

Reminder of the Validity Period of the Diagnostic and or Interventional Radiology Permit for Computed Tomography Scans (Ct Scans) for Advanced Referral Health Facilities of BPJS Health Jember Branch's Partners

M. Suhron^{1*}, Widya Waskito²

^{1,2} STIKes Ngudia Husada Madura

*Corresponding author: dsuhron@yahoo.co.id

ABSTRACT

Background: BPJS Health requires Health Facilities to fill in health service profiles in the form of human resources, facilities, and infrastructure owned into the BPJS Health Facilities information system (HFIS).

Purpose: Expalanation Reminder Feature for the validity period of the Diagnostic and/or Interventional Radiology Permit for Computed Tomography Scan (CT Scan) which is directly sent to the hospital's correspondence email is still not accommodated.

Methods: The method used in this innovation is Action Research, with a research population of 14 Advanced Referral Health Facilities partners of BPJS Health Jember Branch and a research sample of 3 Advanced Referral Health partners of BPJS Health Jember Branch.

Results: Respondents in the 26-35 years age group were 66.7% and the 36-45 years age range was 33.3%. 3 Hospitals filled out the survey, namely Citra Husada Jember Hospital (33.3%), Siloam Jember Hospital (33.3%), and Balung Hospital (33.3%). Category scores using the Mean Hypotetic and Results Validation of responses to innovations from service quality, showing 100% of respondents gave a good response of Siloam Jember Hospital.

Conclusion: This means that the quality of this reminder innovation from the service quality dimension is well received. The innovation of a Reminder of the Validity Period of Diagnostic Radiology Permit and/or Interventional Computed Tomography Scan (CT Scan) for Advanced Referral Health Facilities of BPJS Health Jember Branch partner can be recommended for implementation.

Keywords: BPJS health, CT scan, radiology permit, validity period

Received November 10, 2024; Revised December 12, 2024; Accepted January 3, 2025

DOI: <https://doi.org/10.30994/jnp.v8i2.644>



The Journal of Nursing Practice, its website, and the articles published there in are licensed under a Creative Commons Attribution-Non Commercial-ShareAlike 4.0 International License.

BACKGROUND

Today's business development cannot be separated from the important role of information technology. With the development of information technology, the power of information and information technology is used as tools in winning business competition. Information and communication technology (ICT) includes two aspects, namely information technology and communication technology. Information technology includes everything related to the process, use as a tool, manipulation, and management of information. Communication technology is all about using tools to process and transfer data from one device to another. Therefore, information technology and communication technology are inseparable equivalents that contain a broad understanding of all activities related to the processing, manipulation, management, and transfer of information between media (Aziz, 2012).

Regarding the development of health units, Indonesia also has a government program known as Social Security Administrator (BPJS) Health. Since 2014, BPJS Health has officially operated until now. To improve the quality of services to patients and health facilities, BPJS Health developed an Information Technology-based system related to the increasing number of Indonesians who use Social Security Administrator (BPJS) Health services. The BPJS Health information system is called the Health Facilities Information System (HFIS) (Ginardi, 2020).

BPJS Health Jember Branch has a working area covering Lumajang Regency, Jember Regency, and Bondowoso Regency. The Advanced Referral Health Facilities (FKRTL) that have collaborated with BPJS Health Jember Branch as of 1 January 2024 are 25 The Advanced Referral Health Facilities (FKRTL). From the 25 Advanced Referral Health Facilities (FKRTL), there are 14 Advanced Referral Health Facilities (FKRTL) that operate medical devices in the form of Computed Tomography Scan (CT Scan). During the service from January 2023 until November 2023 there were 1.650 CT Scan service claims with a nominal claim of Rp—2.034.212.800, - which had been paid by BPJS Health Jember Branch to FKRTL cooperation partners.

In implementing cooperation with Health Facilities, BPJS Health requires Health Facilities to fill in health service profiles in the form of human resources, facilities, and infrastructure owned into the BPJS Health information system (HFIS). However, the Reminder Feature for the validity period of the Diagnostic and Interventional Radiology Permit for Computed Tomography Scan (CT Scan) which is directly sent to the FKRTL correspondence email is still not accommodated.

