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## The Description Management of Sharp and Non Sharp Waste of Clinical Infection in General Hospital of Jogja City, Indonesia

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### **Abstract:**

*Background: Hospitals are part of the overall health care system that organizes health service activities. Hospital activities produce various kinds of medical waste such as syringes, infusion needles, medicine bottles made of glass, gauze that has been contaminated with blood and body fluids. Health care workers, are the group at greatest risk for infection. In addition, Health officers are very potential to be exposed to blood when carrying out their daily roles and functions, therefore they are always at risk of contracting various diseases caused by pathogenic germs, such as HIV (Human Immunodeficiency Virus), hepatitis B virus and hepatitis C. Virus Accidents the most common occurrence in health services is the needle stick used in patients piercing the skin of a health service officer Knowledge factor is the basis for the success of hospital waste management.*

*Research Objectives: to find out the description of the management of sharp and non-sharp clinical infectious waste in Yogyakarta City Hospital.*

*Method: This research is a qualitative research with case study design. The main focus in this study was to find out the description of the management of sharp and non-infectious sharp clinical waste whether it was applied in accordance with the Operational Standards of the hospital by the midwife in the Kenanga ward of Yogyakarta City Hospital.*

*Results and Discussion: Management of infectious clinically sharp waste has been carried out in accordance with existing Operational Standards ranging from waste sorting, waste collection, transportation of medical waste, temporary storage of medical waste, transportation of waste and final disposal of hospital waste, in addition to non-infectious clinical infectious waste management. in the City Hospital of Yogyakarta is done the same as sharp waste considering both are equally infectious so that the handling is in accordance with the existing Operational Standards.*

**Keywords:** Management, sharp and non-sharp waste, clinical infections

### **1. Introduction**

The hospital is part of the overall health care system that organizes health service activities that are promotive (health development), preventive (prevention of disease), curative (treatment of diseases) and rehabilitative (health recovery) and can function as a place for education of health workers and places for research. Hospitals in carrying out outpatient services, inpatients, emergency services, medical services, and non-medical services using technology that can affect the surrounding environment, so it is mandatory to maintain and improve environmental health efforts (Sudiharti&Solikhah, 2012).

Hospital activities produce various kinds of medical waste such as syringes, needle infusions, bottles of medicine made of glass, gauze that has been contaminated with blood and body fluids of patients. This has the consequence of the need for hospital waste management as part of environmental sanitation activities aimed at protect the people who are in the hospital or in the area around the hospital from the danger of environmental pollution from hospital waste. The impact of hospital waste has a high risk, forexample serious viral infections such as HIV / AIDS and Hepatitis B and C.

Health workers are the group most at risk of infection due to injuries caused by contaminated sharp objects (usually needles), one of the health workers at risk is a nurse, so many nurses are infected with HIV / AIDS, hepatitis B and C. Similar risks are also faced other health workers in the hospital, waste management implementers outside the hospital, and also scavengers at the waste final disposal location (even though this risk is undocumented). Some infections that

spread through other media or caused by more resistant agents can pose a significant risk to the community and hospital patients. (Sudiharti & Solikhah, 2012).

Knowledge is needed to be the basis for the management of the hospital. Waste management officers must have good knowledge of waste management and have direct responsibility to the hospital director. Cooperation is needed between the Waste Management Officer (WMO) with various parties in charge of health services such as infection control officers, nurses, radiology technicians, pharmacy heads, to understand the correct procedures in handling and disposing of pathological, pharmaceutical, chemical and radioactive waste. .

Based on the above background, researchers are interested in conducting research with the title, "The Description Management of Sharp and Non Sharp Waste of Clinical Infection in General Hospital of Yogyakarta City".

## 2. Methods

This research is a qualitative study with a case study design. Qualitative research is a research procedure that produces descriptive data in the form of written and oral words from people whose behavior is observed (Bogdan, 2007,). The main focus in this study is knowing the description of management sharp and non-sharp clinical infectious waste has been applied according to the Standard Operating Procedure of the hospital by midwives in the Kenanga Ward of Yogyakarta City Hospital.

