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Update 130
FHP-Update
25 January 2023

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GLOBAL

↘
670 562 738
confirmed cases
658 800 000
recovered
6 746 348 deaths

TWN

7-days incidence
518
↘

JPN

7-days incidence
454
↘

BRN

7-days incidence
359
↘

News:

- **WHO:** updates COVID-19 guidelines on masks, treatments and patient care. WHO has updated its guidelines on mask wearing in community settings, COVID-19 treatments, and clinical management. This is part of a continuous process of reviewing such materials, working with guideline development groups composed of independent, international experts who consider the latest available evidence and the changing epidemiology.
- **WHO:** Close to one billion people globally are served by health-care facilities with no electricity access or with unreliable electricity. Close to 1 billion people in low- and lower-middle income countries are served by health-care facilities with unreliable electricity supply or with no electricity access at all, according to a new report from the World Health Organization (WHO), the World Bank, the International Renewable Energy Agency (IRENA), and Sustainable Energy for All (SEforAll). Access to electricity is critical for quality health-care provision, from delivering babies to managing emergencies like heart attacks, or offering lifesaving immunization. Without reliable electricity in all health-care facilities, Universal Health Coverage cannot be reached, the report notes.
- **ECDC:** assesses risk to the EU/EEA associated with Omicron XBB1.5 sub-lineage. The risk is moderate to high for vulnerable individuals such as the elderly and non-vaccinated and immunocompromised people, depending on their immunity against SARS-CoV-2. Several knowledge gaps exist with XBB.1.5 and this assessment may change in the coming weeks as more evidence becomes available.
- **ECDC:** published guidance to variant Creutzfeldt-Jacob disease in donors of blood an plasma having temporarily resided in or visited the United Kingdom.
- **ECDC:** published the surveillance report about Influenza virus characterization – Summary Europe, December 2022. Eight shipments from countries within the WHO European Region were received at the London WHO Collaborating Centre, the Francis Crick Worldwide Influenza Centre (WIC) since the November report. This report focuses on viruses with collection dates after 31 August 2022 for which HA gene sequences were submitted to, and released in, the EpiFluTM database of the Global Initiative on Sharing All Influenza Data (GISAID) in December 2022, together with sequences and antigenic data generated at the WIC.

Topics:

EUROPE

↘
263 566 142
confirmed cases
260 600 000
recovered
2 120 592 deaths

CYP

7-days incidence
221
↘

AUT

7-days incidence
162
↗

SVN

7-days incidence
90
↘

COVID-19 Situation by WHO Region, as of 19 January

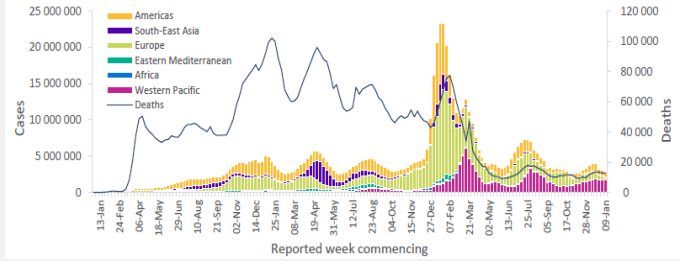
Global epidemiological situation overview; WHO as of 15 January 2023

Globally, nearly 2.8 million new cases and over 13 000 deaths were reported in the week of 9 to 15 January 2023 (Figure 1). In the last 28 days (19 December 2022 to 15 January 2023), nearly 13 million cases and almost 53 000 new deaths were reported globally – a decrease of 7% and an increase of 20%, respectively, compared to the previous 28 days. As of 15 January 2023, over 662 million confirmed cases and over 6.7 million deaths have been reported globally.

Weekly and monthly trends need to be interpreted carefully considering the reduction in testing and delays in reporting in many countries during the year-end holiday season. 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.

At the country level, the highest numbers of new weekly cases were reported from Japan (1 025 321 new cases; -4%), the United States of America (415 864 new cases; -10%), the Republic of Korea (286 291 new cases; -29%), Australia (191 750; no cases reported in the previous three weeks), and China (190 451 new cases; -26%). The highest numbers of new weekly deaths were reported from the United States of America (3922 new deaths; +46%), Japan (2849 new deaths; +33%), China (802 new deaths; +3%), Australia (742; no deaths reported in the previous three weeks), and France (520 new deaths; -35%).

Figure 1. COVID-19 cases reported weekly by WHO Region, and global deaths, as of 15 January 2023**



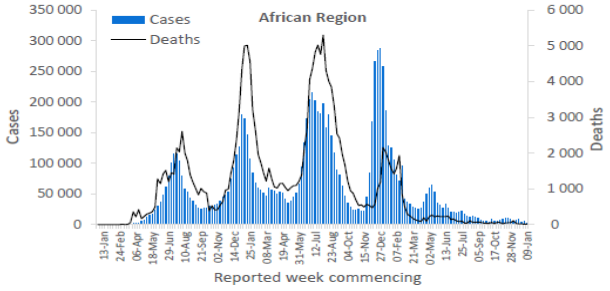
WHO regional overviews:

Epidemiological week 9 to 15 January 2023

African Region

The African Region reported over 3970 new cases, a 40% 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: Malawi (68 vs three new cases; +2167%), Ghana (18 vs five new cases; +260%), and Cabo Verde (13 vs seven new cases; +86%). The highest numbers of new cases were reported from Réunion (1213 new cases; 135.5 new cases per 100 000; -42%), Zambia (1063 new cases; 5.8 new cases per 100 000; no case reported the previous week), and South Africa (772 new cases; 1.3 new cases per 100 000; -55%).

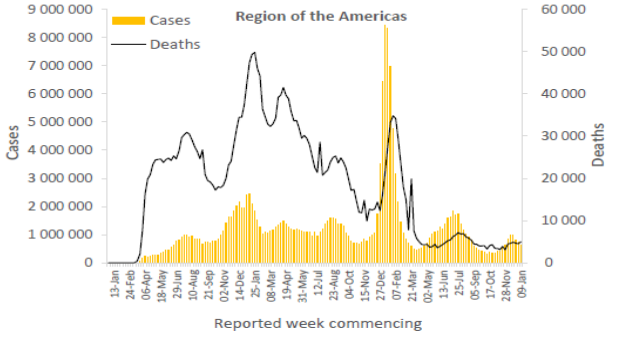
The number of new weekly deaths in the region remained stable as compared to the previous week, with 10 new deaths reported. The highest numbers of new deaths were reported from Réunion (four new deaths; <1 new death per 100 000; similar to the previous week), Zambia (four new deaths; <1 new death per 100 000; no deaths reported the previous week), and the Democratic Republic of the Congo (one new death; <1 new death per 100 000; no deaths reported the previous week).



