

**Supplement**

**Non-compliance of Hospital X Employee in Implementing Standard Operational Procedures of Instrument Decontamination and Chest X-Ray Services**

**Ketidakpatuhan Karyawan Rumah Sakit X dalam Melaksanakan Standar Prosedur Operasional Dekontaminasi Alat dan Pelayanan Foto Toraks**

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**ABSTRACT**

Good hospital management is important to maintain the safety of patients, staff and hospital visitors. Each hospital employee responsible for patient safety by carrying out work according Standard Operating Procedure (SOP) guidelines agreed by organization. This study aims to identify the casues factors and the solution for hospital employees to not comply with the SOP. This study uses a qualitative descriptive approach. Methods of data collection by conducting direct observation and interviews. Subjects in the study were determined based on purposive sampling, as many as 8 respondents consisting of the inpatient room's head, nurses and radiology officers. It is important to apply a system approach in the management of an organization. The elements included in the systems approach are planning, organizing, actuating and controlling. From those elements, there are things that not properly carried in the hospital. The existing procedures were not followed by the employees, for example, procedures regarding instrument decontamination in the inpatient room and photo reading at the radiology service. Non-compliance with this procedure is influenced by several factors, namely the staff lack of discipline and responsibility, inappropriate procedures, facilities that are not available, and there is no socialization of the procedure to hospital employees. The non-compliance of employees at X hospital was caused by procedural factors, decontamination and radiology officer's performance factors and hospital's facilities. For this reason, it is necessary to conduct periodic outreach, monitoring and evaluation of the SOP and hospital employees to improve the quality of hospital services and customer satisfaction.

**Keywords:** Monitoring, patient safety, satisfaction, SOP, socialization

**ABSTRAK**

Pengelolaan rumah sakit yang baik penting dilakukan untuk menjaga keselamatan pasien, petugas dan pengunjung rumah sakit. Karyawan rumah sakit masing-masing bertanggung-jawab terhadap keselamatan pasien melalui acuan atau pedoman Standar Prosedur Operasional (SPO) yang telah disepakati oleh organisasi. Penelitian bertujuan mengidentifikasi faktor-faktor penyebab dan solusi ketidakpatuhan karyawan Rumah sakit terhadap SPO. Penelitian ini menggunakan pendekatan deskriptif kualitatif dengan metode pengumpulan data yaitu observasi langsung dan wawancara. Subjek dalam penelitian ditentukan berdasarkan *purposive sampling*, yaitu sebanyak 8 responden terdiri dari kepala ruangan, perawat, pekaya ruang rawat inap dan petugas radiologi. Pendekatan sistem (*system approach*) penting diterapkan dalam pelaksanaan manajemen sebuah organisasi. Unsur yang termasuk di dalam pendekatan sistem adalah *planning, organizing, actuating* dan *controlling*. Dari keempat unsur tersebut, terdapat hal yang tidak dilaksanakan dengan baik di rumah sakit. Prosedur yang telah tersedia ternyata tidak dipatuhi oleh karyawan, contohnya prosedur tentang dekontaminasi alat di ruang rawat inap dan pembacaan foto di pelayanan radiologi. Ketidakpatuhan terhadap prosedur ini dipengaruhi oleh beberapa faktor, yaitu petugas kurang disiplin dan bertanggung jawab, prosedur tidak sesuai, kurangnya ketersediaan sarana dan fasilitas, serta belum ada sosialisasi tentang prosedur tersebut kepada karyawan rumah sakit. Ketidakpatuhan karyawan di RS X disebabkan oleh faktor prosedur, faktor kinerja petugas dekontaminasi dan radiologi, dan faktor sarana dan fasilitas. Untuk itu perlu dilakukan sosialisasi, monitoring dan evaluasi berkala terhadap SPO dan karyawan rumah sakit untuk meningkatkan mutu pelayanan rumah sakit dan kepuasan pelanggan.

**Kata Kunci:** Kepuasan, keselamatan pasien, monitoring, SPO, sosialisasi

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## INTRODUCTIONS

Hospitals are complex institutions because there are various services provided, such as inpatient services, outpatient services, pharmacies, laboratories, radiology and others. There are various types of medicines, laboratory tests, procedures, technological tools as well as professional and non-professional staffs who provide 24-hour service. Because of that, the hospital must be managed properly so there are no incident that could threaten patient safety (1). Hospital management in the current pandemic era of Covid-19 continues to prioritize patient safety, by providing proper and fast handling of Covid-19. The demand for fast health services must be accompanied by a guarantee of accuracy. One of the efforts to maintain patient safety is to provide fast service in accordance with the application of Standard Operating Procedures (SOP) (2).

Standard Operating Procedure (SOP) is a set or standardized steps to complete certain routine work. The purpose of making SOP is so that routine work can be carried out efficiently, effectively, consistently or uniformly and safely to improve service quality. The benefits of making an SOP are to meet the requirements of hospital service standards or hospital accreditation, documentation of step procedures and ensure hospital staff understand how to carry out their work (3).

Radiology is a medical facility to support hospitals in providing services to the community. Radiologi used to support the diagnosis, treatment or treatment's plan dan evaluation or control of the patient's conditions (4). Chest x-ray is the simplest radiological examination that is mostly done in hospitals. Every medical action, medical check-up and others must be examined first by a chest x-ray (5). Therefore, the speed and accuracy of chest x-ray services play an important role in supporting medical services in hospitals.

In addition to fast and precise radiology services, infection prevention is important to maintain patient safety. Hospital Acquired Infections are infections experienced by patients more than 48 hours after admission to the hospital or more commonly known as nosocomial infections. Currently, the term Hospital Acquired Infections has been changed to Healthcare Acquired Infections (HAIs) because infections not only originate from hospital, but also from other health facilities. In addition, transmission of infection not only limited to patients, but also to health workers and visitors who are infected while in the service facility environment (6,7).

Standard precautions that are applied routinely to prevent cross-transmission in treating all patients in hospitals and other health care facilities become an effort to prevent and control infection with blood-borne diseases (HIV, HBV and HCV) in health care facilities (7,8). Centers for Disease Control (CDC) and Healthcare Infection Control Practices Advisory Committee (HICPAC) in 2011 recommended eleven components that must be implemented and adhered in standard precautions, such as hand hygiene, Personal Protective Equipment (PPE), decontamination of patient's instrument, environmental health, waste management, management of linen, protection of staff's health, patient placement, respiratory hygiene or cough and sneezing etiquette, safe injecting practices and safe lumbar puncture practices (7).

Human behavior is a function of the interaction between individuals and their environment which is formed from the individual's own personality and experience (8). For health workers, compliance is defined as the behavior of health workers in following the standards and policies applicable in each health service. Compliance is influenced by various factors such as cultural, economic, social, self-efficacy and lack of knowledge and facilities (9).

Compliance of standard precautions is reviewed based on a behavioral determinant model called the Precede Model. The Precede Model was first discovered in 1970 by Green and Kreuter as a framework for practitioners to define, create, implement and evaluate health promotion programs including the systematic application of theoretical health promotion (10). Based on the Precede Model, the factors that influence compliance behavior are predisposing factors, reinforcing factors and enabling factors (9). Predisposing factors, that is knowledge, attitudes, education level and years of service. In addition, reinforcing factors, that is support and supervision from superiors or colleagues and enabling factors, that is availability of facilities and facilities, information and training, availability of SOP and so on (8,9).

Hospital X, a privately owned type C hospital which has been fully accredited by the National Hospital Accreditation Standards (SNARS), experienced a non-compliance problem with instrument decontamination in the inpatient room and compliance with radiology services. Based on a preliminary study conducted by researchers on 17-22 August 2020.

Indicators of compliance with instrument decontamination based on Permenkes RI No. 27 of 2017 are decontamination of tools using a 0.5% chlorine solution, using a plastic container, soaking in chlorine for 10 minutes, and storing sterile tools in a dry and clean container (7). Meanwhile, the compliance of staff in decontaminating instrument in the inpatient room at X Hospital was assessed based on the compliance of staff in immersing non-sterile instruments for 15 minutes in enzymatic solutions. The duration of this soaking varies depending on the enzymatic material used when decontaminating.

The staff's non-compliance in decontaminating equipment at inpatient rooms can be seen in the annual report of hospital X in 2019. The overall achievement of quality indicator for decontamination of equipment in semester 1 was 29% and semester 2 was 49%, this figure is still far from the hospital indicator target of 100%. This percentage indicates that the immersion of the equipment during decontamination was not carried out according to the time specified in the SOP for decontamination of non-sterile instrument.

The indicator of compliance with radiology services can be seen from the waiting time of chest x-ray result. Based on the Minimum Services Standards for Hospitals according to the Decree of the Minister of Health of the Republic of Indonesia Number 129/Menkes/SK/II/2008, the waiting time for the result of chest x-ray services is < 3 hours with the executor of the expertise being radiology specialist (11). Meanwhile, according to the ISO 9001:2008 international standarization program, the standard of waiting time is around 1 hour 15 minutes (5). Based on hospital X's report in 2019, the indicator achievement of waiting time for chest x-ray services in semester 1 is 9,5

hours and semester 2 is 9,85 hours. This achievement value indicates that the chest x-ray services at hospital X has not been implemented according to the established standards.

Therefore, this study explores the non-compliance of X Hospital employees in carrying out procedures for instrument decontamination in inpatient rooms and chest x-ray services in radiology installation. This study aims to identify the factors that cause hospital employee non-compliance in carrying out procedures according to SOP and determine solutions to improve employee compliance at X Hospital.

## METHOD

This study used a qualitative descriptive approach through interviews and direct observation at the hospital. The subjects in this study were determined using purposive sampling, namely as many as 8 respondents consisting of the head of the inpatient room, nurses, pekarya and radiology staff. Interviews were conducted in an unstructured manner on October 1, 2020 and October 2, 2020 in the inpatient room and radiology room of X Hospital, interviews were conducted to explore factors that cause employee non-compliance in carrying out decontamination procedures and radiology chest radiology services. After the results of the observations and interviews were obtained, author made a transcripts of the results of the interviews and followed by data analysis. Based on the results of data analysis, it was found that several problems were the cause of the problem of employee non-compliance in carrying out procedures for instrument decontamination and chest x-ray services.

## RESULT

Based on the results of interviews and direct observations in the inpatient room of X Hospital, several factors were found to cause employee non-compliance in carrying out equipment decontamination procedures in the inpatient room and radiology of chest x-ray services. These factors are as follows:

### a. Decontamination Procedure and Radiology of Chest X-ray Services Factors

The SOP of instrument decontamination is available but is still not being implemented properly. The results of the interview regarding the device decontamination procedure were as follows:

*"there ia a SOP... but usually forgotten"*

*"sometimes our friends and ourself, including me sometimes doing decontamination not based on procedures."*

*"after completing the procedure with the patient and then the instrument is decontaminated, the instrument is immersed and in not timed according to the procedure"*

Staffs did not complete documentation of instrument decontamination, so that monitoring of instrument decontamination could not done properly. The results of the interview regarding the documentation of the instrument decontamination procedure were as follows:

*"but the documentation usually forgotten, the*

*immersed time not recorded. We don't know what time instrument was immersed and what time the instrument will be removed from immersion."*

*"yes usually when we see any immersed instrument then we will removed it. Because there is no documentation of time when the instrument was immersed"*

The SOP for radiology services has not regulated the CITO photo chest service and so far the CITO service fee is the same as the regular service.

*"There's only USG CITO procedure, whereas there is no CITO procedure for chest x-ray, even though the chest x-ray services requests at IGD and ICU are consideres CITO requests"*

The SOP for regular services or CITO radiology not include teleradiology procedures. Teleradiology services are additional procedures that have not been regulated in the SPO but have been implemented.

*"all this time if there is a teleradiology result request from IGD or ICU, will be sent via whatsapp with an unspecified reading time limit"*

### b. Staff Performances for Decontamination and Radiology of Chest X-ray Factors

Lack of coordination between staffs causes staffs to be ignorant if there is a device that is being immersed in enzymatic solution, so that the instrument decontamination time is longer. The results of the interviews related to the lack of coordination among staffs were as follows:

*"Not reported, usually after patient's wound care, soaked and left, so often forgotten"*

*"after doing procedure to the patient, instrument is immersed dan left behind, just waving and tell others there is an instrument that is decontaminated"*

Lack of discipline and responsibility of staffs is one of the causes of the problem of non-compliance with officers to carry out decontamination procedures. The results of the interviews related to the lack of discipline and responsibility of staffs are as follows:

*"not used to self discipline, the realization that there is a time of immersion but they are not used to it"*

*"less responsibility, because i think it's not my job. That is the duty of Pekarya"*

*"that is from ourself, because they feel caring for the patient is more important than to the instrument"*

The staff's busyness in handling patients causes the officers to have no time to do documentation of decontamination and removal of equipment soaked in enzymatic solutions. The results of the interviews related to the staffs' busyness were as follows:

*"we should, but we rushed and brek brek brek brek took care of the patient right away"*

The radiology staff does not give a verbal notification to the radiologist because there is no teleradiology procedure in the radiology service.

*"after we tele, we wait for the radiology doctor's reply. If not we will whatsapp the doctor"*

*"we do not notices the doctors verbally or over the phone, we feel bad and afraid when calling"*

### c. Hospital Facilities Factors

Unavailability of supporting facilities that can lead to non-compliance of officers in carrying out decontamination documentation procedures properly is the availability of monitoring sheets and the absence of a timer as a reminder of the length of the equipment soaking. The results of the interviews regarding the availability of facilities are as follows:

*"documentation table not there, near the decontamination area. Far from the decontamination area. If placed there it will come off and fly. So after immersed the instrument we often forget"*

*"There is no alarm. I mean not yet... we only reminding each other"*

The implementation of radiology services in the Covid era demands fast service because it is related to the triage process. Internet networks and cellular telephones as a sending station are needed to support fast services. The radiology service does not yet have a special cellphone for teleradiology.

*"Tele delivery uses each other officer's cellphone and when the officer completes the shift, the reply will be sent to the Whatsapp group to be followed up by the next officers on duty"*

## DISCUSSION

The root cause of the problem of non-compliance by officers in decontaminating instrument in the inpatient room and radiology services for chest x-ray lies in the documentation system which is still not running well, due to several factors such as officer and hospital facilities factors that do not support officers in carrying out documentation of the procedures correctly. Meanwhile, in the era of the Covid-19 pandemic, the implementation of radiology services was developed with teleradiology services. Service development in response to fast service demands. The service that has been implemented has not been included in the SOP because the SOP for radiology services has not been revised according to the current hospital conditions.

For this reason, one solution that can be carried out in an effort to improve the compliance of officers in carrying out the correct procedure for instrument decontamination and chest x-ray services is to revise the SOP for the instrument decontamination procedure by adding a documentation stage in the step after immersion and removal of instruments and revision of SOP for radiology services by adding regular dan CITO teleradiology service procedures.

The provisions in KARS state that the evaluation of the implementation of the SOP is carried out according to the needs and a maximum of 3 years, the evaluation is carried out by each work unit led by the head of the work unit, repairing the SOP can be done partially or in whole. SOP requires repair or revision if the SOP flow is not in accordance with existing conditions, there are developments in science and technology, there are changes in organizations or new policies, and there are changes in facilities (3).

The existence of an SOP cannot automatically solve problems in the hospital, because these problems not only arise due to a lack of regulations or policies, but problems can arise due to various things, for example how far the SOP is socialized, the availability of facilities and technology, human resource competence and culture work prepared to carry out the SOP so that the performance of the officers can be measured and its success can be evaluated (12). Socialization is an activity that aims to make officers understand the importance of activities or services provided for patients or for themselves. Socialization can form a change in attitude from not understanding to understanding, so that the behavior of officers can be better in carrying out procedures (13).

Based on interviews with officers in the inpatient room of X Hospital, it was found that one of the root causes of non-compliance of instrument decontamination was the lack of responsibility of the officers and immersion of equipment that was not in accordance with the procedure, where the device was immersed in the enzymatic solution more than 15 minutes. Meanwhile, one of the root causes of the officer's non-compliance in conducting chest x-rays services was the absence of verbal notification to the radiologist who was in charge of reading the x-rays at that time.

These various problems indicate the lack of information obtained by officers about the importance of carrying out services or actions according to correct procedures. The affordability of information that a person receives is an enabling factor that influences a person's behavior. For health workers, skills and information can be obtained through media or training provided (8). Based on research by McGovern *et al.*, nurses who received training had an adherence rate of 5.7 times better than nurses who did not receive training (9).

Therefore, providing information and training to officers of the inpatient room regarding the procedure for decontamination of instruments and chest x-ray services according to the SOP set by the hospital and how to properly document it is important to increase the compliance of officers in carrying out instrument decontamination and chest x-ray services according to procedures.

Some of the root causes of the problem of non-compliance of officers in carrying out instrument decontamination in the inpatient room of X Hospital are officers who often forget to decontaminate the equipment, there is no coordination between officers, the absence of monitoring sheets near the equipment decontamination area, the absence of a timer as a reminder of the time of soaking the equipment. Meanwhile, one of the root causes of non-compliance of officers in carrying out chest x-ray services is the unavailability of cellphone for teleradiology and SOP that have not been adapted to current technological developments.

The availability of the hospital facilities is one of the factors that can influence a person's behavior, according to Green, et al (1980) in the Precede Model. The absence of adequate facilities causes nurses to tend to disobey standard precautions. For example, in the provision of Personal Protective Equipment (PPE), if the nurse is easy to get PPE then it will play an important role in compliance with standard precautions (9,8). The facilities needed to implement standard precautions are the availability of means for washing hands, PPE, disinfectant and

sterilization materials or equipment, equipment for the management of sharp objects and equipment for waste or medical waste management (7).

Based of that explanation, alternative solution that can be offered to increase the compliance of officers in carrying out instrument decontamination procedures in the inpatient room is to provide the necessary facilities in the process of instrument decontamination, such as a whiteboard to monitor the immersion of instrument at the decontamination area and a timer for reminder of the immersion time of the appliance. Meanwhile, to increase the compliance of officers in carrying out radiology service

procedures is a revision of the SOP to adjust science and technology and the provision of teleradiology cell phones.

The factors that cause the problem of non-compliance with instrument decotamination in the inpatient room and the reading of chest x-ray photos in radiology services of X Hospital are procedures, performance factors for instrument decontamination officers and radiology chest x-ray services, and hospital facilities. The solution to increasing the compliance of officers in carrying out procedures for instrument decontamination and chest x-ray services is revising the SOP, socialization, periodic monitoring and evaluation of SOP.

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