

EXPLORING FACTORS MILITATING AGAINST THE USE OF ICT IN MEDICAL IMAGING DEPARTMENT IN PRIMARY HEALTH CARE SERVICES IN RIVERS STATE, NIGERIA

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Abstract: This research is aimed at exploring the factors that militate against the use of ICT in Medical Imaging Department in the Primary Health Care Service. Obio/Akpor Local Government Area located in Rivers State was used as the study area with a target population of 50 medical staffs available in the various Health Care Centers. This research is introduced with the aims and objectives clearly stated which involves determining the importance of the use of ICT and its effectiveness in the medical imaging department. Data was collected through the distribution of questionnaires whereby 65 questionnaires were issued but 50 were retrieved of which data analysis were made on.

Data presentation was based on the use of tables and percentage which discussion was made based on the outcome of the tables. The findings were discussed according to the previous study of other researchers as stated in the literature review. The study was carried out and factors which happen to limit the use of ICT in imaging department was discovered to be: poor ICT knowledge, poor electricity supply and the use of obsolete machines with several other factors.

Keywords: Primary Health Care Service, poor ICT knowledge, Medical Imaging Department.

1. INTRODUCTION

1.1 BACKGROUND OF THE STUDY

Medical imaging technology has revolutionized health care over the past 30 years, allowing doctors to find disease earlier and improve patient outcome. Information and communication technology is an indispensable tool in the performance of office technology managers.

Computer Aided Detection and Diagnosis, known as *CAD*, is a fundamental tool for assisting radiologists in the image interpretation task. Since the 1980s, its popularity has grown, and it has become an important area of research in

Computer Science, generating a great amount of published papers and many software systems. A wide variety of computer algorithms, such as image processing techniques, classification system and artificial intelligence approaches, such as Artificial Neural Networks (ANNs) have been used in this field. CAD applications extended to an increasing number of image modalities, as for example conventional X-ray ultrasound computer tomography (CT), mammography, magnetic resonance imaging (MRI), and position emission tomography (PET) and to a great number of diseases, such as lung cancer, breast cancer, colon cancer, Alzheimer's disease, spine cancer, aneurysm, interstitial lung diseases.

However, today's office technology manager's can process evaluate, manage and communicate all forms of information using technological devices. Information and Communication Technology is viewed as the process of processing, storing and disseminating information while office technology managers are trained professionals who can effectively operate modern office machines, perform administrative duties and attend meeting to take down minutes of meeting, which also stress the factors militating against the use of ICT in medical imaging.

1.2 STATEMENT OF PROBLEM

The medical imaging technology department is facing challenges to cope with the high disease burden against the backdrop of shortage of Medical Imaging professionals, equipments and infrastructure including ICTs.

1.3 PURPOSE/OBJECTIVES OF THE STUDY

1. To know the effectiveness of the use of ICT in Medical imaging technology department.
2. To determine the factors militating against the use of ICT in medical imaging department.
3. To determine the importance of the use of ICT in medical imaging department.

1.4 SCOPE OF STUDY

This research work is limited to the medical imaging department of the primary health centers in Obio-Akpor local government area of Rivers State.

1.5 RESEARCH QUESTIONS

What are the effectiveness of the use of ICT in Medical imaging Technology department?

What are the factors militating against the use of ICTs in Medical imaging Department?

What is the importance of the use of ICT in medical imaging department?

1.6 SIGNIFICANCE OF THE STUDY

- It is very important in our daily lives. The lack of appropriate information at the right time will result in low productivity, low quality research works, and waste of time to pursue information and even to do research which actually others had done or in other counties. Nowadays ICT cannot be separated with our daily needs.
- ICT has a great impact in our daily lives. For example, we can read our local newspaper using our online newspaper. Another example is that we still can get connected with our family, relatives, or colleagues even if we are abroad by using the electronic mail, yahoo messenger, call conference, or video conference.
- Digital computer and networking has changed our economic concept to the economy with no boundary in time and space because of ICT. It brings a lot of advantages for economic development enabling millions of transactions to happen in an easy and fast way.

1.7 DEFINITION OF TERMS

ICT: ICT (Information and Communication Technology – or technologies) is an umbrella term that includes any communication device or application, encompassing, radio, television, cellular phones, computer and network hardware and software, satellite systems and so on, as well as the various services and applications.

Medical Imaging: Medical Imaging is the technique and process of creating visual representations of the interior of body for clinical analysis and medical intervention used to create images of various parts of the human body for diagnostic and treatment purposes within digital health.

The term medical imaging includes various radiological imaging techniques such as:

- X-ray radiography
- Fluoroscopy
- Magnetic Resonance imaging (MRI)
- Medical ultrasonography or ultrasound
- Endoscopy
- Elastography
- Tactile imaging
- Tomography
- Medical photography and nuclear medicine functional imaging techniques e.g. positron emission tomography (PET)

Factors inhibiting the growth of medical imaging include the:

- Market saturation in many segments

Important applications for medical imaging techniques include the use of:

- **Projectional radiographs** – to identify bone fractures, pathological changes in lungs and to diagnose certain types of cancer.
- **Fluoroscopy** – to produce real-time images of various internal parts and structures of the human body.
- **MRI Scanning** – to produce two-dimensional images of the body and brain.
- **Scintigraphy** – to capture two-dimensional images from the radiation emitted by injected radioisotopes to detect regions of biological activity that may be associated with disease.
- **Positron Emission Tomography (PET)** – to diagnose or treat various pathologies by using certain properties of isotopes and the energetic particles emitted from radioactive material
- **Medical ultrasonography** – to produce images of a foetus, abdominal organs, heart, breast, muscles, tendons, arteries and veins for diagnosis purposes.
- **Elastography** – to map the elastic properties of soft tissue in the body.
- **Tactile imaging** – to produce images of the prostate, breast, vagina, pelvic floor support structures, and myofascial trigger points in muscles through the transformation of the sense of touch into digital images.
- **Photoacoustic imaging** – to provide in vivo tumour angiogenesis monitoring, blood oxygenation mapping, functional brain imaging, and skin melanoma detection.
- **Thermography techniques** – to detect breast tumours through applications such as tele-thermography, contact thermography and dynamic angiothermography.
- **Tomography techniques** – to produce images of the structures of thin sections of the body (CT, PET scanning).
- **Echocardiography** – to see detailed structures of the heart, including chamber size, heart function, the valves of the heart and the pericardium.

FACTORS MILITATING AGAINST THE USE OF ICT IN MEDICAL IMAGING

➤ **Availability of Funds on Adoption of ICT**

According to Oliver (2002) cost refers to an amount paid or to be paid for a purchase to acquire, produce, or maintain goods or services. Adoption according to this study refers to the application of ICT in hospitals.

The cost of ICT training materials is considered to be among the problems that could negatively affect the implementation of ICT in most health facilities. The higher the cost of computers and their accessories, the fewer computers one can buy with the limited resources.

➤ **Training and Adoption of ICT**

Technological innovation has implications for employees of various institutions. Typically, health institutions are lacking in specialized information system and technical skills.

Thong (1999), suggested that the higher is capabilities the staff have, the higher their potential in the use of information systems, and thus the higher percentage of adopting IT. The lack of knowledge on how to use technology and low computer literacy are factors that affect the adoption of ICT.

➤ **Influence of Infrastructure on the Adoption of ICT**

Despite the immense benefits of ICT's as a means of delivering quality health care services, the potential of ICT's have not been fully harnessed by health professionals especially in developing countries.

➤ **ICT staff attitude and adoption of ICT**

In the era of globalization and information age, healthcare industries are intensely promoting and adopting ICT to improve patient care. When more and more patients as health consumers seek and prioritize quality in their lives through enhanced healthcare treatments and services, it places great demands on the healthcare industry's information-handling abilities and infrastructure (Apulu & Latham, 2009). Reliable information and effective communication are crucial elements in public health practice.

2. LITERATURE REVIEW

There is an overwhelming awareness that there are great potentials in the availability and use of information and communication technologies. The use of ICT promotes development and improves services in any organization. It brings changes in today's hospital environment. In Health centers, it speeds up information delivery, facilitates teaching, learning and research. In spite of the above observation about the potentials, and benefits of using ICT, the level of awareness and use in Nigeria appears to be very minimal. Organizational, environmental and cultural factors stand against the good and perceived will of the use of ICTs. Omolayole (2002) points out three strong reasons that stand against the effective use of ICTs in Nigerian Health centers. Each of the factors she has mentioned has a resultant effect on availability and use of ICT. The factors are: low level of computer culture: poor telecommunications infrastructure; and general lack of awareness. Another constraint that affects the use of ICTs in Nigerian Health center is low level of computer culture. When health workers are not computer literate, utilizing the facility would be a problem. In other words, having a good background in computer skill makes the use of computers in work places very practicable. Lack of awareness on the other hand makes availability impossible. Health workers must be aware of the advantages of using ICTs in hospital and Health sector. Training workers on the use of computers and other related technologies for services in any organization is very important. A well trained health worker can perform effectively and efficiently in his/her work place than he/she who is not trained at all.

