

## Positive Outcomes and Challenges of Electronic Health Record Systems: A Case of A Ghanaian Hospital

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**Background and Purpose:** Medical professionals keep a patient's medical record current using the Electronic Health Record System (EHRS), an electronic version of the document. It includes the crucial clinical and administrative information needed to manage the patient's treatment, such as demographics, issue notes, progress notes, prescriptions, vital signs, previous medical records, vaccination records, laboratory results, and radiological reports.

**Methods:** The grounded theory methodology was used to review relevant literature and lay the groundwork for this investigation. Additionally, the information was gathered via a well-structured questionnaire distributed to medical professionals. The main objective of the study was made clear to the participants. The researchers distributed questionnaires to the individuals who provided healthcare using EHRS at their places of employment. Any queries the participants had regarding the questionnaire were allowed to be answered.

**Results:** The main driving force behind this study was finding out what function AlphaChem Hospital's EHRS performs in delivering high-quality care. The study's key findings were that the EHRS helps the hospital by enhancing the accuracy of patient records, enabling the simultaneous care of multiple patients, streamlining appointment scheduling, and decreasing the time spent providing care while maintaining high user satisfaction. Frustrating factors include issues with lack of technical training, lack of technical support, and unstable internet connectivity.

**Conclusions:** Most healthcare providers at AlphaChem Hospital were satisfied with the system and chose the electronic health record system over the paper-based one. However, there were some challenges with EHRS utilization. The report suggests that facility administrators properly orient all staff members on using the system. A facility that wants to gain a competitive edge must adopt, contribute to, and use an electronic health record system to manage health services.

**Keywords:** Electronic Health Record System (EHRS), electronic medical record, healthcare, surgical, obstetrics

### 1 Introduction

The 2019 World Health Statistics (WHS) examines life expectancy, causes of death, and health-related SDGs. The significant findings and supporting data for tracking health-related Sustainable Development Goals (SDGs) are needed for a practical discussion of health policy and program planning implications [1]. The availability of accurate data can help achieve some of the goals of many hospitals. In an EHRS, doctors and nurses and to a larger extent, patients are able to keep track of medical history digitally. Such records could include the patient's demographics, progress notes, problems, prescriptions, vital signs, past medical history, vaccines, laboratory results, and radiology reports, among other administrative and clinical information essential to providing the care the patient requires [3].

An electronic medical record (EMR) is an electronic record of a person in a doctor's office or clinic that is typically in one setting and provider-centric [4]. The phrase "electronic health record system" (EHRS) involves the continuous electronic record of a person that virtually connects to data in multiple electronic medical records (EMRs) and electronic patient records (EMRs and EPRs), is shared among healthcare providers, and is patient-centric [5]. The World Health Organization (WHO) has included healthcare quality as its priority for the overwhelming majority of the medical system, including those in nations that are developing [6].

Healthcare institutions are adopting systems for complete electronic health records swiftly. Such platforms may improve the provision of healthcare services and serve as data repositories for a range of

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information gleaned through outpatient assessments [7]. Using EHRS, healthcare practitioners can improve the level of care they deliver while taking further steps to handle persistent sickness, avert it, and identify specific individuals.

Electronic Medical Records (EMR) systems are being more widely used in both industrialized and underdeveloped countries [8]. Advanced regions prioritize integrating electronic medical records into patient care, whereas impoverished countries face considerable barriers to implementation [9]. Electronic health records allow for the safe sharing of patient information within a group of authorized individuals, even when that care is provided by different medical facilities [10]. Patient billing, investigation order and receipt, prescription, clinical data recording, and in some cases decision assistance software are all characteristics and benefits of an EHRS [11]. Also, EHRS is used by healthcare professionals to enhance better results via their care management initiatives in addition to charting for patients [12].

The biggest issues with the EHRS that were identified were a lack of patient uptake, poor training, a lack of technical assistance, an increase in workload, and data sharing [13], intermittent network connections, subpar network architecture, limited staff understanding, an absence of dedication from top management, and a lack of interoperability and interaction with other systems including lab, x-ray, and digital tomography scan [14].

## 2 Materials and Methods

The grounded theory approach was deployed in reviewing the literature to form the basis of this study. This approach entails a thorough and organized search of published research to find pertinent publications which are evaluated critically and synthesized to present an overview of the available data on a specific issue. The grounded theory method of doing a literature review is to achieve a thorough and theoretical grasp of a field or topic [15].

