

# COMPLIANCE WITH DATA PRIVACY AND CONFIDENTIALITY IN GHANAIAN PUBLIC HEALTHCARE FACILITIES

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## ***Abstract***

*This qualitative study examines how health system structures in Ghana impact nursing and midwifery adherence to patient data privacy and confidentiality protocols. The research involved observations and focus group discussions with 60 healthcare professionals across six hospitals selected from three geographical zones, using a clinical vignette for thematic analysis of practical situations. Findings demonstrate weaknesses across key health system building blocks that negatively impact patient information privacy and confidentiality. The findings indicate critical shortcomings within the leadership and governance, health workforce, health information management, and service delivery domains, emphasizing the need for comprehensive, holistic system strengthening to ensure robust privacy protection. As adaptive and complex entities, health systems are fundamental to safeguarding patients' medical information. However, operating these systems in silos undermines the efficacy of privacy protections within clinical environments. Policy and practice frameworks need to adopt a holistic approach to systems strengthening to ensure robust protection of patient data.*

## ***Keywords***

*Privacy, confidentiality, health systems, patients' information*

## **1. INTRODUCTION**

To what extent do institutional frameworks in Ghana facilitate or hinder the implementation of patient privacy protections within healthcare facilities? We investigated this question to first identify challenges that impede the preservation of patient medical privacy and confidentiality, and second, to explore strategies to enhance data protection standards within Ghanaian clinical settings. The research specifically focuses on the perspectives and professional experiences of nurses and midwives to inform these improvements.

In recent years, the growing importance of privacy and confidentiality in healthcare, occasioned by increasing use of technology and social media, changing health behaviours and health outcomes, and demands from insurance companies, has been re-echoed by many scholars[1]. In Ghana, maintaining the privacy and confidentiality of patient medical information appears challenging and is becoming a major concern for health policymakers, planners, and clinicians. For example, some health facilities allow patients to carry their paper records (folders) home, especially when the patient has a chronic condition. Unfortunately, most of these patients who go

with their records cannot read or write and hence rely on family and friends to read and interpret the content of the records to them, thus exposing the details (confidentiality) in the records. Again, indesperation to seek acure for their illnesses, some patients may share their records with non-medical practitioners such as churches and spiritual homes. However, the degree of divergence between formal regulatory frameworks and frontline professional conduct regarding patient privacy and confidentiality remains empirically under-researched within the Ghanaian context. This knowledge gap limits the ability of policymakers to evaluate the efficacy of existing privacy protections, creating uncertainty regarding the application of patient privacy protection across the national health infrastructure. The usefulness of data protection is not merely a technical requirement but is contingent upon the synergy between human and systemic factors, including the density and specialized competencies of the workforce, professional attitudes and ethical behaviors, and the specific models of service delivery employed. Furthermore, the integration of health information technology (HIT) and supporting infrastructure serves as a conduit through which these elements converge to influence patient privacy outcomes.

## 2. Literature Review

This study utilizes systems theory as a conceptual framework to navigate the multifaceted challenges of patient privacy and confidentiality within healthcare ecosystems. By analyzing the interconnected factors influencing clinical pathways, this approach addresses the systemic complexities of medical data management. Systems theory has demonstrated significant efficacy in diverse social care contexts for optimizing communication protocols and securing sensitive information, making it a robust lens through which to examine and enhance contemporary health information governance[2]. Systems theory, developed in the mid-20<sup>th</sup> century in tandem with management science, draws upon mechanical, electrical, and biological frameworks to examine the fundamental principles common to all complex systems[3]. Conceptualizations of systems tend to be significantly less precise because, unlike formal and informal structures, they do not describe readily observable organizational components; instead, they focus on functional outputs and processes [4]. Consequently, systems theory often appears as an abstract framework that many find difficult to define. Nevertheless, it warrants scholarly attention as it offers critical insights into organizational form and internal dynamics.

This study illustrates fundamental systemic concepts by referencing biological entities, such as humans, noting that these principles extend to information systems and formal organizations [5]. At its most basic level, a system receives environmental inputs—such as physiological stimuli or data—and transforms them through internal processes into specific outputs [6]. Originally conceptualized as General Systems Theory by biologist Ludwig von Bertalanffy, this framework is typically modeled as a cyclical process of inputs, throughputs, outputs, and feedback mechanisms operating within a defined environment [7]

The theory is grounded on the fundamental premise that a complex system of numerous constituent systemsself-organizes without central control to adapt to its environment[8]. Within this framework, each system contains various subsystems that function as distinct entities while remaining integral with the collective whole. Specifically, the output of one subsystem typically constitutes the input of another. Consequently, the entire structure functions as a network of interdependent components in a continuous state of reciprocal actions, both internally among themselves and externally in relation to the broader environment[9]. These subsystems perform specialized functions and complement one another to ensure societal stability and survival. In this perspective, organisationsfunction based on the information and data that employees can access. In its relationship with healthcare, we review extant literature to align its applicability and contextuality.Effective systems management requires leaders to take a comprehensive view, integrating both personnel management and the handling of organizational knowledge [10]

According to the World Health Organization (WHO), effective healthcare delivery relies heavily on the interaction between health systems and their sub-systems [11] because they adapt to internal changes in often unpredictable ways. Health systems are considered "complex adaptive systems" (CAS) [12, 13] and comprise numerous stakeholders, including community members, providers, patients, policymakers, and donors [14]. Furthermore, these complex adaptive systems continuously interact and adjust to environmental shifts, aiming to guide healthcare practice, education, research, and policy. Because it is composed of numerous interdependent subsystems, a failure in one area can compromise the entire structure, ultimately stunting the achievement of positive health outcomes.

Researchers have used the six building blocks to evaluate the resilience of health systems in many countries [15]. For example, in Ethiopia, the six building blocks were used to assess the resilience of hospitals, and the findings offered different prospects for enhancement in each of the hospitals assessed [15]. Indeed, analysing systems in healthcare interventions has yielded positive results in many areas including; processes [16] and training of health professionals [17]. Although privacy and confidentiality are generally studied within a comprehensive system, much of the research narrows down to specific levels, focusing heavily on the privacy and confidentiality of medical records. Studies have highlighted that these, in turn, reveal significant gaps and security risks for patients [18]. Furthermore, it shows that many countries have inadequate security measures for creating, analyzing, and sharing important health data [18].

Documented evidence shows that numerous health facilities across Ghana struggle with deficiencies in governance, leadership, service protocols, and information management, particularly regarding the handling of patient data [19]. The intricate nature of the national health system further hampers efforts to maintain patient privacy and confidentiality [19]. These challenges are rooted in various issues, including regulatory frameworks, cultural norms, organizational structure, internal conflicts, and inequitable resource distribution [20]. Despite this, Ghana has established a legal framework to govern data protection, including the Data Protection Act (2012), Electronic Transactions Act (2008), Right to Information Act (2019), and specialized ethical codes for health professionals [21;22;23;24;25;26]

To improve health systems in line with established values and regulations, researchers have proposed a four-pillar model consisting of ethics, leadership, governance, and systems [27]. This framework, however, primarily overlaps with the "leadership and governance" component of the World Health Organization's six building blocks, neglecting the other five: human resources, health information and technology, service delivery, financial security, and essential medicines. Despite this, a systems-based approach has already proven effective in enhancing healthcare processes, such as professional training [17], and improving health outcomes like tobacco control [28;29]. Consequently, it serves as a valuable lens for evaluating how well organizations adhere to patient privacy and confidentiality standards.

### **3. MATERIALS AND METHODS**

This study employed a qualitative approach to investigate the research question. The following sections outline the research design, data collection, and analysis procedures used to achieve the study's objectives.

### **3.1. Study Design**

We employed a qualitative phenomenology research design using focus group discussions to obtain information from participants. The study aimed at exploring nurses and midwives' understanding of privacy and confidentiality across the health systems based on their personal experiences. Hence, this design was considered the most appropriate technique because it is concerned with the meanings people give to situations they have experienced [30].

