Update on the Dengue situation in the Western Pacific Region

This report describes the epidemiology of dengue in the World Health Organization Western Pacific Region. Data are compiled from open sources (national indicator-based surveillance systems) with the exception of Cambodia, Lao People’s Democratic Republic, Viet Nam, and the Philippines, where data are provided by the WHO Country Offices. For the Pacific Island Countries, syndromic surveillance data are provided by the Division of Pacific Technical Support. Information is reported based on countries’ standard dengue case definitions, summary of these definitions and countries’ dengue surveillance systems - included as an annex to this report. Due to differences in surveillance methods and reporting practices, a comparison of trends between countries and areas is not possible, however, national trends can be observed over time.

Northern Hemisphere

Cambodia

As of epidemiological week 26 of 2024, the National Dengue Surveillance System reported a total of 6,742 cases with 23 deaths (Case Fatality Rate (CFR) 0.34%) since 1 January 2024 (Figure 1). This is higher compared to the number reported in 2023 for the same period, with 6,688 cases and 14 deaths.

![Figure 1: Dengue cases reported weekly in 2024 vs endemic and epidemic alert lines in Cambodia; Source: National Dengue Surveillance System (NDCP/CNM/MOH)]
China
There has been a total of 274 dengue cases and no death reported since the beginning of 2024 (Figure 2).

![Figure 2: Dengue cases reported monthly from 2015-2024 (as of May) in China](source)

Lao People’s Democratic Republic
In epidemiological week 26 of 2024 (24 to 30 June 2024), 605 dengue cases and zero deaths were reported (Figure 3). The number of reported cases is higher than the numbers reported in epidemiological week 25 (443 cases with no deaths), and lower than those in week 26 of 2023 (1 281 cases with three deaths). The cumulative number of cases reported in 2024 (as of epidemiological week 26) is 4 945. This is a 25.0% decrease compared to the 6 591 cases reported during the same period in 2023.

![Figure 3: Dengue cases reported weekly from 2018-2024 in Lao PDR](source)
Malaysia

During epidemiological week 26 of 2024 (23 to 29 June 2024), an increase of 350 cases (14.4%) was reported with 2 788 cases as compared to 2 438 cases reported in the previous week (Figure 4). The cumulative number of dengue cases reported up to week 26 of 2024 is 75 263 cases, which is an increase of 27.4% compared to 59 057 cases for the same period in 2023. 60 dengue-related deaths were reported up to week 26 of 2024, compared to 40 deaths for the same period in 2023.

![Figure 4: Dengue cases reported weekly from 2023, 2024 and median 2019-2023 in Malaysia](Source: Department of Health, Malaysia)

Philippines

There is no update for this reporting period. During epidemiological Week 48 (26 November to 2 December 2023), there were 2 607 new dengue cases reported, a 41% decrease compared to the same period in 2022 (n=4 415 cases) (Figure 5). As of 2 December 2023, a total of 195 603 dengue cases have been reported. The number of cases is 23% lower compared to the same period in 2022 (n=252 700). From 1 January to 2 December 2023, there have been 657 deaths (CFR 0.34%) as compared to 894 deaths (CFR 0.35%); reported in the same period in 2022.

![Figure 5: Dengue cases reported weekly from 2022 and 2023 in the Philippines](Source: Department of Health, the Philippines)

(Note: there is a 3-4 week systematic delay in reporting and numbers should be interpreted with caution)
Singapore
In epidemiological week 26 (23 to 29 June 2024), a total of 292 dengue cases were reported in Singapore. Cumulatively, a total of 9 257 cases (Figure 6) have been reported as of 29 June 2024. When compared to the same period in 2023 (4 349 cases), there has been a 123% increase in cases reported in 2024. Preliminary results of all positive dengue samples serotyped in June 2024 showed DEN-1, DEN-2, DEN-3 and DEN-4 at 8.3%, 52.8%, 33.5% and 5.4% respectively.

Viet Nam
There is no update for this reporting period. In epidemiological week 24 (10 to 16 June 2024), approximately 1 500 cases and no deaths were reported in Viet Nam. Cumulatively, approximately 25 000 dengue cases including three deaths have been reported as of 16 June 2024. Compared to the same period in 2023, the number of cumulative cases decreased by 32%, and the number of deaths decreased by six cases.
Southern Hemisphere

Australia
In June 2024, a total of 195 dengue cases were reported in Australia. As of 30 June 2024, the cumulative number of dengue cases is 1,282, which is more than 2.5 times higher than the same period in 2023 (496 cases). (Figure 7).

![Figure 7: Laboratory-confirmed dengue cases reported monthly from 2016-2024 in Australia](source: Department of Health, Australia)

Note: Graph was updated as of 30 June 2024

Pacific Islands Countries

New Caledonia
From 1 January to 30 June 2024, eight confirmed dengue cases were reported in New Caledonia (Figure 8). This is higher compared to the same period in 2023, when a total of five dengue cases were reported. Of the eight dengue cases in 2024, two were locally acquired confirmed cases, and the serotypes of the cases were DENV-1 and DENV-2, respectively. There is no ongoing epidemic.

![Figure 8: Dengue cases reported by month from 2022 to 2024 in New Caledonia](source: Network of sentinel physicians, New Caledonia)
Pacific Island Countries and Areas (PICs) – Dengue-like illness (DLI) Surveillance

Among the PICs with available surveillance data (18/21 PICs), an upward trend of DLI cases was reported in Vanuatu in week 26 (ending 30 June), and a downward trend of DLI cases was reported in Fiji (week 26) and Samoa (week 27). The remaining PICs reported either no or low numbers of DLI cases or provided no updates (Figure 9).
Figure 9. Reported cases of dengue-like illness in Pacific Islands Countries and Areas

Source: WHO Division of Pacific Technical Support

Note: Caution should be taken in interpreting these data as there may be changes in the number of sentinel sites reporting to the Pacific Syndromic Surveillance System (PSSS). Furthermore, the syndromic case definition of DLI may capture cases with non-dengue acute febrile illnesses (AFI) with similar clinical manifestations to dengue. This includes AFI such as chikungunya, influenza, hantavirus, leptospirosis, malaria, measles, paratyphoid and typhoid fevers, scrub typhus, yellow fever, zika, other diseases. The PSSS may also capture dengue cases under ‘prolonged fever’ surveillance. Alert threshold for DLI is twice the average number of cases seen in the previous 3 weeks.
## Annex 1. Summary of dengue case definitions, laboratory sampling and testing methods used for surveillance in Member States as of 2024

<table>
<thead>
<tr>
<th>Country</th>
<th>Case definition</th>
<th>Surveillance system</th>
<th>Laboratory sampling and testing method</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Australia</strong></td>
<td>Fever, headache, arthralgia, myalgia, rash, nausea and vomiting</td>
<td>Yes</td>
<td>Dengue is a nationally notifiable disease and cases are monitored through the National Notifiable Diseases Surveillance System (NNDSS) indicator-based surveillance system. Both confirmed and probable cases are nationally notifiable. A confirmed case requires both laboratory definitive evidence and clinical evidence. A probable case requires either laboratory suggestive evidence and clinical evidence and epidemiological evidence, or clinical evidence and household epidemiological evidence.</td>
<td>1</td>
</tr>
<tr>
<td>Country</td>
<td>Suspected dengue: very high fever at 39-40 degrees celsius for 2-7 days (usually 3-4 days), with 2 or more of the following signs: flushed face, headache, retro-orbital pain, myalgia/arthritis, cutaneous rash, haemorrhagic signs (petechiae, positive tourniquet test), and leucopenia. Probable dengue: signs of suspected dengue plus laboratory test results (see right column) or that the case occurred in an area where the dengue case has been confirmed.</td>
<td>National Dengue Control Program (NDCP) enhanced sentinel surveillance system</td>
<td>Data collected for Cambodia Laboratory Information System (CamLIS), comprised of 32 participating hospital laboratories where NS1 detection is conducted. Laboratory testing: Antibody HI &gt;= 1/1280 or IgM/IgG positive by ELISA test in convalescence serum</td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td>Cambodia</td>
<td>Yes</td>
<td>Communicable Disease Control (CDC) syndromic surveillance system</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Health Management Information System (HMIS) collects data on confirmed cases and deaths.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>China</td>
<td>No</td>
<td>Reported to the Chinese Centre for Disease Control and Prevention (China CDC) through the Chinese National Notifiable Infectious Disease Reporting Information System (CNNDIS).</td>
<td>A clinically diagnosed case with any of the following laboratory findings: - Isolation of the dengue virus from the serum, cerebrospinal fluid, blood cells, or tissues of an acute-phase patient - Detection of dengue virus gene sequence by RT-PCR or real-time fluorescent quantitative PCR - Detection of dengue virus NS1 antigen in serum from an acute-phase patient - A fourfold or greater increase in specific antibody titer in the convalescent phase compared to the acute phase.</td>
<td></td>
</tr>
</tbody>
</table>
2) Dengue Hemorrhagic Fever can be diagnosed when accompanied by any of the following clinical symptoms:
- Bleeding tendency, significant bleeding manifestations (such as gastrointestinal bleeding or hemorrhage in the chest, abdomen, or cranium), hepatomegaly, and ascites; and
- Laboratory findings including thrombocytopenia (platelet count below $100 \times 10^9/L$), hemoconcentration (an increase in hematocrit of more than 20% above normal levels or a decrease of more than 20% after fluid resuscitation), and hypoalbuminemia.

