World Health Organization

COVID-19 Weekly Epidemiological Update

Edition 127 published 25 January 2023

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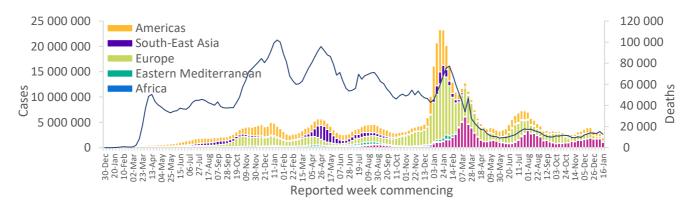- Hospitalizations and ICU admissions

Global overview
Data as of 22 January 2023

Globally, nearly 1.9 million new cases and over 12 000 deaths were reported in the week of 16 to 22 January 2023 (Figure 1, Table 1). In the last 28 days (26 December 2022 to 22 January 2023), over 11 million cases and over 55 000 new deaths were reported globally – a decrease of 25% and an increase of 13%, respectively, compared to the previous 28 days. Since early December, reported deaths have been increasing and the reported deaths do not yet include the 72 596 COVID-19 related hospital deaths announced by China (excluding Hong Kong special administrative region (SAR), Macao SAR, and Taiwan) for the period of 8 December 2022 to 19 January 2023[1,2], as we await detailed data disaggregated by week of reporting. As of 22 January 2023, over 664 million confirmed cases and over 6.7 million deaths have been reported globally. Additional information about the COVID-19 situation in China is presented in Annex 2.

Weekly and monthly trends need to be interpreted carefully considering the reduction in testing and delays in reporting in many countries during recent holidays. Therefore, data presented in this report, especially for the most recent weeks, are incomplete, and any decreasing trends may change as updated information is incorporated.

Figure 1. COVID-19 cases reported weekly by WHO Region, and global deaths, as of 22 January 2023**

Note: Figure 1 does not yet include 72 596 COVID-19-related hospital deaths announced by China (excluding Hong Kong SAR, Macao SAR, and Taiwan) for the period of 8 December 2022 to 19 January 2023.
**See *Annex 1: Data, table, and figure note*

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[1] http://www.nhc.gov.cn/xcs/s3574/202301/a68301ee500b436b989ec5be2a35cad2.shtml

[2] https://www.chinacdc.cn/jkzt/crb/zl/szkb_11803/jszl_13141/202301/t20230125_263519.html

At the regional level, the number of newly reported weekly cases decreased across five of the six WHO regions: the African Region (-41%), the Western Pacific Region (-39%), the European Region (-33%), the South-East Asia Region (-24%), and the Region of the Americas (-21%); while case numbers increased in one WHO region: the Eastern Mediterranean Region (+54%). The number of newly reported weekly deaths decreased or remained stable across five regions: the African Region (-65%), the European Region (-42%), the Western Pacific Region (-16%), the South-East Asia Region (-12%), and the Region of the Americas (+1%); while death numbers increased in the Eastern Mediterranean Region (+24%).

At the country level, the highest numbers of new weekly cases were reported from Japan (672 526 new cases; -34%), the United States of America (323 721 new cases; -25%), the Republic of Korea (192 638 new cases; -33%), China (142 066 new cases; -25%), and Brazil (114 916 new cases; -5%). The highest numbers of new weekly deaths were reported from the United States of America (3922 new deaths; -8%), Japan (2779 new deaths; -2%), Brazil (952 new deaths; +108%), China (617 new deaths; -23%), and Spain (424 new deaths; +21%).

Current trends in reported COVID-19 cases are underestimates of the true number of global infections and reinfections as shown by prevalence surveys.[1–4] The data should be interpreted with caution as several countries have progressively changed COVID-19 testing strategies, resulting in lower numbers of tests performed and consequently lower numbers of cases detected. Additionally, data from previous weeks are continuously updated to retrospectively incorporate changes in reported COVID-19 cases and deaths made by countries.

Table 1. Newly reported and cumulative COVID-19 confirmed cases and deaths, by WHO Region, as of 22 January 2023**

WHO Region	New cases in last 7 days (%)	Change in new cases in last 7 days *	New cases in last 28 days (%)	Change in new cases in last 28 days *	Cumulative cases (%)	New deaths in last 7 days (%)	Change in new deaths in last 7 days *	New deaths in last 28 days (%)	Change in new deaths in last 28 days *	Cumulative deaths (%)
Western Pacific[3]	1 063 388 (56%)	-39%	6 262 250 (57%)	-6%	111 374 411 (17%)	4165 (33%)	-16%	15 825 (29%)	50%	309 133 (5%)
Americas	540 449 (29%)	-21%	2 847 592 (26%)	-21%	188 323 276 (28%)	5857 (46%)	1%	21 065 (38%)	20%	2 908 368 (43%)
Europe	264 653 (14%)	-33%	1 868 782 (17%)	-57%	271 295 532 (41%)	2546 (20%)	-42%	17 430 (32%)	-8%	2 176 040 (32%)
Africa	4166 (<1%)	-41%	23 914 (<1%)	-36%	9 470 128 (1%)	7 (<1%)	-65%	56 (<1%)	-73%	175 183 (3%)
South-East Asia	3683 (<1%)	-24%	22 428 (<1%)	-74%	60 752 516 (9%)	107 (1%)	-12%	539 (1%)	-61%	803 596 (12%)
Eastern Mediterranean	6732 (<1%)	54%	19 370 (<1%)	-27%	23 238 015 (3%)	62 (<1%)	24%	193 (<1%)	23%	349 247 (5%)
Global	**1 883 071 (100%)**	**-34%**	**11 044 336 (100%)**	**-25%**	**664 454 642 (100%)**	**12 744 (100%)**	**-17%**	**55 108 (100%)**	**13%**	**6 721 580 (100%)**

