

GLOBAL VISIBILITY AND EPIDEMIOLOGICAL CHARACTERISTICS OF THE COVID-19 PANDEMIC

Utkirjon A. Yodgorov¹, Jamila A. Rakhmanova²

1 Service of Sanitary and Epidemiological Welfare and Public Health of the Republic of Uzbekistan
E-mail: utkir_040@mail.ru

2 Center for the development of professional qualification of medical workers, Tashkent, Uzbekistan
E-mail: jamila.rakhmanova@gmail.com

ABSTRACT

As of November 21, 2021, the weekly global incidence of COVID-19 has continued to rise for over a month. Since the spread of COVID-19 in March 2020 was characterized as a pandemic, areas such as international travel and transportation, and tourism have been severely affected. Potential Variant of Concern (VOC), Variant of Interest (VOI) or Volume Unit Meter (VUM) are regularly assessed based on the global public health risk, and options classification criteria and current lists are available on the WHO website. to track SARS-CoV-2 variants. On November 26, 2021, WHO designated Option B.1.1.529 as Variant of Concern (VOC) based on the recommendations of the WHO Technical Advisory Group on Virus Evolution, and the option was named Omicron. The likelihood of further global spread of Omicron is high, and future outbreaks of COVID-19 will have serious consequences depending on the location of the spread. The overall global risk associated with the new Omicron is rated very high.

Key words: COVID-19, pandemic, international travel, Potential Variant of Concern (VOC), Variant of Interest (VOI), Volume Unit Meter (VUM), Omicron.

INTRODUCTION

The new coronavirus infection was first reported in China in 2019, and the disease began to spread rapidly throughout China and around the world, leading to an international emergency in all countries of the world. COVID-19 infection is an acute viral disease that primarily affects the organs of the respiratory system, especially the upper respiratory tract, and is now a serious public health problem around the world [1]. Coronavirus infection is an acute viral disease caused mainly by damage to the upper respiratory tract, caused by Betacoronavirus'S RNA genomic virus, which belongs to the Coronaviridae family. On February 11, 2020,

the International Committee on taxonomy of viruses gave an official name to the pathogen of infection - SARS-CoV-2 [3].

OBJECTIVE

Examination of the epidemiological characteristics of COVID-19 as a global problem in the world.

In the case of November 21, 2021, the weekly incidence on a global scale has continued to grow for more than a month. On November 15-21, 2021, more than 3,6 million new confirmed cases were recorded worldwide, which means that the incidence indicator increased by 6 percent compared to the previous week.

Similarly, the new weekly mortality scale in the last seven days also increased by 6% compared to the previous weeks [2, 9, 10]. During the week, more than 51 thousand new cases of deaths were recorded, with more than 256 million confirmed cases and more than 5.1 million deaths recorded worldwide, according to the 21st November case. While it has been reported that the number of weekly new cases in the European region has increased by 11%, in the regions of Southeast Asia and the Eastern Mediterranean it has been reported to have decreased by 11% and 9%, respectively. In other regions, similar cases of the disease were recorded every week compared to the previous week. Although relatively stable disease indicators have been recorded in the western Pacific ocean and the American region, it has been reported that the number of new deaths per week in both regions has increased significantly by 29% and 19%, respectively.

On the contrary, while it has been reported that new weekly deaths have decreased in Africa and Southeast Asia regions, other regions have recorded a similar trend as last week.