The object of this study was the Kenanga Ward in Yogyakarta City Hospital. Whereas the subject of this study were nurses and midwives who had a canoe ward in Yogyakarta City Hospital, this was because the Kenanga Ward was one of the treatment wards in Yogyakarta City Hospital which had the highest Bed Occupancy Rate among other wards so that the production of both sharp and non-sharp waste was more than wards others, so that this room and its available resources are very suitable to be subject and object of research.

## 3. Results

### 3.1. Overview of Research Subjects

The subject population in this study was the midwife who served in the Kenanga ward, amounting to 21 people. The age of the study subjects is 20-40 years. The average length of work of this subject is 10-10 years, the last education is the subject of 20 people with the last education D3 and one undergraduate. All officers in the canoe ward were female because it was a ward for midwifery cases. As in Table 1. following

Characteristics	f
1. Age	21
a. 20-30	6
b. 31-40	15
2. Gender	21
a. Male	0
b. Female	21
3. Duration of work	21
a. 1-5 Year	8
b. 6-10 Year	13
4. Education	21
a. D III	20
b. S1	1

*Table 1: Frequency Distribution of Respondent Characteristics in Yogyakarta City Hospital*

## 4. Results of Qualitative Data Analysis

### 4.1. Document Review

Based on the results of the document review, it was obtained the Standard Operating Procedure document that regulates waste management in Yogyakarta City Hospital from waste segregation, waste collection, transportation of medical waste, temporary storage of medical waste, transportation of waste and final disposal of hospital waste. This is in accordance with the decision of the Minister of Health of the Republic of Indonesia number 1204 / MENKES / SK/X/2004 concerning Hospital Environ-mental Health Requirements. According to Directorate GeneralIP2MPL (2004) in Asmarhany (2014) also stated that the Decree of the Minister of Health of the Republic of Indonesia No.1204 / Menkes / SK/X/2004 concerning the environmental health requirements of hospitals in the implementation of waste management every hospital must do waste reduction starting from the source, must managing and supervising the use of hazardous and toxic chemicals, must manage chemicals and pharmaceutical stocks.

### 4.2. Compliance Observations

Based on the observations of compliance officers in this case the official midwife in the Kenanga Room, Yogyakarta City Hospital, obtained the following results:

- In general, it has been compliant and capable of sharp and non-sharply infectious clinical infectious waste management because based on the results of interviews with one of the official midwives, stated that medical waste if disposed of carelessly is very dangerous for the environment and society. This is supported by Maulana et al., (2017) stating that the danger posed by B3 waste that is directly discharged into the environment is very large and can be accumulative, so that it can follow the food chain. This is very dangerous because it can cause poisoning in living things and can accumulate in the human body so that it can cause disease. However, considering that there were still officers who were negligent in managing waste, especially when there were many patients, there were still officers who told their friends to dispose of medical waste. This has become a distinctive task especially for the head of the Kenanga Ward room in Yogyakarta City Hospital and the Head of Nursing to always motivate and provide a continuous understanding of the dangers of waste management not in accordance with the Standard Operating Procedure. For researchers to provide solutions, especially for officers who guard in Kenanga Ward, Yogyakarta City Hospital, no matter how busy the activities in the ward should always pay attention to the sharp and non-sharp clinical infectious waste management and fellow duty agencies must always remind each other of this waste management problem.
- Unit/installation officers dispose infectious and pathological waste into yellow trash bins, written with infectious/biohazard waste and in it. Based on table 4.2. It is known that, of all respondents who were compliant in implementing Standard Operating Procedure for sharp and non-sharp clinical infectious waste management in Yogyakarta City Hospital, 75% included good categories in waste management and from all respondents who were not compliant in implementing Standard Operating Procedure for sharp and non-sharp clinical infectious waste management in Yogyakarta City Hospital, 100% belongs to good category in waste management, whereas covered with yellow plastic bags, 95% of nurses and midwives in the Kenanga Ward do so according to the Standard Operating Procedure.

Obedience	Waste Management				Amount	%	P Value
	Good	%	Not good	%			
Obedient	15	75	5	25	20	100	0,567
Not obey	1	100	0	0	1	100	
amount	16	76,2	5	23,8	100	100	

Table 2: Analysis of the Relationship between Compliance with Waste Management in Kenanga Room, Yogyakarta City Hospital

- Unit/installation personnel care patients dispose of infectious objects sharp objects / sharp objects into a special safety box with yellow color and biohazard logo results obtained 95% of nurses and midwives in the canoe ward do it according to the Standard Operating Procedure.
- Safety box that has been filled with a maximum volume  $\frac{3}{4}$  or not yet full but already 3 (three) days taken by the janitor / Cleaning Service then replaced by a new safety box by the room / unit / installation officer found that 75% of nurses and midwives in the canoe ward do according to the Standard Operating Procedure.

#### 4.3. Interview Result

Based on the interview data, overall the officers in Kenanga Room, Yogyakarta City Hospital were able to manage sharp and non-sharp clinical infectious waste where medical waste was taken or collected 3 times a week, that is on Tuesday, Thursday and Saturday. Non-medical waste treatment is separated by medical waste. Non-medical waste is accommodated using black plastic bags while medical waste is accommodated using yellow plastic bags. For sharps waste is inserted into the safety box. This is in accordance with the Decree of the Minister of Health of the Republic of Indonesia Number 1204/ Menkes/SK/X/2004 that waste is separated based on its characteristics in a container that does not leak, is anti-puncture and is not easily opened. This requirement has been fulfilled by using safety box containers for sharps medical waste and footing trash bin for invasive waste. This is consistent with Asmadi's (2012) statement, that in medical and non-medical solid waste management, hospitals are required to do waste sorting and store it in a plastic bag that differs based on the characteristics of the waste.

Based on information from the person in charge of waste management in Yogyakarta City Hospital, it is known that the maximum collection of waste if the waste has already fulfilled  $\frac{2}{3}$  of the trash bin must be immediately taken and then transported to the designated shelter. This is in accordance with the Decree of the Minister of Health of the Republic of Indonesia Number 1204/Menkes/SK/X/ 2004 and the Ministry of Health of the Republic of Indonesia (2002) that trash bins must be transported every day and if  $\frac{2}{3}$  parts have been filled with waste.

Waste transportation at the Yogyakarta City Hospital is carried out by cleaning staff by using the transportation equipment provided. Especially for medical waste transported using a closed transportation equipment to prevent the impact of the hazard caused. Waste transportation in Yogyakarta City Hospital is carried out every day in the morning or evening in each unit. The means of transporting waste by using a trolley or train, and the means of transport must be separated between medical and non-medical waste. The security of officers is required to use personal safety equipment for work safety which can be caused by medical or non-medical waste. right work, using gloves and masks. This procedure has been carried out by the Yogyakarta City Hospital following the Decree of the Minister of Health of the Republic of Indonesia Number 1204 / Menkes / SK / X / 2004 that officers are required to use personal safety equipment.

4.4. From the Checklist Data Taken from the Yogyakarta City Hospital Standard Operating Procedure, the Following Results are Obtained

- There are several nurses/midwives on the Kenanga ward who do not immediately dispose of sharp / non-sharply infectious rubbish in the place that has been designated by the Hospital Standard Operating Procedure
- The safety box is not labeled / dated so it is not known how long the safety box is stored in the ward and has ever obtained a safety box that is full but still in the ward.

Based on the results of interviews with research subjects, the following results were obtained:

Coding	Tema
Knowing about the sharp and non-sharp infectious waste differences Know where and how the waste in the ward must be disposed of Not all of them have followed and know the training about waste that is given by the prevention team for transmission and infection and sanitation Some nurses and midwives were not aware of the training / evaluation information held at the Hospital Nurses / midwives know that sharp removal must be disposed of in the safety box and know the safety of the box during the ward Sometimes there is a disobedience of waste disposal caused by busyness There have been no needle punctures due to disobedience of sharp waste management There is a person responsible for the management of sharp and non-sharp clinical infectious waste	The nurse / midwife's knowledge of the sharp and non-sharp infectious waste differences in the ward is good enough Nurses / midwives in the ward understand how to manage and sort waste in the ward but there are still no dates in the safety box as they should be in accordance with standard operating Nurses / midwives in the ward understand how to process and sort wastes on the ward but there are still no dates in the safety box as they should be according to standard operating Ignorance Information Training / evaluation routinely scheduled by special teams in the hospital and uncertainty about answers to existing training / evaluation information Understand how and where infectious sharps are removed Disobedience in disposing of waste in hospitals occurs because many factors and factors that make the non-compliance of nurses / midwives in the most frequent waste disposal are internal factors that occur within the ward itself No Needles Perforated Events Has the person in charge to monitor the nurse / midwife in each shift in handling waste and monitoring waste management in the ward by a special team

