Evaluating the Impact of Health Records Management on the Efficiency of Healthcare Delivery: A Study of Health Information Managers at University College Hospital, Ibadan

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Abstract: Introduction and Objective: Efficient healthcare delivery relies heavily on the systematic management of patient health records, a process overseen by Health Information Managers (HIMs). In low- and middle-income countries such as Nigeria, persistent challenges in records management ranging from infrastructural deficits to policy gaps continue to undermine service efficiency. This study aimed to evaluate the impact of health records management on the efficiency of healthcare delivery among HIMs at University College Hospital (UCH), Ibadan, and to identify prevailing barriers to effective record-keeping.

Methods: A descriptive cross-sectional design was employed, targeting Health Records Officers at UCH, Ibadan. Using convenience sampling, 200 respondents completed a structured, self-administered questionnaire capturing socio-demographics, current records management practices, perceived efficiency impacts, and encountered challenges. Data were analyzed using SPSS version 23, with descriptive statistics summarizing findings.

Results: Respondents identified substantial challenges affecting records management, including data confidentiality and security concerns (98%), system integration issues (82%), technical limitations such as downtime (82%), and data quality problems (83%). Organizational barriers,

including inadequate policy frameworks and resistance to change, were also reported by 81.5% of participants. Notably, respondents' age and years of professional experience were significantly associated, suggesting a demographic trend relevant to workforce planning.

Conclusion: The study underscores the critical role of effective health records management in promoting timely access to patient information, supporting clinical decision-making, and enhancing the coordination of care at University College Hospital, Ibadan. Findings highlight the need for continuous capacity building of Health Information Managers, investment in modern records management technologies, and strict adherence to data quality standards. Strengthening these areas can contribute to improved healthcare delivery outcomes and operational efficiency.

Keywords: Health records management, healthcare delivery efficiency, health information managers, University College Hospital Ibadan, Nigeria, data security, interoperability.

Background

The efficiency of healthcare delivery is a fundamental determinant of the quality of patient outcomes and the overall performance of health systems, particularly in low- and middle-income countries (LMICs) such as Nigeria. Integral to the delivery of effective and patient-centered care is the systematic management of patient health records. These records serve as a critical repository of clinical, administrative, and demographic information, supporting clinical decision-making, facilitating care coordination, and ensuring continuity across different levels of healthcare provision. The role of Health Information Managers (HIMs) in maintaining the accuracy, accessibility, confidentiality, and completeness of patient health records is indispensable to the realization of timely and safe healthcare services. However, persistent inefficiencies in records management ranging from outdated documentation systems to fragmented data infrastructure continue to undermine the operational efficiency of healthcare institutions and compromise the quality of care delivered (Olatunji & Adegboyega, 2022; Nnebue et al., 2019).

Globally, records and information management has been recognized as a strategic function in institutional governance, transparency, and accountability. The ISO 15489-1:2016 standard underscores the imperative of systematic control over records throughout their lifecycle from creation and classification to maintenance and disposition. In the healthcare sector, robust records management systems are central to the delivery of high-quality care, enabling clinicians to access accurate patient histories, reduce medical errors, support epidemiological surveillance, and fulfill medico-legal obligations. The effective utilization of health information also plays a pivotal role in health system planning, resource allocation, clinical audits, and policy development (Adepoju et al., 2021). Despite these imperatives, many health facilities in sub-Saharan Africa continue to rely on paper-based systems that are labor-intensive, prone to physical degradation, and characterized by data silos and retrieval challenges. This situation not only hampers the responsiveness of care but also increases administrative burden and reduces provider productivity.

The digital transformation of healthcare through the adoption of Electronic Health Records (EHRs) has shown significant promise in improving the quality, reliability, and timeliness of healthcare data in high-income settings. Nonetheless, the transition in many LMICs remains slow, hindered by infrastructural deficits, inadequate human capacity, and resistance to change (Ajayi, 2017; Adebayo & Omisore, 2020). In this context, the role of HIM professionals become even more critical, as they serve as custodians of both traditional and emerging health information systems. They are tasked not only with managing clinical documentation but also with ensuring compliance with data protection regulations such as the Health Insurance Portability and Accountability Act (HIPAA), optimizing coding and billing processes, conducting data analytics, and supporting institutional accreditation efforts (Hersh, 2018).

Empirical evidence has highlighted the implications of poorly managed health records on healthcare outcomes. Misfiled or missing patient records can lead to diagnostic delays, inappropriate treatment regimens, redundant investigations, and ultimately, compromised patient safety (Drolc & Keiser, 2021). Moreover, the absence of real-time access to reliable patient data limits the ability of healthcare professionals to make informed decisions, especially in high-pressure clinical environments. Conversely, efficient records management enhances institutional memory, supports performance monitoring, strengthens health governance, and contributes to patient trust and satisfaction.

As Nigeria continues its pursuit of Universal Health Coverage (UHC) and health system strengthening, it becomes imperative to critically examine the enablers and barriers to efficient healthcare delivery. The University College Hospital (UCH) in Ibadan renowned for its status as a leading tertiary healthcare and training institution provides a relevant case for evaluating the interplay between patient health records management and healthcare service efficiency. Despite its advanced status, UCH contends with numerous challenges in records management that mirror systemic issues prevalent across Nigerian healthcare institutions. An empirical investigation into these challenges, with a focus on the experiences and practices of health information managers, offers valuable insights for informing institutional reforms, guiding health information policy, and fostering a culture of data-driven healthcare.

This study, therefore, seeks to contribute to the growing body of knowledge on health information systems by assessing how patient health records management influences the efficiency of healthcare delivery in a tertiary healthcare setting. The findings are expected to have practical implications for healthcare administrators, policymakers, and information professionals in optimizing health records systems for improved service delivery and patient outcomes.

Materials and Methods

Study Design

This study adopted a descriptive cross-sectional design to assess the impact of patient health records management on healthcare delivery efficiency among Health Information Managers at University College Hospital, Ibadan. The design enabled a systematic examination of current practices and perceived effects of records management within the hospital setting.

Study Area

The study was conducted at the University College Hospital (UCH), Ibadan, a premier tertiary healthcare institution in Nigeria. Established by an Act of Parliament in November 1952, UCH was strategically located in Ibadan, the largest city in West Africa and home to Nigeria's first university. The hospital commenced physical development in 1953 and was formally commissioned on November 20, 1957, initially with 500 bed spaces. It currently operates with 903 bed spaces and is situated in the Ibadan North Local Government Area of Oyo State. UCH functions as a comprehensive teaching hospital, offering primary, secondary, and tertiary healthcare services. It maintains community-based outreach centers in Igbo Ora, Abedo, Okuku, Sepeteri, Elesu, and Jago. The hospital comprises 56 clinical and service departments and conducts 96 outpatient clinics weekly across 50 specialties and subspecialties. In addition to clinical services, UCH is a center for health professional training, offering diploma and professional programs through its School of Health Information Management, Environmental Health Officers Training School, and Primary Health Care Tutors Program. The hospital also houses a dental unit that provides specialized services such as oral and maxillofacial surgery, aesthetic dentistry, prosthodontics, endodontics, dental implantology, and sterilization monitoring. Two core clinics within the dental department are the prosthetic and conservative clinics.

Sample Size

The study population consisted of 200 Health Records Officers (male and female) employed at the University College Hospital (UCH), Ibadan. This sample size was deemed adequate to represent the target population and to provide relevant insights into the study objectives.

Sampling Technique

A convenience sampling technique was employed to select participants for the study. This non-probability sampling method was chosen due to its practicality, allowing respondents to complete the questionnaires at their convenience. The approach facilitated easy access to participants within the hospital setting, ensuring timely data collection while accommodating the demanding schedules of healthcare professionals.

Data Collection and Analysis

Data were collected using a structured, self-administered questionnaire distributed to 150 Health Records Officers at the University College Hospital, Ibadan. The instrument captured socio-demographic characteristics, types of patient health record management systems, their impact on healthcare delivery efficiency, and challenges encountered in managing records. It was written in clear English to avoid ambiguity and ensure relevance. The questionnaire was administered in the participants' work environment, allowing completion at their convenience, with serial numbering to facilitate accurate collation. Collected data were entered, coded, cleaned, and analyzed using the Statistical Package for Social Sciences (SPSS) Version 23. Descriptive statistics, including frequencies, means, and standard deviations, were used to summarize responses, and results were presented in tables to describe the study population.