In Decree of the Minister of Health of the Republic of Indonesia Number 1014/Menkes/SK/XI/2008 concerning Standards for Diagnostic Radiology Services in Health Care Facilities regarding Licensing of Diagnostic Radiology Services, it is stated that every equipment that uses ionizing radiation must have a tool utilization permit from Nuclear Energy Regulatory Agency called is BAPETEN . Diagnostic Radiology Services are services to perform diagnosis using ionizing radiation, including conventional X-ray services, Computed Tomography Scan (CT Scan), and mammography.

As an effort to prevent administrative negligence, maintain the quality of services to BPJS Health participants served by FKRTL, and ensure the payment of CT Scan health service claims billed by FKRTL by applicable regulations, it is deemed necessary to make an innovation in the form of Reminder of the validity period of the diagnostic and/or interventional radiology permit for computed tomography scans (CT scans) for advanced referral health facilities of BPJS Health Jember Branch's Partners to facilitate BPJS Health Branch Jember employees to carry out the task of reminding FKRTL related to CT Scan that

will expire, and can be useful as a reminder for FKRTL permit holders to immediately renew the permit within the specified period so that CT Scan operational services are not stopped.

METHODS

The method used in this innovation is Action Research. The steps of implementing action research are based on the Action Research model (Suharsimi, 2013). So far, various models of Action Research have been known, but in principle, four stages must be passed, namely: 1) planning, 2) acting, 3) observing, and 4) reflecting.

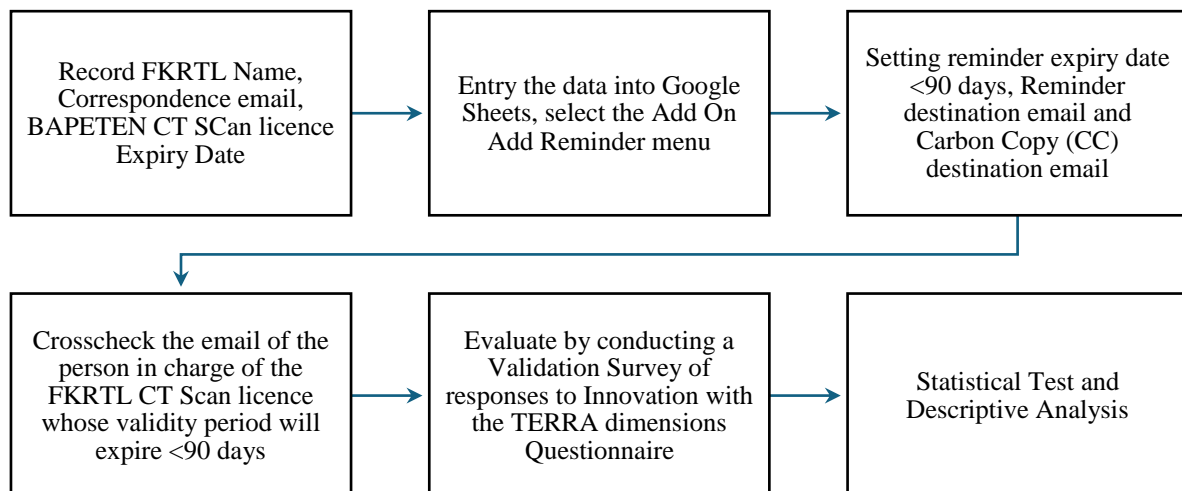
To review the quality of innovation services, a survey was conducted through a questionnaire with the TERRA dimension. The concept of service quality related to satisfaction is determined by five elements commonly known as TERRA service quality (tangible, empathy, responsiveness, reliability, and assurance) (Parasuraman, 2001).

This study presents data in descriptive analysis using frequency distribution tables for data on each variable, tables, and graphs for all research data. Data analysis using the SPSS 26.0 program by producing data in the form of mean, mode (Mo), median (Me), standard deviation (SD), maximum value, minimum value, data range, and number of scores TERRA dimension. The research was conducted in October 2024, and an ethical feasibility test was carried out at STIKES NGUDIA HUSADA with Number: 2404/KEPK/UNIV-NHM/EC/XI/2024.

