

Infectious Waste Management in Ministry of Public Health Hospitals by Private Transport Sector:

Case Study Hospitals in the Northeast in Thailand

การจัดการมูลฝอยติดเชื้อของโรงพยาบาลในสังกัดกระทรวงสาธารณสุขโดยบริษัทขนส่งมูลฝอย ติดเชื้อ

เอกชน : กรณีศึกษาโรงพยาบาลในภาคตะวันออกเฉียงเหนือ

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ABSTRACT

The infectious waste which from hospital trends to be increase in quantity and variety. This goes along with serious problems in the management waste disposal and should be of major concern due to potentially high risks for the human health and the environment. And increasing number of hospitals assigned other organizations from the Private Transport Sector (PTS) to manage their waste disposal. Objective to determine problems and obstacles faced by PTS to manage infectious waste.Using a purposive sampling technique 12 hospitals of the Ministry of Public Health (MoPH) in the northeast of Thailand Results: The practice of waste disposal did not follow planning and the policy stipulated for the management of waste disposal. Infectious waste was not separated from garbage while transported, vehicles used for transporting the waste were not of the required standard, know-how of workers were lacking and the need for using personal protection equipment were not recognized. The infectious waste was stored and stocked in buildings of low standard without controlling the temperature inside. The collection of the waste did not follow the agreed schedule, and the waste was found ferment and released a strong smell. The know-how of the employees of the private companies was low, awareness about the danger of infectious waste was lacking and training was inadequate.

บทคัดย่อ

ขยะติดเชื้อที่เกิดจากโรงพยาบาลมีแนวโน้มสูงขึ้นทั้งด้านความหลากหลายและปริมาณในการใช้ ซึ่งทำให้ปริมาณขยะติดเชื้อเพิ่มสูงขึ้น เป็นปัญหาใหญ่ในการบริหารจัดการขยะติดเชื้อ โดยเฉพาะปัญหาทางด้านสุขภาพและสิ่งแวดล้อม ซึ่งในปัจจุบันทางโรงพยาบาลมีทางเลือกใหม่โดยจะหันมาใช้บริการของบริษัทขนส่งมูลฝอยติดเชื้อของเอกชนในการนำมูลฝอยติดเชื้อไปกำจัดนอกสถานที่มากขึ้นเรื่อยๆ โดยมีวัตถุประสงค์การวิจัยเพื่ออธิบายปัญหาและอุปสรรคของการจัดการมูลฝอยติดเชื้อในโรงพยาบาลที่ให้บริการเอกชนมานำขยะติดเชื้อไปกำจัดนอกสถานที่ โดยใช้เทคนิคการสุ่มตัวอย่างแบบเจาะจงเลือกโรงพยาบาลใน 12 โรงพยาบาลในสังกัดกระทรวงสาธารณสุข ในภาคตะวันออกเฉียงเหนือ ผลการศึกษา พบว่า

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โรงพยาบาลส่วนใหญ่มีการวางแผนและกำหนดนโยบายสำหรับการจัดการมูลฝอยติดเชื้อ แต่ในด้านการปฏิบัติยังไม่สามารถปฏิบัติได้ถูกต้อง ครอบคลุมและดำเนินการต่อเนื่อง ตามกฎกระทรวงว่าด้วยการจัดการมูลฝอยติดเชื้อ ของกระทรวงสาธารณสุข พ.ศ.2545 พบว่าทางโรงพยาบาลส่วนใหญ่ไม่มีเส้นทางขนส่งมูลฝอยติดเชื้อแยกออกจากกระบวนการขนส่งมูลฝอยทั่วไป ส่วนทางด้านรถขนส่งมูลฝอยติดเชื้อที่ใช้ยังไม่ได้มาตรฐานและบางโรงพยาบาลยังไม่มีรถเก็บขนใช้ในการปฏิบัติงาน ในส่วนของพนักงานเก็บขนมูลฝอยติดเชื้อในโรงพยาบาลยังขาดความรู้ และความตระหนักในการป้องกันอันตรายส่วนบุคคลจากการทำงานขนส่งมูลฝอยติดเชื้อ ตลอดจนโครงสร้างของโรงพักขยะติดเชื้อและการจัดเก็บพักขยะติดเชื้อ ยังไม่ได้มาตรฐานไม่มีระบบควบคุมอุณหภูมิของขยะในกรณีที่บริษัทไม่สามารถมาเก็บขนได้ตามระยะเวลาที่กำหนดไว้ พบกลิ่นเหม็นของมูลฝอยติดเชื้อฟุ้งกระจาย ส่วนในด้านพนักงานของบริษัทเอกชนในการขนส่งมูลฝอยติดเชื้อเองยังขาดความรู้ และความตระหนักในการป้องกันอันตรายส่วนบุคคลในการปฏิบัติงานเกี่ยวกับการเก็บขนมูลฝอยติดเชื้อ ขาดการอบรมก่อนปฏิบัติงาน และท้ายสุดประเทศไทยเองยังไม่มีมาตรฐานในการจัดทำระบบเอกสารกำกับกับการขนส่งมูลฝอยติดเชื้อที่ชัดเจน