Region of the Americas

The Region of the Americas reported over 683 000 new cases, a 12% 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 some of the highest proportional increases observed in the United States Virgin Islands (201 vs 50 new cases; +302%), Jamaica (141 vs 36 new cases; +292%), and Trinidad and Tobago (406 vs 246 new cases; +65%). Some of the highest numbers of new cases were reported from the United States of America (415 864 new cases; 125.6 new cases per 100 000; -10%), Brazil (120 721 new cases; 56.8 new cases per 100 000; -17%), and Mexico (25 609 vs 24 561 new cases; 19.9 new cases per 100 000; +4%).

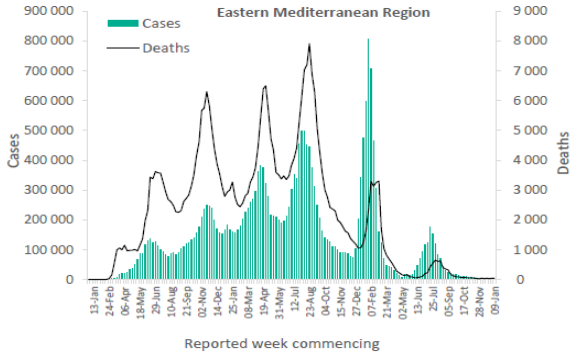
The number of new weekly deaths in the region increased by 10% as compared to the previous week, with 4978 new deaths reported. The highest numbers of new deaths were reported from the United States of America (3922 new deaths; 1.2 new deaths per 100 000; +46%), Brazil (457 new deaths; <1 new death per 100 000; -51%), and Mexico (194 new deaths; <1 new death per 100 000; +126%).



Eastern Mediterranean Region

The Eastern Mediterranean Region reported over 4360 new cases, a 6% increase as compared to the previous week. Two (9%) of the 22 countries for which data are available reported increases in new cases of 20% or greater: Lebanon (1536 vs 907 new cases; +69%) and the United Arab Emirates (556 vs 456 new cases; +22%). The highest numbers of new cases were reported from Lebanon, Qatar (811 new cases; 28.1 new cases per 100 000; -24%), and the Islamic Republic of Iran (687 new cases; <1 new case per 100 000; +3%).

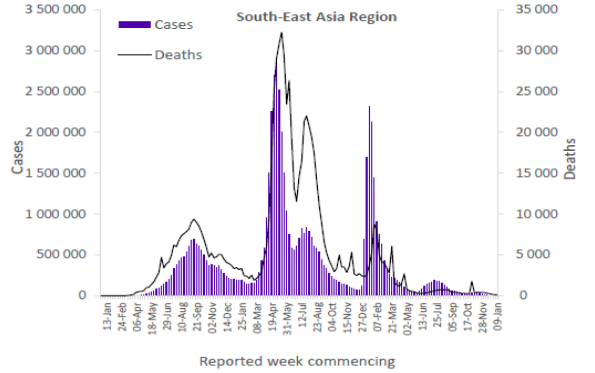
The number of new weekly deaths in the region increased by 9% as compared to the previous week, with 50 new deaths reported. The highest numbers of new deaths were reported from the Islamic Republic of Iran (18 new deaths; <1 new death per 100 000; -14%), Saudi Arabia (13 new deaths; <1 new death per 100 000; +18%), and Lebanon (seven new deaths; <1 new death per 100 000; +17%).



South-East Asia Region

The South-East Asia Region reported over 4850 new cases, a 17% 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: Bhutan (26 vs 13 new cases; +100%) and Nepal (29 vs 20 new cases; +45%). The highest numbers of new cases were reported from Indonesia (2540 new cases; <1 new case per 100 000; -25%), India (1116 new cases; <1 new case per 100 000; -12%), and Thailand (969 new cases; 1.4 new cases per 100 000; -3%).

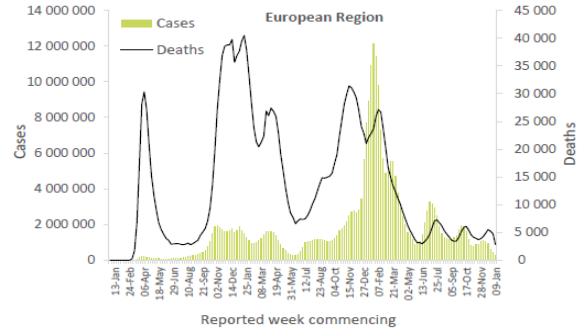
The number of new weekly deaths in the region decreased by 13% as compared to the previous week, with 121 new deaths reported. The highest numbers of new deaths were reported from Thailand (65 new deaths; <1 new death per 100 000; +12%), Indonesia (44 new deaths; <1 new death per 100 000; -31%), and India (six new deaths; <1 new death per 100 000; -60%).



European Region

The European Region reported over 311 000 new cases, a 35% decrease as compared to the previous week. Six (10%) of the 61 countries for which data are available reported increases in new cases of 20% or greater, with the highest proportional increases observed in Spain (17 773 vs 9220 new cases; +93%), Albania (157 vs 113 new cases; +39%), and Montenegro (447 vs 329 new cases; +36%). The highest numbers of new cases were reported from Germany (83 605 new cases; 100.5 new cases per 100 000; -36%), Italy (62 599 new cases; 105 new cases per 100 000; -42%), and France (39 757 new cases; 61.1 new cases per 100 000; -52%).

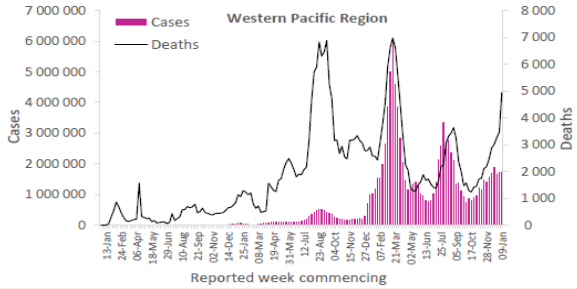
The number of new weekly deaths in the region decreased by 40% as compared to the previous week, with 2826 new deaths reported. The highest numbers of new deaths were reported from France (520 new deaths; <1 new death per 100 000; -35%), Italy (461 new deaths; <1 new death per 100 000; -25%), and Spain (346 new deaths; <1 new death per 100 000; +9%).



Western Pacific Region

The Western Pacific Region reported over 1.7 million new cases, which is similar to the number of cases reported during the previous week. No country has reported increases in new cases of 20% or greater compared to the previous week. The highest numbers of new cases were reported from Japan (1 025 321 new cases; 810.7 new cases per 100 000; -4%), the Republic of Korea (286 291 new cases; 558.4 new cases per 100 000; -29%), and Australia (191 750 new cases; 752 new cases per 100 000; no cases reported the previous three weeks).

The number of new weekly reported deaths in the region increased by 43% as compared to the previous week, with 4938 new deaths reported. The highest numbers of new deaths were reported from Japan (2849 new deaths; 2.3 new deaths per 100 000; +33%), China (802 new deaths; <1 new death per 100 000; +3%), and Australia (742 new deaths; 2.9 new deaths per 100 000; no deaths reported the previous three weeks). Additional information about the COVID-19 situation in China, including 59 938 COVID-19 related deaths announced by China for the period of 8 December 2022 to 12 January 2023 is presented in Annex 3. These deaths are not yet included in the figure below.



