

Rapid communications

INCREASED NUMBER OF DENGUE CASES IN SWEDISH TRAVELLERS TO THAILAND

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Between 2004 and 2008, around 30-60 cases of dengue fever in travellers were reported annually in Sweden. Over 75% of cases in 2005-2008 were infected when travelling to Southeast Asia, most if them in Thailand, one of the Swedes' most popular holiday destinations. Since 2007, we have observed a 55% increase in the number of dengue fever cases reported per month, with 17 cases reported in January 2009 alone.

The global incidence of dengue fever has increased over the past few years, and there are frequent reports of large outbreaks in Asia and Latin America [1]. It is estimated that 50-100 million people are infected world-wide each year and that approximately 500,000 are hospitalised for treatment [2]. Dengue virus infection is one of the most common causes of fever in travellers to countries in the Caribbean, Central America and Southeast Asia [3].

Globally, there has been a marked increase of dengue and countries like Singapore, Malaysia, Thailand, Vietnam, Indonesia and India have all reported increased frequencies of infection [4]. Thailand experienced a major outbreak of dengue fever during the spring and summer of 2008. By August 2008 the total number of reported cases was 43 911 with 46 deaths nationwide. A possible factor behind last year's epidemic in Thailand was the fact that

the virus serotype DEN-2 was found to dominate, whereas recent years have seen mostly DEN-1 [5].

Trends in Swedish travellers

Dengue fever is a notifiable disease in Sweden, and the cases reported here are laboratory-confirmed cases that were reported to the Swedish Institute for Infectious Disease Control.

A total of 100 cases were reported among Swedish travellers in the period November 2007-January 2009 (Figure 1), with a monthly average of 6.7 cases. Of these 100 cases, 52 originated in Thailand. The number of cases reported in January 2009 alone was 17, with 13 (76%) infected in Thailand

The cases presented with fever and influenza-like symptoms upon return from travel abroad. Patients were referred to infectious disease clinics, where the diagnosis was made following laboratory confirmation at the Swedish Institute for Infectious Disease Control. There has been no report of dengue haemorrhagic fever/dengue shock syndrome (DHF/DSS) among Swedish travellers.

Swedish data on dengue virus infections have been available since 2004, and there has been an insignificant rise in the number of annual reported cases since then (Figure 2).

FIGURE 1

Reported cases of dengue fever in Sweden, November 2007–January 2009 (n=100)

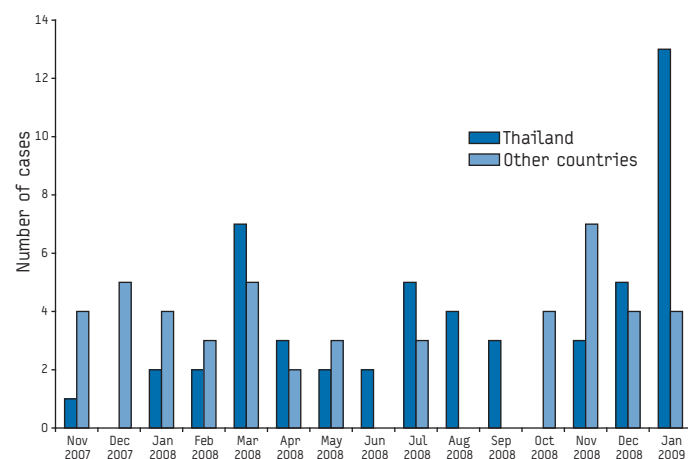
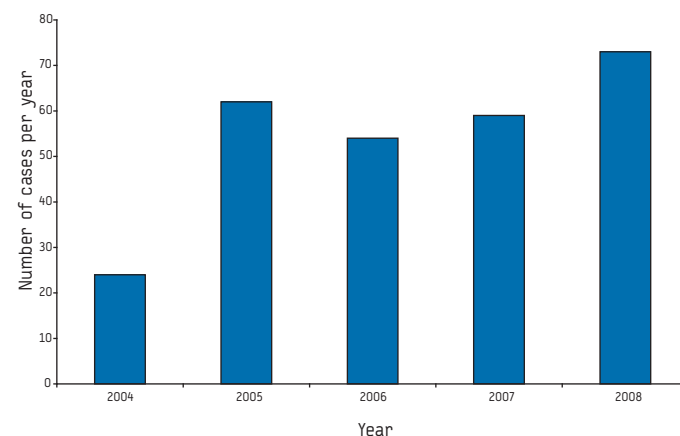