3) Dengue Shock Syndrome: Patients with dengue hemorrhagic fever presenting with cold and clammy skin, restlessness, rapid and weak pulse, low blood pressure with a narrow pulse pressure (less than 20mmHg or 2.7kPa), and reduced urine output.

<p>| Lao People’s Democratic Republic | WHO dengue case classification (2009) † | No | National Surveillance System for Notifiable Selected Diseases, indicator-based surveillance system that consists of passive weekly reports of clinically suspected cases, on admission, from all health-care facilities across the country. | 4 |
| Malaysia | WHO dengue case classification (2009) † | Yes | National Dengue Surveillance System, indicator-based surveillance system | 5 |
| Philippines | WHO dengue case classification (2009) † | Yes | Philippine Integrated Disease Surveillance and Response (PIDS), indicator-based surveillance system. Reporting delays of 2-3 weeks, making comparison of current weekly and cumulative figures with previous years difficult. | Confirmed dengue is a suspect case with positive (+) viral culture isolation and/or PCR. NS1 (+), IgM is used to identify probable dengue. 6, 7, 8 |</p>
<table>
<thead>
<tr>
<th><strong>Singapore (endemic)</strong></th>
<th>Fever, headache, backache, myalgia, rash, abdominal discomfort and thrombocytopenia and laboratory testing (see right column)</th>
<th>Yes</th>
<th>Dengue is a legally notifiable disease in Singapore and notifying the Ministry of Health should not be later than 24 hours from the time of diagnosis.</th>
<th>Laboratory confirmation is done using standard diagnostic tests for the detection of dengue NS1 antigen, IgM and IgG, or RT-PCR.</th>
<th>9, 10</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Viet Nam (endemic)</strong></td>
<td>Acute onset of fever continuously lasting from 2-7 days AND at least 2 of the following: haemorrhagic manifestation/presentation; headache, loss of appetite, nausea, vomiting; rash; muscle pain, joint pain, orbital pain; lethargy; abdominal pain.</td>
<td>No</td>
<td>As per the MOH dengue surveillance guideline, in routine surveillance MAC-ELISA is conducted for at least 7% and virus isolation is conducted for at least 3% of clinical cases. In an outbreak, at least 5 to 10 suspected cases are tested.</td>
<td></td>
<td>11</td>
</tr>
<tr>
<td><strong>Pacific Island Countries</strong></td>
<td>WHO dengue case classification (2009) †</td>
<td>No</td>
<td>Pacific Syndromic Surveillance System</td>
<td>Confirmed case: Isolation of dengue virus or detection of dengue-specific antigen or antibodies in tissue, blood, CSF or other body fluid by an advanced laboratory test</td>
<td>12</td>
</tr>
</tbody>
</table>

Only the minimum criteria required for fulfilling a clinical dengue case definition are included here; additional signs and symptoms required for more severe forms are not listed.

† A probable dengue case is defined as any case living in or travel to dengue endemic area with fever and two or more of the following: nausea, vomiting, rash, aches and pains, positive tourniquet test, leucopenia and any warning sign. A case with warning signs is defined as a clinically diagnosed case with any of the following: abdominal pain or tenderness, persistent vomiting, clinical fluid accumulation, mucosal bleed, lethargy, restlessness, liver enlargement > 2 cm and increase in haematocrit concurrent with rapid decrease in platelet count. Severe dengue is defined as severe plasma leakage leading to any of the following: shock, fluid accumulation with respiratory distress OR severe bleeding as evaluated by clinician OR severe organ involvement of liver (aspartate amino transferase or alanine amino transferase ≥ 1000), central nervous system (impaired consciousness) or heart and other organs.10

References:


