

# COVID-19 Pandemic: What is Known Till June 2020 and What is Yet to Know?

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## INTRODUCTION

COVID-19 is an acute highly contagious infectious disease primarily involving respiratory system caused by coronavirus SARS-CoV-2. It was first detected in Wuhan, Hubei province of China, in December 2019.<sup>1</sup> World Health Organization declared COVID-19 a global pandemic on March 11, 2020.<sup>2</sup>

### Global Situation

COVID-19 is affecting 213 countries and territories around the world and 2 international conveyances. As of June 30, 2020, total number of new cases reported are 10,566,649, deaths 513,222, recovered 5,825,876, and currently infected patients 4,188,397.<sup>3</sup>

The global death percentage is around 4.86% but there are differences in countries with respect to level of epidemic (number of new cases and mortality), population density, response of people living in these countries and containment strategies.<sup>3,4</sup>

## ABSTRACT

Since first cluster of unknown pneumonia from China reported in December 2019 to World Health Organization, more than 10.5 million new cases and more than 0.513 million deaths have been reported till June 30, 2020 in six months' time. World got to know lot of facts about COVID-19 within short period of six months and success stories too concerning its containment. The situation has constantly been unfolding every moment educating people regarding public health and clinical aspects of the infection and disease and its impact on countries and communities. But still lot of information and evidences are required with regard to pharmacological interventions including effective drugs and efficacious vaccine to mitigate the impact of COVID-19 pandemic at all levels. It seems that we have to live with COVID-19 months-years as the virus is going to stay for longer period of time. The option is to continue practice of effective non-pharmacological interventions as to minimize spread of COVID-19 and ensure adequate provision of PPE to healthcare workforce and testing of health-care workers (HCWs) as to alleviate the anxiety of HCW and lessen their depletion by unnecessary quarantine thereby protect their health and reduce in hospital transmission.

## KEY WORDS

COVID-19, Facts, Interventions, Pandemic

**Table 1. Month-wise reported new cases, deaths and death percentage globally.**

Month	New cases	Death	Death Percentage
January	11,950	259	2.16
February	74,656	2718	3.64
March	775,880	41249	5.31
April	2,393,224	191070	7.98
May	2,984,142	142,532	4.77
June	4,326,797	135,394	3.13
Total	10,566,649	513,222	4.86

### Situation in South Asia

More than 60 thousand new cases and more around 18 hundred deaths are reported in 8 South Asian Association of Regional Countries (SAARC) as of May 01, 2020 (00.42 GMT).<sup>3</sup>

**Table 2. COVID-19 Status of SAARC Countries June 30, 2020.**

Country	Total Cases	Total Deaths	Death Percent	Total Recovered	Recovery Rate	Total Active
India	585,792	17,410	2.97%	347,836	59.4%	220,546
Pakistan	209,557	4,304	2.05%	98,723	47.1%	106,530
Bangladesh	145,483	1,847	1.27%	59,624	41.0%	84,012
Afghanistan	31,517	746	2.37%	14,131	44.8%	16,640
Nepal	13,564	29	0.21%	3,194	23.5%	10,341
Maldives	2,361	9	0.38%	1,944	82.3%	408
Sri Lanka	2,047	11	0.54%	1,711	83.6%	325
Bhutan	77	0	0%	44	57.1%	33
Total	990,398	24,356	2.46%	527,207	53.2%	438,835

SAARC countries' death percentage is around 2.5% but there is little bit variation in countries with respect to mortality, population density, response of people living in these countries and containment strategies.<sup>3</sup>

### Magnitude of risk

In order to assess the magnitude of the risk posed by COVID-19, three parameters need to be understood; transmission rate (number of newly infected people from a single case), case fatality rate (percent of cases that result in death) and possibility of asymptomatic case transmission.<sup>3</sup>

The initial studies had estimated  $R_0$  (reproductive number) between 1.5 and 3.5.<sup>5-7</sup> On January 23, 2020, WHO revealed its estimated  $R_0$  between 1.4 and 2.5.<sup>8</sup> It is said that an outbreak with a reproductive number of below 1 will gradually disappear.<sup>3</sup>

An earlier estimate had put the fatality rate 3% but as per epidemiologists' opinion fatality rate can change if virus can mutate. For comparison, the case fatality rate for SARS was 10%, and for MERS 34%.<sup>3,9</sup> Seasonal flu generally kills far fewer than 1% of those infected.<sup>3,10</sup> Current data suggest that case fatality risk is around 1% putting somewhere in between 1957 influenza pandemic (0.6%) and 1918 Spanish influenza pandemic (2%). The risk is more than Seasonal flu.<sup>11</sup>

### Box 1. What is known

The level of epidemic/outbreak in different countries (number of new cases, deaths, patients recovered), containment and mitigation strategies and response of public.<sup>3</sup>

The genome sequences of SARS-CoV-2 is evident.<sup>14</sup>

An infected person on an average spreads the disease 2-3 persons, an exponential rate of growth.<sup>11</sup>

The disease primarily affects respiratory tract but can involve other organs of the body too.<sup>15</sup>

Clinical courses range from asymptomatic patient to very mild disease, may progress to severe disease with pneumonia and some patients develop critical disease. Around 80% have mild disease, 15% moderate-severe and 5% critical disease.<sup>15,16</sup>

