
case study | Dengue Fever

Water-related Disease

While cholera is a familiar water-borne disease, this case study is about another disease: Dengue fever, and a 1989-1990 study of community responses to Dengue fever in the Dominican Republic that was conducted by a team of medical anthropologists from the University of South Florida & John Hopkins.

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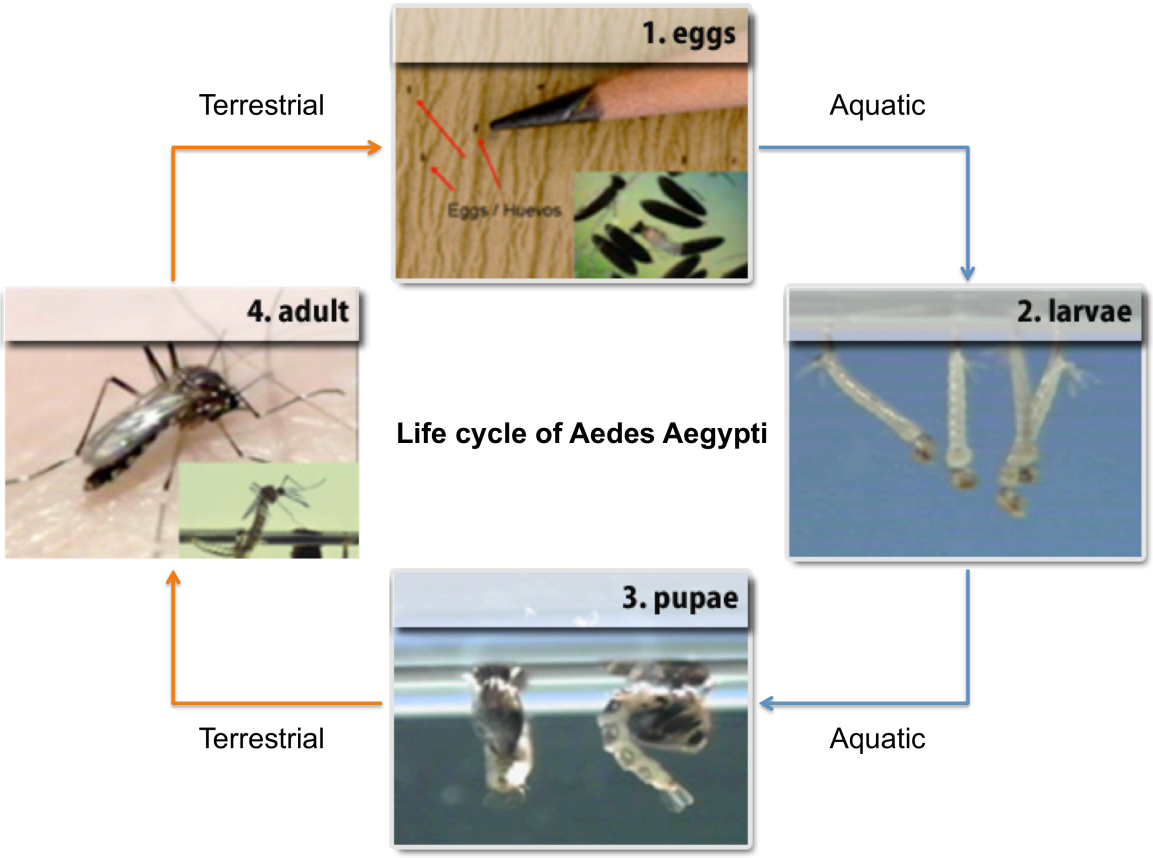
Dengue fever should not be confused with Dengue hemorrhagic fever, which is a separate disease that is caused by the same type of virus but has much more severe symptoms. People with Dengue hemorrhagic fever can bleed to death.

Dengue Fever

Dengue fever is caused by one of four different, but related, viruses. It is spread by the bite of mosquitoes, most commonly the mosquito Aedes aegypti, which is found in tropic and subtropic regions.