Chisenga (2004) surveyed the use of ICTs in public health center in ten (10) Anglophone African countries. The study revealed that all health centers pointed out lack/inadequate ICT personnel and lack of fund. The most interesting aspect of the findings is that primary health center in South Africa express lack of burglaries to protect computers from being stolen whereas findings from two Nigerian health center reveal erratic power supply as one of the barriers for ICT use. Out of the ten countries studied, only Nigeria has a very unique problem (power supply).

Okiy (2005) points out poor and inadequate telecommunication facilities; poor level of computer literacy, even within the academic community; poor level of computer facilities; poor level of awareness of Internet facilities among policy makers, government officials and the ruling class in general; and minimum involvement of health institutions in network building in Africa as challenges militating against the use of ICTs.

The production of quality health-care delivery in imaging is guided by the level of ICT infrastructure possessed and used by the imaging departments.

Gates (1990) reported that intra and inter organizational networks in some advanced countries function like a digital neural system of the organization. Thus, he said, communication for health purposes has shifted from the largely manual or physical documentary methods to digital communication.

In the medical field, Gates reported, American doctors in other parts of the world through the use of ICTs. For example, while examining a patient, a medical doctor might be able to send an electronic x-ray of a patient to a leading expert in another country who could readily interpret and provide more details of the disease or condition as well as send feedback to the medical doctor all within a few minutes.

Eres (1987) observed that amongst such factors that militate against the use of ICT in developing countries are the cost factor, problems of foreign exchange required for the purchase of computers, lack of library and information standards, inadequate and unreliable telephone network systems, shortage of manpower, low prestige of information professions, difficulty in recruiting specialist and lack of continuing education. These views were correlated by many writers.

Womboh (2008) pointed out the harsh economic condition of and government apathy to health services in Nigeria. Due to the same reason, he noted that the content and quality of services of most Nigeria University Libraries have deteriorated to such a level that the quality of the products of such universities has also been adversely affected.

Igbeka (2002) noticed that the problem encountered by Kenneth Dike Library Ibadan during retrospective convention includes problems with the systems after the consultants had downloaded their records. To recall or retrieve the records downloaded was usually difficult. Electricity failure was another problem.

Oketunji (2000) identified some factors militating against the use of ICT in Nigeria Universities which includes access to adequate and reliable electricity, which services are usually restricted to urban centers while most of our universities are usually situated in the rural areas.

Aind (2004) identified the negative attitude towards lecture by students as a factor militating against the development and use of ICT in universities. Aind, while admitting the high cost of ICT training opined that, library staffs and student users should do something on them to improve their IT skills.

Similarly, Kamba (2008) discovered the problem of IT especially internet use in Nigeria libraries to include inadequate and poor information infrastructure.

That the country Nigeria lies within the tropics where dust, humidity and heat reign supreme. The problems of environmental control are compounded by the unreliable electricity supply which makes it difficult to maintain a conducive computer environment.

The available number of information technology engineers to service and maintain information technology hardware and software are insufficient.

On the management factor, Agaja (1997) posits that, Librarians should be skillful in the complex art of managing human and material resources, information packaging library, repositioning, strategic planning, budgeting and effective allocation of funds among competing needs. It behooves an individual librarian and indeed the University libraries to upgrade perspective technical and human relations skills in order to remain relevant and attractive to patrons of academic Librarians especially student users. Hostile and uncooperative approach is repulsive to student users while lack of dexterity on the part of library management will spell doom for library operation. Efficient management ensures that the best hands are employed and sustained especially in the critical areas of information technology.

Oyesika and Oduwale (2004) in their study of the use of academic libraries discovered that majority of the users (students) do not have the requisite skills and as such shy away from the use of IT. Lack of user education and time for practical work on the user of information technology was among the problem of students. They advocated that credit unit should be allocated to IT courses.

