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 15 of 2024, the National Dengue Surveillance System reported a total of 5,062 cases with 17 deaths (Case Fatality Rate (CFR) 0.34%) since 1 January 2024 (Figure 1). This is almost 4 times the number reported in 2023 for the same period, with 1,671 cases and 4 deaths.

![Weekly Dengue Case Reported in Cambodia 2024](image)

**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**
In March 2024, 38 dengue cases and no deaths were reported in China. There has been a total of 108 dengue cases and no death in the country since the beginning of 2024 (Figure 2).

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

*Source: National Disease Control and Prevention Administration, China*

**Lao People’s Democratic Republic**
In epidemiological week 15 of 2024 (8 to 14 March 2024), 144 dengue cases and zero deaths were reported (Figure 3). The number of reported cases is lower than the numbers reported in epidemiological week 14 (190 cases with no deaths), and higher than those in week 15 of 2023 (85 cases with no deaths). The cumulative number of cases reported in 2024 (as of epidemiological week 15) is 2,043. This is a 222.3% increase compared to the 919 cases reported during the same period in 2023.

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

*Source: National Centre for Laboratory and Epidemiology, Ministry of Health, Lao PDR*
Malaysia
During epidemiological week 15 of 2024 (8 April to 14 April 2024), a decrease of 789 cases (32.0%) was reported with 1698 cases as compared to 2487 cases reported in the previous week (Figure 4). The cumulative number of dengue cases reported up to week 15 of 2024 is 48,329 cases, which is an increase of 45% compared to 33,325 cases for the same period in 2023. 35 dengue-related deaths were reported up to week 15 of 2024, compared to 21 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 15 (7 to 13 April 2024), a total of 308 dengue cases were reported in Singapore. Cumulatively, a total of 5886 cases (Figure 6) have been reported as of 13 April 2024. When compared with week 15 in 2023 (2607 cases), there has been a 126% increase in cases reported in week 15 of this year. Preliminary results of all positive dengue samples serotyped in April 2024 showed DEN-1, DEN-2, DEN-3, and DEN-4 at 8.1%, 54.5%, 22.2% and 15.2%, respectively.

Viet Nam
There is no update for this reporting period. As of 31 March 2024 (epidemiological week 13), cumulatively 14,542 dengue cases, including no deaths, were reported in Viet Nam. Compared to the same period in 2023 (25,044 cases, including 5 deaths), the number of cumulative cases decreased by 41.9%, and the number of deaths decreased by 5 (Figure 7). During week 13 (25 March to 31 March 2024), a total of 753 cases were reported nationwide; of those, 608 were hospitalized (80.7%). Compared to the previous week (805 cases, including 631 hospitalizations), the number of cases decreased by 6.5%, and the number of hospitalizations decreased by 3.6%.
Southern Hemisphere

Australia
From 4 March to 31 March 2024, a total of 138 dengue cases were reported in Australia. From 1 April 2023 to 31 March 2024, the cumulative number of dengue cases is 1,225, which is 1.9 times higher than the same period’s 5 year rolling mean (n=647.4 cases). (Figure 8).

Figure 7: Number of dengue hospital admissions and deaths by week in 2024 compared to 2023, as of week 13, 2024, Viet Nam
Source: General Department of Preventive Medicine, Ministry of Health, Viet Nam
Note: hospitalizations include inpatients and outpatients
The alert threshold is a 5-year mean plus 2 standard deviations. Figure 7 was updated on 17 March 2024

Figure 8: Laboratory-confirmed dengue cases reported monthly from 2016-2024 in Australia
Source: Department of Health, Australia
Note: Graph was updated as of 31 March 2024
Pacific Islands Countries

New Caledonia
There is no update for this reporting period. From 1 January to 29 February 2024, six confirmed dengue cases were reported in New Caledonia (Figure 9). This is higher compared to the same period in 2023, when a total of three dengue cases were reported. Of the six dengue cases in 2024, two were imported cases and two were probable cases. The serotypes of the cases were DENV-1 (3 cases), DENV-2 (1 case).

