

WELCOME (WEALTH COMMUNITY EMPOWERMENT) JOURNAL

https://ejournal.poltekkes-smg.ac.id/ojs/index.php/welc_omejournal

CORRUPT DATA ON MRI WORKSTATION

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ABSTRACT

During the internship at the Radiology Installation at Ken Saras Hospital in Semarang Regency, the MRI examination service was well organized, with a structured work flow, including scheduling, patient education, carrying out examinations, and communicating results via WhatsApp messages. However, there are challenges that must be faced by the Radiology Installation at Ken Saras Hospital, especially in technical terms. Even though the MRI equipment is 12 years old, it may present a risk of hardware failure resulting in errors on the MRI workstation. One recurring problem is the appearance of corrupt data in MRI scanning images. The main objective of this community service is to improve the technical skills of radiographers in overcoming and preventing data corruption problems at MRI workstations. Intensive training will be provided to enrich their understanding of MRI technology, identify causes of data corruption, and implement necessary technical solutions

Keywords: abstract; magnetic resonance imaging; data corrupt; workstation.

Introduction

The MRI examination service at Ken Saras Hospital, Semarang Regency has become an important milestone in disease diagnosis and patient care. With the development of medical technology, this examination has become the main choice to provide an in-depth picture of the patient's health condition. However, in the course of providing this service, Ken Saras Hospital faces serious challenges related to the

sustainability of the quality of MRI image scanning results. The phenomenon of data corruption in MRI workstations has become a focal point of concern, given its serious impact on the accuracy of diagnosis and treatment provided to patients.

Poor image quality can pose a risk of missing critical diagnostic information, hinder the medical team's ability to make informed decisions, and result in patient dissatisfaction.

It is important to recognize that radiographers, as the main element in the MRI examination process, play a central role in maintaining and improving the quality of scanning results. Although Ken Saras Hospital has strived to provide the best service, continuing the technical skills of radiographers in overcoming data corruption problems is the key to improving service quality.

Therefore, community service (community service) to radiographers is the right solution to strengthen their capacity and skills facing this technical problem. This is in line with the spirit of internal empowerment at Ken Saras Hospital, which aims to make the medical team an agent of change in improving diagnostic services and quality through a measurable and sustainable approach.

Methods

Community service with the title "Corrupt Data on MRI Workstations" aims to provide solutions and education to health workers regarding preventing and handling data corruption on MRI workstations. This method will involve several stages, starting from problem identification, training, to implementing solutions.

1. Identify the Problem:

Initial Survey: Conduct a survey of several health facilities that use MRI to identify frequent data corruption problems.

Interviews: Conduct interviews with technicians and radiologists to understand the technical and operational issues they face.

Data Analysis: Collect and analyze data from surveys and interviews to determine the root cause of data corruption on MRI workstations.

2. Preparation of Training Modules:

Technical Materials: Create training materials that cover basic knowledge about MRI, causes of data corruption, and preventive measures.

Standard Operating Procedures (SOP): Develop SOPs for maintenance and use of MRI workstations to prevent data corruption.

Simulations and Case Studies: Prepare relevant simulations and case studies to provide real-world examples to trainees.

3. Training and Education:

Workshop: Hold an intensive workshop involving technicians, radiologists and related staff at the health facility.

Hands-On Training: Provide hands-on, in-the-field training on the use and maintenance of MRI workstations.

Discussion and Q&A: Provide discussion and Q&A sessions to address doubts and questions from training participants.

4. Implementation and Monitoring:

Implementation of SOPs: Assist health facilities in implementing the SOPs that have been developed.

Periodic Monitoring: Carry out regular monitoring to ensure the SOP is implemented correctly and produces the expected results.

Evaluation and Feedback: Collect feedback from participants and evaluate the effectiveness of the methods that have been implemented.

5. Continuous Development:

Update Training Materials: Regularly update training materials based on technological developments and feedback from the field.

Collaboration Network: Build a collaboration network with educational and research institutions to strengthen this community service program.

Publication of Results: Publish the results of community service in journals or conferences to share knowledge and experience.

Results and Discussion

There are several tips that you can do if you experience this

data corruption problem:

1. Don't panic
2. Prepare regular data backups
3. Perform regular checks on the hard disk used to analyze hard disk performance

4. It is not permitted to repair the built-in equipment yourself because it has the potential to cause greater damage

Data corruption on MRI can be overcome in several ways, in general there are 3 ways to overcome this:

1. Using manual methods

There are several manual methods that can be used to deal with a damaged hard drive. This manual approach requires technical expertise from the user. Apart from that, these methods work in certain cases, so cases that cannot be handled require professional help. The following are several methods that can be used to repair corrupt data manually:

a. By doing a comprehensive Disk Check

- Open Computer/This PC >> select Hard Drive >> then select Properties
- Select Tools >> Error checking >> Check now >> Check local disk >> Start
- Shut down all open or running programs >> wait for the system to check >> restart the PC

b. Using Control Panel

- Open Control Panel >> select System and Security >> Action Center
- Click on the Maintenance section menu >> select Run Scan >> Restart

c. Using File Manager

- Open -File Manager >> select desired Drive >> Properties
- Select Tools >> Check under Error Checking
- After the check is complete, to repair it, click Repair This Drive

2. Using software

In some cases, software can be used to recover corrupt data. However, the challenge in this case is choosing the right software. There is some software that can be relied on, and there is also some software that cannot be used.

3. Through a professional data recovery service provider

In terms of dealing with corrupted data, the last resort and considered the best option is to hand over the damaged hard drive to an expert. This is because leaving it to the experts is an all in one option for repairing a damaged hard drive. Apart from that, the service provider will also maintain data integrity, data security and data confidentiality during the recovery process.



Conclusion

During the internship at the Radiology Installation at Ken Saras Hospital in Semarang Regency, the MRI examination service was well organized, with a structured work flow, including scheduling, patient education, carrying out examinations, and communicating results via WhatsApp messages. However, there are challenges that must be faced by the Radiology Installation at Ken Saras Hospital, especially in technical terms. Even though the MRI equipment is 12 years old, it may present a risk of hardware failure resulting in errors on the MRI workstation. One recurring problem is the appearance of corrupt data in MRI scanning images.

Thus, efforts to overcome the problem of data corruption in MRI images are urgent. Ken Saras Hospital radiology must consider technical solutions that can detect and repair corrupt data, as well as update MRI hardware that may be old. It is important to prioritize the sustainability of technology so that medical services remain optimal.

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