Source: https://www.who.int/publications/m/item/weekly-epidemiological-update-on-covid-19---19-january-2023

Trends of Omicron subvariant XBB.1.5 with a focus on Northeast United States

The **prevalence of a new Omicron subvariant, XBB.1.5, has been increasing** in recent weeks in the U.S., outpacing growth of other variants particularly in the northeast region. The XBB.1.5 subvariant is an offspring of the XBB subvariant which is a recombinant of two sublineages of the BA.2 variant.

Enhanced transmissibility of XBB.1.5 summary [1]:

In a recent preprint article, researchers from China have shown that the S486P mutation in XBB.1.5 may enable higher ACE-2 receptor binding site affinity when compared to its parent strain. **Both XBB.1 and XBB.1.5 sublineages have also demonstrated stronger neutralizing antibody evasion compared to several other Omicron subvariants.** The clinical impact of this mutation on disease severity or post-acute sequelae are currently unknown. Furthermore, therapeutic monoclonal antibodies (mAbs) including Evusheld and Bebtelovimab could not neutralize XBB.1 or XBB.1.5, while Sotrovimab showed weak neutralization. Together these data indicate that **the higher ACE-2 binding affinity of XBB.1.5 may be the main feature conferring a transmission advantage**. Additionally, there may be an increased risk to those who are unvaccinated or have immunocompromising conditions requiring a treatment plan that includes therapeutic mAbs.

This study is limited by its small sample size (particularly for those who received mRNA vaccine doses) and a lack of comparison to unvaccinated populations or individuals who have received a bivalent vaccine dose. It does, however, provide early evidence for the estimated increase in transmissibility of XBB.1.5. Across the 29 countries which have detected XBB.1.5, [2] more data is required to better understand the effects of XBB.1.5 on disease severity. **Up-to-date vaccination remains key to protecting against severe disease, especially for those at high risk.**

Epidemiological trends in the U.S.:

Over the last few weeks, the **U.S. has predicted a doubling time of XBB.1.5 of approximately nine days**. [3] This is a comparable growth rate to the BQ.1 subvariant lineage which emerged in September 2022 but lower than that observed for the initial Omicron BA.1/BA.2 waves and may have also been driven by holiday behavioural changes. [4] In late December 2022, the U.S. CDC Nowcast System estimated that XBB.1.5 made up approximately 40% of cases in the country. As of January 7, 2023, that estimate has been adjusted to 27.6% (95% prediction interval (PI) 14.0-46.5%) across the country. Currently, the highest estimated prevalence of XBB.1.5 cases (71.6% [95% PI 62.1-79.6%]) is found in the northeastern region, which includes Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont. [5] **At this time, it is not clear whether, or how soon XBB.1.5 will become dominant across the U.S., although the XBB.1.5 variant is growing in proportion while other variants are demonstrating slow or no growth**. The rate at which the XBB.1.5 variant may become dominant country-wide is challenging to predict, and depends on factors such as existing circulating strains, prior immunity and recent vaccination rates including bivalent booster uptake, public health mitigation approaches and population behaviour. Furthermore, current predictions have been completed following data delays due to the holiday season. Additional data and information is expected in the coming weeks. [6]

Wastewater surveillance, northeast U.S.:

Using wastewater surveillance data as an indicator of community transmission, the northeast region is observing a lower level of viral copies in wastewater (1,797 copies/ml as of January 4, 2023) than wastewater surveillance data collected during the initial Omicron wave. As of January 4, levels are comparable to those observed in late January 2022 (2,102 copies/ml - 1,275 copies/ml between January 19-26, 2022) when the initial Omicron wave was subsiding. **Viral levels in wastewater appear to be tapering off in the northeast, having reached approximately 25% of the initial Omicron peak** (7,185 copies/ml on December 29, 2021) although several additional weeks of data are required to conclusively understand the trajectory. [4]

New York State hospitalization data:

In New York state, the **7-day moving average in COVID-19 hospitalizations has shown a gradual increasing trend since approximately mid-November**, with over 510 average daily hospitalizations observed as of January 9, 2023, in comparison with 300-400 average daily hospitalizations experienced throughout much of the fall, 2022. **The seven day moving average hospitalization rate is high (510 new hospital admissions), however the rate has not reached the peak experienced during the initial Omicron wave (1,692 new hospital admissions)**. [7,8] As of January 9, 2023, of the New York State population 16.2% of individuals over the age of five and 37.6% of individuals over the age of 65 have received an updated bivalent booster dose. [7]

Epidemiological trends in the European Union (EU):

On January 9, 2023, the European Centers for Disease Control and Prevention released an updated assessment of XBB.1.5. Based on the mutational profile, which includes the same mutations as seen in the XBB recombinant, [9] plus the additional spike mutation S486P, this subvariant is likely to cause an increase in cases. However, during the last two weeks of 2022, XBB.1.5 was estimated to make up 2.5% of the variant proportion circulating in the EU; as a result the impacts of XBB.1.5 are not expected to occur in the coming month. [10] Though the proportion of XBB.1.5 is currently low, there are no other known circulating variants with a clear competitive advantage in the EU. Whether XBB.1.5 becomes the dominant circulating strain in Europe or globally is still too early to predict, but the recent experience in northeast U.S. **indicates that should it become dominant, cases and hospitalizations would likely rise, albeit at a substantially lower level than experienced during the initial Omicron wave**.

Global COVID-19 Trends:

Several locations are continuing to report an increase in their rate of COVID-19 cases, including Hong Kong, Taiwan, Argentina, and the U.S.

France, Italy, and Australia are reporting a decrease in COVID-19 cases

The rate of COVID-19 cases in South Korea is beginning to plateau, while Brazil and Germany are continuing to observe a plateau

Note: Reported cases may not represent the true extent of the rate of new COVID-19 infections in a country due to differences in access to testing and reporting

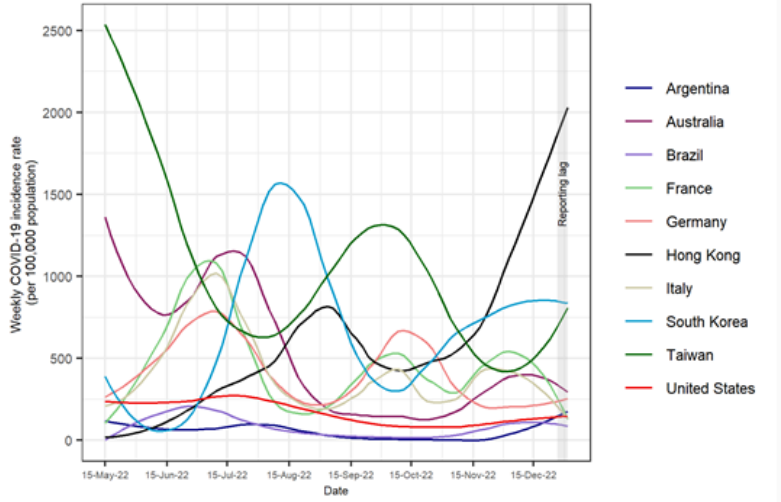


Fig. 1 Outlines the new weekly COVID-19 cases per 100,000 population from May 15, 2022 to Jan 7, 2023 for the top 10 countries that have reported the highest number of cases in the past 30 days. A locally weighted smoothing (LOESS) curve has been applied to the data. The most recent epidemiological week may not represent accurate trends due to reporting lags.

