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## Highlighted Signals and Events

During epidemiological week 40 (28 September to 4 October), 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 608 203 raw signals were scanned and triangulated through DEBS. From this large pool of signals, 31 signals and/or events met assessment thresholds and underwent further analysis and categorization. Of the 31 categorized signals, 30 represented unique signals. A total of 23 signals and/or events were escalated for operational attention.

In the reporting week, three new events were verified through PHI activities. No information products were published during this reporting period. A summary of identified raw signals, assessed signals, and published outputs is presented in the tables below.

## Signal Assessment Metrics, 28 September 2026 - 4 October 2026

| Signals Screened <sup>1</sup> | Signals Categorized <sup>2</sup> | Unique Signals <sup>3</sup> | Signals Escalated <sup>4</sup> |
|-------------------------------|----------------------------------|-----------------------------|--------------------------------|
| 608 203                       | 31                               | 30                          | 23                             |

## Selected new signals of potential public health events assessed, 28 September 2026 - 4 October 2026<sup>5</sup>

| Region                | Hazard                                                                                                                                                                |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| African               | Cholera<br>Not yet diagnosed                                                                                                                                          |
| Americas              | Influenza due to identified avian or animal Influenza virus (mink farm)<br>Malaria<br>Not yet diagnosed<br>Hurricane Polo<br>Substandard or falsified medical product |
| Eastern Mediterranean | Diphtheria                                                                                                                                                            |
| European              | Chikungunya virus disease<br>Not yet diagnosed<br>Poisoning, unspecified<br>Sindbis fever<br>Tularaemia<br>Usutu virus<br>West Nile fever                             |
| South-East Asia       | Anthrax<br>Flood                                                                                                                                                      |

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

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

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

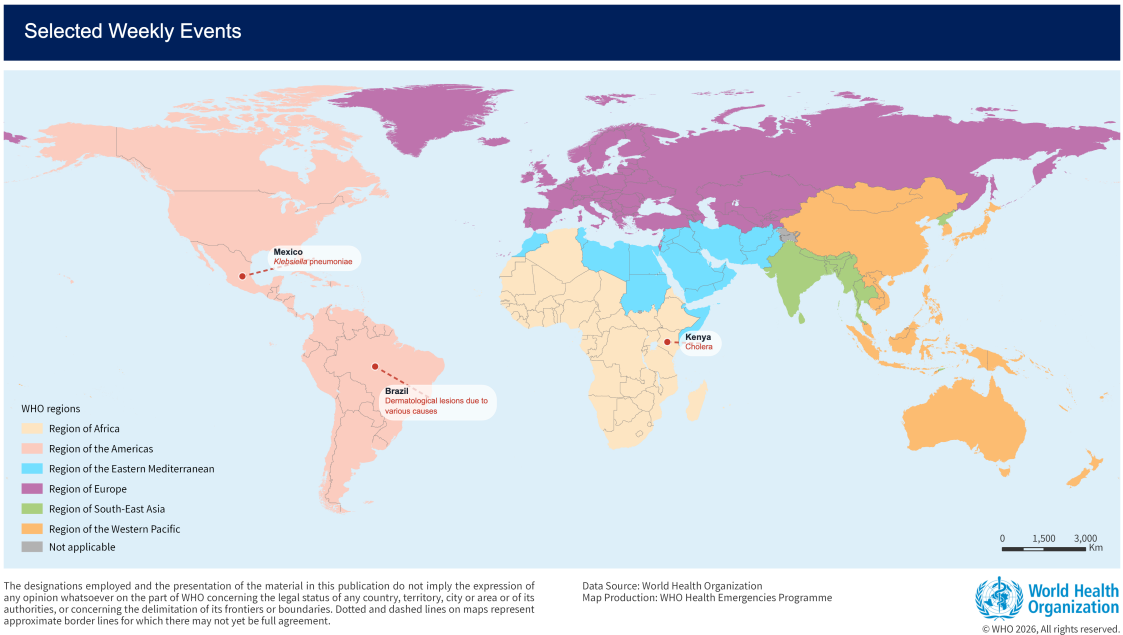
<sup>4</sup> **Signals escalated:** Subset of categorized signals that triggered escalation actions.

<sup>5</sup> 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.

| Region          | Hazard                                                      |
|-----------------|-------------------------------------------------------------|
| Western Pacific | Influenza due to identified avian or animal influenza virus |

## Selected Weekly Events, 28 September - 4 October 2026<sup>6</sup>

Figure 1. Map of select newly reported public health events between 28 September - 4 October 2026



## Published Information Products

No information products were published during this reporting period.

## Global dengue update

Data as of the end of August 2026

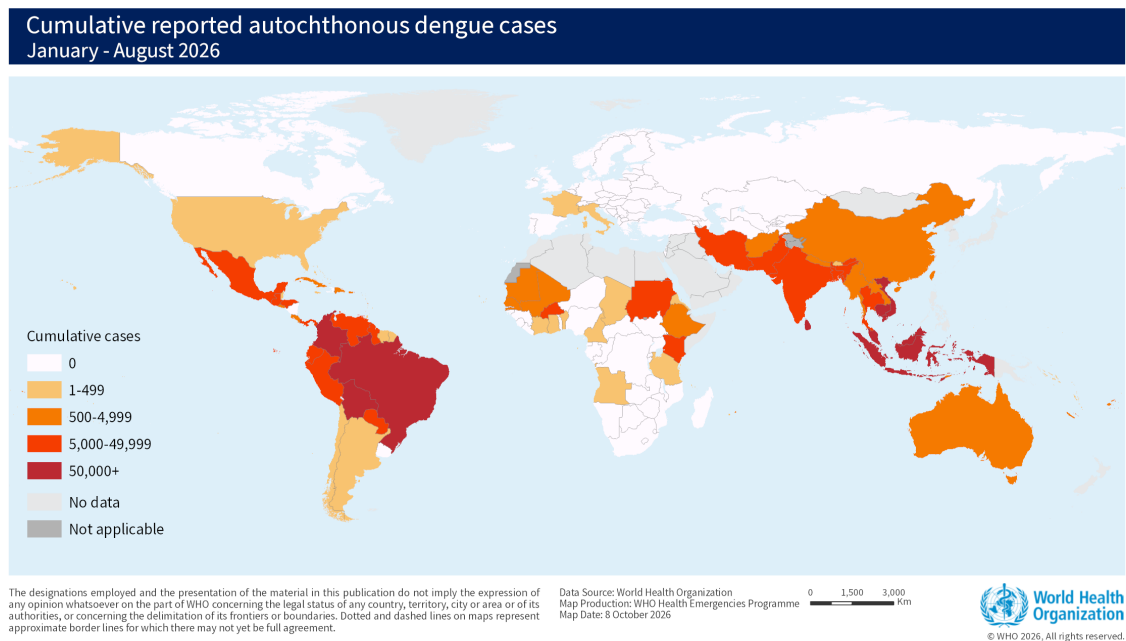
Dengue virus is transmitted mainly through *Aedes aegypti* and *Aedes albopictus* mosquitoes, which thrive in tropical and sub-tropical urban areas. Key drivers of dengue transmission include rapid urbanization and climate change, both of which are resulting in an increase in permissive environments for mosquitoes, as well as expanded global travel and trade, moving the virus, mosquitoes and infected humans across borders. Circulation of multiple dengue serotypes also raises the risk of severe disease due to secondary infections with a different serotype.

WHO has been monitoring dengue incidence since 1954, with Member States reporting cases and deaths to WHO on an annual basis. In response to the changes in the abovementioned drivers of transmission, and the need to better understand changes in intra-annual trends and seasonality patterns, WHO established an almost real-time global surveillance system for dengue in 2024. Currently, this includes monthly data from 185 countries, territories and areas, presented in the global [dashboard](#). This tool also brings together other relevant information for interpreting the global situation such as genomic data available through GenBank, modelled estimates of risk and visualizations of seasonality patterns.

Between January and August 2026, 2.2 million cases and over 1100 deaths were reported from 97 countries, territories and areas (Figure 2). The transmission levels to date in 2026 have been the lowest reported since the global surveillance commenced in 2024, with 12.7 million cases and 4.4 million cases reported by the end of August in 2024 and 2025 respectively (Figure 3).

<sup>6</sup> 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 4 October 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.

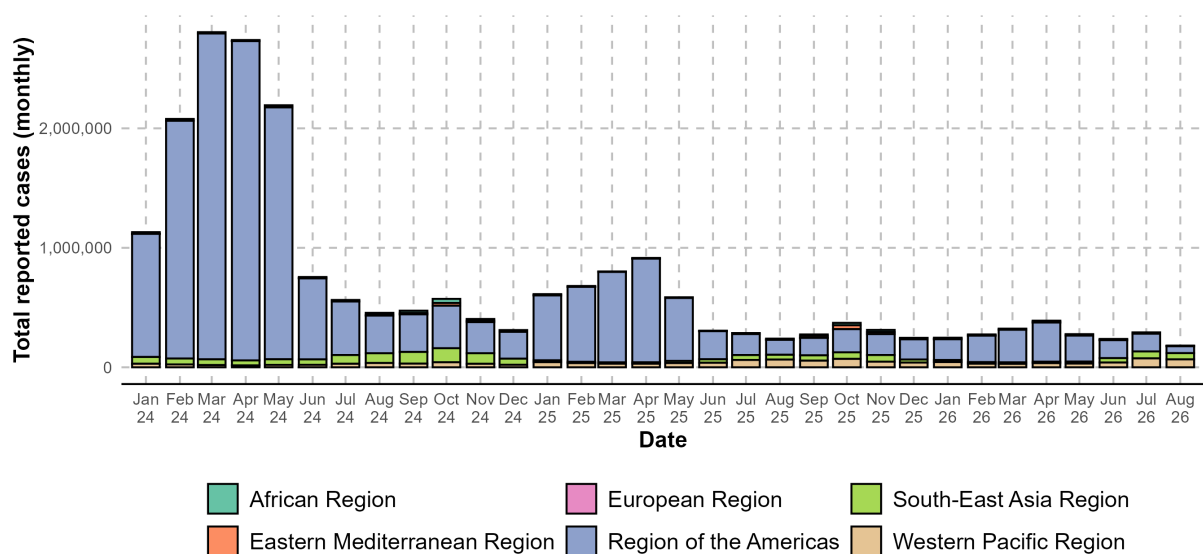
Figure 2. Geographical distribution of total reported dengue cases January–August 2026.



Note: cases reported from Australia include both autochthonous and imported cases.

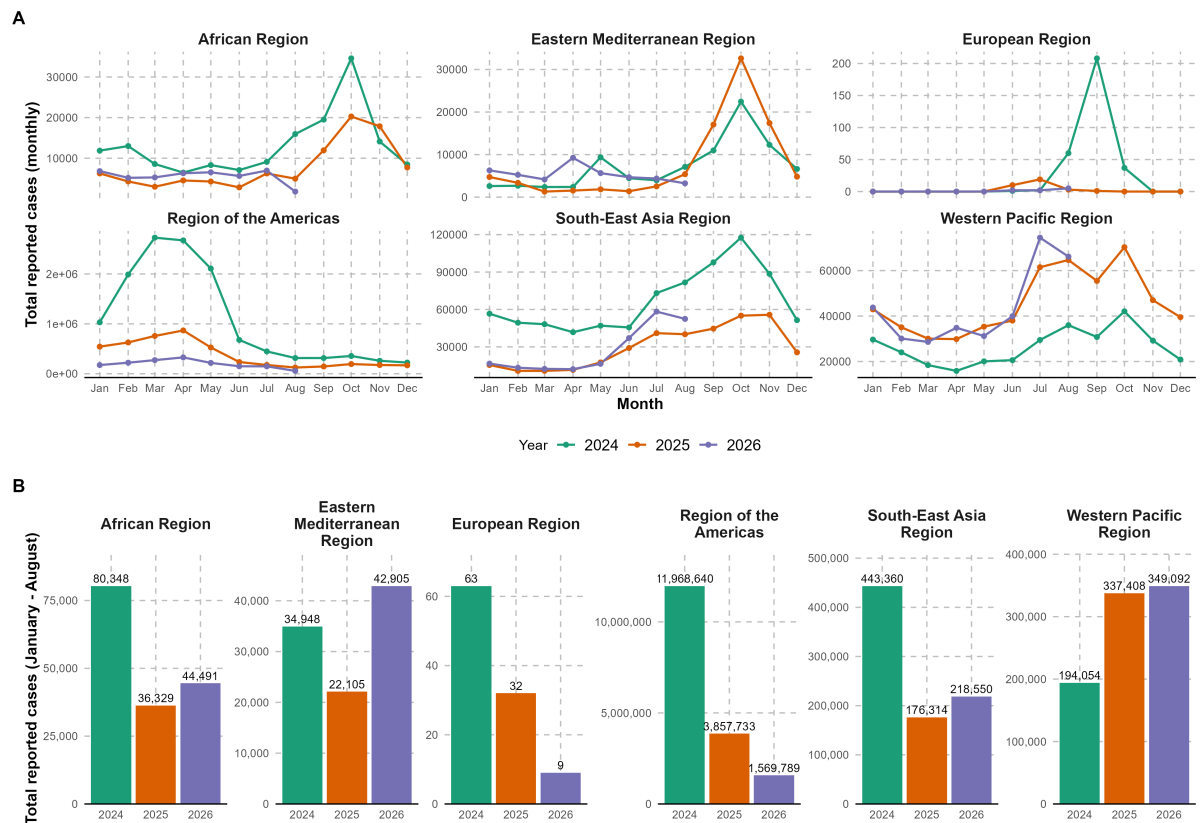
Source: WHO global dengue surveillance dashboard ([https://worldhealthorg.shinyapps.io/dengue\\_global/](https://worldhealthorg.shinyapps.io/dengue_global/), accessed 8 October 2026).

Figure 3. Epidemic curve of total reported dengue cases from January 2024 to August 2026



At the regional level, comparing reported cases from January to August across 2024–2026, four out of six WHO regions recorded their highest case numbers in 2024, with the Western Pacific and Eastern Mediterranean regions reporting the highest incidence in 2026 (Figure 4, Table 1). However, in the Western Pacific Region, this reflects surveillance changes rather than changes in disease incidence: Indonesia was reassigned to the WHO Western Pacific Region under resolution WHA78.25 (2025), effective 27 May 2025, whereby all data from Indonesia have been recorded under the Western Pacific Region from January 2025 onwards. When the approximately 250 000 cases reported by Indonesia in 2024 are included, the Western Pacific Region also recorded its highest case numbers in 2024.

Figure 4. (A) Trends in monthly total dengue cases reported to WHO between January 2024 and August 2026 shown by WHO region; (B) Cumulative total reported cases by region in the period January to August across 2024, 2025 and 2026.



Note in both figures the y axis differs by region in order to illustrate the trends. The trends in the European Region reflect only autochthonous transmission in mainland Europe and do not include the cases reported from the French overseas territories of Mayotte and Réunion.

Table 1. Total cases and deaths reported to WHO January–August 2026 by WHO region

| WHO region                   | Cases     | Deaths | No. of countries reporting cases |
|------------------------------|-----------|--------|----------------------------------|
| African Region               | 44 491    | 56     | 19                               |
| Eastern Mediterranean Region | 42 905    | 0      | 4                                |
| European Region              | 9         | 0      | 2                                |
| Region of the Americas       | 1 569 794 | 481    | 38                               |
| South-East Asia Region       | 218 550   | 274    | 9                                |
| Western Pacific Region       | 349 092   | 374    | 24                               |

An additional 291 cases and no deaths were recorded in the French overseas territories of Mayotte and Réunion and the Autonomous Region of Madeira, Portugal.

At the country level, Brazil has reported the highest number of cases so far in 2026, consistent with previous years and reflecting its large population relative to other countries in the region, reporting over 1.2 million cases, of which 327 724 were confirmed, followed by Viet Nam (106 767) and Sri Lanka (95 545). When expressed as incidence, the Cook Islands report the highest rate, with 1139 cases equivalent to approximately 6699 cases per 100 000 population, followed by Guyana (approximately 4200 per 100 000) and Samoa (2158 per 100 000). Case definitions and ascertainment vary substantially across countries, as detailed on the global dashboard, and these data should be interpreted accordingly.

While at a global level, 2026 is reporting relatively few cases compared with the 2024 epidemic, some countries are experiencing large outbreaks and the largest across the three-year period. Between January and August 2026, 27 countries, areas and territories recorded higher cumulative totals than the same interval in 2024 or 2025. These include 10 in the Western Pacific Region, eight in the African Region, four in South-East Asia, three in the Region of the Americas and two in the Eastern Mediterranean Region, shown in Table 2. For more information, please refer to the WHO [global surveillance dashboard](#).

Table 2. Countries, territories and areas reporting the highest number of cases in 2026 compared to the previous two years in the period January to August

| WHO Region                   | Country                          | Total cases reported between January and August |        |         | Additional cases reported in 2026 compared with the maximum of previous two years |
|------------------------------|----------------------------------|-------------------------------------------------|--------|---------|-----------------------------------------------------------------------------------|
|                              |                                  | 2024                                            | 2025   | 2026    |                                                                                   |
| South-East Asia Region       | Sri Lanka                        | 37 039                                          | 36 637 | 95 545  | 58 506                                                                            |
| Western Pacific Region       | Cambodia                         | 12 072                                          | 37 305 | 77 147  | 39 842                                                                            |
| Western Pacific Region       | Viet Nam                         | 49 207                                          | 75 471 | 106 767 | 31 296                                                                            |
| Eastern Mediterranean Region | Sudan                            | 2 063                                           | 8 865  | 26 344  | 17 479                                                                            |
| Region of the Americas       | Bolivia (Plurinational State of) | 49 816                                          | 29 863 | 58 628  | 8 812                                                                             |
| Eastern Mediterranean Region | Iran (Islamic Republic of)       | 42                                              | 448    | 6 374   | 5 926                                                                             |
| African Region               | Kenya                            | 1 440                                           | 4 389  | 9 704   | 5 315                                                                             |
| South-East Asia Region       | Bangladesh                       | 12 841                                          | 31 476 | 35 846  | 4 370                                                                             |
| South-East Asia Region       | Timor-Leste                      | 1 390                                           | 970    | 4 597   | 3 207                                                                             |
| Western Pacific Region       | New Caledonia                    | 16                                              | 3      | 2 155   | 2 139                                                                             |
| South-East Asia Region       | Maldives                         | 2 778                                           | 1 087  | 4 674   | 1 896                                                                             |
| Western Pacific Region       | Cook Islands                     | 0                                               | 89     | 1 139   | 1 050                                                                             |
| African Region               | Senegal                          | 428                                             | 1 537  | 1 873   | 336                                                                               |
| Western Pacific Region       | Vanuatu                          | 135                                             | 86     | 230     | 95                                                                                |
| Western Pacific Region       | Wallis and Futuna                | 78                                              | 21     | 162     | 84                                                                                |
| African Region               | United Republic of Tanzania      | 11                                              | 157    | 217     | 60                                                                                |
| Western Pacific Region       | Marshall Islands                 | 0                                               | 0      | 57      | 57                                                                                |
| African Region               | Comoros                          | 0                                               | 0      | 41      | 41                                                                                |
| African Region               | Chad                             | 0                                               | 17     | 57      | 40                                                                                |
| Western Pacific Region       | Micronesia (Federated States of) | 39                                              | 31     | 57      | 18                                                                                |
| Western Pacific Region       | Tuvalu                           | 1                                               | 0      | 16      | 15                                                                                |
| African Region               | Sao Tome and Principe            | 32                                              | 0      | 45      | 13                                                                                |
| African Region               | Angola                           | 71                                              | 152    | 158     | 6                                                                                 |
| African Region               | Benin                            | 29                                              | 65     | 71      | 6                                                                                 |
| Western Pacific Region       | Tokelau                          | 4                                               | 0      | 10      | 6                                                                                 |
| Region of the Americas       | Bahamas                          | 0                                               | 0      | 1       | 1                                                                                 |

| WHO Region             | Country | Total cases reported between January and August |      |      | Additional cases reported in 2026 compared with the maximum of previous two years |
|------------------------|---------|-------------------------------------------------|------|------|-----------------------------------------------------------------------------------|
|                        |         | 2024                                            | 2025 | 2026 |                                                                                   |
| Region of the Americas | Bermuda | 1                                               | 0    | 2    | 1                                                                                 |