Percent change in the number of newly confirmed cases/deaths in the past seven days, compared to seven days prior, and past 28 days, compared to 28 days prior. Data from previous weeks are updated continuously with adjustments received from countries.

**See *Annex 1: Data, table, and figure notes*

The latest data and other updates on COVID-19, please see:

- WHO COVID-19 Dashboard
- WHO COVID-19 Monthly Operational Update and previous editions of the Weekly Epidemiological Update
- WHO COVID-19 detailed surveillance data dashboard
- WHO COVID-19 policy briefs

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[3] Data for the Western Pacific Region do not yet include 72 596 COVID-19-related hospital deaths announced by China (excluding Hong Kong SAR, Macao SAR, and Taiwan) for the period of 8 December 2022 to 19 January 2023

Figure 2. Percentage change in confirmed COVID-19 cases over the last seven days relative to the previous seven days, 16 to 22 January 2023**

Percentage change in confirmed COVID-19 cases

| < -50 | -10 0 10 | > 50 |

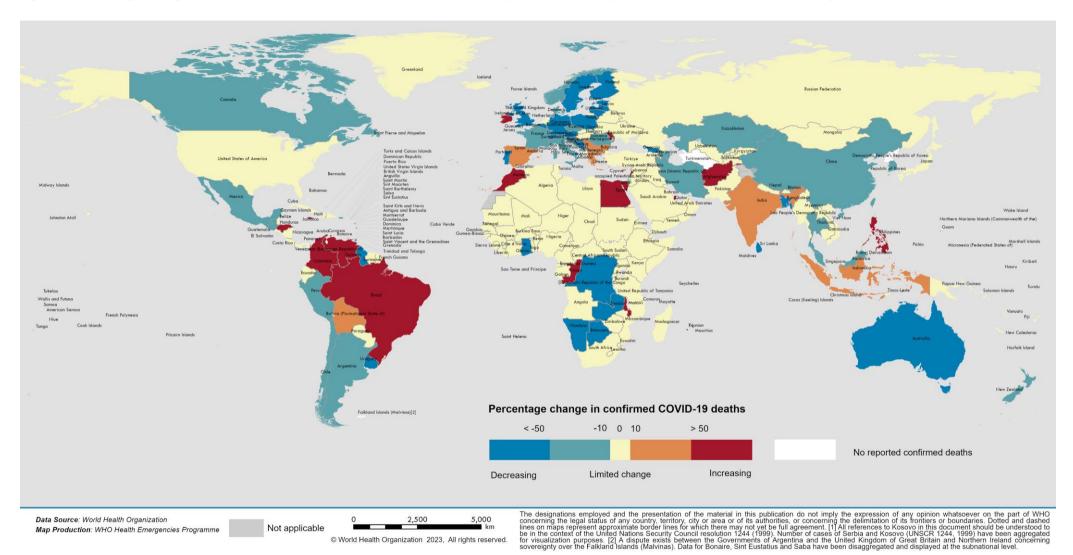Decreasing — Limited change — Increasing

No reported confirmed cases

Data Source: World Health Organization
Map Production: WHO Health Emergencies Programme

Not applicable

0   2,500   5,000
km

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The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of WHO concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps represent approximate border lines for which there may not yet be full agreement. [1] All references to Kosovo in this document should be understood to be in the context of the United Nations Security Council resolution 1244 (1999). Number of cases of Serbia and Kosovo (UNSCR 1244, 1999) have been aggregated for visualization purposes. [2] A dispute exists between the Governments of Argentina and the United Kingdom of Great Britain and Northern Ireland concerning sovereignty over the Falkland Islands (Malvinas). Data for Bonaire, Sint Eustatius and Saba have been disaggregated and displayed at the subnational level.

**See *Annex 1: Data, table, and figure notes*

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Figure 3. Percentage change in confirmed COVID-19 deaths over the last seven days relative to the previous seven days, 16 to 22 January 2023**

Percentage change in confirmed COVID-19 deaths

| < -50 | -10 | 0 | 10 | > 50 |

Decreasing — Limited change — Increasing

No reported confirmed deaths

Note: The map dose not yet include 72 596 COVID-19-related hospital deaths announced by China (excluding Hong Kong SAR, Macao SAR, and Taiwan) for the period of 8 December 2022 to 19 January 2023.