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

SOURCE: WHO

Geographic spread and prevalence Globally, from 16 December 2022 to 16 January 2023, 85 489 SARS-CoV-2 sequences were shared through GISAID. Among these, 85 461 sequences were the Omicron variant of concern (VOC), accounting for 99.9% of sequences reported in the past 30 days.

BA.5 and its descendent lineages are still dominant globally, with 13 684 sequences (70.5%) submitted to GISAID in week 52 (26 December to 1 January 2023) (Figure 4, Table 2). The prevalence of BA.2 and its descendent lineages is rising, a trend based on 3055 sequences (15.7%) submitted in week 52, compared to 11.8% in week 51 (19 to 25 December 2022, 4051 sequences). The prevalence of recombinants remained stable, with 1965 sequences (10.1%) submitted in week 52, compared to week 51 (3336 sequences, 9.7%). BA.4 and its descendent lineages continue to decline, with a prevalence of 0.6% in week 52. Unassigned sequences (presumably Omicron) account for 3.0% of sequences submitted to GISAID in week 52.

WHO is currently tracking four subvariants under monitoring (Table 2). These variants are included on the basis of their signals of transmission advantage relative to other circulating VOC lineages, 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).

Compared to their parent lineages, laboratory evidence shows enhanced neutralization resistance of descendant lineages BQ.1, BQ.1.1, BF.7 and BA.2.75.2 to sera from vaccinated and SARS-CoV-2-infected participants. Of these, BA.2.75.2 showed the most substantial neutralization resistance, driven by the F486S mutation, while the neutralization resistance of BQ.1 and BQ.1.1 was driven largely by the N460K mutation.5-7 BA.2.75.2 and BQ.1.1 showed a decline (35 and 50-fold drop in titers, respectively) relative to the ancestral strain in 55 vaccinated individuals.8 Additionally, in individuals who had BA.5.1.2, BA.2.76 or BF.7 breakthrough infections, a study found significantly decreased neutralization activity against BQ.1 and BQ.1.1 compared to BA.1, BA.2, BA.2.75, BA.4, BA.5 and BF.7.9 Additional data on XBB.1.5 besides those previously reported 10 are not yet available. Variant dynamics differ by WHO regions, and within regions among countries, due to a variety of factors including vaccination coverage and public health and social measures. These variants continue to be monitored for indicators of a rise in transmission and clinical severity.

Table 2. Omicron subvariants under monitoring, as of 16 January 2023

PANGO lineage[#]	GISAID clade	Next strain clade	Relationship to circulating VOC lineages	Spike genetic features	Earliest documented samples
BF.7*	GRA	22B	BA.5 sublineage	BA.5 + S:R346T	24-01-2022
BQ.1[$]	GRA	22E	BA.5 sublineage	BQ.1 and BQ.1.1: BA.5 + S:R346T, S:K444T, S:N460K	07-02-2022
BA.2.75[§]	GRA	22D	BA.2 sublineage	BA.2.75: BA.2 + S:K147E, S:W152R, S:F157L, S:I210V, S:G257S, S:D339H, S:G446S, S:N460K, S:Q493R reversion BA.2.75.2: BA.2.75 + S:R346T, S:F486S, S:D1199N CH.1.1	31-12-2021
XBB[µ]		22F	Recombinant of BA.2.10.1 and BA.2.75 sublineages, i.e., BJ1 and BM.1.1.1, with a breakpoint in S1	BA.2+ S:V83A, S:Y144-, S:H146Q, S:Q183E, S:V213E, S:G252V, S:G339H, S:R346T, S:L368I, S:V445P, S:G446S, S:N460K, S:F486S, S:F490S XBB.1.5: XBB + S:F486P	13-08-2022

[#] includes descendent lineages
* additional mutations outside of the spike protein: N: G30-, S33F, ORF9b: M26-, A29I, V30L
[$] additional mutation outside the spike protein: ORF1a: Q556K, L3829F, ORF1b: Y264H, M1156I, N1191S, N: E136D, ORF9b: P10F
[§] additional mutations outside of the spike protein: ORF1a: S1221L, P1640S, N4060S, ORF1b: G662S, E: T11A
[µ] additional mutations outside of the spike protein: ORF1a: K47R, ORF1b: G662S, S959P, E: T11A, ORF8: G8*

Figure 4. Panel A and B: The number and percentage of SARS-CoV-2 sequences, from 1 July 2022 to 5 January 2023

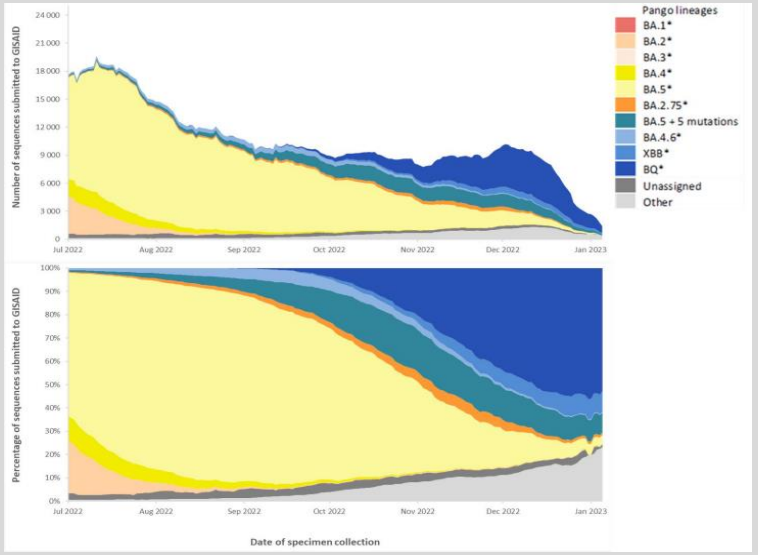


Figure 4 Panel A shows the number, and Panel B the percentage, of all circulating variants since July 2022. Omicron sister-lineages and additional Omicron VOC descendent lineages under further monitoring are shown. BA.1.X, BA.2.X, BA.3.X, BA.4.X and BA.5.X include all BA.1, BA.2, BA.3, BA.4 and BA.5 pooled descendent lineages, except the Omicron subvariants under monitoring shown individually. The Unassigned category includes lineages pending for a PANGO lineage name, whereas the Other category includes lineages that are assigned but not listed in the legend. Source: SARS- CoV-2 sequence data and metadata from GISAID, from 1 July 2022 to 5 January 2023.