Symptoms

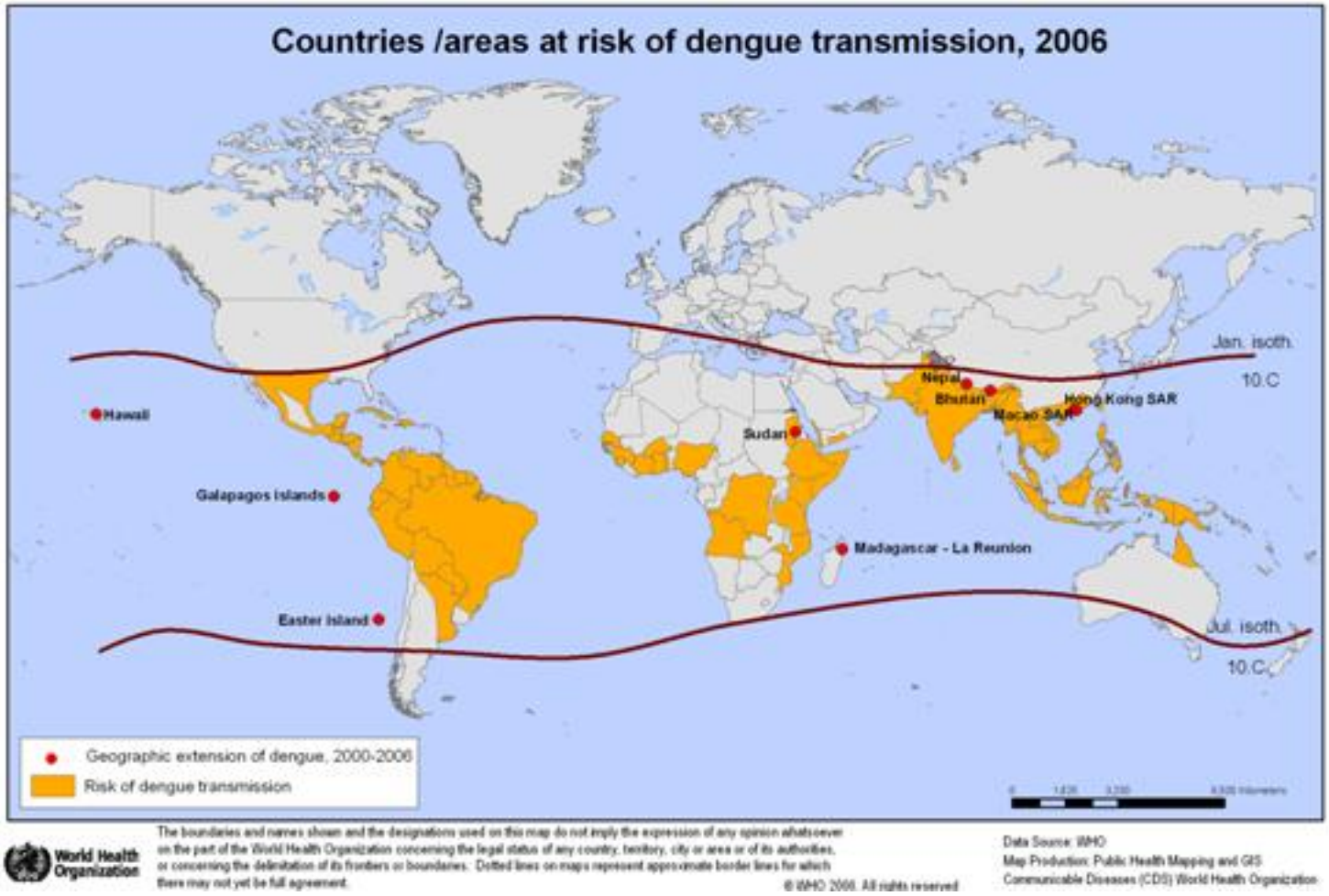
Dengue fever begins with a sudden high fever, often as high as 104 – 105 degrees Fahrenheit. A flat, red rash may appear over most of the body, and the joints are particularly painful. Other symptoms include:

- Headache (especially behind the eyes)
- Fatigue
- Joint aches
- Muscle aches
- Nausea
- Swollen lymph nodes
- Vomiting

Geography

Dengue fever is being seen more in world travelers. The mosquito Aedes aegypti is most commonly found in tropic and subtropic regions found in tropic and subtropic regions. This includes parts of:

- Indonesian archipelago into northeastern Australia
- South and Central America
- Southeast Asia
- Sub-Saharan Africa
- Key West, Florida



The Research

The Dominican research provided public health officials and Dominican authorities with information they needed to understand why local communities were reluctant to participate with the government on mosquito abatement/Dengue prevention activities.

The anthropologists conducted ethnographic studies of several neighborhoods in the capital city, using methods such as observations, participatory research, in-depth interviews, surveys, and applying linguistic analysis as well as epidemiological analysis.

In addition to learning about and documenting community responses, we noticed that most of the homes did not have access to a reliable source of clean water.