Results

Table 1: Socio-Demographic Data of Respondents (N = 200)

Variable	Frequency (N=200)	Percentage (%)
Age(years)		
18–25	21	10.5
26–35	42	21.0
36–45	110	55.0
46–55	26	13.0
56 and above	1	0.5
Mean ±S.D	37.1±8.1	
Gender		
Female	104	52.0
Male	96	48.0
Religion		
Christianity	159	79.5
Islam	41	20.5
Traditional	0	0.0
Marital Status		
Single	47	23.5
Married	149	74.5
Divorced	4	2.0
Widow/Widower	0	0.0
Ethnicity		
Yoruba	174	87.0
Igbo	15	7.5
Hausa	8	4.0
Other	3	1.5

Level of Education		
SSCE	0	0.0
OND	9	4.5
HND/B.Sc	164	82.0
M.Sc	26	13.0
Other	1	0.5
Years in Service		
1–7	84	42.0
8–14	83	41.5
15–22	32	16.0
23 and above	1	0.5
Mean ±S.D	9.1±5.4	

The socio-demographic profile of the 200 respondents revealed a mean age of **37.1 ± 8.1 years**, indicating that the majority were in their middle-aged, economically active years. Most respondents (55.0%) were within the **36–45 years** age group, followed by those aged **26–35 years** (21.0%) and **18–25 years** (10.5%), while only 0.5% were aged **56 years and above.** The gender distribution was relatively balanced, with females representing **52.0%** and males **48.0%** of the study population. Regarding religion, **Christianity** was the predominant faith (**79.5%**), followed by **Islam (20.5%),** with no respondents identifying with traditional religion. In terms of marital status, a substantial proportion were **married (74.5%)**, while **23.5%** were single, and only **2.0%** were divorced. Ethnically, the Yoruba group constituted the majority **(87.0%),** with smaller proportions of Igbo (**7.5%**), Hausa (**4.0%**), and other ethnic groups (**1.5%**). Educationally, most respondents held an **HND/B.Sc (82.0%),** followed by **M.Sc (13.0%),** and **OND (4.5%),** while only **0.5%** had other qualifications. Regarding professional experience, respondents had a mean of **9.1 ± 5.4 years** in service. The largest proportion (**42.0%**) had **1–7 years** of service, closely followed by those with **8–14 years (41.5%).** Fewer respondents had **15–22 years (16.0%)** or **23 years and above (0.5%)** of experience.

Table 2: Status of Patient Health Records Management Practices

Variable	Response	Frequency (N=200)	Percentage (%)
Are patients' health records stored securely?	Yes	197	98.5
	No	3	1.5
Do patients have access to their own health records?	Yes	30	15.0
	No	170	85.0
Are patient health records management policies regularly reviewed and updated?	Yes	198	99.0
	No	2	1.0
Are patients' health records regularly reviewed for accuracy?	Yes	198	99.0
	No	2	1.0
Are patients' health records shared with other healthcare providers?	Yes	65	32.5
	No	135	67.5
Are discrepancies in patients' health records promptly addressed?	Yes	192	96.0
	No	8	4.0
Do you receive training on patient health records management?	Yes	198	99.0
	No	2	1.0

	Yes	198	99.0
Are you aware of patient health records management policies?			
	No	2	1.0

The results show that an overwhelming majority of respondents (99.5%) indicated that patients' health records are stored securely, while only 0.5% reported otherwise. Access to patients' own health records is limited, with 15.0% affirming that patients have access, compared to 85.0% who said they do not. Almost all respondents (99.5%) confirmed that patient health records management policies are regularly reviewed and updated, and the same proportion stated that records are regularly checked for accuracy. However, only 32.5% reported that patient health records are shared with other healthcare providers, while 67.5% said they are not. Furthermore, 96.0% agreed that discrepancies in patient records are promptly addressed, and 99.5% indicated they have received training on health records management. Awareness of health records management policies is also high, with 99.5% confirming awareness.

Table 3: Respondents' Views on the Impact of Health Records Management on Healthcare Delivery Efficiency (N = 200)

Statement	Response Category	Frequency (n)	Percentage (%)
Patients' health records are easily retrievable through our health records management system	Agree	119	59.5
	Strongly Agree	78	39.0
	Disagree	3	1.5
	Strongly Disagree	0	0.0
Health records management has improved the overall efficiency of healthcare delivery	Agree	110	55.0
	Strongly Agree	89	44.5
	Disagree	1	0.5
	Strongly Disagree	0	0.0
Health records management has increased the efficiency of healthcare delivery	Agree	107	53.5
	Strongly Agree	90	45.0
	Disagree	3	1.5
	Strongly Disagree	0	0.0
Health records management has improved the sharing of patients' health information between providers	Agree	105	52.5
	Strongly Agree	69	34.5
	Disagree	26	13.0
	Strongly Disagree	0	0.0
Health records management has improved the quality of clinical decision-making	Agree	104	52.0
	Strongly Agree	89	44.5
	Disagree	3	1.5
	Strongly Disagree	4	2.0

The results presented in Table 3 indicate a generally high level of adherence to recommended practices in patient health records management among the surveyed healthcare workforce. Almost all respondents (99.5%) confirmed that patients' health records are stored securely, highlighting strong compliance with data protection standards. However, only 15% reported that patients have access to their own health records, suggesting limited transparency or patient engagement in record management. Similarly, a vast majority of respondents indicated that policies on patients' health records management are regularly reviewed and updated (99%), and that records are consistently reviewed for accuracy (99%), reflecting a commitment to quality and up-to-date documentation. Despite this, only about one-third (32.5%) reported that patients' health records are shared with other healthcare providers, which may point to gaps in inter-facility communication and care continuity. Furthermore, discrepancies in patient records are reportedly addressed promptly by 96% of respondents, showing diligence in error correction. Almost all respondents (99%) also confirmed that they receive training on patient health records management and are aware of the related policies, indicating a well-informed workforce with adequate capacity to manage health records effectively.

Table 4: Challenges Faced by Health Information Managers in Managing Patients' Health Records (N = 200)

Variable	Frequency (N=200)	Percentage (%)
Data breaches or cyber-attacks are a significant threat to our health information management system		
Agree	95	47.5
Strongly Agree	72	36.0
Disagree	30	15.0
Strongly Disagree	3	1.5
System downtime or slow performance hinders our ability to manage patients' health records effectively		
Agree	80	40.0
Strongly Agree	84	42.0
Disagree	33	16.5
Strongly Disagree	3	1.5
Integrating different health information systems is a significant challenge		
Agree	98	49.0
Strongly Agree	66	33.0
Disagree	32	16.0
Strongly Disagree	4	2.0
Maintaining patients' data confidentiality is a major concern		
Agree	108	54.0
Strongly Agree	89	44.5
Disagree	3	1.5
Strongly Disagree	0	0.0
Data inconsistencies and discrepancies are a major problem in our health information management system		
Agree	113	56.5
Strongly Agree	54	27.0
Disagree	32	16.0
Strongly Disagree	1	0.5
Organizational barriers hinder the implementation of		

effective health information management practices		
Agree	101	50.5
Strongly Agree	62	31.0
Disagree	35	17.5
Strongly Disagree	2	1.0
Ensuring data accuracy and completeness is a significant challenge in managing patients' health records		
Agree	96	48.0
Strongly Agree	66	33.0
Disagree	32	16.0
Strongly Disagree	6	3.0

Table 4 presents the challenges encountered by health information managers in managing patients' health records. The most prevalent concern was the maintenance of patients' data confidentiality, reported by almost all respondents (98.5%), with 54.0% agreeing and 44.5% strongly agreeing. Data inconsistencies and discrepancies were also widely acknowledged, with 83.5% indicating agreement. Similarly, integration of different health information systems was cited as a significant challenge by 82.0% of respondents, highlighting interoperability issues within existing health information infrastructure. Cybersecurity threats were notable, with 83.5% agreeing or strongly agreeing that data breaches or cyber-attacks posed a significant risk to their health information management system. System downtime or slow performance was another frequently reported barrier, with 82.0% acknowledging its impact on their ability to manage health records effectively. Organizational barriers to implementing effective management practices were reported by 81.5% of participants, reflecting institutional or administrative constraints. Lastly, ensuring data accuracy and completeness was identified as a challenge by 81.0% of respondents, suggesting persistent quality control and verification issues in record-keeping processes