On the global surveillance dashboard, WHO also presents the sequence data submitted to GenBank between 1960 and 2026. The data presented on the dashboard use the dengue virus lineage system, which splits up the current genotypes into major and minor lineages to provide additional spatiotemporal resolution and a common language to discuss important genomic diversity. A full description of the lineage system can be found at [Dengue Lineages](#). Over 53 000 sequences were submitted to GenBank across all six WHO regions. Of the four dengue serotypes, DENV-1 accounts for the largest number of sequences (39%), followed by DENV-2 (34%), DENV-3 (18%) and DENV-4 (9%). The Western Pacific Region accounts for 41% of all submitted sequences, followed by the South-East Asia Region (27%). The Region of the Americas accounts for 23% of available sequences ,and so due to geographical disparity the data should be interpreted with caution. More information on real-time tracking of dengue virus evolution is available at [nextstrain.org/dengue](https://nextstrain.org/dengue).

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# Elimination of human onchocerciasis: progress report, 2025–2026

## Introduction

Onchocerciasis is caused by the filarial nematode *Onchocerca volvulus* and transmitted through the bites of blackflies (*Simulium* spp.). Adult worms live in subcutaneous nodules, where the females release millions of microfilariae (first-stage larvae, L1) that migrate through the skin and eyes, causing intense itching, disfiguring skin disease and, after prolonged exposure, visual impairment and irreversible blindness. Early exposure to infection in childhood has also been associated with onchocerciasis-associated epilepsy. Microfilariae ingested by a blackfly during a blood meal develop in the fly, over 6–12 days, through L2 to the infective L3, which is inoculated into another person at a subsequent bite. More than 99% of the people requiring preventive chemotherapy (PC) for onchocerciasis live in 26 countries in Africa; the remainder live in Brazil, the Bolivarian Republic of Venezuela, and Yemen. In 2025, 255.7 million people required PC for onchocerciasis, of whom 180.3 million were treated, representing 70.5% global coverage, the highest number of people ever treated for onchocerciasis in a single year (Table 3, Figure 5).<sup>7</sup>

By the end of 2025, mass drug administration (MDA) with ivermectin had been stopped in 310 implementation units (IUs) previously affected by active transmission, and 38.3 million people who once required PC were living in areas that had completed, or were under, post-treatment surveillance (PTS); most of these are in Nigeria (28.0 million), Uganda, Ethiopia and Mali (Figure 6). Of the 1665 IUs requiring MDA in 2025, 1350 (81.1%) delivered it, and 92.6% of these achieved effective coverage. Angola, Gabon and Sudan did not implement MDA in 2025, Gabon because of the risk of serious adverse events in individuals co-infected with *Loa loa*; the report from Chad had not been received at the time of publication. Geographical coverage remained low in Cameroon (17.1%), Togo (21.9%) and Yemen (24.4%). In Cameroon, the low coverage illustrates the consequences of abrupt changes in external funding: MDA had been planned in 123 IUs with support from external donors, which was suspended in January 2025 after the annual plans had been approved. The Government adopted a mitigation plan, but national funds were released only in October 2025, too late for treatment to be organized before the end of the year, and the shipment of ivermectin was delayed while funding remained uncertain. MDA was delivered only in the 21 IUs for which other partners provided support. The transition that followed the closure of the USAID neglected tropical disease (NTD) programme showed that countries can sustain delivery by integrating MDA into routine health services and other campaigns,<sup>8</sup> but integration requires time to plan and budget. Partners are therefore encouraged to move towards multi-year planning and to provide catalytic funding aligned with nationally owned plans, so that a change in external support does not disrupt treatment.

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<sup>7</sup> Data reported by countries are available on the WHO preventive chemotherapy data portal (<https://www.who.int/data/preventive-chemotherapy>, accessed September 2026). Data from country reports for 2025 that had not been received at the time of publication will be made available on the portal.

<sup>8</sup> See No. 41, 2025, pp. 451–460.

Table 3. Mass drug administration (MDA) for onchocerciasis by country, 2025

| WHO region     | Country                          | Status of MDA                | Total population requiring MDA in 2025 | No. of IUs no longer requiring MDA | Population no longer requiring MDA <sup>a</sup> | No. of IUs requiring MDA <sup>b</sup> | No. of IUs delivering MDA in 2025 | Proportion of IUs achieving effective coverage <sup>c</sup> | Reported population treated in 2025 | Geographical coverage (%) | National coverage (%) |
|----------------|----------------------------------|------------------------------|----------------------------------------|------------------------------------|-------------------------------------------------|---------------------------------------|-----------------------------------|-------------------------------------------------------------|-------------------------------------|---------------------------|-----------------------|
| <b>African</b> |                                  |                              | <b>254 089 751</b>                     | <b>294</b>                         | <b>37 239 975</b>                               | <b>1 621</b>                          | <b>1 338</b>                      | <b>92.5</b>                                                 | <b>179 991 345</b>                  | <b>82.5</b>               | <b>70.8</b>           |
|                | Angola                           | Requiring PC                 | 7 208 537                              |                                    |                                                 | 48                                    | No MDA                            |                                                             |                                     |                           |                       |
|                | Benin                            | Requiring PC                 | 6 774 484                              |                                    |                                                 | 51                                    | 51                                | 80.4                                                        | 5 106 104                           | 100                       | 75.4                  |
|                | Burkina Faso                     | Requiring PC                 | 352 587                                |                                    |                                                 | 6                                     | 6                                 | 100                                                         | 280 815                             | 100                       | 79.6                  |
|                | Burundi                          | Requiring PC                 | 2 431 070                              |                                    |                                                 | 12                                    | 12                                | 100                                                         | 1 971 276                           | 100                       | 81.1                  |
|                | Cameroon                         | Requiring PC                 | 11 456 280                             |                                    |                                                 | 123                                   | 21                                | 90.5                                                        | 2 151 922                           | 17.1                      | 18.8                  |
|                | Central African Republic         | Requiring PC                 | 3 893 062                              |                                    |                                                 | 20                                    | 20                                | 85.0                                                        | 2 915 240                           | 100                       | 74.9                  |
|                | Chad                             | Requiring PC                 | 6 807 590                              |                                    |                                                 | 57                                    | No data                           |                                                             |                                     |                           |                       |
|                | Congo                            | Requiring PC                 | 860 914                                |                                    |                                                 | 19                                    | 19                                | 100                                                         | 800 959                             | 100                       | 93.0                  |
|                | Côte d'Ivoire                    | Requiring PC                 | 23 851 708                             |                                    |                                                 | 97                                    | 97                                | 100                                                         | 18 549 391                          | 100                       | 77.8                  |
|                | Democratic Republic of the Congo | Requiring PC                 | 61 712 299                             |                                    |                                                 | 271                                   | 270                               | 95.2                                                        | 47 901 575                          | 99.6                      | 77.6                  |
|                | Equatorial Guinea                | Post-PC surveillance         |                                        | 4                                  | 98 797                                          |                                       |                                   |                                                             |                                     |                           |                       |
|                | Ethiopia                         | Requiring PC                 | 30 204 609                             | 27                                 | 2 930 644                                       | 312                                   | 300                               | 90.3                                                        | 23 730 928                          | 96.2                      | 78.6                  |
|                | Gabon                            | Requiring PC                 | 818 874                                |                                    |                                                 | 27                                    | No MDA                            |                                                             |                                     |                           |                       |
|                | Ghana                            | Requiring PC                 | 5 269 727                              |                                    |                                                 | 79                                    | 79                                | 94.9                                                        | 4 640 804                           | 100                       | 88.1                  |
|                | Guinea                           | Requiring PC                 | 12 094 033                             |                                    |                                                 | 33                                    | 31                                | 64.5                                                        | 8 083 281                           | 93.9                      | 66.8                  |
|                | Guinea-Bissau                    | Requiring PC                 | 669 565                                |                                    |                                                 | 34                                    | 33                                | 81.8                                                        | 432 589                             | 97.1                      | 64.6                  |
|                | Kenya                            | Thought not requiring PC     |                                        |                                    |                                                 |                                       |                                   |                                                             |                                     |                           |                       |
|                | Liberia                          | Requiring PC                 | 3 922 344                              |                                    |                                                 | 15                                    | 15                                | 46.7                                                        | 2 768 973                           | 100                       | 70.6                  |
|                | Malawi                           | Requiring PC                 | 2 554 764                              |                                    |                                                 | 8                                     | 8                                 | 100                                                         | 2 074 667                           | 100                       | 81.2                  |
|                | Mali                             | Requiring PC                 | 7 550 115                              | 2                                  | 1 021 662                                       | 20                                    | 20                                | 90.0                                                        | 5 690 234                           | 100                       | 75.4                  |
|                | Mozambique                       | Requiring PC                 | 1 463 323                              |                                    |                                                 | 4                                     | 4                                 | 75.0                                                        | 961 289                             | 100                       | 65.7                  |
|                | Niger                            | Elimination verified in 2025 |                                        |                                    |                                                 |                                       |                                   |                                                             |                                     |                           |                       |
|                | Nigeria                          | Requiring PC                 | 35 070 349                             | 209                                | 28 034 056                                      | 260                                   | 257                               | 99.6                                                        | 32 279 359                          | 98.8                      | 92.0                  |
|                | Rwanda                           | Thought not requiring PC     |                                        |                                    |                                                 |                                       |                                   |                                                             |                                     |                           |                       |