The study population was 14 FKRTL partners of BPJS Health Jember Branch that collaborated for FKRTL Computed Tomography Scan (CT Scan) services because three hospitals had an active permit period for the CT Scan examination . The research sample was 3 FKRTL partners of BPJS Health Jember Branch whose expiration period of Diagnostic Radiology Permit and/or Interventional Computed Tomography Scan Tool (CT Scan) was less than 90 days.

FRAMEWORK

Picture 1. Framework



INNOVATION PROJECT TIMETABLE

Table 1. Innovation Project Schedule

| No | Activity | January 2024 | | | | | February 2024 | | | | | |
|----|------------------------------------|--------------|---|---|---|---|---------------|---|---|---|---|--|
| | | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 | |
| 1 | Determining the Innovation Title | | | √ | | | | | | | | |
| 2 | Preparation of Innovation Proposal | | | √ | √ | √ | | | | | | |
| 3 | Implementation of Innovation | | | | | | √ | | | | | |
| 4 | Distributing questionnaires | | | | | | | √ | | | | |
| 5 | Compilation of Innovation Results | | | | | | | √ | √ | | | |

RESULTS

In the Planning stage, researchers conducted interviews with BPJS Health Jember Branch employees in charge of FKRTL cooperation to collect data on the details of FKRTLs that operate CT Scan medical devices along with the expiration date of the Diagnostic Radiology Permit and/or Interventional Computed Tomography Scan (CT Scan) FKRTL partners of BPJS Health Jember Branch, completing the email address of FKRTL correspondence with BPJS Health Jember Branch partners as stated in the Cooperation Agreement.

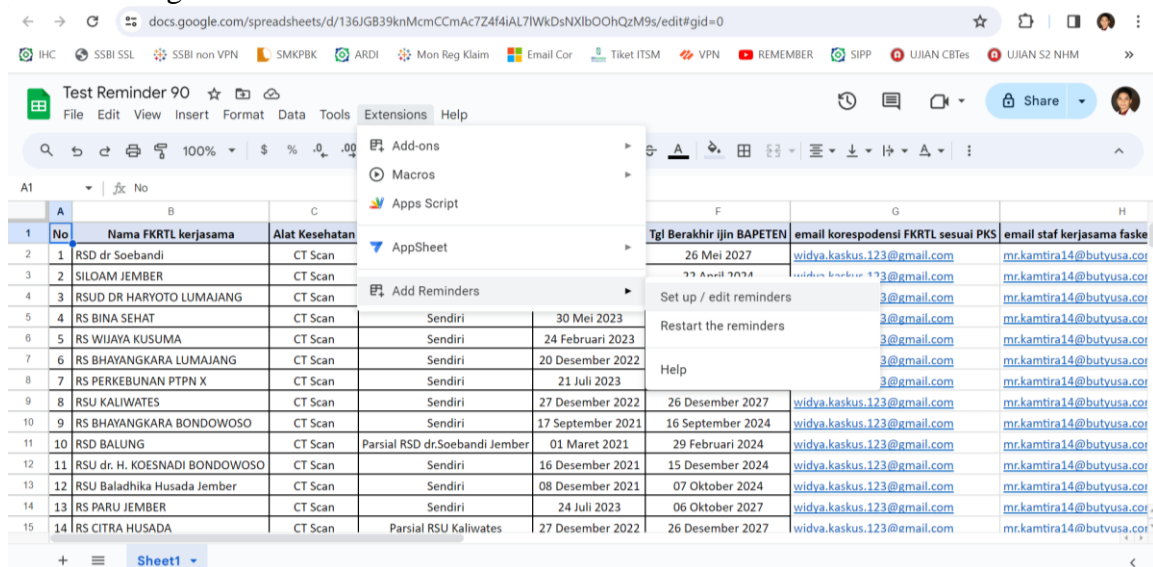
Table 2. Details of FKRTLs that collaborate with CT Scan