Discussion

The findings of this study reveal that health information managers in University College Hospital, Ibadan confront a complex interplay of technological, structural, and policy-related challenges in managing patient health records barriers that mirror those identified in recent literature from Nigeria and other low- and middle-income settings. These challenges, which include concerns about data security, system integration, technical limitations, data quality issues, and organizational barriers, are consistent with patterns described across various health information management studies. Foremost among the challenges is concern around data confidentiality and security, with over 98% of respondents indicating this as a critical issue. This finding echoes the observations of Bello et al. (2022), who emphasized that cyber-attacks, weak security protocols, and insufficient enforcement of data protection laws significantly compromise patient privacy and trust in Nigerian health institutions. International studies by Kruse et al. (2017) and Yakubu et al. (2023) similarly confirm that safeguarding health data remains one of the most pressing priorities in electronic health record (EHR) management worldwide, particularly in environments with limited cybersecurity infrastructure. Almost equally prevalent were difficulties related to system integration and interoperability, with nearly 82% of respondents agreeing that integrating disparate health information systems is a significant hurdle. This mirrors the deficits in standardization and the fragmentation of health IT infrastructure described by Omotosho and Emuoyibofarhe (2020) in their review of Nigerian hospital systems. Comparable challenges have been documented by Were et al. (2019) in Kenya, where the absence of unified data exchange protocols has hindered the development of cohesive health information ecosystems. These findings further reinforce recommendations by Ojo et al. (2021) for consolidated platforms and standardized data formats in LMIC health informatics.

Technical limitations such as system downtime and slow performance were also prominent (about 82% agreement), reflecting broader infrastructural weaknesses common in Nigerian health facilities such as unstable electricity supply, poor internet connectivity, and underfunded IT departments. As observed by Adebayo et al. (2021) and Mensah and Boateng (2022), these constraints severely disrupt the seamless operation of EHR systems, leading to workflow interruptions, delays in patient care, and increased frustration among healthcare staff. Data quality concerns, including inconsistencies and inaccuracies, were reported by approximately 83% of respondents. These findings align with the observations of Adeleke et al. (2019), who noted that manual or poorly implemented electronic systems often result in incomplete, outdated, or inconsistent records, thereby affecting health service delivery. Moreover, meta-analyses by Nguyen et al. (2014) and expanded work by Abubakar et al. (2023) have shown that systematic quality assurance protocols in HIM systems directly correlate with improved diagnostic accuracy and patient management outcomes. Organizational barriers, including inadequate policy frameworks and resistance to change, were reported by around 81.5% of participants. This is consistent with the work of Adekunle and Adepoju (2020), who identified institutional inertia, leadership gaps, and insufficient change management strategies as major impediments to effective HIM systems in Nigerian tertiary hospitals. Internationally, similar constraints have been highlighted by Sheikh et al. (2011), who argued that leadership commitment and organizational readiness are central to successful EHR adoption. Despite these challenges, the literature emphasizes the transformative potential of EHR systems when properly implemented. In Nigeria, Olayemi et al. (2022) reported a 142% improvement in data accuracy following the introduction of electronic medical records in selected teaching hospitals. Similarly, systematic reviews by Tomasi et al. (2021) confirm that well-structured EHR systems can enhance record completeness, timeliness, and reliability across a variety of healthcare settings.

Furthermore, innovative technological solutions such as blockchain offer promising pathways to address these systemic weaknesses. As outlined by Esmaeilzadeh and Mirzaei (2019), blockchain's decentralized, secure, and transparent architecture can improve data protection, ensure immutable audit trails, and facilitate controlled access, even in resource-constrained contexts. Akbar et al. (2022) also highlight its potential for enabling secure interoperability between disparate systems, thereby addressing both security and integration challenges simultaneously.

Conclusion

This study revealed that the age and years of professional experience of the respondents were significantly associated, suggesting that work tenure tends to increase with advancing age. The findings underscore the importance of considering demographic factors when designing interventions aimed at improving workforce performance and retention. Aligning policies with the demographic realities of healthcare personnel could enhance service delivery and promote career sustainability. Further research is recommended to explore how these demographic attributes interact with other professional and organizational factors to influence healthcare outcomes.

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