Table 3: Interview Results

## 5. Discussion

From the data of document review, field observations and interviews conducted on the 3 main informants, representatives of the Kenanga ward midwife and supporting informants found several related problems:

### 5.1. Review the Document

There is a Standard Operating Procedure document that regulates waste management in Yogyakarta City Hospital from waste segregation, waste collection, transportation of medical waste, temporary storage of medical waste, transportation of waste and final disposal of hospital waste. This is in accordance with the decision of the Minister of Health of the Republic of Indonesia number 1204/MENKES/SK/X/ 2004 concerning Hospital Environmental Health Requirements. According to the Directorate General of P2MPL (2004) in Asmarhany (2014) also stated that Kepmenkes RI regulation No.1204 / Menkes/SK/X/2004 concerning the environmental health requirements of hospitals in the implementation of waste management every hospital must do waste reduction starting from the source, must manage and supervise the use of hazardous and toxic chemicals, must manage chemicals and pharmaceutical stocks. The results of this study are in line with the research of Widia Rahmatullah which was published in the Journal of Health Sciences Bhakti Setya Medika Vol. 2, September 2017 1 ISSN Print: 2528-7621 and ISSN Online: 2579-93801 with the title Analysis of Implementation of Standard Operating Procedure for Medical and Non-Medical Waste Treatment at Yogyakarta International Hospital, that processing medical and non-medical waste at Home JIH pain is in accordance with the established Standard Operating Procedure and follows ministerial decree number 1204 of 2004 concerning the requirements of the hospital environment. By treating the waste that is in accordance with the Standard Operating Procedure, it will certainly avoid the harmful effects of the hazard due to waste that is not managed properly.

### 5.2. Compliance with Midwives' Attitudes in the Management of Sharp and Non-Sharply Infectious Clinical Waste

Based on the results of the study it was found that, of all respondents who were compliant in applying Standard Operating Procedure for sharp and non-sharp clinical infectious waste management in Yogyakarta City Hospital, 75% were categorized as good in waste management and from all non-compliant respondents in implementing Standard Operating Procedure for sharp and non-waste management clinically infectious sharp in Yogyakarta City Hospital, 100% included in the good category in waste management, whereas based on statistical test, chi square obtained p value 0,000, because  $p \text{ count} > \alpha (0.05)$  means that  $H_0$  is accepted, it can be concluded, "there is no relationship between compliance with sharp and non-sharp clinical infectious waste management in the City Hospital of Yogyakarta ", meaning that both officers who comply with the Standard Operating Procedure and those who do not comply with the Standard Operating Procedure for waste management are also good. This could be the system built by Yogyakarta City Hospital in sharp and non-sharp clinical infectious waste management is good, moreover there are other factors that make waste management

in Yogyakarta City Hospital both including leadership factors, human resources in the field (officers transporting waste from the room to the disposal place end of waste and also adequate facilities and infrastructure, this is in line with the results of HerySyamsius Nahampun's research (2009). The results showed that the waste management activities of Tangerang General Hospital had run well in other words, hospitals that had been accredited in general The waste is good, however, the compliance of the officers in the management of sharp and non-sharply infectious clinical waste has received its own appreciation, because based on the results of interviews with one of the official midwives, stated that medical waste if disposed of carelessly is very dangerous for the environment and society.

