



Letter to Editor

Surveillance and Control of Dengue Fever as a Global Human Treat

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To Editor,

Dengue fever is considered as one of the most important arboviral diseases and its causative virus includes four serotypes, namely, DEN-1, DEN-2, DEN-3, and DEN-4. It is transmitted to humans by some species of female *Aedes* mosquitoes.¹ The symptoms of the disease on a wide spectrum (asymptomatic to symptomatic and fever-free to hemorrhagic) usually begin 5 to 7 days after the bite of an infected mosquito.² The clinical features of the disease are fever with rash, severe headache, eye pain, pain around the eye socket, and muscle and joint pain. This disease is also known as break bone fever because, due to severe pain, the patient imagines that his/her bones are breaking.¹ Approximately 3.9 billion people in 128 countries are at risk of dengue fever.³ In the Eastern Mediterranean region, several outbreaks of dengue fever have been reported in recent years, especially in Pakistan, Saudi Arabia, Yemen, and the United Arab Emirates. Recently, some disease cases have also been reported in the southern and northern provinces of Iran.^{4,5} *Aedes aegypti* and *Aedes albopictus* mosquitoes are the main vectors of this disease, and these two species of mosquitoes have been reported in Iran's neighboring countries, such as Armenia, Turkey, Oman, Afghanistan, and Pakistan^{6,7} and recently reported from Iran.⁸

Now, the strategies for the surveillance and control of this disease are recommended and classified into two categories, as follows:

Human surveillance activities

- Teaching prevention tips to people and healthcare personnel: For example, dengue fever is not transmitted from person to person. It is transmitted

only through some species of *Aedes* mosquitoes. Personal protection against mosquito bites is performed using a mosquito net.

- Monitoring human dengue cases is important. Awareness of the warning signs of the disease and referrals for possible diagnosis and treatment should be given to people and healthcare personnel.
- Laboratory-based surveillance: Laboratory-based surveillance and treatment are extremely important.⁹

Mosquito surveillance activities

The management of environmental risk factors is important. *Aedes* mosquitoes usually live in containers and spawn in water collected in abandoned cans, used tires, and the like, and it is better to remove these risk factors from human habitations.

Employing entomologists in the health departments of universities and collectors forces to collect vector *Aedes*.

Entomologists and collectors should be trained in catching mosquitoes and diagnosing invasive *Aedes* that transmit dengue fever (e.g., *Aedes aegypti* and *Aedes albopictus* in Iran).

Entomological equipment should be prepared; for example, ovitraps for catching mosquito eggs, an entomological dipper for catching mosquito larvae, and a BG-GAT (Gravid *Aedes* Trap) for capturing adult mosquitoes.⁶

Entomological checks should be regularly performed to monitor the possible presence of invasive *Aedes* mosquitoes as potential vectors of disease in the area.

As a result, it is hoped that with human and entomological surveillance activity, the presence or absence of invasive *Aedes* mosquitoes will be monitored in all regions of the

country. Secondly, with human care and education on methods to prevent the disease, human cases will not be observed, and suspected cases will be quickly found, diagnosed, and treated in time with active case findings.

Authors' Contribution

Conceptualization: Abedin Saghafipour.

Investigation: Abedin Saghafipour, Mohammad Khazaei.

Supervision: Abedin Saghafipour.

Writing—original draft: Abedin Saghafipour.

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Competing Interests

The authors declare that there is no conflict of interests.

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