**See *Annex 1: Data, table, and figure notes*

SARS-CoV-2 variants of concern and Omicron subvariants under monitoring

Geographic spread and prevalence

Globally, from 23 December 2022 to 23 January 2023, 78 505 SARS-CoV-2 sequences were shared through GISAID. Among these, 78 463 sequences were the Omicron variant of concern (VOC), accounting for over 99.9% of sequences reported globally in the past 30 days.

BA.5 and its descendent lineages are still dominant globally. In week 1 (2 to 8 January 2023) they accounted for 68.1% (with 12 000 sequences) of all submitted sequences to GISAID. The prevalence of BA.2 and its descendent lineages is rising, a trend based on 2824 sequences (16.0%) submitted globally in week 1, compared to 14.5% in week 52 (26 December 2022 to 1 January 2023, 4685 sequences). The prevalence of recombinants remained stable, with 1777 sequences (10.1%) submitted in week 1, compared to week 52 (3472 sequences, 10.7%). BA.4 and its descendent lineages also remained stable, with a prevalence of 0.4% as of week 1, compared to 0.5% in week 52. Unassigned sequences (presumably Omicron) account for 5.4% of sequences submitted to GISAID in week 1.

WHO is currently tracking four Omicron descendent lineages closely. These variants are included on the basis of signals of transmission advantage relative to other circulating variants, and additional amino acid changes that are known or suspected to confer fitness advantage. The subvariants under monitoring are BF.7 (BA.5 + R346T mutation in spike), BQ.1* (and BQ.1.1, with BA.5 + R346T, K444T, N460K mutations in spike), BA.2.75* (including BA.2.75.2 and CH.1.1), and XBB* (including XBB.1.5), where * indicates all descendent lineages.

WHO, with advice from the Technical Advisory Group on Virus Evolution (TAG-VE), has updated the global rapid risk assessment for XBB.1.5 (see Annex 4). XBB.1.5 is a descendent lineage of XBB, which is a recombinant of two BA.2 descendent lineages. Globally, from 22 October 2022 to 23 January 2023, 8931 sequences of the Omicron XBB.1.5 variant have been reported from 54 countries (excluding low coverage sequences). The majority of reported sequences are from the United States of America (75.0%). Other countries reporting XBB.1.5 include the United Kingdom (9.9%), Canada (3.0%), Denmark (2.0%), Germany (1.5%), Austria (1.3%) and Ireland (1.3%).

Compared to early January 2023 when WHO published the first rapid risk assessment of XBB.1.5, more countries have reported an increase in the prevalence of XBB.1.5. The XBB.1.5 variant has a growth advantage compared to other circulating Omicron descendent lineages, based on reports from the United States of America, the United Kingdom and the European Centre for Disease Prevention and Control (ECDC) assessing XBB.1.5 across a number of countries in Europe. Preliminary laboratory-based antibody escape studies indicate that XBB.1.5 has higher immune escape than Omicron descendant lineages prior to XBB in individuals vaccinated with three doses of mRNA vaccine, even though neutralization was restored by a bivalent booster.[12] These findings remain to be confirmed in vaccine effectiveness studies. From reports by several countries, no early signal of increase in severity has been observed, however the number of cases associated with XBB.1.5 is still low so it is difficult to assess severity.

Additional resources
- Tracking SARS-CoV-2 Variants
- WHO rapid risk assessment of XBB.1.5, published on 11 January 2023
- TAG-VE statement on the situation in China, published on 3 January 2023
- Genomic sequencing of SARS-CoV-2: a guide to implementation for maximum impact on public health
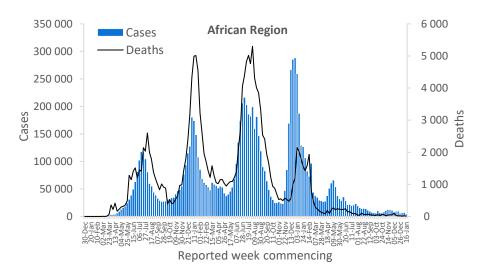- VIEW-hub: repository for the most relevant and recent vaccine data

WHO regional overviews:
Epidemiological week 16 to 22 January 2023

African Region

The African Region reported over 4160 new cases, a 41% decrease as compared to the previous week. Three (6%) of the 50 countries for which data are available reported increases in new cases of 20% or greater, with the highest proportional increases observed in Comoros (five new cases vs one new case; +400%), Côte d'Ivoire (five vs three new cases; +67%), and the Democratic Republic of the Congo (127 vs 90 new cases; +41%). The highest numbers of new cases were reported from South Africa (1740 new cases; 2.9 new cases per 100 000; +16%), Réunion (995 new cases; 111.1 new cases per 100 000; -18%), and Zambia (818 new cases; 4.4 new cases per 100 000; -60%).