Idowu et al. (2003) reported that while ICT capabilities (personal computers, mobile phones internet) were available in Nigeria teaching hospitals, mobile phones were spreading fastest. Their findings also revealed that computers and mobile phones were in use in all the teaching hospitals but not much internet connectivity was available, meaning that most of the medical experts used external (non-hospital) internet services such as cyber cafes, for even rudimentary internet access such as e-mail. They further explained that while 1.4% of medical staff did not use the internet in any fashion, the vast majority (70.7%) of those using the internet did so only for e-mail purposes. In addition, Adeyemi and Ayegoyin (2004), in survey involving four general hospitals, ten primary healthcare centers and six private hospitals in Nigeria reported that more of the institutions had e-mail access or website, only 5% of the workers possessed personal computers only 7% of the health-care workers were computer literate, only 2% had any measurable computer skills and just 65% has access to a

mobile phone but not necessarily their own. This was in spite of the fact that, the state of Lagos has the largest concentration of internet service providers, telecom operations and cyber cafes, intended to create a reasonable platform for ICT use.

The Tucker and Chetty (2004) case study series on ICT-enabled development initiatives illustrated the possible benefits when health workers use ICTs successfully to overcome development obstacles and thus narrowing the digital divide gap. In their study a wireless, Local Area Network (LAN) was set up in 1999 to connect the hospital in Sulenkama in Cape Town with a clinic local school, community center and Police station in Tsilitwa and Africa. The LAN used wireless Fidelity (WiFi) signals with a booster between Tsilitwa, South Sulenkama since Sulenkama lies in a slight valley. The clinic and hospital used the system in a telehealth project pioneered by researchers at the University of Cape Town. The system worked in such a way that a nurse in Tsilitwa focused a web camera on a patient and picture was displayed on a computer in Sulenkama. In Sulenkama a doctor opened up his computer that had been configured to load a web page associated with the IP address of the Web camera that was focused on the patient in Tsilitwa and access the image.

Simultaneously, the nurse, doctor and patient could speak to one another using a voice over Internet Protocol (VoIP) program on the LAN. Advice was given to the nurse regarding treatment and referral to a specialist elsewhere, thus, improving care while saving time and money.

3. RESEARCH METHODOLOGY

The research methodology used for this study include

3.1 RESEARCH DESIGN

This is a descriptive study that was done using the qualitative research methodology to explore and describe the factors that unite the utilization of ICT in Medical Imaging Department in the Primary Health Care Services.

The use of qualitative research methodology is to make room for flexibility and in depth questioning of the reasons, experience and barriers towards the use of ICT among patient and medical imaging staff during the delivery of health care.

3.2 STUDY AREA

This study was carried out in the Primary health centers situated within Obio/Akpor Local Government Area. Obio/Akpor is a local government area in the metropolis of Port Harcourt. It is one of the major centers for economic activities and one of the major cities in Niger Delta located in Rivers State, Nigeria.

The local government area covers 260km² and held a population of 464,789 in the 2006 census. Obio/Akpor has its headquarters at Rumuodomaya. The original indigenous occupants of the area are the Ikwerre people. Obio/Akpor is bounded by Port Harcourt to the South, Oyibo to east, Ikwerre to the north and Emohua to the west. It is located between latitudes 4⁰45'N and 4⁰60'N and longitude 6⁰50'E and 3⁰00'E.

3.3 POPULATION OF STUDY

The target population are men and women working in the medical imaging department (staffs) and also includes the patients at the health center. The target population is 30 medical imaging staffs in the Primary Health Centre in Rumuigbo, Rumuokwuta and Rivers State College of Health Science and Technology Demonstration Clinic all located in Obio-Akpor Local Government Area. Medical imaging staffs provided information on the staffs related factors such as access to technology and digital device while medical staffs provided information on institutional factors and policies in addition to technology and digital device.

3.4 INSTRUMENT FOR DATA COLLECTION

The technique of data collection was through the issuing of questionnaires to the target population. All questions asked on the questionnaires was conducted in English and some was translated into Ikwerre language in order to assess the barriers influencing the utilization of ICT among patients and medical imaging staffs.

3.5 METHOD OF DATA PRESENTATION

The method that was used to analyze the collected data was a descriptive statistics of frequency tables and percentages.

