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 13 of 2024, the National Dengue Surveillance System reported a total of 4,620 cases with 16 deaths (Case Fatality Rate (CFR) 0.35%) since 1 January 2024 (Figure 1), This is almost 4 times the number reported in 2023 for the same period, with 1,383 cases and 5 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
There is no update for this reporting period. In February 2024, 42 dengue cases and no deaths were reported in China. There has been a total of 69 dengue cases and no death in the country from January 2024 to February 2024 (Figure 2).

Lao People’s Democratic Republic
There is no update for this reporting period. In epidemiological week 11 of 2024 (11 March to 17 March 2024), 170 dengue cases and zero deaths were reported (Figure 3). The number of reported cases is higher than the numbers reported in epidemiological week 10 (158 cases with no deaths), and higher than those in week 11 of 2023 (44 cases with no deaths). The cumulative number of cases reported in 2024 (as of epidemiological week 11) is 1,499. This is a 167.1% increase compared to the 542 cases reported during the same period in 2023.

Figure 2: Dengue cases reported monthly from 2015-2024 (as of February) in China
Source: National Disease Control and Prevention Administration, China

Figure 3: Dengue cases reported weekly from 2018-2024 in Lao PDR
Source: National Centre for Laboratory and Epidemiology, Ministry of Health, Lao PDR
Malaysia
During epidemiological week 13 of 2024 (25 March 2024 to 31 March 2024), a decrease of 462 cases (15.0%) was reported with 2,579 cases as compared to 3,041 cases reported in the previous week (Figure 4). The cumulative number of dengue cases reported up to week 13 of 2024 is 44,144 cases, which is an increase of 54.4% compared to 28,587 cases for the same period in 2023. 31 dengue-related deaths were reported up to week 13 of 2024, compared to 18 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 13 (24 March to 30 March 2024), a total of 349 dengue cases were reported in Singapore. Cumulatively, a total of 5,166 cases (Figure 6) have been reported as of 30 March 2024. When compared with week 13 in 2023 (2,359 cases), there has been a 119.0% increase in cases reported in week 13 of this year. Preliminary results of all positive dengue samples serotyped in March 2024 showed DEN-1, DEN-2, DEN-3, and DEN-4 at 18.1%, 54.3%, 12.0%, and 15.6%, respectively.

Viet Nam
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

There is no update for this reporting period. From 19 February to 3 March 2024, a total of 43 dengue cases were reported in Australia. From 4 March 2023 to 3 March 2024, the cumulative number of dengue cases is 1,166, which is 1.8 times higher than the same period’s 5 year rolling mean (n=641.6 cases). (Figure 8).
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 cases were probable cases. The serotypes of the cases were DENV-1 (3 cases), DENV-2 (1 case).

Pacific Island Countries and Areas (PICs) – Dengue-like illness (DLI) Surveillance
During epidemiological week 14 of 2024 (ending 7 April 2024), Pacific Island Countries and Areas (PICs) with available surveillance data (17/21 PICs) reported low or similar numbers of DLI cases. 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, and Wallis and Futuna have reported DLI cases. The number of cases reported in Kiribati, Fiji, New Caledonia and Wallis and Futuna in week 14 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>
</table>
| Australia | Fever, headache, arthralgia, myalgia, rash, nausea and vomiting | 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.  
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)  
Laboratory suggestive evidence:  
- Detection of NS1 antigen in blood by rapid antigen test, or  
- Detection of dengue virus-specific IgM in blood  
Epidemiological evidence:  
- 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.  
Household epidemiological evidence:  
- Living in the same house as a locally-acquired case in a dengue-receptive area of Australia within a month of onset in the | 1 |
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<tr>
<th>Country</th>
<th>Dengue Case Classification (2009)†</th>
<th>Case and at least one case in the chain of epidemiologically linked cases is laboratory confirmed.</th>
<th>National Dengue Control Program (NDCP) enhanced sentinel surveillance system</th>
<th>Communicable Disease Control (CDC) syndromic surveillance system (CamEWARN).</th>
<th>Health Management Information System (HMIS) collects data on confirmed cases and deaths.</th>
<th>Data collected for Cambodia Laboratory Information System (CamLIS), comprised of 32 participating hospital laboratories where NS1 detection is conducted.</th>
<th>Laboratory testing: Antibody HI $\geq 1/1280$ or IgM/IgG positive by ELISA test in convalescence serum</th>
<th>Reported to the Chinese Centre for Disease Control and Prevention (China CDC) through the Chinese National Notifiable Infectious Disease Reporting Information System (CNNDS).</th>
<th>Laboratory confirmation is done by real-time RT-PCR, NS1 in acute-phase serum, or virus isolation from an acutely infected patient’s serum.</th>
<th>WHO internal communication</th>
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<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/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>Yes</td>
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<td>China</td>
<td>(i) more than two symptoms of acute onset fever, severe headache, orbital pain, myalgia, arthritis, 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>
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<td>WHO internal communication</td>
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<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>
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<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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<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 suspect case with positive (+) viral culture isolation and/or PCR. NS1 (+), IgM is used to identify probable dengue.</td>
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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.  
8,9

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.  
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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.10

References:

