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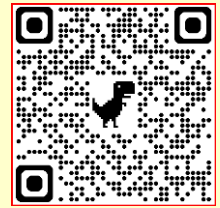
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Public Relations Strategies and the Implementation of Computerised Medical Diagnostic and Recording Systems for Healthcare Delivery in Akwa Ibom State, Nigeria

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ABSTRACT

The successful implementation of computerised medical diagnostic and recording systems in developing-country hospitals depends as much on communication as on technology. This study examined the role of public relations in the implementation of computerised medical diagnostic and recording systems at the University of Uyo Teaching Hospital (UUTH) and St Luke's Hospital, Anua, in Akwa Ibom State, Nigeria. Anchored on the Hierarchy of Communication Effects framework and Diffusion of Innovation Theory, the study adopted a survey design involving 297 healthcare personnel drawn through proportionate stratified and simple random sampling from a population of 1,816. A structured, validated questionnaire (Cronbach's alpha = .88) was used for data collection, and data were analysed using frequencies, percentages and means. Findings show generally high exposure to public relations communication about the system, moderate use of participatory strategies, a strong perceived relationship between communication and system utilisation, and persistent communication-related barriers, particularly inadequate training and weak feedback mechanisms. The study concludes that public relations communication is a critical, though under-optimised, lever for the acceptance and sustained utilisation of computerised medical systems in Nigerian hospitals, and recommends deliberate investment in structured, two-way and participatory public relations strategies to accompany future health information technology rollouts.

KEY WORDS: public relations, computerised medical diagnostic, computerised recording systems, stakeholder engagement, healthcare communication.

Introduction

Computerised medical diagnostic and recording systems, commonly referred to as electronic medical records (EMR) or electronic health records (EHR), are digital platforms designed to replace paper-based charting with tools that support documentation, diagnosis, retrieval and continuity of patient care (Akwaowo et al., 2022). Globally, high-income health systems have achieved near-universal adoption of such systems through sustained policy support and incentives,

whereas low- and middle-income countries, including Nigeria, continue to record slow and uneven uptake despite considerable investment (Bolatito & Togunwa, 2025; Salam et al., 2023). In Nigeria, national frameworks such as the Health ICT Strategic Framework have sought to accelerate digital health adoption, yet implementation research continues to report inconsistent use of computerised systems in practice, frequently attributed to infrastructural deficits, limited digital literacy and weak organisational communication (Babatope et al., 2024; Sibiya et al.,

2023; Tegegne et al., 2023).

Within the Nigerian digital-health sector, this low utilisation is attributed to infrastructural constraints such as unreliable electricity and poor internet connectivity, or to individual-level deficits in computer skills and digital literacy (Bolatito & Togunwa, 2025; Sibiya et al., 2023). Yet these accounts struggle to explain why healthcare personnel who are technically capable, and who work in facilities with reasonably adequate infrastructure, still hesitate to trust or routinely use available systems (Akingbade, 2025; Babalola et al., 2025). A growing body of evidence points instead to a communication gap: healthcare personnel are inadequately exposed to information about new systems, inadequately persuaded of their value, and inadequately consulted before and during rollout, leaving early awareness to stall well short of confident, everyday use (Nair et al., 2024; Potthoff et al., 2023). Left unaddressed, this gap threatens to undermine the considerable financial and policy investment already made in computerising diagnostic and recording systems across Akwa Ibom State's hospitals, and to perpetuate the very documentation failures — delay, error, discontinuity of care — that these systems were introduced to eliminate.

It is this communication dimension, rather than the technology itself, that this study takes as its central concern. The study argues that the acceptance and sustained utilisation of computerised medical diagnostic and recording systems is best understood not as a purely technical outcome but as the product of a communication process — one that moves healthcare personnel from initial exposure and awareness, through understanding and persuasion, to genuine engagement and confirmed everyday use, in the manner theorised by hierarchy-of-effects and diffusion-of-innovation perspectives on communication (Lavidge & Steiner, 1961; Rogers, 2003). Public relations, understood as the strategic, two-way management of communication between an organisation and its publics (Vrabcová et al., 2024), is the organisational function most directly responsible for engineering this movement, and where it is weak, fragmented or one-directional, healthcare personnel may remain aware of a system's existence without ever being persuaded of its value (Adebisi et al., 2024; Agbarakwe et al., 2023).