| WHO region                   | Country                            | Status of MDA                | Total population requiring MDA in 2025 | No. of IUs no longer requiring MDA | Population no longer requiring MDA <sup>a</sup> | No. of IUs requiring MDA <sup>b</sup> | No. of IUs delivering MDA in 2025 | Proportion of IUs achieving effective coverage <sup>c</sup> | Reported population treated in 2025 | Geographical coverage (%) | National coverage (%) |
|------------------------------|------------------------------------|------------------------------|----------------------------------------|------------------------------------|-------------------------------------------------|---------------------------------------|-----------------------------------|-------------------------------------------------------------|-------------------------------------|---------------------------|-----------------------|
|                              | Senegal                            | Post-PC surveillance         |                                        | 8                                  | 356 387                                         |                                       |                                   |                                                             |                                     |                           |                       |
|                              | Sierra Leone                       | Requiring PC                 | 7 990 095                              |                                    |                                                 | 14                                    | 14                                | 85.7                                                        | 5 805 155                           | 100                       | 72.7                  |
|                              | South Sudan                        | Requiring PC                 | 10 246 261                             |                                    |                                                 | 49                                    | 45                                | 86.7                                                        | 7 219 235                           | 91.8                      | 70.5                  |
|                              | Togo                               | Requiring PC                 | 3 680 375                              | 4                                  | 431 567                                         | 32                                    | 7                                 | 100                                                         | 822 014                             | 21.9                      | 22.3                  |
|                              | Uganda                             | Requiring PC                 | 529 369                                | 39                                 | 3 917 910                                       | 5                                     | 5                                 | 100                                                         | 474 001                             | 100                       | 89.5                  |
|                              | United Republic of Tanzania        | Requiring PC                 | 6 677 417                              | 1                                  | 448 952                                         | 25                                    | 24                                | 91.7                                                        | 5 331 534                           | 96.0                      | 79.8                  |
| <b>Americas<sup>d</sup></b>  |                                    |                              | <b>33 313</b>                          | <b>11</b>                          | <b>538 517</b>                                  | <b>2 (715)</b>                        | <b>2 (685)</b>                    | <b>78.2</b>                                                 | <b>28 638</b>                       | <b>95.8</b>               | <b>86.0</b>           |
|                              | Brazil                             | Requiring PC                 | 17 089                                 |                                    |                                                 | 1 (284)                               | 1 (280)                           | 76.7                                                        | 13 945                              | 98.6                      | 81.6                  |
|                              | Colombia                           | Elimination verified in 2013 |                                        | 1                                  | 1 366                                           |                                       |                                   |                                                             |                                     |                           |                       |
|                              | Ecuador                            | Elimination verified in 2014 |                                        | 1                                  | 25 863                                          |                                       |                                   |                                                             |                                     |                           |                       |
|                              | Guatemala                          | Elimination verified in 2016 |                                        | 4                                  | 231 467                                         |                                       |                                   |                                                             |                                     |                           |                       |
|                              | Mexico                             | Elimination verified in 2015 |                                        | 3                                  | 169 869                                         |                                       |                                   |                                                             |                                     |                           |                       |
|                              | Venezuela (Bolivarian Republic of) | Requiring PC                 | 16 224                                 | 2                                  | 109 952                                         | 1 (431)                               | 1 (405)                           | 79.0                                                        | 14 693                              | 94.0                      | 90.6                  |
| <b>Eastern Mediterranean</b> |                                    |                              | <b>1 571 015</b>                       | <b>5</b>                           | <b>512 435</b>                                  | <b>42</b>                             | <b>10</b>                         | <b>100</b>                                                  | <b>301 889</b>                      | <b>23.8</b>               | <b>19.2</b>           |
|                              | Sudan                              | Requiring PC                 | 196 703                                | 3                                  | 356 043                                         | 1                                     | No MDA                            |                                                             |                                     |                           |                       |
|                              | Yemen                              | Requiring PC                 | 1 374 312                              | 2                                  | 156 392                                         | 41                                    | 10                                | 100                                                         | 301 889                             | 24.4                      | 22.0                  |
| <b>Global<sup>e</sup></b>    |                                    |                              | <b>255 694 079</b>                     | <b>310</b>                         | <b>38 290 927</b>                               | <b>1 665</b>                          | <b>1 350</b>                      | <b>92.6</b>                                                 | <b>180 321 872</b>                  | <b>81.1</b>               | <b>70.5</b>           |

<sup>a</sup> Population of areas that have completed or under post-treatment surveillance (country-wide or focal).

<sup>b</sup> Data is available for countries which submitted reports to WHO.

<sup>c</sup> Proportion of IUs implemented MDA achieving  $\geq 65\%$  coverage of population in need of PC. For the Americas, effective coverage calculates as a proportion of districts implemented MDA achieving  $\geq 85\%$  coverage of the eligible population.

<sup>d</sup> For the Region of the Americas proportion of IUs achieving effective coverage and geographical coverage were calculated based on data provided at the community level (in brackets).

<sup>e</sup> Total population includes some individuals who may not live in the transmission zone (e.g. people who live in an IU that is only partially in a transmission zone).

Figure 5. Number of people requiring and receiving preventive chemotherapy for onchocerciasis, and global coverage, 2010–2025

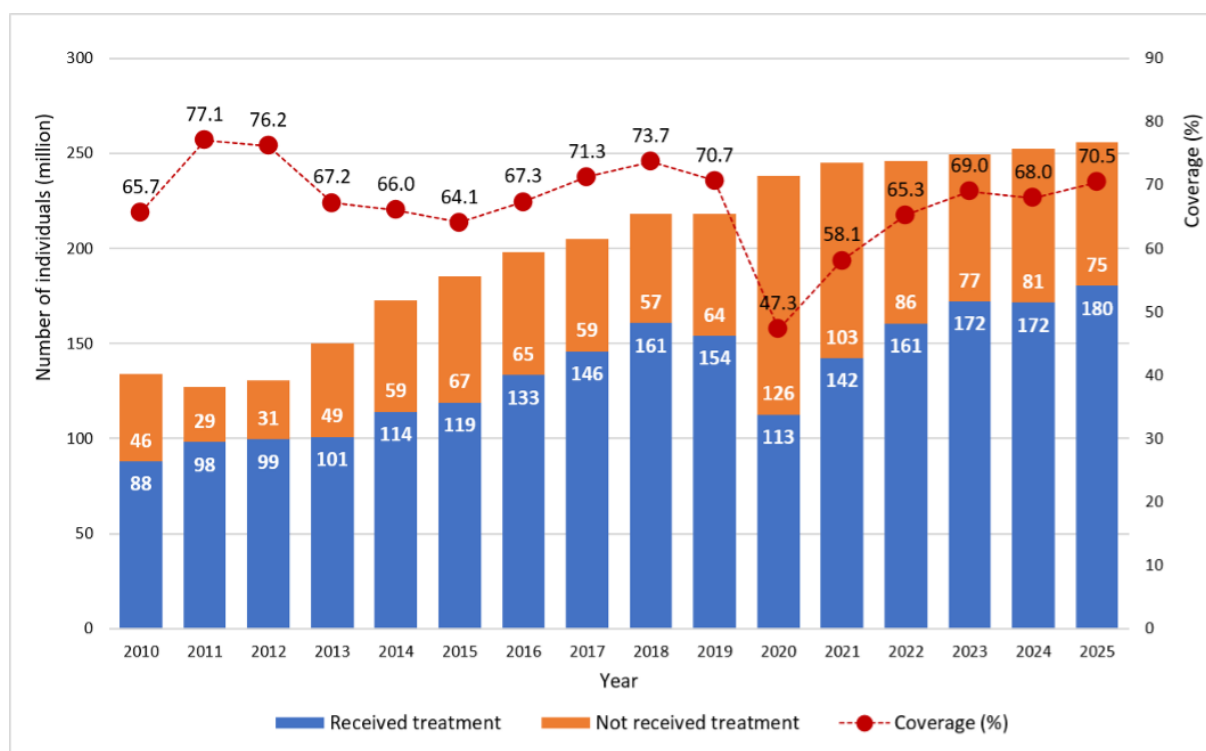
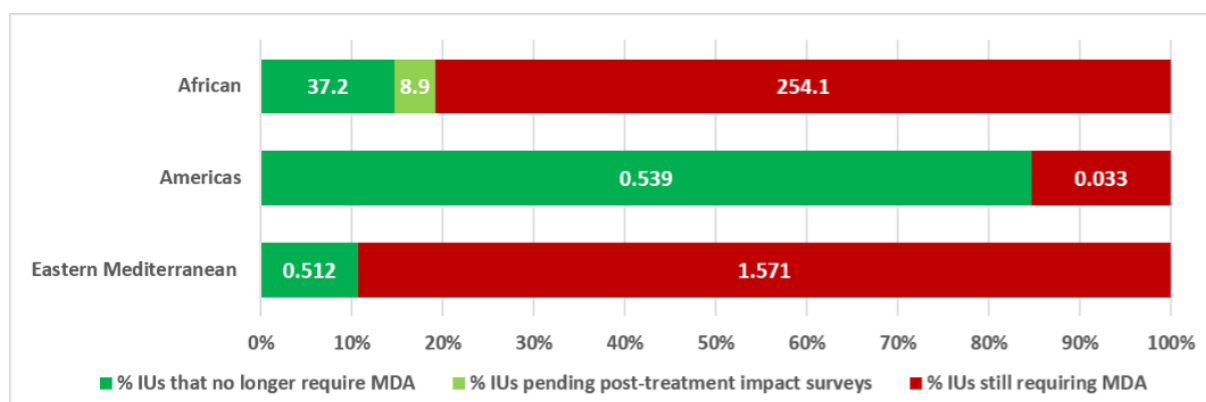