The essential terms connected with Electronic Health Records Systems (EHRS), such as Electronic Medical Records (EMR), Computerized Patient Records (CPR), Health Information Systems (HIS), Digital Patients Records (EPR), personal medical records (PHR), were used to create the review's focus.

These critical phrases were identified in health-related academic databases such as MEDLINE, PsycINFO, EMBASE, Education Research Complete (health education - full text), Scopus, Sage Journals (Technology and Medicine - full text), and Emerald.

### 2.1 Issues and Evidence

The adoption and usage of EHRS and their effects on healthcare delivery were recognized as the main problems when dealing with EHRS in the literature review. The use of EHRS is influenced by attitudes toward them, perceptions of their utility and usability, social influence, computer self-efficacy, possible risks to medical autonomy, and privacy concerns [16] [17]. Despite the clear benefits, many hospitals and clinics must switch to electronic health records (EHRs) for patient management.

One of the essential factors discovered to influence healthcare professionals' decision to adopt an EHR system is their level of computer literacy [16]. EHRS has impacted healthcare practitioners. Physicians, nurses, and other healthcare professionals all reported similar experiences following the deployment of EHRs, with a change in how they perceived their work but no change in their intrinsic motivation [18]. Clinical evaluation practices have improved since the installation of EHRS, and medication errors have decreased [19].

Additionally, electronic health records systems (EHRS) enable healthcare institutions to save and retrieve data and particular patient information for use by healthcare professionals; these EHRS enhance productivity, raise customer happiness, and protect patient data privacy [20]. Nurses have voiced concerns about the EHR's dependability, despite many doctors applauding its potential to prevent medical errors by offering more information quickly for accessibility. Interoperability appeared to be a problem due to the absence of thorough system integration [21].

### 2.2 Study Site

The study was conducted at the AlphaChem Hospital in Accra, Ghana. The hospital features a number of departments, including an emergency room, an obstetrics and gynaecology ward, an outpatient department

(OPD), and a male and female medical and surgical department. Additionally, it serves as a main referral hospital for all other clinics in the Metropolis and offers high-quality care to the nearby villages.

Full-time medical officers at AlphaChem Hospital include surgeons, dermatologists, obstetricians and gynaecologists, as well as a part-time eye specialist who works on Tuesdays and Thursdays. The clinic also offers ultrasound, computerized tomography (CT), maternal and child health welfare, and tuberculosis treatment as additional services.

### **2.3 Study Sample**

The electronic health records system and its contribution to high-quality healthcare at the AlphaChem Hospital were identified through the descriptive cross-sectional design of the study, which used quantitative tools. The hospital has several departments; the Out-Patient Department (OPD), Emergency unit, Male and Female medical and surgical departments, Obstetrics and Gynaecology ward etc.

All healthcare professionals at the AlphaChem Hospital were included in the population of this study. There were hundred (100) healthcare professionals in the AlphaChem Hospital at the time of gathering data for this study. However, only eighty (80) of them responded to the questionnaire and interviews.

A medical professional from each ward with at least two years' worth of experience delivers high-quality care using an electronic health record system. The two years were intentionally picked under the presumption that anyone working on a system would have been aware of its purpose and significance within that time frame. Participants who satisfied the above requirements were chosen for participation in this study. A healthcare worker who had less than two years of experience working was disqualified, as were non-healthcare providers like the security team, protocol officers, cleaners, and health safety officers. These individuals do not have any kind of direct access to the EHRS that the medical centre was deploying in its operations. This serves as the exclusion criteria for the selection of the participants for the study.

### **2.4 Data Collection Instrument**

In accordance with Andersen's model (12), a questionnaire was utilized. This questionnaire included questions regarding demographic characteristics, enabling factors (such as employment status, occupation, income level, health insurance status, and how patients use health facilities), and need factors (such as self-rated health, co-morbidities, and severity of illness). A well-structured questionnaire that was given to healthcare professionals with at least two years of experience was used to gather the data. Data collected from participants with experience reduces information bias, boosting the information's reliability.

The main objective of the study was made clear to the participants. The participants who rendered healthcare using EHRS were given questionnaires at their places of employment. The participants were also given a chance to ask questions regarding the questionnaire if they had any questions, and the method of data collecting in no way revealed the identities of each respondent. A thoughtfully constructed questionnaire was utilized to gather data from knowledgeable participants to reduce information bias and improve the reliability of the findings. The method's ability to forecast whether the same results will be obtained after repeated application was tested for reliability.

### **2.5 Ethical considerations**

Prior to the enhanced data acquisition processes, the goal of the study was declared to the administrator of the AlphaChem Hospital and his approval was sought to meet the ethical requirements of the study. Also, all participants who matched the inclusion criteria were asked to give their consent, either verbally or in writing with no coercion. The participants' involvement in the research was entirely optional, and they were free to withdraw at any time or refuse to answer any or all of the study's questions.

### **2.6 Data Analysis**

The data gathered from the survey was statistically analyzed using SPSS 16. Additionally, the data was processed using the descriptive statistics, percent and frequencies mean analysis. Classified data were described using frequency and percentages, whereas continuous variables were summarized using mean and standard deviation.

### 3 Results

#### 3.1 Socio-Demographic Information of Participants

A total of 80(100.0%) participants participated in this study. The socio-demographic information covers the sex, age, working experience, profession and the clinical ward of each participant. Majority of the participants were females 49(61.3%) between 25-30 years 31(38.8%) and a few of 1(1.3%) were below more than 40 years.

A greater part of the participants, 54(67.5%), represented 2-3 years of working experience, while a minority of only 2(2.5%) represented above five years of working experience. It is indicated that most health workers took nurse 26(32.5%) as their profession, whilst 14 (17.5%) represented the medical ward (Table 1).

**Table 1: Frequencies and Percentages of Demographic Variables.**

| <i>Information participants</i> | <i>Frequencies (n=80)</i> | <i>Percentage(%)</i> |
|---------------------------------|---------------------------|----------------------|
| <b>Sex</b>                      |                           |                      |
| Male                            | 31                        | 38.8                 |
| Female                          | 49                        | 61.3                 |
| <b>Age</b>                      |                           |                      |
| Below 25 years                  | 18                        | 22.5                 |
| 25-30years                      | 31                        | 38.8                 |
| 31-35 years                     | 24                        | 30.0                 |
| 36-40 years                     | 6                         | 7.5                  |
| More than 40 years              | 1                         | 1.3                  |
| <b>Working Experience</b>       |                           |                      |
| 2-3 years                       | 54                        | 67.5                 |
| 4-5 years                       | 24                        | 30.0                 |
| Above 5 years                   | 2                         | 2.5                  |
| <b>What Is Your Profession?</b> |                           |                      |
| Nurse                           | 26                        | 32.5                 |
| Medical doctor                  | 17                        | 21.3                 |
| Midwife                         | 14                        | 17.5                 |
| Pharmacist                      | 12                        | 15.0                 |
| Laboratory technician           | 11                        | 13.8                 |
| <b>Ward</b>                     |                           |                      |
| Surgical                        | 11                        | 13.8                 |
| Medical                         | 14                        | 17.5                 |
| Pediatric                       | 9                         | 11.3                 |
| Out Patients Department         | 6                         | 7.5                  |
| A&E                             | 8                         | 10.0                 |
| Obstetrics/Gynecology           | 9                         | 11.3                 |
| Pharmacy                        | 12                        | 15.0                 |
| Laboratory                      | 11                        | 13.8                 |

### 3.2 The Attitude of Healthcare Providers Towards EHRS

According to the various responses, the majority of the 80 (100%) respondents—31 (22%)—agreed that they had enough knowledge to operate an EHRS, while just three (3.8%) strongly disagreed. Thirty-six (36) respondents representing 45.0%, strongly agreed that EHRS are necessary for healthcare delivery, whereas only 1 (1.3%) strongly opposed it. Thirty-seven (37) people, or 46.3%, strongly agreed or disputed that EHRS improves the duties of other healthcare team members. Only one person, or 1.3%, strongly disagreed. While the majority, 29(36.3%), agreed that using the EHRS in the facility is required, a small number, 9(11.3%), disagreed that it should be used because it is required. Additionally, a more significant percentage—32(40.0%)—agreed that using EHRS is a waste of time, whereas just a tiny percentage—6(7.5%)—strongly disagreed.

Again, the majority, 25(31.3%), disputed that they feel pressured to use EHRS to deliver high-quality care to patients, while the minority, 4 (5.0%), strongly agreed with this notion. While 18(22.5%) of the respondents were dissatisfied with the system's precision, the majority of respondents, 62(77.5%), were pleased with it. Nineteen (19) respondents (28.3%) do not receive technical training or support while utilizing the platform, while 61 respondents (76.3%) do (Table 2).