Therefore, this study investigates the extent to which public relations communication shapes the acceptance and utilisation of computerised medical diagnostic and recording systems among healthcare personnel at UUTH and St Luke's Hospital, Anua, in Akwa Ibom State.

Statement of the Problem

Across Nigerian hospitals, studies consistently report that healthcare personnel underutilise these systems long after installation, often reverting to hybrid or entirely paper-based practices (Akingbade, 2025; Babalola et al., 2025). There has been significant scholarly concentration on infrastructural constraints such as unreliable electricity and poor internet connectivity, and on individual-level factors such as digital literacy and computer skills (Bolatito & Togunwa, 2025; Sibiya et al., 2023; Tegegne et al., 2023). While these factors matter, they do not fully account for cases in which infrastructure is adequate but utilisation remains low, nor do they explain why healthcare personnel who are technically capable nonetheless resist or under-use available systems.

What is comparatively under-examined in the Nigerian context is the communication dimension of implementation: whether healthcare personnel are adequately exposed to information about a new computerised system, whether public relations strategies are

deployed to build understanding and acceptance, whether personnel are genuinely engaged as stakeholders rather than passive recipients of directives, and whether communication-related barriers — poor feedback channels, inadequate training communication, and weak coordination between management, ICT personnel and clinical staff — undermine sustained use (Esmaeilzadeh, 2022; Potthoff et al., 2023). At UUTH and St Luke's Hospital, Anua, anecdotal reports of inconsistent use of the computerised medical diagnostic and recording system persist despite the system's availability, suggesting that a communication-centred, public relations lens is needed to complement the largely technical and infrastructural focus of existing Nigerian digital-health research. It is this gap that the present study addresses.

Objectives of the Study

The objectives of this study were to:

- i. examine the extent to which healthcare personnel are exposed to public relations communication about computerised medical diagnostic and recording systems in healthcare facilities in Akwa Ibom State;
- ii. identify the public relations strategies employed to create awareness, understanding and acceptance of computerised medical diagnostic and recording systems among healthcare personnel;
- iii. examine the influence of stakeholder engagement and participatory communication on the acceptance and utilisation of computerised medical diagnostic and recording systems;
- iv. determine the relationship between public relations communication and the utilisation of computerised medical diagnostic and recording systems for healthcare delivery; and
- v. identify the communication-related challenges affecting the implementation and sustained utilisation of computerised medical diagnostic and recording systems in healthcare facilities in Akwa Ibom State.

Research Questions

The study was guided by the following research questions:

- i. To what extent are healthcare personnel exposed to public relations communication about computerised medical diagnostic and recording systems in healthcare facilities in Akwa Ibom State?
- ii. What public relations strategies are employed to create awareness, understanding and acceptance of computerised medical diagnostic and recording systems among healthcare personnel?
- iii. To what extent does stakeholder engagement and participatory communication influence the acceptance and utilisation of computerised medical diagnostic and recording systems?
- iv. What relationship exists between public relations communication and the utilisation of computerised medical diagnostic and recording systems for healthcare delivery?
- v. What communication-related challenges affect the implementation and sustained utilisation of computerised

medical diagnostic and recording systems in healthcare facilities in Akwa Ibom State?

Literature Review

Review of Concepts

Public relations is conceptualised as the deliberate, planned and sustained management of communication between an organisation and the publics on whose understanding and goodwill its success depends. Contemporary scholarship emphasises its two-way, dialogic character: effective public relations is not the one-directional transmission of management messages but a reciprocal process involving listening, feedback and adjustment (Vrabcová et al., 2024). In organisational settings, symmetrical, two-way communication has been shown to build trust, strengthen employee-organisation relationships and increase willingness to support organisational change (Lee, 2018). Within healthcare organisations specifically, public relations communication performs the function of translating technical or managerial decisions into information that clinical and non-clinical personnel can understand, evaluate and act upon.

Computerised medical diagnostic and recording systems refer to digital platforms used to capture, store, retrieve and share patient diagnostic and clinical information, replacing or supplementing paper-based records (Akwaowo et al., 2022). These systems are associated with improved documentation accuracy, faster retrieval of patient history, reduced duplication of tests and better coordination of care (Salam et al., 2023). Their successful use, however, depends on more than installation; it requires that healthcare personnel understand their purpose, trust their reliability and are supported through the transition from familiar paper-based routines (Sibiya et al., 2023; Tegegne et al., 2023).

Theoretical Framework

This study is anchored on the Diffusion of Innovation Theory, propounded by Everett Rogers and most comprehensively articulated in Rogers (2003). The theory explains how, why and at what rate new ideas, practices or technologies spread within a social system, and identifies five sequential stages through which a potential adopter passes: knowledge (exposure to the innovation's existence), persuasion (formation of a favourable or unfavourable attitude), decision (engagement in activities leading to adoption or rejection), implementation (putting the innovation into use), and confirmation (seeking reinforcement for, or reversing, the adoption decision). Rogers further identifies attributes that influence the speed of diffusion and stresses the role of communication channels and change agents in moving individuals through the successive stages, particularly in organisational contexts where adoption is not purely voluntary. Diffusion of Innovation Theory is directly relevant to this study because each of its stages corresponds closely to a dimension of public relations practice examined in the objectives.

Review of Empirical Studies

Akwaowo et al. (2022) found that perceived usefulness, critical success factors, awareness and relative advantage significantly predicted clinicians' intention to adopt EMR systems, while infrastructure availability, contrary to expectation, was not a statistically significant predictor. The centrality of awareness and perceived usefulness to adoption intention lends strong support to the communication-centred argument advanced in the present study. Akingbade (2025) reported moderate knowledge of EMR functions (65%), positive attitudes toward adoption (76%), but low consistent

practice, with only 28% of respondents relying fully on the system, chiefly because of power outages, poor connectivity and inadequate training. The gap between favourable attitude and actual behaviour observed in this study illustrates precisely the communication-to-action bottleneck that the Hierarchy of Communication Effects framework anticipates.

Salam, Kolawole, Ohaeri and Babarimisa (2023) found strong agreement that EHRs improve healthcare efficiency, accuracy and confidentiality, and identified statistically significant associations between demographic characteristics and both awareness and perception of the system, underscoring the importance of targeted communication and training strategies tailored to different categories of healthcare personnel. Babatope et al. (2024), found that despite general awareness of the system, factors including inadequate staff training, poor change communication and limited involvement of frontline staff in the implementation process constrained effective use, reinforcing the argument that technical deployment without corresponding communication support yields limited utilisation gains.

Agbarakwe, Grange, Awotunde and Fetuga (2023) assessed the knowledge, perception and readiness of health professionals toward electronic health record adoption during the COVID-19 pandemic in Lagos State. The study found that persistent reliance on paper-based record keeping, despite its documented weaknesses for continuity of care, was linked to inadequate readiness communication, suggesting that pandemic-era disruption further exposed the consequences of weak public relations planning around health information technology transitions. Babalola et al. (2025) found that while most respondents recognised the benefits of EMR for documentation and care coordination, persistent barriers including unreliable electricity, limited internet connectivity and insufficient orientation continued to constrain routine use, again reinforcing that positive perception alone does not translate automatically into sustained utilisation without supporting organisational communication. Esmaeilzadeh (2022) found that both internal barriers (technological and organisational) and external barriers (relating to partners, patients and vendors) significantly reduced clinicians' intention to use shared health information systems, with organisational communication failures identified as a recurring internal inhibitor — a pattern broadly consistent with the communication-related challenges examined in Objective Five of the present study.