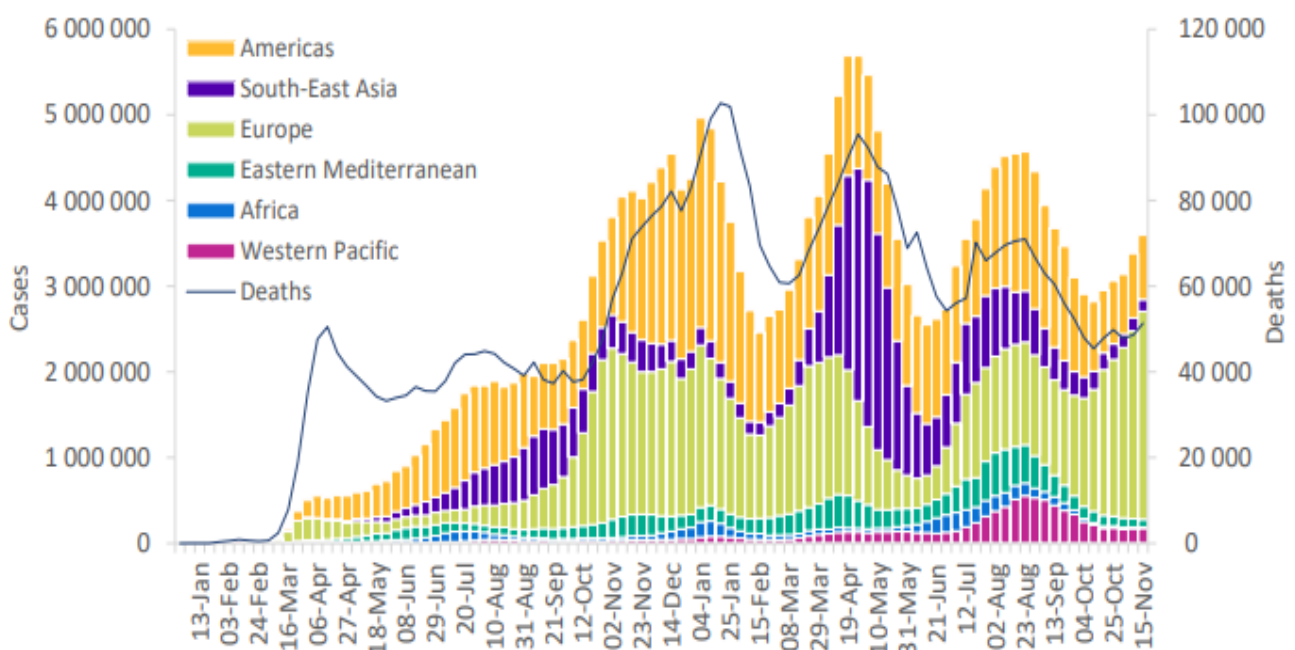


Figure 1. According to the case of November 21, 2021, cases of infection with COVID-19 registered in the WHO region every week and cases of death worldwide **

The regions with the highest weekly incidence rate for every 100 000 population are still the European region (100 000 population 260,2 new cases) and the American region (73,6 new cases per 100 000 population); in these regions, the highest rates of weekly mortality are also recorded - 3,2 and 1,3, respectively, for 100 000 population.

The most frequent new cases are in the United States (558 538 new cases; similar to the previous week), in Germany (333 473 new cases; growth 31%), in the United Kingdom (281 063 new cases; 11% increase recorded), in the Russian Federation (260 484 new cases; similar to the previous week) and in Turkey (163 835 new cases; decreased by 9%) [4, 9, 10].

Table 1. Newly reported and cumulative COVID-19 confirmed cases and deaths, by WHO Region, as of 21 November 2021**

WHO Region	New cases in last 7 days (%)	Change in new cases in last 7 days *	Cumulative cases (%)	New deaths in last 7 days (%)	Change in new deaths in last 7 days *	Cumulative deaths (%)
Europe	2 427 657 (67%)	11%	83 419 825 (33%)	29 465 (57%)	3%	1 510 654 (29%)
Americas	753 140 (21%)	0%	95 847 458 (37%)	13 603 (26%)	19%	2 334 373 (45%)
Western Pacific	174 797 (5%)	0%	9 947 215 (4%)	3 161 (6%)	29%	137 793 (3%)
South-East Asia	136 120 (4%)	-11%	44 409 237 (17%)	2 842 (6%)	-19%	702 762 (14%)
Eastern Mediterranean	92 520 (3%)	-9%	16 657 029 (6%)	1 917 (4%)	-4%	307 333 (6%)
Africa	13 164 (0%)	-4%	6 198 494 (2%)	385 (1%)	-30%	152 074 (3%)
Global	3 597 398 (100%)	6%	256 480 022 (100%)	51 373 (100%)	6%	5 145 002 (100%)

*Percent change in the number of newly confirmed cases/deaths in the past seven days, compared to seven days prior

**See Annex 2: Data, table, and figure notes

The main emphasis in the context of the COVID-19 pandemic: - border access points, International Travel and transport.

Since the spread of COVID-2020 in March 19 was announced as a pandemic, great damage was done to such areas as international travel and transport, as well as tourism. For example, according to the calculations of the United Nations World Tourism Organization (UNWTO), nearly 100 million jobs directly related to tourism are at risk from the effects of the pandemic.

According to the latest economic impact analysis of the International Civil Aviation Organization (ICAO), it is expected that in 2021 the volume of domestic air passenger traffic will continue its growth, despite a lower growth than in 2020

(17 percent more than passengers). In 2021, the number of international passengers decreased by 73 percent compared to 2019. Such a reduction in travel would result in a loss of approximately US \$ 250-252 billion in gross revenue from international passenger air travel activities in the year 2021. According to forecasts, the ongoing losses will mainly come to the international air travel transport industry in 2022 year.