**Table 2: Frequencies and Percentages of Attitude of healthcare providers towards EHRS**

| <i>The attitude of healthcare providers towards electronic health record systems.</i> | <i>Strongly Disagree</i> | <i>Disagree</i> | <i>Neutral</i> | <i>Agree</i> | <i>Strongly Agree</i> |
|---|--------------------------|-----------------|----------------|--------------|-----------------------|
| <i>I have sufficient knowledge of the use of EHRS.</i>                                | n=3(3.8%)                | n=7(8.8%)       | n=19(23.8%)    | n=31(38.8%)  | n=20(25.0%)           |
| <i>EHRS play an important role in healthcare delivery.</i>                            | n=1(1.3%)                | n=0(0.0%)       | n=8(10.0%)     | n=35(43.8%)  | n=36(45.0%)           |
| <i>EHRS enhances the work of other healthcare team members.</i>                       | n=1(1.3%)                | n=3(3.8%)       | n=5(6.3%)      | n=34(42.5%)  | n=37(46.3%)           |
| <i>I use EHRS because it is compulsory in the facility.</i>                           | n=0(0.0%)                | n=9(11.3%)      | n=23(28.7%)    | n=29(36.3%)  | n=19(23.8%)           |
| <i>Using EHRS is not time-consuming.</i>  | n=6(7.5%)                | n=11(13.8%)     | n=14(17.5%)    | n=32(40.0%)  | n=17(21.3%)           |
| <i>I do feel pressured when using EHRS to provide quality care to patients.</i>       | n=14(17.5%)              | n=25(31.3%)     | n=18(22.5%)    | n=19(23.8%)  | n=4(5.0%)             |
|   |                          |                 |                | <i>Yes</i>   | <i>No</i>             |
| <i>Are you satisfied with the accuracy of the system?</i>                             |                          |                 |                | n=62(77.5%)  | n=18(22.5%)           |
| <i>Do you get enough technical training and support when using the system?</i>        |                          |                 |                | n=61(76.3%)  | n=19(28.3%)           |

### 3.3 Benefits of EHRS Contributing to Quality Healthcare

The multiple responses from the table indicate that out of the eighty 80(100.0%) respondents, the majority of 33(41.3%) representing agreed that improvement in quality care could be through EHRS, whilst a minority of 1(1.3%) representing improving quality care could be through EHRS was strongly disagreed. In contrast to the study, 34(42.5%) agreed that EHRS is worth the time and effort required, whilst 1(1.3%) respondent strongly disagreed. Most, which is 40(50.0%), strongly agreed that EHRS reduces paper-based medical charts and filling charts whilst a few 2(2.5%) strongly disagreed. A few 4(5.0%) disagreed to the notion that EHRS is easy, faster and accessible, whilst majority 31(38.8%) agreed and strongly agreed to the notion that EHRS is easy, faster and accessible.

Also, a more significant number, 37(46.3%), strongly agreed that patient information was safer and more secure on EHRS, whereas 1(1.3%) disagreed with this idea. Again, the majority, 42(52.5%) representing, agreed that they do find the reports generated by EHRS valuable and easy to understand, whilst the minority 1(1.3%) representing strongly disagreed with the idea. The majority of the respondents, 65(81.3%), could request laboratory tests and other medical services on the EHRS, whilst 15 (18.8%) could not request

laboratory tests and other medical services on the EHRS. Most respondents, 72(90.0%), approved that EHRS monitor the progress of in and outpatients in the facility, whilst 8(10.0%) do not approve (Table 3).

