

ANALYSIS OF CLINICAL RADIOLOGY EQUIPMENT BASED ON MINISTER OF HEALTH REGULATION NUMBER 24 OF 2020 IN THE RADIOLOGY INSTALLATION

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ABSTRACT

Hospitals as a health service facility have a strategic role in accelerating the health status of the Indonesian people. Quality health services are a measure of satisfaction which has an effect on the patient's desire to return. Radiographers are health workers who are given the task, authority and responsibility by authorized officials to carry out Radiology service activities in the Health Service Unit. The implementation of Radiology Services needs to be adapted to the development and needs of health services, legal certainty that underlies health services, and developments in science and technology. Based on these considerations, the government needs to stipulate Minister of Health Regulation concerning Clinical Radiology Services number 24 of 2020. To realize the objectives of clinical radiology services, it is supported by Clinical Radiology Service Equipment (PPR) which must be maintained and maintained in accordance with Minister of Health Regulation Number 24 of 2020. The approach method used is sociological juridical and the research specification is descriptive analysis. The juridical aspect studied is the legal provisions regarding the analysis of clinical radiology service equipment and understanding the obstacles faced in implementing it in the radiology room at Bhayangkara Hospital, Semarang City. The sociological aspect studied is the response from PPR officers and the head of the radiology room regarding the analysis of radioclinic service equipment based on Minister of Health Regulation number 24 of 2020. The output of this research is planned for publication in a national scientific journal

Keywords: Radiology Equipment; Minister of Health Regulation 24 of 2020

BACKGROUND

The state guarantees the right of every citizen to realize a good, healthy and prosperous life. Health is a person's healthy state, both physically, mentally and socially and not just limited by disease to enable him to live ("Undang-Undang Republik Indonesia Nomor 17 Tahun 2023 Tentang Kesehatan," 2023). Knowing the health needs of the community is important to understand, especially by policy makers and health service program providers, especially if there is a gap between the health needs of the community and the programs, priority actions taken by policy makers/health program providers (Jurnal _Massie, Roy G A Kandou, 2013) Health development as part of national development has the aim of increasing the will and ability as well as awareness of healthy living for everyone in order to achieve optimal levels of public health (Jurnal _Ulumiyah, 2018). Hospitals as one of the health facilities that provide health services to the community have a very strategic role in accelerating improvements in the level of public health. Therefore, hospitals are required to provide quality services in accordance with established standards and can reach all levels of society (Kemenkes No 058 tahun 2009 tentang Pedoman penyelenggaraan Rumah, 2009).

Hospitals as a health service facility have a very strategic role in efforts to improve the health status of the Indonesian people. Reforms in the health sector are implemented to improve health services and make them more efficient, effective and affordable for all levels of society. Quality health services are one measure of satisfaction which has an effect on patients' desire to return to institutions that provide effective health services. To meet the needs and desires of patients so that they can obtain satisfaction that can ultimately increase trust in the hospital through excellent service (Jurnal _Budo, Arwis Tulus, Femmy Tampi, 2020). A health worker is every person who dedicates themselves to the health sector and has a professional attitude, sufficient knowledge, and optimal skills through higher education, which for certain types requires authority to carry out health efforts ("Undang-Undang Republik Indonesia Nomor 17 Tahun 2023 Tentang Kesehatan," 2023). Radiographers are health workers who are given the task, authority and responsibility by authorized officials to carry out Radiology service activities in the Health Service Unit (IR – Perpustakaan Universitas Airlangga, 2020). A radiographer is any person who has completed education in radiodiagnostic and radiotherapy techniques in accordance with statutory provisions (Permenkes Nomor 81 Tahun 2013, 2013). According to research by Hasmawati et al, stated that Radiology

Installation Services are an integral part of medical support services in Hospitals which provide diagnostic services including conventional x-ray services, the use of computer radiography (CR), Mammography, Panoramic, Dental and Diagnostic Imaging services, namely ultra sonography (USG) (Hasmawati et al., 2018). Public demands for the quality of radiology health services are increasing, requiring every Radiographer to work professionally (Menteri Kesehatan, 2007).

In order to improve the quality of health services, comprehensive and responsive action is needed for undesirable events in health service facilities so that similar incidents do not happen again. Patient Safety is a system that makes patient care safer, including risk assessment, identification and management of patient risks, incident reporting and analysis, the ability to learn from incidents and follow up, as well as implementing solutions to minimize risks and prevent injuries caused by errors. as a result of carrying out an action or not taking action that should be taken (Permenkes Nomor 11 tahun 2017 tentang Keselamatan Pasien, 2017). The rapid development of science and technology in the health sector in the use of ionizing radiation sources can be used to improve the quality of health services, while still paying attention to the safety aspects of patients, health workers and the environment where health services are provided. The provision of Radiology Services needs to be adapted to the development and needs of health services, the legal needs of society, and developments in science and technology. Based on these considerations, the government needs to stipulate Minister of Health Regulation concerning Clinical Radiology Services number 24 of 2020 (Permenkes Nomor 24 Tahun 2020 tentang Pelayanan Radiologi Klinik, 2020). Clinical Radiology Services aims to ensure the safety, security and health of health workers, patients, the community and the environment where Clinical Radiology Services are carried out as well as realizing standards for Clinical Radiology Services in Health Service Facilities; and improving the quality of Clinical Radiology Services in Health Service Facilities. To realize the objectives of the clinical radiology service, it is supported by Clinical Radiology Service Equipment which must be maintained and maintained in accordance with Minister of Health Regulation Number 24 of 2020.

Bhayangkara TK Hospital. III Akpol is a hospital belonging to the National Police of the Republic of Indonesia under the Pusdokkes Polri Headquarters. This hospital has a class C license, even though it has a C license, Bhayangkara Hospital tries to provide the best service to all people. The types of services available at Bhayangkara Hospital Semarang City are medical checkup, emergency department, outpatient care, supporting facilities. Supporting services at Bhayangkara Hospital, Semarang City include: pharmacy, laboratory, PCR laboratory, radiology, hemodialysis, clinical forensics, narcotics, central surgical installation, hyperbaric and nutrition. The supporting unit for radiology installations is that there is a CT Scan examination with the latest technology (Sejarah RSBhayangkara Kota Semarang, 2019). The types of services available at Bhayangkara Hospital, Semarang City, are medical checkups in the form of periodic health examinations for Indonesian Taruna Students by the MCU Team Bhayangkara Semarang Rumkit, emergency care, outpatient care, supporting facilities (website _Admin RS Bhayangkara Kota Semarang, n.d.) Bhayangkara Hospital, Semarang City, has clinical radiology service equipment, but from initial survey data, there is still some clinical radiology equipment that is not owned by Bhayangkara Hospital, Semarang City. This research reveals the obstacles faced in providing equipment for clinical radiology services based on Minister of Health Regulation No. 24 of 2020, in order to provide suggestions as solutions. The impact of this research on science is that it is hoped that it can increase insight into the clinical radiology equipment that is owned according to the type of hospital and the current technological developments in clinical radiology equipment.

METHOD

The sociological juridical approach is legal research regarding the enactment or implementation of legal provisions in action at each particular legal event that occurs in society. This implementation in action is an empirical fact and is useful for achieving the goals determined by the State (Dr. Muhammad Chairul Huda, S.HI, 2021). In this study, the juridical aspect studied was an analysis of the equipment for clinical radiology services in the Radiology Room at Bhayangkara Hospital, Semarang City and to find out the obstacles faced. In this study, the sociological aspect examined was the response of PPR officers and the Head of the Bhayangkara Hospital Radiology installation room regarding the analysis of clinical radiology service equipment in the Bhayangkara Hospital Radiology Room, Semarang City. To collect data regarding Analysis of Clinical Radiology Service Equipment Based on Minister of Health Regulation Number 24 of 2020 in the Radiology Room at Bhayangkara Hospital, Semarang City, it was carried out qualitatively, namely direct, free and in-depth interviews with respondents, including: PPR officers, heads of radiology rooms and radiographers using an interview guide. . Data processing techniques are carried out by collecting data, reducing data, presenting data, analyzing data and drawing conclusions.

Document study is by studying legal materials that are relevant to the topic of discussion, including: Law Number 17 of 2023 concerning Health, Minister of Health Regulation Number 81 of 2013 concerning the Implementation of Radiographer Practices, Minister of Health Regulation Number 24 of 2020 concerning Clinical Radiology Services, Minister of Health Decree number 058 of 2009 concerning the Implementation of Mobile Hospitals, Minister of Health Regulation number 11 of 2017 concerning Patient Safety. Qualitative research methodology, namely a research method based on post-positivism philosophy, is used to research the conditions of natural objects, (as opposed to experiments) where the researcher is the key instrument, sampling of data sources is carried out purposively and snowballing, the collection technique is triangulation. (combined), data analysis is inductive/qualitative, and qualitative research results emphasize meaning rather than generalization (Setiawan, 2018). In this study, those taken as research subjects who were considered representative included PPR officers, the head of the radiology room and radiographers at Bhayangkara Hospital, Semarang City.

RESULT AND DISCUSSION

Bhayangkara Hospital Semarang City is a type C hospital and is included in intermediate clinical radiology services. Based on Minister of Health Regulation No. 24 of 2024, the researchers conducted in-depth interviews using an interview guide asking about what radiology equipment for intermediate clinics is owned by Bhayangkara Hospital, Semarang City, what equipment they don't have, if there is still a shortage of radiology equipment, then how to handle the examination. the.

Based on the results of in-depth interviews with PPR officers, heads of radiology rooms and radiographers in the radiology department at Bhayangkara Hospital, Semarang City, from the list of intermediate clinical radiology equipment in Minister of Health Regulation number 24 of 2024, there are still several tools that are not yet owned by Bhayangkara Hospital, Semarang City, including that is:

1. Fluoroscopy and its equipment

Fluoroscopy is basically performed to help doctors make a diagnosis. Apart from that, these supporting examinations are also used for operations related to the respiratory and digestive tracts, as well as blood vessels, muscles, heart and lungs.

For CT scan equipment, it is used for:

- a. Detect diseases such as muscle and bone disorders such as bone tumors and fractures; Cancer, heart and lung disease, stroke, and liver disease; Injuries and internal bleeding, such as problems with blood vessels; Digestive disorders such as appendicitis; Kidney stones and injuries to the brain and spinal cord.
- b. Determine the location or part of the body affected by the disease. For example, a CT scan determines the location, size and shape of a tumor before undergoing radiotherapy
- c. Assisting with the Operation Process

Not only a diagnosis process, CT scans are also used when doctors carry out treatment procedures on patients. For example, CT scans are used for procedures such as surgery, biopsies, and radiation therapy. Apart from that, CT scans are also used to monitor the effectiveness of treatment that has been carried out, such as cancer treatment.

At Bhayangkara Hospital, Semarang City, there is no fluoroscopy examination equipment, but this examination can be replaced with a CT Scan examination, because this fluoroscopy test is similar to a CT scan, fluoroscopy uses X-rays to capture images and the resulting image only has one viewing angle, whereas CT Scan is an examination procedure that utilizes special computer technology and X-rays to view tissues and structures in the body from various angles.

2. Dental X-ray and its equipment

Conventional dental x-rays do not provide as accurate intra-oral images as the newer digital x-rays. With technological developments, examinations in radiology installations generally use Computed Radiography (CR) and Digital Radiography (DR). For dental examinations, X-Ray is a conventional examination that has been abandoned and is now replaced by a digital and computer-based panoramic examination. Panoramic digital dental x-rays to give patients the clearest picture of their oral health condition. Digital dental x-rays expose patients to much less radiation than conventional x-rays. Digital x-rays are displayed on a large computer screen, and the contrast and brightness can be increased on the screen, meaning less time spent taking x-rays.

At Bhayangkara Hospital, Semarang City, dental examinations do not use a dental machine because BHP dental film is no longer produced and manual processing of dental film with solutions has been eliminated. As a replacement, Bhayangkara Hospital, Semarang City, uses a panoramic aircraft whose processing is digital, namely using CR.

3. Mammography and its equipment

Mammography is a radiological examination aimed at seeing whether or not there are abnormalities that could lead to cancer in the breast area. This procedure uses X-Ray photos and is recommended for patients over 35 or 40 years old. Mammography examination is important because it is sensitive enough to detect early signs and symptoms of breast cancer. Signs of breast cancer include abnormal lumps appearing in the breast, pain in the breast, fluid coming out of the breast but not breast milk, breast skin becoming thick and having spots like orange peel, the nipple turning inward or its position changing, etc. In addition, screening mammography is useful for detecting signs of breast cancer in women who do not experience symptoms.

Bhayangkara Hospital does not yet have radiological equipment for a mammography clinic, because there are not many requests for this examination, and if there is a request for such an examination, a referral can be made to a higher level hospital.

4. Radiation protective equipment, namely PB gloves and glasses

For radiation protective equipment at Bhayangkara Hospital, Semarang City, it already has a lead apron for radiological examinations, but does not yet have PB gloves and glasses. Protective equipment is used in full if the radiographer is exposed to X-rays, for example during radiological examinations of babies, children or toddlers. In reality, most of the radiographers attending the Bhayangkara Hospital, Semarang City, are adults, so that during the examination the radiographer can only use a lead apron.

5. Radiation protection equipment, namely a surveyor

The benefit of a surveymeter is to measure radiation dose or dose rate. The use of the surveymeter is to test leaks in X-ray tubes and also leaks in radiology examination rooms. Surveymeter inspection of the aircraft tube is carried out at the beginning of assembly of the radiology equipment, periodic checks (once a year) to test the aircraft tube for leaks and determine the amount of X-ray radiation dose emitted by the aircraft tube. A survey meter inspection of the room is carried out at the beginning of the radiology examination room and is carried out periodically once a year to test the room for leaks. X-ray radiation leaks can occur in a room if there is a building construction such as a crack in the wall, hot weather causes the door to shrink, there is a hole in the room or when moving to a radiology examination room. Bhayangkara Hospital, Semarang City, does not yet have radiation protection equipment, namely surveymeters, but this can be overcome by bringing in surveymeters and people who are experts in their fields to carry out X-ray leak tests on tubes or rooms.

From this research, the new thing that I got was that knowledge about x-ray/manual dental examinations was replaced with a panoramic plane, which is processed digitally, namely using CR and provides the patient with the clearest picture of their oral health condition. The impact of the findings on the development of science is to increase insight into the development of clinical radiology examination technology

CONCLUSION AND SUGGESTION

The obstacles faced in providing clinical radiology service equipment based on Minister of Health Regulation No. 24 of 2020 at RSB Hayangkara Semarang City are, for the submission of work plans and annual budgets (RKAT) they have budgeted for clinical radiology equipment that they do not yet have, but clinical radiology equipment requires large costs. , so that the purchase of clinical radiology equipment is carried out in stages.

It is hoped that future researchers can carry out more extensive research, apart from analyzing the implementation of Minister of Health Regulation No. 24 of 2024 concerning Klink radiology services, further researchers can conduct research on hospital quality control.

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