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 47 of 2023, the National Dengue Surveillance System reported a total of 31,567 cases with 39 deaths (Case Fatality Rate (CFR) 0.12%) since 1 January 2023 (Figure 1), an increase by 169.3% (n=11,722) and 143.8% (n=16; Case Fatality Rate (CFR) : 0.16%) in cases and deaths respectively, as compared to cases and deaths reported in 2022 over the same period.

![Weekly Dengue Case Reported in Cambodia 2023](image-url)

Figure 1: Dengue cases reported weekly in 2023 vs Mean and Mean+2SD during 2015-2020 *excluding 2019 in Cambodia*

Source: National Dengue Surveillance System (NDCP/CNM/MOH)
China
There is no update for this reporting period. In October 2023, 5388 dengue cases and no deaths were reported in China. There were no deaths reported. There have been a total of 17,788 dengue cases and one death in the country from January 2023 to October 2023 (Figure 2).

Lao People’s Democratic Republic
In epidemiological week 51 (18 December to 24 December 2023), 152 dengue cases and zero death were reported (Figure 3). The number of reported cases is lower than the numbers reported in epidemiological week 50 (230 cases with no deaths). The cumulative number of cases reported in 2023 (as of epidemiological week 51) is 31,997. This is a 9.8% increase compared to the 29,138 cases reported during the same period in 2022. There have now been 20 deaths reported in 2023.
Malaysia
During epidemiological week 51 (17 December to 23 December 2023), an decrease of 227 cases (7.2%) was reported with 2,913 cases as compared to 3,140 cases reported in the previous week (Figure 4). Four dengue-related death was reported in week 51. The cumulative number of dengue cases reported up to week 51 is 120,418 cases, which is an increase of 87.9% compared to 64,078 cases for the same period in 2022. As of epidemiological week 51, a total of 96 deaths have been reported, compared to 50 deaths for the same period in 2022.

Figure 4: Dengue cases reported weekly from 2022, 2023, and median 2018-2022 in Malaysia
Source: Department of Health, Malaysia

Philippines
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 50 (10 December to 16 December) and 51 (17 December to 23 December 2023), a total of 211 and 236 dengue cases were reported in Singapore, respectively. Cumulatively, a total of 9663 cases (Figure 6) have been reported as of 23 December 2023. When compared with week 51 in 2022 (31,845 cases), there has been a 69.6% decrease in cases reported in week 51 of this year. Preliminary results of all positive dengue samples serotyped in December 2023 (as of 23 December) showed DEN-1, DEN-2, DEN-3, and DEN-4 at 17.0%, 55.2%, 20.6%, and 7.3% respectively.

![Figure 6: Dengue cases reported weekly from 2018-2023 (as of 23 December) in Singapore](image)

Source: Communicable Diseases Division, Ministry of Health, Singapore
(Note: Case numbers are derived from the MOH Singapore’s Weekly Infectious Bulletin Year Excelsheet as available from MOH | Weekly Infectious Diseases Bulletin)

Viet Nam
From 1 January to 17 December 2023 (epidemiological week 50), cumulatively 166,619 dengue cases including 42 deaths (CFR : 0.03%) were reported in Viet Nam. The number of cases and death decreased by 53.5% and 109 compared to the same period in 2022. During epidemiological week 50 (from 11 December to 17 December), 3,337 cases including no death were reported, which is a 8.6% decrease in cases compared to the previous week (3,650 cases). Of these cases, 2,531 were hospitalized, which is a 8.3% decrease compared to the previous week (2,759 hospitalizations) (Figure 7).

![Figure 7: Number of dengue hospital admissions and deaths by week in 2022 compared to 2023, as of week 50, 2023, Viet Nam](image)

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
Southern Hemisphere

Australia
From 27 November to 10 December 2023, a total of 48 dengue cases were reported in Australia. As of 10 December 2023, the cumulative number of dengue cases is 1,023, a 170.6% increase this year compared to the same period in 2022 (n=378 cases). The number of cases reported as of 10 December 2023 was higher than the reported number of cases for the same month in the years 2020-2022 (Figure 8).

Pacific Islands Countries
New Caledonia
There is no update for this reporting period. From 1 January to 30 September 2023, four confirmed dengue cases were reported in New Caledonia (Figure 9). This is higher compared to the same period in 2022 when a total of one dengue case was reported. Of the four confirmed dengue cases in 2023, two were imported cases. The serotype of the two imported cases were DENV-1 and DENV-2.

Figure 8: Laboratory-confirmed dengue cases reported monthly from 2016-2023 in Australia
Source: Department of Health, Australia
Note: Graph was updated on 10 December 2023

Figure 9: Dengue cases reported by week from 2021 to 2023 in New Caledonia
Source: Network of sentinel physicians, New Caledonia
During epidemiological week 51 (ending 24 December 2023), five out of eighteen (5/18) Pacific Island Countries and Areas (PICs) with available surveillance data reported no or low numbers of DLI cases compared to past few weeks. Among them, most countries or areas reported similar or decreasing trend in DLI cases from week 50 to week 51.
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.

FSM: Federated States of Micronesia
# Annex 1. Summary of dengue case definitions, laboratory sampling and testing methods used for surveillance in Member States as of 2023

<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>Clinically confirmed case&lt;br&gt;Laboratory confirmation required</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 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</td>
</tr>
<tr>
<td>Country</td>
<td>Dengue Situation Update</td>
<td>Laboratory Confirmed</td>
<td>Surveillance System</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/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>
<td>National Dengue Control Program (NDCP) enhanced sentinel surveillance system. Communicable Disease Control (CDC) syndromic surveillance system (CamEWARN). Health Management Information System (HMIS) collects data on confirmed cases and deaths. Data collected for Cambodia Laboratory Information System (CamLIS), comprised of 32 participating hospital laboratories where NS1 detection is conducted. Laboratory testing: Antibody HI $\geq$ 1/1280 or IgM/IgG positive by ELISA test in convalescence serum.</td>
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<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). Laboratory confirmation is done by real-time RT-PCR, NS1 in acute-phase serum, or virus isolation from an acutely infected patient’s serum. WHO internal communication</td>
<td></td>
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<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></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. 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>
<td></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 suspect case with positive (+) viral culture isolation and/or PCR. NS1 (+), IgM is used to identify probable dengue.</td>
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</tr>
</tbody>
</table>
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.

**Singapore** (endemic)  
Fever, headache, backache, myalgia, rash, abdominal discomfort and thrombocytopenia and laboratory testing (see right column)  
No  
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

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:**


