

United Nations Medical Directors

Dengue Risk Mitigation Plan and Recommendations for UN Personnel

22 July 2024

- The following occupational health recommendations are provided by the UN Medical Directors to all UN Organizations and apply to all UN personnel to reduce the risk of UN personnel acquiring dengue.
- Dengue is a viral infection caused by dengue virus and transmitted by the bite of the *Aedes aegypti* mosquito (and to lesser extent, *Aedes albopictus*). While most cases are asymptomatic or mild, some individuals will develop severe dengue which can be life-threatening. Dengue is managed with supportive care.
- There are four serotypes of dengue virus (DENV-1, 2, 3 and 4)
- For more information, please see WHO's website: <https://www.who.int/news-room/fact-sheets/detail/dengue-and-severe-dengue>
- **Duty stations should take into account local host country/authorities' guidance and regulations when implementing these recommendations.**
- Contact dos-dhmosh-public-health@un.org for more information.

Risk Categories

UN Medical Directors' Recommendations

1 All UN personnel

- Familiarize yourself with [dengue](#) and be aware of the local risk of dengue in your local duty station.
- Protect yourself from mosquito bites by wearing loose fitting clothing that minimizes skin exposure to mosquitoes, use of DEET (or equivalent) products (mosquito repellants) and ensuring windows have screens and bed nets are used.
- UN personnel can also help prevent mosquito breeding grounds in their duty station by preventing mosquitoes from accessing egg-laying habitats, disposing of solid waste, reducing areas where water can collect and stagnate, and applying insecticides to outdoor water storage containers.
- Be aware of signs and symptoms of dengue and severe dengue (see section 3).
- **UPDATE:** In May 2024 the WHO prequalified and published a position paper on the use of the new live attenuated quadrivalent dengue vaccine Qdenga® (Takeda). Please see here for more details: [WER9918-eng-fre.pdf \(who.int\)](#):
 - The vaccine is recommended for programmatic introduction in settings with high dengue disease burden and high transmission intensity for children aged 6 – 16 years of age.
 - The vaccine is administered as a 2-dose schedule with a 3-month interval between doses.
 - Vaccination can be considered in those ages 6 – 60.
 - Vaccination is contraindicated in those who are immunocompromised, pregnant and/or breastfeeding.
 - Use of vaccination in other groups such as frequent travellers, long-term travellers, migrants and long-term expatriates have a higher likelihood of previous dengue infection (and are therefore more likely to

be seropositive) compared to first-time or short-term travellers could be considered in areas of high transmission intensity in discussion with their healthcare provider.

- The benefits of vaccination with TAK-003 are lower for travellers who have never experienced dengue infection (and are therefore seronegative) compared to travelers who are seropositive.

Notes:

- The dengue vaccine Qdenga® (Takeda) is not currently available/accessible in all countries.
- Dengvaxia®, the other WHO prequalified vaccine against dengue, is also not available/accessible in all countries and requires pre-vaccination screening for positive dengue serology.

2 UN managers who approve travel / UN personnel who are travelling or plan to travel

- There are no recommendations for travel restrictions for those who have previously had dengue. However, since a secondary infection with another dengue serotype increases the risk of severe dengue, precautions outlined in risk category 1 should be followed strictly.

3 UN health care workers (HCWs)

- HCWs should be aware of the signs/symptoms of dengue: high fevers (40 degrees Celsius) accompanied by two or more of the following symptoms during the febrile phase (2-7 days): severe headache (retro-orbital), muscle and joint pains, nausea, vomiting, swollen lymph nodes, rash ("white in a sea of red"). If these individuals do not have warning signs, they can be managed as outpatients with supportive care.
 - HCWs should be aware of signs/symptoms of severe dengue: these occur about 3-7 day after illness onset and, during the 24 to 48-hour critical phase, a small proportion of patients may experience a sudden worsening of symptoms.
 - Warning signs of severe dengue include severe abdominal pain, persistent vomiting, rapid breathing, bleeding from gums/nose, fatigue, restlessness, liver enlargement and blood in vomit or stool. If these symptoms occur, the patient should be managed in the hospital/medical center for close observation over the next 24-48 hours as well as into the convalescent period.
 - HCWs can order diagnostic testing for dengue which include PCR and serological methods depending on week of illness.
 - Management of dengue and severe dengue is supportive care. Early detection of disease progression associated with severe dengue and access to proper medical care lowers fatality rates of severe dengue to below 1%.
 - Acetaminophen/paracetamol can be used for treatment but NSAIDs such as ibuprofen/aspirin should be avoided.
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4 UN personnel with confirmed Dengue

- Infection with one serotype of dengue is believed to provide lifelong immunity against that serotype. However, cross-immunity to other serotypes is partial and temporary and subsequent infections with other serotypes increase the risk of severe dengue.
 - Treatment is supportive and those with warning signs/severe dengue should be managed in hospital as mentioned in section 3.
 - Mother to child-transmission of dengue is possible though rates appear low. If a mother has dengue infection during pregnancy, babies might be pre-term, have low birthweight, or experience fetal distress.
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References:

- <https://www.who.int/news-room/questions-and-answers/item/dengue-and-severe-dengue>
- <https://www.who.int/news-room/questions-and-answers/item/dengue-vaccines>
- <https://www.who.int/news-room/fact-sheets/detail/dengue-and-severe-dengue>