### **3.2. Study Area/Setting**

The healthcare system in Ghana is multi-structured with both public and private participation. The public participation includes public and faith-based facilities. The focus of this study was on public healthcare, hence the need to include both mission and public facilities in the study. To ensure fair representation of the country's health districts, the study was stratified into three geographical and cultural zones: the northern (Upper East), middle (Ashanti), and southern (Western) belts. Therefore, for fair representation, the study stratified the country into three zones to obtain a geographical and cultural representation of the health districts in the country: the northern, middle, and southern belts of the country (Upper East, Ashanti, and Western regions, respectively). The Ashanti and Western regions share similar economic, cultural, and geographic characteristics within the forest rain belt of Ghana, while the Upper East region is typically a savanna grassland with a diverse culture and is different from the other two regions. Stratification was based on the number of Metropolitan, Municipal, and District Assemblies (MMDAs) as well as the geographical and cultural characteristics.

### **3.3. Sampling Methods**

We used multiple sampling methods distinct in qualitative research in selecting the regions, facilities, and participants. One region from each zone that represented the geographical, economic, and cultural characteristics of that zone was purposively selected. We used purposive sampling techniques to select three regional hospitals from each zone (one from each region) since each region has only one regional hospital. However, selecting one district hospital from each region was challenging due to the number of district hospitals in each region. We therefore used a combination of purposive and convenience sampling techniques to select the three district hospitals. Purposive sampling was employed to make sure that both faith-based and public district hospitals, particularly one in a rural area was selected, and convenient sampling was employed to make sure that the district hospitals were not far from the regional hospitals to allow for easy commuting between facilities. We purposefully selected participants from medical, surgical, pediatric, emergency, and maternity wards in the various hospitals due to their generality and similar characteristics across all the facilities.

### **3.4. Study Population, Selection, And Recruitment of Participants**

The study population included all nurses and midwives working in the selected regions. Our target population was ward managers, junior nurses, and midwives from the six health facilities. The recruitment of subjects for the study was based on several key criteria; eligible participants were registered nurses or midwives with a minimum of three years' experience who were on duty at the time of the visit. Additionally, all participants had to express interest and provide written informed consent. Auxiliary nurses were excluded from this study because the study focused on only professional nurses.

### 3.5. Data Collection

Primary data were gathered by employing qualitative methods tailored to address the research objectives. The following sections detail the specific approaches used.

#### 3.5.1. Focus Group Discussion

We used focus group discussions to solicit information from participants. The focus group discussions were held with the ward managers and the junior nurses and midwives in the conference rooms of the selected health facilities. We had two separate groups of respondents from each facility: junior nurses and midwives in one group, and ward managers in another group. We created unique codes to identify each group: Generic codes FGD(focus group discussion)represent all the groups, WM(ward managers), JNM(junior nurses and midwives), D or R representing the type of facility(D stands for district hospital and R, regional hospital). The regional location of facilities is also represented by codes. Since we were also interested in capturing specific verbatim quotations from specific group members who stood up strongly, we identified participants with codes. Participants were identified by the gender type(PF representing a female participant and PM a male participant).Unique numbers from 1 to 5 were assigned to members of each group. For example, a group could be represented by FGDWMASR, and a member from that group by FGDWMPFASR1.