The attitude of midwives in the management of sharp and non-infectious sharp and non-sharp clinical wastes is inseparable from the knowledge of midwives about the differences in sharp and non-sharp infectious waste in the ward which is good enough, where nurses/ midwives in the ward understand how to manage and sort waste in the ward but still found no calendar in the safety box as it should be in accordance with the Standard Operating Procedure. This is in line with the results of research conducted by Annisa Fitri Maharani about the knowledge and attitudes of health workers towards the management of solid medical waste at one hospital in the city of Bandung. According to the article health workers as producers of solid medical waste have a high risk of accidents and spread of disease so that as the first person to be in direct contact with medical waste and producers of medical waste should have good knowledge and attitude about the management of solid medical waste in order to prevent risks that may occur due to solid medical waste.

Many obstacles were encountered so that not all midwives could do it in accordance with applicable regulations / Standard Operating Procedures. It was obtained from the information that all the informants answered the obstacles that were obtained when the field was busy due to the large number of patients and the lack of midwives at that time. However, a lot of things have been done to minimize this by having the person in charge at each shift either the head of the room or his chosen colleague who will evaluate, remind or even throw away if his colleague does not get rid of it due to his busy life. According to one informant, the PPI team often evaluated the ward to monitor the compliance of midwives in medical waste disposal.

However, considering that disobedience is still found, especially in participating in trainings facilitated by special teams in hospitals, it is feared that it will affect the risk of transmission from sharp and non-infectious clinical infectious waste and also at risk of throwing waste carelessly which will pollute the environment. This is in accordance with the statement of Maulana et al., (2017) stating that the danger posed by B3 waste which is directly discharged into the environment is very large and can be accumulative, so that it can follow the food chain. This is very dangerous because it can cause poisoning in living things and can accumulate in the human body so that it can cause disease.

Therefore, researchers provide solutions so that midwives who are in direct contact with patients and also sharp and non-sharp clinical objects infectious diligently attend training and are not ashamed to learn from their colleagues who already understand this problem. Because obediently following the training and applying the knowledge and skills acquired during compliance, the impact is not only for the midwives themselves but also for patients, their families and hospitals.

### *5.3. Interview Resultsof Sharp and Noninfectionclinical Waste Management*

In general, service midwives in Bangsal Kenanga, understand how and where infectious sharps are disposed of, but considering that there is still disobedience in disposing of waste in hospitals where based on the results of interviews due to many factors and factors that make non-compliance with nurses/ midwives the most common waste disposal is an internal factor that occurs within the ward itself. It will certainly have an impact on the deterioration of the quality of health services. This is consistent with the research article conducted by Yahar namely the Study of the Management of Medical Waste in the Regional Public Hospital Kab. Barru. The study discusses the procedures for managing medical waste in hospitals as a whole from the beginning of disposal to the final stage of medical waste management in hospitals. In the study related to the interview questions I did in the section of the observation conducted by the midwife in the ward by observation. Basically, the maintenance of medical waste management by nurses / midwives in the wards I interviewed mostly understood, although in practice many problems resulted in incompatibility with the understanding of the rules they should have known. One of them is labeling the expiration date in a safety box, according to labeling informants it should be there but often when many patients do not take long until the safety box must be taken by cleaning service, so labeling is not needed. Waste management that is not in accordance with the Standard Operating Procedure, is feared to cause various problems and influences.

## **6. Conclusion**

Based on the results of research conducted in the Kenanga ward of Yogyakarta City Hospital, it can be concluded as follows:

- Management of sharp infectious clinical waste in Yogyakarta City Hospital has been carried out in accordance with existing Standard Operating Procedures ranging from waste sorting, waste collection, transportation of medical waste, temporary storage of medical waste, transportation of waste and final disposal of hospital waste.
- The management of non-infectious clinical non-sharp waste in Yogyakarta City Hospital is carried out together with sharp waste considering both are equally infectious so that the treatment is in accordance with the existing Standard Operating Procedure.

## 7. Suggestions

- For health workers, especially nurses / midwives in the ward, they pay more attention to and comply with the procedures for disposing of waste even when they are busy. Because if the waste, especially the sharp or non-sharp infectious discarded or placed where it is not supposed to be fatal to the environment.
- For health workers, they should always be present and take part in training or evaluation held by the installation where they work, so that their knowledge and knowledge are always updated.

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