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Highlighted Signals and Events

During epidemiological week 38 (14 September to 20 September), WHO Public Health Intelligence (PHI) teams conducted digital event-based surveillance (DEBS) to support the early detection and assessment of potential public health threats. During the reporting period, approximately 582 592 raw signals were scanned and triangulated through DEBS. From this large pool of signals, 37 signals and/or events met assessment thresholds and underwent further analysis and categorization. Of the 37 categorized signals, 35 represented unique signals. 23 signals and/or events were escalated for operational attention.

In the reporting week, of the new events verified through PHI activities, none were in the public domain. One Rapid Risk Assessment was published during this reporting week. A summary of identified raw signals, assessed signals, and published outputs is presented in the tables below.

Signal Assessment Metrics, 14 September 2026 - 20 September 2026

Signals Screened ¹	Signals Categorized ²	Unique Signals ³	Signals Escalated ⁴
582 592	37	35	23

Selected new signals of potential public health events assessed, 14 September 2026 - 20 September 2026⁵:

Region	Hazard
Africa	Anthrax Crimean-Congo haemorrhagic fever Diphtheria Mpox Poliomyelitis Substandard falsified medical product
Americas	Not yet diagnosed Substandard falsified medical product
Eastern Mediterranean	Not yet diagnosed
Europe	Diphtheria Malaria Substandard falsified medical product West Nile fever
South-East Asia	No publicly available signals identified
Western Pacific	No publicly available signals identified

¹ **Signals screened:** Total volume of raw signals reviewed from across multiple sources during the reporting period.

² **Signals categorized:** Number of signals categorized for further detailed WHO assessment and actions during the reporting period.

³ **Unique signals:** Count of distinct signals after removing duplicate or repeated entries from different sources within the same epidemiological week.

⁴ **Signals escalated:** Subset of categorized signals that triggered escalation actions.

⁵ The absence of listed signals indicates that no publicly available signals were identified during the reporting period and does not imply absence of signal activity overall. Signals designated as "Not yet diagnosed" refer to those with ongoing epidemiological and clinical investigations to determine the causative hazard or disease.

Selected Weekly Events, 14 September 2026 - 20 September 2026⁶

During epidemiological week 38, none of the events verified through PHI activities were available in the public domain.

Published Information Products

Rapid Risk Assessment

[Diphtheria, African Region version 3](#)

Global Respiratory Virus Activity: Weekly Update

The findings below are based on surveillance conducted through the [WHO Global Influenza Surveillance and Response System \(GISRS\)](#). More details can be found on the [Global Influenza Programme's surveillance and monitoring page](#).

Overview

In week 37 2026, globally, influenza positivity was at 10% and SARS-CoV-2 positivity remained stable and low. Influenza positivity was under 10% in the southern hemisphere temperate and subtropical areas and just above 10% in the tropical areas. Influenza positivity increased to just above 10% in the northern hemisphere temperate and subtropical areas but there was also a decrease in the reported specimens tested for week 37. RSV positivity remained low globally.

Influenza

Globally, influenza detections remained low in week 37 with influenza A virus detections predominant.

In the southern hemisphere, influenza percent positivity was elevated (>10%) in some countries in Temperate South America and in single countries in Tropical South America and Eastern and Southern Africa. Percent positivity was over 30% in single countries in South-East Asia and Oceania. Small increases in activity were reported in single countries in Tropical South America, Eastern Africa and South-East Asia.

In the northern hemisphere, influenza percent positivity was elevated (>10%) in some countries in Western, Southern, South-East and Eastern Asia, and in single countries in Central America and the Caribbean, Tropical South America and Western Africa. Percent positivity was over 30% in some countries in Western Africa and Southern and South-East Asia. Small increases in activity were observed in some countries in Western Africa and South-East Asia and in single countries in Tropical South America, South West and Eastern Europe, and Western, Southern and Eastern Asia.

In the zones with elevated positivity, influenza A(H3N2) was predominant in Western Africa, Eastern Asia and Oceania; influenza A(H1N1)pdm09 was predominant in Eastern Africa, Western, Southern and South-East Asia and influenza B was predominant in Tropical and Temperate South America. Influenza A and B were codominant in Central America and the Caribbean.

SARS-CoV-2

Globally, SARS-CoV-2 positivity remained stable and low across most reporting countries, with elevated positivity (>10%) reported in some countries in Central America and the Caribbean, Northern and South West Europe and Eastern Asia, and in a single country in Tropical South America. Small increases in activity were observed in some countries in Northern Europe and in single countries in Central America and the Caribbean and in South West and Eastern Europe.

Respiratory Syncytial Virus (RSV)

RSV positivity was elevated (>10%) in a few countries in Central America and the Caribbean and Temperate South America and in a single country in Western Africa. Percent positivity was over 30% in single countries in Temperate South America and Southern Asia. Increases in activity were observed in single countries in Eastern Africa and Southern Asia. RSV and influenza activity were both elevated in countries in Temperate South America and Southern Asia.

Severity assessment

The severity assessments here are reported from countries, areas and territories. Assessments for transmissibility can be reported based on syndromic parameters and/or influenza-specific parameters. In the southern hemisphere temperate and subtropical areas, influenza-specific transmissibility was reported as low in two countries; transmissibility using syndromic data was reported as below seasonal threshold in a single country. In the northern hemisphere temperate and subtropical areas, influenza-specific transmissibility was reported as below seasonal threshold in 13 countries, low in a single country and moderate in a single country; transmissibility using syndromic data was reported as below seasonal threshold in seven countries. Influenza-specific transmissibility was reported as below seasonal threshold in a single country in the tropical areas.

⁶ Only new events registered during the defined period are included, accordingly changes to disease/condition that occur after the data cut off of 23:59 on 20 September 2026 will not be reflected in the description. The absence of events indicates that no publicly available newly reported events were identified during the reporting period and does not imply absence of event activity overall.

Cholera Annual Report, 2025

In 2025, 47 countries, territories, and areas (hereafter, ‘countries’) reported 451 499 cholera cases and 7870 deaths to the World Health Organization (WHO); 4831 cases were classified as imported (**Table 1; Map 1**). Among the 37 countries for which a facility-based case fatality rate (CFR) could be calculated, 2994 deaths occurred in health facilities among 351 482 reported cases, corresponding to a CFR of 0.9%. These 37 countries accounted for 77.8% of reported cases. The African Region accounted for 245 501 cases (54%) and 5338 deaths (68%), followed by the Eastern Mediterranean Region with 176 654 cases (39%) and 2438 deaths (31%). A further 81 countries submitted zero reports, and no data were received from 77. By comparison, 60 countries reported 560 823 cases and 6028 deaths in 2024, and 58 countries submitted zero reports.⁷ Reported cases were 19.5% lower and reported deaths 30.6% higher than in 2024, although fewer countries reported cases.

WHO publishes this annual report, compiled from country-reported surveillance data, to track global progress toward *Ending Cholera: A Global Roadmap to 2030*, endorsed by the World Health Assembly in 2018 (resolution WHA71.4)⁸ and coordinated by the Global Task Force on Cholera Control (GTFCC), which aims to eliminate cholera transmission in up to 20 countries and to reduce cholera deaths by 90%.⁹

Unless otherwise stated, reported cases include both suspected and confirmed cholera. Countries are grouped in this report by WHO region rather than by continent as in previous editions.⁷ WHO regions are the basis on which countries submit their data and on which the WHO regional offices validate them. Case fatality ratios in this report are calculated using deaths occurring in health facilities, as recommended by WHO and the GTFCC, to better reflect access to and quality of clinical care.^{10,11} Community deaths are reported separately in **Table 2**. National reporting practices vary in case definitions, laboratory testing, and the recording of deaths and place of death, and comparisons between countries should be interpreted accordingly. These figures therefore represent surveillance data reported to WHO for 2025 rather than an estimate of the global disease burden. For comparison, the global burden of cholera in endemic countries has been estimated at 1.3 to 4.0 million cases and 21 000 to 143 000 deaths each year.¹²

Seven countries reported more than 10 000 cholera cases: Yemen (93 463 cases; 246 deaths), South Sudan (79 480; 1258), Sudan (73 597; 2161), the Democratic Republic of the Congo (71 168; 2071), Angola (36 341; 895), Nigeria (24 354; 548), and Bangladesh (22 709; no deaths reported). Together, they accounted for 89% of reported cases and 91% of reported deaths. Five of these countries, the Democratic Republic of the Congo, Nigeria, South Sudan, Sudan, and Yemen, were classified by the World Bank as conflict-affected during 2025,^{13,14} and all seven recorded conflict- or disaster-related internal displacement during the year.¹⁵ Angola was the only country to newly exceed 10 000 reported cases in 2025, after reporting no cases in 2024.⁷

Twelve countries reported more than 10 000 cases in 2024.⁷ Six remained above that level in 2025: Bangladesh, the Democratic Republic of the Congo, Nigeria, South Sudan, Sudan, and Yemen. Six fell below it: Comoros, Ethiopia, Somalia, the United Republic of Tanzania, Zambia, and Zimbabwe. Countries reporting more than 10 000 cases are grouped here to identify those most heavily affected.

⁷ World Health Organization. Global situation report for cholera, 2024. *Weekly Epidemiological Record*. 2025;100(36):347–364. <https://www.who.int/publications/i/item/who-wer10036-347-364>

⁸ World Health Assembly. Cholera prevention and control. Resolution WHA71.4. Seventy-first World Health Assembly, Geneva, 21–26 May 2018. Geneva: World Health Organization; 2018. <https://iris.who.int/handle/10665/279470>

⁹ Global Task Force on Cholera Control. Ending cholera: a global roadmap to 2030. Geneva: GTFCC; 2017. <https://www.gtfcc.org/our-work/roadmap-2030/>

¹⁰ Global Task Force on Cholera Control. Public health surveillance for cholera: guidance document. Geneva: GTFCC; 2024. <https://www.gtfcc.org/resources/public-health-surveillance-for-cholera/>

¹¹ Global Task Force on Cholera Control. Cholera outbreak response field manual. Geneva: GTFCC; 2024. <https://www.gtfcc.org/resources/gtfcc-cholera-outbreak-response-field-manual/>

¹² World Health Organization. Cholera. Fact sheet. Geneva: World Health Organization; 5 December 2024. <https://www.who.int/news-room/fact-sheets/detail/cholera>

¹³ World Bank. Classification of Fragile and Conflict-Affected Situations: FY25. Washington, DC: World Bank; 2024. <https://thedocs.worldbank.org/en/doc/b3c737c4687db176ec98f5c434d0de91-0090082024/original/FCSListFY25.pdf>

¹⁴ World Bank. Classification of Fragile and Conflict-Affected Situations: FY26. Washington, DC: World Bank; 2025. <https://www.worldbank.org/en/topic/fragilityconflictviolence/brief/harmonized-list-of-fragile-situations>

¹⁵ Internal Displacement Monitoring Centre. 2026 Global Report on Internal Displacement (GRID). Geneva: IDMC; 2026. <https://www.internal-displacement.org/global-report/grid2026/>

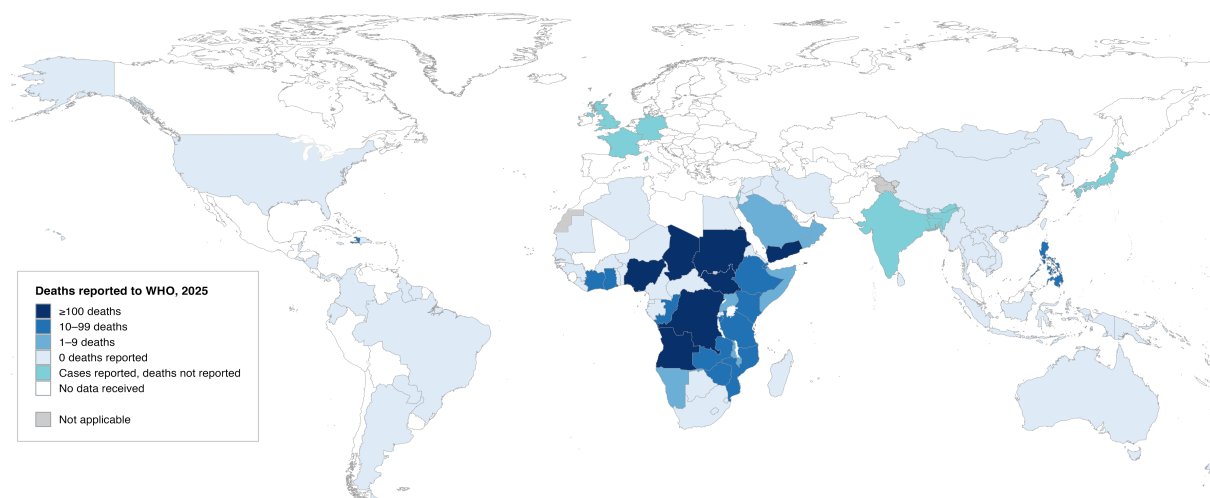
Table 1. Reported cholera cases, attack rate, deaths, and case fatality rate by WHO region and country, 2025

Country	Total cases	of which imported	Attack rate (per 100 000)	Total deaths	Facility deaths	CFR, facility deaths (%)
African Region						
Angola	36 341	0	93.2	895	508	1.4
Burundi	6 016	85	41.5	28	24	0.4
Cameroon	2	0	<0.1	0	0	0.0
Chad	2 979	0	14.2	167	89	3.0
Congo	822	0	12.8	67	11	1.3
Côte d'Ivoire	556	0	1.7	24	0	0.0
Democratic Republic of the Congo	71 168	NR	63.1	2 071	NR	NR
Ethiopia	8 505	12	6.3	84	80	0.9
Ghana	2 442	0	7.0	21	18	0.7
Kenya	725	0	1.3	27	21	2.9
Malawi	144	39	0.7	2	2	1.4
Mozambique	5 926	0	16.6	61	22	0.4
Namibia	45	0	1.5	1	1	2.2
Niger	14	2	<0.1	0	0	0.0
Nigeria	24 354	0	10.3	548	130	0.5
Rwanda	54	10	0.4	0	0	0.0
South Africa	4	0	<0.1	0	0	0.0
South Sudan	79 480	3 426	662.3	1 258	682	0.9
Uganda	203	9	0.4	4	2	1.0
United Republic of Tanzania	3 987	0	5.7	47	NR	NR
Zambia	1 210	26	5.5	18	NR	NR
Zimbabwe	524	0	3.1	15	5	1.0
Subtotal	245 501	3 609	–	5 338	1 595	0.9
Region of the Americas						
Haiti	3 446	0	29.0	65	46	1.3
United States of America	11	9	<0.1	0	0	0.0
Subtotal	3 457	9	–	65	46	1.3
Eastern Mediterranean Region						
Djibouti	379	352	31.6	15	7	1.8
Iran (Islamic Republic of)	5	3	<0.1	0	0	0.0
Kuwait	1	1	<0.1	0	0	0.0
Oman	1	1	<0.1	1	1	100.0
Qatar	8	8	0.3	0	0	0.0

Country	Total cases	of which imported	Attack rate (per 100 000)	Total deaths	Facility deaths	CFR, facility deaths (%)
Saudi Arabia	197	178	0.6	6	6	3.0
Somalia	9 003	0	45.7	9	9	0.1
Sudan	73 597	350	142.4	2 161	1 080	1.5
Yemen	93 463	292	223.6	246	221	0.2
Subtotal	176 654	1 185	–	2 438	1 324	0.7
European Region						
France	4	4	<0.1	NR	NR	NR
Germany	8	8	<0.1	NR	NR	NR
Israel	3	3	<0.1	NR	NR	NR
United Kingdom	4	4	<0.1	NR	NR	NR
Subtotal	19	19	–	NR	NR	NR
South-East Asia Region						
Bangladesh	22 709	NR	12.9	NR	NR	NR
India	920	NR	<0.1	NR	NR	NR
Myanmar	468	0	0.9	0	0	0.0
Nepal	55	0	0.2	0	0	0.0
Thailand	17	0	<0.1	0	0	0.0
Subtotal	24 169	0	–	0	0	0.0
Western Pacific Region						
Australia	3	3	<0.1	0	0	0.0
Cambodia	79	NR	0.4	0	0	0.0
China	17	2	<0.1	0	0	0.0
Japan	4	4	<0.1	NR	NR	NR
Philippines	1 596	NR	1.4	29	29	1.8
Subtotal	1 699	9	–	29	29	1.7
Total	451 499	4 831	–	7 870	2 994	0.9

Cases comprise suspected and confirmed cholera. Attack rates are crude national rates, reported cases per 100 000 population, using United Nations World Population Prospects estimates for 2025.¹⁶ Case fatality ratio is deaths in health facilities as a percentage of all cases reported by the same country; regional and global CFRs are pooled. CFR and facility deaths are shown as NR where place-of-death data were missing or did not match reported total deaths. Count subtotals sum reported values; NR values are excluded. CFR: case fatality rate; NR: not reported; –: not applicable.