#### 3.5.2. Focus Group Discussion Guide

We used one common vignette to guide the discussions on privacy and confidentiality, with the researchers facilitating each discussion:

*Lardi was admitted to a community clinic in active labour, but unfortunately, her baby was stillborn. The sole midwife on duty informed Lardi of the loss and asked how she wanted to handle the remains. In her intense grief, Lardi requested the midwife "get rid of it." One week after Lardi was discharged, a radio broadcast alleged that midwives were involved in selling babies, specifically citing Lardi's case. The midwife, feeling aggrieved by these claims, was contacted by the station. To clarify the situation on air, the midwife provided documentation covering the period from Lardi's admission to her discharge to support the actual events that had transpired.*

The vignette was developed using actual clinical experiences from nurses and midwives to serve as realistic scenarios. To protect anonymity while maintaining relatability for participants, these real-life accounts were slightly modified. The vignette underwent a rigorous validation process, including reviews by subject matter experts and a specialist in vignette design for data collection. It is believed that vignettes could generate large amounts of data when used properly in focus group discussions [20]. Determining the relationship between real-life experience and stories from the vignettes posed a major limitation in using the vignette, and that was seen as a major constraint to this study. The vignette was meant to address the following questions:

1. What is the understanding of privacy and confidentiality of patients' data/medical information among nurses and midwives in health facilities in Ghana?
2. What is the influence of governance and leadership on compliance with privacy and confidentiality of patients' data/medical information in health facilities in Ghana?
3. What is the influence of service delivery on compliance with privacy and confidentiality of patients' data/medical information in health facilities in Ghana?
4. What is the influence of health information management on compliance with privacy and confidentiality of patients' data/medical information in health facilities in Ghana?

5. What is the influence of human resources on compliance with the privacy and confidentiality of patients' data/medical information in health facilities in Ghana?

### **3.6. Quality Assurance**

Data collection was done by the authors and a team of field assistants, each from the selected regions in which the research took place. Research assistants were given a one-day training session on data collection, especially on the use of vignettes to conduct naturalistic observations, as well as being sensitive to participants and their cultural differences. They were also taken through guidelines on data protection, including the Data Protection Act 2012 of Ghana, with an emphasis on maintaining anonymity and confidentiality[22].

All participants were given an information sheet to read through, and the data collection process was explained to them, which included assuring them of confidentiality, autonomy, and anonymity throughout the research process, and all concerns were addressed. Participants were given an informed consent form to sign and submit if they agreed to participate in the focus group discussion, and the forms were duly signed and returned.

One observation that ran through all groups was respondents' fatigue – most of the nurses and midwives selected for the FGD were either on duty, just closed from duty, or preparing for duty later in the day, and as such did not want the discussion to linger on for long. They opted to stay and finish the discussion right away rather than taking a break in between discussions. The study's early findings, themes, and descriptions were presented to major stakeholders in a stakeholder validation workshop. This process helped to translate the original data into a cleaner form. Ethical clearance and approval for this study were sought from the Ethical Review Committee of the Ghana Health Services and the Ghana Adventist Health Services Ethics Review Committee. Permission to access the various facilities was requested from the regional health directorates of the selected regions.

A pilot test was conducted in a selected health facility with 10 nurses and midwives participating. This process allowed the face and content validity of the vignettes to be checked.

### **3.7. Data Analysis**

We analysed the data using Ravindran's approach, which included preparing the data, reading and reflection, coding, categorizing, and developing themes [31]. The first step in the analysis was the preparation, where we transcribed the data to make the recorded data easily readable. We used a deductive process, which involved a more explorative and broader understanding of the phenomenon in people's lives during the data coding.

We examined the verbatim quotations and isolated the words that were common in all the quotations. We also interrogated the consensus reached in the focus groups and identified the common conclusions from the various groups. This approach moved beyond simple description, allowing us to transition toward interpretive conceptualization. To immerse ourselves in the data and identify recurring language, we initially applied single-word descriptive codes to summarize the abstracts after multiple readings. We then conducted line-by-line coding, utilizing a color-coded system to categorize common phrases across the transcripts. These categories facilitated a structured review of our codes, which ultimately led to the development of our final themes. Thematic analysis approach was used because it aligned with the research questions and objectives of the study as well as the patterns and meanings of the health systems. The analysis and field notes from the observations aided us in identifying emergent codes. We subjected the data to different levels of categorisation and mapping to further clarify roles and perceptions and

to reveal how the different study units address the themes selected.