Figure 6. Proportion of endemic implementation units (IUs) that no longer require MDA, pending post-treatment impact surveys and remaining IUs still requiring MDA and their population in millions, 2025



Note: This analysis does not include IUs that require mapping.

## The pathway to elimination of transmission

Elimination of onchocerciasis proceeds through a sequence of phases defined in the 2016 WHO guidelines for stopping MDA and verifying elimination.<sup>9</sup> The starting point is onchocerciasis elimination mapping (OEM), which is required in areas of unknown endemicity, most of which were classified as hypo-endemic under the former control programmes and never received treatment.<sup>10</sup>

Where transmission is confirmed, the intervention is annual MDA with ivermectin delivered to the entire eligible population, with the aim of reaching at least 80% of the total population in every round (effective coverage). Ivermectin kills the microfilariae (L1) in the skin and temporarily blocks their production by adult female worms, but does not kill the adult worm. When effective coverage is sustained, microfilarial loads in the skin fall to levels at which blackflies no longer acquire infection and therefore no longer inoculate L3: this is the phase of transmission suppression, which is maintained only as long as treatment continues, and which is reached after a number of rounds that depends on the pre-control endemicity of the focus and on coverage. In the human host, an inoculated L3 moults to L4 within about a week and to the immature adult within 1–3 months; the adults

<sup>9</sup> Guidelines for stopping mass drug administration and verifying elimination of human onchocerciasis: criteria and procedures. Geneva: World Health Organization; 2016 (<https://www.who.int/publications/i/item/9789241510011>, accessed September 2026).

<sup>10</sup> Onchocerciasis elimination mapping: a handbook for national elimination programmes. Geneva: World Health Organization; 2024 (<https://www.who.int/publications/i/item/9789240099227>, accessed September 2026).

mature and pair in subcutaneous nodules, and microfilariae appear in the skin after a prepatent period of about 10–15 months. Transmission suppression therefore stops the establishment of new adult worms. Adult female worms continue to reproduce for a mean of 9–11 years and for up to about 15 years,<sup>11</sup> so that MDA must be continued, from the moment suppression is reached, for at least the reproductive lifespan of the adult worm before stopping can be considered; the minimum of 12–15 years of annual treatment commonly quoted for elimination applies only where effective coverage is achieved from the first rounds. In rounds in which coverage remains below 80%, transmission may be re-established, new adult worms are acquired, and the count of effective rounds starts again; low coverage therefore prolongs the time needed to reach elimination of transmission.

Monitoring that transmission is indeed suppressed is an integral part of the treatment phase. Periodic impact assessments are conducted in sentinel sites, usually first-line villages selected at the start of the programme, in which the prevalence and intensity of microfilariae in the skin are measured by skin snip microscopy and exposure to infection is measured by Ov16 serology (RDT or enzyme-linked immunosorbent assay, ELISA) on dried blood spots collected from children aged under 10 years, who were born after treatment began and are therefore indicators of recent transmission. Because a low sensitivity of Ov16 serology in children has been reported to WHO by its Diagnostics Technical Advisory Group (DTAG) (see below), skin snip microscopy, the standard practice before the introduction of the Ov16 RDT, should be considered in sentinel sites to monitor programme progress. In parallel, blackflies are collected at breeding sites in sentinel sites during the transmission season and tested by pool screening with O-150 polymerase chain reaction (PCR) to detect L3.<sup>9</sup>

Once MDA is stopped, the transmission zone enters a period of PTS of 3–5 years, during which entomological evaluation is repeated to verify that transmission has not resumed in the absence of treatment. If the entomological criterion is again met, transmission is considered interrupted and the area moves to post-elimination surveillance. Elimination is verified at national level: the national onchocerciasis elimination committee compiles a dossier documenting the evidence for each transmission zone, which is reviewed by an independent verification team convened by WHO before the country is declared free of onchocerciasis. As acknowledgement of elimination requires that areas across national borders have also interrupted transmission, cross-border collaboration is a prerequisite at every step of the pathway, and surveillance remains critical after verification to detect any reintroduction of the parasite from neighbouring countries.

## Mid-term review of the NTD road map for onchocerciasis in the African Region

As 2025 marked the midpoint of the WHO road map on NTDs 2021–2030, a mid-term review (MTR) is being conducted for onchocerciasis in the endemic countries of the WHO African Region. Its purpose is to identify, country by country and IU by IU, the bottlenecks that prevent progress along the pathway to elimination described above and the actions required to remove them before 2030.

Quantitative data were extracted from the joint application package submitted annually by countries, the [ESPEN](#) portal, the epidemiological data reporting form and the IU planner. Each country then completed a self-assessment questionnaire of 12 sections covering the full programmatic cycle, from mapping to verification, and the cross-cutting enablers. The questionnaire documents the status of mapping, the treatment history and the number of consecutive rounds with effective coverage, the results of epidemiological and entomological surveys and of PTS in 2020–2025, the delineation of transmission zones, the year in which each IU is expected to be ready for a stop-MDA evaluation, and the activities planned for 2026 and their funding. Qualitative sections cover the national onchocerciasis elimination committee, cross-border collaboration, integration into the health system, domestic financing, equity of access for remote and nomadic populations, coordination across ministries, capacity-building and partner support. Responses are triangulated with the quantitative data, the reports of national committees and national master plans. The review is also informed by the WHO Onchocerciasis Technical Advisory Subgroup (OTS) and by the chairs and members of the national onchocerciasis elimination committees (NOECs), with whom its findings are discussed.

The outputs of the review consist of a bottleneck matrix identifying the three main obstacles per disease against the road map indicators; IU-level dashboards and recommendations, with cost estimates for the activities identified; and a country fact sheet. In 2027, countries will be invited to use these findings to develop costed acceleration plans towards the 2030 targets, with support from the partners of the NTD NGO Network, so that every endemic IU in the Region has a defined trajectory, with dates and budget, from its current position on the elimination pathway to the stopping of MDA, anchored in national leadership and in delivery, supply chain and data management integrated within the health system.

At the midpoint of the road map, about half of each target has been reached (*Table 4*): 17 of the 34 countries expected to stop MDA in at least one focus, nine of 16 in more than 50% of their population and six of 12 in their entire endemic population. The obstacles that recur will determine whether the remaining targets are met: incomplete geographical coverage, *L. loa* co-endemicity preventing the deployment of ivermectin, and uncertainty in the diagnostics used for stop-MDA decisions. About 28 million people live in IUs in which MDA was not delivered in 2025, in Angola, Cameroon, Chad, Gabon, Sudan, Togo and Yemen (*Table 3*), where the count of effective rounds has not started or has been interrupted. Even if all three targets are

<sup>11</sup> Plaisier AP, van Oortmarssen GJ, Remme J, Habbema JDF. The reproductive lifespan of *Onchocerca volvulus* in West African savanna. *Acta Trop.* 1991;48(4):271–284.

met, most of the 255.7 million people currently requiring PC will still be under MDA in 2030, which is the rationale for the acceleration plans. The projected year of stop-MDA for each IU and the ranking of bottlenecks will be reported once the MTR is completed.

Table 4. Status of countries achieving neglected tropical diseases road map targets for onchocerciasis elimination, 2025

| WHO Region            | I. Countries that stopped MDA in at least one area                                                                                                                                 | II. Countries that stopped MDA for $\geq 50\%$ of population           | III. Countries that stopped MDA for 100% of population | IV. Countries verified for elimination of onchocerciasis transmission |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|--------------------------------------------------------|-----------------------------------------------------------------------|
| African               | Equatorial Guinea, Ethiopia <sup>a</sup> , Ghana <sup>a</sup> , Malawi <sup>a</sup> , Mali, Nigeria <sup>a</sup> , Senegal, Togo, Uganda, United Republic of Tanzania <sup>a</sup> | Equatorial Guinea, Senegal, Uganda                                     | Equatorial Guinea, Senegal                             | Niger <sup>b</sup>                                                    |
| Americas              | Colombia, Ecuador, Guatemala, Mexico, Bolivarian Republic of Venezuela                                                                                                             | Colombia, Ecuador, Guatemala, Mexico, Bolivarian Republic of Venezuela | Colombia, Ecuador, Guatemala, Mexico                   | Colombia, Ecuador, Guatemala, Mexico                                  |
| Eastern Mediterranean | Sudan, Yemen                                                                                                                                                                       | Sudan                                                                  |                                                        |                                                                       |
| <b>Total</b>          | <b>17</b>                                                                                                                                                                          | <b>9</b>                                                               | <b>6</b>                                               | <b>5</b>                                                              |

MDA: mass drug administration

<sup>a</sup> Countries pending impact assessment in implementation units stopped MDA, as of 2025 status.