FIGURE 2

Annual number of dengue fever cases reported in Sweden, 2004-2008



Discussion

The underlying causes behind the seemingly increasing global trends of dengue infection are complex and not fully elucidated. A number of possible contributing factors have been suggested:

- Demographic changes including rapid urbanisation with large populations living in peri-urban slums in poor sanitary conditions, which provide favourable breeding conditions for the *Aedes* mosquito vector and promote dengue transmission;
- Increased international travel;
- Failing health systems with decreased access to public health services;
- Climate change, particularly change in rainfall [8];
- Failing vector control programmes;
- Increased attention to dengue fever (World Health Organization programmes, the Bill and Melinda Gates Foundation and others), leading to more accurate reporting and data.

Around 350,000 Swedes visited Thailand in 2007 (personal communication: Swedish aviation authority). The increase in dengue fever cases reported here is based on too small a number to draw any significant conclusions, but available international data suggests that the incidence of dengue fever has indeed increased in Thailand as well as globally, and the trend seen amongst Swedish travellers may be indicative of a changing risk.

The above has not led to changes in travel recommendations to Swedish travellers, and there are no restrictions on travel to endemic areas, as the overall risk of contracting a dengue virus infection is still deemed relatively low for the ordinary tourist. However, adequate precautionary measures including bednets, mosquito repellents and appropriate clothing should be encouraged in order to avoid exposure to mosquito bites. People who have had the infection once and are worried about the potential increased risk to develop DHF/DSS when infected a second time should be advised to consult an infectious disease/travel medicine clinic prior to departure to get advice. There are no general recommendations for this group to abstain from travel to areas where dengue virus is endemic.

Future considerations

Dengue virus does not occur naturally in the geographical area of the European Union (EU), and current conditions do not seem to be conducive to endemic transmission in the region. However, this may change. It is thus important to closely monitor the development of dengue epidemiology world-wide as well as within the EU. The outbreak of chikungunya fever in Ravenna in 2007 showed that the presence of a competent vector can enable spread under the right conditions [7]. Studies have shown that case fatality rates of DHF/DSS are higher among the elderly and people with underlying complicating disease such as diabetes and cardiovascular disease [8]. This may call for extra caution as this is also a growing group of travellers.

References

1. Kyle JL, Harris E. Global spread and persistence of dengue. *Annu Rev Microbiol.* 2008;62:71-92.
2. World Health Organization. Dengue and dengue haemorrhagic fever. Fact sheet N°117. Geneva: World Health organization; 2008 May. Available from: <http://www.who.int/mediacentre/factsheets/fs117/en/>
3. Wichmann O, Gascon J, Schunk M, Puente S, Siikamäki H, Gjørup I, et al. Severe dengue virus infection in travelers: risk factors and laboratory indicators. *J Infect Dis.* 2007;195(8):1089-96.
4. Diseases of Environmental and Zoonotic Origin Team, ECDC. Dengue worldwide: an overview of the current situation and the implications for Europe. *Euro Surveill.* 2007;12(25):pii=3222. Available from: <http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=3222>
5. ProMED-mail. Dengue/DHF update 2008 (31). Archive no. 20080806.2407. Available from: http://www.promedmail.org/pls/otn/f?p=2400:1202:2357701608264615::NO::F2400_P1202_CHECK_DISPLAY,F2400_P1202_PUB_MAIL_ID:X,73415
6. Su GL. Correlation of climatic factors and dengue incidence in Metro Manila, Philippines. *Ambio.* 2008;37(4):292-4
7. Angelini R, Finarelli AC, Angelini P, Po C, Petropulacos K, Macini P, et al. An outbreak of chikungunya fever in the province of Ravenna, Italy. *Euro Surveill.* 2007;12(36):pii=3260. Available from: <http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=3260>
8. Lahiri M, Fisher D, Tambyah PA. Dengue mortality: reassessing the risks in transition countries. *Trans R Soc Trop Med Hyg.* 2008;102(10):1011-6

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