The number of new weekly deaths in the region decreased by 65% as compared to the previous week, with seven new deaths reported. The highest numbers of new deaths were reported from Zambia (three new deaths; <1 new death per 100 000; -70%), and the Republic of the Congo (two new deaths; <1 new death per 100 000; no deaths reported the previous week).
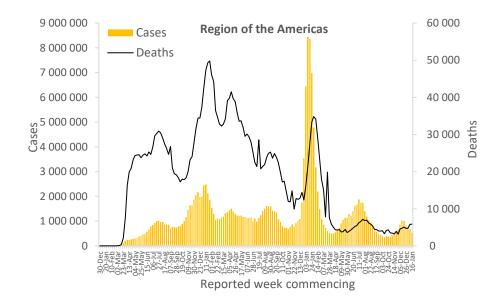

Updates from the African Region

Region of the Americas

The Region of the Americas reported over 540 000 new cases, a 21% decrease as compared to the previous week. Five (9%) of the 56 countries for which data are available reported increases in new cases of 20% or greater, with the highest proportional increases observed in Paraguay (4045 vs 779 new cases; +419%), Venezuela (Bolivarian Republic of) (323 vs 165 new cases; +96%), and Curaçao (21 vs 11 new cases; +91%). The highest numbers of new cases were reported from the United States of America (323 721 new cases; 97.8 new cases per 100 000; -25%), Brazil (114 916 new cases; 54.1 new cases per 100 000; -5%), and Mexico (20 226 new cases; 15.7 new cases per 100 000; -26%).

The number of new weekly deaths in the region remained stable (+1%) as compared to the previous week, with 5857 new deaths reported. The highest numbers of new deaths were reported from the United States of America (3922 new deaths; 1.2 new deaths per 100 000; -8%), Brazil (952 new deaths; <1 new death per 100 000; +108%), and Canada (225 new deaths; <1 new death per 100 000; -23%).
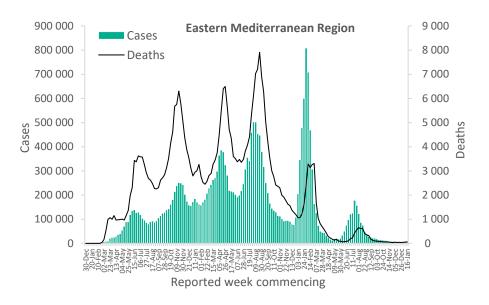

Updates from the Region of the Americas

Eastern Mediterranean Region

The Eastern Mediterranean Region reported over 6730 new cases, a 54% increase as compared to the previous week. One (5%) of the 22 countries for which data are available reported an increase in new cases of 20% or greater: Libya (four new cases vs one new case; +300%). The highest numbers of new cases were reported from Lebanon (1490 new cases; 21.8 new cases per 100 000; -3%), the Islamic Republic of Iran (778 new cases; <1 new case per 100 000; +13%), and Saudi Arabia (206 new cases; <1 new case per 100 000; +13%).

The number of new weekly deaths in the region increased by 24% as compared to the previous week, with 62 new deaths reported. The highest numbers of new deaths were reported from Afghanistan (15 new deaths; <1 new death per 100 000; +275%), Lebanon (13 new deaths; <1 new death per 100 000; +86%), and Saudi Arabia (13 new deaths; <1 new death per 100 000; similar to the previous week).
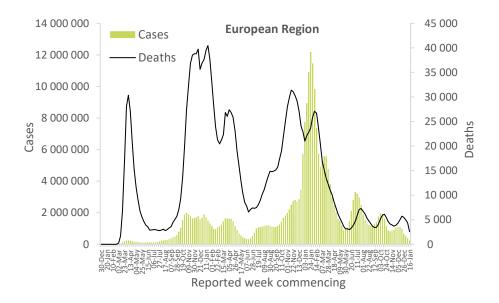

Updates from the Eastern Mediterranean Region

European Region

The European Region reported over 264 000 new cases, a 33% decrease as compared to the previous week. Two (3%) of the 61 countries for which data are available reported increases in new cases of 20% or greater: the Russian Federation (37 544 vs 29 631 new cases; +27%) and the Republic of Moldova (382 vs 302 new cases; +26%). The highest numbers of new cases were reported from Germany (57 439 new cases; 69.1 new cases per 100 000; -36%), the Russian Federation (37 544 new cases; 25.7 new cases per 100 000; +27%), and Italy (34 742 new cases; 58.3 new cases per 100 000; -56%).

The number of new weekly deaths in the region decreased by 42% as compared to the previous week, with 2546 new deaths reported. The highest numbers of new deaths were reported from Spain (424 new deaths; <1 new death per 100 000; +21%), France (373 new deaths; <1 new death per 100 000; -31%), and Italy (330 new deaths; <1 new death per 100 000; -47%).
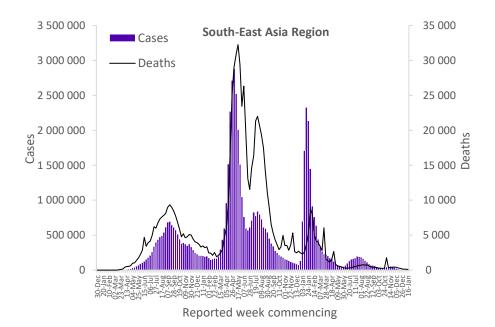

Updates from the European Region

South-East Asia Region

The South-East Asia Region reported over 3680 new cases, a 24% decrease as compared to the previous week. Two (20%) of the 10 countries for which data are available reported increases in new cases of 20% or greater: Timor-Leste (five vs two new cases; +150%) and Myanmar (51 vs 33 new cases; +55%). The highest numbers of new cases were reported from Indonesia (1979 new cases; <1 new case per 100 000; -22%), India (881 new cases; <1 new case per 100 000; -21%), and Thailand (627 new cases; <1 new case per 100 000; -35%).

