

**COMPARISON OF IMPLEMENTATION OF INFECTION
PREVENTION BEFORE AND DURING THE COVID-19
PANDEMIC IN PATIENTS IN THE EMERGENCY UNIT OF RSUD
DR. M.M. DUNDA LIMBOTO**

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ABSTRACT

This study aims to determine the comparison of the implementation of infection prevention before and during the COVID-19 pandemic in Patients in the Emergency Unit of RSUD DR. M.M. DundaLimboto.

The research method used is the descriptive method with a qualitative approach by describing, analyzing, and discussing data directly sourced from informants. The informants in this study were 2 (two) IPCN people, the ER implementers consisted of the head of the ER, 1 doctor, 1 nurse, and the management, namely the head of the field of medical services.

The results of the study that have been carried out regarding the comparison of the implementation of infection prevention before and during the covid-19 pandemic in Patients in the Emergency Unit of RSUD DR. M.M. Dunda Limboto, it can be seen that there is a gap in the achievement of the PPI implementation target in the ER before and during the covid-19 pandemic, where this gap is more likely to be influenced by individual factors related to officer compliance which will affect the implementation of the PPI program, training that has not been carried out routinely both before and during the covid-19 pandemic, for management support in terms of providing PPE and handwashing facilities is still minimal, This led to an increase in the budget during the COVID-19 pandemic.

Keywords: Infection Prevention and Control, Covid-19, Hospital, Emergency Room

INTRODUCTION

The hospital is the unit of medical services is very complex, in addition to organizing complete services, the hospital is also responsible for handling a variety ber of illnesses that required getting attention from doctors (medical providers) for enforcing assessment / diagnosis and ensure treatment (curative) and the existence of various medical equipment from simple to modern and advanced [3].

In hospitals, patients undergoing treatment, both those with one underlying

disease and patients with more than one underlying disease, are generally in poor physical condition, causing a decrease in the immune system. In this way, susceptible to cross-infection, because the virus, germs and the like can easily enter the body of the patient during the treatment process. Infections that occur to patients during treatment are termed nosocomial infections [3].

Healthcare Associated Infections (HAIs) currently known as nosocomial infections are infections in patiens that

occur while being treated in hospital or other health facilities. This infection was neither acquired nor incubated when the patient was admitted to the hospital. Infection acquired in the hospital but later manifested when the patient is discharged. The incidence of HAIs is not only in patients but also in health workers and hospital staff. HAIs, according to global data are still very limited to date, but refer to the World Health Organization report. Based on a literature review through the study of national or multi center from 1995 to 2010 obtained the data where the overall prevalence of HAIs in the world ranges from 3.5% to 12%, for the prevalence of HAIs in developed countries to 7.6% while in developing countries the prevalence is higher, which is up to 10.1% with a variation of 5.7%-19.1%. Developed countries namely the United States estimated the incidence of infection of 1.7 million (9.3 infections/1000 patient days or even 4.5/100 admissions) in a hospital in the United States and in 2002 donated patient die more than 98,000. The ECDC (European Center for Disease Prevention and Control) in 2015 prevalence in Europe is 7.1% [7].

The incidence of nosocomial infections is still very high in both developed and developing countries. Based on the results of a literature review conducted by WHO and several research results published since 1995-2008, in developed countries the prevalence of nosocomial infections ranges from 5.1% to 11.6%, while in developing countries it ranges from 5-19%. In 2011 in the United States, the Centers for Disease Control and Prevention (CDC) estimate there are at least 722,000 patients with nosocomial infections. Around 75,000 of them died during hospitalization. Furthermore, the World Health Organization (WHO) estimates that the world's population of 1.4 billion/10% will be exposed to

infections that cause death every day in the world [11].

United States hospitals have had health care-associated infection prevention (HAIs) programs, including surveillance for certain HAIs, since the 1960s—early 1970s. Such programs begin with active surveillance for HAIs based on the Centers for Disease Control and Prevention's (CDC) National Nosocomial Infection Surveillance (NNIS) system. This system includes a standard definition of surveillance protocol [5].