| FKRTL's name | Medical Devices | Date of expiry of NUCLEAR ENERGY REGULATORY AGENCY license | FKRTL email according to the cooperation agreement |
|--|-----------------|--|--|
| Dr. Soebandi Hospital | CT Scan | 26 May 2027 | rsd.soebandi@jemberkab.go.id |
| SILAM JEMBER | CT Scan | 22 April 2024 | info.shjr@silamhospitals.com |
| DR HARYOTO LUMAJANG HOSPITAL | CT Scan | August 23, 2027 | rsdharyoto@yahoo.co.id |
| BINA SEHAT HOSPITAL | CT Scan | June 7, 2027 | rs_binasehat@yahoo.com |
| WIJAYA KUSUMA HOSPITAL | CT Scan | December 25, 2027 | admin@rswijayakusuma.id |
| BHAYANGKARA HOSPITAL LUMAJANG | CT Scan | July 27, 2027 | rsbhylumajang@gmail.com |
| PTPN | CT Scan | February 21, 2028 | rs.jemberklinik@gmail.com |
| KALIWATES RSU | CT Scan | December 26, 2027 | info_rsuk@rolasmedika.co.id |
| BHAYANGKARA BONDOWOSO HOSPITAL | CT Scan | 16 September 2024 | rsbbondowoso@yahoo.co.id |
| BALUNG RSD | CT Scan | February 29, 2024 | rsd.balung@jemberkab.go.id |
| RSU dr. H. KOESNADI BONDOWOSO | CT Scan | December 15, 2024 | rsu.koesnadi@gmail.com |
| Baladhika Husada General Hospital, Jember | CT Scan | 07 October 2024 | rsadbaladhikahusada@yahoo.co.id |
| JEMBER LUNG HOSPITAL | CT Scan | 06 October 2027 | rsparujember28@gmail.com |
| CITRA HUSADA HOSPITAL | CT Scan | 22 April 2024 | rs_citrahusada@yahoo.co.id |

In the Acting stage, the researcher entered the data details of the name of the FKRTL that operates the CT Scan medical device along with the expiration date of the Diagnostic Radiology Permit and/or Interventional Computed Tomography Scan (CT Scan), the email address of the correspondence of the FKRTL that operates the CT Scan medical device, the email address of the BPJS Health employee in charge of FKRTL cooperation into Google Sheets which then selected the Add-Ons Add Reminders menu.

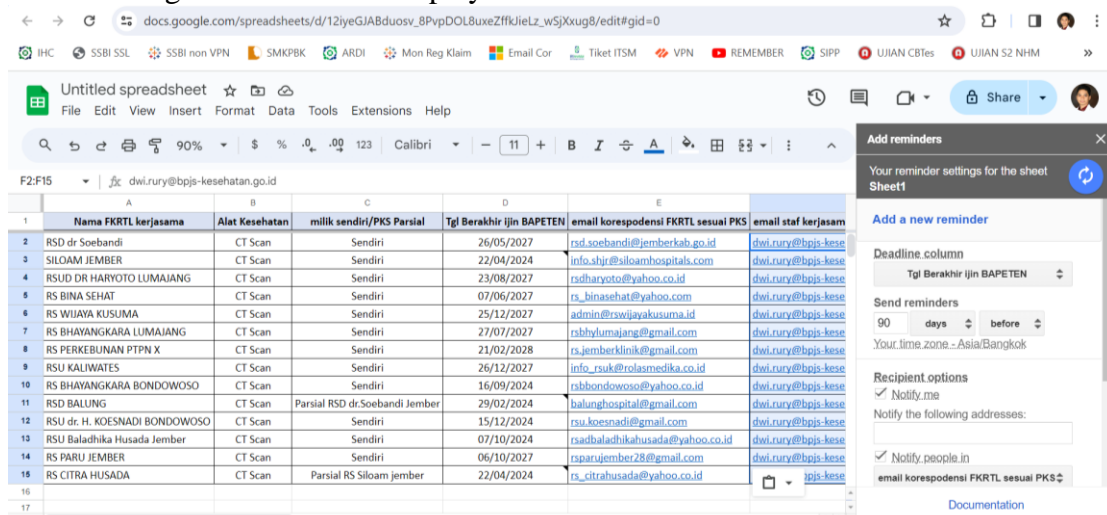
In the Acting stage, the researcher entered the data details of the name of the FKRTL that operates the CT Scan medical device along with the expiration date of the Diagnostic Radiology Permit and/or Interventional Computed Tomography Scan (CT Scan), the email address of the correspondence of the FKRTL that operates the CT Scan medical device, the email address of the BPJS Health employee in charge of FKRTL cooperation into Google Sheets which then selected the Add-Ons Add Reminders menu.

Picture 2. Google Sheets View



The next step is to set a reminder for 90 days before the expiry date of the Diagnostic And/or Interventional Radiology Permit for Computed Tomography Scan (CT Scan) and write a note in the form of an appeal to FKRTL to immediately renew the permit.

Picture 3. Setting reminder menu display



In the Observing Stage, confirmation was made to the person in charge of the CT Scan license of FKRTLs who received email reminders. 3 FKRTLs get email reminders automatically, namely FKRTLs whose NUCLEAR ENERGY REGULATORY AGENCY CT Scan license expiry date falls within the range of less than 90 days. The 3 FKRTLs are Siloam Jember Hospital, Balung District Hospital, and Citra Husada Jember Hospital.

Picture 4. Display of email reminders received by FKRTL



In the Reflecting stage, researchers evaluated by validating FKRTL's response to innovation using a survey through a questionnaire with the TERRA dimension. The questionnaire used a Likert scale, for quantitative analysis purposes, the answers to the questionnaire were given a score of 1 to 5, from strongly disagree to strongly agree.

DISCUSSION

Respondent Characteristics

Respondents in this response validation have several characteristics consisting of age, gender, and education. These characteristics are described in the table below.

Table 3. Respondent Demographic Data

| | | Gender | | | |
|-------|----------|-----------|---------|---------------|--------------------|
| | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | Woman | 3 | 100.0 | 100.0 | 100.0 |
| | | Age | | | |
| | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | 26-35 Th | 2 | 66.7 | 66.7 | 66.7 |
| | 36-45 Th | 1 | 33.3 | 33.3 | 100.0 |
| | Total | 3 | 100.0 | 100.0 | |

Based on Table 3, it can be seen that in terms of gender demographics, all respondents are female, namely 3 people (100%). Based on age grouping, it was found that respondents in the 26-35 year group were 66.7% and the 36-45 year age range was 33.3%.

Table 4. Demographics of the respondent FKRTLs

| | Frequency | Percent | Valid Percent | Cumulative Percent |
|------------------------------------|-----------|---------|---------------|--------------------|
| Valid Citra Husada Hospital Jember | 1 | 33.3 | 33.3 | 33.3 |
| RS Siloam Jember | 1 | 33.3 | 33.3 | 66.7 |
| RSD Balung Jember | 1 | 33.3 | 33.3 | 100.0 |
| Total | 3 | 100.0 | 100.0 | |

Based on the demographics of the respondent FKRTLs, 3 FKRTLs completed the survey, namely Citra Husada Jember Hospital (33.3%), Siloam Jember Hospital (33.3%), and Balung District Hospital (33.3%).

Scoring Categories

Calculating the score categorization with the ideal mean (Mi) and ideal standard deviation (SDi) previously calculated the ideal maximum value and ideal minimum value. The ideal maximum value is the number of statements multiplied by the maximum score of 5 and the ideal minimum value is the number of statements multiplied by the minimum score of 1.

The score categorization table was determined with three categories, namely high, medium, and low. The determination is made by calculating the ideal Mean (Mi) and ideal Standard Deviation (SDi) using the formula:

$$= 1/2 (maksimal\ ideal + minimal\ ideal)$$

$$SDi = 1/6 (maksimal\ ideal - minimal\ ideal)$$

Categorizing the scores of the three categories using the Mean Hypothetic, thus using the following criteria:

Table 5. Categorizing the scores

| Score Category | Description |
|--|-------------|
| $X > (Mi + 1.5SDi)$ | Good |
| $(Mi - 1.5SDi) < X \leq (Mi + 1.5SDi)$ | Enough |
| $X \leq (Mi - 1.5SDi)$ | Low |

After analyzing the data, based on the results of the questionnaire filled in by the respondents, the calculations for the categorical norms were obtained as follows:

Table 6. Calculation for Categorisation Norms

| | Max Shoes | My Shoes | Mean | SD | MI-1.5SD | MI+1.5SD |
|-----------------|-----------|----------|------|----|----------|----------|
| Service Quality | 40 | 8 | 16 | 8 | 4 | 28 |
| Reliability | 10 | 2 | 4 | 2 | 1 | 7 |
| Responsiveness | 5 | 1 | 2 | 1 | 0.5 | 3.5 |
| Assurance | 5 | 1 | 2 | 1 | 0.5 | 3.5 |
| Empathy | 10 | 2 | 4 | 2 | 1 | 7 |
| Tangible | 10 | 2 | 4 | 2 | 1 | 7 |

Validation of Response to Innovation

Service Quality

Data was obtained from 3 respondents with an instrument in the form of a closed questionnaire. There are 8 statements for all components in validating responses to the Service Quality dimension innovation with the lowest score of 1, and the highest score of 5. The data obtained from the table of results of the service quality dimension questionnaire, obtained an average (mean) of 38.67 then the median of 39, standard deviation of 1.528. The lowest score is 37 and the highest score is 40.

Table 7. Frequency distribution of Service Quality

| Report | | | | | |
|------------------------|---------|---------|-------|--------|----------------|
| Service Quality | | | | | |
| N | Minimum | Maximum | Mean | Median | Std. Deviation |
| 3 | 37 | 40 | 38.67 | 39.00 | 1.528 |

| Service Quality | | | | |
|------------------------|-----------|---------|---------------|--------------------|
| | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | 37 | 1 | 33.3 | 33.3 |
| | 39 | 1 | 33.3 | 66.7 |
| | 40 | 1 | 33.3 | 100.0 |
| | Total | 3 | 100.0 | 100.0 |

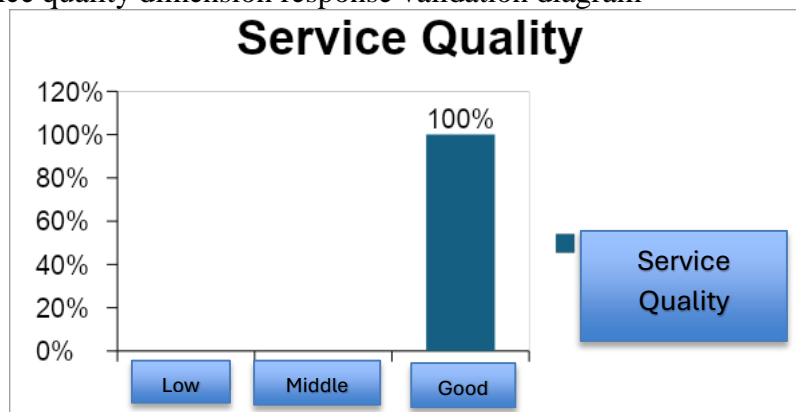
The next step is to calculate the score categorization with the ideal mean (Mi) and ideal standard deviation (SDi) which previously calculated the ideal maximum value and ideal minimum value and obtained the results as shown in the following table.

Table 8. Score Category of Service Quality dimension

| Score Category | Total | Percentage | Description |
|-----------------|-------|------------|-------------|
| $X > 28$ | 3 | 100% | Good |
| $4 < X \leq 28$ | 0 | 0% | Enough |
| $X \leq 4$ | 0 | 0% | Low |

| Service Quality | | | | |
|------------------------|-----------|---------|---------------|--------------------|
| | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | Good | 3 | 100.0 | 100.0 |

Picture 5. Service quality dimension response validation diagram



Based on the data analysis, overall, validation of responses to innovation from service quality shows that 100% of respondents gave a good response. This means that the quality of this reminder innovation from the service quality dimension is well received.

CONCLUSION

The overall service quality dimension response validation results have a good category of 100%, while the results of each service quality indicator are as follows:

1. Service quality in terms of physical evidence (tangibles) has a good category of 100%.
2. Service quality in terms of attention (empathy) has a good category of 100%.
3. Service quality in terms of responsiveness has a good category of 100%.
4. Service quality as seen from reliability has a good category of 100%.
5. Service quality in terms of assurance has a good category of 100%.