Map 1. Cholera deaths reported to WHO by country, 2025



¹⁶ United Nations, Department of Economic and Social Affairs, Population Division. World Population Prospects 2024: Dataset. New York: United Nations; 2024. <https://www.un.org/development/desa/pd/content/World-Population-Prospects-2024>

Countries are shaded by the number of deaths reported to WHO for 2025. The boundaries and names shown and the designations used on this map 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.

Distribution of reported cases

Expressed as an attack rate (reported cases per 100 000 population), the burden is ordered differently from the list of countries reporting more than 10 000 cases (**Table 1**). South Sudan (662.3 per 100 000), Yemen (223.6), Sudan (142.4), Angola (93.2), and the Democratic Republic of the Congo (63.1) recorded the highest national rates. By contrast, populous countries such as Bangladesh (12.9) and Nigeria (10.3) recorded comparatively low rates despite substantial case numbers. Attack rates also bring smaller countries into view: Burundi reported 6016 cases and a rate of 41.5 per 100 000, while Djibouti reported 379 cases but a rate of 31.6 per 100 000.

Regional patterns

African Region

In 2025, 22 countries in the African Region reported 245 501 cases and 5338 deaths, the largest regional burden. Among the 19 countries for which a facility-based CFR could be calculated, the rate was 0.9% (1 595 facility deaths among 169 136 reported cases). Cases were 34% higher and deaths 58% higher than in 2024, when countries in the Region reported 183 275 cases and 3375 deaths.⁷ The report for 2024 grouped countries by continent, so its published Africa total of 258 442 cases is not directly comparable. In 2025, the Region accounted for 54% of reported cases but 68% of reported deaths. The difference between these two shares should be interpreted cautiously because the completeness of death reporting, including of deaths occurring in the community, varies between countries. The burden was concentrated: South Sudan (79 480 cases; 1258 deaths), the Democratic Republic of the Congo (71 168; 2071), Angola (36 341; 895), and Nigeria (24 354; 548) together accounted for 86% of the Region's cases. Burundi reported 6016 cases and 28 deaths, its highest annual total reported since 1990, and was among the ten countries reporting the most cases worldwide; it had reported 905 cases in 2024.⁷ Case counts declined substantially in several southern African countries that had been heavily affected in 2024: Zambia reported 22 170 fewer cases, Zimbabwe 20 108 fewer, Mozambique 2248 fewer, and Malawi 410 fewer.⁷

Eastern Mediterranean Region

Nine countries in the Eastern Mediterranean Region reported 176 654 cases and 2438 deaths. A facility-based CFR could be calculated for all nine countries; the rate was 0.7% (1324 facility deaths among 176 654 reported cases). Cases were 47% lower than the 336 359 reported in 2024, while deaths were similar to the 2482 reported that year.⁷ Yemen and Somalia accounted for most of the decrease, reporting 166 811 and 12 942 fewer cases; Sudan partly offset it with 20 596 more as transmission continued from 2024.⁷ Yemen reported more cases than any other country (93 463 cases; 246 deaths) and had a facility-based CFR of 0.2%, whereas Sudan reported 73 597 cases and 2161 deaths (89% of the Region's reported deaths), with a facility-based CFR of 1.5%. Sudan reported 1080 deaths in health facilities, 303 in the community, and 778 for which the place of death was not recorded.

South-East Asia Region

Five countries in the South-East Asia Region reported 24 169 cases. Bangladesh accounted for 22 709 cases and India for 920; all of India's cases were confirmed by culture or polymerase chain reaction (PCR). Neither country reported data on deaths, so both are excluded from both the numerator and the denominator of the CFR. The three countries included in the denominator reported zero deaths: Myanmar (468 cases, all confirmed by culture or PCR), Nepal (55), and Thailand (17). A facility-based CFR could be calculated for those three countries; the rate was 0.0% (no deaths among 540 reported cases), but it should be interpreted with caution because they represent 2.2% of the 24 169 cases reported in the Region. Reported cases in the Region were 16% lower than in 2024 (28 854).⁷

Region of the Americas

Two countries in the Region of the Americas reported 3457 cases and 65 deaths. Haiti accounted for 3446 cases and all 65 deaths, including 46 in health facilities and 19 (29%) in the community. Among the two countries for which a facility-based CFR could be calculated, the rate was 1.3% (46 facility deaths among 3457 reported cases). The United States of America reported 11 cases, of which nine were imported. The Dominican Republic investigated 40 suspected cases, of which 30 were tested by culture or PCR and none was positive; it submitted a zero-cholera report and is therefore included among zero-reporting countries. Reported cases in the Region were 65% lower than in 2024 (9957)⁷ and accounted for less than 1% of the global total.

Western Pacific Region

Five countries in the Western Pacific Region reported 1699 cases and 29 deaths. The Philippines accounted for 1596 cases and all 29 deaths, all of which were reported as having occurred in health facilities. Among the four countries for which a facility-based CFR could be calculated, the rate was 1.7% (29 facility deaths among 1695 reported cases). Cambodia reported 79 cases and no deaths, while China, Japan, and Australia reported small numbers of predominantly imported cases. Reported cases in the Region were 20% lower than in 2024 (2125).⁷

European Region

Four countries in the European Region reported 19 cases. All were imported: Germany (eight cases), France (four), the United Kingdom (four), and Israel (three). None reported data on deaths.

Case fatality and place of death

With prompt and appropriate treatment, the CFR in cholera treatment facilities should not exceed 1%.^{10,11} The global facility-based CFR in 2025 was 0.9%. Of the 37 countries for which the facility-based CFR could be calculated, 12 exceeded 1%; Uganda and Zimbabwe were just below 1% but are shown as 1.0% in **Table 1** after rounding. Estimates for five of those 12 countries (Djibouti, Malawi, Namibia, Oman, and Saudi Arabia) should be interpreted cautiously because they are based on fewer than 10 facility deaths. Oman's 100.0% CFR, for instance, reflects one death among one imported case.

Of the 26 countries that reported at least one death, 23 also reported place of death, accounting for 72.9% of all deaths reported in 2025 (**Table 2**). Among these countries, 2994 deaths (52.2%) occurred in a health facility, 1302 (22.7%) in the community, and 1438 (25.1%) had no place recorded. The report for 2024 states that 21 countries reported deaths occurring in the community and that the CFR in health facilities, among countries distinguishing place of death, was 0.8%.⁷ In three countries more than half of all reported deaths occurred in the community: Côte d'Ivoire (all 24), Congo (56 of 67), and Mozambique (39 of 61). The largest numbers of community deaths were reported by Angola (387), South Sudan (346), and Sudan (303); the latter two were classified as conflict-affected during 2025.^{13,14} Community deaths indicate that patients died before reaching a health facility and reducing them depends on strengthening the integration of oral rehydration solution and early case management into primary health care and community health worker programmes.^{11,12} Information on place of death can help identify where capacity strengthening is most needed,¹⁰ and countries not yet reporting these data are encouraged to do so.

Table 2. Cholera deaths and place of death by WHO region and country, 2025

Country	Total deaths	Facility deaths	Community deaths	Place not reported	% Community deaths
African Region					
Angola	895	508	387	0	43.2
Burundi	28	24	4	0	14.3
Chad	167	89	78	0	46.7
Congo	67	11	56	0	83.6
Côte d'Ivoire	24	0	24	0	100.0
Democratic Republic of the Congo	2 071	NR	NR	NR	NR
Ethiopia	84	80	4	0	4.8
Ghana	21	18	3	0	14.3
Kenya	27	21	6	0	22.2
Malawi	2	2	0	0	0.0
Mozambique	61	22	39	0	63.9
Namibia	1	1	0	0	0.0
Nigeria	548	130	NR	418	NR
South Sudan	1 258	682	346	230	27.5
Uganda	4	2	2	0	50.0
United Republic of Tanzania	47	NR	NR	NR	NR
Zambia	18	NR	NR	NR	NR
Zimbabwe	15	5	3	7	20.0
Subtotal	3 202	1 595	952	655	29.7
Region of the Americas					
Haiti	65	46	19	0	29.2
Subtotal	65	46	19	0	29.2
Eastern Mediterranean Region					
Djibouti	15	7	3	5	20.0
Oman	1	1	0	0	0.0
Saudi Arabia	6	6	0	0	0.0
Somalia	9	9	0	0	0.0
Sudan	2 161	1 080	303	778	14.0
Yemen	246	221	25	0	10.2

Country	Total deaths	Facility deaths	Community deaths	Place not reported	% Community deaths
Subtotal	2 438	1 324	331	783	13.6
Western Pacific Region					
Philippines	29	29	0	0	0.0
Subtotal	29	29	0	0	0.0
Total	5 734	2 994	1 302	1 438	22.7

Countries reporting one or more deaths. The percentage of community deaths is calculated on all reported deaths. Subtotals and the total include only the 23 countries whose place-of-death figures sum to their reported total deaths; figures are shown as NR where place-of-death data were missing or did not match reported total deaths. The South-East Asia and European regions are not shown, as no country in either reported a death. Table 1 shows all reported deaths. NR: not reported.

Laboratory testing and confirmation

Rapid diagnostic test (RDT) positivity among suspected cases tested was high in several countries reporting testing data, including Ethiopia (92.0%), Angola (87.8%), Zambia (85.7%), and South Sudan (53.8%) (Table 3). Among 27 countries with positivity data for both methods, culture or PCR positivity was lower than RDT positivity in 15, higher in 10, and the same in two, although some comparisons are based on small numbers of specimens. These comparisons should nevertheless be interpreted cautiously because testing pathways and policies differ between countries, and the same specimens are not necessarily tested by both methods.^{10,12} Differences may also reflect antibiotic use before specimen collection, loss of organism viability during transport or storage, or the testing of different specimen types. Culture or molecular confirmation remains essential for identifying the causative organism and supporting antimicrobial resistance monitoring. The proportion of reported cases tested cannot be derived reliably from the available data because testing counts may include repeat testing, more than one method per patient, and people not subsequently reported as cholera cases, while several countries did not report numbers tested.

Table 3. Cholera laboratory testing by WHO region and country, 2025

Country	RDT tested	RDT positive	RDT positivity (%)	Culture/PCR tested	Culture/PCR confirmed	Culture/PCR positivity (%)
African Region						
Angola	7 290	6 403	87.8	383	317	82.8
Burundi	6 297	4 780	75.9	1 243	1 236	99.4
Cameroon	96	38	39.6	5	2	40.0
Chad	588	365	62.1	233	112	48.1
Congo	115	46	40.0	139	66	47.5
Côte d'Ivoire	NR	NR	NR	224	123	54.9
Ethiopia	2 901	2 669	92.0	275	208	75.6
Ghana	NR	NR	NR	1 012	229	22.6
Kenya	408	278	68.1	218	113	51.8
Malawi	320	235	73.4	168	86	51.2
Mozambique	1 679	636	37.9	1 340	532	39.7
Namibia	126	34	27.0	130	34	26.2
Niger	14	2	14.3	14	2	14.3
Nigeria	1 161	452	38.9	456	214	46.9
Rwanda	250	54	21.6	70	54	77.1
South Africa	0	0	NR	27	4	14.8
South Sudan	13 245	7 129	53.8	3 442	339	9.8
Uganda	195	195	100.0	203	203	100.0
United Republic of Tanzania	250	239	95.6	89	11	12.4
Zambia	879	753	85.7	855	365	42.7
Zimbabwe	431	395	91.6	28	12	42.9
Subtotal	36 245	24 703	–	10 554	4 262	–
Region of the Americas						
Dominican Republic	1	1	100.0	30	0	0.0
Haiti	NR	NR	NR	NR	259	NR

Country	RDT tested	RDT positive	RDT positivity (%)	Culture/PCR tested	Culture/PCR confirmed	Culture/PCR positivity (%)
United States of America	NR	NR	NR	11	11	100.0
Subtotal	1	1	–	41	270	–
Eastern Mediterranean Region						
Iran (Islamic Republic of)	NR	9	NR	194 882	5	0.0
Kuwait	0	0	NR	17	1	5.9
Oman	0	0	NR	4	1	25.0
Qatar	NR	NR	NR	720	8	1.1
Saudi Arabia	215	177	82.3	252	42	16.7
Somalia	5 781	414	7.2	199	6	3.0
Sudan	12 068	11 059	91.6	54	54	100.0
Yemen	29 762	24 891	83.6	6 478	3 093	47.7
Subtotal	47 826	36 550	–	202 606	3 210	–
South-East Asia Region						
Bangladesh	19 179	1 694	8.8	7 740	515	6.7
India	NR	NR	NR	NR	920	NR
Myanmar	7 870	26	0.3	733	468	63.8
Nepal	862	363	42.1	119	55	46.2
Thailand	0	0	NR	17	17	100.0
Subtotal	27 911	2 083	–	8 609	1 975	–
Western Pacific Region						
Australia	0	0	NR	3	3	100.0
Cambodia	NR	NR	NR	NR	NR	NR
China	0	0	NR	16	16	100.0
Philippines	10	3	30.0	105	40	38.1
Subtotal	10	3	–	124	59	–
Total	111 993	63 340	–	221 934	9 776	–

Countries reporting suspected or confirmed cases with laboratory data. Subtotals and totals sum reported values. Some countries, including Haiti and India, reported confirmed cases without numbers tested; positivity is therefore shown only for individual countries. The Dominican Republic's 40 suspected cases were not confirmed and are excluded from the cholera total. The Islamic Republic of Iran's 194 882 cultures reflect broad national surveillance rather than suspected cholera patients. RDT: rapid diagnostic test; PCR: polymerase chain reaction; NR: not reported; –: not applicable.

Age and sex distribution

Where reported, the distribution of cases by sex was broadly balanced: the male-to-female ratio was 1.0 overall and, among countries reporting more than 1000 cases, ranged from 0.6 in Chad to 1.3 in Ethiopia. Among those countries, the proportion of cases among children under 5 years ranged from 5.5% in the Democratic Republic of the Congo to 56.6% in Somalia (Table 4).

