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COMPETENCE OF SURVEILLANCE AND RAPID RESPONSE TEAM TO PUBLIC HEALTH EMERGENCIES OF NORTHEAST THAILAND.

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ABSTRACT

This study assessed the competency of surveillance rapid response team to response to epidemics of infectious diseases in emergency situations at district level in Northeast Thailand. From 28 community hospitals, 28 District Health Offices, and 50 health centers all together 227 officials assigned to tasks of surveillance rapid response teams had been selected for this study by random sampling. Quantitative data were collected through a self-administered questionnaire and review of documents. Qualitative data were collected by focus group discussions and in-depth interviews. The surveillance rapid response team were very well familiar with the local situation and could easily communicate with the population; however, other important issues need improvements, especially management skills and systematic thinking. Other important shortcomings are the implementation of the policy towards reacting to emergencies, and skills in adopting epidemiological methods. Staff responsible for surveillance rapid response team was overburdened with other tasks, and training was insufficient in various aspects.

Keywords: Competency, public health emergency response.

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INTRODUCTION

Infectious diseases are still posing more than ever a serious problem. Recent examples of viral diseases had been the Severe Acute Respiratory Syndrome (SARS) and Avian flu. The latter is not only life threatening but also causes substantial damage to the economy, especially in the rural areas. Millions of chickens had to be slaughtered and it almost ruined this section of the agricultural industry. SARS, on the other hand, for some time paralyzed tourism and caused significant losses to airlines worldwide. Prevention and control of these sudden emergent dangers rely on an effective surveillance and is controlled by the health system. Countries around the world had been advised by the World Health Organization to react to public health emergency situations by arranging and developing a system to be able to 'integrate the mechanism for an immediate encounter of urgent problems' (WHO, 2005).

The Ministry of Public Health (MOPH) of Thailand, in supporting the important policy of the WHO, did set up surveillance and rapid response teams (SRRT) on all levels of the health system in 2005, including the district level (Department of Disease Control, 2005). The tasks of the SRRTs are to emphasize on surveillance of important infectious diseases and on an immediate response in case of public health emergencies. The goal of the MOPH was that each district should have a sufficiently functioning SRRT up to the year 2010. Previous studies showed that the resources in responding to emergencies are insufficient throughout the world. This especially was found to be true for developing countries (Kate et al., 2008). Sookawee and Prapasiri (2005) evaluated the performance of SRRTs in Bangkok and found that the competency and readiness to react in emergency situation were limited and team members were not working together. SRRT members are dispatched to the SRRT in case of emergencies and are otherwise working in various different sections of the health system. The problem was that each section worked for itself and did not leave their boundaries. Another main problem was that health officers could not react appropriately because they were overloaded with too many other duties as well. Planning and preparation for emergency situations beforehand were neglected. Professional skills of the SRRT members to conduct surveillance and to investigate the spread of infectious diseases were limited (Prapasiri et al., 2007). They were in danger to be infected as well since they did not know how to protect themselves (Ramasut et al., 2006). Furthermore, the SRRT members did not utilize the information obtained by foregoing surveillance attempts (Thaewnongiew et al., 2009). Since the deadline the MOPH set for the function of the SRRT had past and most of the forgoing studies had not been done at the periphery of the health system. This investigation aimed to evaluate the competency and readiness SRRTs at a district level in eight provinces within the Northeast Thailand.

MATERIALS AND METHODS

This study was a descriptive study. Participants were derived from 28 community hospitals, 28 District Health Offices (DHO), and 50 health centers located in eight provinces in Northeast Thailand. The sample size consisted of 227 health officials.

The quantitative part of the study, 227 individuals out of 1,500 persons from the district SRRTs had been selected, which consisted of 56 staff members from community hospitals, 54 members from DHO, and 117 members from health centers. The group was selected by simple random sampling by considering the probability proportion to size. The qualitative part of the study, 50 persons (30 males and 20 females) out of 227 individuals, was willing to participate in-depth interviews and focus group discussions. They were consisted of the heads of the SRRT, core members of the SRRT, SRRT's members from 10 community hospitals, 10 DHO, and 30 health centers.

