Preservation of Medical information in Healthcare facilities in Delta State, Nigeria: a Survey

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Abstract

This study surveyed healthcare facilities in Delta State, Nigeria in order to discover the major threats to medical records, to examine the strategies and methods of preserving medical information , and to examine the challenges militating against effective preservation of medical records in Delta State. The concepts of medical records and preservation of records were reviewed in literature. The survey method was used for the study. Medical staff members who are involved in handling health records in selected health facilities in Delta State were the target for this study. The questionnaire was the instrument used for data collection. The instrument was administered on respondents by hand, social media and e-mail. 300 questionnaires were administered on healthcare officials in 150 healthcare facilities in Delta State. Two questionnaires were administered on two officials of each facility. The healthcare facilities surveyed include public and private hospitals 84, Dental and Eye Clinics 15, Pharmacies 21, and Medical laboratory test centers 30. Thus, a total of 150 health facilities. A total of 280 questionnaires were completed and returned. This implies 93.3% return rate. Data was analyzed using graphical charts. The result indicate that the major threats to medical records in healthcare facilities include Rodents and pests 70%, Tampering 78%, Physical damage 89%, Lack of skilled staff 90%, Dust 90%, Wear and tear 90%, Misplacement 76%, Poor power supply 80%, Lack of ICT deployment 67%. Additional results indicate the strategies and methods of preserving medical records in healthcare facilities to include adherence to Records Preservation strategies 55%, shelving of records 66%, using Cabinets and drawers to store records 78%, use of air conditioners to control temperature 55%, providing alternative source of power supply 52%, and installation of CCTV Security system 50%. More results revealed the challenges militating against effective preservation of medical records to include nonchalant attitude towards

preservation 90%, Poor funding of healthcare facility 86%, Lack of records storage space 86%, Lack of modern records storage equipment 92%, Lack of skilled manpower 78%, Lack of records management and preservation policy 90%, Excessive heat 94%, Harsh climatic conditions 88%, Pests and rodents attack 67%, Lack of ICT deployment 82%, Lack of temperature and humidity control equipment 68%, Insecurity 95%, and Erratic power supply 88%. it was consequently recommended that libraries/archives should be established in all healthcare facilities in Delta State, while librarians or archivist should be responsible for managing medical records. Also, healthcare facilities should deploy electronic health record system, while regulators of health facilities should create a comprehensive policy and regulations that guide the management and preservation of medical records.

Keywords: Delta State, Healthcare, Libraries, Medical Records, Preservation, Nigeria.

Introduction

Non availability of potentially life-saving health information is a significant risk that damaged or lost medical records could present. A lack of management with regard to preservation of medical information can also pose a legal threat. The onus of preservation generally, is concerned with keeping something the same way it is or preventing it from being damaged. In library and information profession, it implies the protection of information bearing materials through activities that bring to the barest minimum deterioration agents (such as biological, environmental, chemical and physical), thereby prolonging their existence. Preservation involves routine maintenance activities such as proper handling of records to prevent environmental hazards or physical damages, the use of physical and chemical treatments which will not adversely affect the integrity of the original records in order to resist further deterioration, and the repair of already damaged records to ensure that their contents are not lost (Anyira et. al., 2010). According to Alayeh (2019), methods of preserving medical records include cleaning of records, careful handling, use of effective storage media, photocopying, using air filter systems to control air pollution, sun shield, use of energy saving light, air-conditioners for controlling temperature and relative humidity, using papers with low acidity, fumigation against insects and rodents attack, fire extinguishers and sand buckets, microfilming of records, ensuring adequate security of records to prevent unauthorized access to records.

Medical records are very important documents in patient management. They explain the details about each patient's history, clinical findings, diagnostic test results, pre and postoperative care, patient's progress and medical history and care over a period of time within one health care institution (Bali, et. al., 2011). Medical information comprises of a variety of notes entered over time by health care professionals, recording observations and administration of drugs and therapies, test results, x-rays, reports, mediations and medical allergies, immunization records, surgical history, e.t.c. Keeping accurate medical record is a vital tool for the delivery of quality

healthcare. As such, preservation of medical information is a core practice in clinical environment. The goal of preservation is to ensure that important information is retained over a period of time. Irrespective of the format of medical information (i.e. electronic or paper), good record keeping enables continuity of care and enhances communication between different healthcare professionals (Mathioudakis et al., 2016).

The responsibility of documenting medical information involves all members of the multidisciplinary team that are involved in a patient's care namely, physicians, surgeons, nurses, pharmacists, physiotherapists, occupational therapists, psychologists, chaplains, administrators etc. However, the preservation of medical records is the primary responsibility of the library and information professional (Alayeh, 2019). The responsibility of organizing and preserving medical information is the duty of the librarian or archivist (Alayeh, 2019).

Healthcare Facilities

Healthcare facilities generally refer to any location or setting where healthcare services are provided. They range from small clinics and doctor's offices to urgent care centers and large hospitals with elaborate emergency rooms and trauma centers (Alayeh, 2019). Healthcare centers may be owned and operated for profit and non-profit purposes by governments and individuals in Nigeria, but their activities are regulated by the federal ministry of health among other regulatory bodies. Examples of healthcare facilities in Nigeria are:

1. **Hospitals:**
   A hospital's primary task is to provide short-term care for people with severe health issues resulting from injury, disease or genetic anomaly. Open 24 hours a day, seven days a week, hospitals bring together physicians in assorted specialties, a highly skilled nursing staff, various medical technicians, health care administrators and specialized equipment to deliver care to people with acute and chronic health conditions. Many hospitals offer a wide range of services, including emergency care, scheduled surgeries, labor and delivery services, diagnostic testing, lab work, and patient education. Depending on their health situation, patients may receive inpatient or outpatient care from a hospital.
2. Primary **Health centers:**
   The primary health care system is a grass-root approach meant to address the main health problems in the community, by providing preventive, curative and rehabilitative services. These centers are usually found in communities in the Nigeria.
3. **Nursing Home**
   A nursing home is designed for patients who require constant care but do not need to be hospitalized and cannot be cared for at home. Often associated with seniors who require custodial care in a residential facility, it can actually serve patients of all ages who require

this level of care. Nursing homes have medical personal onsite 24 hours a day. A physician, skilled nurses and therapists are on staff to oversee and provide medical care, assistance with medications, and services like physical, speech and occupational therapy. In addition, the nursing home's staff offers help with basic tasks that can be challenging for individuals with health issues, including feeding, bathing and dressing.

4. Ambulatory healthcare services
   This segment includes outpatient care center and medical and diagnostic laboratories. These establishments are diverse including kidney dialysis centers, outpatient mental health and substance abuse centers, blood and organ banks, and medical labs that analyze blood, do diagnostic imaging, and perform other clinical tests.
5. **Pharmacies and drug stores:**
   Pharmacies and drug stores comprise establishments engaged in retailing, prescription or non-prescription drugs and medicines and other types of medical and orthopedic goods. Regulated pharmacies may be based in a hospital or clinic or they may be privately operated and are usually staffed by pharmacists, pharmacy technicians and pharmacy aides.
6. **Medical laboratories:**
   A medical laboratory, or lab, completes diagnostic tests ordered by physicians and primary care providers. Using biological specimens, such as blood, urine, or saliva, medical technicians run tests to help diagnose, treat, and monitor a patient's health.
   Clinical lab facilities can be organized by function or test specialization. General clinical labs run common tests, while other labs, such as cancer clinics, run disease-specific tests.

Statement of Research Problem

Preservation of records is an often overlooked and underrated activity at many establishments. While a strong, well-thought out records preservation plan can make organizations efficient and effective, neglect of preservation activities can lead to deterioration of important documents and loss of information. Poor records management can cripple a company, halting efficiency, sucking up precious time, and causing unnecessary stress for employees. Record Nations helps companies experiencing the symptoms of poor records management find solutions.
Organizations with poor preservation plan oftentimes waste excessive amounts of time sorting through messy filing cabinets, waste valuable office spaces to store paperwork, forcing the organization to pay premium prices for document storage, vital documents are misplaced, buried, and lost, communication between coworkers erodes, and employee stress levels rise as their ability to find and share information becomes unnecessarily challenging (Hilinski, 2019).
Preservation of medical information is one of the most crucial factors that can help develop the medical sector which is responsible for saving lives. Records preservation activities include storage, retrieval, maintenance, careful use and disposal or weeding of medical information. According to Ondieki (2017), health workers in the public health institutions, such as medical doctors and nurses, are usually not able or are struggling to render timely and effective health

services to citizens due to a lack of effective records management systems. Poor Medical record preservation is often the case in resource-limited settings, which threatens the quality of health care (Pirkle, Dumont & Zunzunegui, 2012). Ineffective records management systems usually lead to long patient waiting times before patients receive health service (Ondieki, 2017). Result obtained from a recent study indicate that in healthcare institutions where records are not properly preserved, the health workers end up not rendering certain services because the health history of the patient is not contained in medical files. This is due to the fact that, if health workers proceed to treat patients without enough information about the patients' health background, he/she may end up rendering poor health service that might be risky to patients health (Ondieki, 2017). Besides many health challenges persist because of lack of medical information. Even Bali (2011) reported that the management and preservation of the hospital records in Indian context present a very gloomy picture. Despite the intensive effort at national and international level, the fundamental health care needs of the population of the developing countries are still unmet. The lack of basic health data renders difficulties in formulating and applying a rational for the allocation of limited resources that are available for patient care and disease prevention (Bali, 2011). Many large medical facilities spend a lot of time searching for patient's records and sometimes some records were never found again. Therefore, this study seeks to investigate the preservation and accessibility of medical records in selected health facilities in Delta State.

Objectives of the Study

The general objective of this study is to survey the methods and strategies for preserving medical information in healthcare facilities in Delta State, Nigeria. The specific objectives are:

1. To survey healthcare facilities in Delta State in order to discover the major threats to medical records.
2. To examine the strategies and methods of preserving medical information in healthcare facilities in Delta State.
3. To examine the challenges militating against effective preservation of medical information In Delta State.

Research Questions

1. What are the major threats to medical records in healthcare facilities in Delta State?
2. What are the strategies and methods of preserving medical information in healthcare facilities in Delta State?
3. What are the challenges militating against effective preservation of medical information In Delta State.

Conceptual Framework

The Concept of Medical Records

Bali et. al. (2011) defined a medical record as any document that explains all detail about a patient's history, clinical findings, diagnostic test results, pre and postoperative care, patient's progress and medication. To them, medical records are one of the most important aspect on which practically almost every medico-legal battle is won or lost. Dictionary.com described it as a chronological written account of a patient's examination and treatment that includes the patient's medical history and complaints, the physician's physical findings, the results of diagnostic tests and procedures, and medications and therapeutic procedures. It comprises a chronologic written account that includes a patient's initial complaint(s) and medical history, physical findings, results of diagnostic tests and procedures, any therapeutic medicines or procedures, and subsequent developments during the course of the illness (Farlex Partner Medical Dictionary, 2012).

Medical records cover an array of documents that are generated as a result of patient care (Medical Protection Society, 2017). According to the Health Professions Council of South Africa (HPCSA), these include:

- Hand-written contemporaneous notes taken by the health care practitioner.
- Notes taken by previous practitioners attending health care or other health care practitioners, including a typed patient discharge summary or summaries.
- Referral letters to and from other health care practitioners.
- Laboratory reports and other laboratory evidence such as histology sections, cytology slides and printouts from automated analysers, X-ray films and reports, ECG traces, etc.
- Audio visual records such as photographs, videos and tape-recordings.
- Clinical research forms and clinical trial data.
- Other forms completed during the health interaction such as insurance forms, disability assessments and documentation of injury on duty.
- Death certificates and autopsy reports.

Increasingly, Rose (2019) stated that at a minimum, a medical record must include the patient's identifying information, including name, date of birth, Social Security number, address, contact information, insurance information, emergency contact information, HIPAA Authorization, and advance directives. She added that beyond those basics, the medical record must also include adequate clinical documentation that substantiates medical necessity, such as SOAP notes:

- Subjective: a description of the patient's current condition in narrative form, e.g., chief complaint or reason for seeking diagnosis or treatment.
- Objective: documents objective; repeatable and traceable facts about the patient's status; and includes vital signs, labs, and other findings from the physical exam.
- Assessment: medical diagnosis for the medical visit and the date the note was written.

- Plan: the plan of treatment, next steps, and follow-up.

The information included in the medical record should meet medical treatment protocols, which are based on scientific evidence and professional standards of care (Rose, 2019). In addition, medical records must be comprehensive enough to substantiate medical necessity; appropriately identify the patient; accurately document insurance information; and have adequate technical, administrative, and physical safeguards in order to protect a patient's privacy (Rose, 2019). Hicks (2019) moreover noted that records may vary, but all medical records contain common information as identified below:

- **Personal identification information: e**ach medical record must have specific personal identification information, such as social security, state or government issued identification number in order to tie record to the correct patient.
- **Medical History:** everyone has a medical history, even if they have never been to a hospital and never had their immunization.
- **Family Medical History:** information about family members health is an important part of your medical records because some health concerns are genetic.
- **Medication History:** what we ingest, whether it is prescribed, over the counter, herbal or illegal is an important piece of our medical puzzle. A medical professional needs to know about herbal, over the counter, home remedies, prescription medicines and even illegal drug use because of the way these can affect our health not only immediately, but over time, some drugs, medicines or other ingestible materials are water soluble, some are fat soluble; some have short half-lives, while others stay in our bodies for longer periods.
- **Treatment History: k**nowing what treatment have been given, whether they worked and which have failed in significant information for the provider to have.
- **Medical Directives:** most parents who had any treatment at a hospital have a medical directive or living will. This document is kept on file and tells the treatment team the wishes of the patient in the event that they are unable to speak for themselves regarding their medical care.

Preservation of Records

According to the Public Record Office of Northern Ireland (2006) preservation refers to the means by which archives are protected for the use of present and future generations. It is a word commonly used by record offices, libraries and museums to describe the ways in which their collections are safeguarded and kept in good physical condition. This can be done through a variety of measures aimed both at minimizing the risk of loss of records and slowing down, as much as possible, the processes of physical deterioration which affect most archive materials (Public Record Office of Northern Ireland, 2006). Library of Congress (n.d.) observed that

taking care when handling any record, especially large format, poor-quality paper items, is one of the more effective, cost-efficient, and easily achieved preservation measures. The library noted that taking proper care when handling paper records involve the following:

- Having clean hands before handling records;
- Keeping records flat and fully supported on the table during use.
- Keeping food and drink away from storage areas.
- Never folding the paper back on itself.
- Refolding the paper using the original center fold and with the edges neatly aligned.
- Not using paper clips, "dog ear" folding, acidic inserts, rubber bands, self-adhesive tape, and/or glue on papers and clippings.

For proper storage of paper records, the Library of Congress recommended:

- A cool (room temperature or below), relatively dry (about 35% relative humidity), clean, and stable environment (avoid attics, basements, and other locations with high risk of leaks and environmental extremes).
- Minimal exposure to all kinds of light; no exposure to direct or intense light.
- Distance from radiators and vents.
- Supportive protective enclosures.

Materials and Methods

The survey method was used for the study. Medical staff members who are involved in handling health records in selected health facilities in Delta State were the target for this study. The questionnaire was the instrument used for data collection. The instrument was administered on respondents by hand, social media and e-mail. 300 questionnaires were administered on healthcare officials in 150 healthcare facilities in Delta State. Two questionnaires were administered on two officials of each facility. The healthcare facilities surveyed include public and private hospitals 84, Dental and Eye Clinics 15, Pharmacies 21, Medical laboratory test centers 30. A total of 280 questionnaires were completed and returned. This implies 93.3% return rate. Data was analyzed using graphical charts.

Data Analysis and Results

Chart 1: Major threats to medical records in healthcare facilities in Delta State

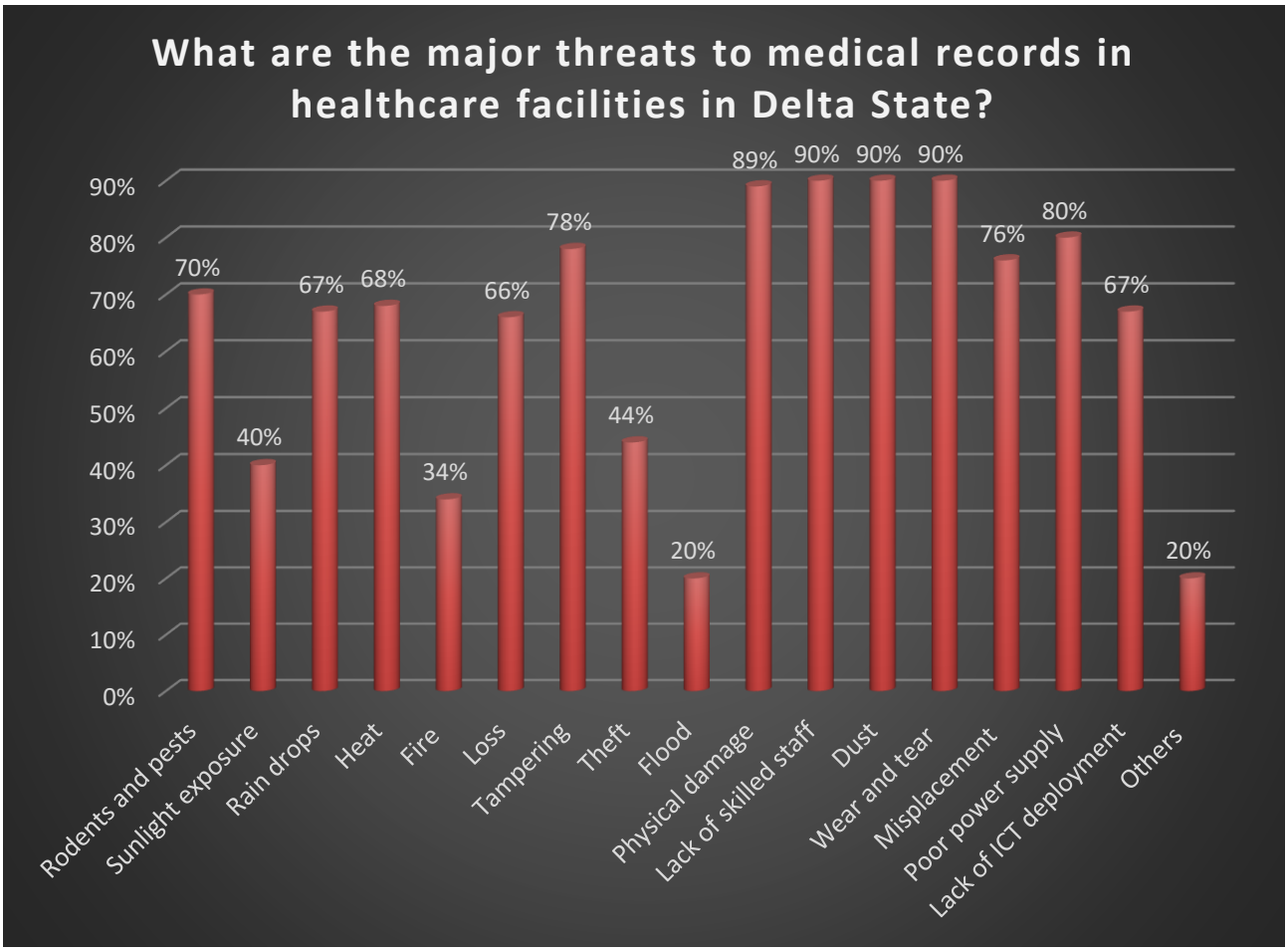

Chart 1 above indicates that the major threats to medical records in healthcare facilities in Delta State are Rodents and pests 70%, Sunlight exposure 40%, Rain drops 67%, Heat 68%, Fire 34%, Loss 66%, Tampering 78%, Theft 44%, Flood 20%, Physical damage 89%, Lack of skilled staff 90%, Dust 90%, Wear and tear 90%, Misplacement 76%, Poor power supply 80%, Lack of ICT deployment 67%, and Others 20%.

Chart 2: Strategies and methods of preserving medical records in healthcare facilities in Delta State

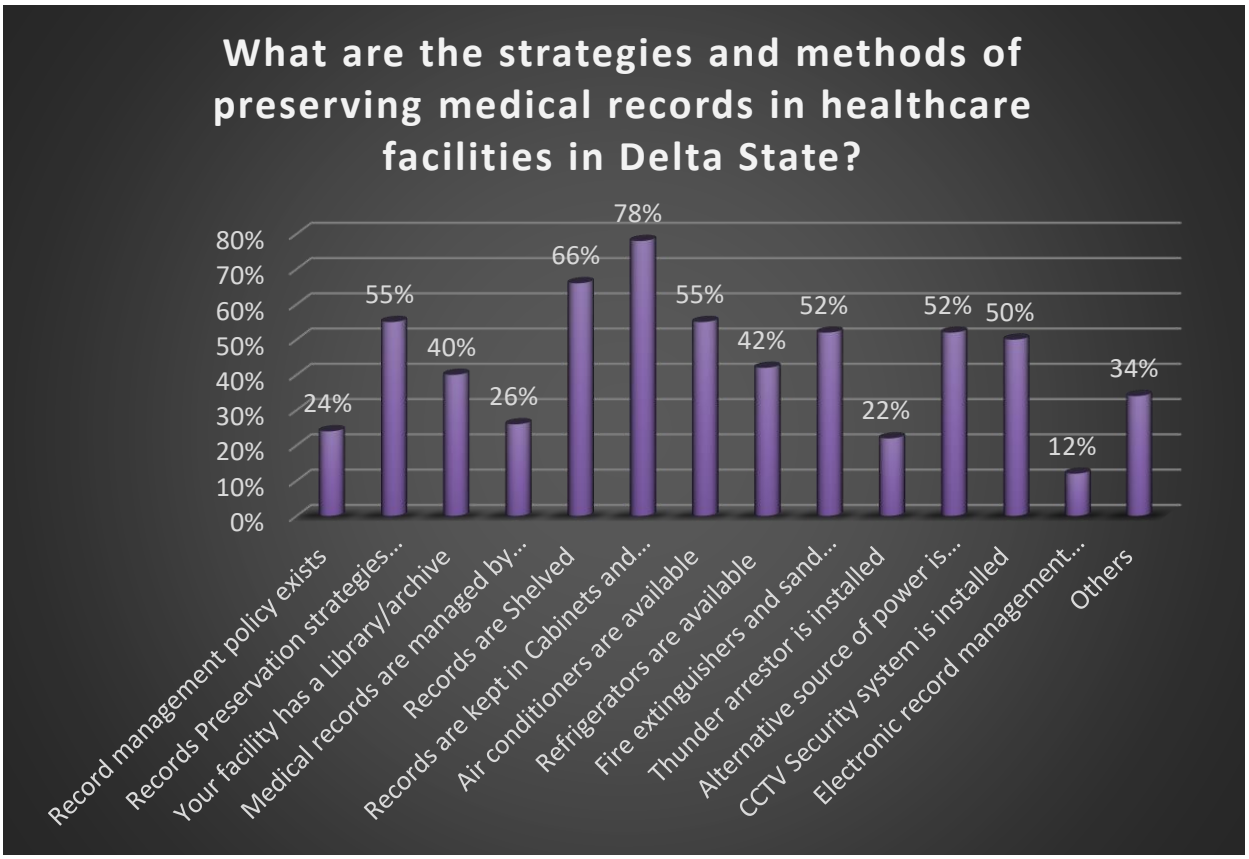

Chart 2 above indicates the strategies and methods of preserving medical records in healthcare facilities in Delta State to include the putting in place of Record management policy 24%, adherence to Records Preservation strategies 55%, availability of Library/archive 40%, Medical records are managed by librarian/archivist 26%, Records are Shelved 66%, Records are kept in Cabinets and drawers 78%, Air conditioners are available 55%, Refrigerators are available 42%, Fire extinguishers and sand buckets are available 52%, Thunder arrestor is installed 22%, Alternative source of power is available 52%, CCTV Security system is installed 50%, Electronic record management system is available 12%, and Others 34%.

Chart 3: Challenges militating against effective preservation of medical Records in Delta State.

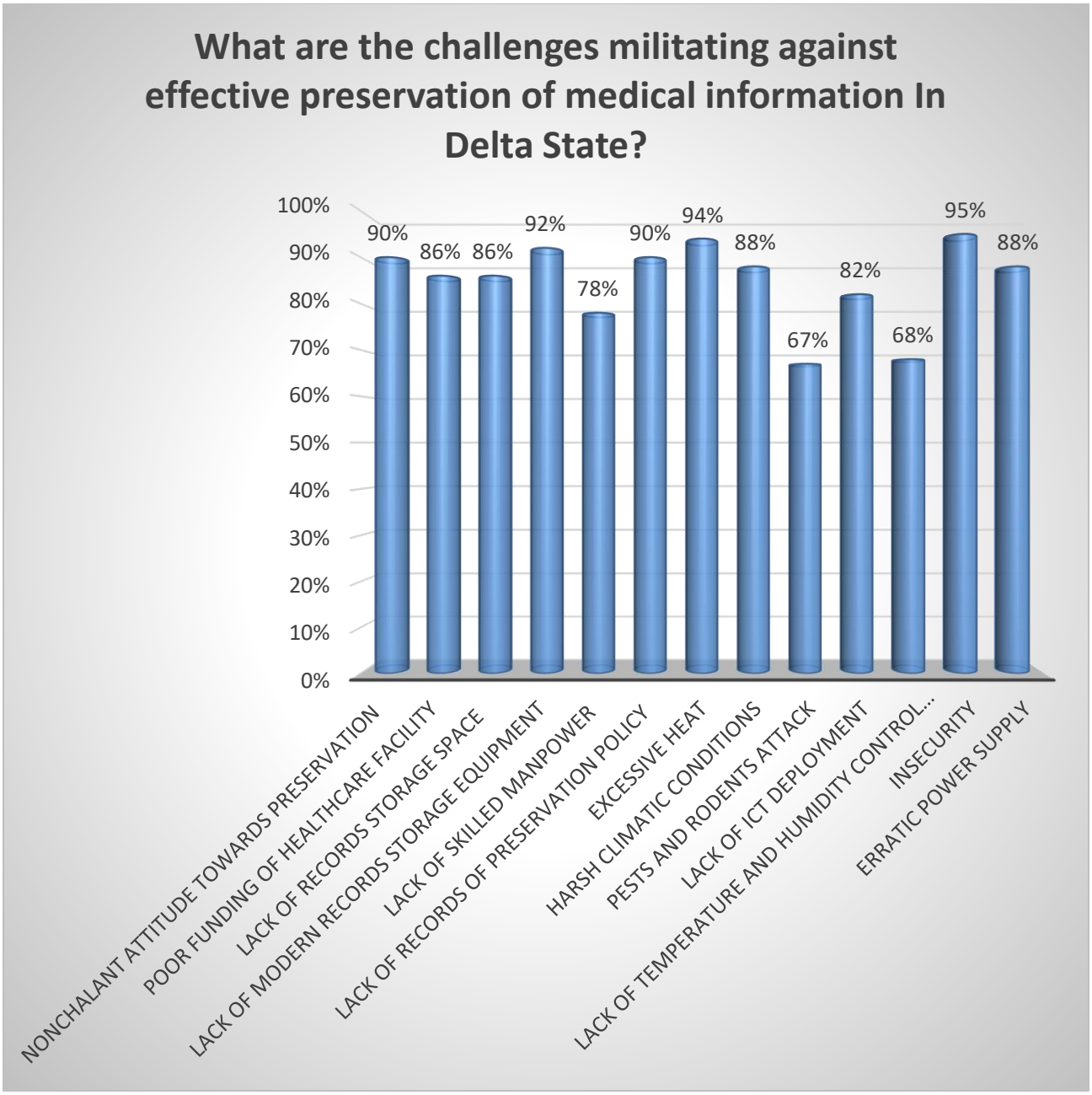

Chart 3 above shows the challenges militating against effective preservation of medical information In Delta State. They are Nonchalant attitude towards preservation 90%, Poor funding of healthcare facility 86%, Lack of records storage space 86%, Lack of modern records storage equipment 92%, Lack of skilled manpower 78%, Lack of records of preservation policy 90%, Excessive heat 94%, Harsh climatic conditions 88%, Pests and rodents attack 67%, Lack of ICT deployment 82%, Lack of temperature and humidity control equipment 68%, Insecurity 95%, and Erratic power supply 88%.

Conclusion

This study has established that majority of the healthcare facilities surveyed rely on paper medical records. Paper records have been found to be space-consuming and difficult to manage even though that is the only option available to them at the moment. It was observed that patients are not allowed to access their records. Only health officials are authorized to have access to medical records. It was further observed that the health facilities do not have back-up records in the event of disaster, damage, or loss. The non-existence of back-up medical records puts the healthcare facilities and patients at great risks in the case of eventuality. The electronic record management system has not gained prominence as much. Few health facilities where they are deployed, they are used mainly for registration of new patients and for keeping financial records. Other vital information that are captured in the paper records are not captured electronically. Preservation of medical records in Delta State, Nigeria is not considered a serious affair at the moment.

Recommendations

For effective management and preservation of medical records, the following are recommended:

1. There is the need to establish libraries/archives in all healthcare facilities in Delta State.
2. Qualified librarians or archivists should be responsible for the management of medical records in all healthcare facilities.
3. There is the urgent need for healthcare facilities to adopt and deploy electronic health record system across health facilities in the State because it makes preservation and back-up of records more efficient and easy.
4. Health facilities should provide the necessary conducive environment that promotes longevity, and safety of medical records.
5. Regulators of health facilities should create a comprehensive policy and regulations that guide the management and preservation of medical records.
6. Records management staff should be equipped with relevant knowledge and skills through training and retraining.
7. Uninterrupted fast speed internet access and power supply from solar power should be provided for records management and preservation.

References

Alayeh, F. (2019). Preservation and accessibility of medical records in selected health facilities in Asaba, Delta State. Unpublished project report submitted to the Department of Library and Information Science, Delta State Polytechnic Ogwashi-Uku.

Anyira , I., Onoriode, O. & Nwabueze, A. (2010) "The Role of Libraries in the Preservation and Accessibility of Indigenous Knowledge in the Niger Delta Region of Nigeria" Library Philosophy and Practice e-Journal. Available online at http://digitalcommons.unl.edu/libphilprac/387

Bali, A. et. al. (2011). Management of Medical Records: Facts and Figures for Surgeons. Journal of Maxillofac Oral Surg, 10(3), pp. 199–202.

Farlex Partner Medical Dictionary (2012). Definition of medical record.

Health Professions Council of South Africa (HPCSA) cited in Medical Protection Society (2017). The importance of keeping good medical records. Junior Doctor, 7(1). Retrieved from https://www.medicalprotection.org/southafrica/junior-doctor/volume-7-issue-1/the-importance-of-keeping-good-medical-records

Hicks, J. (2019). The basic component of a complete medical record. Retrieved from https://www.verywellhealth.com/important-part-of-medical-record-2317249

Hilinski, L. (2019). Bad Records Management: Consequences and Solution.Retrieved from https://www.recordnations.com/2017/08/bad-records-management/

Library of Congress (n.d.). Preservation Measures for Newspapers. Retrieved from https://www.loc.gov/preservation/care/newspap.html

Mathioudakis, A., Rousalova,I., Gagnat, A., Saad, N., and Hardavella, G. (2016). How to keep good clinical records. Breathe (Sheff) 12(4), pp. 369–373. doi: 10.1183/20734735.018016

Olaun, S. et. al. (2015). Preservation and conservation. Retrieved from https://www.academia.edu/8585904/REASONS_FOR_PRESERVATION_OF_RECORDS?auto=download

Ondieki, F. (2017). Effects of Health Records Management on Service Delivery: A Case Study of Kisii Teaching and Referral Hospital. Journal of Hospital & Medical Management, 3(1).

Pirkle, C., Dumont, A., Zunzunegui, M. (2012). Medical recordkeeping, essential but overlooked aspect of quality of care in resource-limited settings. International Journal for Quality in Health Care, 24(6), pp. 564–567.

Pourasghar, F. et al. (2008). What they fill in today, may not be useful tomorrow: lessons learned from studying medical records at the Womens Hospital in Tabriz, Iran. BMC Public Health, vol. 8. P.139.

Public Record Office of Northern Ireland (2006). Preservation of records. Retrieved from http://326gtd123dbk1xdkdm489u1q.wpengine.netdna-cdn.com/wp-content/uploads/2017/01/Public-Record-Office-of-Northern-Ireland-Preservation-of-Records-Preservation-Policy-Sep-2006.pdf

Rose, R. (2019). The differences among records and what's legally required to be in them. Rtrieved from https://www.medicaleconomics.com/law-malpractice/differences-among-recordsand-whats-legally-required-be-them

Williams, F. & Boren, S. (2008). The role of the electronic medical record (EMR) in care delivery development in developing countries: a systematic review. Inform Prim Care, vol. 16. pp139-145.

Wong, R. & Bradley, E. (2009). Developing patient registration and medical records management system in Ethiopia. Int J Qual Health Care, vol. 21. pp 253-258.