<sup>b</sup> Niger is excluded from columns I–III because MDA was implemented primarily for lymphatic filariasis; verification for elimination of onchocerciasis transmission resulted from earlier vector control combined with LF MDA.

## High-level side event at the Seventy-ninth World Health Assembly

At the Seventy-ninth World Health Assembly, in May 2026, the Global Onchocerciasis Network for Elimination (GONE) and the African Union Commission convened a high-level side event that brought together African governments and global partners to advance the elimination of malaria and NTDs. Discussions focused on cross-border collaboration, integrated health systems and sustainable financing, the same three enablers that the MTR examines in each country. Senior representatives and leaders from 10 African countries, including the Ministers of Health of Liberia, Senegal and the United Republic of Tanzania, endorsed an advocacy statement calling for the signature of the memorandum of understanding on cross-border collaboration for the elimination of NTDs.

## Diagnostics: meetings of the onchocerciasis subgroup of the DTAG

The onchocerciasis subgroup of the DTAG met twice in 2026 to review new diagnostic tools against the WHO target product profiles (TPPs) for onchocerciasis.<sup>12</sup> The TPPs define two priority use cases: a test to support OEM, with a minimum sensitivity of 60% and a specificity of 99.8% in adults, and a test to support decisions to stop MDA, with a minimum sensitivity of 89% and a specificity of 99.8% in children. The very high specificity required reflects the fact that, at the low prevalence thresholds used for programme decisions, even a small proportion of false-positive results would generate more false than true positives, and a false-positive classification commits an entire district to more than a decade of MDA that was not needed. The only rapid test currently in programmatic use is the SD Bioline Onchocerciasis IgG4 (Ov16) test, performed for programmatic decisions on dried blood spots in a laboratory setting,<sup>13</sup> and the subgroup has repeatedly noted the need for alternative, well-characterized tools and a second supplier.

At its first meeting, in July 2026, the subgroup reviewed the LoaScope, a portable automated video microscope that quantifies *L. loa* microfilariae in a capillary of fingerprick blood by detecting their movement and displays the microfilarial density within 2–3 minutes, without staining or a microscopist. The device was developed to support the test-and-not-treat (TaNT) approach, proposed by researchers to allow ivermectin MDA to proceed in loiasis co-endemic areas: every eligible individual is tested before treatment, and the small proportion with *L. loa* microfilaraemia at or above an operational threshold of 20 000 microfilariae/mL, set deliberately below the level at which the risk of encephalopathy rises sharply, are excluded from ivermectin and referred for alternative management. In the Okola health district of Cameroon, 16 259 people were tested with the first-generation device, 2.4% were excluded from ivermectin and no serious adverse event occurred,<sup>14</sup> and modelling indicates that elimination

<sup>12</sup> Onchocerciasis: diagnostic target product profile to support preventive chemotherapy. Geneva: World Health Organization; 2021 (<https://iris.who.int/handle/10665/341719>, accessed September 2026).

<sup>13</sup> WHO Onchocerciasis Technical Advisory Subgroup: report of the seventh meeting, Saly, Senegal, 4 November 2023. Geneva: World Health Organization; 2024.

<sup>14</sup> Kamgno J, Pion SD, Chesnais CB, et al. A test-and-not-treat strategy for onchocerciasis in *Loa loa*-endemic areas. *N Engl J Med*. 2017;377(21):2044–2052.

of onchocerciasis could be feasible in co-endemic areas with this approach.<sup>15</sup> TaNT is not, however, a WHO-recommended strategy: it is being assessed, with its diagnostic requirements, in the living guideline described below, and the reference method for quantifying *L. loa* microfilaraemia remains the calibrated thick blood smear.

The subgroup concluded that the technology is highly promising and the public health need urgent, but that it cannot at present recommend the device to WHO for programmatic use: the device is not yet in its final version or commercially available, is being developed under a generic quality management standard (ISO 9001) rather than the standard for medical devices (ISO 13485) that applies to an in vitro diagnostic informing an individual treatment decision, and has no legal manufacturer of record. It advised that validation of the final, locked device, capillary and software be completed under a protocol reviewed by the subgroup before any commitment to scale manufacture, and that the developers pursue certification under ISO 13485, identify a manufacturer of record, preferably based in Africa, and submit an expression of interest to the WHO Expert Review Panel for Diagnostics (ERPD) when eligible.

At its second meeting, in August 2026, the subgroup reviewed the evidence package submitted to the ERPD for the Onchocerciasis Test Plus (OT+), a lateral-flow test developed by Drugs & Diagnostics for Tropical Diseases that detects IgG4 antibodies to three *O. volvulus* antigens, including Ov16. The developer claims a single intended use, OEM, on capillary whole blood and dried blood spots. Against skin snip microscopy as the reference, the claimed sensitivity in adults was 75.5% in whole blood and 76.8% in dried blood spots, and the claimed specificity 99.3% ( $n = 2410$ ), with no cross-reactivity with *L. loa* or *Mansonella*; in 20 clusters in Angola, the seroprevalence estimates of OT+ and of the SD Bioline Ov16 test were strongly correlated ( $R^2 = 0.91$ ). The subgroup considered OT+ a promising tool for OEM and advised WHO that it is suitable for this use if the ERPD review, expected to conclude in early 2027, is favourable, noting that the claimed specificity remains below the 99.8% TPP minimum and must be confirmed with production-lot data, and that the evidence does not yet support a stop-MDA use case.

The most important finding of the meeting extended beyond OT+: in the Angola data, the sensitivity of Ov16 antibody detection against skin snip microscopy fell markedly with decreasing age, to about 20% in children aged 5–9 years, with the SD Bioline Ov16 test and OT+ alike. As children aged under 10 years are the sentinel population for stop-MDA evaluations, the subgroup recommended that the Angola samples be re-analysed by Ov16 ELISA and that the sensitivity of Ov16 diagnostics be measured against skin snip microscopy in children and adults in other geographies before the implications for stop-MDA surveys can be determined. WHO also drew the subgroup's attention to a third use case not addressed by the current TPPs, a diagnostic to support TaNT or test-and-treat strategies in *L. loa* co-endemic areas, which implies an onchocerciasis individual diagnosis and treatment decision and therefore a higher bar for sensitivity, regulatory status and quality assurance; the subgroup will take up the requirements for such a test at a future meeting.

## WHO guideline on alternative treatment strategies for parasitic infections

In 2026, WHO advanced the development of a guideline on alternative treatment strategies for onchocerciasis, lymphatic filariasis and soil-transmitted helminthiasis. The guideline is being developed in accordance with the WHO handbook for guideline development:<sup>16</sup> the systematic reviews and GRADE evidence profiles were produced by a team independent of the Guideline Development Group (GDG), the GDG met to formulate recommendations using the GRADE evidence-to-decision framework, and the document is undergoing review by the Guidelines Review Committee before publication in 2027. Ivermectin, donated through the Mectizan Donation Programme (MDP), remains the cornerstone of onchocerciasis elimination and annual community-directed treatment remains the default; the alternative regimens under evaluation are intended to complement where specific conditions make a change necessary and where it can be sustained for as long as elimination requires.

For onchocerciasis, the GDG examined seven questions. At the level of MDA, these compared annual moxidectin with annual ivermectin; annual moxidectin with biannual ivermectin; biannual moxidectin with biannual ivermectin; and annual ivermectin combined with moxidectin six months later. At the level of individual treatment, they compared single-dose moxidectin with single-dose ivermectin; single-dose moxidectin once a year with single-dose ivermectin twice a year; and doxycycline given with a single dose of ivermectin or moxidectin with the single dose alone. Two questions apply across the diseases: whether fixed-dose ivermectin, with the dose determined by age, should be used instead of height-based dosing when weight-based dosing is not feasible, with or without albendazole, and whether ivermectin should be used in children aged under 5 years or weighing less than 15 kg.

The guideline will be published as a living guideline under the WHO Guidelines 2.0 initiative: the searches for each question will be re-run every 6–12 months, new evidence will be assessed and updated recommendations will be published on a rolling basis. Three areas central to completing elimination are being addressed for the future living updates: the safe delivery of ivermectin in areas co-endemic with *L. loa*, including the assessment of the TaNT strategy; the diagnostics that support OEM, stop-MDA

<sup>15</sup> Blok DJ, Kamgno J, Pion SD, et al. Feasibility of onchocerciasis elimination using a “test-and-not-treat” strategy in *Loa loa* co-endemic areas. Clin Infect Dis. 2021;72(12):e1047–e1055.

<sup>16</sup> WHO handbook for guideline development, second edition. Geneva: World Health Organization; 2014 (<https://www.who.int/publications/i/item/9789241548960>, accessed September 2026).

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decisions and PTS, drawing on the DTAG reviews described above; pediatric formulations of ivermectin and the longer-term impact of moxidectin on transmission, on which trial and modelling evidence is expected between 2026 and 2030.