4. PRESENTATION OF DATA

This chapter attempts to analyse and present the result obtained from the data collected.

The simple percentage calculation was used in analyzing the research questions.

4.1 RESEARCH QUESTION

Table 4.1: Staff of Medical Imaging Department.

Variables	Frequency	Percentages
Yes	30	60%
No	20	40%
Total	50	100%

The above table shows that out of 50 respondents of the population 30(60%) of the respondents are medical imaging staff while 20(40%) of the respondents are not medical imaging staff.

Table 4.2: Do you have knowledge of ICT?.

Variables	Frequency	Percentages
Yes	38	76%
No	12	24%
Total	50	100%

The above table specified that 38(76%) of the medical imaging staff have the knowledge of ICT, while 12(24%) of the medical imaging staff does not have the knowledge of ICT.

Table 4.3: Do you have ICT in your facility?.

Variables	Frequency	Percentages
Yes	14	28%
No	36	72%
Total	50	100%

The table above specified that 14(28%) of the medical imaging staff have ICT, while 36(72%) of the medical imaging staff does not have ICT in their facility.

Table 4.4: Is the availability of computer necessary in Imaging Diagnostic Center?

Variables	Frequency	Percentages
Yes	45	90%
No	5	10%
Total	50	100%

The table above shows that 45(90%) of the respondents indicate that the availability of computer is necessary in medical diagnostic center while 5(10%) indicate that the availability of computer is not necessary.

Table 4.5: The use of computer help in large processing of images and quick access to it through networking.

Variables	Frequency	Percentages
Yes	35	70%
No	15	30%
Total	50	100%

The table above shows that 35(70%) of the respondents indicate that the uses of computer has help in large processing of images and quick access to it through networking while 15(30%) of the respondents indicate that the uses of computer has not helped in large processing of images and quick access to it through networking.

Table 4.6: Has computer help in proper selection of exposure factor?

Variables	Frequency	Percentages
Yes	31	62%
No	19	38%
Total	50	100%

Table 4.6 shows that 31(62%) of the respondents indicates that computer has help in proper selection of exposure factor while 19(38%) of the respondents indicates that computer has not help in proper selection of exposure factor.

Table 4.7: Has computer provided accuracy and consistency of diagnosis in Medical Imaging?

Variables	Frequency	Percentages
Yes	42	84%
No	8	16%
Total	50	100%

Table 4.7 shows that 42(84%) of the respondents indicates that computer has provided accuracy and consistency of diagnosis in Medical Imaging while 8(16%) of the respondents indicates that computer has not provided accuracy and consistency of diagnosis in Medical Imaging.

Table 4.8: Are the computer systems in the facilities functional?

Variables	Frequency	Percentages
Yes	37	74%
No	13	26%
Total	50	100%

Table 4.8 shows that 37(74%) of the respondents indicates that computer systems in their facilities are functional while 13(26%) of the respondents indicates that computer systems in their facilities are not functional.

Table 4.9: If yes, what category do they fall into?

Variables	Frequency	Percentages
Obsolete/old model	32	64%
New model	18	36%
Total	50	100%

Table 4.9 shows that 32(64%) fall into the category of old model while 18(36%) fall into new model.

Variables	Frequency	Percentages
Lack of finance	25	50%
Lack technically skilled staff	15	30%
Both	10	20%
Total	50	100%

Table 4.9.1 shows that 25(50%) falls into the category of lack of finance while 15(30%) falls into the category of lack of technically skill staff while 10(20%) falls into the category of lack of finance and lack of technically skill staff.

Table 4.10: Do you have adequate electricity to power the computers?

Variables	Frequency	Percentages
Yes	47	94%
No	3	6%
Total	50	100%

Table 4.10 shows that 47(94%) of the respondents have adequate electricity to power the computers while 3(6%) of the respondents do not have adequate electricity to power their computers.

Table 4.11: Do you have adequate security in the facility?

Variables	Frequency	Percentages
Yes	10	20%
No	40	80%
Total	50	100%

Table 4.11 shows that 10(20%) of the respondents have adequate security while 40(80%) of the respondents do not have adequate security.

Table 4.12: Do you think as a Medical Staff in the Health Centre, does the hospital management lack initiative towards the implementation of modern ICT facilities?