There is no national data on HAIs in Indonesia yet, but data on HAIs at Cipto Mangunkusumo Hospital from 1999 to 2002, namely 1.1, 0.9, 0.6, also in 2003 which was 0.4%, Perdalin Jaya and Prof. Hospital. Dr. Sulianti Saroso carried out monitoring to eleven hospitals in DKI Jakarta. According to this result, the prevalence of nosocomial infection data from Urinary Tract Infection (UTI) 15.1%, Respiratory Tract Infection 15.1%, Surgical Wound Infection (ILO) 18.9%, Pneumonia 24.5%, Primary Blood Flow Infection (IADP) 26.4% and other infections 32.1% [7].

The impact of HAIs, namely the increase in mortality and morbidity, which affects the patient's economy and quality of life, can also harm hospitals. Staff, families and visitors can be at risk of exposure to infection not also experienced by patients. Implementation of the PPI program can minimize the spread of infection. In preventing and minimizing the incidence of infection to patients, staff and visitors in the hospital environment, the implementation of the PPI program is carried out by forming an infection prevention and control committee. Each hospital must carry out the PPI program, according to Permenkes number 27 of 2017, which is one of the requirements of the hospital accreditation commission. HAIs can be reduced to 32% through

effective infection prevention and control [14].

One of the patient safety efforts is Infection Prevention and Control (PPI). According to WHO, proper hand hygiene is one of the core measures of infection prevention and control in a simple and inexpensive way with the aim of reducing the frequency of nosocomial infections by more than 50 % [6].

Severe Acute Respiratory Syndrome (SARS) CoV-2 is the cause of the COVID-19 pandemic. Since the initial cases emerged in Wuhan, China in late 2019 seven months later, COVID-19 has struck at least 188 of 195 countries causing more than 15 million cases and more than 600,000 deaths. These numbers continue to increase hourly for the following months and all countries are at very high risk. In 2019 the world is still poorly prepared for the pandemic and in fact what happened during covid-19 shows unpreparedness in various countries, the world has witnessed many mistakes such as, poor preparation for a pandemic in many countries [15].

Infection Prevention and Control (PPI) rules during the COVID-19 pandemic according to the level of transmission seen from the absence of cases, cluster cases, sporadic cases and community transmission, namely officers who treat COVID-19 patients using appropriate PPE. Meanwhile, prevention of transmission in the community includes: hand hygiene, physical distancing, wearing masks, coughing/sneezing etiquette, ensuring access hand hygiene in front of public facility buildings, transportation centers, and providing hand washing facilities with soap and water within 5 meters from all toilets, both in public or private facilities [10].

Hospital Dr. M.M Dunda Limboto is a type B hospital owned by the Gorontalo Regency Government. The emergency

unit is a unit within the hospital that provides initial treatment for patients in need of fast and appropriate help, when patients enter with an unknown diagnosis this makes officers often contact with patients, so they must pay attention to the use of PPE and hand hygiene as a form of infection prevention.

Based on a preliminary study in November 2020, the results of an interview from one of the PPI members said that the implementation of Infection Prevention and Control (PPI) awareness of officers who were still lacking in using Personal Protective Equipment (PPE) as well as hand hygiene 5 moments of hand hygiene in accordance with SPO, one of which was before contact with nurses do not wash hands, where during the covid-19 pandemic Infection Prevention and Control (PPI) is done even better.

Hospitals are health facilities that provide outpatient services, emergency inpatient care with medical actions carried out for 24 hours through individual health efforts. Hospitals that provide health services in all fields and types of disease are general hospitals [8].

One of the service places in the hospital that provides initial treatment for patients who go directly to the hospital also provides follow-up treatment for patients who are referred from other health care facilities or from PSCs, suffer from illness or injury that can threaten their lives, namely the emergency unit. Emergency is a patient's clinical condition that requires immediate medical attention to save lives and prevent further disability [9].

The function of the emergency department is to receive, regulate and stabilize patients who need emergency treatment as soon as possible, either in daily situations or in disasters. Emergency services are medical actions that are needed by emergency patients immediately with the aim of saving lives

and preventing disability. The place of emergency service acts the main entrance for the patient. Emergency services in health care facilities are carried out in emergency rooms or action rooms for clinics, health centers or independent practice places for doctors and dentists or other health workers and emergency unit for hospitals [9].

In the world, infections is part of the health problems including in Indonesia. The presence of infection originating room the community or hospital environment previously known as nosocomial infection, origins of her infection is often definitely not be determined. So, now the term nosocomial infections (Hospital Acquired Infection) has been changed to a new term, namely "Healthcare Associated Infections" (HAIs) which has a broader meaning not only in hospitals but in other health care facilities. Infections that occur or are acquired in hospital is infections hospital (Hospital Infection) [4].

Infection Prevention and Control is the basic step in reducing the risk of transmission of microorganisms whose origin is found or not found. Sources of infection that can cause transmission include blood and body fluids, feces (excluding sweat), open wounds or mucous membranes and equipment/items in care that cause contamination [5].

The process of infection depend on the interaction between the susceptibility hosts, the infectious agent (virus, bacteria, pathogen and fungus) is also the process of transmission. Identifying the cause of risk for the host and controlling certain infections could reduce the incidence of infection (HAIs), for patients would also health workers [4].

Part of the infection prevention and control (PPI) plan is monitoring activities. Not only other activities such as education as well as training, isolation precautions and infection monitoring

activities of health care institutions are the most needed activities in the infection control program, they must also be carried out so that the success of the PPI program is achieved [12].

To describe the quality of hospital services, it is important to prevent and control nosocomial infections (PPIRS). Outbreaks of infectious diseases or special events (KLB) are difficult to predict, therefore it is necessary to watch out for them through monitoring and prevention and control measures. Furthermore, in the hospital the infection that occurs can not only be overcome, but of course can be prevented by carrying out the steps in accordance with the applicable procedures [2].

Hospital Infection Surveillance is a systematic, dynamic stage, always carrying out data collection, identification, analysis, as well as interpretation of necessary health information from a special population that is periodically disseminated to those in need with the aim of planning, implementing, and evaluating health-related actions [12].

Standard precautions are primary precautions, which are formulated and applied routinely to the care of all patient in hospitals and other health care facilities, whether diagnosed with infection or colonization. Apply to prevent cross-transmission before the patient is diagnosed, before before the results of laboratory tests and after the patient is diagnosed infection is a major risk for health workers. That's why it's important for officer to comply with and understand the implementation of standard precautions so they don't get infected [4].

Healthcare Associated Infections (HAIs) or Nosocomial Infections come from the Greek nosokomeion meaning hospital (nosos=disease and komeo=care). Infection is the presence of an organism in tissues or body fluids accompanied by a local or systemic clinical symptom.

Infection nosocomial can be interpreted as an infection originating or occurring in a hospital [6].

Hospital infection (IRS) is an infection acquired in a hospital due to treatment, duty or visiting a hospital that occurs to patients, staff or hospital visitors. Nosocomial infections are part of hospital infections namely hospital infections (IRS) namely hospital infections that afflict patient who are acquired or appeared when the patient is hospital is, sick according to the criteria: when entering the hospital there are no signs or indication and not in the incubation period the infections occurs 2 x 24 hours after the patient is hospital is up to 10 days after the patient is discharged from the hospital except for surgical injury infections up to 30 days after surgery (without implant) or one year after implant placement, the infection is at the same location, about caused by microorganism when entering the hospital or similiary trigger microorganism but different areas of infection[13].

RESEARCH METHODS

The research This is a descriptive study with qualitative approach. This research was conducted from March to May 2021 at the Regional General Hospital Dr. M.M Dunda Limboto.

The data collection used in this study was by means of interviews or open questions and answers to informants. Interviews were conducted with hospital elements as informants. The informants in this study were IPCN which consisted of 2 (two) people, the ER executive consisted of the head of the ER, 1 doctor, and 1 nurse, and the management, namely the head of the service division. The tools used in the interview process were recorders, cellphones, notebooks and cameras. Testing the validity of this data is done by triangulation of sources.

The data processing and analysis methods in this research consist of:

1. Data Reduction (Data Reduction)

Analyzing data by reducing data which summarizes and selects the main points, focuses on the important things, looks for themes and patterns. Then the data that has been reduced will give a clearer picture and make it easier for researchers to carry out further data collection.

2. Data Display (Data Presentation)

After the data is reduced, the next step is to display the data. Presenting data in the form of brief descriptions, relationships between categories, charts, flowcharts and the like. In this study, the presentation of data with narrative text is used.

3. Conclusion Drawing (Withdrawal Conclusion)

The final stage for data analysis in this study is drawing conclusions and verification. So, conclusions for research will be able to answer the focus of the problem in qualitative research is still temporary, then will develop after the field. It is hoped that the conclusions in qualitative research can provide new findings that have never existed before [16].

RESEARCH RESULT

PPI program implementation

a. PPI implementation education

From the results of interviews with IPCN and ER implementers, it was concluded that education on the implementation of PPI had been carried out regularly long before the COVID-19 pandemic, and when a pandemic occurred, education became more intense.

b. PPI program

The informant's statement can be concluded that the PPI program has been implemented and its implementation is better than before

the COVID-19 pandemic. This goes back to each person to apply it both before and during a pandemic.

c. Monitoring the evaluation of the PPI implementation program

From the statements expressed by IPCN and ER implementers, it was concluded that for monitoring the evaluation of the PPI implementation program including reporting, it had been carried out both before and during the COVID-19 pandemic.

It can be concluded that the implementation of the PPI program can be seen from education that has been carried out regularly long before the covid-19 pandemic occurred, as well as monitoring activities for the evaluation of the PPI implementation program including reporting have been carried out both before and during the covid-19 pandemic. However, in the PPI program, its implementation is better during the COVID-19 pandemic. This is influenced by the lack of compliance of officers before the pandemic.

Availability of SOP

From the statements obtained from several informants, namely IPCN and the head of the service sector where the SOP already exists, it has also been known by the officers in the emergency unit which refers to the national guidelines regarding the implementation of PPI in hospitals and during the covid-19 pandemic there is an SOP for patients. Who have complaints that are characteristic of Covid-19 patients.

Education and training

From the statements expressed by several informants, it can be seen that education and training have been carried out, but if seen from the statements of other informants, this has not been done routinely both before and during the pandemic.

Management Support

a. Facilities and infrastructure

Based on the results of interviews conducted from several informants, it can be concluded that the facilities and infrastructure are appropriate but there are several obstacles, namely during the pandemic the availability of handrub is still limited and PPE is limited, especially masks.

b. More Management Support

Statements obtained from IPCN and management regarding other management support, it can be concluded that there is always support, follow-up, and facilitation of the PPI program as well as policies both before and during the COVID-19 pandemic. It is also known that the budget during this pandemic has increased.

Based on the statement above, it is concluded that management support starting from the infrastructure is appropriate. However, the availability of handrub is still limited during the pandemic when PPE is limited, especially the provision of masks. This, also affects the budget which has increased. Other management support is that there is always support, follow up, facilitate the running of the PPI program and there are policies both before and during the COVID-19 pandemic.

DISCUSSION

PPI Program Implementation

Based on the results of the study, the researchers found that the implementation of PPI in RSUD Dr. MM Dunda Limboto has been running since before the covid-19 pandemic, both from education, implementation of the PPI program, monitoring to evaluation. This is because the PPI Guidelines published in 2017 have been implemented by the person in charge of the PPI who is also an IPCN. The PPI guideline was originally a general infection prevention guideline aimed at

preventing nosocomial infections that could occur to patients, staff and visitors in hospitals. The implementation of the PPI is also supported by good education, and the PPI SOP which is the basis for officers to implement the PPI in the emergency unit.

The stages of PPI implementation have been carried out starting from socialization, education, implementation of the PPI program to monitoring, evaluation and reporting. However, in particular, there is a gap between the achievement of the PPI implementation target before the pandemic and during the COVID-19 pandemic, where before the pandemic the PPI implementation target achievement was still below expectations.

The researcher assumes that the non-achievement of the PPI implementation target is related to the personnel of each officer, namely the low compliance of officers with the use of personal protective equipment and hand hygiene. This is evidenced by the results of research which found that the PPI program had been implemented, however, officer compliance was still below the time before the pandemic.

Compliance is the degree to which a person does something or behaves in accordance with what is suggested or imposed on him. This is like the statement by the previous researcher regarding the description of the factors that influence nurse compliance in infusion care in the inpatient ward of Ungaran Hospital, that a person's level of compliance is influenced by several factors, including demographic characteristics including gender, education, age is also long working. Furthermore, this motivation and perception can be a factor causing nurses' compliance behavior to carry out nursing actions in hospitals. Motivation plays an important role in a person's compliance and this slightly answers why during the pandemic there was an increase in

compliance with the use of PPE and handhygeine because officers were motivated not to contract the covid-19 virus.

In the transmission of COVID-19, one form of infection prevention is hand hygiene and the use of PPE. This was also obtained by previous researchers, where in the implementation of PPI, hand hygiene is very influential. The application of the use of personal protective equipment and hand hygiene is important. Therefore, officers must pay attention to both before a pandemic occurs or during a pandemic.

In the implementation of infection prevention, one form of infection prevention by officers is hand hygiene and the use of PPE, to reduce the risk of infection transmission. From the statements obtained from the informants, this returns to each person, namely the awareness of the officers who are still lacking.

Availability of SOP

Standard Operating Procedures are documents related to standard procedures that are carried out chronologically with the aim of completing a job so as to get more effective and efficient work results at the lowest possible cost.

In the PPI guidelines, it is clear the infection prevention procedures in each unit as well as the monitoring and evaluation procedures. Based on this guideline, PPI SOPs are made in health facilities that refer to the national guidelines regarding the implementation of PPIs in hospitals. Based on the results of the research at the Dunda Hospital, the researchers found that there were PPI SOPs both before and during the covid-19 pandemic, where during the covid-19 pandemic there were SOP for patients who had complaints that were characteristic of covid-19 patients, so there were differences before and during the covid-19 pandemic when viewed from the availability of SOP. This SOP has

been known by officers in the ER to then become a guideline for officers in providing services to patients.

Education and training

Education and training is one of the efforts to improve the skills and knowledge of officers to carry out infection prevention. The provision of training, seminars, and workshops can gradually increase the capacity of officers.

The results of this study indicate that education is also PPI training at RSUD Dr. MM Dunda Limboto has been carried out, but has not been carried out regularly, both before the pandemic and during the covid-19 pandemic, as seen from the statements expressed by the informants. This is in line with previous research at Hospital of Pematang Raya Simalangun where PPI education and training have not been carried out routinely and there are officers who only attend education and training once.

Management Support

For management support, the results of this study found that the form of management support was from the availability of facilities and infrastructure, during a pandemic for personal protective equipment (PPE) such as masks that were available in limited numbers and handrub was also limited, this can be seen from the results of interviews conducted with informants on duty. In the emergency room of RSUD Dr. M.M Dunda Limboto. The lack of available facilities can hinder the implementation of infection prevention, especially during a pandemic. Facilities and infrastructure are an important part of infection control and prevention efforts.

In research conducted by previous researchers at Labuang Baji Hospital Makassar, the lack of availability of facilities and infrastructure as well as unsustainable preparation is one of the obstacles in the implementation of the PPI

implementation, this is in line with what was found by researchers after research was carried out in the emergency unit RSUD Dr. M.M Dunda Limboto.

In addition, other management support is that there is always a follow-up from the management who facilitates and organizes what supports the PPI program. Management support and role are very important in supporting the programs run by PPI.

The results also show that one form of management support is the provision of a budget. Provision of budget for facilities and infrastructure to support the implementation of infection prevention, both before the pandemic and during the COVID-19 pandemic. This is, there is a difference where there is an increase in the budget during the covid-19 pandemic which is influenced by the increasing need, especially facilities to support the implementation of the infection prevention program.

CONCLUSION

Based on research that has been carried out regarding the comparison of the implementation of infection prevention before and during the COVID-19 pandemic in patients in the Emergency Unit of RSUD Dr. M.M Dunda Limboto can be concluded as follows:

From the comparison results, it can be seen that there is a gap in the achievement of the PPI implementation target in the ER of RSUD Dr. MM Dunda Limboto before the covid-19 pandemic and during the covid-19 pandemic, where before the pandemic the PPI implementation target was still low compared to during the pandemic, where this gap was more likely to be influenced by:

1. The individual factors of officers that are closely related to the compliance of these officers will affect the implementation of the PPI program.

2. The knowledge and skills of officers who are not evenly distributed due to training cannot be carried out routinely both before and during the COVID-19 pandemic.

3. Management support, especially the budget, where during the pandemic the budget for the provision of PPE and hand washing facilities was still minimal, this led to an increase in the budget during the covid-19 pandemic.

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Comparison of Implementation of Infection Prevention Before and During the Covid-19 Pandemic in Patients in the Emergency Unit of RSUD Dr. M.M. Dunda Limboto

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