We employed pattern matching, explanation building, and cross-case synthesis to strengthen internal and external validity by comparing empirical data with predicted patterns. The analysis focused on identifying similarities and differences in participant behaviors to confirm that strengthened health systems enable nurses and midwives to improve patient privacy protection.

## 4. RESULTS AND ANALYSIS

The findings of this study are presented and analyzed below, providing insights into the research question. The results are organized by key themes, with the analysis integrating relevant literature and implications for practice within the study context.

### 4.1. Characteristics and Background of Focus Group Discussants

Table 1 presents demographic characteristics of the respondents involved in the focus group discussions.

Table 1: Demographic analysis of the respondents

Zone/Region	Frequency	Sex		Position	
		F	M	Ward Manager	Junior Staff
Southern/WR	20	16	4	10	10
Middle/ASR	20	17	3	10	10
Northern/UER	20	18	2	10	10
Total	60	51	9	30	30

Table 1 shows that, in all, 60 nurses and midwives participated in the focus group discussions, comprising 9(15%) males and 51(85%) females. This demonstrates female dominance in the study, which could be explained by the female domination of the nursing and midwifery professions in the country[32]. The breakdown shows that ward managers, junior nurses, and midwives were equally represented (30 each). Disaggregating the respondents into zones, Table 1 again shows that all the zones were equally represented with 20 participants from each zone. In all, 6 quotations from specific individuals were selected and presented in the analysis to support the consensus of the.

### 4.2. Analysis of Responses to the Vignette

The following system weakness emerged from the thematic analysis of the vignette during the focus group discussions. We identified some common words and phrases that appeared in all the groups, and these were categorized into themes. In all six themes appeared as consensus from the groups: staff shortages, inappropriate practices, leadership challenges, breaches and non-compliance, hospital ward space, and coordination of patient information.

We then categorized those themes into the health systems building blocks for discussion. For example, staff shortage was classified under health workforce, inappropriate practices, breaches, non-compliance under service delivery, sanctions and nature of hospital ward space within the leadership and governance building block, while coordination of patient information was placed under health information. Nevertheless, since the building blocks are interconnected subsystems[11], some of the themes were discussed under more than one building block.

#### 4.2.1. Staff Shortage

According to feedback gathered from six focus groups across three different zones, there is a consensus that nurses and midwives possess a solid understanding of confidentiality principles. However, due to limited staffing, these professionals are often compelled to delegate tasks—such as purchasing or collection of medication—to patients' friends and family members, as shown by the focus group FGDWMPDWR1  
FGDWMPFWR1

*Due to shortages of staff, nurses get patients' relatives to assist in their operations. While assisting, some of these relatives are curious and thus read the patient information in the folders, thereby getting to know patient's information without consent from the patients.*

#### 4.2.2. In Appropriate Practices

Participants also felt that nurses and midwives sometimes unwittingly discuss patients' information with friends and relatives. The quotation from FGDWMPMWR2 affirms participants' views:

FGDWMPMWR2

*There are times when we unconsciously discuss patients in a way that relatives get to hear.*

#### 4.2.3. Breaches and non-compliance

Regarding breaches of protecting patient medical information, participants from the groups held contrasting views; while some were of the view that the midwife in the vignette breached the privacy of the patient's information, others felt that the midwife did not breach privacy and confidentiality.

Participants who believed there was a breach of privacy and confidentiality felt that midwives have a hierarchy of command that spans from the ward-in-charge, through to the hospital matron and even to the medical director of the facility, so the midwife in the vignette should have followed this to get the case resolved.

Some participants from the groups supporting that the midwife breached privacy and confidentiality stated during the focus group discussions that:

FGDJNMPFASR 1

*The midwife should have contacted the authorities first, and she should not have defended herself. Staff are not allowed to disclose any information about anybody, especially to the public and the media. When privacy or confidentiality is breached by staff, as in the case of this midwife, possible punishment could include their license being withdrawn, even if it is the first time they have committed the offence, depending on the severity.*

FGDJNMPFASR 3

*There is no more confidentiality in this case because it has been breached. I think the midwife should have contacted the authorities or directed the journalist to her superiors and not have related to the media at all.*

Those who held the later view felt that, since the radio station contacted the clinic rather than the other way around, there was no breach of privacy and confidentiality in this matter. Some groups argued that because the mother consented to the disposal of her baby following its death, sharing the medical file with the media for verification does not violate confidentiality. They believe such transparency is necessary to pardon the individuals concerned.