The number of new weekly deaths in the region decreased by 12% as compared to the previous week, with 107 new deaths reported. The highest numbers of new deaths were reported from Indonesia (54 new deaths; <1 new death per 100 000; +23%), Thailand (44 new deaths; <1 new death per 100 000; -32%), and India (seven new deaths; <1 new death per 100 000; +17%).
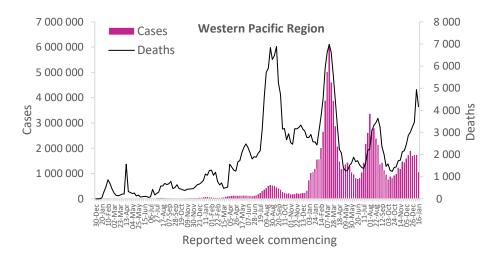

Updates from the South-East Asia Region

Western Pacific Region

The Western Pacific Region reported over one million new cases, a 39% decrease as compared to the previous week. One (3%) of the 35 countries for which data are available reported an increase in new cases of 20% or greater: Palau (six vs four new cases; +50%). The highest numbers of new cases were reported from Japan (672 526 new cases; 531.7 new cases per 100 000; -34%), the Republic of Korea (192 638 new cases; 375.7 new cases per 100 000; -33%), and China (142 066 new cases; 9.7 new cases per 100 000; -25%).

The number of new weekly deaths in the region decreased by 16% as compared to the previous week, with 4165 new deaths reported. The highest numbers of new deaths were reported from Japan (2779 new deaths; 2.2 new deaths per 100 000; -2%), China (617 new deaths; <1 new death per 100 000; -23%), and Australia (310 new deaths; 1.2 new deaths per 100 000; -58%).

The figure below does not yet include 72 596 COVID-19-related hospital deaths announced by China (excluding Hong Kong special administrative region (SAR), Macao SAR, and Taiwan) for the period of 8 December 2022 to 19 January 2023.

Updates from the Western Pacific Region

Hospitalizations and ICU admissions

At the global level, during epidemiological week 2 (9 to 15 January 2023), a total of 15 062 new hospitalizations and 880 new intensive care unit (ICU) admissions were reported. The presented hospitalization data are preliminary and might change as new data become available. Furthermore, hospitalization data are subject to reporting delays. These data are also likely to include both hospitalizations with incidental cases of SARS-CoV-2 infection and those due to COVID-19 disease.
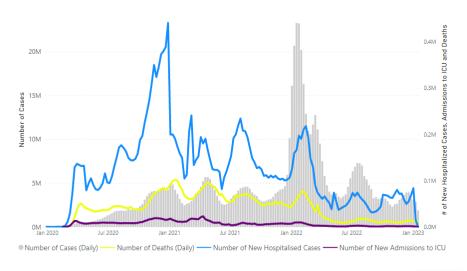
Globally, in week 2, 30 (13%) countries reported data to WHO on new hospitalizations. The region with the highest proportion of countries reporting data on new hospitalizations was the European Region (17 countries; 28%) followed by the Eastern Mediterranean Region (three countries; 14%), the South-East Asia Region (one country; 9%), the Western Pacific Region (three countries; 9%), the African Region (three countries; 6%), and the Region of the Americas (three countries; 5%).

Across the six WHO regions, in week 2, a total of 23 (10%) countries reported data to WHO on new ICU admissions. The region with the highest proportion of countries reporting data on new ICU admissions was the European Region (13 countries; 21%) followed by the Eastern Mediterranean Region (five countries; 23%), the Western Pacific Region (two countries; 6%), the Region of the Americas (two countries; 4%), and the African Region (one country; 2%). So far, no country in the South-East Asia Region has reported data on new ICU admissions during week 2.

Among the 17 countries that reported more than 50 new hospitalizations, three countries showed an increasing trend compared to the previous week: Ukraine (2406 vs 1600 new hospitalizations; +50%), Belgium (1400 vs 1285 new hospitalizations; +9%), and Greece (1748 vs 1632 new hospitalizations; +7%).

Among the 12 countries that reported more than 10 new ICU admissions, three countries showed an increasing trend compared to the previous week: Mexico (19 vs 11 new ICU admissions; +73%), Greece (63 vs 51 new ICU admissions; +24%), and Ireland (11 vs nine new ICU admissions; +22%).

