

Call for action for setting up an infectious disease control action plan for disaster area activities: Learning from the experience of checking suffering volunteers in the field after the Great East Japan Earthquake

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Summary: After the Great East Japan Earthquake on March 11th, 2011, a journalist visited the disaster area with febrile symptoms and was diagnosed with measles of the D genotype, which is not indigenous to Japan. After continuing activities in disaster areas and Tokyo, 11 measles cases were reported, some of which were identified as genotype D. Meanwhile non-profit activities directed towards volunteers were offered including interviews to screen for subjective symptoms, check body temperature and advise volunteers to refrain from working in shelter areas during the period of sickness. As a consequence, disease transmission was controlled among volunteers. In disaster areas, anyone can be an infection vector. In order to prevent transmission of infectious diseases, a field action plan, which includes body temperature checks and standard precautions should be formulated and put into place. If the action plans are shared among local governments and non-governmental organizations (NGOs), they can become a norm and be expected to control infectious disease transmission.

Almost two and a half years have passed since the earthquake and tsunami hit the Pacific coast of Tohoku on March 11th, 2011. As of July 1st, 2013, the death toll is reported to be approximately 15,883 with 2,654 persons still listed as missing (1).

A disaster affects everything, the control function of

local governments may be lost and misrule may emerge because officers of local governments can themselves be victims. The Japanese experience this time is nothing short of misrule. Under such circumstances, it is noteworthy that many volunteers participated in aiding shelter residents.

Lessons for health should be learned and shared from all disasters in order to benefit future preparedness. As such, this disaster offered us an important lesson for when there is an influx of people into areas that have been affected by a disaster.

In this article, we review a case of measles importation in the disaster period and a response from a company in which non-profit activities for controlling infectious disease transmission were directed at volunteers. We conclude that simple activity guidelines in disaster areas, including precautions, are useful and should be shared internationally.

A case of measles importation into a disaster area

In April, 2011, news hit the Tohoku disaster area that a foreign journalist had visited with febrile symptoms (2), and had continued his/her activities in the disaster area and Tokyo, before finally being diagnosed with measles. The measles virus genotype of the journalist was D4, which is not indigenous to Japan. Fortunately, no measles outbreak was observed in the disaster area. However, 11 measles cases were observed in Japan thereafter, some of which were identified as the D4 genotype (3,4).

Neither the journalist's attitude to precautions nor his/her vaccine history were officially disclosed, so the relationship between his/her activities and measles virus dissemination is unclear. What is clear is that, since measles is contagious during the febrile period (5),

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the activities of the journalist should have been limited in order to prevent the dissemination of the pathogen.

A good practice for controlling infectious diseases

Lessons can be drawn from the non-profit activities offered by the company Carepro, which usually offers health check services. The objective of the company's activities in the affected area was to check the health status of volunteers and control infectious disease epidemics within the disaster area. When they started activities 17 days after the disaster, they found that among the more than 100 volunteers working there, some were suffering from influenza-like illnesses or enterocolitis. The staff from Carepro advised volunteers to check for subjective symptoms and take their body temperature each day. If volunteers felt ill, they were advised to refrain from working in shelters. Besides alleviating volunteers' fatigue, their activities contributed to controlling the incidence of infectious diseases among volunteers including influenza/enterocolitis (from 14/100 to 1/100) (6) and halted the transmission of common infectious diseases to those affected by the disaster.

While other factors including improvement of the shelter conditions may have influenced the dramatic reduction in disease incidence, their experience in these focused activities is considered good practice for controlling infectious disease transmission.

Considering feasible means of disease prevention

When a disaster occurs, a range of different people tend to enter the affected area, including professional people such as police, rescue teams, medical teams, journalists and volunteers, any of whom can be a vector of infectious diseases (7). Any pathogen, including those that are vaccine preventable, can easily pass national borders.

In addition, in disaster areas, where resources are limited, it is difficult to both handle sophisticated medical techniques including detailed diagnosis and to force people coming from outside the disaster area to receive vaccinations and/or intensive medical checks. Existing guidelines are too complicated for local government officers in devastated regions to implement in the event of a disaster, because they are written in a problem-oriented, list-wise manner. Officers may be too exhausted to understand detailed guidelines and reorganize their plans while coping with difficult situations. (8,9).

Thus the simple method provided by Carepro, which includes checking body temperature and physical condition every day before starting volunteer work, is useful for public health activities. Learning from this lesson, more feasible means of preparation for coming

disasters should be considered, in particular, with sharing experiences and lessons of troubles faced by local government officers. The formulation of simple action plans for field activities in which standard, reasonable and applicable precaution methods, which may be assumed even when the general population is suffering the effects of a disaster, should be included. If such action plans are circulated among local governments and non-governmental organizations (NGOs) which provide disaster-relief activities and training for the plan is repeated, then they may become a norm for safeguarding activities in disaster areas, which can be shared internationally.

In conclusion, every influx of population into disaster areas can be a vector for the transmission of infectious diseases. For preventing shelter residents from acquiring infectious diseases, it is recommended that action plans, in which basic health checks are included, are established and drilled.

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