

## Abstract

# Evaluation of a Dengue Surveillance Control Program, Yemen, Hodeidah (2021)

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## Abstract

**Background:** The number of dengue cases reported to the World Health Organization (WHO) increased over 8-fold over the past 2 decades, from 2.4 million in 2010 to 4.2 million in 2019. In Yemen, from January to December 2019, 59,486 suspected dengue cases and 219 deaths with a case fatality rate (CFR) of 0.4% were reported. The dengue surveillance system (DSS) provides necessary information for outbreak response.

**Objective:** As there was an increase in the number of dengue outbreaks, especially in Hodeida, last year, this study aims to evaluate the DSS between January and March 2021 to assess its usefulness and performance and identify its strengths and weaknesses.

**Methods:** We used the Centers for Disease Control and Prevention (CDC) updated guidelines for evaluation of surveillance systems. For data collection, desk review and interviews with stakeholders at a central level were conducted and semistructured questionnaires distributed for the sentinel site's coordinators. Indicators were developed to evaluate the usefulness based on 8 attributes: flexibility, stability, simplicity, acceptability, sensitivity, data quality, representativeness, and overall performance. The score percentage was calculated and interpreted as poor (<60%), average (60% to <80%), or good (≥80%).

**Results:** The DSS was found to be useful (ie, using data for detecting changes in trends in morbidity and mortality). Regarding system attributes, flexibility (22.7%), stability (33.3%), sensitivity (76%), and data quality (31%) were poor, while simplicity (79%), acceptability (76%), and representativeness (65%) were average. The overall DSS performance was poor (47%).

**Conclusions:** The DSS was useful. Although acceptability and representativeness were average, flexibility, stability, sensitivity, and data quality were poor. Strengthening the DSS by providing basic infrastructure, ensuring sustainability, improving supplements, supervising laboratory testing for dengue fever, and expanding DSS coverage to include private health care facilities are necessary. For data quality, supervision and training are recommended.

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## KEYWORDS

dengue surveillance system evaluation; CDC guidelines; Yemen Field Epidemiology Training Program

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