

Operation of the evacuation site surveillance for the Great East Japan Earthquake in 2011

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Objective

For an early detection and control of an infectious disease outbreak, we developed and have been operating syndromic surveillance for evacuation sites 'evacuation site surveillance'.

Introduction

In March 11, 2011, the big earthquake attacked eastern Japan followed by huge tsunami and nuclear plant accident. Consequently, a lot of people could not help living in evacuation sites. Since those evaluation sites have high density of population and were not necessarily good in sanitary condition, outbreaks of influenza, norovirus or other infectious diseases were concerned.

Methods

We developed a web-based evacuation site surveillance system with 8 syndromes including acute gastroenteric symptoms; influenza or influenza-like-illness; acute respiratory symptoms other than influenza; rash and fever; neurologic symptoms including tetanus, meningitis and encephalitis; cutaneous symptoms; wound-related infectious diseases; icterus and death. Age of the patients was classified into three categories: younger than 5 years, 5 to 64 years and 65 years old or older. Analysis by evacuation site was performed automatically, and if some aberrations were found, the system showed an alert sign on the screen of a computer. The information on patients was shared with the public health center and the local government office simultaneously.

Results

Evacuation site surveillance started in Fukushima prefecture on March 25, 2011, and in Miyagi prefecture on May 8, 2011.

About 400 sites in Miyagi prefecture were covered until the end of May. When the surveillance found an aberration, the public health center investigated the site and started taking an action for control.

Conclusions

This system raised awareness of infectious diseases and provided good information for risk assessment. Before the earthquake, the pharmacy surveillance and the school surveillance (only in Miyagi prefecture), which are nationwide syndromic surveillance in Japan, were operating, and these played a complementary role for evacuation site surveillance and the official surveillance. Our experience showed that it would be too late to start to develop the system from the scratch after a disaster occurred. Thus, it is essential to make a plan on activation of the system in advance in case a severe disaster occurs and to prepare and stockpile the hardware that is necessary for an early activation of evacuation site surveillance. The necessary hardware, for example, includes battery and communication tool even if electronic power, internet and (mobile) phone network are shut down. This is the next challenge.

Keywords

Earthquake; evacuation site; disaster

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