Table 3. Relative proportions of SARS-CoV-2 sequences from 21 November 2022 to 1 January 2023, by specimen collection date

Lineage	Countries	Sequences	2022-47	2022-48	2022-49	2022-50	2022-51	2022-52
BA.1*	186	2 219 657	0.02	0.01	0.02	0.01	0.01	0.01
BA.2*	174	2 048 278	0.27	0.31	0.29	0.27	0.32	0.33
BA.3*	34	816	0.01	0.00	0.00			
BA.4*	136	119 967	0.14	0.11	0.14	0.07	0.10	0.16
BA.5*	156	1 358 002	18.76	14.97	12.30	8.08	5.93	4.02
BA.2.75*	96	43 201	4.62	3.64	2.31	1.59	1.24	1.11
BA.5 + 5 mutations	131	167 661	14.46	13.41	12.39	11.46	9.82	8.84
BA.4.6*	98	54 353	1.19	0.96	0.75	0.60	0.40	0.40
XBB*	87	36 348	6.24	6.60	6.40	6.72	8.47	8.36
BQ.1*	110	241 634	40.53	45.08	48.78	53.18	55.09	54.37
Unassigned	91	125 076	2.86	3.20	2.69	2.43	3.28	3.02
Other	207	6 744 067	10.71	11.56	13.77	15.47	15.22	19.33

Table 3 shows the number of countries reporting the highlighted lineages, the total number of sequences reported and the prevalence of the lineages for the last six weeks. *BA.1.X, BA.2.X, BA.3.X, BA.4.X* and *BA.5.X* include all BA.1, BA.2, BA.3, BA.4 and BA.5 pooled descendent lineages. The *Unassigned* category includes lineages pending for a PANGO lineage name, whereas the *Other* category includes lineages other than those listed in the legend. Data source: sequences and metadata from GISAID, retrieved on 16 January 2023. Proportions are shown as percent.

Global Influenza Trends

bluedot

In this Weekly Brief the BlueDot Intelligence team will summarize the current global influenza activity and notable trends using data from the World Health Organization – FluNet updated as of January 02, 2023.

While the Northern Hemisphere has observed comparable flu activity to pre-pandemic levels, the 2022 season has been marked with unusual and unpredictable trends (i.e., out-of-season, early epidemics).

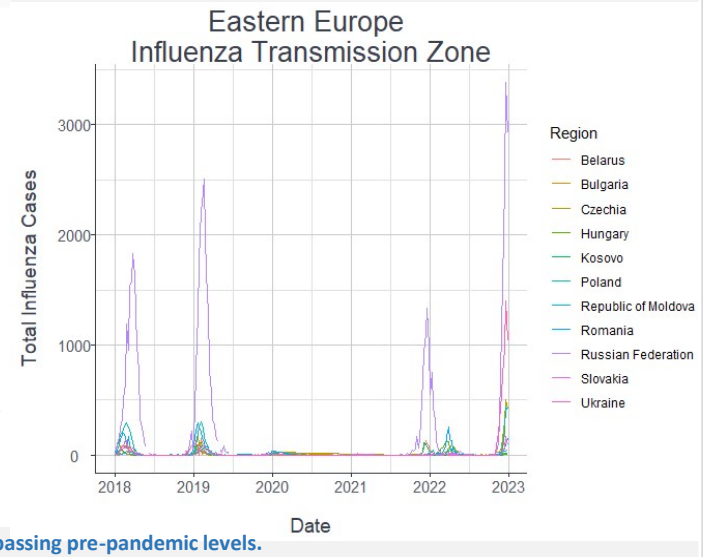
Out of the 88 countries reporting activity (>10 cases) within the last month (December 2022 – January 2023):

- 78 countries are within the Northern Hemisphere
- 37 countries are reporting increasing trends based on the most available data (by country ranging from November 21, 2022 – January 02, 2022), with 30 countries nearing peak activity
- 48 countries are reporting declining trends (November 21, 2022 – January 02, 2022)

Countries within North America (United States of America, Canada, Mexico) show large declines in activity, while countries in the European region continue to report increasing trends.

- 26 countries are reporting increasing trends and/or appearing to be near peak activity within the European region (e.g. Sweden, Denmark, Norway, Switzerland)

Countries observing recent increasing trends within Europe:



A number of countries have experienced peak activity surpassing pre-pandemic levels.

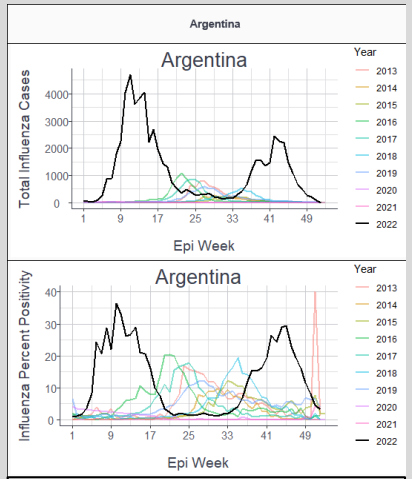
- 49 countries reported cases surpassing prior years up to 2012 where data is available
- 17 countries reported percent positivity surpassing prior years
- **Seven countries experienced both higher percent positivity and reported cases in 2022 compared to previous seasons**, suggesting a higher burden of illness not explained by changes in testing: Argentina, Chile, Iran, Netherlands, Malaysia, Honduras, United Arab Emirates (UAE).

UAE, Belarus, and Iran demonstrated high influenza activity during the past 180 days based on cases and percent positivity. These countries have recently observed a peak in activity, while only Belarus and Iran are reporting declining trends.

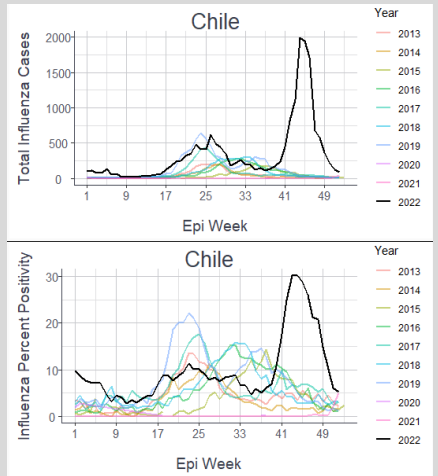
Notable Influenza Trends in 2022

The unusual activity in the influenza season (Northern and Southern) was not limited to temporal shifts. **While many countries experienced delayed activity in 2021 and an earlier onset of the 2022 season, a few countries also observed multiple out-of-season peaks** (rebound cases following initial wave of activity). Rebounding cases can be influenced by several factors such as population-level immunity and circulating subtypes dynamics.