Key words : Infectious Waste Management, Transportation, Private Transport Sector

คำสำคัญ : การจัดการขยะติดเชื้อ การขนส่ง บริษัทขนส่งเอกชน

Introduction

Infectious Waste Management (IWM) is remaining the primarily most serious problem that has affected to the social and medical realms of nearly every nation. Since 2002, there has been an increase in the level of public concern about the management of healthcare wastes on a worldwide basis and in Thailand had attracted public attention of IWM (Sukon et al., 2002). Healthcare activities lead to the production of wastes that may cause adverse health effects. Some types of healthcare wastes represent a higher risk to health than others. Approximately 15–25% (by weight) of healthcare wastes is considered infectious. The World Health Organization(WHO) has estimated that, in 2000, injections with contaminated syringes caused 21 million hepatitis B infections, 2 million hepatitis C virus infections and 260,000 HIV infections (WHO, 2004). The system of the IFW in Thailand still

problematic since health care reformed in 1977 (Sukon et al., 2002). Governmental and public concern has subsequently arisen over the insufficient collection and treatment systems of IWM. Although, in Thailand, the public hospital have own incinerators to handle the Infectious Waste (IW). Moreover, the environment concern and to protest of local residents, many incinerators inside the hospitals have been shutdown lately, and these hospitals eventually need service from outside waste management agency.

The huge number of IW was relative to the huge of IW disposal. Financial provision is the necessary for capital and recurring expenditure. It is estimate that US\$ 3,000-4,000 per tones of hospital in India waste is required. An estimate of € 1,000,000 spends per year of Sabadell hospital in Spain (Mühlich et al., 2003). While, the cost of IWM in Thailand also high with the estimate of 10,000 to 17,000 Baht per

month (Department of health, Ministry of Public Health, 2006)

In current, there was the increasing number of hospitals which had the other organization manage the disposal. But, until now there still has been no control measure, especially the infectious control, of any part of the incinerating by that organization. Transportation of IW outside hospitals was undertaken with PTS that did not meet the regulatory requirements for safety.

IWM is not only the technical problem, but it also strongly influence by economic condition such as separating, collecting and disposal expenditure, manpower management such as training, education and skill, and government support policy. The new view of IWM in Thailand was managing by the PTS since 2002. From 2004 to 2006 there was the increasing number of hospital which has other organization manage the disposal (Suporn et al., 2006). But until now there still has been no control measure especially infectious control of any part of the incinerating by those organizations.

The hospitals under the Permanent Secretary office of the Ministry of Public Health hospitals in the northeast of Thailand have units of 281 hospitals (The hospitals were 3 regional hospitals, 17 provincial hospitals, 261 community hospitals) (Suporn et al., 2006).

The problem of manage the IW were trend to be increasing. Future more, the new trend of manage IW is managed by PTS. Now a day, there were no standard guide lines for PTS and also in hospital and health care center. This study attempt to find the of the PTS the results will be benefit for government, health official,

hospital and health care centre for make policy and plan for future development.

Objective

To determine problems and obstacles of the hospital's infectious waste management by PTS.

Materials and methods

The hospital that employed the PTS was select. The qualitative method including participatory observation, non-participatory observation, in-depth interview, focus group discussion was used to finding the results. The three PTSs were selected and 12 hospitals that employed the PTS for transport IW in the northeast of Thailand. (The hospitals were 3 regional hospitals, 4 provincial hospitals, 5 community hospitals which have private company managed the infectious waste). Interview guideline was conducted for guide to interview. The target populations were the former of administrative of IW, the present of administrative of IW and the problems and treats of working with IW. The primary source of data was the data from hospital and primary care unit, which from join the hospital and PCU activities such as meeting, observation and interview of concern IW source. The secondary data was document search, research article, journal citation that appreciated in this study. The content and context analysis were used to analyze the data. The study will be start at May to September 2007.