## WHO guideline on the diagnosis and management of loiasis

Loiasis, caused by the filarial nematode *Loa loa* and transmitted by tabanid flies of the genus *Chrysops*, is endemic in the forest and adjacent savannah areas of Central Africa and in foci of West Africa. More than 20 million people are estimated to be infected and up to 170 million live in areas with ongoing transmission. Long regarded as a benign nuisance, loiasis is now recognized as a cause of morbidity and excess mortality in its own right, and, as described above, it determines the strategy for onchocerciasis elimination in co-endemic areas. No vector control tool exists for *Chrysops*; diagnosis relies on the history of eye worm migration and on the calibrated thick blood smear, serological assays being poorly standardized; and diethylcarbamazine (DEC), the reference treatment, is contraindicated in patients co-infected with *O. volvulus*, while albendazole requires prolonged regimens and ivermectin carries a risk of serious adverse events in hypermicrofilaraemic patients. In the absence of any evidence-based guideline, treatment is guided by the individual experience of health-care providers.

WHO has therefore initiated the development of this guideline, following the WHO handbook for guideline development.<sup>16</sup> It addresses the individual patient in both endemic and non-endemic settings, where returning travellers, migrants and expatriates are seen, and does not at this stage address population-based programmes or MDA. Several questions in the population, intervention, comparator, outcome (PICO) and population, index test, reference standard (PIRT) formats have been proposed in three domains: diagnosis, comparing clinical scoring, serology, microscopy of thick or concentrated blood and molecular assays for the screening of suspected cases and the confirmation of amicrofilaraemic and microfilaraemic loiasis; treatment, comparing albendazole, ivermectin and combination regimens with DEC, and antifilarial therapy with no intervention, in patients living in endemic areas and in returning travellers; and prevention, addressing DEC chemoprophylaxis for long-term visitors to high-transmission areas and repellents against *Chrysops* bites. Critical outcomes are diagnostic accuracy, clinical and parasitological cure, reduction of microfilaraemia, prevention of disease progression and complications, and adverse drug reactions. Best practice statements will also be developed on case definitions, setting and infrastructure, follow-up, adjunct treatments, management of complications and the use of blood products in endemic areas. The systematic reviews are being conducted in 2026 and 2027 with the kind support of the Center for Tropical Medicine of the Bernhard Nocht Institute for Tropical Medicine, Hamburg, Germany.

## Forty years of the Mectizan Donation Programme

Ivermectin has been donated for the elimination of onchocerciasis through the MDP since 1987 by MSD, also known as Merck & Co., Inc., Rahway, N.J. USA. In 2027, the MDP will mark 40 years as the longest-running large-scale medicine donation programme in history, having delivered more than five billion treatments for onchocerciasis and lymphatic filariasis, the 5-billionth of which was administered in Togo in 2025.<sup>8</sup> The year 2025 was also the year with the highest number of treatments against onchocerciasis ever delivered, showing that the donation continues to reach further four decades after it began, and making the MDP and the global onchocerciasis elimination programme one of the most successful public health programmes in history.

As more countries stop MDA and move into post-treatment and post-elimination surveillance, the requirements of the programme change. The phases that follow depend on national capacity for entomological monitoring, laboratory diagnostics, data management and cross-border surveillance. The long-term success of elimination will therefore depend not only on the continued availability of medicine but also on the integration of these surveillance functions into routine health systems. National leadership and strong reliable partnerships will be the key to see onchocerciasis gone forever.

## Progress in eliminating onchocerciasis in the WHO Region of the Americas: report from the XXXV Inter-American Conference on Onchocerciasis (IACO) 2025

### Editorial note

Onchocerciasis elimination in the World Health Organization (WHO) Region of the Americas is approaching completion, with transmission persisting only in the Yanomami Focus Area (YFA), a cross-border endemic zone in the Amazon region shared by the Federative Republic of Brazil and the Bolivarian Republic of Venezuela<sup>17</sup>. This report reflects on progress in the Americas and the need for a single operational approach to the YFA presented at the XXXV Inter-American Conference on Onchocerciasis (IACO) in 2025. The Onchocerciasis Elimination Program for the Americas (OEPA) facilitated a technical working group meeting prior to the IACO, at which the countries agreed to ongoing operational team meetings to address common challenges

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<sup>17</sup> World Health Organization. Progress in eliminating onchocerciasis in the WHO Region of the Americas: report from IACO 2023. Weekly Epidemiological Record. 2024;99(39):545–564.

and identification of operational synergies. Persistent challenges highlighted during the conference include treatment coverage, high population mobility, malaria hyperendemicity, violence linked to illegal mining, and logistical barriers.

This report presents a phased framework, emphasizing three central pillars of intervention—treatment, epidemiological surveillance and health education—supported by strengthened health information systems and laboratory capacity. Accelerated implementation during the period 2026–2027 will determine whether the regional elimination target for 2030 can be achieved.

## Background

Onchocerciasis is a parasitic disease caused by *Onchocerca volvulus* and transmitted by *Simulium* blackflies. Following WHO recommendations, the OEPA strategy, based on repeated and sustained ivermectin mass drug administration (MDA) achieving at least 85% coverage of eligible populations<sup>18</sup>, has resulted in the elimination of transmission in 11 out of thirteen endemic foci in the region<sup>19</sup>.

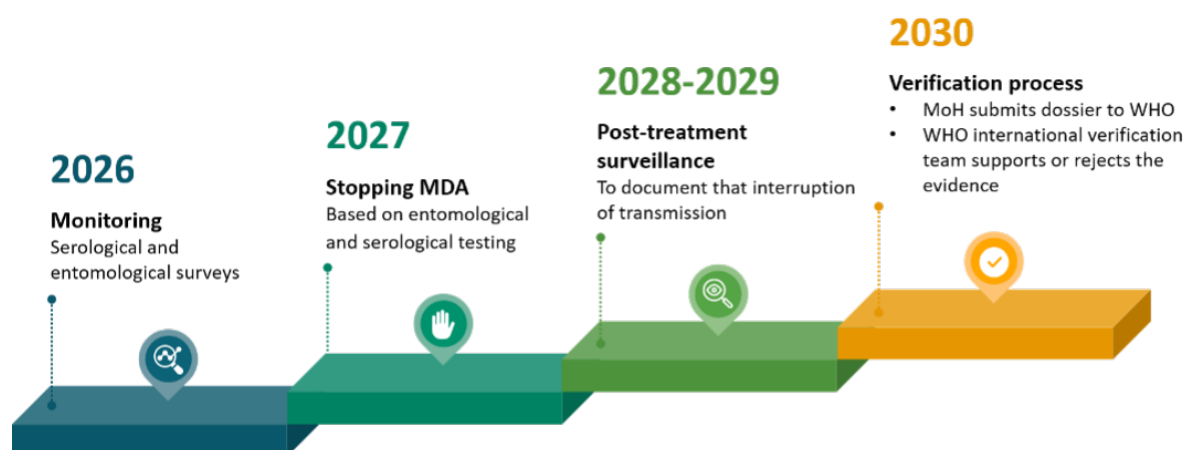
By 2025, transmission remains only in the YFA, affecting an estimated 39 701 individuals in 715 communities distributed across a remote and highly dispersed cross-border region between Brazil and the Bolivarian Republic of Venezuela<sup>20</sup>. The YFA accounts for approximately 7% of the regional population originally requiring preventive chemotherapy for onchocerciasis<sup>21</sup>, reflecting the remarkable progress achieved in the Americas.

The WHO Neglected Tropical Diseases (NTD) road map (2021–2030) emphasizes sustaining high ivermectin treatment coverage, strengthening country ownership and integrating programmes into health systems, particularly at the midterm review point in 2025<sup>22</sup>.

## Results

Within the framework of the WHO elimination road map (2021–2030), at IACO 2025, the national onchocerciasis elimination programmes from the YFA presented their assessments of the feasibility of achieving the elimination goal by 2030. The present report is based on a qualitative synthesis of conclusions and recommendations from IACO 2025 and supporting programme documentation. The analysis focuses on identifying operational gaps, priority interventions and system-level requirements across the theoretical timeline to elimination (Figure 7). Summary IACO 2025 key takeaways on operational gaps highlighted structural and governance challenges; population mobility and epidemiological complexity; operational and logistical barriers to implementation; external disruptors including illegal mining, inter-community conflict, and interdependencies with other health programs and services that may sometimes affect ivermectin uptake; and surveillance gaps. These emerged from meeting proceedings as main themes for tailored action plans.

Figure 7. Theoretical timeline to eliminate onchocerciasis in the Yanomami Focus Area, 2026–2030, based on the WHO NTD road map 2021–2030 (launched 28 January 2021).



## Core programme pillars

National programmes evaluated their progress by the interaction of three main interdependent pillars: (i) sustained mass drug administration (MDA), (ii) epidemiological surveillance and (iii) health education and community engagement and proposed key operational shifts to achieve elimination. These include: (i) strengthening epidemiological surveillance supported by en-

<sup>18</sup> World Health Organization. Elimination of human onchocerciasis: progress report, 2024–2025. Weekly Epidemiological Record. 2025;100(41):451–468.

<sup>19</sup> Sauerbrey M *et al.* Progress toward elimination of onchocerciasis in the Americas. Int Health. 2018.

<sup>20</sup> World Health Organization. Progress in eliminating onchocerciasis in the WHO Region of the Americas: report from the Inter-American Conference on Onchocerciasis, 2024. Weekly Epidemiological Record. 2025.

<sup>21</sup> Camacho O *et al.* Scorecard approach to eliminate onchocerciasis in Venezuela. Am J Trop Med Hyg. 2024;111(Suppl):127–136.