Table 4. Cholera cases by sex and age group by WHO region and country, 2025

Country	Total cases	Male	Female	Sex NR	M:F ratio	<5 years	≥5 years	Age NR	% <5 years
African Region									
Angola	36 341	19 584	16 757	0	1.2	4 845	31 496	0	13.3
Burundi	6 016	3 124	2 892	0	1.1	1 089	4 927	0	18.1
Cameroon	2	1	1	0	1.0	0	2	0	0.0
Chad	2 979	1 163	1 816	0	0.6	418	2 550	11	14.1
Congo	822	498	324	0	1.5	115	707	0	14.0
Côte d'Ivoire	556	452	104	0	4.3	23	533	0	4.1
Democratic Republic of the Congo	71 168	NR	NR	71 168	NR	3 933	67 273	NR	5.5

Country	Total cases	Male	Female	Sex NR	M:F ratio	<5 years	≥5 years	Age NR	% <5 years
Ethiopia	8 505	4 733	3 772	0	1.3	1 075	7 430	0	12.6
Ghana	2 442	1 256	1 186	0	1.1	173	2 150	119	7.4
Kenya	725	412	313	0	1.3	151	574	0	20.8
Malawi	144	86	58	0	1.5	24	120	0	16.7
Mozambique	5 926	2 923	3 003	0	1.0	973	4 953	0	16.4
Namibia	45	25	20	0	1.3	6	39	0	13.3
Niger	14	5	9	0	0.6	0	14	0	0.0
Nigeria	24 354	11 745	12 587	22	0.9	4 373	19 514	467	18.3
Rwanda	54	34	20	0	1.7	5	49	0	9.3
South Africa	4	2	2	0	1.0	0	4	0	0.0
South Sudan	79 480	39 599	39 872	9	1.0	17 919	61 539	22	22.6
Uganda	203	119	84	0	1.4	12	191	0	5.9
United Republic of Tanzania	3 987	650	637	2 700	1.0	125	1 161	2 701	9.7
Zambia	1 210	658	543	9	1.2	194	1 000	16	16.2
Zimbabwe	524	292	232	0	1.3	51	473	0	9.7
Subtotal	245 501	87 361	84 232	73 908	1.0	35 504	206 699	3 336	14.7
Region of the Americas									
Haiti	3 446	1 665	1 774	7	0.9	785	2 631	30	23.0
United States of America	11	8	3	0	2.7	0	11	0	0.0
Subtotal	3 457	1 673	1 777	7	0.9	785	2 642	30	22.9
Eastern Mediterranean Region									
Djibouti	379	304	75	0	4.1	1	5	373	16.7
Iran (Islamic Republic of)	5	3	2	0	1.5	1	4	0	20.0
Kuwait	1	1	0	0	–	0	1	0	0.0
Oman	1	0	1	0	0.0	0	1	0	0.0
Qatar	8	6	2	0	3.0	2	6	0	25.0
Saudi Arabia	197	156	41	0	3.8	2	195	0	1.0
Somalia	9 003	4 150	4 853	0	0.9	5 097	3 906	0	56.6
Sudan	73 597	35 329	38 249	19	0.9	9 504	63 464	629	13.0
Yemen	93 463	43 788	49 675	0	0.9	13 852	79 611	0	14.8
Subtotal	176 654	83 737	92 898	19	0.9	28 459	147 193	1 002	16.2
South-East Asia Region									
Bangladesh	22 709	11 963	10 746	0	1.1	12 331	10 378	0	54.3
India	920	518	401	1	1.3	162	758	0	17.6
Myanmar	468	215	253	0	0.8	34	434	0	7.3
Nepal	55	30	25	0	1.2	5	50	0	9.1
Thailand	17	9	8	0	1.1	0	17	0	0.0
Subtotal	24 169	12 735	11 433	1	1.1	12 532	11 637	0	51.9
Western Pacific Region									
Australia	3	1	2	0	0.5	0	3	0	0.0
Cambodia	79	30	49	0	0.6	14	65	0	17.7
China	17	14	3	0	4.7	0	17	0	0.0
Philippines	1 596	783	812	1	1.0	221	1 373	2	13.9
Subtotal	1 695	828	866	1	1.0	235	1 458	2	13.9
Total	451 476	186 334	191 206	73 936	1.0	77 515	369 629	4 370	17.3

Countries reporting cases with data on sex or age. The male-to-female ratio is calculated on cases for which sex was reported, and the percentage of cases in children under 5 years on cases for which age was reported. Sex NR and Age NR are cases for which that information was not reported. The Democratic Republic of the Congo's age breakdown exceeds its reported total by 38 cases (0.05%) and is shown as submitted. Subtotals and the total sum the values reported and thus differ from the global total in Table 1. NR: not reported; -: not applicable.

Zero reporting

In total, 81 countries submitted a zero report for 2025, an increase from 58 in 2024,⁷ and no data were received from a further 77 (Table 5). A zero report is distinct from the absence of a submission: it indicates that no cases were detected by a surveillance system that was in operation, and it therefore carries information that silence does not. Tracking progress towards the 2030 Roadmap relies on evidence from a well-functioning epidemiological and laboratory surveillance system able to detect and confirm cases.⁹

Ten countries that had reported cases in 2024 submitted a zero report for 2025. Among them, Comoros had the highest 2024 case count (10 692 cases), followed by Iraq (596), Liberia (340), Togo (281), and the Syrian Arab Republic (169).⁷

For eight countries the zero report was accompanied by reported laboratory testing for *Vibrio cholerae*: the Syrian Arab Republic (925 RDTs and 350 cultures), Togo (189 RDTs), Liberia (123 cultures), the Dominican Republic (one RDT and 30 cultures), Bahrain (16 cultures), the Republic of Korea (16 cultures), Argentina (12 cultures), and Ecuador (nine cultures). No specimen tested by culture or PCR was positive for *Vibrio cholerae*; these testing data provide additional support for the zero report.

Table 5. Countries, territories, and areas reporting zero cholera cases, by WHO region, 2025

WHO region	Number of countries	Countries reporting zero cases
African Region	22	Algeria, Benin, Botswana, Burkina Faso, Cabo Verde, Central African Republic, Comoros, Equatorial Guinea, Eritrea, Eswatini, Gabon, Gambia, Guinea, Lesotho, Liberia, Madagascar, Mauritania, Mauritius, Sao Tome and Principe, Senegal, Seychelles, Togo
Region of the Americas	25	Antigua and Barbuda, Argentina, Bahamas, Barbados, Belize, Brazil, British Virgin Islands, Colombia, Dominica, Dominican Republic, Ecuador, El Salvador, Grenada, Guadeloupe, Guyana, Jamaica, Martinique, Nicaragua, Panama, Paraguay, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Suriname, Turks and Caicos Islands
Eastern Mediterranean Region	7	Bahrain, Egypt, Iraq, Jordan, Lebanon, occupied Palestinian territory, Syrian Arab Republic
European Region	0	
South-East Asia Region	5	Bhutan, Democratic People's Republic of Korea, Maldives, Sri Lanka, Timor-Leste
Western Pacific Region	22	Cook Islands, Fiji, Guam, Indonesia, Kiribati, Lao People's Democratic Republic, Marshall Islands, Micronesia (Federated States of), Mongolia, Republic of Naoero, New Zealand, Niue, Palau, Papua New Guinea, Republic of Korea, Samoa, Solomon Islands, Tokelau, Tonga, Tuvalu, Vanuatu, Viet Nam
Total	81	

No data were received for 2025 from a further 77 countries, territories, and areas (African Region four, Region of the Americas 12, Eastern Mediterranean Region six, European Region 52, Western Pacific Region three); these are not listed in the table.

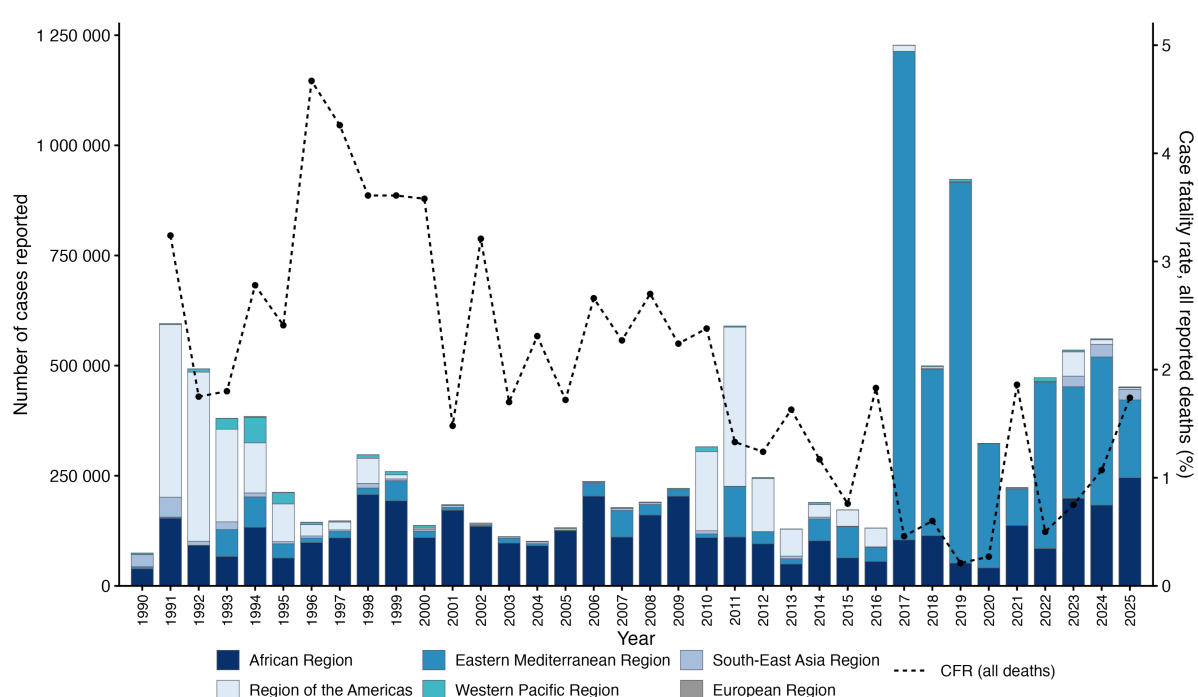
Cholera in the longer-term context

Comparisons of the number of reported cholera cases and deaths between years require caution because the number of countries reporting changes from year to year, and surveillance and reporting practices vary over time and between countries.

The number of cholera cases reported to WHO has fluctuated widely since 1990, reflecting successive regional epidemics rather than a steady global trend (Figure 1). The whole series is presented on a consistent WHO-region basis to facilitate comparison over time. The epidemic in the Americas dominated the early part of the series, peaking in 1991, when the region accounted for 391 220 of the 594 694 cases reported worldwide.⁷ The Region of the Americas also accounted for much of the 2010–2011 peak, the Eastern Mediterranean Region for the 2017 peak, and the African and Eastern Mediterranean regions for the resurgence observed since 2022, which continued through 2024 before reported cases fell in 2025. The 2025 case total remained above the case totals reported in 2020 and 2021 but below those reported in each year from 2022 to 2024. The African Region reported the largest share of cases in 20 of the 36 years, and the Eastern Mediterranean Region in seven of the eight years from 2017 to 2024; in 2025, the African Region again accounted for the largest share.

For consistency across the historical series, CFR is calculated using all reported deaths; on this basis, it was 1.7% in 2025, compared with 1.1% in 2024.⁷

Figure 1. Cholera cases reported to WHO by WHO region, and all-deaths case fatality rate, 1990 to 2025



Source: annual cholera reporting to WHO. No rate is plotted for 1990, for which no death total was published. Figures for earlier years reflect later revisions, so some bars differ slightly from the totals published at the time. CFR: case fatality rate.

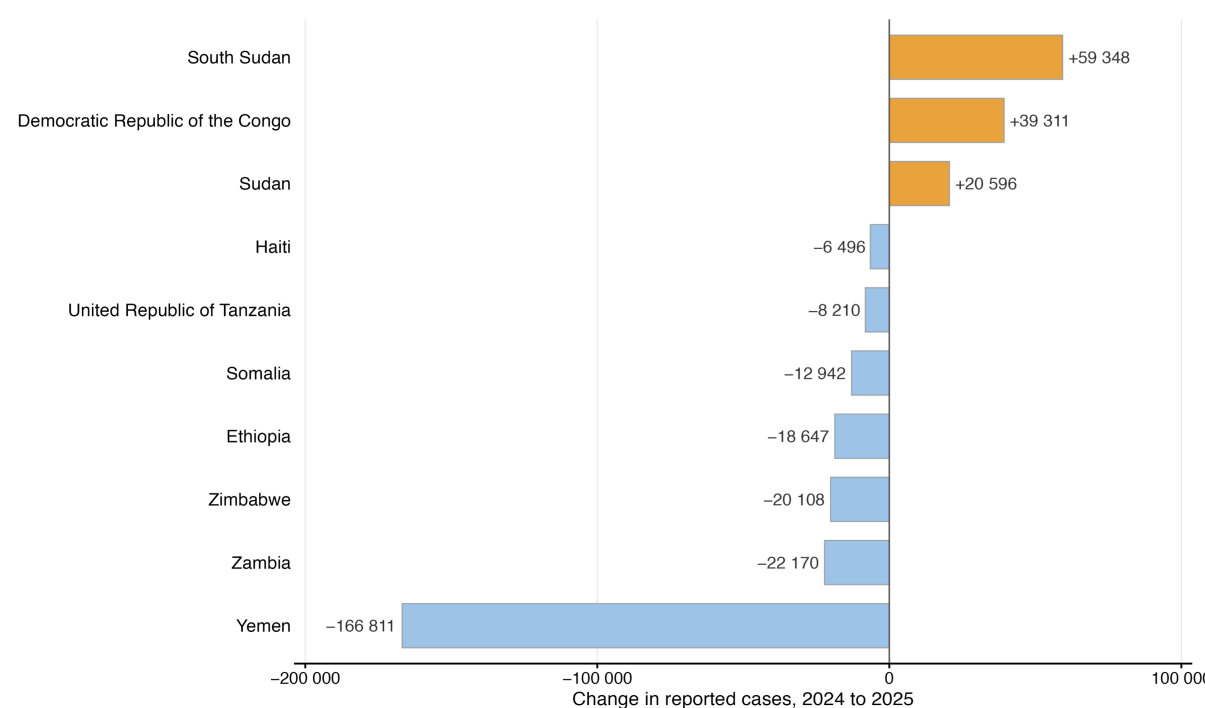
Comparison with 2024

Overall reported cases fell by 109 324 (19.5%), from 560 823 in 2024 to 451 499 in 2025. Among the 38 countries reporting cases in both years, cases fell by 138 096. Changes in the reporting pool partly offset this decline: countries reporting cases in 2024 but none in 2025, whether by zero report or by no submission, accounted for 12 418 fewer cases, while countries newly reporting cases in 2025 added 41 190, mostly from Angola (36 341).⁷

The decline among countries reporting in both years was largely driven by Yemen, which reported 166 811 fewer cases than in 2024. Excluding Yemen, cases increased by 28 715, with the largest increases in South Sudan (+59 348), the Democratic Republic of the Congo (+39 311), Sudan (+20 596), and Burundi (+5111). The overall decline therefore primarily reflected the decrease in Yemen, despite substantial increases elsewhere, particularly in the African Region (**Figure 2**).⁷

Reported deaths increased by 1842, from 6028 in 2024 to 7870 in 2025. The largest increases occurred in the Democratic Republic of the Congo (+1645 deaths), South Sudan (+898), Angola (+895), and Sudan (+705), while substantial declines occurred in Zambia (−722), Yemen (−633), and Zimbabwe (−398).⁷ The four countries with the largest increases accounted for a combined 4143 additional deaths, and each also reported more cases than in 2024, so reported deaths rose even as the global case total fell. These changes should be interpreted cautiously because the completeness of death reporting, including deaths occurring in the community, can vary between countries and years.

Figure 2. Change in reported cholera cases between 2024 and 2025 among countries reporting in both years, ten largest changes



Decreases are shown in blue and increases in orange. Countries that reported cases in only one of the two years are not shown. Comparison is with the figures reported for 2024.⁷

Editorial note

Global coordination and technical guidance

Timely reporting, supported by strong epidemiological and laboratory surveillance, remains vital to the global response and to achieving the goals of the 2030 Roadmap.⁹ These goals depend on a comprehensive multi-sectoral response combining water, sanitation, and hygiene (WASH) measures, early detection and response including rapid access to quality case management, risk communication and community engagement, and oral cholera vaccine (OCV).¹⁷

WHO and partners support cholera-affected countries in all of these areas. WHO hosts the GTFCC Secretariat, which coordinates global cholera activities and helps countries develop and implement multisectoral national cholera plans (NCPs), beginning with identification of priority areas for multisectoral interventions (PAMIs). The GTFCC Country Support Platform, hosted at the International Federation of Red Cross and Red Crescent Societies (IFRC), provides operational and technical assistance for advocacy, coordination, financing, implementation, and monitoring of NCPs. Current PAMI and NCP status is publicly available.¹⁸

Technical guidance, tools, and training materials developed by the GTFCC working groups are maintained in dedicated resource libraries,^{19,20} and recorded technical sessions and self-paced courses are available through the OpenWHO cholera channel.²¹

Vaccination and stockpile management

After several years of severely constrained supply, OCV availability improved in 2025. This reflected sustained efforts by manufacturers and partners, including expanded production capacity, WHO prequalification of the innovative Evuichol-S formulation in 2024,²² and WHO prequalification of a Shanchol product in September 2025.²³ Global production more than doubled,

¹⁷ World Health Organization. Cholera vaccines: WHO position paper – August 2017. Weekly Epidemiological Record. 2017;92(34):477–500. <https://www.who.int/publications/i/item/who-wer9234-477-500>

¹⁸ Global Task Force on Cholera Control. Country support & progress. Geneva: GTFCC. <https://www.gtfcc.org/our-work/country-support-progress/>

¹⁹ Global Task Force on Cholera Control. Guidelines & technical documents. Geneva: GTFCC. <https://www.gtfcc.org/page-resources/guidelines-technical-documents/>

²⁰ Global Task Force on Cholera Control. Training material. Geneva: GTFCC. <https://www.gtfcc.org/page-resources/training-material/>

²¹ World Health Organization. Cholera channel. OpenWHO. Geneva: World Health Organization. <https://openwho.org/channel/Cholera/493105>

²² World Health Organization. WHO prequalifies new oral simplified vaccine for cholera. Geneva: World Health Organization; 18 April 2024. <https://www.who.int/news/item/18-04-2024-who-prequalifies-new-oral-simplified-vaccine-for-cholera>

²³ World Health Organization. Shanchol. WHO Prequalification of Medical Products. Effective 25 September 2025. <https://extranet.who.int/prequal/vaccines/p/shanchol-0>

from around 30 million doses in 2022 to 80 million in 2025.²⁴ These gains allowed preventive vaccination to resume: under a GTFCC-agreed framework, WHO, Gavi, and UNICEF allocated 20 million doses for preventive campaigns in February 2026, with 3.6 million delivered to Mozambique, 6.1 million to the Democratic Republic of the Congo, and 10.3 million planned for Bangladesh.^{25,26}

Reactive vaccination reached its highest level on record in 2025. Countries continued to refine their reactive strategies in line with the recommendations of the International Coordinating Group (ICG) on Vaccine Provision, with the median interval between outbreak confirmation and campaign start falling to 45 days, from 64 days in 2024 and 120 days in 2022. The single-dose strategy adopted by the ICG in 2022, when the emergency stockpile could not meet demand, remained standard for outbreak response throughout 2025;^{25,27} a single dose confers high short-term protection (2–6 months) and significant, though reduced, protection for about 1–2 years.²⁸ During 2025, requests to the ICG totalled 116 million doses, of which 71 million were approved, including 20 million for preventive use.

Surveillance

Notification of cholera cases is no longer mandatory under the International Health Regulations (2005), but cholera-related public health events must be assessed against the Regulations' notification criteria.²⁹ Strengthening local surveillance, diagnostic capacity, and data management remains essential for early detection, outbreak monitoring, and identification of high-risk populations.

Because cholera outbreaks can cross national borders, countries benefit from timely sharing of surveillance information, including annual reporting of cholera indicators, and from coordinated control and elimination efforts.

International travel and trade

Experience shows that quarantine and embargoes on the movement of people and goods are ineffective in controlling the spread of cholera and are therefore unnecessary. Restrictions on imports of food produced in accordance with good manufacturing practices, solely because cholera is present in a country, are unjustified.

Countries that neighbour cholera-affected areas are encouraged to strengthen national disease surveillance and preparedness so that they can rapidly detect and respond to outbreaks should cholera spread across their borders. Information should be provided to travellers and communities about the potential risk of cholera, its symptoms, precautions for avoiding the disease, when and where to report cases, and where to seek treatment if necessary.

WHO does not advise routine screening, vaccination, or quarantine for travellers from cholera-affected areas, nor does WHO advise prophylactic administration of antibiotics or proof of their administration for travellers from or going to a country affected by cholera.

Conclusion

The 2025 decline in reported cholera cases masked substantial increases in several heavily affected countries and was driven largely by the decrease in Yemen. Despite this decline in cases, reported deaths rose by 31% globally, from 6028 to 7870. Seven countries accounted for about nine in 10 reported cases and deaths, underscoring the concentration of the global burden. Five of these countries were classified as conflict-affected during 2025, and all seven recorded conflict- or disaster-related internal displacement. In the African Region, cases rose 34% and deaths rose 58% compared with 2024; in the Eastern Mediterranean Region, cases fell 47%, while deaths were similar.

The facility-based CFR was below 1% globally but could be calculated for only 37 of the 47 countries reporting cases, 12 of which exceeded that benchmark. Community deaths and gaps in place-of-death reporting point to persistent challenges in timely access to care and mortality surveillance. Integrating oral rehydration solution and early case management into primary and community health care can help ensure timely treatment before illness becomes severe.

Zero reporting increased from 58 countries in 2024 to 81 in 2025. Comoros's return to zero reported cases after 10 692 in 2024 provides an encouraging example of substantial progress, while Haiti's continued reporting of cases since its 2022 resur-

²⁴ Gavi, the Vaccine Alliance. Six major health threats that could shape 2026: here's what experts are watching. Geneva: Gavi; 19 February 2026. <https://www.gavi.org/vaccineswork/six-major-health-threats-could-shape-2026-heres-what-experts-are-watching>

²⁵ Gavi, UNICEF, and World Health Organization. Preventive cholera vaccination resumes as global supply reaches critical milestone. Geneva: Gavi, UNICEF, and World Health Organization; 4 February 2026. <https://www.who.int/news/item/04-02-2026-preventive-cholera-vaccination-resumes-as-global-supply-reaches-critical-milestone>

²⁶ Global Task Force on Cholera Control. Preventative campaign: Oral Cholera Vaccine supply allocation framework. Guidance document. Geneva: GTFCC; 2024. <https://www.gtfcc.org/wp-content/uploads/2025/11/gtfcc-preventative-campaign-oral-cholera-vaccine-supply-allocation-framework.pdf>

²⁷ World Health Organization. Shortage of cholera vaccines leads to temporary suspension of two-dose strategy, as cases rise worldwide. Geneva: World Health Organization; 19 October 2022. <https://www.who.int/news/item/19-10-2022-shortage-of-cholera-vaccines-leads-to-temporary-suspension-of-two-dose-strategy-as-cases-rise-worldwide>

²⁸ Xu H, Tiffany A, Luquero FJ, Kanungo S, Bwire G, Qadri F, Garone D, Ivers LC, Lee EC, Malembaka EB, Mendiboure V, Bouhenia M, Breakwell L, Azman AS. Protection from killed whole-cell cholera vaccines: a systematic review and meta-analysis. *Lancet Glob Health*. 2025;13(7):e1203–e1212. doi: 10.1016/S2214-109X(25)00107-X. PMID: 40580988; PMCID: PMC12208782.

²⁹ World Health Organization. International Health Regulations (2005), as amended in 2014, 2022 and 2024. Geneva: World Health Organization; 2026. https://apps.who.int/gb/bd/pdf_files/IHR_2014-2022-2024-en.pdf

gence, after previously reaching the Roadmap's three-year elimination threshold, highlights how quickly progress can be reversed. With only a few years remaining to 2030, reaching the Roadmap goals of eliminating cholera transmission in up to 20 countries and reducing cholera deaths by 90% will require sustained investment in the priority areas for multisectoral interventions identified by countries, stronger surveillance, and more complete reporting, including of place of death. Improved OCV availability and the resumption of preventive vaccination expand the options available for control, but vaccination complements rather than substitutes for WASH measures, early detection and response, and quality case management.

Control of epidemic meningitis in countries in the African meningitis belt, 2025

Acute bacterial meningitis, an infection of the meninges surrounding the brain and spinal cord, is an important cause of mortality and long-term disability³⁰. Clinical deterioration can be rapid, and death may occur within 24 hours in the absence of prompt treatment. Approximately one in five survivors experiences long-term sequelae, including hearing loss, seizures, motor deficits, and cognitive impairment. Common presenting features include sudden-onset fever, headache, neck stiffness, and altered mental status³⁰.

The epidemiology of acute bacterial meningitis varies by geographical setting and causative pathogen. In the African meningitis belt, an area of sub-Saharan Africa extending from Senegal to Ethiopia, large, recurrent epidemics occur predominantly during the dry season, which generally extends from November to June, although its onset and duration vary by location and year. *Neisseria meningitidis* (*N. meningitidis*) is the principal cause of epidemic meningitis in the belt, while *Haemophilus influenzae* (*H. influenzae*) and *Streptococcus pneumoniae* (*S. pneumoniae*) also contribute substantially to the reported burden of bacterial meningitis³¹.

Within the meningitis belt, the epidemiology of meningococcal disease changed markedly after the introduction of meningococcal A conjugate vaccine (MenACV) beginning in 2010. Before vaccination, most epidemics in the belt were attributed to *N. meningitidis* serogroup A³¹. Mass preventive campaigns reduced confirmed serogroup A disease by more than 99% in vaccinated populations³², and no confirmed case of serogroup A meningitis has been reported since 2017 in countries that introduced MenACV³¹. Epidemics caused by other meningococcal serogroups nevertheless continue to occur, and the pentavalent meningococcal ACWYX conjugate vaccine (Men5CV/MMCV), prequalified by WHO in 2023, broadens prevention beyond serogroup A³³.

These vaccination developments form part of the broader strategy established through *Defeating meningitis by 2030: a global road map*, which was endorsed by the World Health Assembly in 2020 and launched by the World Health Organization (WHO) in 2021³⁴. The road map addresses the four principal causes of acute bacterial meningitis globally: *N. meningitidis*, *H. influenzae*, *S. pneumoniae*, and *Streptococcus agalactiae* (group B streptococcus)³⁴.

Reported cases, deaths, the case fatality rate (CFR), and the number of districts crossing the epidemic threshold (see note to Table 6) were lower in 2025 than in 2024, but interpretation is limited by non-reporting from Ethiopia and Uganda and by lower, compositionally different laboratory participation³⁵. Despite progress in vaccination and disease control, meningococcal epidemics have not been eliminated from the belt.

This article presents the epidemiological situation and laboratory surveillance findings for the African meningitis belt in 2025, outbreak response and reactive vaccination activities conducted during the year, progress in the introduction and preventive use of meningococcal conjugate vaccines, and implementation of the global road map.

Epidemiological situation and laboratory surveillance

Enhanced surveillance network and reporting

The enhanced surveillance network has expanded from eight countries in 2003 to 26 in 2025, when Sierra Leone joined, reflecting sustained country commitment to enhanced meningitis surveillance in the region. Participating countries compile district-level epidemiological and laboratory data and submit them weekly to the WHO Regional Office for Africa, which consolidates and analyses the data and publishes a weekly bulletin³⁵. For this analysis, the meningitis epidemic season was defined as epidemiological weeks 1–26, and results are presented for both that period and the full year.

³⁰ World Health Organization. Meningitis. Fact sheet. Geneva: World Health Organization; 1 April 2025. <https://www.who.int/news-room/fact-sheets/detail/meningitis>

³¹ World Health Organization. Control of epidemic meningitis in countries in the African meningitis belt, 2024. Weekly Epidemiological Record. 2025;100(38):385–400.

³² Trotter CL, Lingani C, Fernandez K, Cooper LV, Bitá A, Tevi-Benissan C, et al. Impact of MenAfriVac in nine countries of the African meningitis belt, 2010–15: an analysis of surveillance data. Lancet Infect Dis. 2017;17(8):867–872. doi: 10.1016/S1473-3099(17)30301-8

³³ World Health Organization. Meningococcal vaccines: WHO position paper on the use of multivalent meningococcal conjugate vaccines in countries of the African meningitis belt, January 2024. Weekly Epidemiological Record. 2024;99(1–2):1–10.

³⁴ World Health Organization. Defeating meningitis by 2030: a global road map. Geneva: World Health Organization; 2021.

³⁵ WHO Regional Office for Africa. Meningitis weekly bulletins and validated meningitis surveillance dataset, 2025. Brazzaville: WHO Regional Office for Africa; 2025.

Of the 26 countries in the network, 24 submitted epidemiological data for 2025, including Angola and Sierra Leone, which lie outside the historical meningitis belt. No data were received from Ethiopia or Uganda. Three countries reported for part of the year only: Angola to week 32, Guinea-Bissau to week 36, and the United Republic of Tanzania to week 24 (**Table 6**). An absent country report was treated as missing data, not as an absence of disease. Countries that did not report were therefore excluded from denominators used for comparisons with earlier years, and like-for-like comparisons were restricted to countries that submitted data in both 2024 and 2025 ³⁵.

Cases, deaths, and districts crossing thresholds

During the 2025 meningitis epidemic season, 14 318 suspected cases and 656 deaths were reported, giving a CFR of 4.6%. Over the full year, 21 526 suspected cases and 971 deaths were reported, resulting in a CFR of 4.5% ³⁵. The epidemic season accounted for 66.5% of cases and 67.6% of deaths reported over the year, a lower seasonal concentration than in 2024, when 72.4% of cases and 78.8% of deaths occurred during the season ³¹.

The reported case total was lower than in 2024, when 26 457 suspected cases were reported over the year ³¹, representing a crude reduction of 18.6%. This comparison is dominated by a change in the reporting pool and cannot be interpreted as an equivalent reduction in disease burden. Ethiopia and Uganda together contributed 3766 cases in 2024 and submitted no data for 2025, accounting for 76% of the apparent decline. Among countries that reported in both years, cases declined by 5.9% (**Figure 3**).

Reported deaths were less sensitive to the change in the reporting pool. Deaths decreased from 1397 in 2024 ³¹ to 971 in 2025, a crude reduction of 30.5%, and by 30.8% among countries reporting in both years. The CFR decreased from 5.3% to 4.5% across all reporting countries and from 6.0% to 4.4% on a like-for-like basis. Incomplete reporting from the Democratic Republic of the Congo and Nigeria in 2024 understated both case and death totals for that year; the resulting reductions may therefore be underestimated, while the effect on the CFR comparison cannot be determined. Over the year, 118 districts crossed the alert threshold, and 18 crossed the epidemic threshold, including 15 during the epidemic season (**Table 6**). In 2024, 46 districts crossed the epidemic threshold ³¹, including 17 in Ethiopia, which did not report in 2025 ³⁵.

Reported cases remained concentrated in a small number of countries. The Democratic Republic of the Congo reported the largest number of suspected cases (5602, with 419 deaths), followed by Nigeria (3916 cases, 143 deaths), and Niger (2604 cases, 110 deaths); together, these three countries accounted for 56.3% of all cases reported in 2025 (**Figure 4A**). Senegal reported 1150 cases, compared with 332 in 2024 ³¹, the largest proportional increase in the network, although its 2024 data covered only the first 18 weeks of that year ³⁵, so the increase is not directly interpretable.

The reported CFR varied widely between countries, from zero in three countries (Burundi, Guinea-Bissau, and the United Republic of Tanzania) to 20.8% in Sierra Leone (**Figure 4B**). The highest reported values were in Sierra Leone (20.8%) and Angola (19.2%), followed by Chad (9.2%), Gambia (9.1%), Sudan (7.9%), and the Democratic Republic of the Congo (7.5%). These rates are based on suspected rather than confirmed cases ³⁶, and several rest on small numbers; in Gambia, for example, the CFR was based on two deaths among 22 cases. Although its CFR was lower than those of five countries, the Democratic Republic of the Congo accounted for 43.2% of all deaths reported in 2025 because of its much larger case burden. The two highest CFRs were reported by countries outside the meningitis belt, neither of which submitted pathogen confirmation data. These differences may therefore partly reflect surveillance practices, including preferential detection of more severe cases, rather than differences in underlying disease lethality.

³⁶ World Health Organization. Standard case definitions of acute bacterial meningitis and invasive meningococcal disease for routine and outbreak surveillance. Geneva: World Health Organization; 2025 (WHO/B09491). <https://www.who.int/publications/i/item/B09491>

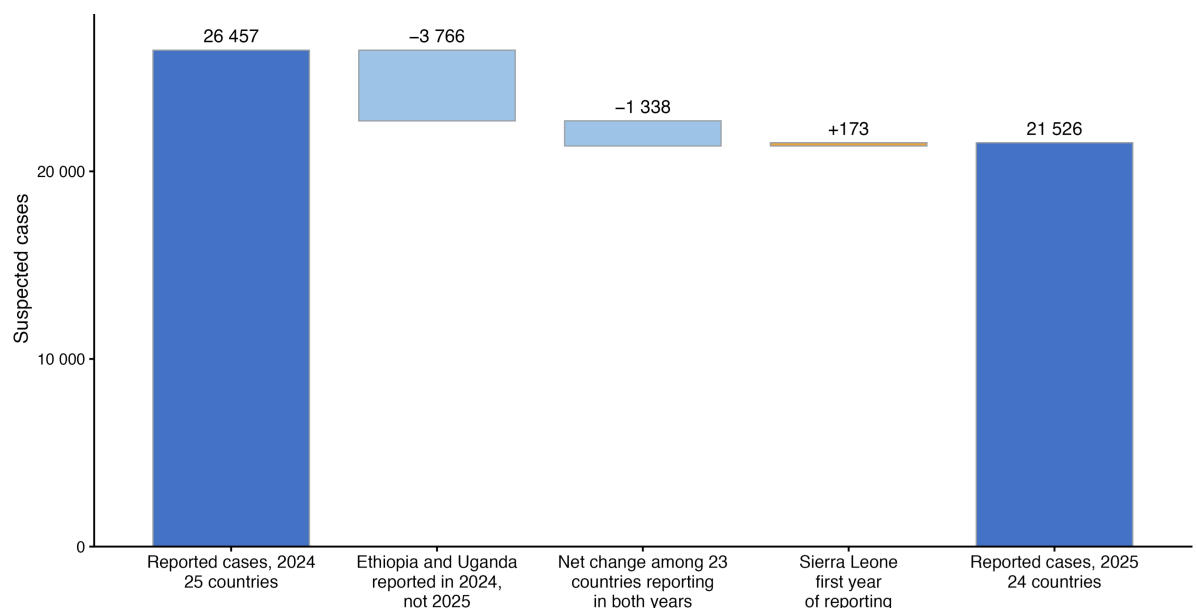
Table 6. Suspected meningitis cases, deaths, and districts crossing the epidemic threshold, countries under enhanced surveillance in the African meningitis belt, 2025

Country	No. of suspected cases		No. of deaths		Districts crossing epidemic threshold	
	Season	Annual	Season	Annual	Season	Annual
Angola	109	130	19	25	0	0
Benin	760	1 257	5	13	0	1
Burkina Faso	1 082	1 862	43	64	0	0
Burundi	91	161	0	0	0	0
Cameroon	378	759	3	6	0	0
Central African Republic	343	546	10	18	0	0
Chad	432	541	49	50	2	2
Côte d'Ivoire	34	57	1	1	0	0
Democratic Republic of the Congo	2 996	5 602	223	419	2	4
Ethiopia	–	–	–	–	–	–
Gambia	15	22	2	2	0	0
Ghana	488	590	20	20	2	2
Guinea	214	342	2	2	0	0
Guinea-Bissau	1	1	0	0	0	0
Kenya	13	29	2	2	0	0
Mali	410	801	0	1	0	0
Mauritania	0	0	0	0	0	0
Niger	1 838	2 604	86	110	2	2
Nigeria	3 639	3 916	124	143	5	5
Senegal	673	1 150	10	21	0	0
Sierra Leone	89	173	21	36	0	0
South Sudan	59	114	4	6	1	1
Sudan	186	191	15	15	0	0
United Republic of Tanzania	27	27	0	0	0	0
Togo	441	651	17	17	1	1
Uganda	–	–	–	–	–	–
Total	14 318	21 526	656	971	15	18

Data cover the epidemic season (weeks 1–26) and the full year (weeks 1–52), except for Angola (to week 32), Guinea-Bissau (to week 36), and the United Republic of Tanzania (to week 24). Ethiopia and Uganda did not report; – denotes non-reporting. Districts crossing the alert threshold (85 during the epidemic season and 118 over the year) are not shown. For districts of 30 000–100 000 inhabitants, the alert and epidemic thresholds are three and 10 suspected cases per 100 000 inhabitants in one week, respectively; for districts below 30 000 inhabitants, they are two and five suspected cases in one week, with additional criteria based on historical incidence or doubling over three weeks³⁷. For populations above 100 000, assessment is conducted in administrative or surveillance areas of 30 000–100 000 inhabitants. Source: WHO Regional Office for Africa meningitis surveillance data.

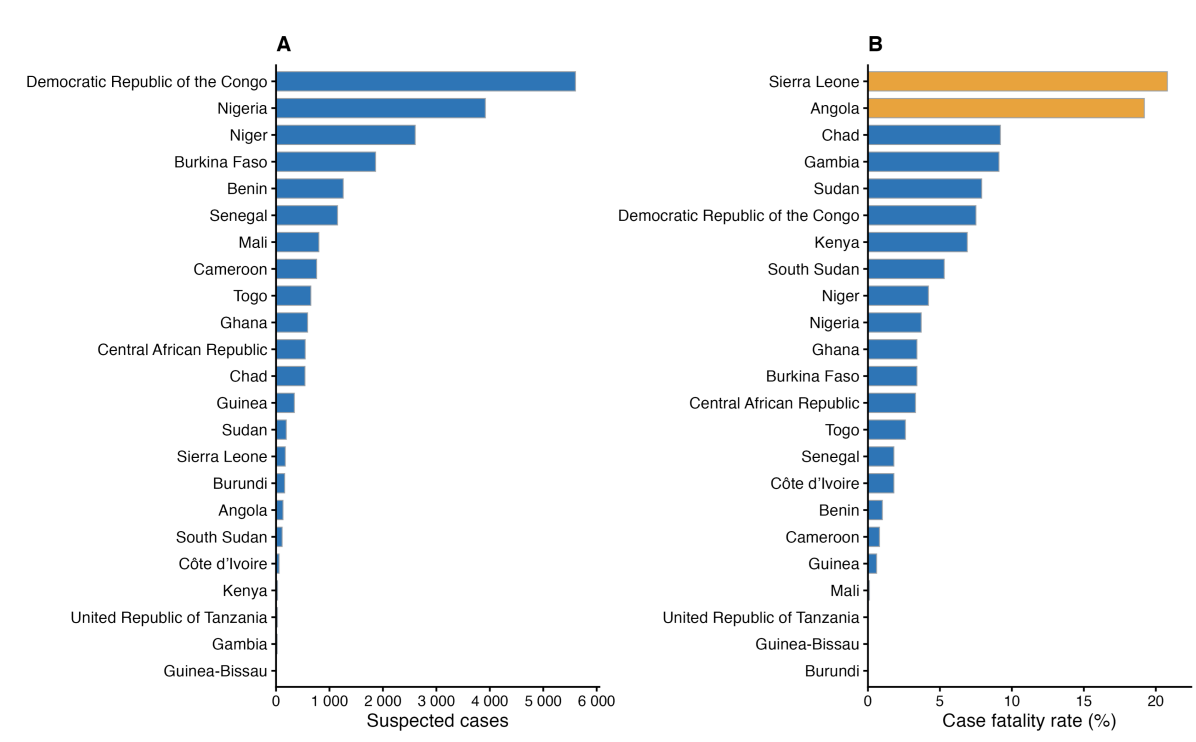
³⁷ World Health Organization. Managing meningitis epidemics in Africa: a quick reference guide for health authorities and health-care workers, revised 2015. Geneva: World Health Organization; 2015 (WHO/HSE/GAR/ERI/2010.4 Rev.¹).

Figure 3. Decomposition of the change in reported suspected cases, 2024 to 2025



The observed change is separated into the effect of Ethiopia and Uganda not reporting in 2025, the net change among the countries that reported in both years, and the addition of Sierra Leone to the network.

Figure 4. Suspected cases and CFR by country, 2025



Panel A, suspected cases reported over the year; panel B, CFR, with countries at or above 10% shown in amber. Countries reporting no cases are omitted.

Laboratory surveillance

Routine laboratory surveillance within the network includes the collection and testing of cerebrospinal fluid (CSF) specimens, identification of the causative pathogen, and determination of the serogroup for *N. meningitidis*.

Countries reported collecting 8569 CSF specimens in 2025, including 5731 during the epidemic season (Table 7). A bacterial pathogen was identified in 1280 of the 8462 specimens tested, corresponding to 15.1%, compared with 14.9% in 2024^{31,35}; 1081 of these identifications were reported during the epidemic season. Compared with 2024, the number of specimens collected declined by 42.6%, from 14931 to 8569, while the number in which a pathogen was identified declined by 42.5%, from 2227 to 1280^{31,35}. Because the epidemiological and laboratory data are not case-linked and may cover different reporting periods or

surveillance streams, specimen counts cannot be used to estimate the proportion of suspected cases from whom specimens were collected.

The pathogen distribution described below reflects only the countries that submitted laboratory results, not the meningitis belt as a whole ³⁵. Nigeria reported confirmed serogroup C and W activity without submitting corresponding laboratory results, indicating a reporting gap between national laboratory confirmation and the enhanced surveillance dataset that requires follow-up with countries.

Among the 1280 specimens in which a pathogen was identified, *S. pneumoniae* was the most frequently reported pathogen, accounting for 39.9% of identifications, followed by *N. meningitidis* serogroup C (28.4%) and serogroup W (17.3%) (**Figure 5**). Collectively, meningococcal serogroups accounted for 47.8% of identifications. *H. influenzae* type b was identified in 39 specimens (3.0%), and *H. influenzae* other than type b in 61 (4.8%), the two together accounting for 100 identifications, or 7.8%. The latter category includes the five other typable serotypes and non-typeable organisms and cannot be interpreted further. No *N. meningitidis* serogroup A or B, and no group B *Streptococcus*, was identified in the laboratory data reported for 2025 ³⁵.

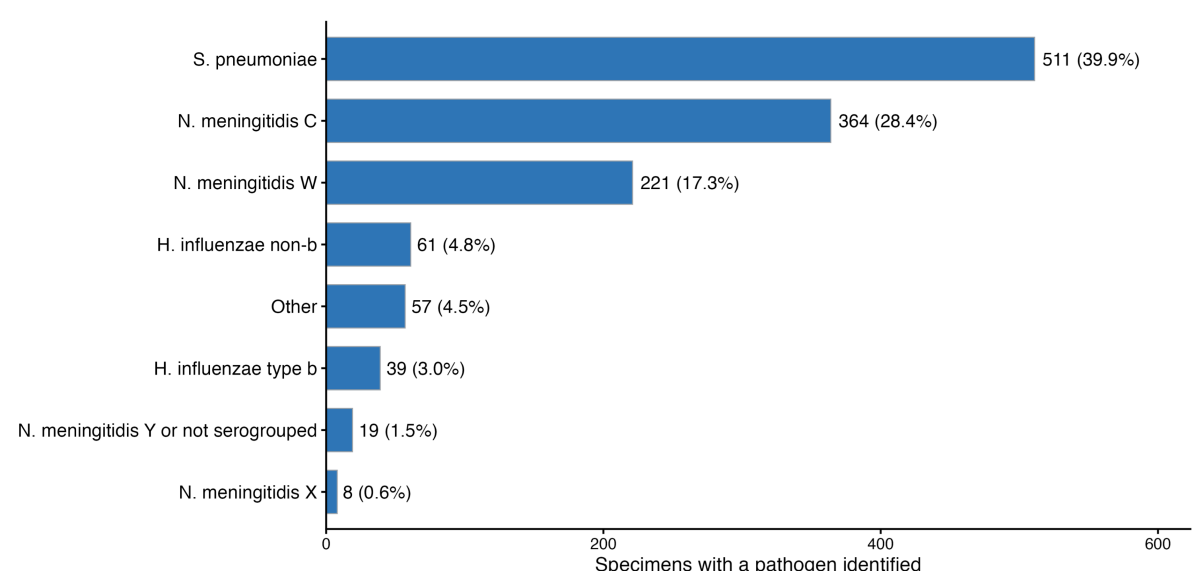
Comparison with 2024 is limited by changes in the countries contributing laboratory data and by the concentration of 2025 identifications in a small number of countries. Niger alone accounted for 677 of the 1280 identifications (52.9%), including 316 of 364 serogroup C identifications and 177 of 221 serogroup W identifications. Nigeria, which contributed 264 specimens and 105 serogroup C identifications in 2024 ³¹, submitted no laboratory data for 2025. Differences in reported pathogen proportions between the two years therefore cannot be interpreted as evidence of changes in pathogen circulation across the belt ³⁵.

Table 7. Cerebrospinal fluid specimens and pathogens reported, countries under enhanced surveillance, 2025 (full year)

Country	Specimens collected	Specimens tested	Pathogen identified	Nm C	Nm W	Nm X	Nm Y	Nm ns	Spn	Hib	Hi non-b	Other
Burkina Faso	1 747	1 682	161	20	11	1	0	7	103	8	10	1
Cameroon	804	804	34	0	0	0	1	1	2	1	0	29
Central African Republic	552	552	33	0	0	0	0	0	28	0	0	5
Chad	256	256	87	26	7	0	0	8	41	0	5	0
Côte d'Ivoire	105	105	10	0	0	0	0	1	8	1	0	0
Democratic Republic of the Congo	76	76	1	0	1	0	0	0	0	0	0	0
Ghana	590	563	51	0	1	0	0	0	47	0	1	2
Guinea	109	94	18	1	0	0	0	0	9	0	2	6
Kenya	520	520	15	0	0	0	0	0	1	0	0	14
Mali	766	766	130	1	24	0	0	0	61	9	35	0
Niger	2 177	2 177	677	316	177	7	0	1	152	16	8	0
Togo	867	867	63	0	0	0	0	0	59	4	0	0
Total	8 569	8 462	1 280	364	221	8	1	18	511	39	61	57

Only countries submitting usable laboratory data are shown. The proportion with a pathogen identified is calculated among specimens tested, including those recorded as contaminated or in process. Nm = *Neisseria meningitidis*; Spn = *Streptococcus pneumoniae*; Hib = *Haemophilus influenzae* type b; Nm ns = *N. meningitidis* not serogrouped. "Other" comprises identifications outside the named categories. Source: WHO Regional Office for Africa meningitis surveillance data.

Figure 5. Pathogens identified among specimens with a pathogen reported, 2025



Percentages are of the 1 280 specimens in which a pathogen was identified over the year. The category shown as *N. meningitidis* Y or not serogrouped combines the Nm Y and Nm ns columns of Table 7 (1 and 18 identifications, respectively).

Molecular surveillance

Molecular surveillance is essential for monitoring the circulation of strains and for detecting the emergence of clones with high epidemic potential. The circulation of meningococcal strains in the meningitis belt is monitored with the support of the WHO collaborating centres for bacterial meningitis, currently the Institut Pasteur, Paris, France, and the Norwegian Institute of Public Health, Oslo, Norway. Timely strain characterization remains a challenge, given the very limited number of culture isolates from countries in the belt, the complexity and cost of molecular characterization performed directly on CSF specimens, and limited awareness in countries of the resources available for such characterization. Results were reported for a small number of countries in 2025. The molecular and serotyping findings described here and in the following paragraph were reported to WHO during 2025. Specimens from Chad were assigned to clonal complex (CC) 10217 for *N. meningitidis* serogroup C and to CC11 for serogroup W. The CC10217 genomes carried mutations associated with reduced ciprofloxacin susceptibility. Ciprofloxacin is among the agents used for meningococcal chemoprophylaxis, so continued monitoring of susceptibility alongside strain characterization is warranted.

Serotyping of *S. pneumoniae* from the pneumococcal outbreak in Togo in 2025 identified serotype 1 as the main circulating serotype, in 16 of 25 specimens. This is consistent with established epidemiological data showing that serotype 1 is a common cause of invasive pneumococcal disease in sub-Saharan Africa ³⁸. The remaining nine specimens were identified as serotypes 23F, 18C, 19A, and 12F.

Outbreak response activities

Districts crossing the alert and epidemic thresholds

The alert and epidemic thresholds vary by district population size and are defined in the note to Table 6 ³⁷. Crossing the alert threshold should prompt investigation, specimen collection, and intensified preparedness for epidemic response. Districts exceeding the epidemic threshold trigger epidemic-response measures, but confirmation of the causative organism is required before a serogroup-specific reactive vaccination campaign is undertaken.

During the epidemic season, 15 districts in seven countries crossed the epidemic threshold: Nigeria (five), Chad, the Democratic Republic of the Congo, Ghana, and Niger (two each), and South Sudan and Togo (one each). In the same period, 85 districts in 14 countries crossed the alert threshold: the Democratic Republic of the Congo (32), Ghana (10), the Central African Republic and Niger (six each), Chad and Mali (five each), Burkina Faso, Nigeria, and Senegal (four each), Cameroon (three), Benin and Togo (two each), and Gambia and Guinea (one each). Over the full year, 18 districts in eight countries crossed the epidemic threshold and 118 districts in 15 countries crossed the alert threshold; the three additional epidemic-threshold districts were in the Democratic Republic of the Congo (two) and Benin (one).

³⁸ Bricio-Moreno L, Chaguza C, Yahya R, Shears RK, Cornick JE, Hokamp K, et al. Lower density and shorter duration of nasopharyngeal carriage by pneumococcal serotype 1 (ST217) may explain its increased invasiveness over other serotypes. *mBio*. 2020;11(6):e00814-20. doi: 10.1128/mBio.00814-20

Confirmed outbreaks and reactive vaccination

When a meningococcal outbreak is confirmed, a country may request vaccine from the International Coordinating Group on Vaccine Provision (ICG) for a reactive campaign. The ICG coordinates access to an emergency stockpile of meningococcal conjugate vaccines³⁷. Requests are assessed against epidemiological and laboratory evidence, and approved doses are released for campaigns targeting the affected districts.

Three countries conducted ICG-supported reactive campaigns with Men5CV in 2025. In Nigeria, the campaigns responded to outbreaks involving *N. meningitidis* serogroups C and W in northern states from February to May. Four local government areas, Aliero, Gwandu, and Jega in Kebbi State, and Tambuwal in Sokoto State, crossed the epidemic threshold from epidemiological weeks 11 to 13. In Niger, the campaign responded to a serogroup C outbreak in Dogon Doutchi and Zinder Ville from March to May. In Chad, the campaign responded to a predominantly serogroup C outbreak in Ouaddaï Province from May to July.

The campaigns in Nigeria were conducted from 19 April to 31 May in ten local government areas across five states. The campaign in Niger began on 13 May in two districts, while the campaign in Chad was conducted from 2 to 8 July in three districts (Table 8). The target population was aged 1–29 years in Nigeria and Niger, and 1–19 years in Chad. Across the three countries,

3 288 785 people were vaccinated against a final campaign target of 3 355 013. A total of 3 913 750 doses of Men5CV were shipped, including allowances for wastage and buffer stock, and approximately 524 000 doses remained after the campaigns.

Post-campaign coverage surveys produced estimates ranging from 64% to 97% by local government area in Nigeria. A survey was conducted in Niger, but its results were not available for inclusion in this report. No survey was conducted in Chad. Across the three countries, 1306 non-serious adverse events following immunization were reported, comprising 909 in Nigeria, 295 in Niger, and 102 in Chad; no serious events were reported.

Table 8. Reactive vaccination campaigns with Men5CV, by country and district, 2025

Country	State/region	District or local government area	Campaign start	Target population	Vaccinated	Coverage (%)	
						Administrative	Survey
Nigeria	Adamawa	Mubi North	24 May	182 033	188 374	103	95
	Gombe	Kaltungo	26 May	190 782	189 748	99	97
		Yamaltu Deba	26 May	325 068	314 663	97	82
	Kebbi	Aliero	19 April	82 487	80 099	97	94
		Gwandu	19 April	188 819	191 821	102	96
		Jega	19 April	241 746	184 681	76	84
	Sokoto	Shagari	19 April	191 991	168 349	88	81
		Tambuwal	19 April	276 092	260 921	95	64
	Yobe	Fune	20 May	404 747	412 826	102	82
		Nguru	20 May	202 714	205 553	101	83
Niger	Zinder	Zinder Ville	13 May	371 778	397 123	107	–
	Dosso	Dogon Doutchi	13 May	432 547	415 852	96	–
Chad	Ouaddaï	Abéché	2 July	107 662	110 873	103	–
		Amleyouna	2 July	77 098	84 129	109	–
		Farchana	2 July	79 449	83 773	105	–
Total				3 355 013	3 288 785	98	–

Campaigns were supported by the ICG. Administrative coverage is the number vaccinated as a percentage of the target population. Survey coverage is the post-campaign coverage survey estimate; a dash denotes that no district-level validated estimate was available. The target population was aged 1–29 years in Nigeria and Niger and 1–19 years in Chad. Maradi Ville, Niger, is not included: 2183 people were vaccinated there outside the ICG-supported campaign. Source: WHO records of ICG-supported reactive vaccination and country campaign reports.

Meningococcal conjugate vaccine introduction and preventive use

MenACV introduction, routine immunization, and catch-up

Between 2010 and 2019, 24 of the 26 countries in the meningitis belt conducted mass preventive MenACV campaigns targeting people aged 1–29 years, either nationwide or in high-risk areas ³³. In the nine countries analysed for 2010–2015, the incidence of confirmed serogroup A meningitis declined by more than 99% in fully vaccinated populations, and no serogroup A epidemic was reported in those populations ³². To maintain population immunity among subsequent birth cohorts, 15 of the 24 countries incorporated MenACV into routine immunization after the paediatric formulation was prequalified in 2014 ^{31,39}. The vaccine is administered at 9–12 months of age with the first dose of measles-containing vaccine, or at 15–18 months with the second dose ^{31,39}. Most countries introduced routine vaccination 3–10 years after their preventive campaign and conducted catch-up vaccination for children born during the intervening period.

For the 15 countries using MenACV in routine immunization, the unweighted mean of the 2025 national WHO/UNICEF coverage estimates was 61% ⁴⁰. WHO programme data indicate that approximately 10 million children received MenACV in 2025 and that approximately 425 million people had been vaccinated through mass campaigns, catch-up campaigns, or routine immunization by 31 December 2025.

MenACV activities during 2025

In 2025, no additional country in the meningitis belt introduced MenACV into routine immunization or organized a catch-up campaign. Children aged 9–18 months continued to be vaccinated through the routine immunization schedules of the 15 countries that introduced MenACV between 2016 and 2024. Reported MenACV coverage ranged from 40% in the Central African Republic to 91% in Ghana ⁴⁰.

Preventive introduction of Men5CV

The Strategic Advisory Group of Experts on Immunization recommended the use of Men5CV in countries of the meningitis belt in September 2023, and the Gavi Board approved expansion of its meningococcal programme to include multivalent meningococcal conjugate vaccines in December 2023 ^{33,41}. The WHO recommendation was published in January 2024 as an addendum to the position paper on meningococcal vaccines ³³. Men5CV is intended to prevent a resurgence of serogroup A epidemics and to prevent, and potentially eliminate, epidemics caused by serogroups A, C, W, X, and Y. Realizing that potential will require not only continued coordination but stronger investment in, and technical support for, the preventive use of Men5CV, with prioritization of the districts and populations at highest risk.

Each country's introduction strategy is informed by a meningitis risk assessment, which considers whether an initial mass preventive campaign is warranted, which areas should be targeted where only part of the country is at high risk, and how the vaccine should be incorporated into the routine immunization schedule (**Map 2**). Six countries (Benin, Cameroon, Chad, South Sudan, Sudan, and Togo) conducted risk assessments during 2025, following five countries in the second half of 2024. On the basis of these assessments, Benin, Chad, Sudan, and Togo applied for Gavi support, as did Mali, which had completed its assessment in late 2024.

Niger, whose application was approved in 2024, conducted the first Gavi-supported preventive Men5CV campaign and, as of 31 December 2025, remained the only country to have done so. The campaign was implemented in two phases during November and December 2025, jointly with a typhoid conjugate vaccine campaign targeting the same population aged 1–19 years. Consistent with WHO recommendations, populations in districts covered by reactive Men5CV campaigns in 2024 or 2025 were not revaccinated with Men5CV and received typhoid conjugate vaccine only. The campaign reached 12.3 million people, corresponding to reported administrative coverage of 100%; a post-campaign survey was conducted and preliminary results indicated high coverage. A meningococcal carriage survey was conducted at three sites before the campaign, and post-vaccination carriage surveys were planned for 2026 to assess its effect on meningococcal carriage. Niger also planned to introduce Men5CV into routine immunization in mid-2026, replacing MenACV administered at 9 months of age with Men5CV administered at 16 months.

In December 2025, the Gavi Board approved the scope and design of country vaccine budgets for 2026–2030, with meningococcal vaccines included in discretionary budgets ⁴². During Gavi's organizational restructuring and strategic recalibration, review of country applications was paused, with applications including Men5CV expected between mid-2026 and mid-2027. These arrangements may delay or constrain Men5CV introduction in some countries and may require some countries to finance a larger share of their MenACV programmes ⁴².

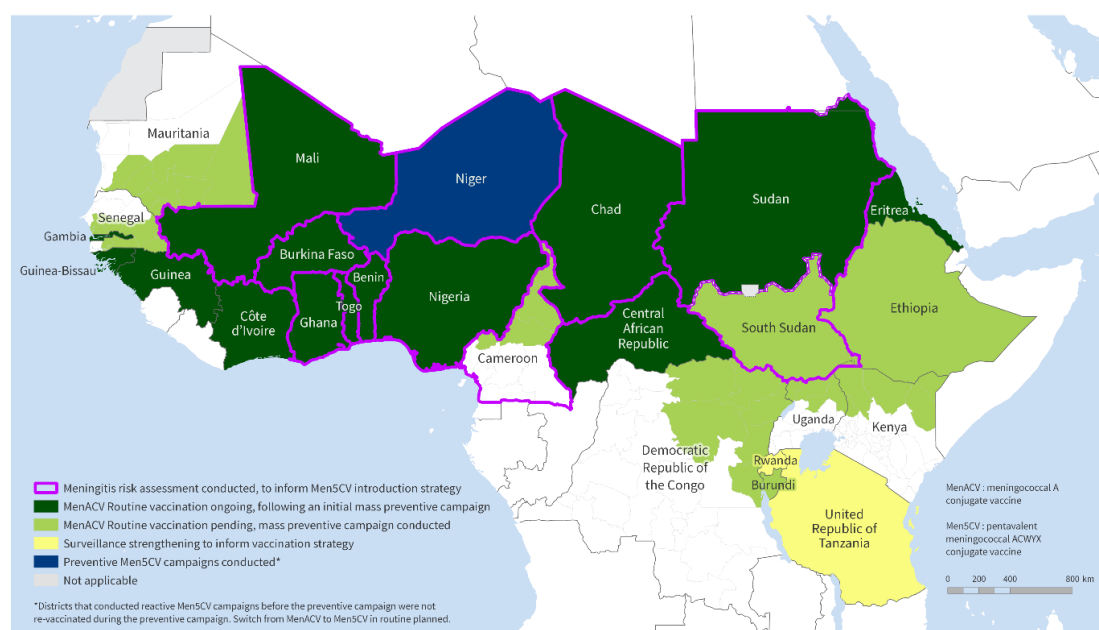
³⁹ World Health Organization. Meningococcal A conjugate vaccine: updated guidance, February 2015. *Weekly Epidemiological Record*. 2015;90(8):57–68.

⁴⁰ World Health Organization and United Nations Children's Fund. WHO/UNICEF immunization coverage estimates - 2025 revision. Geneva: World Health Organization and United Nations Children's Fund; 2026.

⁴¹ Gavi, the Vaccine Alliance. Review of decisions: Board meeting, 6–7 December 2023. Geneva: Gavi, the Vaccine Alliance; 2023.

⁴² Gavi, the Vaccine Alliance. 2026–2030 strategy: country vaccine budgets (including portfolio optimisation and prioritisation). Gavi Board meeting, 3–4 December 2025. Geneva: Gavi, the Vaccine Alliance; 2025.

Map 2. Status of meningococcal conjugate vaccine (MenACV and Men5CV) roll-out in the African meningitis belt, as of 31 December 2025



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.

Data Source: WHO
Map Production: WHO GIS Centre for Health, DNA/DDI
Map Creation Date: 15 May 2026

Defeating meningitis by 2030 global road map

Implementation of *Defeating meningitis by 2030: a global road map* advanced during 2025 through regional frameworks, support for national planning, technical collaboration, integrated programme delivery, and new clinical guidance ³⁴.

Regional implementation frameworks were launched for the Eastern Mediterranean Region and the South-East Asia Region during their respective Regional Committee sessions ^{43,44}. Together with frameworks previously established for the Region of the Americas and the African Region, four WHO regions had dedicated implementation frameworks by the end of 2025. The operational manual for developing national meningitis plans was available in four languages and was used across regions ⁴⁵.

The tenth meeting of the Technical Taskforce was held in Chile in September 2025 and organized jointly by WHO headquarters and the WHO Regional Office for the Americas. Participants included Taskforce members from every WHO region, representatives of regional civil society organizations and professional societies, and representatives of Brazil, Chile, Costa Rica, El Salvador, and Uruguay. Working across the five pillars of the road map, the meeting reviewed progress and challenges, informed the 2026–2030 work plan, and considered how support for national meningitis plans could be strengthened. Examples from the Region of the Americas included national training packages on diagnosis, surveillance, and clinical management; training for hospital laboratory staff; updated laboratory surveillance guidance and real-time dashboards; decentralization of laboratory capacity to priority territories; and procurement of reagents and supplies for bacteriological diagnosis.

At a side event during the Seventy-eighth World Health Assembly, the Ministries of Health of Mali, Nigeria, and Pakistan, together with Gavi, considered opportunities to integrate activities for malaria, meningitis, and polio. Participants presented examples of integrated delivery, including joint vaccination campaigns and bed-net distribution, and identified opportunities to extend integration to surveillance, diagnosis, treatment, long-term care, and prevention ⁴⁶.

The WHO guidelines on meningitis diagnosis, treatment, and care were published in April 2025 and provide evidence-based recommendations for the clinical management of community-acquired acute meningitis in children aged over 1 month, adolescents, and adults ⁴⁷. Webinars disseminated the principal recommendations, and a workshop was held for countries attending the Technical Taskforce meeting.

⁴³ WHO Regional Office for the Eastern Mediterranean. Framework for implementing the Defeating meningitis by 2030 global road map in the Eastern Mediterranean Region. Cairo: WHO Regional Office for the Eastern Mediterranean; 2025.

⁴⁴ WHO Regional Office for South-East Asia. Regional implementation framework to defeat meningitis in South-East Asia by 2030. New Delhi: WHO Regional Office for South-East Asia; 2025.

⁴⁵ World Health Organization. Developing national meningitis plans: an operational manual. Geneva: World Health Organization; 2025 (ISBN 9789240094284).

⁴⁶ World Health Organization. Global health leaders urge action on immunization priorities at Seventy-eighth World Health Assembly. Geneva: World Health Organization; 4 June 2025.

⁴⁷ World Health Organization. WHO guidelines on meningitis diagnosis, treatment and care. Geneva: World Health Organization; 2025.

National meningitis plans in the African Region

In total, 30 of the 38 priority countries of the African Region were supported to develop national strategic plans for meningitis through two face-to-face workshops. At the request of some countries, the workshops were followed by technical assistance and financial support to finalize the plans. As of 31 December 2025, 11 of the 38 priority countries had finalized their plans, namely Benin, Burkina Faso, Cameroon, the Central African Republic, Côte d'Ivoire, the Democratic Republic of the Congo, Guinea, Mali, Niger, Nigeria, and Togo; the remaining 27 had not completed the process but had begun to implement key activities. All 38 priority countries were supported in implementing their national strategic plans.

Conclusion

In 2025, 24 of the 26 countries in the enhanced surveillance network reported 21 526 suspected cases and 971 deaths, with a CFR of 4.5%. Reported cases, deaths, the CFR, and the number of districts crossing the epidemic threshold were lower than in 2024, but interpretation is limited by non-reporting from Ethiopia and Uganda. Among countries reporting in both years, cases declined by 5.9%, compared with the crude decline of 18.6%. Limited and uneven laboratory participation also constrained inference about pathogen circulation across the belt.

Programme developments included the continued absence of reported *N. meningitidis* serogroup A in countries that introduced MenACV, ICG-supported reactive Men5CV campaigns reaching 3 288 785 people in Chad, Niger, and Nigeria, and Niger's first Gavi-supported preventive Men5CV campaign. Road map implementation also advanced through the launch of regional implementation frameworks in two further WHO regions and publication of new WHO guidelines on meningitis diagnosis, treatment, and care.

Sustaining progress will require consistent country reporting, adequate laboratory and molecular surveillance, coordination between reactive and preventive Men5CV use, equitable access to clinical care and support for people living with sequelae, implementation of national meningitis plans, and sufficient, predictable financing.

Human plague, 2019 to 2025

Plague is a zoonotic infection of wild and domestic animals, including rodents, and is caused by *Yersinia pestis*, a Gram-negative coccobacillus ^{48,49,50}. The most common route of transmission to humans is through bites of rodent fleas, followed by direct contact with infected animals and handling of infected animal fluids or tissue ^{48,49}. Plague can also be transmitted through infectious respiratory particles, following close and direct contact with infected patients or animals ^{48,49}. The most frequent clinical presentation is acute febrile lymphadenitis, called bubonic plague. Less common yet severe forms include septicemic and pneumonic plague ^{48,49}.

For surveillance purposes, international case definitions distinguish suspected, probable, and confirmed plague cases; these definitions were revised in 2021 ⁵⁰. This report focuses on the period from 2019 to 2025, continuing the series of *Weekly Epidemiological Record* plague reports, the two most recent of which together covered 2010–2018 ^{51,52}.

The surveillance data presented here are distinct from notifications under the International Health Regulations (2005). Under these Regulations, States Parties are required to apply the decision instrument in Annex 2 to relevant events; pneumonic plague is among the diseases that must always be considered under this instrument ⁵³. The data in this report should not be interpreted as estimates of global incidence but rather as a summary of human plague cases and deaths reported to the World Health Organization (WHO).

Distribution of cases

Between 2019 and 2025, six countries in two WHO regions reported confirmed human plague cases: the Democratic Republic of the Congo, Kenya, Madagascar, and Uganda in the African Region, and China and Mongolia in the Western Pacific Region. Together, these six countries accounted for 3847 of the 3860 suspected cases reported worldwide, of which 2646 were reported as confirmed (Table 9; Map 3). Across these six countries, 423 deaths were reported, corresponding to a case fatality rate (CFR) of 11.0% among their suspected cases. The remaining 13 suspected cases were reported by Brazil (eight), Qatar (two), Saudi Arabia (two), and Ecuador (one), none of which reported a confirmed case. Brazil also reported eight deaths among its eight suspected cases; because none was reported as confirmed, these deaths are excluded from the CFR analysis. The Democratic Republic of

⁴⁸ World Health Organization. Plague. Fact sheet. Geneva: World Health Organization; 7 July 2022. <https://www.who.int/news-room/fact-sheets/detail/plague>

⁴⁹ World Health Organization. WHO guidelines for plague management: revised recommendations for the use of rapid diagnostic tests, fluoroquinolones for case management and personal protective equipment for prevention of post-mortem transmission. Geneva: World Health Organization; 2021. ISBN 978-92-4-001557-9. <https://www.who.int/publications/i/item/9789240015579>

⁵⁰ Bertherat E, Jullien S. Revision of the international definition of plague cases. *Weekly Epidemiological Record*. 2021;96(24):238–240. <https://iris.who.int/handle/10665/341853>

⁵¹ Bertherat E. Plague around the world in 2019. *Weekly Epidemiological Record*. 2019;94(25):289–292. <https://iris.who.int/handle/10665/325482>

⁵² Bertherat E. Plague around the world, 2010–2015. *Weekly Epidemiological Record*. 2016;91(8):89–93. <https://iris.who.int/handle/10665/254296>

⁵³ World Health Organization. International Health Regulations (2005): as amended in 2014, 2022 and 2024. Geneva: World Health Organization; 2026. Article 6 and Annex 2. https://apps.who.int/gb/bd/pdf_files/IHR_2014-2022-2024-en.pdf

the Congo and Madagascar collectively accounted for 97.7% of reported confirmed cases and 87.7% of suspected cases reported by the six countries with confirmed cases.

The Democratic Republic of the Congo reported identical suspected and confirmed case counts every year, ranging from 48 in 2019 to 641 in 2022; these identical counts should not be interpreted as evidence that every suspected case was laboratory confirmed. Madagascar also reported confirmed cases annually, ranging from 51 in 2025 to 174 in 2023. Both countries contain long-established endemic foci. In the Democratic Republic of the Congo, the principal focus lies in the Ituri highlands in the north-east, where outbreaks have been documented since 1928⁵⁴. In Madagascar, plague is endemic in the central and northern highlands above 800 metres, with seasonal recrudescence from September to March⁵⁵.

In contrast, confirmed cases in China, Kenya, Mongolia, and Uganda were reported intermittently. China reported 0–5 confirmed cases annually and Mongolia 0–6. Kenya reported its first confirmed cases in 2021 and 2–8 cases annually from 2023 to 2025; the 2022 count is shown as not determined (**Table 9**). Uganda reported two confirmed cases in 2019 and none thereafter. The West Nile region of north-western Uganda is a recognized plague focus where detection has historically been episodic⁵⁶.

Table 9. Reported human plague cases, deaths, and case fatality rate in countries reporting one or more confirmed cases, by WHO region, country, and year, 2019 to 2025

WHO region	Country	Indicator	2019	2020	2021	2022	2023	2024	2025	2019–2025
African Region	Democratic Republic of the Congo	Suspected cases	48	451	138	641	114	447	54	1 893
		Confirmed cases	48	451	138	641	114	447	54	1 893
		Deaths	8	31	14	16	18	13	1	101
		CFR (%)	16.7	6.9	10.1	2.5	15.8	2.9	1.9	5.3
	Kenya	Suspected cases	48	50	95	8	36	110	28	375
		Confirmed cases	0	0	5	ND	2	8	7	22
		Deaths	0	0	0	0	0	0	0	0
		CFR (%)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Madagascar	Suspected cases	217	122	201	311	378	166	87	1 482
		Confirmed cases	106	60	100	131	174	71	51	693
		Deaths	52	30	46	59	59	32	29	307
		CFR (%)	24.0	24.6	22.9	19.0	15.6	19.3	33.3	20.7
	Uganda	Suspected cases	2	0	0	0	0	0	0	2
		Confirmed cases	2	0	0	0	0	0	0	2
		Deaths	1	0	0	0	0	0	0	1
		CFR (%)	50.0	–	–	–	–	–	–	50.0
	Subtotal	Suspected cases	315	623	434	960	528	723	169	3 752
		Confirmed cases	156	511	243	772	290	526	112	2 610
		Deaths	61	61	60	75	77	45	30	409
		CFR (%)	19.4	9.8	13.8	7.8	14.6	6.2	17.8	10.9

⁵⁴ Abedi AA, Shako JC, Gaudart J, Sudre B, Ilunga BK, Shamamba SKB, et al. Ecologic features of plague outbreak areas, Democratic Republic of the Congo, 2004–2014. *Emerg Infect Dis.* 2018;24(2):210–220. doi: 10.3201/eid2402.160122

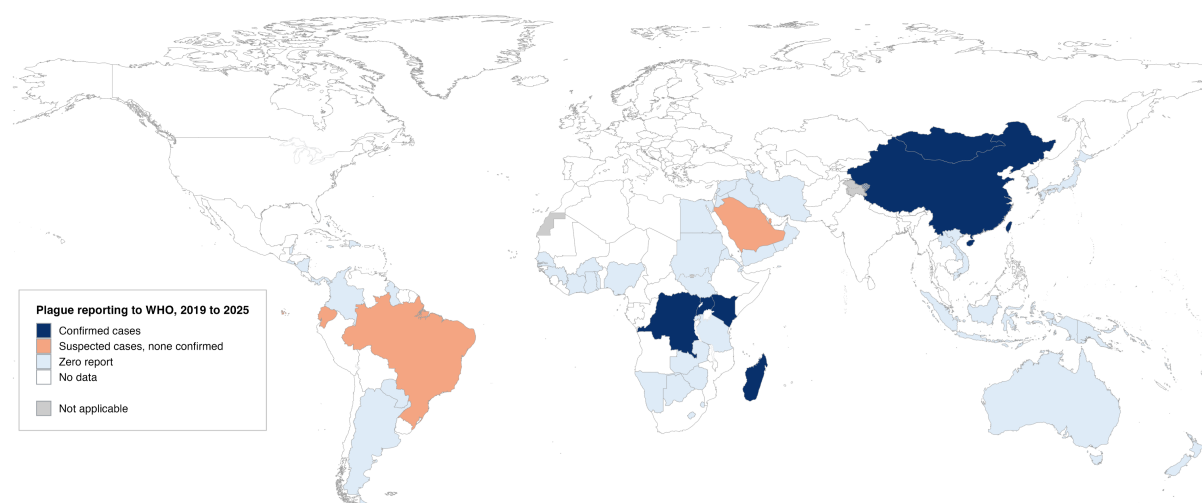
⁵⁵ Andrianaivoarimanana V, Piola P, Wagner DM, Rakotomanana F, Maheriniaina V, Andrianalimanana S, et al. Trends of human plague, Madagascar, 1998–2016. *Emerg Infect Dis.* 2019;25(2):220–228. doi: 10.3201/eid2502.171974

⁵⁶ Forrester JD, Apangu T, Griffith K, Acayo S, Yockey B, Kaggwa J, et al. Patterns of human plague in Uganda, 2008–2016. *Emerg Infect Dis.* 2017;23(9):1517–1521. doi: 10.3201/eid2309.170789

WHO region	Country	Indicator	2019	2020	2021	2022	2023	2024	2025	2019–2025
Western Pacific Region	China	Suspected cases	5	4	1	2	5	2	0	19
		Confirmed cases	5	4	1	2	5	2	0	19
		Deaths	2	2	0	1	1	1	0	7
		CFR (%)	40.0	50.0	0.0	50.0	20.0	50.0	–	36.8
	Mongolia	Suspected cases	7	22	4	6	15	8	14	76
		Confirmed cases	2	6	1	2	5	0	1	17
		Deaths	2	3	0	0	1	0	1	7
		CFR (%)	28.6	13.6	0.0	0.0	6.7	0.0	7.1	9.2
	Subtotal	Suspected cases	12	26	5	8	20	10	14	95
		Confirmed cases	7	10	2	4	10	2	1	36
		Deaths	4	5	0	1	2	1	1	14
		CFR (%)	33.3	19.2	0.0	12.5	10.0	10.0	7.1	14.7
All regions	Total	Suspected cases	327	649	439	968	548	733	183	3 847
		Confirmed cases	163	521	245	776	300	528	113	2 646
		Deaths	65	66	60	76	79	46	31	423
		CFR (%)	19.9	10.2	13.7	7.9	14.4	6.3	16.9	11.0

Suspected cases meet the WHO suspected plague case definition and include probable and confirmed cases. CFR: case fatality rate (deaths/suspected cases). The Democratic Republic of the Congo submitted identical suspected and confirmed case counts in each year; values are shown as reported. China's cases were laboratory-confirmed and are therefore also counted as suspected. Brazil's 8 reported deaths are excluded because no case was reported as confirmed. Kenya's 2022 confirmed-case count is shown as ND because the submitted value (14) exceeded the suspected-case count (eight); it is excluded from confirmed-case totals. ND: not determined. –: no case reported; CFR not calculated.

Map 3. Human plague cases reported to WHO, by country, 2019 to 2025



Countries are shaded according to the status of plague reporting to WHO. Countries shown as having no data are those for which no surveillance data were received; this is distinct from a zero report. The boundaries and names shown and the designations used on this map 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.

Case confirmation

Ten countries reported one or more suspected or confirmed human plague cases during 2019–2025, together accounting for 3860 suspected cases (Table 10). Excluding the eight suspected cases reported by Kenya for 2022, for which the submitted confirmed-case count could not be reconciled, 2646 of 3852 suspected cases (68.7%) were reported as confirmed. This proportion should be interpreted with caution because the relationship between suspected and confirmed case counts differed across countries. In the Democratic Republic of the Congo, suspected and confirmed counts were identical in every year, totalling 1893 cases. All 19 cases reported by China were confirmed. Uganda reported two suspected cases, both confirmed. These three countries together contributed 1914 cases counted as both suspected and confirmed, and their inclusion increased the overall proportion; excluding them, 732 of 1938 suspected cases (37.8%) were reported as confirmed. Among the remaining countries, Kenya, Madagascar, and Mongolia reported both suspected and confirmed cases: Madagascar reported 693 of 1482 suspected cases as confirmed (46.8%), Mongolia 17 of 76 (22.4%), and Kenya 22 of 367 (6.0%).

Four countries had no reported confirmed case, each submitting a confirmed-case count of zero: Brazil (eight suspected cases), Qatar (two), Saudi Arabia (two), and Ecuador (one). Brazil reported suspected cases in three years, Qatar and Saudi Arabia in two each, and Ecuador in one. Together, these four countries accounted for 13 suspected cases (0.3% of the total). The aggregate data do not distinguish suspected cases that were tested and not confirmed from those that were not tested.

