Supplement article

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Case study

What triggers dengue fever epidemics in Red Sea State, Sudan? a teaching case-study

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Abstract

Dengue fever (dengue hemorrhagic fever) is a mosquito-borne disease. The disease is widespread throughout the tropics, with risk factors influenced by local spatial variations of rainfall, temperature, relative humidity, the degree of urbanization and quality of vector control services in urban areas. In the East Mediterranean Region, the disease was reported from Sudan, Yemen, and Pakistan in the past five years. During 2015 -2018 many epidemics were detected, investigated and contained in Sudan. The recent epidemics in Sudan were devastating leading to many deaths and invading new areas. It is thus necessary to study triggering factors for the occurrence of dengue fever epidemics. This case study stimulates the students to analyse surveillance data, critically appraise epidemic report and to assess the epidemic contingency plan. The case study is designed for the training Novice field epidemiology trainees. The case study can be administered in 3-4 hours. Used as adjunct training material, the case study provides the trainees with competencies in analysing available data in order to identify triggering factors for dengue epidemics in Sudan and using this information to develop risk map using relevant software.

How to use this case study

General instructions: this case study should be used as adjunct training material for novice epidemiology trainees to reinforce the concepts taught in prior lectures. The case study is ideally taught by a facilitator in groups of about 20 participants. Participants are to take turns reading the case study, usually a paragraph per student. The facilitator guides the discussion on possible responses to questions. The facilitator may make use of flip charts to illustrate certain points. Additional instructor's notes for facilitation are coupled with each question in the instructor's guide to aid facilitation.

Audience: this case study was developed for novice field epidemiology students. These participants are commonly health care workers working in the county departments of health whose background may be as medical doctors, nurses, environmental health officers or laboratory scientists who work in public health-related fields. Most have a health science or biology background.

Prerequisites: before using this case study, participants should have received lectures on disease surveillance, detection and control of outbreak.

Materials needed: Flash drive, flip charts, markers, computers with MS

Excel and Epi Info

Level of training and associated public health activity: Novice – Outbreak investigation

Time required: 3 - 4 hours

Language: English

Case study material

- Download the case study student guide
- Request the case study facilitator guide

Competing interest

The authors declare no competing interests.

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Annexes

Annex 1: Dengue fever in Red Sea State Sudan-2018
Annex 2: Dengue fever contingency plan
Annex 3: CDC UP contingency planning checklist

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