

## 2024 Dengue Virus Infections Among Travelers in Pennsylvania

<b>DATE:</b>	07/02/2024
<b>TO:</b>	Health Alert Network
<b>FROM:</b>	Debra L. Bogen, MD, FAAP, Secretary of Health
<b>SUBJECT:</b>	2024 Dengue Virus Infections Among Travelers in Pennsylvania
<b>DISTRIBUTION:</b>	Statewide
<b>LOCATION:</b>	Statewide
<b>STREET ADDRESS:</b>	n/a
<b>COUNTY:</b>	n/a
<b>MUNICIPALITY:</b>	n/a
<b>ZIP CODE:</b>	n/a

This transmission is a “Health Advisory,” and provides important information for a specific incident or situation; may not require immediate action.

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### **SUMMARY**

- In the Region of the Americas, countries including Brazil, Argentina, Peru, Paraguay, Colombia, and Ecuador have reported a record-breaking number of dengue cases from January 1–June 24, 2024; Pennsylvania has reported 23 dengue cases among travelers during this same time period.
- Health care providers should have a heightened clinical suspicion for dengue virus infections in persons with clinically compatible symptoms, particularly with a travel history to endemic areas.
- For questions, please call your local health department or DOH at 1-877-PA-HEALTH.

Global incidence of dengue in 2024 has been the highest on record for this calendar year; many countries are reporting higher-than-usual [dengue case numbers](#). In 2024, countries in the Americas have reported a record-breaking number of dengue cases, exceeding the highest number ever recorded in a single year. Cases from six countries make up 98% of the fatal cases in this region including Brazil (3,643), Argentina (355), Peru (203), Paraguay (100), Colombia (74), and Ecuador (44). From January 1–June 24, 2024, [countries in the Americas](#) reported more than 9.7 million dengue cases, twice as many as in all of 2023 (4.6 million cases). In the United States, Puerto Rico has declared a public health emergency (1,498 cases) and a higher-than expected number of dengue cases have been identified among U.S. travelers (745 cases) from January 1–June 24, 2024. Pennsylvania has reported 23 dengue cases so far this year, all with travel related exposures. The most recorded travel related dengue cases in Pennsylvania occurred in 2023 with 34 cases.

The Pennsylvania Department of Health (DOH) reminds health care providers to consider the diagnosis of dengue virus (DENV) infection among people with fever who have been in areas with frequent or continuous dengue transmission within 14 days before illness onset, order appropriate diagnostic tests for acute DENV infection, ensure timely reporting of dengue cases (reportable within 24 hours of diagnosis in Pennsylvania), and promote mosquito bite prevention measures.

## **EPIDEMIOLOGY OF DENGUE VIRUS INFECTIONS**

[Dengue](#) is the most common arboviral disease globally. It is caused by four distinct but closely related dengue viruses (DENV-1, -2, -3, and -4). DENVs are transmitted through bites of infected *Aedes* species mosquito vectors. Infection with one DENV generally induces life-long protection against infection from that specific DENV but only protects against other DENVs for several months to years. Dengue is a [nationally notifiable](#) disease in the United States and a [reportable disease in Pennsylvania](#).

Six U.S. territories and freely associated states are classified as [areas with frequent or continuous dengue transmission](#): Puerto Rico, American Samoa, the U.S. Virgin Islands, the Federated States of Micronesia, the Republic of Marshall Islands, and the Republic of Palau. In the rest of the United States, local transmission of DENV has been limited, with sporadic cases or small outbreaks in Florida, Hawaii, and Texas. However, confirmed local DENV transmission has also been reported by Arizona and California over the past two years. Pennsylvania has never had a locally acquired case of dengue; however, continued vigilance is needed as the *Aedes albopictus* mosquito is prevalent and capable of transmitting the virus from an infected person. See the [DENV factsheet](#) for more information on mosquito bite prevention.

Approximately one in four DENV infections are symptomatic and can be mild or severe. Symptoms begin after an incubation period of 5–7 days (range 3–10 days) and present as fever accompanied by [non-specific signs and symptoms](#) such as nausea, vomiting, rash, muscle aches, joint pain, bone pain, pain behind the eyes, headache, or low white blood cell counts. [Warning signs](#) that predict progression to severe disease include abdominal pain or tenderness, persistent vomiting, clinical fluid accumulation (e.g., ascites, pleural effusion), mucosal bleeding, lethargy or restlessness, progressive increase of hematocrit, or liver enlargement >2cm. Severe disease, with associated severe bleeding, shock or respiratory distress caused by plasma leakage, or end-organ impairment, develops in 1 in 20 people with symptomatic dengue. Infants aged ≤1 year, pregnant people, adults aged ≥65 years, and people with [certain medical conditions](#) are at increased risk of developing severe dengue. Although a second DENV infection (i.e., with a different DENV from the first infection) carries a higher risk of severe disease than a first, third, or fourth infection, any infection can lead to severe disease. There are no antiviral medications approved to treat dengue. Treatment is supportive and requires careful volume management.

## **RECOMMENDATIONS FOR HEALTHCARE PROVIDERS**

- Maintain a high suspicion for dengue among patients with fever and recent travel (within 14 days before illness onset) to [areas with frequent or continuous dengue transmission](#).
- Consider locally acquired dengue among patients who have signs and symptoms highly compatible with dengue (e.g., fever, thrombocytopenia, leukopenia, aches, pains, rash) in [areas with competent mosquito vectors](#).
- Order appropriate FDA-approved dengue [tests](#) (RT-PCR and IgM antibody tests, or NS1 and IgM antibody tests), and do not delay treatment waiting for test results to confirm dengue.

- Know the warning signs for progression to severe dengue, which include abdominal pain or tenderness, persistent vomiting, clinical fluid accumulation (e.g. ascites, pleural effusion), mucosal bleeding, lethargy or restlessness, and liver enlargement.
- For people with suspected dengue who do not have warning signs and are not part of a population at high risk for severe dengue, consider outpatient management with close follow-up.
- Teach patients about the warning signs that may appear as their fever starts to decline and instruct them to seek care urgently if they experience any warning signs.
- Recognize the critical phase of dengue. The critical phase begins when fever starts to decline and lasts for 24–48 hours. During this phase, some patients require close monitoring and may deteriorate within hours without appropriate intravenous (IV) fluid management.
- Hospitalize patients with severe dengue or any warning sign of progression to severe dengue and follow [CDC/WHO protocols for IV fluid management](#).

### **DIAGNOSIS OF DENGUE VIRUS INFECTIONS**

Patients with [symptoms](#) compatible with dengue can be [tested](#) with both molecular and serologic diagnostic tests. All patients with suspected DENV infection should be tested with RT-PCR (i.e., a nucleic acid amplification test (NAAT)) or a NS1 antigen test, and also with IgM antibody test to confirm DENV infection. These tests can be considered regardless of the symptom onset date, although the test sensitivity of RT-PCR and NS1 antigen tests decrease after the first 7 days. IgG detection by enzyme-linked immunosorbent assay (ELISA) in a single serum sample should not be used to diagnose a patient with acute dengue because it does not distinguish between current and previous DENV infection.

Specimens collected from patients with suspected DENV can be submitted to the DOH Bureau of Laboratories (BOL). Instructions for submitting specimens can be found at [Arbovirus testing form](#).

Here is the full CDC Health Advisory from June 25, 2024 titled “[Increased Risk of Dengue Virus Infections in the United States](#).”

For questions, please call your local health department or DOH at 1-877-PA- HEALTH.

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This information is current as of July 2, 2024 but may be modified in the future.
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