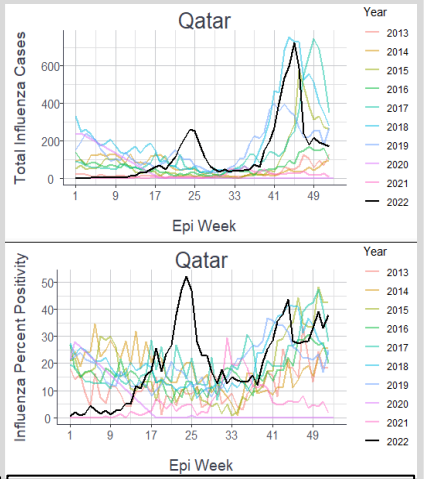
Example of notable countries observing two epidemic waves during 2022:



Observation: Significant activity outside of the expected season. However, activity has since declined. **Second wave can be attributed to influenza type B**, while the initial wave was predominately type A. Factors that may be related to this pattern include lack of immunity to the later influenza B strains following an early influenza A wave.



Observation: Initial wave consistent with prior seasonal patterns. **A second large wave extended activity beyond seasonal norms.** Influenza type A was the predominant strain detected in the country in 2022. Although strain information was unavailable, both waves were attributed to influenza type A. Differences in the circulating strains can contribute to resurgences. A subsequent wave of influenza type B is possible given historic trends and the observations from Argentina.



Observation: Most activity was consistent with prior seasonal patterns, excluding **an additional unusually-timed wave.** The high percent positivity during the initial peak suggests a **greater case burden than reported cases indicate.** Cases will likely extend into early 2023 based on the reduced rate of declining cases and high percent positivity. Influenza type A was the predominant strain detected in the country in 2022 with a small proportion of influenza B detected later in the year. Notably, additional reports of influenza-like symptoms by news media during the 2022 FIFA World Cup mirrors the high influenza activity observed at the time. Mass gathering events provide increased risk for extended transmission due to conditions facilitating spread.

The unusual patterns observed above reinforce the unpredictability of the first flu seasons globally following relaxation of pandemic precautions and rebounding global travel. Because influenza undergoes mutations at a high rate relative to many other viruses (particularly influenza A strains), the effectiveness of the influenza vaccine, which typically starts at around 35% against influenza A(H3N2), can wane over the course of a single season.[1] The decline in immunity can be observed across all strains to varying degrees and may be compounded by the effects of waning individual immunity and an increase in mismatched vaccine compositions over time.[2,3] This can lead to second waves of activity occurring within a single seasonal epidemic. As observed in Argentina and Chile, second influenza waves, potentially driven by influenza B strains, cannot be ruled out in the Northern Hemisphere, particularly in regions with earlier-than-usual activity. **A double-wave pattern was also observed in the U.S. in 2018-2019**, driven by two different influenza A strains.

The trajectory for the remaining 2022 influenza season in the Northern Hemisphere remains unpredictable and it is too early to determine whether influenza activity will surpass previous years, or whether countries observing declining activity may experience a resurgence later in the season. Healthcare pressures from high transmission of COVID-19, RSV and other seasonal illnesses have caused severe strains to the delivery of healthcare services in many regions. **The uncertainty around seasonal flu patterns indicates additional challenges to resource planning and disease management.** Personal (vaccination, masking, hand hygiene) and public preventative measures (sanitation, indoor air quality) are important to limit the spread of respiratory viruses given the continued uncertainty of this influenza season.

Influenza virus characterization Summary Europe December 2022

Influenza – Multi-country - Monitoring

As of week 52/2022, 109 321 detections had been reported. Of these detections, 94% were type A viruses, with A(H3N2) and A(H1N1)pdm09 showing near equal proportions, 51% and 49% respectively, and 6% type B of which 707 were ascribed to a lineage, with all being B/Victoria. This represents a 5-fold increase in detections compared to the 2021-2022 season, despite only a modest increase (5%) in the number of samples tested. The epidemic threshold of 10% positivity within sentinel specimens was crossed in week 45/2022.

Executive summary

Eight shipments from countries within the WHO European Region were received at the London WHO Collaborating Centre, the Francis Crick Worldwide Influenza Centre (WIC) since the November report. This report focuses on viruses with collection dates after 31 August 2022 for which HA gene sequences were submitted to, and released in, the EpiFluTM database of the Global Initiative on Sharing All Influenza Data (GISAID) in December 2022, together with sequences and antigenic data generated at the WIC.

Globally, the great majority of the A(H1N1)pdm09 viruses detected in the first 13 weeks of the 2022-2023 season have fallen in the HA 6B.1A.5a.2 subgroup. As a percentage of type A viruses detected in the WHO European Region there has been an increase to 49% from 4% in the same period in 2021. Clear antigenic discrimination of 6B.1A.5a.1 and 6B.1A.5a.2 viruses has been shown in many previous reports. While circulating 6B.1A.5a.2 viruses are well recognised by post-infection ferret antisera raised against A/Victoria/2570/2019-like viruses, being used in vaccines for the northern hemisphere 2022-2023 influenza season, they are recognised less well by post-vaccination sera from humans. Recently circulating 6B.1A.5a.2 viruses carry HA1 K54Q, A186T, Q189E, E224A, R259K and K308R amino acid substitutions compared to A/Victoria/2570/2019 so the recommendation was to change the vaccine component to an A/Sydney/5/2021-like virus (carrying these substitutions) for the southern hemisphere 2023 season. A(H1N1)pdm09 viruses continue to diversify and viruses with additional HA1 amino acid substitutions of P137S, K142R, D260E and T277A are of concern.

In Europe and across the world A(H3N2) viruses have been dominant with the great majority of recently detected viruses, as assessed from sequence deposition in GISAID's EpiFluTM database, falling in the 'Bangladesh-like' (3C.2a1b.2a.2) subgroup, but with recent detections of 'Cambodia-like' 3C.2a1b.2a.1 viruses in China. While clusters of viruses showing genetic and associated antigenic drift have emerged among the 'Bangladesh-like' viruses, the great majority of these viruses retained good recognition by post-infection ferret antisera raised against egg-propagated A/Darwin/9/2021 which has been recommended for egg-based vaccines to be used in the 2022 and 2023 southern hemisphere, and 2022-23 northern hemisphere seasons. Antisera raised against a range of cell culture- and egg-propagated 3C.2a1b.2a.2 viruses generally gave good recognition of the 57 3C.2a1b.2a.2 test viruses from France, Portugal and Spain analysed since the November report.

In Europe and across the world generally, few B/Victoria-lineage viruses have been detected during weeks 40-52/2022. The vast majority of viruses with collection dates after 31 August 2022 for which sequences have been deposited in GISAID's EpiFluTM database have HA genes that fall in the V1A.3a.2 subgroup with defining HA1 A127T, P144L and K203R amino acid substitutions. B/Austria/1359417/2021-like (V1A.3a.2) viruses have been recommended for use in the southern hemisphere 2022 and 2023, and the northern hemisphere 2022-2023 influenza seasons and post-infection ferret antisera raised against such viruses react well with recently circulating V1A.3a.2 viruses. Sequence from a single V1A.3 B/Washington/02/2019-like virus, with a collection date after 31 August 2022, was deposited in EpiFluTM during December 2022.