The pandemic continues to have a serious impact on the maritime sector, in particular on seafarers, many of whom are deprived of the opportunity to receive medical care in the ports, remain on the ships of seafarers even after the expiry of the contract, so that seafarers can not return to their homeland, and seafarers in this regard are facing serious problems. In addition, seafarers are also receiving vaccines against COVID-19 or circulating vaccines to meet vaccine requirements in different countries.

WHO recommends that governments take into account situations such as emergency situations and humanitarian actions (such as emergencies and medical evacuations) when developing important travel policies; travel of key personnel, including emergency responders, providers of technical assistance to health care, and critical personnel in the transport and security sector (such as seafarers); cargo transportation for basic materials such as food, medicine and fuel transport.

Such feedback will help to mitigate the actual problems of the regions still facing the pandemic.

Essential note: updated information about the SARS-CoV-2 options that cause concern and interest

Who in collaboration with national authorities, institutions and researchers will regularly assess whether the SARS-CoV-2 variants affect the effectiveness of influenza or disease characteristics, or whether vaccines, therapeutic agents, diagnostic tools, or health and social measures (PHSM) used by government agencies, are effective and control the spread of the disease. Potential anxiety options (VOC), interest options (VOI), or controlled options (VUM) are regularly assessed on the basis of the risk that affects public health around the world. In the presence of data, the classification of options will be revised to reflect the continuous evolution of circulating options and their variable epidemiology. The options classification criteria and current listings are available on the VOC, VOI and VUM who SARS-CoV-2 options tracking website.

The National Authority may choose other options that are relevant to local interest and are encouraged to research and report on the consequences of these options [9, 10].

Geographic location and distribution of VOCs

In the current global epidemiology of SARS-CoV-2, The Delta variant prevails, while the prevalence of other variants continues to decline among genomic sequences reported in the mass data collection or found in who (Figure 4, Appendix 1).

Delta has surpassed other options, including VOCs in most countries. Of the 845 087 sequences uploaded to GISAID with samples collected in the last 60 days, 842 992 (99,8%) were Delta, 519 (0,1%) were gamma, 212 (<0,1%) alfa, 16 (< 0,1%) were beta and 0,1% were other turnover options (including VOI Mu and Lambda) [9, 10].

Differences at the level of sub continent and country are still preserved; especially in some countries of South America, the development of the Delta option has been slow and other options (e.g. gamma, lambda, Mu) are still making a major contribution to the reported sequences. It should also be interpreted taking into account the monitoring limitations of the global spread of VOCs, including differences in sequence capacity and sampling strategies between countries and delays in reporting.

Table 2

Currently defined anxious (VOC) options [9, 10]

WHO label	Pango lineage*	GISAID clade	Nextstrain clade	Additional amino acid changes monitored*	Earliest documented samples	Date of designation
Alpha	B.1.1.7	GRY	20I (V1)	+S:484K +S:452R	United Kingdom, Sep-2020	18-Dec-2020
Beta	B.1.351	GH/501Y.V2	20H (V2)	+S:L18F	South Africa, May-2020	18-Dec-2020
Gamma	P.1	GR/501Y.V3	20J (V3)	+S:681H	Brazil, Nov-2020	11-Jan-2021
Delta	B.1.617.2	G/478K.V1	21A, 21I, 21J	+S:417N +S:484K	India, Oct-2020	VOI: 4-Apr-2021 VOC: 11-May-2021
Omicron*	B.1.1.529	GR/484A	21K	-	Multiple countries, Nov-2021	VUM: 24-Nov-2021 VOC: 26-Nov-2021

Omicron

General view

On November 26, 2021, WHO the 1.1.529 option was identified as a Variant of Concern (VOC) based on the recommendations of the WHO technical advisory group on Virus Evolution, and this option was called Omicron.

Omicron is a very diverse option, which has a large number of mutations, including those that make up 26-32, some that cause anxiety and can be associated with the potential to avoid immunity and high permeability. However, there is still a serious uncertainty.

The main inaccuracies are: (1) how far the option is transferred, and whether any increase is associated with the avoidance of immunity, the internalization or imbalance of permeability; (2) how well the vaccines protect against infection, infection, clinical diseases of varying weight and death; and (3) whether the option with a different severity profile is provided. Health advice is based on current information and is adapted to the emergence of new information on these key issues [8, 9].

Risk assessment

Given the potential to escape from the immune response and the mutations that possibly lead to the predominance of permeability, the likelihood of the next global spread of Omicron is high [6]. Depending on these characteristics, in the future, COVID-19 may have an outbreak, which can have serious consequences depending on a number of factors, including the place of spread. The overall global risk associated with the new Omikron VOC is estimated to be very high [5, 9,10].