**Table 3: Frequencies and Percentage of Benefits of EHRS Contributing to Quality Healthcare**

| <i>Benefits of electronic health record system contributing to quality healthcare.</i> | <i>Strongly Disagree</i> | <i>Disagree</i> | <i>Neutral</i> | <i>Agree</i> | <i>Strongly Agree</i> |
|--|--------------------------|-----------------|----------------|--------------|-----------------------|
| <i>I can increase or improve quality care through EHRS.</i>                            | n=1(1.3%)                | n=6(7.5%)       | n=17(21.3%)    | n=33(41.3%)  | n=23(28.7%)           |
| <i>EHRS is worth the time and effort required to use.</i>                              | n=1(1.3%)                | n=7(8.8%)       | n=18(22.5%)    | n=34(42.5%)  | n=20(25.0%)           |
| <i>EHRS reduces paper-based medical charts and filling charts.</i>                     | n=2(2.5%)                | n=0(0.0%)       | n=6(7.5%)      | n=32(40.0%)  | n=40(50.0%)           |
| <i>EHRS is easy and fast accessible.</i>   | n=0(0.0%)                | n=4(5.0%)       | n=14(17.5%)    | n=31(38.8%)  | n=31(38.8%)           |
| <i>Confidentiality of patient's information on EHRS.</i>                               | n=2(2.5%)                | n=1(1.3%)       | n=6(7.5%)      | n=34(42.5%)  | n=37(46.3%)           |
| <i>Do you find the reports generated by EHRS useful and easy to understand?</i>        | n=1(1.3%)                | n=2(2.5%)       | n=18(22.5%)    | n=42(52.5%)  | n=17(21.3%)           |
| <i>Benefits of electronic health record system contributing to quality healthcare.</i> |                          |                 |                | <b>Yes</b>   | <b>No</b>             |
| <i>Can you request laboratory tests, x-ray and other medical services on the EHRS?</i> |                          |                 |                | n=65(81.3%)  | n=15(18.8%)           |
| <i>Does EHRS help monitor the progress of in and out patients in the facility?</i>     |                          |                 |                | n=72(90.0%)  | n=8(10.0%)            |

### 3.4 Challenges Faced During the Usage of EHRS

Majority representing 36(45.0%) were sure to state that EHRS is cumbersome to use whilst minority representing 2(2.5%) said that EHRS is not cumbersome to use. As many as 24(30.0%) disagreed that time to enter data affect EHR system contribution and its time wasting whilst 7(8.8%) respondent strongly agreed. Majority of 31(38.8%) low internet speed when using the system is good whilst 5(6.3%) disagreed to it. A few 3(3.8%) strongly disagreed to the notion that poor internet connection slows productivity whilst majority 35(43.8%) agreed that poor internet connection slows productivity. Also, a greater number 35(43.8%) agreed that lack of computers affects EHRS contribution to quality healthcare whereas 3(3.8%) strongly disagreed to the idea.

Again, majority 29(36.3%) representing respondents who wrote patient's information were easily accessed by healthcare providers and kept confidential for quality care whilst minority 9(11.3%) representing those who wrote EHRS helps to monitor the progress and benefits all patients. Majority of the respondents 61(76.3%) said lack of sufficient training and computer skills of the healthcare providers result in low work productivity whilst 19(23.8%) said no to it.

Majority of the respondents 62(77.5%) approved that patient's information input meets their expectation whilst 18(22.5%) do not approve. The contribution and usage of EHR system improved the management of records in the hospital by Patient's information/ data were easily accessed by healthcare providers and kept confidential for quality care 29(36.3%) accounted for majority, Reports generated by EHRS is useful and easy to understand, old files retrieved, fast reference to improve productivity 27(33.8%), Reduction of errors, missing files, time wasting and requesting of test results to scheduling of patient appointments 15(18.8%) and less accounted for EHRS helps to monitor the progress and benefits all patients 9(11.3%) (Table 4).