No cases of infection with circulating B/Yamagata-lineage viruses have been confirmed since March of 2020. All HA gene sequences from the 77 viruses detected in 2020, inclusive of 16 from the WHO European Region, belonged to genetic clade Y3 and had three HA1 amino acid substitutions (L172Q, D229N and M251V) compared to B/Phuket/3073/2013-like viruses which are still recommended for use in quadrivalent influenza vaccines.

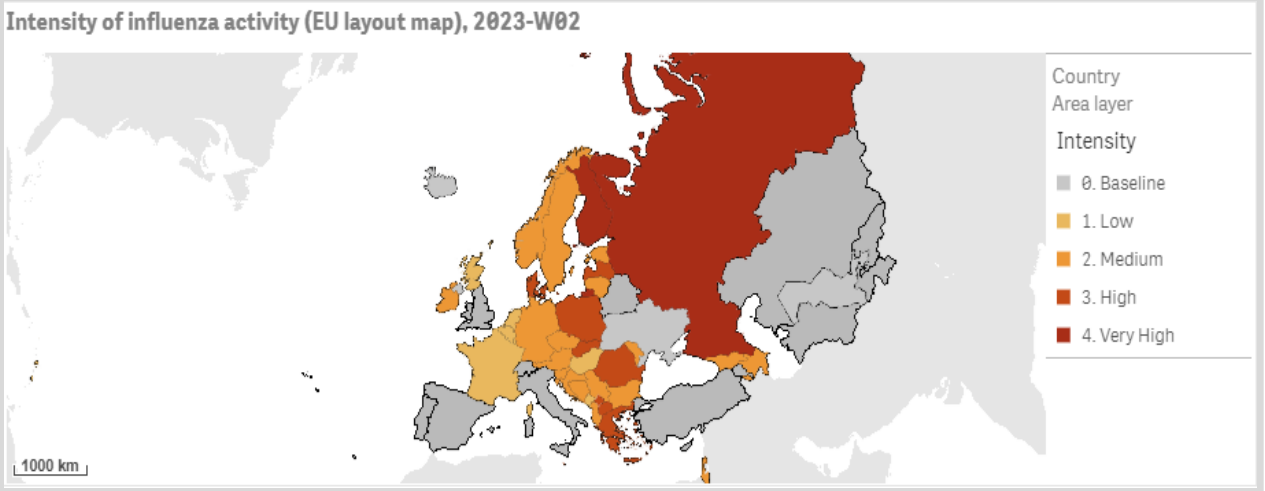
There is need to share all B/Yamagata-lineage viruses detected recently for detailed characterization to determine if there are any in circulation that are not related to Live Attenuated Influenza Vaccines.

Influenza Europe; Weeks 02/2023 (09 January – 15 January 2023)

- The percentage of sentinel primary care specimens from patients presenting with ILI or ARI symptoms that tested positive for an influenza virus remained above the epidemic threshold (10%) and decreased to 22% (23% in EU/EEA) from 29% (30% in EU/EEA) in the previous week in the European Region.
- Thirty-three of 40 countries or areas reported high or very-high intensity and/or widespread activity indicating high seasonal influenza virus circulation across the Region.
- Finland, Poland, and Slovenia reported seasonal influenza activity above 40% positivity in sentinel primary care.
- Both influenza type A and type B viruses were detected with A(H1)pdm09 viruses dominating in both sentinel and non-sentinel surveillance systems.
- Hospitalised patients with confirmed influenza virus infection were reported from ICU, other wards (with mainly influenza type A unsubtyped viruses reported) and SARI surveillance (with mainly influenza A(H1)pdm09 subtype viruses reported). Twelve countries or areas reported influenza positivity rates above 10% in SARI surveillance.

Source: Flu News Europe

ECDC assessment: Seasonal influenza activity is still increasing in some EU/EEA countries while other countries have already passed their peak period of seasonal activity. Sentinel positivity for influenza virus detections above 40% for a minimum of 10 tested specimens were observed in the following countries: Finland (55%), Slovenia (47%), and Poland (41%).



Source: ECDC

Other Infectious Disease Outbreaks/ Conflicts

Human infection caused by avian influenza A(H5) - Ecuador

On 9 January 2023, WHO was notified of a human infection caused by an avian influenza A(H5) virus. The case, a nine-year-old girl, living in a rural area in the province of Bolívar, Ecuador, was in contact with backyard poultry, which was acquired a week before the onset of her symptoms. She is currently hospitalized, in isolation, and is being treated with antivirals.

This is the first reported case of human infection caused by avian influenza A(H5) virus in the Latin America and the Caribbean region. Work is ongoing to further characterize the virus.

Currently, available epidemiological and virological evidence suggests that influenza A(H5) viruses have not acquired the ability for sustained transmission among humans, thus the likelihood of human-to-human spread is low.

SOURCE: WHO

Ebola disease caused by Sudan – Ebolavirus Uganda

On 11 January 2023, the Ministry of Health (MoH) of Uganda declared the end of the Ebola disease outbreak caused by the *Sudan ebolavirus* that affected nine districts. A total of 164 cases (142 confirmed, 22 probable) with 77 deaths (55 among confirmed cases and 22 among probable cases) were reported during the outbreak.

In accordance with WHO recommendations, the declaration was made 42 days (twice the maximum incubation period for *Sudan ebolavirus* infections) after the sample from the last admitted case that was collected on 29 November 2022 tested negative before discharge, and the last confirmed death was accorded a safe and dignified burial on 29 November 2022.

Although the outbreak has been declared over, health authorities are maintaining surveillance to rapidly identify and respond to any re-emergence. A follow-up programme has been put in place to support survivors. Neighbouring countries remain on alert and are encouraged to continue strengthening their capacities to detect and respond to infectious disease outbreaks.

SOURCE: WHO

Circulating vaccine-derived poliovirus type 2 – Sudan

On 18 December 2022, the IHR National Focal Point for Sudan notified WHO of the detection of a circulating vaccine-derived poliovirus type 2 (cVDPV2) in a 48-month-old male with acute flaccid paralysis (AFP), from West Darfur in Western Sudan. The case had onset of paralysis on 31 October. The isolated virus is most closely related to a strain that circulated in Borno State, Nigeria, in 2021, and is unrelated to a cVDPV2 strain that caused an outbreak in Sudan in 2020. On 28 November, the Federal Ministry of Health (FMOH) launched an immunization campaign for children under the age of 13 years in the affected areas. Field investigations were immediately launched by local and national public health authorities, with support from partners of the Global Polio Eradication Initiative (GPEI).

SOURCE: WHO

Diphtheriae among migrants – Europe

As of 17 January 2023, and since the last update on 11 January 2023, Austria has reported two new cases of diphtheria.

Background: Since the beginning of 2022, and as of 17 January 2023, there have been 240 cases of diphtheria among migrants reported by eight EU/EEA countries: Austria (70), Belgium (25), France (14), Germany (116), Italy (2), the Netherlands (5), Norway (7), and Spain (1). Cases have also been reported in Switzerland (25) and the United Kingdom (73), bringing the overall number for Europe to 338.