The Ethics Committee of the Khon Kaen hospital approved the proposal of the study, and then the investigators started to collect information in the field. Participants who agreed to participate in the study signed a consent form. The study assessed the competency of the SRRT according to the updated guidelines derived from a checklist for

influenza pandemic preparedness planning described by WHO (WHO, 2005).

Quantitative data were collected through a review of documents and by a self-administered questionnaire. The questionnaire consisted of seven main aspects. The Likert scale (Babbie, 2005) was used for collecting the information. Approximately, five items were asked per domain. Scoring was done conventionally from good to poor.

Qualitative data was collected through four focus group discussions, and 15 in-depth interviews. All interviews were tape-recorded, and were conducted with the participants (for 60 to 80 minutes); then information was transcribed verbatim.

Socio-demographic data and information about the competency of the teams were used for quantitative data analysis by calculating percentages, means, and standard deviations from the different scores. Attempts had been made to analyze qualitative data, where the investigators assessed the information obtained from the qualitative approach by content analysis (Elo and Kyngas, 2008). The investigators transcribed the information obtained from the focus group discussions and the in-depth interviews, and coded them into a number of categories. The categories were subsequently linked together. Then the investigator combined sub-categories with similar content into generic categories, and the generic categories were subsequently combined into main categories to describe the competency of SRRTs.

Trustworthiness: To ensure the accuracy of the information, the investigators used quantitative and qualitative methods for collection the detail. The investigators made the information and interpretation available to the participating offices at the end of the study, so that the results could be discussed further on with the participants of the focus group discussions in informal meetings.

RESULTS

Information about the demographic features of the participants and the working environment are summarized in Table 1. The majority of health officers are males of 30 to 40 years old. Most of them are holding a bachelor degree, with 10 to 20 years of working experience, and are mainly engaged in routine work. The main findings are summarized in Table 2. It was found that the teams could adequately address and communicate with the local population well, but the competency in responding to public health emergencies caused by infectious diseases need improvement, especially in the filed of management, leadership, and systematic thinking. Skills of analyzing situations, handing data assessment, and epidemiological methods also could be enhanced. In depth interviews and focus group discussions gave an even better insight into the nature of the problems.

Situation analysis and assessment: It was demonstrated that suggestions for preventing the disease were insufficient, whereas methods for data analysis were not used appropriately and the staff failed to realize the importance of the correct use of statistics. The follow up of the work in the field was largely missing. As a consequence, summarizing of results and providing suggestions to the local people were missing. One health officer stated: *"There are two causes that limit us in working, which are to know or not to know. For example, we investigate diseases about 10 times but we only find the source of infection for about one or two times. We insist of a response for more information, but we could not obtain all of the necessary and important information, maybe we miss to pay attention to it. Mostly we think that it does not matter whether we will find the source of infection or not. In addition, some of the staff have no idea what they should do and do not know where and how to start".*

The previous study of 28 SRRTs during 2007-2008 showed that the source of infection and factors involved in spreading the disease were not mentioned. Consequently, prevention of the further spread of the disease was seriously hampered. Preventive measures, undertaken finally were not based on the reports but followed conventional measures known to be effective in a given situation.

Table 1. Demographic characteristics of samples (n=227).

Characteristics	Administrator (28)		Nurse (56)		Technician (76)		Health worker (67)	
	n	%	n	%	n	%	n	%
Gender								
Male	23	82.1	3	5.4	56	73.7	47	70.1
Female	5	17.9	53	94.6	20	26.3	20	29.9
Age (years)								
20-29	0	0	12	21.4	4	5.3	5	7.5
30-39	0	0	24	42.9	43	56.6	34	50.7
> 40	28	100	20	35.7	29	38.2	28	41.8
Recent education attainment								
< Bachelor	0	0	4	7.1	7	9.21	10	14.9
≥ Bachelor	28	100	52	92.9	69	90.79	57	85.1
Duration of work (hours)								
< 10	0	0	22	39.3	14	18.4	10	14.9
>10	28	100	34	60.7	62	81.6	57	85.1
Marital status								
Single	0	0	15	26.8	10	13.2	12	17.9
Married and others	28	100	41	73.2	66	86.8	55	82.1
Ever trained on epidemiology								
Yes	0	0	39	69.6	63	82.9	59	88.1
No	28	100	17	30.4	13	17.1	8	11.9
Responsibility of work								
Routine work	20	71.43	32	57.14	51	67.11	29	43.28
Prevention and control	6	21.43	11	19.64	15	19.74	16	23.88
Other works	2	7.143	13	23.21	10	13.16	22	32.84

Table 2. Competency of surveillance rapid response team (n=227).

