wave of the virus***

- **Globally**, the world is still in a fierce war with the virus in its second wave, and the mutations it is witnessing have resulted in new strains that have begun to spread in

different geographical regions, including Britain, France, and South Africa.<sup>6</sup>

- Global competition for access to a vaccine that can prevent infection intensified. There were a number of vaccines, the most famous of which were Pfizer, Moderna, AstraZeneca, the Chinese vaccine and the Russian vaccine. Many countries began vaccinating their citizens and announcing their plans to manage their national needs of vaccines.
- Despite the multiplicity of announced vaccines and the strength of the producing companies, there is no agreement about their effectiveness, especially in light of the continuous mutation of the virus. It is not known how sufficient they are for all peoples of the world, especially the developing ones.
- The return of the virus in new waves and strains forced some countries to close again, and places governments again before the dilemma of human life or continuation of the economy.
- **Locally**, Egypt is facing a more difficult situation compared to what happened in the first wave, as the number of

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<sup>6</sup> Statement by the Director-General of the World Health Organization on December 21, 2020.

infections and deaths has doubled in an unprecedented manner. The death rate for the total number of infected people in Egypt (6%) increased by three times the global average (2%), which can be attributed to several reasons, most importantly:

- The speed of the virus's spread in its second wave is much higher than in the first wave, especially as it has coincided with the spread of usual diseases in the fall and winter seasons. Infections turned from being individual infections to family ones.
- Holding elections, celebrations, festivals and matches, shortening the time for reconciliation in building violations and installing electronic vehicle stickers, all of which led to gatherings and helped to present an unrealistic image to society about the seriousness of the situation.
- The absence of measures that were applied in the first wave, including the obligation to wear masks, reducing the number of employees in the administrative apparatus, and lax adherence to precautionary

measures and exceptions in adhering to the 50% rule in malls, restaurants and cafeterias, for example.

- The shortage in health service providers, which is a result of multiple factors, including the migration of doctors abroad, which increased after the pandemic, and their number was estimated at 7,000 doctors,<sup>7</sup> in addition to the death of a large number of them as a result of the virus, which the Medical Association estimated at about 276 doctors and 66 nurses. The Ministry of Health did not clarify how it would deal with this deficit.
- The absence of procedures for monitoring concentration areas and adopting measures to contain the virus, especially in slums and crowded areas, despite the

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<sup>7</sup> ECES estimated this number based on the development of the total number of doctors issued by the Central Agency for Public Mobilization and Statistics. It found that the number of doctors decreased by approximately 7,000 doctors in 2018, with an annual rate of change of 6%. Note that CAPMAS data is limited to doctors in the government and private sectors. ECES assumed the continuation of this rate during 2019 and 2020 (Table 1 in the Appendix shows the evolution of the number of doctors during 2009-2018 according to CAPMAS and ECES estimates for 2019 and 2020). The ECES estimate of 7,000 doctors as a minimum and linking it to migration trends specifically is due to the announcement by several European countries and the United States of their encouragement of recruiting Egyptian doctors and their facilitation of immigration procedures in an unprecedented manner for medical personnel in light of the Coronavirus pandemic. This trend reinforces what the Doctors' Syndicate reported of the increase in the number of doctors' resignations in general to 3,500 doctors in 2019 alone, in addition to the presence of a large number of doctors not belonging to the government and private sectors.



interactive maps previously announced by the Ministry of Health. The result is an increase in the speed of the virus spread. The governorates of Cairo, Giza, Fayoum and Minya are still witnessing the highest rate of infection.

### ***3.2. ECES estimates for the coming phase***

**With regard to the number of infections during January and February:**

- There are no announced estimates for the coming period, but ECES put forth some estimates regarding the number of infections during the months of January and February in light of specific assumptions.<sup>8</sup> This is in view of a general assumption that any new measure does not show results immediately on the number of infections, but rather takes two weeks for the results to appear. Likewise, for example, even if the vaccine is available and in adequate quantities, it is not

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<sup>8</sup> These estimates should be read with caution, as expectations may require further reviews due to the developments that occur, whether related to the day-to-day outbreak of the virus, whose duration and scope are still unknown, or those related to any global or local developments that may affect the estimates directly or indirectly.

practically easy to distribute it during the estimation period, i.e., January and February.

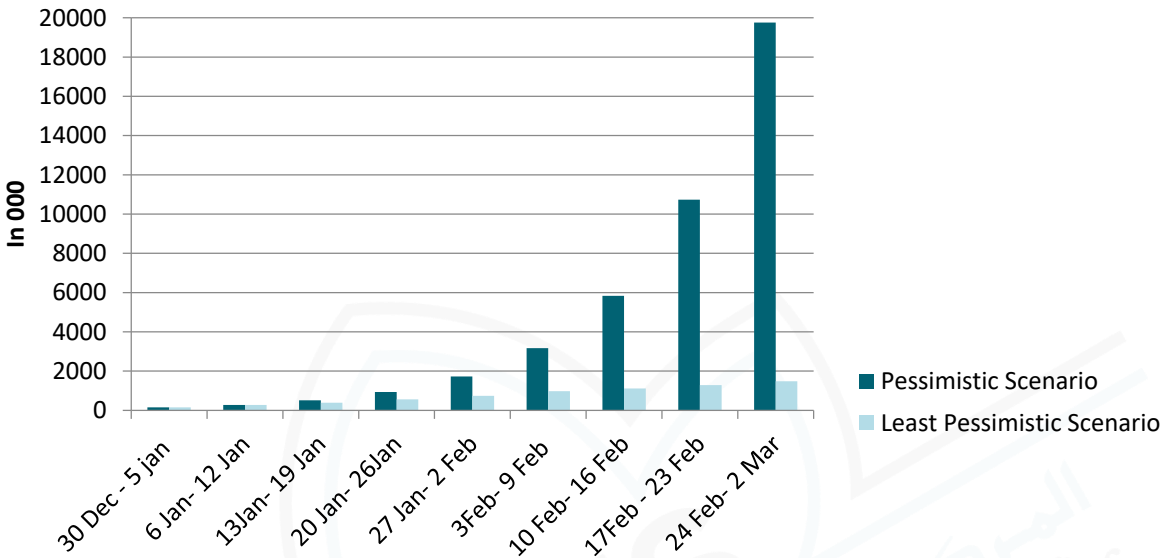
Based on the foregoing, ECES put forth its estimates of the number of infections during the months of January and February 2021 in light of the following two assumptions:

**Table 3. ECES estimates of the number of infections during January and February 2021**

	<b>Assumption underlying the scenario</b>	<b>Rate of change in the number of infections</b>
The pessimistic scenario	The government delays taking more precautionary measures and does not tighten compliance with the measures, and exceptions continue until the second week of January.	The rate of change in the number of infections continues, at the same rate as in the last week of December (84%), until the end of the estimation period.
The least pessimistic scenario	Taking more precautionary measures, their strict implementation, and canceling exceptions starting from the second week of January, and thus their results will appear in the coming weeks.	Continuation of the rate of change in the number of infections at 84% during the first and second weeks of January with a decline in the rate of increase by half in the following two weeks, then to a quarter in the following two weeks, then to 15% until the end of the period.

Figure 3 below shows estimates of the number of new infections during January and February.

**Figure 3. Estimates of the number of new infections during January and February 2021**



Source: ECES calculations.

From the previous figure, the estimate of the total number of new infections during January and February ranges between 7 million according to the less pessimistic scenario, and 43 million according to the pessimistic scenario. This means the need to accelerate the start of tightening measures and procuring a vaccine.

## **With regard to the gap between the demand for health services and the capabilities available during January and February**

The following table shows estimates of the needs of the new infections in the months of January and February in terms of medical services and the nature of these services. It then estimates the gap between the volume of demand and available capabilities in each scenario. The estimates are based on a set of facts and assumptions, as follows:

- During the past period, the State increased the readiness of Ministry of Health hospitals, equipping 364 hospitals with 35,000 beds, 5,000 care beds, and 2,400 respirators, which represent an increase of 11%, 4%, and 2%, respectively, compared to what was available during the first wave.<sup>9</sup>
- The two scenarios assume that 80% of total infections receive treatment at home and that only 20% of the total go to hospitals.<sup>10</sup> The nature of health services will remain the same according to the assumptions of the Ministry of

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<sup>9</sup> Statement of the Minister of Health before the cabinet in its meeting No. 123 on December 23, 2020.

<sup>10</sup> 20% was used as per some experts. Based on what the Egyptian Center for Public Opinion Research "Baseera" estimated, only 12% of the infected resorted to hospitals during the first wave, and since the second wave is worse, this percentage was increased to 20%. To read more about the survey results, please refer to: <http://www.baseera.com.eg>

Health,<sup>11</sup> although reality entails a review in light of the families' tendency for treatment at home and the increasing demand for intensive care and respirators.

- The estimates do not take into account recovery and death rates.

**Table 4. Estimation of the gap between the needs of health services and available capabilities after their recent increase during the months of January and February 2021 (in 1000)**

		The pessimistic scenario	The least pessimistic scenario
The total number of infected during January and February		43,095	6,968
The number of infected who sought treatment in hospitals		8,619	1,394
Distribution of health services needs of the infected	Beds	7,843	1,268
	Intensive care	392	63
	Intensive care and respirator	16	3
The gap between the recently increased available capabilities and actual needs	Beds	-7,808	-1,233
	Intensive care	-387	-58
	Intensive care and respirator	-13	-0.14

Source: Egyptian Center for Economic Studies calculations.