**Table 4: Frequencies and Percentage of challenges faced during the Usage of EHRS**

| <i>Challenges faced during the usage of electronic health record systems.</i>               | <i>Frequency</i> | <i>Percentage (%)</i> |
|---|------------------|-----------------------|
| <b><i>The EHRS in AlphaChem Hospital is cumbersome to use.</i></b>                          |                  |                       |
| <i>Strongly disagree</i>  | 36               | 45.0                  |
| <i>Disagree</i>   | 21               | 26.3                  |
| <i>Neutral</i>  | 7                | 8.8                   |
| <i>Agree</i>  | 14               | 17.5                  |
| <i>Strongly agree</i>   | 2                | 2.5                   |
| <b>Total</b>  | <b>80</b>        | <b>100.0</b>          |
| <b><i>The time to enter data affects EHR system contribution and is time-wasting.</i></b>   |                  |                       |
| <i>Strongly disagree</i>  | 9                | 11.3                  |
| <i>Disagree</i>   | 24               | 30.0                  |
| <i>Neutral</i>  | 20               | 25.0                  |
| <i>Agree</i>  | 20               | 25.0                  |
| <i>Strongly agree</i>   | 7                | 8.8                   |
| <b>Total</b>  | <b>80</b>        | <b>100.0</b>          |
| <b><i>Low internet speed affects the use of the system.</i></b>                             |                  |                       |
| <i>Strongly disagree</i>  | 7                | 8.8                   |
| <i>Disagree</i>   | 5                | 6.3                   |
| <i>Neutral</i>  | 31               | 38.8                  |
| <i>Agree</i>  | 27               | 33.8                  |
| <i>Strongly agree</i>   | 10               | 12.5                  |
| <b>Total</b>  | <b>80</b>        | <b>100.0</b>          |
| <b><i>Poor internet connection slows EHRS use.</i></b>                                      |                  |                       |
| <i>Strongly disagree</i>  | 3                | 3.8                   |
| <i>Disagree</i>   | 4                | 5.0                   |
| <i>Neutral</i>  | 15               | 18.75                 |
| <i>Agree</i>  | 47               | 58.75                 |
| <i>Strongly agree</i>   | 11               | 13.7                  |
| <b>Total</b>  | <b>80</b>        | <b>100.0</b>          |
| <b><i>Lack of computers/hardware affects EHRS's contribution to quality healthcare.</i></b> |                  |                       |
| <i>Strongly disagree</i>  | 3                | 3.8                   |
| <i>Disagree</i>   | 8                | 10.0                  |
| <i>Neutral</i>  | 11               | 13.8                  |
| <i>Agree</i>  | 35               | 43.8                  |
| <i>Strongly agree</i>   | 23               | 28.7                  |
| <b>Total</b>  | <b>80</b>        | <b>100.0</b>          |

**Table 4 Continues: Frequencies and Percentage of challenges faced during the Usage of EHRS**

|   | Frequency | Percentage(%) |
|---|-----------|---------------|
| <b>Do the patient's information input meet your expectation?</b>  |           |               |
| Yes   | 62        | 77.5          |
| No  | 18        | 22.5          |
| <b>Total</b>  | <b>80</b> | <b>100.0</b>  |
| <b>Does the lack of sufficient training and computer skills of healthcare providers result in low work productivity?</b>      |           |               |
| Yes   | 61        | 76.3          |
| No  | 19        | 23.8          |
| <b>Total</b>  | <b>80</b> | <b>100.0</b>  |
| <b>Has the contribution and usage of the EHR system improved the management of records in the hospital?</b>                   |           |               |
| Patient information/ data are easily accessed by healthcare providers and kept confidential for quality care.                 | 29        | 36.3          |
| Reduction of errors, missing files, time-wasting and requesting of test results to the scheduling of patient appointments.    | 15        | 18.8          |
| Reports generated by EHRS are useful and easy to understand, old files retrieved, and fast reference to improve productivity. | 27        | 33.8          |
| EHRS helps to monitor the progress and benefits all patients.   | 9         | 11.3          |
| <b>Total</b>  | <b>80</b> | <b>100.0</b>  |

**Table 5: Identified challenges facing the effective use of EHRS**

| <b>Challenges facing the effective use of electronic health record systems.</b>  | Frequency | Percentage(%) |
|--|-----------|---------------|
| <b>I am aware of the challenges facing the use of EHRS in AlphaChem Hospital</b> |           |               |
| Strongly disagree  | 0         | 0             |
| Disagree   | 0         | 0             |
| Neutral  | 0         | 0             |
| Agree  | 29        | 36.25         |
| Strongly agree   | 51        | 63.75         |
| <b>Total</b>   | <b>80</b> | <b>100.0</b>  |
| <b>Challenges of the EHRS AlphaChem Hospital</b>                                 |           |               |
| Lack of Technical Training   | 38        | 47.5          |
| Lack of Technical Support  | 12        | 15            |
| Unstable Internet Connectivity   | 21        | 26.25         |
| Lack of Computers  | 2         | 2.5           |
| I Prefer Old Folder System   | 7         | 8.75          |
| <b>Total</b>   | <b>80</b> | <b>100.0</b>  |

### 3.5 Challenges Faced During the Usage of EHRS

The majority representing 36(45.0%) were sure to state that EHRS is cumbersome to use whilst minority representing 2(2.5%) said that EHRS is not cumbersome to use. As many as 24(30.0%) disagreed that time to enter data affect EHR system contribution and its time wasting whilst 7(8.8%) respondent strongly agreed. Majority of 31(38.8%) low internet speed when using the system is good whilst 5(6.3%) disagreed to it. A few 3(3.8%) strongly disagreed to the notion that poor internet connection slows productivity whilst



majority 35(43.8%) agreed that poor internet connection slows productivity. Also, a greater number 35(43.8%) agreed that lack of computers affects EHRS contribution to quality healthcare whereas 3(3.8%) strongly disagreed to the idea.

