



Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.



Letter to the Editor

COVID-19 in Bangladesh: public awareness and insufficient health facilities remain key challenges



The coronavirus disease 2019 (COVID-19) pandemic has now spread through the entire world and emerged as a major public health threat. COVID-19 is a highly transmittable and pathogenic viral infection caused by severe acute respiratory syndrome coronavirus 2. This novel pathogenic virus emerged in Wuhan, China, and has rapidly spread around the world,¹ with 210 countries, including Bangladesh, reporting more than 2.4 million confirmed cases of COVID-19, leading to 169,006 deaths as of April 22, 2020.² Many developed countries in the world have imposed uniquely severe isolation measures in an attempt to attenuate the mortality and disease transmission of the virus, and the World Health Organization (WHO) declared the situation a public health emergency of international concern. The first COVID-19 case in Bangladesh was identified on March 8, 2020. Since then, 120 deaths of 3772 confirmed cases have been reported to date. The total number of cases is rising rapidly, with a high mortality rate

(3.18%).³ As the number of COVID-19 infections continues to rise in Bangladesh (Fig. 1), an emergency public health response is urgently required to mitigate the severity of the COVID-19 outbreak, which has the potential to result in devastating social, economic, and political crisis.

In response to COVID-19, the government of Bangladesh, including the Directorate General of Health Services (DGHS) and Institute of Epidemiology, Disease Control and Research (IEDCR), has raised a national-level alert and implemented wide-ranging, multiagency public health measures under WHO guidelines to fight against the pandemic. However, lack of public awareness and wide-spread panic and anxiety related to an unknown illness among the general population, as well as limited health facilities, pose unique challenges and an enormous threat to the population. Because COVID-19 appears to be transmitted from person to person through respiratory droplets, close contact, and fomites in the immediate

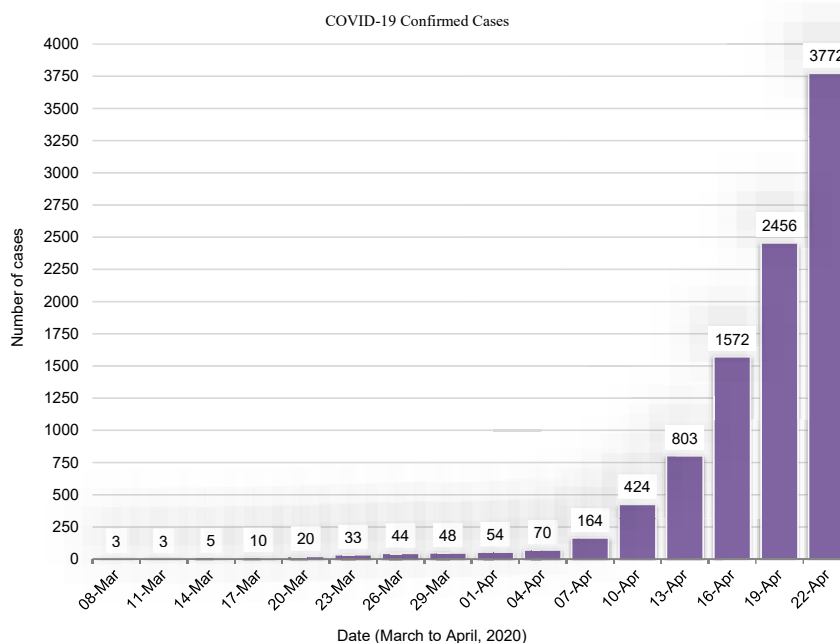


Fig. 1. Number of confirmed COVID-19 cases recorded in Bangladesh. COVID-19 = coronavirus disease 2019.

environment around the infected person,⁴ the Bangladeshi government initiated a public campaign highlighting the necessity of practicing respiratory hygiene and hand hygiene and using appropriate personal protective equipment (PPE) such as mask and gloves,⁵ with evidence of minimal adoption by the public at large. Early detection and isolation of cases have been the bedrock for curbing the rapid spread of communicable diseases such as COVID-19, and extra precautions need to be taken to promptly identify asymptomatic viral carriers.⁶ Currently, there are only 20 laboratories, which perform COVID-19 testing in Bangladesh, and most of them are in Dhaka.⁷ By April 22, a total of 32,674 samples were tested, and in the last 24 h, a total of 3096 samples were tested all over the country.³ The overall COVID-19 test rate in Bangladesh is 156 per 1,000,000 population,⁷ obviously a markedly insufficient figure that attests to the severe insufficiency in testing facilities and the absence of sufficient testing centers with necessary equipment such as testing kits, surgical gloves, and PPE for healthcare staff to address the anticipated surge in COVID-19 cases.⁸ Dhaka, the largest and most populated city, remains the epicenter of COVID-19 in Bangladesh; multiple clusters have been identified from which rapid community transmission has taken place, and measures such as lock-down and social distancing to disrupt transmission chains have already begun.⁹ However, public awareness remains extremely low and often dismissive of the social isolation directives. Government interventions aimed at enforcing the preventive measures have been quite difficult to implement and rather unsuccessful despite the mobilization of the Bangladesh police.¹⁰