Figure 4. COVID-19 cases, deaths, hospitalizations, and ICU admissions reported weekly to WHO, as of 15 January 2023

Note: Recent weeks are subject to reporting delays and should not be interpreted as a declining trend.
Source: WHO Detailed Surveillance Dashboard

Annex 1. Data, table, and figure notes

Data presented are based on official laboratory-confirmed COVID-19 cases and deaths reported to WHO by country/territories/areas, largely based upon WHO case definitions and surveillance guidance. While steps are taken to ensure accuracy and reliability, all data are subject to continuous verification and change, and caution must be taken when interpreting these data as several factors influence the counts presented, with variable underestimation of true case and death incidences, and variable delays to reflecting these data at the global level. Case detection, inclusion criteria, testing strategies, reporting practices, and data cut-off and lag times differ between countries/territories/areas. A small number of countries/territories/areas report combined probable and laboratory-confirmed cases. Differences are to be expected between information products published by WHO, national public health authorities, and other sources.

A record of historic data adjustment made is available upon request by emailing epi-data-support@who.int. Please specify the countries of interest, time period, and purpose of the request/intended usage. Prior situation reports will not be edited; see covid19.who.int for the most up-to-date data. COVID-19 confirmed cases and deaths reported in the last seven days by countries, territories, and areas, and WHO Region (reported in previous issues) are now available at: https://covid19.who.int/table.

'Countries' may refer to countries, territories, areas or other jurisdictions of similar status. The designations employed, and the presentation of these materials do not imply the expression of any opinion whatsoever on the part of WHO concerning the legal status of any country, territory, or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps represent approximate border lines for which there may not yet be full agreement. Countries, territories, and areas are arranged under the administering WHO region. The mention of specific companies or of certain manufacturers' products does not imply that they are endorsed or recommended by WHO in preference to others of a similar nature that are not mentioned. Errors and omissions except, the names of proprietary products are distinguished by initial capital letters.

[1] All references to Kosovo should be understood to be in the context of the United Nations Security Council resolution 1244 (1999). In the map, the number of cases of Serbia and Kosovo (UNSCR 1244, 1999) have been aggregated for visualization purposes.
[2] A dispute exists between the Governments of Argentina and the United Kingdom of Great Britain and Northern Ireland concerning sovereignty over the Falkland Islands (Malvinas).

Updates on the COVID-19 outbreak in the Democratic People's Republic of Korea are not included in this report as the number of laboratory-confirmed COVID-19 cases is not reported.

Annex 2. Summary of the update on the COVID-19 situation released by the Chinese Center for Disease Control and Prevention on 25 January 2023

On 25 January, the Chinese Center for Disease Control and Prevention issued an update[4] on the COVID-19 situation in the country (all subsequent references to China exclude Hong Kong SAR, Macao SAR, and Taiwan). Below is a summary of what was reported. WHO has not yet conducted an independent analysis of the COVID-19 pandemic situation in China as we do not have access to the data underpinning this overview.

Consultations at fever clinics: Using proxy indicators to assess the burden of COVID-19, health authorities in China report that they have been monitoring outpatient visits to fever clinics set up in primary and secondary health care facilities across the country. Consultations in fever clinics reached a peak of 2.867 million visits on 22 December 2022, and have since been declining in both rural and urban areas to 63 000 (97.8% from the peak) on 23 January 2023 (Figure 5).
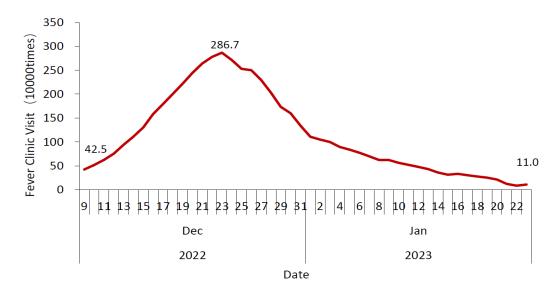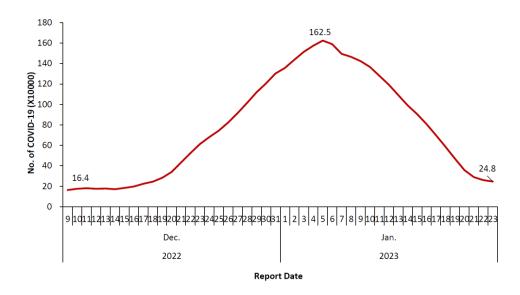
Figure 5. Trend in the number of daily fever clinic visits in China from 9 December 2022 to 23 January 2023.[4]

COVID-19 hospitalizations: According to the analysis released by China, the number of COVID-19 hospitalizations reached a nationwide peak of 1.625 million on 5 January 2023 and has been steadily declining over the last month to 248 000 (85% decrease from the peak) on 23 January (Figure 6). Furthermore, from 27 December 2022 to 3 January 2023, the number of newly hospitalized SARS-CoV-2 positive patients classified as 'severe' increased rapidly, and reached a peak of 128 000 on 5 January. The number of severe COVID-19 patients has decreased to 36 000 (72% decrease from the peak) on 23 January 2023.
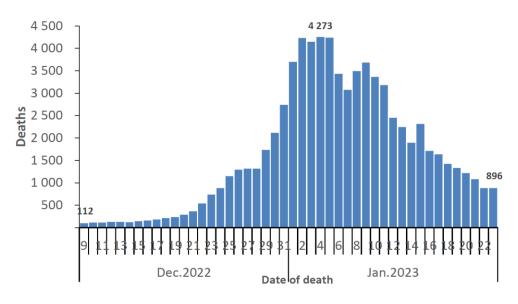
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[4] China CDC

Figure 6. Trend in the number of daily COVID-19 hospitalizations in China from 9 December 2022 to 23 January 2023.[4]

COVID-19-related deaths: In the update, health authorities in China state that the number of new daily COVID-19-related deaths in hospitals reached a peak of 4273 on 4 January 2023, and steadily declined to 896 (79% decrease from the peak) on 23 January (Figure 7).[4] From 13 to 19 January, there were 12 658 new COVID-19 related deaths (681 deaths caused by respiratory failure due to COVID-19).