Again, majority 29(36.3%) representing respondents who wrote patient's information were easily accessed by healthcare providers and kept confidential for quality care whilst minority 9(11.3%) representing those who wrote EHRS helps to monitor the progress and benefits all patients. Majority of the respondents 61(76.3%) said lack of sufficient training and computer skills of the healthcare providers result in low work productivity whilst 19(23.8%) said no to it.

Majority of the respondents 62(77.5%) approved that patient's information input meets their expectation whilst 18(22.5%) do not approve. The contribution and usage of EHR system improved the management of records in the hospital by Patient's information/ data were easily accessed by healthcare providers and kept confidential for quality care 29(36.3%) accounted for majority, Reports generated by EHRS is useful and easy to understand, old files retrieved, fast reference to improve productivity 27(33.8%), Reduction of errors, missing files, time wasting and requesting of test results to scheduling of patient appointments 15(18.8%) and less accounted for EHRS helps to monitor the progress and benefits all patients 9(11.3%) (Table 4).

## 4 Discussion

### 4.1 Nature of Responses

At the AlphaChem Hospital in Accra, Ghana, 80(100%) healthcare providers participated in the data-gathering process by responding to a developed questionnaire. The study found 49 female participants, or 61.3% of the total, compared to 31 male participants, or 38.8%. According to the study's age range, 25 to 30 years old (38.8%) reacted the most, followed by 31 to 35 years old (30.0%), under 25 years old (18.5%), 36 to 40 years old (6.7%), and those above 40 years old (1.3%), in that order.

According to the demographic data, the employment experience of participants ranges from 2-3 years to 4-5 years to more than five (5) years. The majority of healthcare professionals who worked for 2-3 years were 54(67.5%), followed by 24(30.0%) for those who worked for 4-5 years, and the fewest participants (2, 2.5%) who worked for more than five (5) years. The profession that received the most responses was nursing with 26(32.5%), followed by medicine with 17 (21.3%), midwifery with 14(17.5%), pharmacy with 12(15.0%), and laboratory with 11(13.8%). 14(17.5%) of the volunteers were in the medical wards, while 12(15.0%) were in the pharmacy. 11(13.8%) respondents from the surgical ward and 11(13.8%) from the lab participated in the survey.

Pediatric ward respondents comprised 9(11.3%), whereas Obstetrics and Gynecology ward respondents comprised 9(11.3%). 6(7.5%) and 8(10%) responders each came from the Out-Patient Department (OPD) and Accident & Emergency Department, respectively. Most of the nurses in the medical ward are likely in general nursing practice, accounting for the distribution in the ward.

#### 4.1.2 Attitude of Healthcare Providers Toward the Use of EHRS

From this study, healthcare professionals know how to use EHRS. Fifty-one (51) people representing 63.8%, demonstrated varying levels of EHRS understanding. Only 10 (or 12.6%) of those tested had poor EHRS knowledge, whereas 19 (23.6%) had adequate knowledge. Some healthcare professionals are reluctant to adopt new technologies that they need to become familiar with because healthcare providers do not see EHRS favorably (7.87%). It is evident from this study that many participants thought EHRS significantly impacted how well care is delivered in the nation.

EHRS compiles all patient demographic information into one extensive database and leverages it to help develop "new treatment or ingenuity in healthcare delivery, ultimately advancing healthcare aims. According to the study's findings, 32 respondents (40.0%) claimed that using EHRS takes time, while thirty-six (36) respondents representing 45.0%, affirm the EHRS's importance in healthcare delivery, including improving other healthcare providers' efficiencies.

The complicated nature of the program, which necessitates a lot of internet data, knowledgeable trainers, and frequent maintenance/support, caused some other respondents to express conflicting opinions about its viability. According to the administrator of the AlphaChem Hospital, there has been some resistance to the transition of some practitioners and health professionals from manual to digital documentation. At the same time, most healthcare workers know it could take time to alter behaviors and attitudes, if not wholly, to

meet patients' expectations. The EHRS enables redesigning clinical procedures to create a more effective working method.

#### **4.1.3 Benefits of EHRS Contributing to Quality Healthcare**

40(50.0%) of the participants used EHRS for other reasons than charting for patients; healthcare providers use data from patient records to improve quality outcomes through their care management programs. According to this study, the quality of care could be improved through EHRS by a majority of 33(41.3%). Further, EHRS help staff avoid mistakes and improve the quality of patient care [22].

