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 from WHO Country Offices, and for Pacific Island Countries, where syndromic surveillance data are provided by the Division of Pacific Technical Support. Information is reported based on countries’ standard dengue case definitions and a summary of these definitions and countries’ dengue surveillance systems is 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 11 of 2023, a total of 1,176 dengue cases and 3 deaths (Case Fatality Rate (CFR) 0.26%) were reported to the National Dengue Surveillance System in Cambodia since 1 January 2023 (Figure 1); compared to 416 cases and one death in 2022 over the same period.

China
In December 2022, 11 dengue cases were reported respectively in China. There has been a total of 548 dengue cases and no deaths in the country from January 2022 to December 2022. The trend for 2022 remained low (Figure 2).
As of epidemiological week 11 of 2023, 44 dengue cases and 0 death were reported. This is lower compared to the 52 cases reported in the previous week. The cumulative number of cases reported for epidemiological week 11, 2023 was 542. This is 12 times higher compared to the 68 cases reported during the same period in 2022. There have been no deaths reported in 2023.
Malaysia
During epidemiological week 11 of 2023, there were 2,151 compared to 2,152 in the previous week, which is a decrease of 1 case (0.05%). No deaths due to dengue fever complications were reported. The cumulative number of Dengue cases reported to date is 23,753 cases compared to 7,364 cases for the same period in 2022, which is an increase of 16,389 cases (222.6%). As of epidemiological week 11, a total of 16 deaths due to dengue had been reported, compared to three death cases in 2022.

![Figure 4: Dengue cases reported weekly from 2022, 2023 and median 2018-2023 in Malaysia](image)

Source: Department of Health, Malaysia

Philippines
As of 11 March 2023, epidemiological week 10, a total of 25,248 have been reported. The number of cases is 98% higher compared to the same period in 2022 (n=12,772). From 1 January to 11 March 2023, there have been 86 deaths (CFR 0.7%), which is lower than 93 deaths (CFR 0.7%) for the same period in 2022.

![Figure 5: Dengue cases reported weekly from 2022 and 2023 in the Philippines](image)

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**

As of epidemiological week 11 of 2023, 149 dengue cases were reported in Singapore, leading to a total of 2,123 cases (Figure 6). This is a 11% decrease compared to the same period (epidemiological weeks 1–11) in 2022. Preliminary results of all positive dengue samples serotyped in Feb 2023 showed DEN-1, DEN-2, DEN-3, and DEN-4 at 16.5%, 5.3%, 71.2%, and 7.1% respectively.

![Figure 6: Dengue cases reported weekly from 2018-2023 in Singapore](Source: Communicable Diseases Division, Ministry of Health, Singapore)

**Viet Nam**

As of 19 March epidemiological (week 11) 2023, there were 21,907, including 3 deaths reported cumulatively in Viet Nam. Compared to the same period in 2022 (10,980 cases including 6 deaths), the number of cumulative cases nationwide is 2 times higher, and the number of deaths decreased by 3 cases. During week 11th (from 13 Mar – 19 Mar), there were 1,345 cases reported including no deaths; of those 1,065 were hospitalized (79.2%). Compared to the previous week (1,511 cases including 1,211 hospitalizations and no deaths), the number of cases decreased by 11%, and the number of hospitalizations decreased by 12%.
Southern Hemisphere

Australia

There were 27 dengue cases reported in Australia during the reported fortnight (23 January to 5 February 2023). The number of cases remained low at 382 for the year 2022 to 5 February 2023, compared with the trend for the years before 2020 (Figure 8). This may be attributed to COVID-19-related travel restrictions in 2020-2021. Prior to COVID-19, Australia had seen notifications of overseas-acquired cases from travellers returning from dengue-endemic areas.

Figure 7: Number of dengue hospital admissions and deaths by weeks in 2022 compared to 2023 as of week 9th 2023, Viet Nam
Source: General Department of Preventive Medicine, Ministry of Health, Viet Nam
Note hospitalizations include inpatients and outpatients
Alert threshold is a 5-year mean plus 2 standard deviations
Pacific Islands Countries
New Caledonia

There are no further updates since the previous report. From 1 January to 28 February 2023, 4 confirmed dengue cases were reported in New Caledonia (Figure 9). This is higher compared to the same period in 2022 when a total of 1 dengue cases were reported. Of the 4 confirmed dengue cases in 2023, two were imported cases. 2 imported cases were DENV-1 and DENV-2.

Figure 9: Dengue cases reported by week from 2021 to 2023 in New Caledonia

Source: Network of sentinel physicians, New Caledonia

Pacific Island Countries and Areas (PICs) – Dengue-like illness (DLI) Surveillance

During epidemiological week 11 of 2023, Pacific Island Countries and Areas with available surveillance data (14/18 PICs) are reporting no or low numbers of DLI cases. Fiji and Solomon Islands reported a higher weekly number of cases compared with the corresponding epidemiological week of 2022. No other countries reported case numbers above the alert threshold.

Figure 9: Dengue cases reported by week from 2021 to 2023 in New Caledonia

Source: Network of sentinel physicians, New Caledonia
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>Laboratory confirmation required</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>National Notifiable Diseases Surveillance System (NNDSS) indicator-based surveillance system</td>
<td>Testing is recommended in persons who have a clinically compatible illness and have travelled to an area with known dengue activity during the exposure period (3-14 days prior to onset of symptoms). Both confirmed and probable cases are nationally notifiable.</td>
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<td><strong>Cambodia</strong></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 Communication Disease Control (CDC) syndromic surveillance system (CamEWARN). Health Management Information System (HMIS) collects data on confirmed cases and deaths.</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>
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<td><strong>China</strong></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>Laboratory confirmation is done by real-time RT-PCR, NS1 in acute-phase serum, or virus isolation from an acutely infected patient’s serum.</td>
<td>WHO internal communication</td>
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<td><strong>Lao People’s Democratic Republic</strong></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>3</td>
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<tr>
<td>Country</td>
<td>WHO dengue case classification (2009) †</td>
<td>Case classification</td>
<td>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>Malaysia</td>
<td>Yes</td>
<td>National Dengue Surveillance System, indicator-based surveillance system</td>
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<td>Philippines</td>
<td>Yes</td>
<td>Philippine Integrated Disease Surveillance and Response (PIDSR), indicator-based surveillance system. Reporting delays of 2-3 weeks, making comparison of current weekly and cumulative figures with previous years difficult.</td>
<td>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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<td>Singapore (endemic)</td>
<td>No</td>
<td>Samples are tested by the laboratory as ordered by the physician. Laboratory confirmation is done by dengue NS1 (+), IgM (+) or PCR (+)</td>
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<td>Viet Nam (endemic)</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>
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<tr>
<td>Pacific Island Countries</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>
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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: