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An Evaluation of Implementation Nosocomial Infection Prevention and Control Program in The Space Covid-19 Isolation at Hospital Royal Prima Medan

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Abstract

An Infectious diseases are still one of the health problems in the world, including in Indonesia. According to the World Health Organization (WHO) in 2013, the percentage of nosocomial infections in hospitals worldwide reached 9% (variation 3 – 21%) or more than 1.4 million hospitalized patients worldwide had nosocomial infections. At the end of 2019, there was an outbreak of a virus called Corona Virus Disease / COVID-19 in Wuhan City, China. Efforts to minimize the risk of infection in Royal Prima Hospital and other health facilities need to be implemented in infection prevention and control (PPI). Researchers are interested in evaluating how to implement a nosocomial infection prevention and control program in the COVID-19 isolation room at Royal Prima Hospital Medan. This research used is qualitative research with a descriptive approach with the method of determining the informants using purposive selection. The research was carried out in the Covid-19 Isolation Room of Royal Prima Hospital Medan. The sources of data or sources of information in the study were parties who were considered competent in providing internal information at the Royal Prima Medan Hospital related to nosocomial infections as many as 7 people consisting of the head of the Covid-19 isolation room at the RSU Royal Prima, PPI Team (Infection Prevention and Control in Hospitals) Royal Prima General Hospital, Five nurses on duty to nurse patients in the Covid-19 isolation room at Royal Prima Hospital. The results showed that the implementation of the infection prevention and control program at the Royal Prima Hospital was running well. Management support has been running optimally.

Keywords
infection control prevention (PPI); nosocomial infection; COVID-19

I. Introduction

Health care is an effort made by an individual or group within an organization, aimed at maintaining or maintaining health and improving health, preventing and also curing disease, and restoring the health of an individual, family, group, and community. Organization must have a goal to be achieved by the organizational members (Niati et al., 2021). The success of leadership is partly determined by the ability of leaders to develop their organizational culture. (Arif, 2019).

The hospital is also used as an educational institution for health workers and research as well as carrying out activities for healing patients and recovering from physical and mental disabilities. Health workers in provide services to patients have the possibility of contracting the disease, if they do not pay attention to the sanitation aspect

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which creates a negative image and has an impact on the incidence of nosocomial infections. (Karo-Karo, 2019).

Infectious diseases are still one of the health problems in the world, including Indonesia. Judging the origin or acquisition of infection can come from the community (Community-acquired infection) or come from the hospital environment (Hospital acquired infection) which was previously known as nosocomial infection. (Infection, 2008).

According to the World Health Organization (WHO) in 2013, the percentage of nosocomial infections in hospitals worldwide reached 9% (variation 3 – 21%), or more than 1.4 million inpatients in hospitals around the world2 received nosocomial infections. Around 8.7% of 55 hospitals in 14 countries from Europe, the Middle East, Southeast Asia, and the Pacific showed nosocomial infections, and for Southeast Asia as much as 10%. (Syamson et al., 2021) .

WHO created three categories to help assess the risk of COVID-19 in the workplace and plan some preventive measures in the workplace. First, low-risk exposure i.e. work or work assignments without frequent close contact with the general public and other co-workers, visitors, clients or customers, or contractors, and which does not require contact with people known or suspected to be infected with COVID-19. Second, moderate exposure risk is work or work assignments with frequent close contact with the general public, or other co-workers, visitors, clients or customers, or contractors, but do not require contact with people known or suspected to be infected with COVID-19.

Third, the risk of high exposure is work or work tasks with a high potential for close contact with people known or suspected of having COVID-19, as well as contact with objects and surfaces that can be contaminated with the COVID-19 virus. (Wahana & Dewi, 2021)

Apart from the type and type of disease, there are also various kinds of equipment and several people or person who interact directly or indirectly have an interest in patients being treated in hospitals. From the description of these conditions, it is clear that it is difficult and difficult to prevent the transmission of infectious diseases, especially the COVID-19 virus infection in the isolation room of the Royal Prima Hospital, as well as to prevent cross infection or cross infection from these people/personnel to patients who are being treated.

Efforts to minimize the risk of infection in Royal Prima Hospital and other health facilities need to be implemented in infection prevention and control (PPI). In Indonesia, one of the patient safety goals in the Minister of Health Number 1691/Menkes/PER/VIII/2011 states that hospitals are required to develop an approach to reduce the risk of infection related to health services. (Ginting et al., 2019).

II. Review of Literature

2.1 Hospital Sanitation

Hospitals as health care facilities have an important role in improving the health status of the community, therefore hospitals are required to provide quality, effective and efficient health services that ensure patient safety in accordance with predetermined standards. One indicator of patient safety is reducing the risk of infection related to health services (WHO, 2012).(Riani & Syafriani, 2019)

Sanitation is the control of all factors in the human physical environment that can have adverse effects on human life, both physically and mentally. Hospital sanitation is an

effort to become a hospital environment health. Sanitation is a way to prevent the outbreak of an infectious disease by breaking the chain from the source. Sanitation is a public health effort that focuses on mastering various environmental factors that affect health status. Environmental health is an effort to protect, manage, and modify the environment that is directed towards ecological balance at an increasing level of human welfare.(Karo-Karo, 2019)

2.2 Infection Prevention and Control

Nosocomial infection control is an activity that includes planning, implementation, and supervision as well as coaching to reduce the incidence of infection in hospitals. The process of infection depends on the interaction between the susceptibility of the host, the infectious agent (pathogenesis, virulence, and dose), and the mode of transmission. Identification of risk factors in the host and control of certain infections can reduce the incidence of nosocomial infections/HAIs, both in patients and health workers. (Adhiwijaya, 2017).

2.3 Nosocomial Infection

Nosocomial infections or also called Hospital Acquired Infections (HAIs) are infections that are acquired and develop during a patient's stay in a hospital. Nosocomial infections are infections that a person gets within 3x24 hours of their admission to the hospital. Nosocomial comes from the Greek, word nosos which means disease, and some which means to care. Nosokomion means a place to treat/hospital. So nosocomial infection can be interpreted as an infection that is acquired or occurs in a hospital.(Agustina, 2019).

2.4 Corona Virus Diseases

Coronaviruses are a large family of viruses that cause illnesses ranging from mild to severe symptoms. There are at least two types of coronavirus that are known to cause diseases that can cause severe symptoms such as Middle East Respiratory Syndrome (MERS) and Severe Acute Respiratory Syndrome (SARS). Coronavirus Disease 2019 (COVID-19) is a new type of disease that has never been previously identified in humans.

The virus that causes COVID-19 is called Sars-CoV-2. Coronavirus is zoonotic (transmitted between animals and humans). Research says that SARS was transmitted from civet cats to humans and MERS from camels to humans. Meanwhile, the animal that is the source of the transmission of COVID-19 is still unknown. (Isbaniah, 2020)

The WHO report states that the number of COVID-19 cases as of May 1, 2020, in the world has reached 3,174,495 cases with a death rate of 224,159 cases. In Indonesia, as of May 1, 2020, there were 10,118 confirmed cases with a total death toll of 792 cases. (Organization, 2020)

WHO created three categories to help assess the risk of COVID-19 in the workplace and plan some preventive measures in the workplace.

1. First, low-risk exposure i.e., work or work assignments without frequent close contact with the general public and other co-workers, visitors, clients or customers, or contractors, and which does not require contact with people known or suspected to be infected with COVID-19.
2. Second, moderate exposure risk is work or work assignments with frequent close contact with the general public, or other co-workers, visitors, clients or customers, or contractors, but do not require contact with people known or suspected to be infected with COVID-19.
3. Third, the risk of high exposure is work or work tasks with a high potential for close contact with people known or suspected of having COVID-19, as well as c

ontact with objects and surfaces that can be contaminated with the COVID-19 virus.

Looking at this category, nurses who work in the isolation room of a COVID-19 referral hospital are included in the category of high exposure risk. This is because, while working in the isolation room, close contact with COVID-19 patients and the environment/surface around the patient can be contaminated with COVID-19. (Wahana & Dewi, 2021)

III. Research Method

The type of research used is qualitative research with a descriptive approach with the method of determining the informants using purposive selected. This type was chosen because researchers want to describe, explore, analyze information from the PPI team in order to obtain comprehensive information related to the implementation of infection prevention and control in improving the quality of health services.

The research was conducted in the Covid-19 Isolation Room of the Royal Prima Hospital in Medan, and also was conducted from June to July 2022. Beginning with the submission of the title, the preparation of the proposal, the research and the preparation of the thesis and conclusions.

To get the right data, it is necessary to determine the source of information (informants) who have competence and are in accordance with the data needs (purposive). According to Sugiyono (2015) purposive is a technique of taking data sources based on certain considerations, namely data sources that are considered to know best about what is expected, making it easier for researchers to explore the object or social situation being studied. The aspect that is of concern in sampling qualitative research is the completion of obtaining information with a variety of existing variations, not on many data sources. Sources of data or sources of information in the study are parties who are considered competent in providing internal information at RSU Royal Prima Medan relating to nosocomial infections as many as 7 people consisting of:

1. Head of the Covid-19 isolation room at Royal Prima Hospital
2. PPI Team (Infection Prevention and Control in Hospitals) Royal Prima General Hospital
3. Five nurses on duty to nurse patients in the Covid-19 isolation room at Royal Prima Hospital

Table 1. Variables and Operational Definitions

Variable	Operational definition	Measuring instrument
Input	a. Management support b. Individual knowledge level c. Supervision d. Facilities and infrastructure as well as e. Training.	In-depth interview, document review, and observation
Process	The process is: a. Planning activities b. Organizing and implementing job descriptions of PPI	In-depth interview, document review, and observation

	committees and teams c. Providing materials, tools and supporting facilities.	
Output	a. Surveillance activity reports b. Isolation alert activity report c. antimicrobial use d. infection prevention and control education and training in hospitals.	In-depth interview, document review, and observation

In this study the data will be analyzed using qualitative data analysis in accordance with the NLP (Neuro Linguistic Programming) technique. The purpose of Neuro Linguistic Programming (NLP) is to help humans communicate better with themselves, reduce fear without reason, control negative emotions and anxiety, help humans create positive goals.

The relationship between the counselor and the counselee in Neuro Linguistic Programming (NLP) counseling is that the counselor uses the 4 pillars of NLP such as outcome, report cards, sensory ocuity and flexibility to make the counselee feel comfortable in expressing opinions and telling stories about the problem, during the counseling process the counselor and the counselee will be the same - both get the positive side, namely in the sense that a good relationship during the counseling process will make it easier for the counselor to direct the counselee to achieve the desired end result, and the counselee is easy to follow the counselor's direction to achieve the desired end result, the counselor and the counselee become familiar because of the similarity of the counselee and counselor, Creating a mutually beneficial atmosphere between the counselor and the counselee.

IV. Result and Discussion

4.1. Characteristics of Informants

Table 2. Researchers obtained sources of data or sources of information.

No	Informant's Initials	Position	Place of Duty
1	Informant 1	Head of the room	Covid-19 isolation room
2	Informant 2	PPI team	RSU Royal Prima
3	Informant 3	Nurse	Covid-19 isolation room
4	Informant 4	Nurse	Covid-19 isolation room
5	Informant 5	Nurse	Covid-19 isolation room
6	informant 6	Nurse	Covid-19 isolation room
7	informant 7	Nurse	Covid-19 isolation room

The implementation of infection prevention and control programs in order to be carried out requires management support, especially the director as the highest leader in the hospital. Initial support is by establishing an infection prevention and control committee and team. Following are the results of interviews with several informants.

Informant 2

"Management is very supportive in implementing the PPI program in the Royal Prima isolation room with one making policies on hospital infection control and activities, the two directors also forming an infection prevention committee which is under structurally structured coordination, the three directors are responsible for the availability of facilities and infrastructure for support the activities of the PPI committee."

Informant 1

"So one of the supports is providing training and PPE"

Informant 3

"Yes.. Management support is very necessary, and I think management has given support to the PPI team and also to nurses like me... by holding training it really helps us"

Based on the results of the interview, it can be seen that the director's support in planning for providing education and training budgets to all PPI officers and teams has been implemented.

Informant 1

"Management support for educational activities exists, training or education is carried out under the coordination of Education and Training for hospital officers who are or who work in isolation rooms"

4.2. Roles and Duties Performed by IPCN in the Implementation of the Nosocomial Infection Prevention and Control Program in the Covid-19 Isolation Room of Royal Prima Hospital

Informant 2:

"The efficient duty and role is to audit all programs or audit all implementation of standard precautions in isolation rooms, namely hand washing compliance audits, waste audits, PPE audits, safe injection audits and audits for sharp objects.

Informant 1:

"Ensure the nurses wear a nurse cap, use two-layer surgical masks, one N-95 mask and then one ordinary mask, a total of 5 layers of masks. Then 3 layers of non-sterile gloves 1, sterile 1 and non-sterile 1, apron, complete PPE, boots."

Informant 7:

"The ppi team monitors to check the completeness of the nurse's PPE as well as the proper use and disposal of PPE, the second checks whether the waste disposal is correct or not,"

Informant 6:

"In terms of the role of IPCN, every day monitoring the situation at the hospital regarding PPI, implementing SOPs, there are many, many if the role of PPI, surveillance, auditing, monitoring, mostly about auditing, hand washing, monitoring and evaluation of PPE, all about the application of isolation precautions"

4.3. Facilities and Infrastructure Provided by Royal Prima Hospital to Support PPI Needs in the Covid-19 Isolation Room

The study of documents on the guidelines for the implementation of infection prevention in hospitals found that one of the factors that support the implementation is management support related to the procurement of facilities and infrastructure. Informant statements include the following:

Informant 1:

"The facilities and infrastructure provided by the hospital to support the first PPI activity, the availability of PPE, namely masks, gloves, protective glasses, gowns, apron, boots, and head protection. The hospital also provides facilities for washing hands, such as a sink, disinfectant liquid, whether it is soap or an alcohol-based hand rub, and a safety box is also available for securing syringes."

Informant 3:

"The need for PPE for every shift, scrub clothes for every shift"

4.4. Management Support in the Implementation of the Nosocomial Infection Prevention and Control Program in the Covid-19 Isolation Room of Royal Prima Hospital

Management support in a program must be followed by good management. The leadership is responsible for the implementation of infection prevention and control efforts in the hospital. The leadership of the Royal Prima Hospital, Prof. Dr. Achsanuddin Hanafi, Sp.An, KIC, KAO together with the structural ranks know the importance of implementing infection prevention programs in hospitals. The success of infection prevention and control can improve the quality of hospital services, besides that it is important as preparation for accreditation.

The leadership of the Royal Prima Hospital has formed a committee and PPI team that is responsible for the implementation of infection control in the hospital. Management in the implementation of infection prevention and control programs is an activity to control infection including planning, implementation, supervision, guidance, monitoring, evaluation and reporting(Buenita, 2016). The management approach can be used to assess the success of the IPC program implementation. Management support for the successful implementation of the PPIRS program is also used in research(WILMA, 2013)about the factors related to the implementation of the prevention of nosocomial infections by nurses in the Regional General Hospital of Makassar City, the results obtained using the Fisher's Exact Test obtained a p value = 0.000, it can be concluded that there is a significant relationship between management support and the implementation of prevention. nosocomial infections by nurses.

4.5. Management Support for Education and Training Activities (Training) to Hospital Officers and the PPI Team

Management support according to the Indonesian Ministry of Health, 2008 for the successful implementation of infection prevention and control is the existence of a budget or funds for education and training activities. The infection prevention and control team must attend PPI basic and advanced education and training, have an PPI certificate and develop themselves by attending seminars, workshops and receiving continuous technical guidance. So that the criteria as chairman, secretary, member can be met.

Education and training for the PPI team must be carried out first with the aim of increasing the knowledge and skills of the team so that they can carry out one of the PPI Hospital education and training programs back to all officers in the hospital. Education and training is carried out inside the hospital itself or outside the hospital from a separate PPI program. Training for employees is carried out twice a year as a whole, and every day the head of the room and the person in charge conducts briefing or training at each shift change.

4.6. Roles and Duties Performed by IPCN in the Implementation of the Nosocomial Infection Prevention and Control Program in the Covid-19 Isolation Room of Royal Prima Hospital

The task of IPCN is to visit the room every day, collect data on the incidence of infection, conduct an assessment of health workers' compliance with PPIs and make reports to the chairman and director. IPCN nurses must inspect every hospital room, check the cleanliness of the hospital. Control of the hospital environment is also important in the implementation of PPI, the goal is to create a clean, safe and comfortable environment so as to minimize and prevent the transmission of microorganisms from the environment to patients, staff and visitors.

From the interviews, it can be seen that the role and function of IPCN as a surveyor has been carried out well. IPCN has understood the description of its duties in implementing compliance monitoring of officers in carrying out standard precautions in isolation rooms, namely hand washing compliance audits, waste audits, PPE audits, safe injection audits and audits of sharp objects.

IV. Conclusion

One of the patient safety goals is that hospitals are required to develop an approach to reduce the risk of infection associated with health care, namely the implementation of prevention and control programs against infections found in all forms of health care. The implementation of this program is an integration of management in managing various existing resources as well as a systems approach. Based on the results and discussion of this study, several conclusions can be drawn, including:

1. The implementation of infection prevention and control programs at Royal Prima Hospital has been going well. Management support has been running optimally. The leadership of RSU Royal Prima has understood and implemented PPI's managerial activities, namely planning, supervising, coaching, monitoring and evaluating program implementation.
2. The organizational structure of the PPIRS committee is in accordance with the structure set by the Indonesian Ministry of Health, 2008. The director is the highest position in the organizational structure and there is already a composition of the PPI RS committee and team.

3. The job descriptions of the PPI committee and team have been matched between policy makers and policy implementers. It is proven that the duties of the PPI committee and the PPI team have been carried out in carrying out periodic evaluations of the policies and implementation of the PPI policies. The description of the supervisory duties by IPCN has been optimal in monitoring the Covid isolation room at Royal Prima Hospital.
4. The facilities provided by the hospital are adequate. It can be seen from the availability of facilities and infrastructure in several units, especially in high-infectious units, namely the Covid isolation room.

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