Figure 7. Trend in the daily number of COVID-19-related deaths among hospitalized cases in China from 9 December 2022 to 23 January 2023.[4]
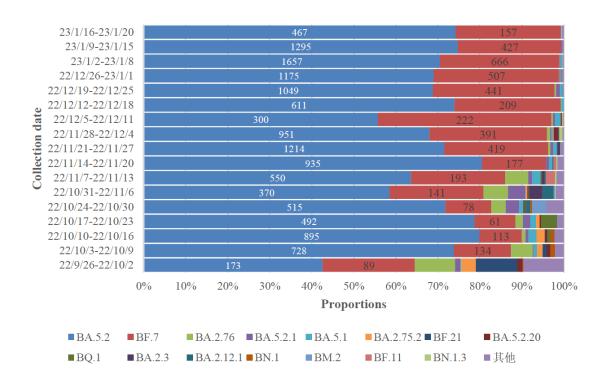

SARS-CoV-2 variants: According to the update from Chinese authorities, from 26 September 2022 to 23 January 2023, 18 906 sequences were analyzed across the country. The prevalence of subvariants is shown in Figure 8. BA.5.2 (70.8%) and BF.7 (23.4%) were the most common circulating subvariants. Regarding regional differences, based on available data, BF.7 is the dominant in Beijing and Tianjin, and BA.5.2 is the dominant in most other provinces.

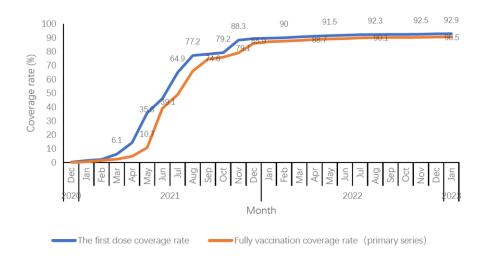
[4] China CDC

Figure 8. Number of COVID-19 variants from sequences in China from 26 September 2022 to 20 January 2023.[4]

COVID-19 vaccination: As of 20 January 2023, Chinese authorities report that 3.488 billion doses of COVID-19 vaccines had been administered in the country. About 90.5% of the population has received the primary series of COVID-19 vaccines. Additionally, among the population over 60 years, 92% of those who completed the primary vaccination series have also received a booster dose. No information is available on the percentage of the whole population over 60 who have completed the primary vaccination series or received a booster dose.

Figure 9. Monthly trend in COVID-19 vaccination coverage for the first dose and full primary vaccination series in China from December 2020 to January 2023.[4]

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[4] China CDC

Annex 3. SARS-CoV-2 variants assessment and classification

WHO, in collaboration with national authorities, institutions and researchers, routinely assesses if variants of SARS-CoV-2 alter transmission or disease characteristics, or impact the effectiveness of vaccines, therapeutics, diagnostics or public health and social measures (PHSM) applied to control disease spread. Potential variants of concern (VOCs), variants of interest (VOIs) or variants under monitoring (VUMs) are regularly assessed based on the risk posed to global public health.

The classifications of variants will be revised as needed to reflect the continuous evolution of circulating variants and their changing epidemiology. Criteria for variant classification, and the lists of currently circulating and previously circulating VOCs, VOIs and VUMs, are available on the WHO Tracking SARS-CoV-2 variants website. National authorities may choose to designate other variants and are strongly encouraged to investigate and report newly emerging variants and their impact.

WHO continues to monitor SARS-CoV-2 variants, including descendent lineages of VOCs, to track changes in prevalence and viral characteristics. The current trends describing the circulation of Omicron descendent lineages should be interpreted with due consideration of the limitations of the COVID-19 surveillance systems. These include differences in sequencing capacity and sampling strategies between countries, changes in sampling strategies over time, reductions in tests conducted and sequences shared by countries, and delays in uploading sequence data to GISAID.[5]

Annex 4. XBB.1.5 rapid risk assessment, 25 January 2023

Following a TAG-VE meeting on 23 January 2023, the WHO has revised the confidence level of the risk assessment for XBB.1.5 from "Low" (assessed on 11 January 2023) to "Moderate" (25 January 2023), using additional reports from countries on prevalence and growth advantage, and laboratory-based studies.