<sup>11</sup> The Ministry of Health analyzed the nature of the health needs of the first 1000 cases and found that about 91% needed only a bed, 5% needed intensive care rooms, and 4% needed intensive care rooms and a respirator.

It is evident from the previous table that the delay in adopting strict precautionary measures will lead to a steady increase in the number of infected, the imposition of more exceptional pressures on the health system, and an exacerbation of the deficit in health services, especially care, respirators and medical teams. Hence, expectations of a higher number of deaths. Although recovery and death rates may reduce these estimates, the gaps indicate a dire need for all medical services. For example, we need 11 times the current capabilities of intensive care in the less pessimistic scenario, and it may reach 77 times in the case of the pessimistic scenario.

#### **Fourth: Proposals to face up to the crisis**

The government recently announced some measures to control the virus, which were mentioned in Prime Minister Resolution No. 2701 of 2020.<sup>12</sup>

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<sup>12</sup> It included for example:

- It is prohibited to hold any parties, festivals, or events related to the celebration of New Year's Eve.
- It is prohibited to hold festivals, conferences and major events of all kinds or purposes, and any activities or parties that lead to mass gatherings.
- It is prohibited to hold all kinds of marquees, whether for weddings, to receive condolences, or for birthdays and popular celebrations.

Despite the seriousness of these measures and the fact that they included some penalties for violators, they allowed exceptions, with the approval of the competent minister, in addition to the fact that they coincided with some confusion in statements related to the exam system, whether for pre-university or university education.

Despite the importance of these decisions and what was added to them, they alone are not sufficient to control the spread of the virus. There is still a need for a set of measures that can be divided into two levels:

### **Precautionary measures:**

- To expedite more precautionary measures, of which a large number have already been applied in the first wave, starting with strict compliance of all units of the state's administrative apparatus, especially those that deal with the public, with these procedures and cancelling exceptions, with the need to simplify government procedures and

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- It is prohibited to receive citizens in event-houses attached to the places of worship; and it is prohibited to hold weddings and similar events in places that are not open.
  - Citizens are obliged to wear protective masks while they are in all means of collective transport, whether public or private, closed public places, and open places where social distancing is impossible to achieve.

shorten the period of obtaining the service. This will lead to a change of the image that is presented to the society to reflect the seriousness of the situation, especially since the behavior of society is a reflection of this image.

- Expanding the adoption of non-traditional solutions, including, for example, providing diagnostic, radiology and treatment services through mobile medical convoys, training veterinarians on how to act when they are needed, whether in treatment, vaccination and follow-up, as they are the closest to human physicians.
- Establishing controls over the costs of providing health services to the private sector, the majority of which have become exaggerated.

### **Crisis management:**

- The current stage requires a proactive, participatory strategic planning capable of assessing upcoming expectations and scenarios for handling.
- The lack of a clear role for scientific research bodies and the Physicians and Pharmacists Syndicates in managing the crisis is illogical; they should be major partners.



- There is still a great need for civil society and parliament to participate in crisis management committees, especially at the governorate level. Among the areas in which they can be involved is the development of health units and upgrading their efficiency, thus relieving pressure on central hospitals or assisting in distributing the vaccine, when available.
- Improving the efficiency of utilizing information technology in all fields, including, for example, making use of the interactive maps announced by the Ministry of Health in identifying the groups that have priority of vaccination, as well as analyzing data on infections and deaths. Asian countries have succeeded in in this respect to the extent that enabled them to control the virus.
- What has been announced<sup>13</sup> regarding the identification of vaccine distribution centers means the appropriate vaccine has been selected, and that there is a comprehensive plan that guarantees its distribution at the same time throughout the nation with a clear timetable with prioritization and a clear mechanism for follow-up and evaluation of results.

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<sup>13</sup> On January 5, 2021.

## Appendix

**Table 1: Evolution of the number of physicians in the public and private sectors during the period 2009-2018 and ECES estimates for 2019 and 2020**

Year	Number of physicians	Annual change	Annual rate of change
2009	86,628		
2010	89,994	3,366	4%
2011	93,311	3,317	4%
2012	96,074	2,763	3%
2013	103,307	7,233	8%
2014	111,454	8,147	8%
2015	116,980	5,526	5%
2016	125,250	8,270	7%
2017	128,083	2,833	2%
2018	120,606	-7,477	-6%
2019**	113,370	-7,236	-6%
2020**	106,567	-6,802	-6%

\* Existing and contracted.

\*\* Estimates of the Egyptian Center for Economic Studies, assuming a constant annual rate of change for the year 2018.

Source: Central Agency for Public Mobilization and Statistics, Annual Bulletin of Health Services Statistics 2018, November 2019 issue.

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