Methodology

The study adopted a survey research design, appropriate for describing the perceptions, attitudes and reported behaviour of a defined population at a given point in time. The population comprised 1,816 healthcare personnel drawn from the University of Uyo Teaching Hospital (UUTH), Uyo, and St Luke's Hospital, Anua, in Akwa Ibom State. A sample size of 328 respondents was determined using the Taro Yamane formula at a 5% level of precision, consistent with sample-size procedures previously applied to comparable clinical-personnel populations in Nigerian tertiary hospital research (Akwaowo et al., 2022). A proportionate stratified sampling technique was used to allocate the sample across the selected hospitals and relevant professional categories, after which simple random sampling was used to select individual respondents within each stratum.

Data were collected using a structured questionnaire covering exposure to public relations communication, public relations strategies employed, stakeholder engagement and participatory communication, the relationship between communication and

system utilisation, and communication-related implementation challenges. The instrument was subjected to face and content validation by experts in Public Relations, Mass Communication, Health Information Management and Research Methods. Its reliability was established through a pilot test and assessed using Cronbach's alpha, which yielded a coefficient of 0.88, indicating a high level of internal consistency. The questionnaires were administered directly to selected respondents by the researcher and trained research assistants after obtaining the necessary permission from the management of the selected facilities. Of the 328

questionnaires administered, 297 were correctly completed and returned, representing a 90.5% response rate and constituting the effective sample analysed in this study. Frequencies, percentages and means were used to answer the research questions, with responses on the five-point scale (Strongly Agree, Agree, Undecided, Disagree, Strongly Disagree) presented in summary tables and interpreted in relation to the study's objectives.

Data Presentation and Analysis

Table 1: Exposure to Public Relations Communication about Computerised Medical Systems

S/N	Statement	SA	A	U	D	SD	Total
1	Hospital management regularly communicates information about the computerised medical diagnostic and recording system to healthcare personnel.	104	113	24	34	22	297
2	I receive adequate information about the purpose and benefits of the computerised medical system.	99	118	23	35	22	297
3	I am adequately informed about changes and updates concerning the computerised medical system.	93	112	29	39	24	297
4	Information provided by management helps me understand how the computerised system supports healthcare delivery.	101	115	25	34	22	297

Source: Fieldwork, 2026

Table 1 shows that a large majority of respondents (73.1%) agreed or strongly agreed that hospital management regularly communicates information about the system, and the same proportion (73.1%) agreed that management information helps them understand how the system supports healthcare delivery.

Table 2: Public Relations Strategies Used in Communicating Computerised Medical Systems

S/N	Statement	SA	A	U	D	SD	Total
5	Staff meetings and briefings are used to communicate information about the computerised medical system.	88	119	31	38	21	297
6	Workshops and training programmes are used to educate healthcare personnel about the computerised medical system.	84	117	30	43	23	297
7	Memos, circulars and other internal communication channels are used to provide information about the system.	82	115	33	44	23	297
8	Management communicates the benefits of the computerised system in ways that encourage healthcare personnel to accept it.	90	120	28	39	20	297

Source: Fieldwork, 2026

Table 2 shows that staff meetings and briefings, workshops and training programmes, internal memos and circulars, and benefit-oriented messaging are all perceived as important strategies for communicating about the computerised system, with the highest level of agreement (210 respondents, or 70.7%) recorded for communication that emphasises the system's benefits.

Table 3: Stakeholder Engagement and Participatory Communication

S/N	Statement	SA	A	U	D	SD	Total
9	Healthcare personnel are given opportunities to express their views and concerns about the computerised medical system.	81	115	31	45	25	297
10	Management seeks the opinions of healthcare personnel during the implementation or improvement of the system.	78	111	34	48	26	297
11	Feedback from healthcare personnel is considered when addressing problems with the computerised system.	76	112	36	47	26	297
12	Participation in discussions and training about the system increases healthcare personnel's willingness to use it.	84	114	30	44	25	297

Source: Fieldwork, 2026

Table 3 shows comparatively lower, though still majority, agreement with statements on stakeholder engagement: 198 respondents (66.7%) agreed or strongly agreed that they are given opportunities to express their views, while only 188 (63.3%) agreed that management seeks their opinions during implementation or improvement of the system.