CONCLUSION

Priority actions for member states

Stenthen follow-up and sequence to better understand the circulating SARS-CoV-2 options, including Omicron. If possible, conduct field research and laboratory assessments to better understand the Omicron properties. This should include team testing to determine if Omicron is being deployed in the community. Since Omicron is indicated in the widely used PCR test (ThermoFisher TaqPath) with S-gene target failure (SGTF), SGTF can be used as a marker for this option, which can lead to effective detection of Omicron. Report the initial Omicron cases/clusters to who through the mechanism of international health regulations (IHR), then report the relative prevalence of Omicron (either in bulk or through IHR) by dividing the number of Omicron sequences (counter) by the total number of sequences generated using the regular procedure.

- Accelerate vaccination against COVID-19 as soon as possible, especially among the population that has not been vaccinated or is not yet fully vaccinated [7, 10].
- Use a risk-based approach to change international travel arrangements on time. For more information, see who's upcoming international transportation guidelines for the SARS-CoV-2 Omicron variant.
- The use of masks, maintaining a physical distance, venting the room, avoiding traffic jams and hand hygiene remain the main factors in reducing the incidence of SARS-CoV-2 infection even in the case of Omicron variants. To disrupt the SARS-CoV-2 infection chains, it is recommended to monitor the contacts of patients with COVID-19.
- Ensure that there are early warning systems in place to ensure that public health and social measures are effective.
- While an increase in the incidence of COVID-19 and associated health care system loading is expected, make sure that there are clear plans to support basic health care services and the necessary health resources to respond to possible escalation waves.
- Authorities should regularly report to the public on what Omicron and other common options and possible consequences, including specific information, known, unknown and responsible institutions are doing, in a timely and transparent manner.

REFERENCES

1. Raxmanova J.A., Yodgorov U.A.// Forecast of the situation with COVID-19 in Uzbekistan-anti-epidemic measures directed to the prevention of spread.// Nauchno-prakticheskiy journal: Infektsiya, Immunitet i Farmacologiya. 2021; 3: S.137-144. Rakhmanova J.A., Yodgorov U.A.//Prognoz situatsii s COVID-19 v Uzbekistane-protivoepidemicheskiye meropriyatiya napravlennyye na profilaktiku rasprostraneniya.//Nauchno-prakticheskiy zhurnal: Infektsiya, Immunitet i Farmakologiya. 2021;3:S.137-144.
2. <https://economist.com/briefing/2021/05/15/there-have-been-7m-13m-excess-deaths-worldwide-during-the-pandemic>.
3. Chan J.F.-W., Kok K.-H., Zhu Z. et al. Genomic characterization of the 2019 novel human-pathogenic coronavirus isolated from a patient with atypical pneumonia after visiting Wuhan. *Emerg. Microbes. Infect.* 2020; 9 (1): 221–236. DOI: 10.1080/22221751.2020.1719902.

4. Kannan S.R., Spratt A.N., Sharma K., Chand H.S., Byrareddy S.N., Singh K.J. Autoimmun. 2021 Dec 13;126:102779. doi: 10.1016/j.jaut.2021.102779. Online ahead of print.PMID: 34915422.
5. Choudhary OP, Dhawan M, Priyanka. Omicron variant (B.1.1.529) of SARS-CoV-2: Threat assessment and plan of action..Int J Surg. 2021 Dec 9;97:106187. doi: 10.1016/j.ijssu.2021.106187. Online ahead of print.PMID: 34896627.
6. Gu H, Krishnan P, Ng DYM, Chang LDJ, Liu GYZ, Cheng SSM, Hui MMY, Fan MCY, Wan JHL, Lau LHK, Cowling BJ, Peiris M, Poon LLM. Probable Transmission of SARS-CoV-2 Omicron Variant in Quarantine Hotel, Hong Kong, China, November 2021. Emerg Infect Dis. 2021 Dec 3;28(2). doi: 10.3201/eid2802.212422. Online ahead of print.
7. Effectiveness of COVID-19 vaccines against the Omicron (B.1.1.529) variant of concern . Andrews N, et al. KHub.net preprint. December 10, 2021.
8. Weinreich et al., D. Weinreich, S. Sivapalasingam, T.D. Norton, S. Ali, H. Gao, 2021. R. Bhore, J. Xiao, A.T. Hooper, J.D. Hamilton, B.J. Musser, et al. REGEN-COV Antibody Cocktail Clinical Outcomes Study in Covid-19 Outpatients medRxiv (2021), 10.1101/2021.05.19.21257469.
9. [https://www.who.int/news/item/26-11-2021-classification-of-omicron-\(b.1.1.529\)-sars-cov-2-variant-of-concern](https://www.who.int/news/item/26-11-2021-classification-of-omicron-(b.1.1.529)-sars-cov-2-variant-of-concern)
10. <https://covid19.who.int/>