<sup>22</sup> World Health Organization. Elimination of human onchocerciasis: progress report, 2024–2025 (overview). Geneva: WHO; 2025.

hanced laboratory capacity and regional collaboration with established laboratories in endemic countries and those already certified as signatories in the Americas, which is critical for monitoring impact and ensuring reliable verification of elimination; (ii) integrating onchocerciasis operations with those of other programmes, such as malaria, other NTD programmes and primary health care systems, is essential to reduce duplication, optimize logistics and resources, and sustain high treatment coverage; (iii) transforming service delivery and community engagement through more frequent or sustained field presence, direct engagement with indigenous associations, and community forums is needed to improve community ownership, treatment adherence and last-mile effectiveness.

Recognizing the high complexity of intervention implementation in a territory characterized by difficult access, high population mobility, diverse micro-ecosystems and vector species, intercommunity conflict, and environmental disruption, both national programmes continue to refine their epidemiologic indicator evaluation approaches. Factors that need to be tailored for subregional analyses are sample size determination and selection of sampling locations, among others, to refine operational transmission zones in accordance with WHO guidance in forthcoming evaluations.

National programmes are actively strengthening health education and community engagement through their regulatory frameworks, while expanding engagement with indigenous organizations in the field. Indigenous community health agents bridge cultural and linguistic gaps, improve adherence to treatment, and enable more effective identification of mobile or absent individuals. These activities are continuous and embedded within national programme delivery.

Programmes receive support from the regional OEPA initiative to enhance performance across the three pillars. Key priorities include strengthening binational coordination; increasing systematic involvement of indigenous health agents (IHA), training, and community engagement; and ensuring the sustained presence of dedicated health teams in the field, enabling deeper community understanding and fostering stronger relationships with indigenous health workers.

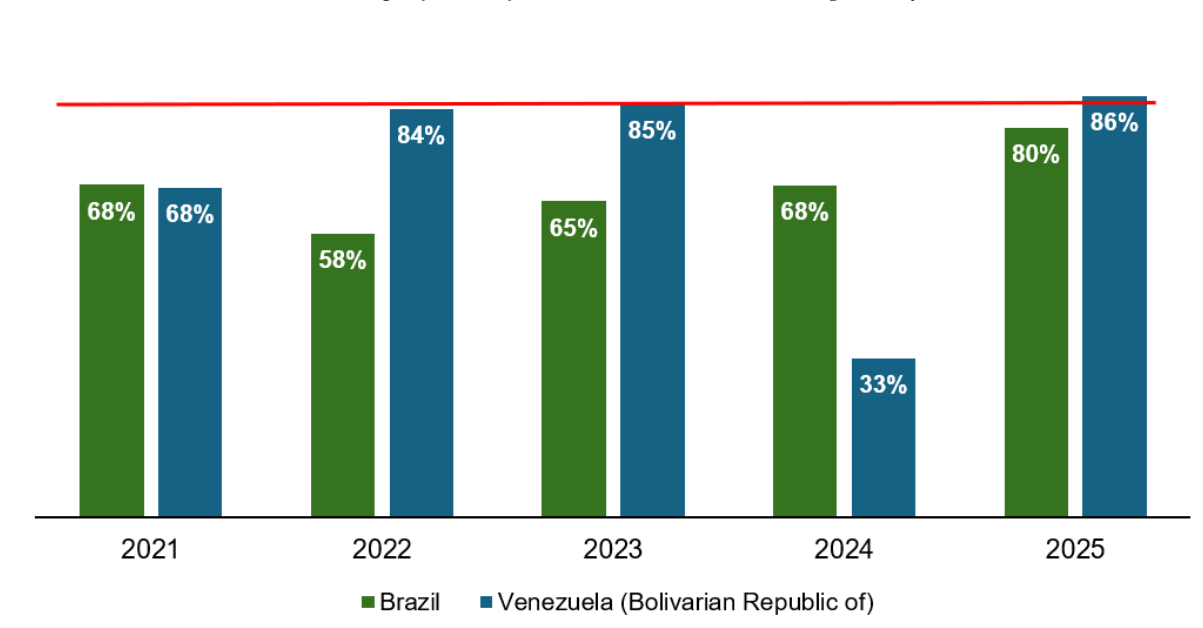
Participation in community forums and decision-making processes can help national programmes build trust and co-design interventions with communities. This approach positions communities as partners rather than recipients of services.

During IACO, members of the OEPA Program Coordinating Committee met and discussed joint management of their adjacent border region as a single shared focus, under the guiding principle, “*Two countries, one focus.*”

## Ivermectin treatment in the YFA in 2025

In 2025, the main elimination strategy remained the standard two-round treatment scheme; however, the Bolivarian Republic of Venezuela maintained quarterly treatments in 68 of its 431 endemic communities. Semiannual treatment coverage rounds reached 82% and 78%, respectively, in Brazil, and 90% and 83%, respectively, in the Bolivarian Republic of Venezuela’s South Focus. Under the four-round scheme, coverage by round in the Bolivarian Republic of Venezuela’s South Focus was 83%, 79%, 84%, and 71%, respectively. Both programmes continue working to restore and sustain coverage above 85%, which has not been consistently met after the COVID-19 disruption. Figure 8 shows annual coverage in each country since 2021.

Figure 8. Onchocerciasis treatment coverage by country, Brazil and the Bolivarian Republic of Venezuela, 2021 – 2025.



Note: Annual coverage was calculated as the total number of individuals treated across two semi-annual rounds relative to the annual target population.

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## Accelerating road map implementation

The period 2026 – 2027 represents a critical window for accelerating efforts towards transmission elimination. While WHO guidance highlights the importance of sustaining high coverage and addressing untreated populations, operational challenges persist (e.g., hard-to-reach areas, illegal mining, inter-community conflict and violence against health teams) and cause coverage gaps within the YFA.

Elimination requires a unified cross-border approach between the two countries. Sustaining high coverage across consecutive treatment rounds is a strategic priority, to be supported by harmonized binational prioritization criteria and targeted territorial microplanning. Surveillance must be intensified through expanded serological sampling, timely turnaround for laboratory results, and enhanced cross-border data sharing. Health education must target sustained community engagement to support participation and adherence.

Programmes should strengthen integrated health information systems to enable real-time monitoring of ivermectin supplies and treatment coverage among mobile populations. Health team supervisors should use standardized supervision checklists to track field operations, and health workers should identify people missed during scheduled community visits using individual-level treatment records. Programmes should continue strengthening the monitoring of population mobility to further improve cross-border follow-up.

## Transition to interruption of transmission

Given sustained effective treatment coverage in selected areas where transmission suppression is suspected, it is critical that programmes maintain robust surveillance and laboratory capacity to detect residual transmission, not only in these areas but in surrounding areas with known ongoing transmission.

## Post-treatment surveillance and verification

In the final phase, programmes focus on verifying elimination through serological and entomological evidence. Before post-treatment surveillance (PTS) begins, national programmes should strengthen laboratory capacity and geospatial analysis. Priorities for laboratories include refresher training, continuing competency certification, expanded diagnostic capacity, and shorter turnaround times to support timely decisions.

Regional collaboration through the OEPA initiative plays a key role by leveraging laboratory expertise in countries that have already achieved elimination. These laboratories can provide quality assurance, technical support and additional capacity for testing. This approach strengthens post-verification surveillance and ensures long-term sustainability of elimination gains.

## Feasibility and operational constraints

The findings indicate that elimination is technically feasible, supported by improved coverage trends, expanded workforce capacity, and stronger epidemiological tools. However, operational barriers—particularly those linked to binational coordination and mobility of the at-risk population—pose significant risks to achieving the 2030 target.

Information-sharing efforts are essential for tracking treatment delivery and population coverage. Similarly, laboratory strengthening and regional collaboration ensure the reliability of surveillance and support the transition to post-elimination monitoring. Furthermore, programme operational integration provides the most effective pathway for optimizing limited resources while maintaining high-impact interventions.

## Priority acceleration strategies

*Strengthened binational coordination:* Regular binational technical meetings and joint operational planning are essential to synchronize interventions, including treatment rounds, surveillance, and workforce deployment.

*Targeted treatment optimization:* Strategies such as cross-border treatment campaigns, adaptive treatment regimens, and focused interventions in low-coverage areas can improve programme effectiveness.

*Expansion of community-based workforce:* Scaling up investments in IHA training, as well as increasing female participation, enhances cultural mediation, improves census accuracy, and supports treatment uptake.

*Enhanced indigenous engagement:* Integrating indigenous leadership into programme governance and conducting meetings within indigenous territories foster trust, ownership, and sustainability.

*Strengthening surveillance and data systems:* Improving laboratory turnaround times, expanding serological sampling, and using geospatial and modelling tools are critical to guiding programme decisions.

*Adaptive approaches to mobility:* Incorporating anthropological insights, community mapping, and digital communication tools (e.g., mobile platforms) can improve tracking of mobile populations.

*Integrated health education and communication:* Innovative communication tools, including culturally adapted audiovisual materials and resources in autochthonous languages, improve community engagement and treatment adherence.

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*Cross-sectoral integration:* Collaboration with malaria and other health programmes and environmental sectors enhances operational efficiency and addresses underlying drivers of mobility and vulnerability.

## Conclusion

The Yanomami Focus Area represents the final binational frontier for onchocerciasis elimination in the Americas. While progress has been substantial, achieving the 2030 elimination goal will depend on overcoming persistent operational challenges. Achieving elimination by 2030 will require sustained binational coordination, community-led delivery, adaptive strategies for mobile populations, and timely surveillance data. Without these, delays in interrupting transmission and verifying elimination are likely. Strategic alignment across these domains offers a realistic pathway to accelerating progress and achieving the regional elimination goal. The period 2026–2027 remains decisive, and accelerated action during this window will determine whether the 2030 elimination target can be achieved.

### How to obtain the WER through the Internet

- (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.