Equally interesting is that the medical anthropologists uncovered a source of breeding places necessary for the transmission of the disease that had not been noticed before. And therefore was not being controlled.

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Often the water ran just occasionally (and at unpredictable times), and when it did, it often had bits of straw or dirt in it. Remember, the original public water system for Santo Domingo – the capital city of the Dominican Republic – was built by US Marines in the 1918-1919.

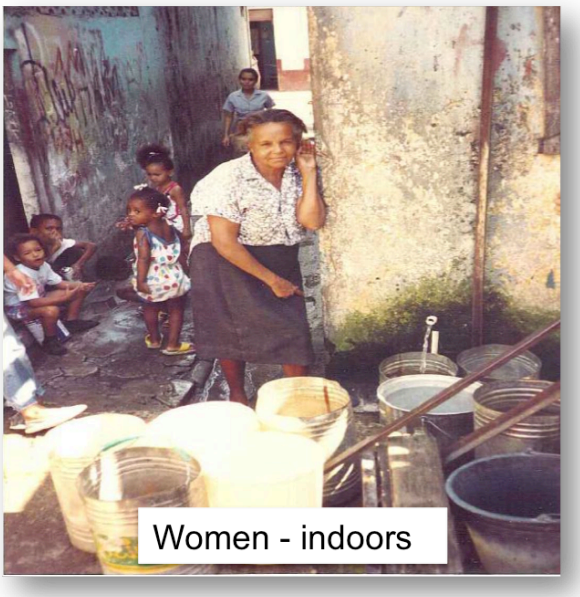
Problem Identification – Storage

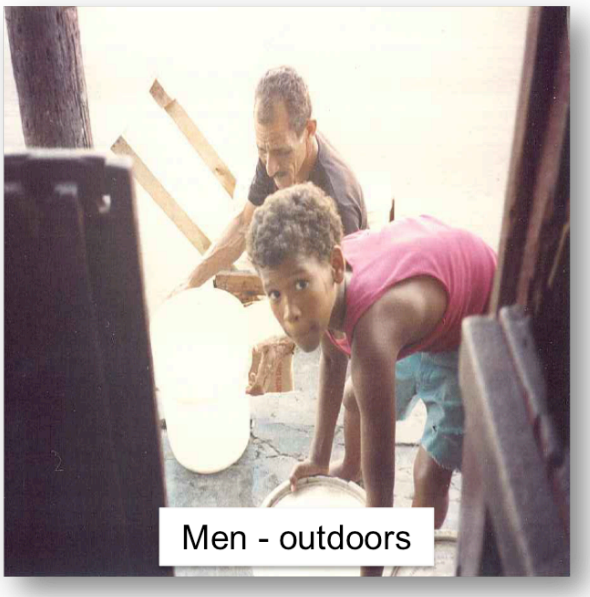
Everyone stored water for their personal use. Sometimes they stored water in their bathtubs, but mainly they stored water in large containers, like 55-gallon drums that frequently had previously been used to store solvents for industry.

Such large drums occupy lots of space and so often they are left outside. While everyone had been taught to keep the drums covered so the mosquitoes could not breed in them, sometimes it was too much to remember to put the tops back on them whenever anyone in the household dipped water out of them, so they often were uncovered.

Problem Identification – Gender Roles

The research team noticed that if the water containers were in the house, local gender roles dictated that women were responsible for keeping them covered, as the home was the women's domain.





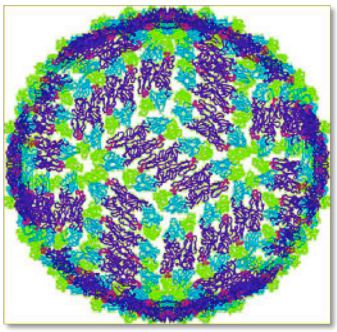
However, if the containers were outside, they fell between domains of responsibility – outside was men's responsibility, but the water was for the family and this part of the women's responsibility. As a result, the outside containers were frequently left uncovered as neither men nor the women of the family felt that it was their responsibility to make sure the barrels were covered.

What kind of intervention can you imagine to resolve the problem? Can you think of any gender roles in your family that effect health care or define health care decisions?

Conclusion: Disciplines and Disease Prevention

Medical anthropology, medical geography, medical sociology, epidemiology are all disciplines well suited to the discovery and prevention of disease transmission, especially for water-related diseases. This is because discovery and prevention of water-related diseases require expertise for examination of multiple factors, in this case, the vector (which is the virus), the medium (which is water), and the exposure (which is the human agent).

Vector



Medium

Exposure