Interest of syndromic surveillance within the Armed Forces in French Guiana for early warning

Meynard J-B, Dussart P, Lamy M, Matheus S, Dupuy B, Daudens E, Langevin S, Texier G, Chaudet H, Pellegrin L, Tournebize O, Moine G, Deparis X, Migliani R, Spiegel A, Morvan J, Boutin J-P

Institut Pasteur de la Guyane, Cayenne, French Guiana, Institut de Médecine Tropicale du Service de santé des armées, Marseille, France, Ecole du Val de Grâce, Paris, France, Université de la Méditerranée, Marseille, France

OBJECTIVE

This paper describes the early warning that has been activated by the syndromic surveillance system installed within the Armed Forces in French Guiana and the consequences for Public Health decisions.

BACKGROUND

The syndromic surveillance system "2SE FAG" has been installed within the Armed Forces in French Guiana (3000 people) in October 2004 [1]. This system provides an automatized statistical analysis which permits in real time to know the level of the current epidemiological situation for the occurence of fever within the soldiers : normal situation, pre-alarm or alarm. This level and the epidemiological data are sent weekly to the civilian health authorities of French Guiana if the situation is normal and immediatly in case of pre-alarm or alarm.

Fever in French Guiana could be associated with a lot of infectious or tropical diseases, as dengue fever or malaria. Before April 2006 and the implementation of a new syndromic surveillance system, the only data available to assess the situation of the diseases associated with fever in French Guiana were the data provided by the laboratories. For dengue fever, the main laboratory is the French national reference laboratory of "Institut Pasteur de la Guyane" in Cayenne.

An outbreak of dengue fever (DEN-2 serotype) has occured in French Guiana since the end of November 2005. The objective of this study was to evaluate the reactivity of both surveillance systems in face of this outbreak and the decisions taken.

METHODS

The data produced by both systems were compared, using the weekly incidence: confirmed dengue fever for the reference lab and for "2SE FAG" occurrence of fever without infectious evidence, associated with one or more of those symptoms : headaches, aches among articulations, muscles or behind eyes. The levels of alarm given by "2SE FAG" were recorded and also the Public Health decisions taken in both military and civilian sides.

RESULTS

The pre-alarm has been activated by "2SE FAG" during the week 48 of 2005 and the alarm during the week 2 of 2006.
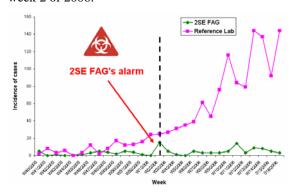

Figure 1: Comparison of the weekly epidemiological data produced by 2SE FAG system and the reference laboratory of "Institut Pasteur le la Guyane" between the week 40 of 2005 and 16 of 2006

The military authorities have reinforced the control of mosquitoes since the pre-alarm and more after the warning, with some collective and individual measures (insecticides inside military buildings use of repellents for soldiers, etc.). The situation stayed under control. On the civilian side, even if the alarm was known, the time to set up specific measures was longer and it was more difficult to control the outbreak, as shown on figure 1.

CONCLUSIONS

Early warning given by the 2SE FAG sytem has permitted to enhance the reactivity of the military authorities to keep the situation under control whereas it was more difficult on the civilian side, not familiar with the use of syndromic surveillance.

REFERENCES

[1] Touze J-E, Richard V, Josse R and al. Les nouveaux concepts de la surveillance épidémiologique dans l'armée française. Bull Acad Natle Med 2004;188:1143-52.

Further Information : Jean-Baptiste Meynard, jbmeynard@pasteur-cayenne.fr, jb.meynard@wanadoo.fr