

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.



Contents lists available at ScienceDirect

## Journal of Infection and Public Health

Journal of Infection and Public Health

journal homepage: www.elsevier.com/locate/jiph

Letter to the Editor

# Path to normal life post-COVID-19, the Saudi Arabian case



#### ARTICLE INFO

Article history: Received 17 April 2022 Received in revised form 15 June 2022 Accepted 26 June 2022

*Keywords:* SARS-COV-2 Pandemic Prevention

Dear Editor,

Up to date, there have been up to 494,587,638 confirmed cases and 6,170,283 deaths of COVID-19 worldwide with the eastern Mediterranean region encompassing only 4.4 % of the cases [1]. The SARS-COV-2 virus is still causing a worldwide pandemic that does not seem to end by the near future. Several variants with selective advantages including increased transmissibility and immunity escape have emerged. This emergence could be partially attributed on one hand to the continuous transmission of the virus due to the insufficient preventative and restrictive measures adopted by several countries, in addition to the partial adherence of the general community [2]. On the other hand, the likelihood of new mutations can increase in patients with impaired immune system due to prolonged SARS-COV-2 infection [3]. We present here in, an update on the current epidemiological situation of COVID-19 in the Kingdom of Saudi Arabia, in view of the worldwide emergence of the third wave of COVID-19. In the Kingdom, the surge in the number of new daily cases started in mid-December where the number of cases increased from 80 in 16 December 2021 to 252 in 21 December 2021, reaching 1024 by January first 2022. The surge was in conjunction with the opening of the MDLBeast Soundstorm music festival held in Riyadh during the same period; where more than 500,000 persons have attended with mask usage not being enforced during the event. As seen in Fig. 1, in 18 January, 5928 new COVID-19 cases were reported throughout the country. Consequently, by the end of this month, the Saudi ministry of health announced the possibility to book an appointment through "Sehaty" and "Tawakkalna" apps to take the booster dose of the COVID-19 vaccine; this is after having taken the second dose of at least three months [4]. Furthermore, the ministry of interior stated that starting from February 1, 2022, all citizens and residents in the kingdom should take the third vaccine dose to secure their "immune" status on the Tawakkalna app. This status will be mandatory to enter any social, scientific, economic or sporting

events in public as well as private places [4]. In all health care centers "hospitals and clinical research centers", the receipt of the third dose was without the need of prior appointment and was available to all workers including nurses, medical doctors, researchers and even volunteers in the clinical research area. By April 5, 2022, 26,283,466 of first dose, 24,602,529 second dose and 12,387,363 booster doses were administered in KSA [5]. On the other hand, during this same period, social distancing, wearing of masks were still mandatory in public and private spaces. Taking a "Umrah" was still through the "Eatamarna" app; this is in order to ensure that the correct capacity approved by concerned authorities is fulfilled to fight COVID-19 over the territory. All these restrictive/preventative measures led to the containment of the COVID-19 pandemic in KSA in March 2022. In the 6th of March, authorities decided to: suspend social distancing in public, private spaces, schools, mosques. wearing masks is no longer mandatory in open areas but only in closed spaces, passengers arriving to KSA are no longer required to abide by the institutional/home quarantine nor required to provide PCR tests upon arrival. Furthermore, social distancing in the Prophet's holy Mosque and Grand Holy Mosque is no longer applicable; this is while continuing to abide by the wearing of masks inside [6]. By the time of writing this paper, the number of SARS-COV-2 daily cases was still below 100 and the number of deaths arrived to "0" cases in the 4th of April 2022 [5].

Beside the restrictive and preventative measures taken during the pandemic, KSA had put an effort at the level of clinical research and especially the usage of whole genome sequencing techniques [7,8]. Until 7 April 2022, 1247 sequences were shared on the GISAID database, of which 1192 were deposited with complete collection date [9]. At the national level, "Urgent COVID-19 Research Program" was launched; this program aims to explore COVID-19 epidemiology, source of infection, diagnosis, pathological changes, treatments and preventative measures. Through the central institutional review



Fig. 1. Number of reported daily cases and daily critical cases from late November 2021 to April 2022 in the Kingdom of Saudi Arabia.

board, 338 research proposals were reviewed and more than 100 were given ethical approvals to conduct COVID-19 related research. Furthermore, in cooperation with the ministry of health, Saudi health council and Saudi center for disease control and prevention (SCDC), King Abdulaziz City for Science and Technology (KACST) dedicated a fast track in order to support COVID-19 scientific research [10]. All these attempts and cooperation between different bodies at the kingdom level will undoubtedly provoke the continuous monitoring of SARS-COV-2, preventing thus the possibility of a new wave of infections.

## Funding

This article did not receive any funding.

#### **Competing interests**

None declared.

### References

 WHO Coronavirus (COVID-19) Dashboard [Internet]; 2022. Available from: https://covid19.who.int/.

- [2] Hirabara SM, Serdan TDA, Gorjao R, Masi LN, Pithon-Curi TC, Covas DT, et al. SARS-COV-2 variants: differences and potential of immune evasion. Front Cell Infect Microbiol 2022;11:781429.
- [3] Choi B, Choudhary MC, Regan J, Sparks JA, Padera RF, Qiu X, et al. Persistence and evolution of SARS-CoV-2 in an immunocompromised host. New Engl J Med 2020;383(23):2291–3.
- [4] Saudi Arabia offers booster shots to adults three months after their second dose [Internet]; 2021. Available from: https://saudigazette.com.sa/article/614951.
- [5] COVID 19 Dashboard: Saudi Arabia [Internet]; 2022. Available from: https:// covid19.moh.gov.sa/.
- [6] An official source at ministry of interior: all precautionary and preventive measures related to combating corona pandemic are lifted [Internet]; 2022. Available from: https://www.moi.gov.sa/wps/portal/Home/sectors/interpol/contents/.
- [7] Mourier T, Shuaib M, Hala S, Mfarrej S, Alofi F, Naeem R, et al. SARS-CoV-2 genomes from Saudi Arabia implicate nucleocapsid mutations in host response and increased viral load. Nat Commun 2022;13(1):601.
- [8] Ullah MF, Alnour TMS, Elssaig EH, Ahmed-Abakur EH. Characterization of altered genomic landscape of SARS-CoV-2 variants isolated in Saudi Arabia in a comparative in silico study. Saudi J Biol Sci 2021;28(12):6803–7.
- [9] Shu Y, McCauley J. GISAID: Global initiative on sharing all influenza data from vision to reality. Eur Surveill 2017;22(13):30494. https://doi.org/10.2807/1560, 7917.ES.2017.22.13.30494
- [10] Saudi Arabia's Experience in Health Preparedness and Response to COVID-19 Pandemic [Internet]; 2020. Available from: https://www.moh.gov.sa/en/ Ministry/MediaCenter/Publications/Pages/Publications-2020-10-27-001.aspx.

Iman Dandachi, Waleed Aljabr\* Research Center, King Fahad Medical City, Riyadh, Saudi Arabia E-mail address: waljabr@kfmc.med.sa (W. Aljabr).

<sup>\*</sup> Correspondence to: Research Center, King Fahad Medical City, P.O. Box. 59046, Riyadh 11525, Saudi Arabia.