Evaluation of the Surveillance System 2SE FAG Using A CDC Recommended Framework

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OBJECTIVE

The objective of this study was the evaluation of the syndromic surveillance system "Projet de Surveillance Spatiale des épidémies au Sein des Forces Armées en Guyane" (2SE FAG) which operates among armed forces personnel in French Guiana using the "Framework for Evaluating Public Health Surveillance Systems for Early Detection of Outbreaks," published by CDC [1].

BACKGROUND

In November 2002 a NATO summit meeting issued an initiative calling for member states to begin development of an interoperable disease surveillance system that had the ability to give early warning in the event of an attack on armed forces using weapons of mass destruction [2]. In response, the French military have developed 2SE FAG, a prototype real-time syndromic surveillance system based on fever case reporting which has been in operation among armed forces personnel in French Guiana since October 2004. Between January and June 2006, French Guiana experienced the largest epidemic of dengue fever in its history. During that year, 2255 confirmed cases and many thousands more suspected cases were recorded among the civilian population [3]. 2SE FAG issued an alert based on a rise in fever cases among armed forces personnel in week 2 of 2006, 5 weeks before a rise was noticed among the civilian population. Limited evaluations of the system have taken place in the past; this study represents a final evaluation of the system before its possible expansion.

METHODS

Quantitative and qualitative methods were used under the various themes of the CDC guidelines. Two main groups of system stakeholders, data input (doctors and nurses) and data analysis (epidemiologists), were identified and interviewed using semi-structured questionnaires to assess timeliness, data quality, acceptability, usefulness, stability, portability and flexibility of the system. Validity was assessed by comparing the surveillance of 2SE FAG with a well established surveillance system also operating among armed forces in French Guiana using a statistical method for assessing agreement between data sets. System costs were assessed by analyzing past cost analyses of the system.

RESULTS

The system operates among some 3000 armed forces personnel in French Guiana. Qualitative data showed a degree of poor acceptability among data input stakeholders resulting in decreased data input and data quality. Timeliness analysis showed excellent case processing time, hindered by delays in case reporting by data input stakeholders. Analysis of stability indicated a relatively high level of technical problems encountered by the system. System flexibility was found to be high within French Guiana. Adaptability of the system was difficult to determine without further data. Quantitative data analysis of validity indicated better agreement between 2SE FAG and the traditional surveillance system when reporting on dengue fever cases as opposed to all cases of fever or malaria.

CONCLUSIONS

Despite the system having given early warning of the dengue epidemic of 2006, it has yet to be given the opportunity to repeat this feat. The sophisticated technical design of 2SE FAG has resulted in a system which is able to carry out its role as an early warning system based on syndromic surveillance. Efforts must now be concentrated on increasing its acceptance and use by data input stakeholders and decrease the number of technical problems occurring so that the system is able to fulfill its potential.

This study has shown the huge importance of acceptability to the proper functioning of syndromic surveillance systems such as 2SE FAG which do not use automated data input.

REFERENCES

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