Table 4: Public Relations Communication and System Utilisation

S/N	Statement	SA	A	U	D	SD	Total
13	Effective communication about the computerised system encourages healthcare personnel to use it in their routine duties.	96	119	28	36	18	297
14	Clear communication about the benefits of the system increases its utilisation among healthcare personnel.	92	122	27	37	19	297
15	Adequate information and guidance from management have increased my confidence in using the computerised system.	87	119	31	39	21	297
16	Effective public relations communication contributes to the sustained use of the computerised system in my healthcare facility.	91	117	30	40	19	297

Source: Fieldwork, 2026

Table 4 shows a strong perceived relationship between communication and utilisation, with 215 respondents (72.4%) agreeing or strongly agreeing that effective communication encourages routine use of the computerised system, and 214 (72.1%) indicating that clear communication about benefits increases utilisation.

Table 5: Communication-Related Challenges Affecting Implementation and Utilisation

S/N	Statement	SA	A	U	D	SD	Total
17	Inadequate communication about the computerised system hinders its effective implementation.	71	117	34	47	28	297
18	Inadequate training and orientation constitute major barriers to effective use of the system.	76	121	31	44	25	297
19	Limited opportunities for healthcare personnel to provide feedback hinder the effective implementation of the system.	68	116	37	48	28	297
20	Poor communication between management, ICT personnel and healthcare workers affects the sustained utilisation of the system.	73	119	32	46	27	297

Source: Fieldwork, 2026

Table 5 shows substantial agreement that communication-related problems constitute real barriers to effective implementation, with the strongest agreement (197 respondents, or 66.3%) recorded for inadequate training and orientation.

Discussion of Findings

A majority of healthcare personnel (73.1%) reported adequate exposure to communication about the computerised medical diagnostic and recording system indicates that management at UUTH and St Luke's Hospital, Anua, has achieved a reasonable baseline level of awareness-building, corresponding to the knowledge stage of Rogers's (2003) Diffusion of Innovation Theory. This finding aligns closely with Akwaowo et al. (2022), who found awareness to be a significant predictor of EMR adoption intention across Niger Delta hospitals, and with Salam et al. (2023), who similarly reported strong awareness of EHR benefits among Ondo State health workers. It contrasts, however, with Agbarakwe et al. (2023), whose Lagos-based COVID-19 era study found persistent gaps in readiness communication that left many health professionals continuing to rely on paper records despite awareness of digital alternatives. The comparison suggests that while exposure in Akwa Ibom facilities is comparatively strong, exposure alone is an early-stage outcome that does not by itself guarantee movement to persuasion, decision or confirmed use; the meaningful minority who remained unexposed or undecided represents precisely the group at

greatest risk of non-adoption.

Benefit-oriented messaging, staff meetings, workshops and internal memoranda are the dominant strategies used to communicate about the computerised system, with benefit-framed communication recording the highest agreement (70.7%), supports the persuasion stage of Diffusion of Innovation Theory, in which the clarity of relative advantage communicated to potential adopters shapes the speed and completeness of diffusion. This is consistent with Adebisi et al. (2024), who found that enlightenment and health-information-exchange campaigns were essential to sustained EMR use at Federal Medical Centre, Bida, and with Nair et al. (2024), whose cross-national synthesis identified message framing around new health technologies as central to clinician engagement across implementation phases. It diverges somewhat from Bolatito and Togunwa (2025), who found that Nigerian implementations more generally have relied on infrequent, poorly sustained communication rather than structured, benefit-focused strategy. A divergence that may reflect facility-level variation in public relations capacity rather than a contradiction of the broader theoretical expectation that persuasive, benefit-centred communication is what moves personnel from awareness toward favourable attitude formation.

The comparatively weaker agreement recorded for stakeholder engagement items indicates that the decision stage of the diffusion process is the weakest link in the communication chain at the studied facilities. This finding corroborates Potthoff et al. (2023), whose international study of implementation stakeholder engagement found

that engagement is too often minimal or confined to barrier identification rather than genuine co-design, and Pellegrini and Lovati (2025), who similarly emphasised that effective stakeholder engagement in health-technology contexts requires sustained, multi-level dialogue rather than episodic consultation. The finding also supports the two-way symmetrical communication perspective (Vrabcová et al., 2024; Lee, 2018), which holds that engagement practices characterised by genuine listening and feedback incorporation, rather than one-directional information dissemination, are what most strongly influence stakeholders' willingness to support organisational change.