Based on the conclusion of the response validation above, it means that the Innovation of Reminder of the Validity Period of Diagnostic Radiology Permits and/or Interventional Computed Tomography Scan (CT Scan) for Advanced Referral Health Facilities of BPJS Health Jember Branch Partners can be well received by all respondents and can be recommended to be implemented as an alternative solution to reminder of the validity period of licensing for BPJS Health Jember Branch.

REFERENCES

- Arikunto, Suharsimi. 2013. *Research Procedures, a Practical Approach*. Jakarta: Rineka Cipta.
- Aziz, Azwar. 2012. *Utilization of Information Technology in Postal Business Development*. Research and Development Center for Post and Informatics Resources and Equipment. Jakarta.
- BAPETEN. 2010. Regulation of the Head of the Nuclear Energy Supervisory Agency Number 6 of 2010 concerning Health Monitoring for Radiation Workers. Nuclear Energy Regulatory Agency. Jakarta.
- BAPETEN. 2011. Regulation of the Head of the Nuclear Energy Supervisory Agency Number 8 of 2011 concerning Radiation Safety in the Use of Diagnostic and Interventional Radiology X-ray Aircraft. Jakarta: Nuclear Energy Regulatory Agency.
- BAPETEN. 2011. Regulation of the Head of the Nuclear Energy Supervisory Agency Number 9 of 2011 concerning Conformity Tests for Diagnostic and Interventional Radiology X-ray Aircraft. Nuclear Energy Regulatory Agency, Jakarta.
- BAPETEN. 2013. Regulation of the Head of the Nuclear Energy Supervisory Agency Number 4 of 2013 concerning Radiation Protection and Safety in the Use of Nuclear Energy. Nuclear Energy Regulatory Agency. Jakarta.
- BAPETEN. 2018. Regulation of the Head of the Nuclear Energy Supervisory Agency Number 2 of 2018 concerning Conformity Tests for Diagnostic and Interventional Radiology X-ray Aircraft. Nuclear Energy Regulatory Agency. Jakarta.
- BAPETEN. 2022. Regulation of the Nuclear Energy Supervisory Agency Number 1 of 2022 concerning Management of Risk-Based Business Licensing in the Nuclear Energy Sector. Nuclear Energy Regulatory Agency. Jakarta.
- Bontrager, Kenneth L. 2001. *Textbook of radiographic positioning and related anatomy*. Missouri USA: Mosby, Inc.
- Endang Mulyatiningsih. 2012. *Applied Research Methods in the Field of Education*. Bandung: Alfabeta.

- Ginardi, 2020. The Effect of Implementing the Health Facilities Information System (Hfis) on the Business Process of the Bunga Melati Clinic, Welirang Branch. Department of Technology Management, Faculty of Creative Design and Digital Business, Sepuluh Nopember Institute of Technology. Surabaya.
- ICRP. 2007. Managing patient dose in multi-detector computed tomography In Annals of the ICRP (Vol. 102). ICRP.
- Irnawati. 2018. Radiation Dose Study on Computer Tomography Dose Index (CTDI) at Bhayangkara Hospital Makassar. UIN Makassar.
- Indonesia, Presidential Regulation 2018. Presidential Regulation of the Republic of Indonesia Number 82 of 2018 concerning Health Insurance, Jakarta.
- Indonesia, Ministerial Regulation 2014. Regulation of the Minister of Health of the Republic of Indonesia Number 28 of 2014 concerning Guidelines for Implementing the National Health Insurance Program, Jakarta.
- Meyer, Julien. 2000. Qualitative research in health care Using qualitative methods in health-related action research. City University, St Bartholomew School of Nursing and Midwifery, London E1 2EA. *BMJ* 2000;320:178–81.
- Nugroho, et al. 2021. Action Research as an Approach to Improving the Quality of Health Programs. *Global Health Science*. Volume 6 Number 2, June 2021.
- Parasuraman, A. Valerie. 2001. (Translated by Sutanto) *Delivering Quality Service*. The Free Press, New York.
- Son, Randi. 2015. Design and development of an Android-based lecture schedule and assignment reminder application. Amikom College of Information and Computer Management. Yogyakarta.