As a result of illegibility, high storage costs, and the difficulties of remote file access, the manual system of preserving paper records slows down healthcare services, whereas EHRS increases healthcare efficiency [13]. Healthcare professionals' reluctance to switch from manual (paper-based) to digital reporting has been an issue which sometimes results in inaccurate data [23] [24]. However, this study revealed that the number of paper-based medical records has decreased by EHRS 40(50.0%).

Most research participants—65, or 81.3%—reported using the EHRS to request medical services, including x-rays and lab testing. According to the study's findings, 34 (2.5%) and 37 (46.3%) highly agreed that patient information confidentiality is more reliable and secure on EHRs.

#### **4.1.4 Challenges Faced During the Usage of EHRS**

The 36(45.0%) that responded that EHRS was cumbersome to use identified lack of suitable training 38(47.5%), lack of technical support 12(15%) whiles using the system as some of the contributing factors. These issues hindered the use and the effectiveness of EHRS at the AlphaChem Hospital. Also, the lack of adequate guidance and relevant computer skills to aid in navigating the system by several healthcare providers resulted in seeing the EHRS as cumbersome.

Another challenge of effective deployment of EHRS at the AlphaChem Hospital includes unstable internet connectivity 21(26.3%). The system (EHRS at the AlphaChem Hospital) relied on internet connectivity to share data among between the users. Thus a reliable 24-hour internet connectivity as a backbone for EHRS is crucial since data availability and sharing need real-time. However, the internet connection was not stable which hindered effective service delivery using the EHRS since a stable internet penetration is one of the critical determinants of the success of EHRS [25].

Behavioral problem 7(8.75%) also hindered the success of AlphaChem Hospital's EHRS, as some healthcare providers preferred to obtain patient data manually rather than input it into the EHRS. Most healthcare personnel know it can take time to modify their behavior and attitude to meet their clients' expectations (18). In addition, AlphaChem Hospital lacked sufficient workstations 2 (2.5%) for optimal EHRS usage. Consequently, the absence of computers affects workflow by increasing the time spent directly providing for patients and contributing to more extended treatment periods of high quality.

Finally, the EHRS systems were left to run independently with minimal supervision. Adequate supervision allows managers to identify and correct mistakes and also ensure that standards are maintained. Problems such as lacking a complaints section or channels for addressing EHRS challenges could be easily identified and corrected without adequate monitoring and supervision.

## **4.2 Limitations of the Study**

Although our study has provided evidence to support the literature on the usage of EHRS, the attitudes of healthcare providers toward EHRS, the advantages of EHRS, and the problems associated with the use of the EHRS by individuals seeking health care and caretakers, we are aware of several limitations.

Some participants of the study may not have told the truth in their answers, and the researchers did not rule this out. The research method was time-consuming, the questionnaires were challenging to fill out, and numerous participants failed to appear on the planned days. Patients and EHRS users who cannot recollect when they first experienced difficulties could have been affected by recall bias; this was minimized by asking participants to recall the first time they engaged with the system.

## **5 Conclusion**

Every healthcare organization that wishes to remain competitive must adopt, support, and use an electronic health record system. Most professionals were satisfied with the system and preferred it to paper records,

although there were occasional challenges with doctors using EHRs. Contemporary healthcare organizations are continually improving the standard of patient care, and Healthcare consumers constantly demand excellent service from their suppliers. The results demonstrated that the AlphaChem Hospital EHR system significantly raised the patient care standard. The implementation of an EHRs, according to the study's findings, has improved the standard of care and decreased patient wait times.

The EHR system's capacity to provide many reports quickly has led to a rise in provider expectations. The study's key conclusions were that the hospital benefited significantly from the EHR system in terms of patient records, concurrent patient care, quality requisitions, streamlined appointment scheduling, lack of discrimination, prevention of waste, reduction in time, adaptability to patient needs, system satisfaction, laboratory test requests, and a wide range of healthcare services.

Although issues with the EHR system still need to be overcome, including buying the necessary hardware infrastructure, end users' restrictions, payment issues, redundancy issues, wait times, internet connectivity, and data/information gaps. Ample financing, management, supervision, training, and support are necessary for the healthcare system to remain viable. This study recommends that facility managers properly train each employee on how to use the system. There is also a need for more computers, qualified IT personnel, and proficient monitoring and administration.

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