Beyond Treatment: Health Records Management Practices as a Catalyst for Healthcare Delivery and Nation Building — A Cross-Sectional Study of General Hospital Gusau, Zamfara State, Nigeria

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ABSTRACT

Background: *Health records are the clinical, administrative and legal evidence of the care a patient receives. They support continuity of care, reduce waiting time, inform planning and provide data for research. Health records management practices include the numbering, filing and tracing (tracer card) systems used to create, store and retrieve patient records. Poor practices lead to missing case folders, delays and poor patient management.*

Objectives: *The study assessed the level of health records management practices at General Hospital Gusau, Zamfara State, identified the causes of poor practices, and identified the major challenges facing the Health Information Management (HIM) Department.*

Methods: *A descriptive cross-sectional survey design was used. All 80 HIM personnel available at the time of the study (25 professional staff, 35 technicians and 20 students) were enumerated. Data were collected with an interviewer-administered structured checklist and analysed using frequencies and percentages.*

Results: *Most respondents (97.5%) rated the hospital's filing and numbering system as good, and 81.25% rated its tracing system as good. Straight numerical filing was the most common filing method (76.25%). Lack of trained personnel (33.75%) and illegible handwriting (23.75%) were the main causes of poor health records management practices. Illegible handwriting (32.5%) and inadequate filing space (32.5%) were the major challenges, followed by improper use of the tracer system (25.0%).*

Conclusion: *Straight numerical filing, supported by a functional tracer system, is the foundation of health records management at the hospital. Inadequate filing space, illegible handwriting and a shortage of trained personnel undermine the quality of healthcare delivery. Government and hospital management should sponsor continuous training of HIM personnel, provide additional filing and secondary storage space, enforce legible documentation, and plan for a transition to electronic medical records.*



Keywords: *health records management, filing system, numbering system, tracer system, healthcare delivery, Zamfara State*

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INTRODUCTION

Every encounter between a patient and a health worker produces information. This information includes the patient's personal details, medical history, clinical findings, investigation results, diagnosis, treatment and outcome. Together, these documents form the patient's health record. The health record is the main means of communication among the doctors, nurses and other professionals who care for the patient. It is also a legal document, a source of data for hospital statistics and planning, and a resource for clinical research and education (Melton, 1997; World Health Organization [WHO], 2006).

Health records management practices are the procedures and systems used to create, number, file, retrieve, track, retain and dispose of patient records. They are designed so that records are kept in the interest of both the patient and the hospital. When records are properly numbered and filed, they can be retrieved quickly. This reduces patient waiting time and ensures continuity of care. A filing system is the process of arranging records in a prescribed order in a designated area, usually called the health records library, for preservation, security and ease of reference, so that each record can be located whenever it is needed (WHO, 2006).

Health information managers are responsible for the custody, classification, maintenance and confidentiality of health records. They must also know where every record is when it has been removed from the file. Tracer (out-guide) cards, appointment registers and clear filing procedures help them to do this (WHO, 2006). The WHO (2010) identifies the health information system as one of the six building blocks of every health system. Good health records management at hospital level is therefore not only a clerical matter. It contributes to the quality of national health data, to effective health planning and, ultimately, to nation building.

Statement of the Problem

Records generated in both outpatient and inpatient services must be organised and stored in appropriate locations so that internal and external users can retrieve and use them. Health records also need protection from loss and destruction because they provide evidence of care and support legal, administrative and statutory obligations. They are critical during emergencies and disasters, when access to patients' previous information can determine the quality of care.

In Nigerian hospitals, however, many studies report persistent problems in records management. These include reliance on paper records, lack of national retention policies, inadequate filing space, misfiling and missing case notes (Oweghoro, 2015; Osundina & Azeez, 2020; Adio et al., 2021). When an original folder cannot be found, hospitals often open temporary case notes. Health workers regard these as incomplete and as an obstacle to quality care (Kurokeyi, 2025). The researchers' professional experience of more than ten years in hospital health records services suggests that similar problems exist in the documentation, filing, maintenance and retention of records at General Hospital Gusau. However, no empirical study has assessed health records management practices at this hospital. This study was therefore conducted to fill this gap.

Objectives of the Study

The main objective of the study was to assess health records management practices as a catalyst for healthcare delivery at General Hospital Gusau, Zamfara State. The specific objectives were to:

1. Assess the level of health records management practices (filing, numbering and tracing systems) at General Hospital Gusau;
2. Identify the causes of poor health records management practices at the hospital; and
3. Identify the major challenges of health records management practices at the hospital.

Research Questions

1. What is the level of health records management practices at General Hospital Gusau?
2. What are the causes of poor health records management practices at General Hospital Gusau?
3. What are the major challenges of health records management practices at General Hospital Gusau?

Significance of the Study

The findings will help the management of General Hospital Gusau and the Zamfara State Ministry of Health to identify the areas of health records services that need investment, such as staffing, training and filing space. They will help HIM practitioners to improve filing, numbering and tracing procedures. They will also provide baseline data for policy makers, non-governmental organisations and researchers interested in strengthening health information systems in Nigeria. Better records lead to better care for individuals, families and communities, and to more reliable data for national health planning.

LITERATURE REVIEW

Concept of Health Records Management Practices

Health records management covers the whole life cycle of a patient's record, from its creation at registration to its

retention and final disposal. Its main components are the numbering system, documentation, appointment system, filing system, tracer system, and retention and disposal. When these components work well, records are complete, accurate and available when needed. When they fail, records are lost or misfiled, statistics become unreliable and patient care suffers (WHO, 2006; Adio et al., 2021).

Numbering Systems

A numbering system is the method of assigning a hospital number to a patient's record so that the patient and the record can be identified. Three numbering systems are commonly used.

Serial numbering: The patient receives a new number at each visit or admission. A patient registered five times therefore has five different numbers and five separate records. This makes it difficult to bring together the patient's history.

Unit numbering: The patient is given one number at the first visit and keeps it permanently, however many times he or she attends the hospital. All the patient's records are kept in one folder under that number. The WHO (2006) recommends this approach: each patient is given a permanent medical record number, issued in straight numerical sequence, that is never reassigned.

Serial–unit numbering: The patient receives a new number at each visit, but the previous records are brought forward and filed under the latest number. This combines features of both systems and is mainly used in small hospitals with few readmissions.

Filing Systems

A filing system arranges records in a prescribed order for ease of reference and preservation. The method of arrangement affects how easily records can be filed, maintained and retrieved. The main filing systems are alphabetical, numerical and chronological.

Alphabetical filing: Records are filed by the patient's surname and then other names. This system can be used without a master patient index, but it is suitable only for small facilities with low patient turnover. Large hospitals, such as teaching hospitals and federal medical centres, need numerical filing supported by a master patient index.

Numerical filing: Records are filed by their hospital number. There are three types:

1. Straight numerical filing: Records are filed in exact ascending order of their numbers, for example 65023, 65024, 65025 and 65026. Its main advantage is that staff are easily trained to use it, and the WHO (2006) recommends it for hospitals in developing countries. Its disadvantages are that staff must read every digit when filing, which increases the risk of transposing digits (for example, filing 65424 as 56424), and that most filing activity is concentrated at the end of the series where the newest records are kept.
2. Terminal digit filing: The number is divided into three pairs of digits. The last pair is the primary digit, the middle pair the secondary digit and the first pair the tertiary digit. For example, in 52-46-07, 07 is the primary digit, 46 the secondary and 52 the tertiary. The file is divided into 100 primary sections (00–99). This spreads records evenly across the filing area and allows responsibility for sections to be assigned to individual staff. However, it requires trained staff and is not recommended for small hospitals (WHO, 2006).
3. Middle digit filing: The middle pair of digits is the primary digit, the first pair the secondary digit and the last pair the tertiary digit. For example, in 76-68-96, 68 is the primary digit, 76 the secondary and 96 the tertiary. Blocks of 100 consecutive numbers (for example, 76-68-00 to 76-68-99) remain together in straight numerical order.
4. **Chronological filing:** Documents are arranged by date. It is mainly used for filing loose reports within a folder rather than for filing patients' folders.

Centralised and Decentralised Filing

In a centralised system, outpatient, inpatient and emergency records are kept in one location, usually the health records library. When combined with unit numbering, each patient has one record and one number for life. In a decentralised system, records are kept in different clinics or units, such as the emergency unit, paediatrics, medical and surgical outpatient clinics, and obstetrics and gynaecology. Decentralisation can save time within a clinic. However, it fragments the patient's history and makes it harder to locate records.

Tracer System and Misfiling

A tracer (out-guide) card is placed in the position of a record when the record is removed from the file. It shows the patient's name and number, the place to which the record was sent and the date of removal. According to the WHO (2006), "using a tracer system improves the work of the medical record department". Without tracers, records that leave the library are difficult to follow up.

Misfiling occurs when a record is returned to the wrong position. A misfiled record is effectively lost, and searching for it disrupts routine work. Common causes are transposition of digits, confusion of similar-looking digits (such as 3, 5 and 8), placing one folder inside another, and fatigue from filing for long periods. To locate a misfiled record, staff first check for transposed digits (for example, 534607 filed as 534067 or 536407). Next, they check adjacent records and the shelves directly above and below the correct position. Finally, they check the records filed on

the same day (WHO, 2006). Osundina and Azeez (2020) found that 93.8% of health records staff in two hospitals in Abeokuta had experienced mislaying and misfiling of records in their departments.

Causes and Effects of Poor Health Records Management Practices

The literature identifies the following causes of poor health records management practices:

1. Improper documentation and appointment procedures;
2. Shortage of trained him personnel and reliance on non-professional staff;
3. Inadequate supervision;
4. Inadequate filing space and equipment;
5. Poor lighting and ventilation in filing areas;
6. Improper use of tracer cards;
7. Absence of electronic medical records (emr) and poor ict support; and
8. Illegible handwriting by health care providers.

(WHO, 2006; Adio, 2019; Osundina & Azeez, 2020; Adio et al., 2021)

Illegible handwriting is a particular risk. Brits et al. (2017) found that pharmacists correctly read only 75% of handwritten prescriptions. In one case, 20% of health workers misread a lorazepam dose of 4 mg as 40 mg.
The effects of poor practices include:

1. Unreliable statistics for medical audit and planning;
2. Loss of information for research and education (melton, 1997);
3. Broken continuity of care;
4. Repeated investigations and treatment;
5. Longer waiting times; and
6. The use of temporary case notes in place of missing originals (kurokeyi, 2025).

Empirical Review

Oweghoro (2015) surveyed the heads of health records departments in 18 Nigerian teaching hospitals, specialist hospitals and federal medical centres. He found the following:

1. 83.3% of the hospitals still kept paper records.
2. There was no national policy on the retention and disposal of health records.
3. Filing space was the main factor in retention decisions (88.9%).

Osundina and Azeez (2020) studied two hospitals in Abeokuta. Most respondents reported inadequate filing cabinets (60%) and shelves (42.5%) and inadequate numbers of technicians and health records officers. Almost all respondents (97.5%) agreed that effective tracer cards should be used in filing areas. Vanje and Okwedadi (2026) found that Government General Hospital, Ughelli, Delta State, used a paper-based system filed by outpatient number. Limited storage space was the main challenge, slowing the storage and retrieval of records.

Kurokeyi (2025) studied 185 health professionals in two tertiary hospitals in Bayelsa State. Temporary case notes were mainly caused by misplaced or misfiled original records and by dependence on manual records. Adio (2019) described the experience of a records department in Abuja. The main problems were non-professional staffing, congested records libraries, misfiling and undue retention of records on wards. A training programme for non-professional staff achieved about 85% success. Adio et al. (2021) concluded that a well-structured, adequately staffed records department and the adoption of EMR are essential to restoring confidence in Nigerian healthcare delivery.

Electronic records offer a long-term solution to storage and retrieval problems, but their adoption in Nigeria remains slow. Akwaowo et al. (2022) surveyed 1,177 clinicians and administrators in four Nigerian states. Perceived usefulness was the strongest predictor of intention to adopt EMR, while perceived risk reduced it. Most facilities still depended on paper records.

These studies show that problems of filing space, staffing, misfiling and tracing are common in Nigerian hospitals. However, few studies have focused on secondary health facilities in North-West Nigeria, and none has examined General Hospital Gusau. The present study addresses this gap.

METHODOLOGY

Research Design and Setting

The study adopted a descriptive cross-sectional survey design. This design allowed the researchers to obtain information from respondents at a single point in time about existing practices and challenges. The study was conducted in the Health Information Management Department of General Hospital Gusau, a secondary health facility owned by the Zamfara State Government, in Gusau, the state capital.

Population and Sampling

The population consisted of all HIM personnel in the Health Information Management Department of General Hospital Gusau. These comprised professional staff, technicians, and students undergoing training in the department. Total enumeration was used: all 80 HIM personnel available in their units during the data collection period were included.

Table 2: Respondents' rating of the filing, numbering and tracing systems (n = 80)

Item	Response	Frequency	Percentage (%)
Does the hospital have a good filing and numbering system?	Yes	78	97.50
	No	2	2.50
Does the hospital have a good tracing (tracer card) system?	Yes	65	81.25
	No	15	18.75

Source: Field Survey, 2026

They were 25 professional staff, 35 technicians and 20 students.

Instrument for Data Collection

Data were collected using a structured checklist developed by the researchers. It had four sections:

4. **Section A:** demographic characteristics.
5. **Section B:** filing, numbering and tracing systems.
6. **Section C:** causes of poor health records management practices.
7. **Section D:** major challenges.

Procedure for Data Collection

The checklist was administered to respondents through face-to-face interviews by the researchers with the help of a trained research assistant. Data collection took three days, and all 80 checklists were completed and returned (response rate 100%).

Method of Data Analysis

Data were coded and analysed using descriptive statistics (frequencies and percentages) and presented in tables.

Ethical Considerations

Participation was voluntary. Respondents gave informed verbal consent, and no personal identifiers were recorded.

RESULTS

Demographic Characteristics of Respondents

Table 1: Demographic characteristics of respondents (n = 80)

Variable	Category	Frequency	Percentage (%)
Sex	Male	55	68.75
	Female	25	31.25
Age (years)	18–25	10	12.50
	26–33	18	22.50
	34–40	30	37.50
	41–50	15	18.75
	Above 50	7	8.75
Marital status	Married	49	61.25
	Single	15	18.75
	Divorced	6	7.50
	Widowed	10	12.50
Category	Professional staff	25	31.25
	Technicians	35	43.75
	Students	20	25.00

Source: Field Survey, 2026

Table 1 shows that most respondents were male (68.75%) and married (61.25%). The largest age group was 34–40 years (37.50%). Technicians formed the largest category of respondents (43.75%), followed by professional staff (31.25%) and students (25.00%).

Research Question One: What is the level of health records management practices at General Hospital Gusau?

Table 2 shows that almost all respondents (97.50%) rated the hospital's filing and numbering system as good, and a large majority (81.25%) rated the tracing system as good.

Table 3: Filing system used in the hospital (n = 80)

Filing system	Frequency	Percentage (%)
Straight numerical filing	61	76.25
Terminal digit filing	14	17.50
Alphabetical filing	5	6.25
Chronological filing	0	0.00
Total	80	100.00

Source: Field Survey, 2026

Table 3 shows that straight numerical filing is the main filing system in use (76.25%), followed by terminal digit filing (17.50%) and alphabetical filing (6.25%). The level of health records management practices at the hospital is therefore high, and it rests on straight numerical filing supported by a tracer system.

Research Question Two: What are the causes of poor health records management practices at General Hospital Gusau?

Table 4: Causes of poor health records management practices (n = 80)

Cause	Frequency	Percentage (%)
Lack of trained personnel	27	33.75
Illegible handwriting	19	23.75
Inadequate filing space	12	15.00
Carelessness of staff	8	10.00
Inadequate supervision	6	7.50
Poor lighting in the filing area	4	5.00
Improper use of the tracer system	4	5.00
Total	80	100.00

Source: Field Survey, 2026

Table 4 shows that lack of trained personnel was the leading cause of poor health records management

practices (33.75%), followed by illegible handwriting (23.75%) and inadequate filing space (15.00%). Poor lighting and improper use of the tracer system were the least reported causes (5.00% each).

Research Question Three: What are the major challenges of health records management practices at General Hospital Gusau?

Table 5: Major challenges of health records management practices (n = 80)

Challenge	Frequency	Percentage (%)
Illegible handwriting	26	32.50
Inadequate filing space	26	32.50
Improper use of the tracer system	20	25.00
Senior staff keeping case folders in their offices	8	10.00
Total	80	100.00

Source: Field Survey, 2026

Table 5 shows that illegible handwriting and inadequate filing space were the two major challenges (32.50% each), followed by improper use of the tracer system (25.00%). Some respondents (10.00%) reported that senior staff keep case folders in their offices, which removes records from the filing system. Illegible handwriting was also the second most reported cause of poor practices under Research Question Two (23.75%).

Discussion of Findings

The study found that the level of health records management practices at General Hospital Gusau is high. Almost all respondents rated the filing and numbering system as good (97.50%), and most rated the tracing system as good (81.25%). Straight numerical filing was the dominant system (76.25%). This agrees with the WHO (2006), which recommends straight numerical filing for hospitals in developing countries because staff can be trained in it easily. The strong rating of the tracer system is also consistent with the WHO's (2006) view that tracers improve the work of records departments. It is also consistent with Osundina and Azeez (2020), whose respondents almost unanimously (97.5%) supported the use of tracer cards. However, about one in five respondents (18.75%) did not rate the tracing system as good, and a quarter identified improper use of the tracer system as a major challenge (Table 5). This suggests that tracer cards are available but not always used correctly, especially when folders leave the records library.

Lack of trained personnel was the leading cause of poor practices (33.75%). This supports Adio (2019) and Osundina and Azeez (2020), who reported shortages of qualified health records officers and technicians and heavy reliance on non-professional staff. Untrained staff are more likely to transpose digits, misfile folders and neglect tracer procedures (WHO, 2006). Adio (2019) showed that structured training of non-professional records staff can be highly successful, which suggests that the problem can be addressed.

Inadequate filing space was a major challenge (32.50%) and a cause of poor practices (15.00%). This finding agrees with Oweghoro (2015), who reported that filing space was the main factor in retention decisions in Nigerian hospitals. It also agrees with Vanje and Okwedadi (2026), who found limited storage space to be the main challenge at a general hospital in Delta State. Congested shelves make filing and retrieval slow and increase misfiling. Over time, they lead to missing folders and the use of temporary case notes, which health workers regard as an obstacle to quality care (Kurokeyi, 2025). Without secondary storage and a clear retention and disposal schedule, the filing area will continue to fill up.

Illegible handwriting was both a major challenge (32.50%) and a leading cause of poor practices (23.75%). Illegible entries make records difficult to code, index and use for statistics. They also endanger patients, as shown by Brits et al. (2017), where a fifth of health workers misread a 4 mg dose as 40 mg. Some respondents (10.00%) reported that senior staff keep case folders in their offices. This practice breaks the tracing chain and is a known source of missing records (Adio, 2019).

Taken together, the findings show that the hospital has a sound basic filing and numbering system. However, its effectiveness is limited by staffing, space and documentation problems. In the long term, these problems point to the need for electronic medical records, which reduce dependence on physical space and remove the problem of illegible handwriting. Adoption in Nigeria remains slow and depends on users' perception of usefulness and risk (Akwaowo et al., 2022). Because health records feed the national health information system (WHO, 2010), improving records management at facilities such as General Hospital Gusau contributes directly to better health planning and nation building.

CONCLUSION

The study concludes that straight numerical filing, supported by a tracer system, is the foundation of health records management practices at General Hospital Gusau. However, inadequate filing space and illegible handwriting are the major challenges facing the Health Information Management Department. The shortage of trained personnel is the leading cause of poor practices. Together, these problems reduce the quality and efficiency of healthcare delivery and the reliability of health data for planning and nation building.

RECOMMENDATIONS

Based on the findings, the following recommendations are made:

1. The Zamfara State Government and hospital management should recruit more qualified HIM personnel and sponsor regular training for existing staff on filing, numbering, tracing and misfiling prevention.
2. Hospital management should expand the central health records library and provide adequate shelves and a secondary storage area for inactive records.
3. The hospital should adopt a written retention and disposal policy so that inactive records are archived or disposed of systematically.
4. Hospital management should enforce legible documentation by doctors, nurses and other health workers. Measures should include the use of name stamps, printed forms and regular documentation audits.
5. The HIM Department should enforce the use of tracer cards for every folder removed from the library. Management should direct all staff, including senior staff, to return folders promptly after use.
6. The state government should plan a phased introduction of electronic medical records at the hospital, with adequate ICT infrastructure and staff training.
7. Further studies should cover other secondary and tertiary hospitals in Zamfara State and North-West Nigeria and use inferential statistics to examine the relationship between records management practices and healthcare delivery outcomes.

Limitations of the Study

The study was conducted in a single hospital and relied on the self-reported views of HIM personnel, so the findings may not be generalisable to other hospitals. Future studies could include direct observation or audits of records and the views of other health workers and patients.

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