Among these cases, more than two thirds (69%) presented with an exclusively cutaneous form of the disease (n=236). A total of 53 cases had a respiratory presentation; of those, six cases had both respiratory and cutaneous presentations. Thirty cases were asymptomatic, and information was missing for 19 cases. All cases were caused by toxigenic C. diphtheriae, and the majority were detected in male migrants aged 8–49 years.

ECDC has no data indicating further transmission and outbreaks of C. diphtheriae in the broader EU/EEA population resulting from the increased number of diphtheria cases. **SOURCE: ECDC**

Mpox – Multi-country – EU/EEA 2022 - 2023

Since the start of the mpox outbreak and as of 17 January 2023, 21 127 confirmed cases of mpox have been reported from 29 EU/EEA countries: Spain (7 514), France (4 114), Germany (3 676), Netherlands (1 260), Italy (959), Portugal (943), Belgium (790), Austria (327), Sweden (257), Ireland (227), Poland (215), Denmark (192), Norway (94), Greece (86), Hungary (80), Czechia (71), Luxembourg (57), Romania (47), Slovenia (47), Finland (42), Croatia (33), Malta (33), Iceland (16), Slovakia (14), Estonia (11), Bulgaria (6), Latvia (6), Cyprus (5) and Lithuania (5).

Deaths have been reported from: Spain (3), Belgium (1) and Czechia (1).

Western Balkans and Turkey:

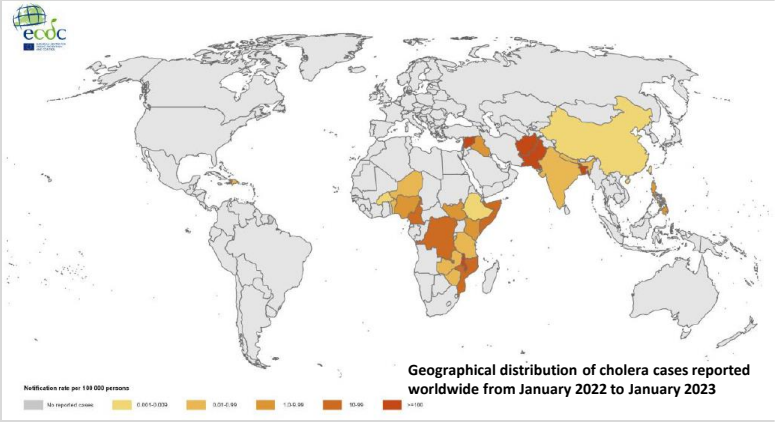
Since the start of the mpox outbreak and as of 17 January 2023, the following Western Balkan countries have reported confirmed cases of monkeypox: Serbia (40), Bosnia and Herzegovina (9) and Montenegro (2). In addition, 12 cases have been reported from Türkiye.

SOURCE: ECDC

Cholera – Monitoring global outbreaks

Since the last update on 20 December 2022, 74 761 cholera cases, including 745 fatalities, have been reported worldwide. Countries and territories reporting new cases since the previous update are Afghanistan, Bangladesh, Burundi, Cameroon, the Democratic Republic of the Congo, the Dominican Republic, Haiti, Iraq, Kenya, Lebanon, Malawi, Mozambique, Nigeria, the Philippines, Somalia, Syria, and Tanzania. Please find more information here.

ECDC Risk Assessment



Geographical distribution of cholera cases reported worldwide from January 2022 to January 2023

Cholera cases continue to be reported in western Africa and south-east Asia over the past months. Cholera outbreaks have also been notified in the eastern and southern parts of Africa as well as in some parts of the Middle East. Despite the number of cholera outbreaks reported worldwide, few cases are reported each year among returning EU/EEA travellers. In this context, the risk of cholera infection in travellers visiting these countries remains low, even though sporadic importation of cases in the EU/EEA remains possible. In 2021, two cases were reported in EU/EEA Member States, while three and 26 cases were reported in 2020 and 2019 respectively. All cases had travel history to cholera-affected areas. According to the WHO, vaccination should be considered for travellers at higher risk, such as emergency and relief workers who are likely to be directly exposed to cholera. Vaccination is generally not recommended for other travellers. Travellers to cholera-endemic areas should seek advice from travel health clinics to assess their personal risk and apply precautionary sanitary and hygiene measures to prevent infection. These can include drinking bottled water or water treated with chlorine, carefully washing fruits and vegetables with bottled or chlorinated water before consumption, regularly washing hands with soap, eating thoroughly cooked food, and avoiding the consumption of raw seafood products.

SOURCE: ECDC

Ukraine – Situation Report

Situation Report (20 January 2023)

Source: WHO

Ukraine Refugee Situation Update – Highlights:

On 16 January, Ms. Tytti Tuppurainen, Finish Minister of European Affairs and Ownership Steering visited UNHCR's integrated service hub for refugees at RomExpo, accompanied by State Secretary Ms. Daniela Gitman. During the visit, State Counsellor Ms. Madalina Turza, and UNHCR's Representative Mr. Pablo Zapata walked her through the services extended by the government authorities, NGOs, EUAA and UN Agencies. During the visit the Finnish Minister had the opportunity to discuss the needs of and services provided to refugees from Ukraine currently hosted in Romania. On 19 January, the embassies of Denmark, Finland, Norway and Sweden also jointly visited RomExpo. During the joint visit, delegations had the opportunity to discuss with UNHCR and partners operating in the site and in the nearby social store run by the Municipality of Bucharest. Response In continuation of UNHCR's winter assistance, nearly 15,000 clothes, 2,200 cooking pots and hygiene materials have been distributed at the Clothing & Relief Item Shop run by Bucharest Municipality for refugee located at RomExpo. UNHCR is preparing to hand over another batch of core relief items (CRIs) to the shop in the following week. Similarly, this week, UNHCR and the Brasov Municipality assisted 1,450 refugees from Ukraine with CRIs. UNHCR together with the CATTIA centre distributed winter clothes, blankets, bedding, baby care items and kitchen items. On 19 January, UNHCR participated in the local integration coordination meeting lead by the Prefecture in Constanta. During the event, UNHCR presented an overview of its response to the refugee hosted in Constanta and the challenges faced by refugees. UNHCR continues its field missions to conduct monitoring missions and collect needs of refugees from Ukraine. UNHCR in Suceava conducted a visit to Iasi county and coordinated activities supporting refugees with national institutions working on health, education and child protection. Likewise, UNHCR in Galati recently conducted a needs assessment mission to Constanta where a large refugee population is residing.

Key figures

106,706 refugees currently in Romania (as of 16 January 2023)
107,686 refugees registered for temporary protection in Romania (as of 16 January 2023)
43,129 refugees supported with multi-purpose cash assistance
67,165 refugees provided with information and counselling in person or over the phone
14,748 refugees supported to travel to Romania from Ukraine-Moldova border through fast-track transfers.