Variables	Frequency	Percentages
Yes	35	70%
No	15	30%
Total	50	100%

From table 4.12 the respondent 35(70%) thinks that the hospital management lack initiative towards the implementation of modern ICT facilities while 15(30%) of the respondents thinks that the hospital management does not lack initiative towards the implementation of modern ICT facilities.

5. DISCUSSION OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Discussion of Findings

This chapter discuss the findings of the study, concludes the study and the recommendation.

Discussion of the work will be based on objectives of the study discussed on the following findings.

5.1.1 Effectiveness of the use of ICT in Medical Imaging Department (MID):

The study shows that the effectiveness on the utilization of ICT in the various health care centers located in the target area in terms of the use of computer in processing of images and the quick access to internet is high revealing a frequency of 35(70%). Idowu et al, (2003) discovered in their research that the use of ICT in all teaching hospitals in Lagos as at that period was not effectively used due to the absence of internet connection. They further explained that 1.4% of medical staffs did not use the internet for medical activities, the vast majority (70.7%) did so only for e-mail purposes in contradiction to our findings where more of medical imaging staffs use computer as a major tool in their field of experience.

5.1.2 Factors militating against the use of ICT in medical Imaging department

A major factor that has limited use of ICT among medical imaging staffs is the lack of knowledge of ICT. These are based on the reasons according to Aino (2004) who identified that there was negative attitude towards lectures on ICT by the students. In addition, Kamba (2008) also stated in his research that the lack of knowledge of ICT libraries includes the inadequate and poor formation infrastructure.

According to this research, it was discovered that most of the medical imaging staffs with a frequency of 38(76%) had ICT knowledge while just very few with a frequency of 12(24%) lack ICT knowledge. This study is opposing the research carried out by Aino (2004) and Kamba (2008) who discovered that their respondents had poor knowledge on ICT.

Other factors which militate against the use of ICT in medical imaging department were observed to be poor electrical power supply having a frequency of 47(94%), inadequate security resources and man power with the frequency of 40(80%) and lastly obsolete and old model computers/machine.

In concordance to these factors, other researchers stated some factors militating against the use of ICT in the various field; Eres (1997), observed that amongst such factors that militate against the use of ICT in developing countries are the cost factor, problems of low purchase computer, lack of libraries and information standard, shortage of man power and so on.

Oketunji (2000) identified some factors such as inadequate and reliable electricity.

5.1.3 Importance of the use of ICT in Medical Imaging department

Based on this study ICT has added in the proper selection of exposure factors in medical imaging department having a frequency of 31(62%) in the health care centre.

Another importance of ICT is the introduction of accurate and consistent diagnosis in medical imaging department with a very high frequency of 42(84%) in the various health care centers in the target area.

According to Tucher and Chatty (2004) also stated the importance of the use of ICT in the effective diagnosis and management of patients in the sense that results be sent to a specialist in another country through the use of telecommunication. This is in agreement to this research work that ICT is very important in the proper diagnosis of diseases and management of patient in the medical imaging field.

6. RECOMMENDATION

That the government should increase the ICT budget to address adopt ICT challenges in medical imaging department as the survey found that high cost of funding ICT programmes is immensely influencing ICT adoption. Adequate ICT budget should be provided to empower the operations of ministry of information and communication as well as the ministry of health with a focus of bringing down the cost of ICT adoption.

Adoption of internet connectivity in the medical imaging department to empower resource sharing among the hospitals.

Public hospitals management should train their medical imaging professionals on the information systems prior to the ICT adoption. This will ensure that the staff will easily understand the functionality of information systems and will also serve to reduce resistance to information systems.

7. CONCLUSION

Information communication technology has been very helpful to the medical imaging technology. One example of a significant advancement that ICT has provided to computed tomography is a variation on the more conventional x-ray type of medical imaging, although the latter isn't used to much as the former for cross sectional diagnosis and therapy. The radiations emitted in this kind of medical imaging are also strong enough to damage DNA. Hence, this kind of radiation used to be that the contrast agents and for a better imaging could be harmful to the body. However, studies shows that there are some factors such as availability of Funds on Adoption of ICT. Training and Adoption of ICT, Influence of Infrastructure on the Adoption of ICT militate against the use of ICT in medical imaging department, hence government should increase the ICT budget to address adoption challenges and adoption of internet connectivity in the medical imaging department to enhance work effectiveness and efficiency in the department.

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