The strong, consistent agreement that effective communication and clear benefit messaging increase system utilisation (72.4% and 72.1% respectively) provides direct empirical support for the study's central proposition that public relations communication is causally linked to the implementation stage of Diffusion of Innovation Theory. This finding is strongly corroborated by Akingbade (2025), whose Ogun State study found that positive attitudes toward EMR, cultivated substantially through communication, translated into willingness to adopt even where infrastructural constraints limited full utilisation, and by De Leeuw et al. (2020), who found that clear communication and support significantly influenced digitally lagging nurses' adoption of health information technology in a Dutch context, suggesting the relationship is not merely a Nigerian or low-resource-setting phenomenon but a broadly generalisable one. The finding is also consistent with Esmaeilzadeh (2022), who found that organisational communication failures were a significant internal inhibitor of clinicians' engagement with health information exchange in the United States, reinforcing that communication quality, not technology quality alone, differentiates high- from low-utilisation contexts across very different health systems.

The identification of inadequate training and orientation as the most strongly endorsed barrier (66.3%), followed closely by poor communication between management, ICT personnel and healthcare workers, points to unresolved weaknesses at the confirmation stage of the diffusion process, where Rogers (2003) argues that adopters seek ongoing reinforcement for their decision or risk discontinuance. This finding is strongly consistent with Sibiya et al. (2023), who found that limited digital competence, worsened by the absence of structured, ongoing training communication, constrained EHR use independently of infrastructure in a Southwest Nigerian tertiary hospital, and with Babatope et al. (2024), who identified inadequate staff training and poor change communication as key militating factors against effective EHR implementation in Ondo State. It also aligns with Nair et al. (2024), who classified training and engagement as recurring barrier categories across the planning, implementing and sustaining phases of health-technology adoption internationally.

Conclusion

Healthcare personnel are generally well exposed to communication about the computerised system and perceive a strong relationship between such communication and their actual utilisation of the system. However, stakeholder engagement remains comparatively weak, and that unresolved communication-related challenges: particularly inadequate training and orientation, limited feedback opportunities, and poor coordination among management, ICT personnel and clinical staff, which continue to threaten the sustained, confirmed use of the system. As such, the success of computerised medical diagnostic and recording systems in healthcare delivery cannot be assured by technological deployment alone; it depends

fundamentally on how deliberately, consistently and participatorily that deployment is communicated. Public relations, properly resourced and strategically deployed, is therefore not a peripheral support function in digital health transformation but a central determinant of whether such transformation succeeds or stalls.

Recommendations

Based on the findings and conclusions of this study, the following recommendations are made, one corresponding to each objective:

- i. Hospital management at UUTH and St Luke's Hospital, Anua, should sustain and formalise regular, scheduled communication about the computerised medical diagnostic and recording system to close the residual exposure gap among the minority of healthcare personnel who remain inadequately informed.
- ii. Management should institutionalise benefit-focused public relations strategies, combining interpersonal channels such as staff meetings and workshops with documentary channels such as memos and circulars, ensuring that messaging consistently and clearly communicates the relative advantage of the computerised system over paper-based practice.
- iii. Hospital administrators should strengthen stakeholder engagement by institutionalising structured, two-way feedback mechanisms so that healthcare personnel are genuinely consulted, and not merely informed, during system implementation and improvement.
- iv. Because effective communication is strongly associated with system utilisation, hospital management and public relations units should treat communication planning as a core component of health information technology implementation budgets and timelines, rather than as an incidental or afterthought activity.
- v. Hospital management should address communication-related implementation challenges directly by establishing continuous, structured training and orientation programmes and by improving coordination among management, ICT personnel and clinical staff, so that early communication gains are reinforced rather than eroded over time.

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