XBB.1.5 is descendent lineage of XBB, which is a recombinant of two BA.2 descendent lineages. From 22 October 2022 to 23 January 2023, 8931 sequences of the Omicron XBB.1.5 variant have been reported from 54 countries (excluding low coverage sequences). Most of these sequences are from the United States of America (75.0%); countries with a prevalence of >1% are the United Kingdom (9.9%), Canada (3.0%), Denmark (2.0%), Germany (1.5%), Ireland (1.3%) and Austria (1.3%).

Based on its genetic characteristics and growth rate estimates, XBB.1.5 is likely to contribute to increases in case incidence globally. There is moderate-strength evidence for increased risk of transmission and immune escape. From reports by several countries, no early signal of an increase in severity has been observed. The number of cases associated with XBB.1.5 is still low and thus severity cannot yet be confidently assessed. Taken together, XBB.1.5 does not appear to have additional public health risk relative to the other Omicron descendent lineages.

WHO and the TAG-VE recommend Member States prioritize the following studies to better address uncertainties relating to the growth advantage, antibody escape, and severity of XBB.1.5. The suggested timelines are indicative and will vary from one country to another based on national capacities:

- Neutralization assays using human sera representative of the affected community(ies) and XBB.1.5 live virus isolates (2-4 weeks)
- Comparative assessment to detect changes in rolling or ad hoc indicators of severity (see table below, 4-12 weeks)

The rapid risk assessment below is based on currently available evidence and will be revised regularly as more evidence and data from additional countries become available.

	Indicator	Confidence in the assessment
Growth advantage	In the United States of America, XBB1.5 is increasing in many regions (the prevalence of XBB.1.5 in some regions is predicted to be 80%, while in others, 20-50%). In the United Kingdom, growth advantage relative to BQ.1.1 was estimated to 38.9%, with high uncertainty due to the small number of sequenced XBB.1.5 cases.[6,7] Further, the ECDC has reported growth of XBB.1.5 in several countries, including Iceland where it has increased to 8.7% in week 2 of 2023.[8] In addition, *in silico* analysis reported that the mutation S:F486S (present in XBB.1) abrogated the local hydrophobic interaction with ACE-2 while 486P (present in XBB.1.5) restored it. The amino acid change to 486P contributes to higher ACE-2 binding affinity, and suggests a mechanism for XBB.1.5 to have a higher growth advantage as compared to its parent lineage XBB.1.[9]	Moderate
Antibody escape	Using pseudotyped virus neutralization assays, XBB.1.5 is shown to be as immune evasive as XBB.1, one of the Omicron subvariants with the highest immune escape to date.[9-13] Antibody titers against XBB.1 were mostly absent in individuals with a history of vaccination with the index vaccine (2-4 doses), were higher in those who recently received a bivalent (BA.5) vaccine booster, and highest in individuals with hybrid immunity.[10,11] There are currently no data on real world vaccine effectiveness against severe disease or death.	Moderate
Severity and clinical considerations	Severity assessments in human populations are ongoing. The number of cases associated with XBB.1.5 is still low and thus clinical severity cannot yet be confidently assessed. XBB.1.5 does not carry any known mutation(s) associated with potential changes in severity (such as S:P681R).[14,15]	Low
Risk assessment	Based on its genetic characteristics and growth rate estimates, XBB.1.5 is likely to contribute to increases in case incidence globally. There is moderate-strength evidence for increased risk of transmission and immune escape. From reports of several countries, no early signals of an increase in severity have been observed. The number of cases associated with XBB.1.5 is still low and thus severity cannot yet be confidently assessed. Taken together, available information does not suggest that XBB.1.5 has additional public health risks relative to the other currently circulating Omicron descendent lineages.	

Risk assessment framework and indicators used to assess risk and confidence given available evidence

	Rapid indicators: 0-4 weeks	Confidence in the assessment		
		LOW	**MODERATE**	**HIGH**
Growth advantage	Evidence of a growth advantage likely to lead to global predominance A. An increase in variant specific Rt B. Logistic growth (compared to currently circulating variant) (Nb variants with subnational-limited growth are not assessed).	All data derived from one country	At least two models; data from two countries not linked by close travel	At least two models and at least three countries in three regions, over more than two weeks
Immune escape	• Genomic (predictive) and structural biology assessment • Pseudovirus neutralization using vaccinee sera **or** pre-banked population serosurveys • Reinfection rate through a cohort study or surveillance system • Signals from outbreak investigations (Rapid VE is unlikely by 28 days so the rapid RA cannot reach high confidence).	One indicator (reinfection, neutralization or structural model)	Two indicators including neutralization data	[rapid VE]

Severity and clinical considerations	• Change in a rolling surveillance metric for severity synchronized with increase in variant e.g.
	  • Infection hospitalization ratio
	  • Indicators from sentinel hospital network (e.g. surveillance of severe acute respiratory infections)
	  • Comparison of admission trends with previous variants
	  • Change in the demographic profile of who is admitted to hospital
	• Change in clinical phenotype
	• Major tests/therapeutics issues
		One metric, one country	Multiple metrics, one country OR same method in multiple countries	Multiple metrics, multiple countries in multiple regions

Risk assessment	Including overall view of threat in the wider context, confidence level in the assessment, and identification of urgent priority work.			

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