Figure 9: Dengue cases reported by week 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
During epidemiological week 15 of 2024 (ending 14 April 2024), Pacific Island Countries and Areas (PICs) with available surveillance data (18/21 PICs) reported similar numbers of DLI cases except some countries. Among the PICs, Cook Islands, Fiji, French Polynesia, Kiribati, Marshall Islands, Micronesia (Federated States of), New Caledonia, Niue, Northern Mariana Islands, Palau, Pitcairn Islands, Samoa, Solomon Islands, Tokelau, Tonga, Vanuatu, Tuvalu and Wallis and Futuna have reported DLI cases. The number of cases reported in Fiji, Micronesia (Federated States of), New Caledonia, Samoa and Wallis and Futuna in week 15 is higher than the number reported in the previous week.
Figure 10. 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>Australia</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.</td>
<td>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. Laboratory definitive evidence:  - Isolation of dengue virus, or  - Detection of dengue virus by nucleic acid testing, or  - Detection of NS1 antigen in the blood by EIA, or  - IgG seroconversion or significant increase in antibody level or fourfold or greater rise in titre to dengue virus (proof by neutralization or another specific test)  - Detection of NS1 antigen in blood by rapid antigen test, or  - Detection of dengue virus-specific IgM in blood  - Exposure between 3 – 14 days prior to onset either in a country with known dengue activity or in a dengue-receptive area in Australia where a locally-acquired or imported case has been documented with onset within a month.  - Living in the same house as a locally-acquired case in a dengue-receptive area of Australia within a month of onset in the</td>
</tr>
<tr>
<td>Country</td>
<td>Dengue Case Classification (2009)</td>
<td>National Dengue Control Program (NDCP) Enhanced Sentinel Surveillance System</td>
<td>Communicable Disease Control (CDC) Syndromic Surveillance System (CamEWARN)</td>
<td>Health Management Information System (HMIS) Collects Data on Confirmed Cases and Deaths</td>
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<tr>
<td>Cambodia</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/Arthralgia, 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>Yes</td>
<td>National Dengue Control Program (NDCP) Enhanced Sentinel Surveillance System</td>
<td>Communicable Disease Control (CDC) Syndromic Surveillance System (CamEWARN).</td>
</tr>
<tr>
<td>China</td>
<td>(i) More Than Two Symptoms of Acute Onset Fever, Severe Headache, Orbital Pain, Myalgia, Arthralgia, Fatigue With a History of Travel in a Dengue Endemic Area Within 15 Days Before Symptom Onset or Cohabitation With an Individual With Confirmed Dengue; Or No Travel History, But With a Rash or Positive Tourniquet Test AND Leucopenia or Thrombocytopenia or Serum IgM Positivity.</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 (CNNDS).</td>
<td>Lab Reports Provided to the Chinese Centre for Disease Control and Prevention (China CDC) Through the Chinese National Notifiable Infectious Disease Reporting Information System (CNNDS).</td>
</tr>
<tr>
<td>Lao People's Democratic Republic</td>
<td>WHO Dengue Case Classification (2009) †</td>
<td>No</td>
<td>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.</td>
<td>All Suspected Cases Are to Be Tested by the Following Laboratory Tests: Rapid Combo Test (RCT) (NS1, IgM, IgG), Dengue Antigen and Serology Tests by ELISA, Dengue Viral RNA Detection (Real Time RT-PCR), Viral Isolation</td>
</tr>
<tr>
<td>Malaysia</td>
<td>WHO Dengue Case Classification (2009) †</td>
<td>Yes</td>
<td>National Dengue Surveillance System, Indicator-Based Surveillance System</td>
<td>All Suspected Cases Are to Be Tested by the Following Laboratory Tests: Rapid Combo Test (RCT) (NS1, IgM, IgG), Dengue Antigen and Serology Tests by ELISA, Dengue Viral RNA Detection (Real Time RT-PCR), Viral Isolation</td>
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<tr>
<td>Philippines</td>
<td>WHO Dengue Case Classification (2009) †</td>
<td>Yes</td>
<td>Philippine Integrated Disease Surveillance and Response (PIDSR), Indicator-Based Surveillance System. Reporting Delays of 2-3 Weeks, Confirmed Dengue Is a Suspected Case With Positive (+) Viral Culture Isolation And/or PCR. NS1 (+), IgM Is Used to Identify Probable Dengue.</td>
<td>Philippine Integrated Disease Surveillance and Response (PIDSR), Indicator-Based Surveillance System. Reporting Delays of 2-3 Weeks, Confirmed Dengue Is a Suspected Case With Positive (+) Viral Culture Isolation And/or PCR. NS1 (+), IgM Is Used to Identify Probable Dengue.</td>
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### Dengue Situation Update

#### Singapore (endemic)
- Fever, headache, backache, myalgia, rash, abdominal discomfort and thrombocytopenia and laboratory testing (see right column)
- Yes
- 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.
- Laboratory confirmation is done using standard diagnostic tests for the detection of dengue NS1 antigen, IgM and IgG, or RT-PCR.

#### Viet Nam (endemic)
- 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.
- No
- 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.

#### Pacific Island Countries
- WHO dengue case classification (2009) †
- No
- Pacific Syndromic Surveillance System
- 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

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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.  

References: