

## The Development Model of Administration Management on Infectious Waste in Tambon Health Promoting Hospital Kalasin Province

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**Abstract:** This study was a research and development study, aimed to develop the Administration Management Model on infectious waste of Tambon health promoting hospital, Kalasin Province. The samples comprised 32 officers as a agent who is in the Tambon health promoting hospital Namon District Kalasin Province's population which have been selected by a purposive sampling technique. This study were participatory action research as a method for officers participation in infectious waste management, conducted under four participatory frameworks including planing, decision making, practice and evaluation. The research instruments included questionnaires, group discussions organization meetings and observation. The data collection was analyzed by frequency, percentage usage and t-test. The study results are as following: the Administration Management Model (Kalasin Model) development on infectious waste management was rated as a high efficiency. The officers of Tambon health promoting hospital had knowledge and behavior on infectious waste management after training was rated higher that before training ( $p < 0.05$ ).

**Key words:** Infectious waste, management, Tambon health promoting hospital, model, administration, officer

### INTRODUCTION

Medical waste, due to its content of hazardous substances, poses serious threats to environmental health. The hazardous substances include pathological and infectious material, sharps and chemical wastes. In hospitals, different kinds of therapeutic procedures (i.e., cobalt therapy, chemotherapy, dialysis, surgery, delivery, resection of gangrenous organs, autopsy, biopsy, para clinical test, injections, etc.) are carried out and result in the production of infectious wastes, sharp objects, radioactive wastes and chemical materials. Medical waste may carry germs of diseases such as hepatitis B and AIDS. In developing countries, medical waste has not received much attention and it is disposed of together with domestic waste. Improper medical waste management is alarming and it poses a serious threat to public health (Hassan *et al.*, 2008).

Healthcare waste management is a serious public health concern. In developing countries, compared to developed nations, the management of infectious wastes has not received sufficient attention. Recently, worldwide awareness has grown of the need to impose stricter controls on the handling and disposal of wastes generated by healthcare facilities (Ali and Kuroiwa, 2009).

Analysis of the medical waste stream and its characteristics or a medical waste audit is an important first step in selecting and implementing of an effective health care waste management plan. It is a useful tool to

find the sources of waste in a health care facility, their compositions, rates of generation, waste flow within the facility, information on waste handling practices and compliance with existing regulations on waste handling and disposal (Sartaj and Arabgol, 2015).

In Thailand, the Ministry of Public Health is the main organization setting policies and controlling health care industries and the health of the people. The principle legislation related to infectious waste management is the Public Health Act 1992 and the Healthcare Facility Act 1998. The Public Health Act specifies that local government shall provide disposal facilities for infectious and industrial non-hazardous waste. The Department of Health and the Department of Pollution Control have claimed that the procedure for collection, transportation and disposal of clinical waste is the responsibility of each health care provider who must comply with criteria specified by the Department of Health. Approximately 10-25% of the waste generated by health care providers is hazardous waste (Niyompanitpatana and Bonollo, 2012).

Therefore, researcher as an Kalasin Rajabhat University' lecturer had developed of the officers of Tambon health promoting hospital on infectious waste management. The aim was to have more knowledge and behavior in their working areas through the development of Administration Management Model on infectious waste for the officers of Tambon health promoting hospital Kalasin Province.

**The research's purposes:**

- To study condition on infectious waste management of in Tambon health promoting hospital Kalasin Province
- To develop the Administration Management Model on infectious waste of Tambon health promoting hospital Kalasin Province
- To compare knowledge and behavior on infectious waste of the officers of Tambon health promoting hospital Kalasin Province after activities

**Hypothesis:**

- The Administration Management Model on infectious waste of Tambon health promoting hospital Kalasin Province has rated as high efficiency
- The officers of Tambon health promoting hospital Kalasin Province had knowledge and behavior on infectious waste after activities were higher than before activities

**MATERIALS AND METHODS**

Population and sample as follows:

- Population were 156 officers of Tambon health promoting hospital of Kalasin Province
- Sample, 32 officers of Tambon health promoting hospital of Kalasin Province, selected by a purposive sampling technique

Research instrument including the following:

- The questionnaires about condition on infectious waste management of in Tambon health promoting hospital Kalasin Province divided into three sections which are Section 1: general data are 4 items such as gender, ages, education levels and job positions of the tambon health promotion hospitals officers. Section 2: quantity of infectious waste. Section 3: conducted about infectious waste are 34 item. They were examined by five experts for an evaluation form IOC which is indicated that they were between 0.05-1.00. Improving and collecting them which according to the five expert's suggestions and opinions which leded them to find out without the thirty officers sampling random group, it's indication was discrimination value that also using in the point of Pearson coefficient correlation by choosing the items with positive discrimination value which having a higher score than 0.02, the discrimination value in range of 0.02-0.80, the reliability value that using the Cronbach Alpha coefficient and the reliability is equally to 0.79. Then, they were analyzed for collecting data by frequency and percentage:

- The Administration Management Model on infectious waste of Tambon health promoting hospital Kalasin Province
- The test of knowledge on infectious waste management for officers of Tambon health promoting hospital of Kalasin Province
- The observation about infectious waste management of the officers of Tambon health promoting hospital of Kalasin Province

Data collection, there was the step as follows:

- Step 1: collecting condition on infectious waste management of in Tambon health promoting hospital Kalasin Province by questionnaires
- Step 2: the data from step 1 to develop the Administration Management Model on infectious waste of Tambon health promoting hospital, Kalasin Province
- Step 3: try out Administration Management Model (Kalasin Model) by step4-6
- Step 4: collecting pre-activities data from the sample by the test of knowledge and behavior on infectious waste management on the first day of training
- Step 5: collecting the immediate post-training data from the same sample by the same instruments, namely, the tests of knowledge toward infectious waste management
- Step 6: analyzing data by statistical, percentage and Efficiency Index (EI) and t-test

**RESULTS AND DISCUSSION**

The major findings revealed as following: mostly the Tambon health promotion hospitals officers of Kalasin Province as male (51.28%), age 31-40 years old (35.90%), education level higher than bachelor degree (67.95%) and position as director (47.44%) (Table 1). The quantity of infectious waste showed that total 8.12 kg/office/day; the maximized showed that the general infectious waste as 3.76 kg/office/day and the minimized showed that hazardous infectious waste as 0.75 kg/office/day (Table 2). The Tambon health promotion hospitals officers of Kalasin Province action about infectious waste in accordance with the ministry of health total as 81.58%, general regulation aspect as 80.77%, collected aspect as 76.61%, transportation aspect as 86.74% and disposal aspect as 82.21% (Table 3).

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Table 1: General data of Tambon health promotion hospitals officers of Kalasin Province

Data	Frequency	Percentage
<b>Gender</b>		
Male	80	51.28
Female	76	48.72
<b>Age</b>		
20-30	16	10.26
31-40	56	35.90
41-50	39	25.00
51-60	45	28.85
<b>Education level</b>		
Less than bachelor degree	50	32.05
Higher than bachelor degree	106	67.95
<b>Position</b>		
Director	74	47.44
Technical officer	56	35.90
Official	26	16.67

Table 2: The quantity of infectious waste of Tambon health promotion hospitals officers of Kalasin Province (kg/office/day)

Type of waste	Quantity
General infectious waste	3.76
Sharp infectious waste	1.21
Liquid or secretion infectious waste	1.26
Hazardous infectious waste	0.75
Organs or parts of organs infectious waste	1.15
Total	8.12

Table 3: Infectious waste management of in Tambon health promoting hospital Kalasin Province

Management	Percentage	
	Action	No action
General regulation	76.05	23.95
Collected	87.69	13.37
Transportation	86.70	13.38
Disposal	69.00	31.00
Total average	79.86	20.43

promoting hospital Kalsin Province can be used research and development process and has been step to at Kalasin Model (Fig. 1).

The officers of Tambon health promoting hospital of Kalasin Province had a knowledge on infectious waste management during the training and after training in very high level of over 80%. This shows that the developed Administration Management Model (Kalasin Model) has made the officers of Tambon health promoting hospital of Kalasin Province efficiently received knowledge and experiences about infectious waste management which is accorded to Khumchom *et al.* (2013) who found that the Administration Management Model (ADD Model) development on infectious waste management was rated as a high efficiency.

The officers of Tambon health promoting hospital of Kalasin Province had knowledge and behavior on infectious waste management after training were higher than before training with statistically significant difference at the level of 0.05 which shows that the developed Administration Management Model (Kalsin Model) making more knowledge and experience receiving for

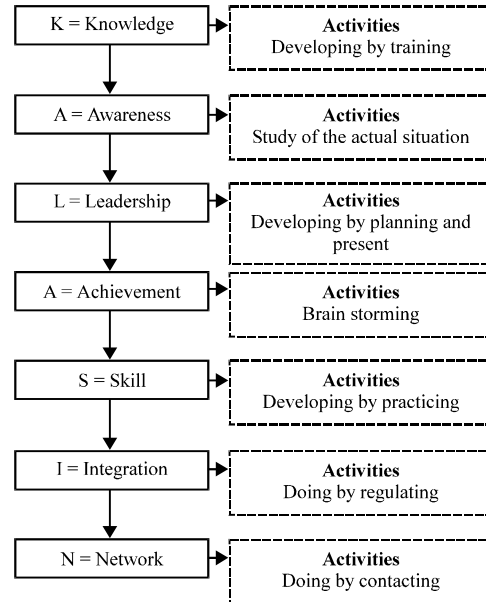


Fig. 1: Model of administration management on infectious waste in Tambon health promoting hospital (Kalsin Model)

the officers of Tambon health promoting hospital which relating to the infectious waste management directly to the program's target which is accorded to Khumchom *et al.* (2013) who found that the officers of Tambon health promoting hospital had knowledge and behavior on infectious waste management after training was rated higher that before training ( $p < 0.05$ ).

## CONCLUSION

From this research, the Administration Management Model (Kalasin Model) on infectious waste was rated as a high efficiency and they also had knowledge and behavior on infectious waste after training were higher than before training. Information from the study was giving beneficially to the infectious waste development system in the other Tambon health promoting hospital.

## ACKNOWLEDGEMENTS

This research has completed perfectly with a support and kindness of Assistant Dr. Yanyong Innuang from Faculty of Public Health Khonkaen University, Dr. Supasak Mueangprom, Dr. Lampoon Sanawang, Dr. Somsak Sripugdee from Ministry of Public Health and Dr. Rittirong Junggoth from Faculty of Environmental and Resource Studies Mahasarakham University who have greatly given a useful advice and weakness verification from the beginning till its

completion. The study was supported by funds from Kalasin Rajabhat University and National Research Council of Thailand (NRCT).

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