

BASIC PROTECTIVE MEASURES CAN KEEP DENGUE FEVER AT BAY

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Hawaii is most fortunate to have been spared, so far, from the brunt of a major epidemic of dengue fever. The risk of a full-blown epidemic is low, but caution is warranted. Warm El Nino currents and the broader impacts of climate change continue to produce unusual weather patterns. Places that become wetter than usual invite mosquito migrations. The last time I was sick was exactly 40 years ago. I almost didn't make it. It was a bad case of dengue.



Back in the 1970s it was still possible to travel overland from Europe to India. I took that trip at age 17. The Kurdish uprising was heavily active, but it remained possible to get through eastern Turkey. The Shah was still in power in Iran. Despite mass poverty and starvation among the people, the police were powerful and the rich were getting richer. Afghanistan was a sleepy country before the Russians invaded. Though dangerous when passing through the poppy fields of the drug lords, most travelers were left unbothered. I avoided the Khyber Pass at the Afghan-Pakistani border, known for its lawlessness since time immemorial. My journey took me through India to Nepal and finally to my destination, Kathmandu, in the foothills of the Himalayas.

During the middle of the night, I woke up in my cheap hotel burning with fever and frozen with pain. Managing to rouse the traveler next door, I asked him to call for an ambulance. He soon returned. "No ambulance in Kathmandu," he said in an Aussie accent. With alarm, he agreed to drag me down three flights of stairs to the dirt road below and hail a rickshaw. In the pre-dawn light over the tiny hospital on the outskirts of town, I saw at least 200 locals waiting in line. Thinking I would not make it, with what strength I had, I tossed a rock through the window. A worried face poked through a crack in the door and ushered me in. With sleep-tossed hair the doctor asked what was wrong. "Malaria, I think." Blood was drawn, and I was wheeled to a dingy room with an old Japanese man in the other bed moaning continuously from the pain of altitude sickness. I was promptly forgotten on my little cot for four days and unable to move to get help. Once found, the doctor announced that I did not have malaria. It was dengue. At last, with enough strength to walk and 20 pounds lighter, I left the hospital. The bill was \$60.

Dengue is now widespread throughout the South Pacific, Southeast Asia, Latin America and the Indian subcontinent. Other widespread mosquito-borne illness not found in Hawaii include chikungunya (from Africa), Ross Valley fever (in Australia), Zika fever (from Uganda), malaria and yellow fever.

While there is active research to develop new vaccines, they are not currently available for dengue, chikungunya, Zika or West Nile encephalitis. Vaccines or medicines are available to protect against some

mosquito-borne illnesses such as yellow fever, Japanese encephalitis and malaria, but general protective measures against getting bitten remain highly important.

Below are some precautions to take while in Hawaii or while planning to travel abroad.

>> Take measures to avoid the formation of stagnant pools of rainwater at home, work and school. This includes turning over empty pots and buckets and making sure that rain gutters are clear.

>> Optimize the use of screens when leaving windows and doors open.

>> Look up risks and recommendations before you fly, and stop in for a travel consultation with your health provider. Check and become familiar with the Centers for Disease Control and Prevention's Travelers' Health website, wwwnc.cdc.gov/travel

>> Obtain vaccinations when available and if they are legally required before you travel to high-risk areas.

>> Use insect repellent, but in general, put the chemicals on your clothing, especially outer garments, and place natural agents on the skin unless in high-risk areas. Permethrin is a strong chemical repellent that stays on clothing for weeks. Permethrin-impregnated clothing can be ordered from certain suppliers. Eucalyptus typically works better than citronella when applied directly to the skin, but both natural agents must be reapplied every few hours to remain effective.

Hawaii has had limited outbreaks of dengue fever in 1967, 2001, 2011 and 2014. Another 20 or so cases have been picked up recently. Hawaii is more vulnerable to the spread of illness not just because of the increased rainfall, but also because we have over 8 million visitors annually from all around the world. Conversely, a true epidemic of dengue fever would cause many of our visitors to take pause before booking their trips.

Remember, most of the time, fevers, body aches and joint pains are not from dengue fever or any other mosquito-borne illness. In Hawaii these symptoms are far more likely to be from the flu or another medical problem. After assessing a patient's medical history and performing a physical examination, health providers are trained to work through the most likely causes first.