Some of the groups agreed that the midwife needed to clarify the situation, hence she did not breach privacy and confidentiality as the radio station contacted the clinic first. The following quotations from some of the participants in the focus group discussions tend to explain the consensus reached by the groups:

FGDJNMPMASR 4

*“If you don’t provide them with the information, how will they know the truth?”*

FGDPWMPFUER1

Since the midwife did not do this and released the patient’s folder to the media, she breached both the privacy and confidentiality of the patient and her medical information. Rei thinks that such offences can lead to dismissal from the profession.

FGDJNMPMWR 5

*If you don’t provide them with the information, how will they know the truth? Privacy and confidentiality are central components of patient care and are of particular importance in obstetrics and gynaecology, where clinical situations of a sensitive nature regularly occur. The layout of the emergency department in maternity units of some facilities might not be conducive to maintaining privacy in this case, undermining the service delivery building block of the health system.*

#### **4.2.4. Punishment and Sanctions**

Participants from all six groups complained about the sanctions that hospital authorities impose on nurses and midwives who are suspected of any wrongdoing or breach of privacy and confidentiality. One member of the group affirms this in the group discussions with the following quote:

FGDJNMPFASR 2

*Nurses and midwives are aware of privacy and confidentiality, and that is clearly stated in the nurses’ pledge. For example, when a nurse was brought before colleagues and senior nurses and midwives and was humiliated for breaching privacy and confidentiality .... I think this is not the correct way to address such a challenge.*

In terms of sanctions for junior nurses and midwives relating to privacy and confidentiality,

where the media is involved, participants in all the groups were of the view that nurses and midwives who become offenders are often not supported by hospital authorities and are always left at the mercy of the media. Some members from the groups explained this with the following quotes:

FGDPWMPFUER 3

*In matters of this nature, the NMC should provide legal support to the nurses and midwives involved and can sanction the culprits per their professional code of practice. This restores professional integrity and ensures adherence to standards of practice.*

FGDPWMPFWR 3

*In terms of breach of confidentiality, where the media is involved. I think the NMC is the best institution that can assist offenders.*

#### **4.2.5. Hospital Wards and Space**

Participants from the six groups arrived at a consensus that the nature of some of the wards of the facilities, especially those in rural areas, also contribute privacy and confidentiality challenges. They indicated that the nature of hospital wards allows relatives and friends to be close to clients whenever service providers are attending to their clients, making it difficult to keep patients' information and other procedures away from them. A member of one of the groups used the following quote to explain this issue:

FGDPWMPMUER 4

*You know our hospital wards are such that we are not able to restrict them so much. Relatives are always around, and they hear. Meanwhile, it's not our intention to say anything to them. Sometimes we use coded language, but they hear and go to enquire about it, like 279 (code for HIV patients), so when they hear you saying it, they know.*

#### **4.2.6. Coordination of Patients' Information**

Participants were of the view that the use of folders in the facilities does not help to protect patients' medical information. They felt that the patients' medical information in most facilities is poorly coordinated. A member of one of the groups explained this with the quote below:

FGDPWMPFUER 5

*The use of electronic data would greatly assist in maintaining the privacy and confidentiality of patients' information. You can see clearly that information in most facilities is not well coordinated.*

### **5. DISCUSSIONS**

The discussions of the findings provide insights into the research question. The results are organized by key themes, with the analysis integrating relevant literature and implications for practice within the study context.