A comprehensive awareness-raising program through mass media as well as the Internet and social media is urgently required to fully engage the general people to learn and understand the seriousness of the outbreak and their role and responsibility in alleviating the severity of COVID-19. At the same time, however, government measures aimed at ensuring the adequacy of the food supply chain, making sure that the poor and disadvantaged are brought under adequate and effective relief programs, and that community leaders are identified and empowered to lead and preserve the social isolation measures while effectively constituting surveillance mechanisms that are all needed. In a time of crisis such as the one generated by the rapid transmission of COVID-19, Bangladesh stands, similar to many other emerging economies, in an extremely vulnerable position, whereby the absence of adequate testing and hospital resources along with public unawareness and lack of coordination among the various government or private agencies is likely to result in catastrophic loss of lives.

References

1. Shereen MA, Khan S, Kazmi A, Bashir N, Siddique R. COVID-19 infection: origin, transmission, and characteristics of human coronaviruses [Internet]. *J Adv Res* 2020;24:91–8. <https://doi.org/10.1016/j.jare.2020.03.005>. Available from: .
2. World Health Organization. Coronavirus disease 2019 (COVID-19) situation report – 91 [Internet]. 2020. Available from: https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200420-sitrep-91-covid-19.pdf?sfvrsn=fcf0670b_4.
3. Institute of Epidemiology Disease Control and Research. COVID-19 status Bangladesh [Internet]. 2020 [cited 2020 Apr 22]. Available from: <https://www.iedcr.gov.bd/>.
4. World Health Organization. Modes of transmission of virus causing COVID-19: implications for IPC precaution recommendations [Internet]. Scientific brief; 2020. Available from: <https://www.who.int/publications-detail/modes-of-transmission-of-virus-causing-covid-19-implications-for-ipc-precaution-recommendations>.
5. Shawon AA. PM instructs all govt officials to wear masks [Internet]. Dhaka Tribune; 2020 [cited 2020 Apr 21]. Available from: <https://www.dhakatribune.com/health/coronavirus/2020/04/02/pm-instructs-all-govt-officials-to-wear-masks>.
6. Guan W, Chen R, Zhong N. Strategies for the prevention and management of coronavirus disease 2019. *Eur Respir J* 2020;55(4):2000749. <https://doi.org/10.1183/13993003.00749-2020>.
7. World Health Organization. COVID-19: Bangladesh situation report No- 8 [Internet]vol. 11; 2020. Available from: https://www.who.int/docs/default-source/searo/bangladesh/covid-19-who-bangladesh-situation-reports/who-ban-covid-19-sitrep-08.pdf?sfvrsn=a108826d_4.
8. Molla MA-M. Govt now scrambles for testing kits, PPE [Internet]. The Daily Star; 2020 [cited 2020 Apr 21]. Available from: <https://www.thedailystar.net/frontpage/news/govt-now-scrambles-testing-kits-ppe-1882633>.
9. Bangladesh prepares for lockdown [Internet]. The Business Standard; 2020 [cited 2020 Apr 21]. Available from: <https://tbsnews.net/coronavirus-chronicle/coronavirus-bangladesh/bangladesh-prepares-lockdown-60595>.
10. Mahmud I. Bangladesh police struggle enforcing pandemic shutdown [Internet]. New Age Bangladesh; 2020 [cited 2020 Apr 21]. Available from: <https://www.newagebd.net/article/104228/bangladesh-police-struggle-enforcing-pandemic-shutdown>.

R. Banik*

Department of Public Health and Informatics, Jahangirnagar University, Savar, Dhaka, 1342, Bangladesh

M. Rahman, T. Sikder

Department of Public Health and Informatics, Jahangirnagar University, Savar, Dhaka, 1342, Bangladesh

D. Gozal

Health and the Child Health Research Institute, The University of Missouri School of Medicine, Columbia, MO 65201, USA

* Corresponding author. Department of Public Health and Informatics Jahangirnagar University Savar, Dhaka-1342, Bangladesh. +8801621892009 (mobile).
E-mail address: rajonbanik.phiju@gmail.com (R. Banik).

24 April 2020

Available online 7 May 2020