

Rural areas at higher risk of dengue fever than cities

August 30 2011

In dengue-endemic areas such as South-East Asia, in contrast to conventional thinking, rural areas rather than cities may bear the highest burden of dengue fever—a viral infection that causes sudden high fever, severe headache, and muscle and joint pains, and can lead to a life-threatening condition, dengue hemorrhagic fever.

In a study led by Wolf-Peter Schmidt from the Nagasaki Institute of Tropical Medicine, Japan, and published in this week's *PLoS Medicine*, the authors analysed a population in Khanh-Hoa Province in south-central Vietnam (~350,000 people) that was affected by two dengue epidemics between January 2005 and June 2008.

They found that at low [human population](#) densities, mostly in [rural areas](#), dengue risk is up to three times higher than in cities, presumably because the number of mosquitoes per individual is higher in low density areas.

The authors show that severe outbreaks of dengue occur almost exclusively in areas falling within a narrow range of human [population densities](#) with limited access to tap water, where water storage vessels provide breeding sites for the mosquitoes causing [dengue fever](#). However, as the actual number of people who contract dengue fever in populated areas is high, urban areas still substantially contribute to dengue epidemics.

The authors argue that improving water supply and vector control in areas with a human population density critical for dengue transmission

could increase the efficiency of control efforts.

The authors say: "Ideally, all people should have access to reliable tap water, not only to reduce the burden of dengue but also a range of other diseases associated with inadequate water supply such as diarrhea or trachoma, and to realize important economic benefits."

However as supplying everyone with [tap water](#) is not a realistic short-term option in many low-income settings, reducing mosquito breeding around human settlements is an uphill struggle.

The authors conclude: "Additional intervention measures in areas with a human population density critical for dengue virus transmission could increase the efficiency of vector control, especially since population density figures are relatively easy to obtain."

More information: Schmidt W-P, Suzuki M, Dinh Thiem V, White RG, Tsuzuki A, et al. (2011) Population Density, Water Supply, and the Risk of Dengue Fever in Vietnam: Cohort Study and Spatial Analysis. PLoS Med 8(8): e1001082. [doi:10.1371/journal.pmed.1001082](https://doi.org/10.1371/journal.pmed.1001082)

Provided by Public Library of Science

Citation: Rural areas at higher risk of dengue fever than cities (2011, August 30) retrieved 20 April 2024 from <https://medicalxpress.com/news/2011-08-rural-areas-higher-dengue-fever.html>

<p>This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.</p>
--