The findings revealed health systems' failure in respect to governance and leadership, service delivery protocols, health information management, and adequacy of human resources in the application of protecting patients' information, supporting earlier reports by the Ghana Health Service[20]

### 5.1. Leadership and Governance

Leadership and governance are very important components of the health system building block. It is the steering wheel that controls the other sectors of the health system. Without good leadership and governance, vital decisions that will improve the health service cannot be made. Both the senior and junior nurses and midwives all attested to this fact. From the respondents, it appears that there are weaknesses in the leadership and governance structures of their facilities, and because of that, subordinates do as they please. An example of this weakness was pointed out in the form of sanctions and punishment metered out to offenders.

As key drivers of health system functionality, leadership and governance are critical for effective decision-making and improvement, a view supported by both senior and junior nurses and midwives. Respondents noted, however, that weak leadership structures within their facilities have resulted in a lack of subordinate accountability. A key example of this dysfunction was the public humiliation of a midwife by authorities as punishment for violating patient confidentiality. While it was agreed that the midwife's action—releasing a patient's record to the media—was a severe breach deserving of potential license revocation, many felt the punitive handling of the situation was improper. Instead, staff emphasized that the midwife failed to follow established professional hierarchy and reporting protocols (ranging from ward-in-charge to medical director) to resolve the issue appropriately.

### 5.2. Service Delivery

This passage highlights failures in meeting WHO standards for safe, quality healthcare due to inadequate training, understaffing, and poor infrastructure. As illustrated by the focus groups. These logistical constraints—specifically in overcrowded, open-plan hospital wards—hinder the ability of nurses and midwives to maintain patient confidentiality and deliver optimal, safe care.

### 5.3. Health Workforce

Health workers identify staff shortages as a primary driver of patient privacy breaches, as they are often forced to rely on relatives for administrative and care tasks that expose medical records. While involving family supports patient well-being, the manual handling of folders by non-professionals creates significant confidentiality risks. To address this, respondents recommend:

**Digitization:** Implementing electronic health records to eliminate physical folder handling by relatives.

**Capacity Building:** Increasing nurses and midwives through long-term training programs.

**Professional Development:** Providing immediate in-service training on ethical codes and privacy protocols.

### 5.4. Health Information

Across the surveyed zones, stakeholders emphasized that reducing unintentional patient data breaches requires transitioning from paper folders to electronic health record systems. Currently,

only one of the visited sites is piloting electronic records, meaning most still rely on physical files, which the award manager noted are insecure due to accessibility by unauthorized individuals. Because medical confidentiality is legally mandated, it is essential for facilities to adopt secure, electronic methods and provide ongoing staff training on managing sensitive information.

## **6. CONCLUSIONS**

Based on the findings, the vignette highlights persistent, wide-ranging gaps in public healthcare facilities that threaten patient privacy and data confidentiality if not addressed through careful, strategic design. There is a clear need for a robust data architecture that enables seamless, secure information sharing across different nodes to analyze trends while maintaining privacy. Although nurses and midwives at all levels understand their responsibility regarding privacy, they are deeply concerned about factors driving breaches, particularly staff shortages, the continued reliance on paper-based records, and weak leadership. To fix this, staff recommended transitioning to electronic health records (digitisation), increasing staffing levels, and providing facility-level, in-service training.

### **6.1. Recommendations**

- The practical implication is for the regulators to strengthen the aspect of regulation to ensure adherence to the code of ethics by junior staff.
- Adopting the three levels of protection that give responsibilities to nurses at various stages: technical, administrative, and physical protection. The technical protection outlines what nurses should know; the administrative protection outlines what leadership must do, and physical protection outlines what nurses and midwives must do.

## **AUTHORS' CONTRIBUTIONS**

This work was carried out in collaboration between all authors. Author LOA designed the study, wrote the protocol, and wrote the first draft of the manuscript. Author JA managed the literature review and editing. All authors read and approved the final manuscript.

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## **DECLARATIONS**

### **Ethics approval and consent to participate**

Ethical approval was sought from the Ghana Health Services and Ghana Adventist Health Services ethics review committees. Informed consent was achieved through written consent from participants.

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