There are sufficient number of asymptomatic cases. As per studies between 5% and 80% cases may be asymptomatic; some asymptomatic cases will become symptomatic over one week labelled as pre-symptomatic. Asymptomatic and patient in pre-symptomatic stage can infect the people.<sup>17-19</sup>

COVID-19 spreads rapidly in large gatherings. In this context World Health Organization has issued interim guidance on April 2020 – Practical consideration and recommendations for religious leaders and faith-based communities in the context of COVID-19.<sup>20</sup>

The mild cases which are around 80% of all new cases can be treated at home provided adequately isolated otherwise in the isolation facilities of hospital.<sup>21,22</sup>

Approximately 15 per cent of COVID-19 patients are categorized as 'severe' and require high flow oxygen therapy. This may help in early recovery.<sup>23</sup>

Most of the critical patients do not require ventilators as basic problem is in the capillaries rather than in the alveoli of lungs. There are more deaths reported in ventilated patients.<sup>24,25</sup>

The hospitals are/ can be the sources of spread if adequate personal protective equipment (PPE) are not provided to healthcare workforce and testing of healthcare workforce is not done.<sup>26-28</sup>

Real-time reverse transcription-polymerase chain reaction (RT-PCR) test is the only reliable test available at this point in time for diagnosis of COVID-19, but this can be negative in 33% of cases and rapid tests are not meant for the acute and accurate diagnosis.<sup>29</sup>

Rapid tests (immunoassays) have been developed detecting antigen or IgM and IgG antibodies. Rapid antigen test has poor sensitivity. IgM is detected after seven days of infection indicating recent infection; these antibodies are short-lived. While IgG remains in the serum but for how long? and its protective effect is yet to be known.<sup>29</sup>

The importance of social distancing, wearing mask, hand hygiene, respiratory hygiene and cough etiquettes in reducing the transmission and spread of infection is very well recognized.<sup>4,22,30</sup>

The significance of lockdown is to flatten the curve and provide time to healthcare workforce to strategize containment and mitigation plan provided implementation of additional non-pharmacological interventions continue during lockdown period. However, the long-term lockdown compromises care of patient with other disease/s, limits livelihood, negative impact on economy, etc. There is worth of selective lockdown in limited area and isolation of elderly and patients with comorbidities.<sup>31-34</sup>

There are no data from controlled clinical trial and no high-quality evidence are available to support the use of any medication to treat the COVID-19 patient. Various drugs in different combination in different parts of country in different countries are continuously being used since the outbreak begins. The literature is available for interpretation.<sup>34</sup>

World Health Organization has initiated "Solidarity Drug Trial" with voluntary participation of the countries in trial.<sup>35</sup>

Convalescent plasma of recovered COVID-19 patient has also been used for passive immunization as a treatment.<sup>36</sup>

Some vaccines are under third stage of trial. As per WHO landscape documents there are 70 coronavirus vaccines in various process of development; three are being tested in human trials.<sup>37,38</sup>

Various practical models for containment of COVID-19 at country level and local level with positive impact are available to learn and apply with modification/adjustment at other places.<sup>39</sup>

Mainstream of the healthcare workforce understand the facts, involved in dealing pandemic and exposed at various level but they are anxious due to short supply of PPE and loss of their colleagues while caring COVID-19 patients. Their physical and mental wellness is essential to cope up with pandemic.<sup>40,41</sup>

Majority of the public is aware about common facts related to COVID-19 but still there is anxiety and fear among people. Anxiety is a normal reaction to uncertainty and an uncertainty is till associated with COVID-19. Facts may minimize the anxiety and fears.<sup>42</sup>

The current management is to reduce the virus spread utilizing non-pharmacological intervention and provide supportive care for diseased patients.<sup>43</sup>

There is evidence of asymptomatic transmission too.<sup>12,13</sup>

## CONCLUSION

We got to know so many facts within short period of six months and success stories too and the situation has continuously been unfolding every moment teaching lesson to us. But still lot of information and evidences are required with regard to pharmacological interventions to mitigate the impact of COVID-19 pandemic. We have to live with COVID-19 as the virus is going to stay long; let us continue to practice effective non-pharmacological interventions as to minimize spread of COVID-19 and adequate provision of PPE and testing of health-care workers (HCWs) as to alleviate the anxiety of HCW and lessen their depletion by

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## Box 2. What is yet to know

When this pandemic will end?

Will definitely be the second wave? If there will be second wave, what will be the gravity of second wave in different countries?

Are we prepared to contain second wave?

When will herd immunity develop naturally or with vaccine? (Herd immunity without vaccine is not a preventive measure, waiting for herd immunity to develop naturally could be catastrophic)

When will be effective and safe vaccine available? Whether available vaccine will provide short term immunity or long-lasting immunity? When will vaccine be used for mass vaccination?

Are antibodies developing in patients' serum protective or not?

Will there be reinfection, relapse or reactivation of disease? If there will be what will be the presentation and severity?

When will efficacious and safe drug or drugs will be available for the treatment? Will single drug be sufficient or combination of drugs required? Will drug for chemoprophylaxis be available?

When will be more sensitive test than RT-PCR equally specific to RT-PCR developed? When will such test be widely available?

What will be health status of those who recover from critical illness.

There are lot of other queries require explanations.

unnecessary quarantine thereby protecting their health and ultimately reducing hospital transmission. We may continue testing for diagnosis purpose and isolate the patients and trace the contacts and quarantine them as a public health measure to limit the transmission.

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