Table 10. Suspected, probable, and confirmed human plague cases in countries reporting one or more suspected or confirmed cases, by WHO region and country, 2019 to 2025

WHO region	Country	Suspected cases	Probable cases	Confirmed cases	Confirmed, % of suspected
African Region	Democratic Republic of the Congo	1 893	ND	1 893	100.0
	Kenya	375	0	22	6.0
	Madagascar	1 482	23	693	46.8
	Uganda	2	0	2	100.0
	Subtotal	3 752	23	2 610	69.7
Region of the Americas	Brazil	8	0	0	0.0
	Ecuador	1	0	0	0.0
	Subtotal	9	0	0	0.0
Eastern Mediterranean Region	Qatar	2	0	0	0.0
	Saudi Arabia	2	0	0	0.0
	Subtotal	4	0	0	0.0
Western Pacific Region	China	19	0	19	100.0
	Mongolia	76	ND	17	22.4
	Subtotal	95	0	36	37.9
All regions	Total	3 860	23	2 646	68.7

Probable and confirmed cases are subsets of suspected cases⁵⁰. China did not report a separate suspected-case count; its reported confirmed cases are included in the suspected-case total because confirmed cases are subsets of suspected cases. The Democratic Republic of the Congo submitted identical suspected and confirmed case counts in each year; the 100.0% shown reflects these submitted values and should not be interpreted as evidence that every suspected case was laboratory confirmed. ND: not determined and excluded from category totals. Kenya's confirmed-case count for 2022 was not determined; percentages for Kenya, for the African Region, and for all regions are calculated excluding the 8 suspected cases reported by Kenya for that year.

Case fatality

Across the six countries reporting confirmed cases during 2019–2025, 423 deaths were reported among 3847 suspected cases, an overall CFR of 11.0%, with annual rates ranging from 6.3% in 2024 to 19.9% in 2019 (Table 9). Deaths were not stratified by confirmation status, so a CFR restricted to confirmed cases cannot be derived from these data. Country-level CFRs are not directly comparable because the underlying case denominators differ. In the Democratic Republic of the Congo, the CFR was 5.3% (101 deaths among 1893 suspected cases); because the suspected and confirmed counts were identical as submitted, this should not be interpreted as a CFR among independently verified laboratory-confirmed cases. In Madagascar, the CFR was 20.7% (307 deaths among 1482 suspected cases). Kenya reported no death among its 375 suspected cases. Rates in the other three countries rest on small numbers: 36.8% in China (seven deaths among 19 cases), 9.2% in Mongolia (seven among 76), and 50.0% in Uganda (one among two). Case fatality differs between clinical forms, so an overall rate combines groups with different expected mortality; rates by form are given below.

Clinical forms

Four countries reported cases by clinical form, although the case basis differed: Madagascar and Uganda classified suspected cases, whereas China and Mongolia classified confirmed cases (**Table 11**). In Madagascar, 1233 of 1482 suspected cases (83.2%) were bubonic and 230 (15.5%) were pneumonic, the bubonic proportion falling within the 80% to 95% range given for bubonic plague in the WHO guidelines for plague management ⁴⁹, although it is calculated here over suspected rather than confirmed cases. The CFR was 15.7% for bubonic plague (194 deaths among 1233 cases) and 41.3% for pneumonic plague (95 among 230). A further 19 cases (1.3%) were classified as other, among which 18 deaths were reported; Madagascar reported no septicaemic case in any year of the period.

Clinical-form distributions in the other three countries were based on smaller numbers. Uganda reported two bubonic cases, of which one was fatal. China reported nine bubonic, six pneumonic, three septicaemic, and one other confirmed case; reported deaths by clinical form were one, three, two, and one, respectively. Of the 17 confirmed cases in Mongolia, 15 were classified as bubonic and two as septicaemic. Of the seven deaths reported by Mongolia, five were assigned to bubonic plague and two were due to septicaemic plague. Rates by clinical form are not pooled across the four countries because the case basis differs.

Table 11. Human plague cases and deaths by clinical form reported to WHO, by WHO region and country, 2019 to 2025

WHO region	Country	Indicator	Bubonic	Pneumonic	Septicaemic	Other	Not stated	Total
African Region	Madagascar	Cases	1 233	230	0	19	0	1 482
		Deaths	194	95	0	18	0	307
	Uganda	Cases	2	0	0	0	0	2
		Deaths	1	0	0	0	0	1
	Subtotal	Cases	1 235	230	0	19	0	1 484
		Deaths	195	95	0	18	0	308
Western Pacific Region	China	Cases	9	6	3	1	0	19
		Deaths	1	3	2	1	0	7
	Mongolia	Cases	15	0	2	0	0	17
		Deaths	5	0	2	0	0	7
	Subtotal	Cases	24	6	5	1	0	36
		Deaths	6	3	4	1	0	14
All regions	Total	Cases	1 259	236	5	20	0	1 520
		Deaths	201	98	4	19	0	322

For Madagascar and Uganda, clinical-form distributions are based on suspected cases; for China and Mongolia, they are based on confirmed cases. Death counts were not stratified by confirmation status. Not stated: deaths reported without an assigned clinical form. The Democratic Republic of the Congo did not report cases by clinical form and is not shown; its 101 deaths are not included here, and together with the 322 deaths shown above they account for the 423 deaths in Table 9.

Zero reporting

During 2019–2025, 79 countries, territories, and areas (hereafter, ‘countries’) across four WHO regions reported no human plague cases in any year for which surveillance data were submitted (**Table 12**).

Reporting to WHO was not universal, and absence of reporting does not imply absence of cases. Peru and the United States of America, both of which have documented plague foci and which reported 74 and 49 cases respectively during 2010–2018 ^{51,52}, are among the countries for which no surveillance data were received for 2019–2025; they are shown on **Map 3** as having no data, rather than among those reporting no case. No country in the Region of the Americas reported a confirmed case in any year of the period, and the only cases reported from the Region were eight suspected cases from Brazil and one from Ecuador, none of them confirmed (**Table 10**). Brazil also reported eight deaths, equal to its suspected-case count, and no death was assigned to a clinical form; these values are shown as reported. These deaths are excluded from the CFR analysis because none of Brazil’s cases was reported as confirmed.

Table 12. Countries, territories, and areas reporting no human plague cases, by WHO region, 2019 to 2025

WHO region	Number of countries	Countries reporting no cases
African Region	21	Botswana; Burkina Faso; Comoros; Côte d'Ivoire; Eritrea; Eswatini; Gambia; Ghana; Guinea; Lesotho; Namibia; Nigeria; Rwanda; Sao Tome and Principe; Senegal; Seychelles; South Sudan; Togo; United Republic of Tanzania; Zambia; Zimbabwe
Region of the Americas	22	Antigua and Barbuda; Argentina; Bahamas; Barbados; Belize; British Virgin Islands; Colombia; Dominica; Dominican Republic; El Salvador; Grenada; Guadeloupe; Guyana; Jamaica; Martinique; Nicaragua; Panama; Paraguay; Saint Kitts and Nevis; Saint Lucia; Saint Vincent and the Grenadines; Turks and Caicos Islands
Eastern Mediterranean Region	13	Bahrain; Djibouti; Egypt; Iran (Islamic Republic of); Iraq; Jordan; Kuwait; Lebanon; occupied Palestinian territory; Oman; Sudan; Syrian Arab Republic; Yemen
Western Pacific Region	23	Australia; Cook Islands; Fiji; Guam; Indonesia; Japan; Kiribati; Lao People's Democratic Republic; Marshall Islands; Micronesia (Federated States of); Republic of Naoero; New Zealand; Niue; Palau; Papua New Guinea; Republic of Korea; Samoa; Solomon Islands; Tokelau; Tonga; Tuvalu; Vanuatu; Viet Nam
Total	79	

Countries listed reported no human plague cases in any year for which they submitted surveillance data.

Plague in the longer-term context

To place the 2019–2025 period in longer-term context, annual plague cases reported to WHO from 2010 to 2025 are shown in **Figure 6**. Comparability across the series is limited by changes in reporting coverage and case classification^{51,52}. Madagascar and the Democratic Republic of the Congo nevertheless accounted for most reported cases throughout the period, representing 4140 of the 4420 cases published by country for 2010–2018 (93.7%) and 2586 of the 2646 cases reported as confirmed during 2019–2025 (97.7%).

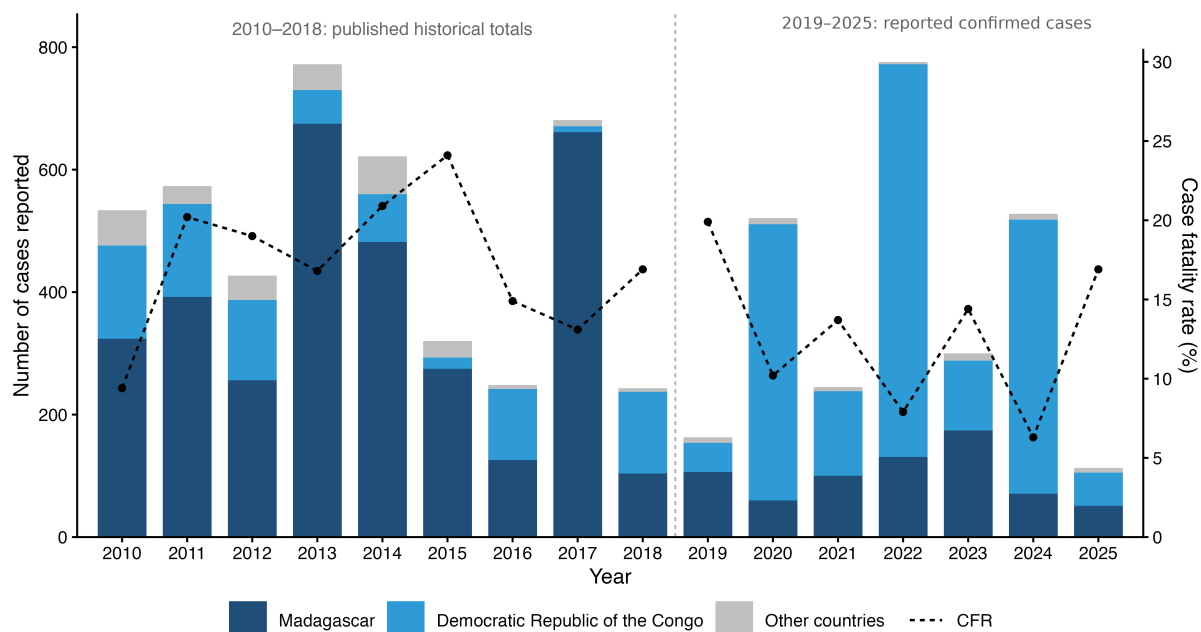
Annual case totals fluctuated markedly. The largest totals were reported in 2013 and 2022. The 2013 total was driven predominantly by Madagascar, while that in 2022 was driven primarily by the Democratic Republic of the Congo. The marked increase in 2017 also occurred principally in Madagascar and coincided with a large-scale urban plague epidemic⁵⁷.

A 2010 review in the *Weekly Epidemiological Record* presents country-level plague data reported to WHO back to 1987, with global annual totals frequently in the thousands and reaching 5419 cases in 1997⁵⁸. Comparisons across this longer period should be interpreted with caution because it spans a major change in international reporting requirements: all human plague cases were notifiable under the previous International Health Regulations, whereas the revised Regulations, in force since June 2007, provide for notification of events that may constitute a public health emergency of international concern^{53,58}.

⁵⁷ Randremanana R, Andrianaivoarimanana V, Nikolay B, Ramasindrazana B, Paireau J, ten Bosch QA, et al. Epidemiological characteristics of an urban plague epidemic in Madagascar, August–November, 2017: an outbreak report. *Lancet Infect Dis*. 2019;19(5):537–545. doi: 10.1016/S1473-3099(18)30730-8

⁵⁸ World Health Organization. Human plague: review of regional morbidity and mortality, 2004–2009. *Weekly Epidemiological Record*. 2010;85(6):40–45. <https://iris.who.int/handle/10665/241511>

Figure 6. Human plague cases and case fatality rate reported to WHO, by country and year, 2010 to 2025



For 2010–2018, case totals are as published; cases from the Democratic Republic of the Congo were reported as suspected, and the case basis was not stated for 2010–2012. For 2019–2025, bars show cases reported as confirmed. CFRs are shown separately for the two periods because the denominators differ. Sources: ^{51,52}; annual plague reporting to WHO. CFR: case fatality rate.

Surveillance and control

Two WHO guidance documents on plague were published during the reporting period. The 2021 WHO guidelines for plague management set out revised recommendations on the use of rapid diagnostic tests, on fluoroquinolones for case management, and on personal protective equipment for the prevention of post-mortem transmission ⁴⁹. The 2024 manual for plague surveillance, diagnosis, prevention, and control brings together current guidance on plague epidemiology, surveillance, diagnosis, clinical management, and prevention ⁵⁹.

Plague is maintained in animal reservoirs, and WHO guidance accordingly extends surveillance beyond human cases to the animal and flea species involved in the local plague cycles and to the environmental management that follows from investigating them; active long-term surveillance of animal foci, coupled with rapid response to outbreaks in animals, has reduced the number of human plague outbreaks ^{48,59}. Multisectoral surveillance in which findings in animals serve as an early warning ahead of human cases would strengthen early detection and would also help to interpret the year-to-year variation in reported human cases described here.

The concentration of reported cases in Madagascar and the Democratic Republic of the Congo, together with the intermittent occurrence of cases in other recognized foci, underscores the importance of maintaining surveillance and diagnostic capacity in areas where plague persists. Complete and consistent reporting of suspected and confirmed cases, as well as clinical form, would also improve comparability across countries and over time.

⁵⁹ World Health Organization. Manual for plague surveillance, diagnosis, prevention and control. Geneva: World Health Organization; 25 September 2024. ISBN 978-92-4-009042-2. <https://www.who.int/publications/i/item/9789240090422>

Conclusion

Human plague reported to WHO during 2019–2025 remained geographically concentrated. Ten countries in four WHO regions reported 3860 suspected cases. Six of them, in two regions, reported at least one confirmed case and accounted for 3847 of those suspected cases, including 2646 cases reported as confirmed and 423 deaths, a case fatality rate of 11.0%. The remaining four countries reported 13 suspected cases with no confirmed case. The Democratic Republic of the Congo and Madagascar together accounted for 97.7% of cases reported as confirmed. Cross-country comparisons should be interpreted cautiously because case ascertainment and classification differed, and absence of reporting to WHO does not imply absence of cases. Sustained surveillance in countries with recognized plague foci, extended to the animal and environmental interface, together with complete and consistent reporting, remains essential for monitoring changes in the occurrence and severity of the disease. Maintained vigilance is required for the early detection and rapid control of any introduction of *Y. pestis* from endemic rural foci into urban areas, where onward person-to-person transmission of pneumonic plague can occur, as documented during the 2017 urban epidemic in Madagascar ⁶⁰.

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- (1) WHO WWW server: Use WWW navigation software to connect to the WER pages at the following address: <http://www.who.int/wer>
- (2) An e-mail subscription service exists, which provides by electronic mail the table of contents of the *Weekly Epidemiological Record* (WER). To subscribe, please go to the home page of the WER and click on “Subscribe to the WER mailing list” or go directly to <https://confirmsubscription.com/h/d/4759AAD079391CCC>. A request for confirmation will be sent in reply.

⁶⁰ Andrianaivoarimanana V, Savin C, Birdsell DN, Vogler AJ, Le Guern AS, Rahajandraibe S, et al. Multiple introductions of *Yersinia pestis* during urban pneumonic plague epidemic, Madagascar, 2017. *Emerg Infect Dis.* 2024;30(2):289–298. doi: 10.3201/eid3002.230759