Competency of public health emergency	Mean	S.D.	Level
Situation analysis and assessment	3.62	0.56	moderate
Working knowledge	3.29	0.51	moderate
Communication	3.33	0.52	moderate
Working in local area	2.37	0.68	fair
Local culture skill	4.33	0.67	good
Management	1.94	0.81	need to be improved
Leadership and systematic thinking	1.86	0.83	need to be improved
Total	**3.43**	**0.52**	**moderate**

Working skills: A half of the SRRT members were trained in epidemiology but they did not know how to apply what they had learned to use for their work in the field. Some of them tried to acquire the necessary skills by themselves. As an officer stated during a group discussion: *"I learned how to work from my seniors. Sometimes I asked them and compiled what they told me. When other juniors arrived, I taught them the same way as I was told. That became our tradition. I had never used what we learned at college. What we had learned at college was a lot of theory which could not be applied later on"*. The others agreed with this statement.

The ability to write a report of an investigation was insufficient. Some of them had the impression that the investigation reports were not important, they did not do it because it seemed not to be of any benefits. Moreover, it was considered to be a burden. As they said that: *"There is no advantage in writing a report because we have a lot of work to do here. Moreover, we do not use a report, so we do not know why we have to write one"*.

Communication: The communication between the district and the sub-district was only in one way. In fact, health center officers and district health officers did not share any ideas and problems to each other. Consequently, the health officers had different idea in performing their duty. As one health officer explained: *"Networking is not strong enough. We did not see anyone who took it seriously. For example, the disease occurred on Saturday, but the district just informed us on Tuesday, luckily it was still not out of control."*

Working in a local area: Working ability of the SRRTs in the field was considerably good. Improvement was also detected in the ability of other persons, such as village health volunteers who helped to detect newly diseased patients in the community during a disease outbreak. However, the SRRTs were not able to provide information about the spread of an epidemic disease to the sub-district administrative organization or community administrators.

Skills to respond to the local culture: The SRRTs were found to be quite skillful in responding to the local culture. Most of them could communicate in the local dialect and they could understand and communicate with people in the villages very well. In case of an epidemic they could interview patients, their relatives, and infected people by using the local dialect. They understood the way of life that helped in preventing the spread of the diseases.

Management: The management of the SRRTs should be improved because its policy was not clear. Thus it affected the structure of the local area management. Transferring the policy to work practice was inadequate. Besides, the SRRTs had no motivation because budget and necessary materials were scarce. A statement of one health officer was as follows: *"The SRRTs are established or not it does not matter because they are useless. The system is no good. Those who are actually working do not get any reward but those who do not work will have some benefits. I have never attended any meetings aimed to assign the work. The boss should be certain what to do and who should do it."* Moreover, *"When there is an epidemic, nobody wants to work in the field because they do not get anything for doing so. While working in the field we are in danger and at the front line. Who takes responsibility for us if we are sick? It is not like other work that they have an allowance for. Working in the epidemiological section is the last position one would like to be assigned for"*. *Leadership and systematic thinking: Competency in leadership and thinking should be one of the major abilities of the SRRT, especially team development in terms of capacity building, and readiness for working in public health emergencies. However, the staff is overburdened with work and they are not flexible enough to prevent the spread of diseases and control them.*