Results and discussion

1) The planning and policy the result found that most of hospital have planning and policy but the practice were not regular and completed. Lack of

knowledge and awareness of IFW for example waste collection and separation if there were well organized there would have had less number of IW.

2) The transported IW in hospitals. Lack of route for IW transported separated from garbage. Lack of vehicle standard for transport due to the standard of MoPH by the year 2002 the transported of IW with normal route, lack of vehicle for transport, move by handle, lack of knowledge and awareness and protection suit. There was lack of personal protection for the manpower who handle waste.

3) For the IW storage. The structure and the building were low standard from MoPH. The result have no air-condition and control temperature under 10⁰C especially when there have little IW and the collection were not on time. The ferment and strong smell were found.

4) The PTS employees. The result found that, lack of knowledge and awareness especially the danger from pressed crashed the infectious container bags raising and have no protection suits.

5) The IW manifest system, there was no standard manifest system in Thailand at present. The weight loss was the main example for IW disposal.

The policy of IWM in government hospitals were widely known in the head of each department. On the other hand the workers still doubts and not clear especially the rule of their duty. The problems, separated, handling, collected and storage. The results of this problem were made the hospitals have a huge of IW. This study found that their were a lot of workers were punch by the used needle and medical equipment.

This study also found that some hospital have no policy about control and manage IW, lack of awareness, appropriate policy and laws, and apathy are responsible for improper management of IW in hospital. The process of collection, segregation and disposal of IW is not performed according to recommended standards, and concerned people are exposed to the danger of such wastes. This study also found that a half of doctors, nurses and infection control nurses (ICNs) knew that their hospitals had a written policy in the management of IW. This could be due to lack of information or in certain hospitals, and there was no written policy. More ICNs knew responsible units for medical waste management than doctors and nurses. (Danchaivijitr S, et al., 2005). The PTS workers, in this study found that lacked of knowledge and awareness especially their personal hygiene and protected their health. Some of them never ware protection suit and protection equipment for example glasses, boot, mask and gloves.

The study also found that nearly a half of Ward workers wore gloves and half of them wore aprons and masks respectively. Segregation of waste into different categories was done at the sources of the waste in 96.2%. Hand washing after taking off gloves was observed in 16.7% of the occasions. Ward workers are assigned to handle hospital waste in the ward and to transport it to a storage site. (Danchaivijitr S, et al., 2005). Management of wastes usually is delegate to poorly educated laborers who perform most activities without proper guidance and insufficient protection (Diaz LF, et al., 2005). The IW is a potentially harmful which can infect hospital patients, health care workers,

general publics and environment. In USA, 17,700 to 22,000 of nurses and healthcare worker, 28,000 to 48,000 hospital cleaners and 500 to 7,300 of scavengers outside hospital were disposed with needles and syringe (WHO, 2004)

The separate of IW were still have problem. Some medical doctors and nurses and health workers were have no separated IW and garbage. Sometime, the IW collector found blades and needles included with garbage.

ICNs interviewed were not aware of the responsible unit of waste management and the types of hospital waste. Whether they were newly assigned or had less experience in infection control been to be explored. Doctors and nurses are responsible in segregating hospital wastes at the sources of the waste and, thus, they need to know the definition of medical waste. (Danchaivijitr S, et al., 2005).

Wastes produced in healthcare facilities in developing countries have raised serious concerns because of the inappropriate treatment and final disposal practices accorded to them (Abdulla F, et al., 2007).

Conclusions

The management of IW by PTSs was started with sources (hospital and health care center) through the incinerator. They have no standard guide line for work and transport. The policy of managed the IW were not clear. The problem started with the separated, handling, storage and stocked still has developed. The PTS should develop and provide standard equipments and vehicle with rule by MoPH and train the PTS worker before working was necessary.

Recommendation for hospital; they could be built policy and planning for practice and control examine and evaluation system for reduce the number of IW. For the official they could be increase more knowledge for IWM and well quality check for PTS before make a permit for example the driver and the license permit from hospital or MoPH. For the hospital IWM, the control measure of IW dispersion should be undertaken, same as clean technology to reduce the volume of the IW which is the way of reduction for the expenditure of IW disposal. The monitoring and control sector for the IW disposal standards should be set up to take responsibility of the prevention of infectious disease from disposal process in the PTS and another organization that going to have the IW disposal service. For the PTS, should provide the IFW know-how of the standards of environmental sanitation. For the National policy and could be build scope of transport, clearly IW manifest system, including the development of official and organization for set standard for working or procedure.

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