The epidemiological unit on district level is not clear. The task of the SRRTs increases substantially but they are not promoted for that. Only half of the SRRTs had been trained in epidemiology. Most of them have to learn from their seniors. They are not prepared and ready to conduct their tasks in case of a public health emergency. One health officer

claimed that *"Working in the field related to epidemics and epidemiology is not important. The local administrators are not designed for that. If you want something to be done, there should be an order from the MOPH to let us know what we are supposed to do. While we are just doing our routine work according to what the boss orders us, no time is left for anything else. It is the duty of MOPH to think about how to strengthen the team. We do not have enough time to work for that as well". Moreover, "The SRRT is like a hot potato. Nobody wants to be involved. When we cannot control the outbreak, the boss blames us that we are not effective. I do not want to say anything more. There is not enough staff in the DHO, so it's impossible for us to take any additional job and work in every field".* In addition, there was hardly an attempt to solve the problems. Most of them worked as individuals and not as team members, where just only one or two persons were responsible for outbreak. Unity among the group was not as expected.

DISCUSSION

The result of this study indicated that the competency of the SRRTs to response to public health emergencies was insufficient to a great extent. In the case of an emergency, the SRRT can only respond to the event to a certain extent, especially the competency in management, leadership, and systematic thinking need improvement. The core of problems is an unclear policy and no clear guidelines how to conduct disease surveillance and prevention of infection in the field. Another major problem is that the budget and facilities are not enough supplied. The quality control for developing SRRTs was not always helpful, and had weak surveillance network.

The ability to promptly response to an emergency should be in the focus of the government and should be considered as a national duty. But there are limitations in implementing the policy into practice. For instance, to react to an emergency is considered to be the duty only of the health staff. However, without the co-operation and help of the curative sectors, attempts to control an epidemic are fruitless. Those yet working as nurses and doctors treating predominantly patients are not used to work within a team and therefore are not in the position to react adequately to the situation. Therefore, networking needs to be improved. Concerned organizations are not integrated into the attempts of the governmental officials. Other organizations have the impression that prevention and control of diseases is only the duty of health officers. Markenson et al. (2005) found the same information while studying the preparation of health officers responsible for terrorism, disasters, and public health emergencies.

The readiness of the teams in preparing themselves for responding to the public health emergencies must be improved considerably. This point has been emphasized and assessed the need and the readiness of the different sections of the health delivery system to improve the competency in disease surveillance and disease prevention (Ramasut et al., 2006). The importance of teamwork for the success of the SRRT and their professionalism in epidemiology had also been highlighted by Edbert et al. (2006). An emphasis on particular should be given to the ability to make decisions and take appropriate actions to deal with acute problems. The know-how of SRRT members to certain extent is sufficient but had to be improved, so that they are able to find the cause for the spread of the disease and know how to protect themselves not to be infected, and are able to collect specimen correctly. These aspects are crucial because they lead to effective disease prevention and control. A precondition for achieving true improvements are that there is consistency within the teams and not that the officials within the team are often replaced. Only 50% team members are trained accordingly, whereas the others are not, which are shortcomings. Ditsoonun (2006) already mentioned these when investigating public health emergency attempts in the case of bird flu, especially new teams need to be trained according to their responsibilities. This study found that members of the SRRT spent about 20% of their time for disease prevention and control and administrative duties and participate

in numerous meetings. This is a drawback which already had been pinpointed by previous investigations (Prapasiri et al., 2007; Ditsoonun, 2009; Suttisa et al., 2007).

Resources to fulfill their duties are not sufficiently provided to the staff. For instance, they have to use their own vehicles to go into the field without compensation. In any case, they would be allowed to do so outside of the health officers working hours, some extra-payment could be provided. But since they have to go during the official working hours and the excursions are considered to be their duty, thus, their expenses are not covered. These shortcomings demotivate team members and result in a frequent turnover of health officers within the team (Sookawee and Prapasiri, 2005; Suttisa et al., 2007).

The limitations of this study are that the SRRTs answered a self-administered questionnaire, so the answers reflect the self-perceived ability for assessment of those who participated. All of those answering the questionnaire really have an appropriate insight view and are self-critical enough so that their answers reflect the true situation that cannot be always assured. Therefore, the investigator also tried to support the findings of the quantitative assessment by collecting additional qualitative information by forming a focus group discussions and in-depth interviews.

In conclusion, the competency of the SRRT at district level needs to be improved almost on all aspects in order to be able to response to the public health emergencies. They should be prepared to fall into action at any given time.

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