Adoption and Barriers to Adoption of Electronic Health Records by Nurses in Three Governmental Hospitals in Eastern Province, Saudi Arabia

by Azza El.Mahalli, MD, PhD

Abstract

Although electronic health records (EHRs) have been implemented in many hospitals and healthcare providers benefit from their effective and efficient data processing, their evaluation from nurses has received little attention. This project aimed to assess the adoption and barriers to the use of an EHR system by nurses at three governmental hospitals implementing the same EHR software and functionalities in Eastern Province, Saudi Arabia. The study was a cross-sectional, paper-based questionnaire study. SPSS version 20 was used for data entry and analysis, and descriptive statistics were calculated. The study found underutilization of almost all functionalities among all hospitals and no utilization of any communication tools with patients. In addition, there were no instances of "allowing patients to use the Internet to access parts of their health records." The most frequently cited barrier among all hospitals was "loss of access to medical records transiently if computer crashes or power fails" (88.6 percent). This was followed by "lack of continuous training/ support from information technology staff in hospital" (85.9 percent), "additional time required for data entry" (84.9 percent), and "system hanging up problem" (83.8 percent). Complexity of technology (81.6 percent) and lack of system customizability (81.1 percent) were also frequently reported problems. The formation of an EHR committee to discuss problems with the system in Saudi hospitals is recommended.

Keywords: EHR; use; barriers; nurses; Saudi Arabia

Introduction

Health information technology benefits both patients and providers with respect to healthcare quality.[1] Health information technology is defined as "the application of information processing involving both computer hardware and software that deals with the storage, retrieval, sharing, and use of health care information, data, and knowledge for communication and decision making."[2] Adapting to technological innovations represents a key process for improving and restructuring healthcare.[3-6] Electronic health records (EHRs) have been touted as an essential component in the transformation of the healthcare industry.[7] Technological developments have exposed nursing personnel to new tasks and responsibilities in many areas of practice.[8-11] Nurses are the largest segment of the healthcare workforce in the acute care setting; thus, nurses' advocacy of the EHR is a key factor influencing its adoption.[12]

Adoption of EHRs continues to progress rapidly within the healthcare industry. This new technology reshapes healthcare at all levels of the industry, especially nursing.[13] Since this technology first became popular, nursing professionals have used computer systems in patient care.[14-17] Both medical secretaries and nurses are important users of hospital information systems, utilizing both the EHR and the administrative part of the system. The medical secretaries work as transcriptionists, receptionists, and coordinators of patient logistics and communication, and the nurses have their own documentation and administrative routines.[18] Nurses interact most with EHR systems as a result of the nature of their work. They make nursing diagnoses,[19] check physician orders,[20] write nursing care plans,[21] record vital signs, and sometimes transcribe physician orders,[22] among other roles.

Although EHRs have been implemented in many hospitals and healthcare providers benefit from their effective and efficient data processing, the evaluation of EHRs by nurses who provide 24-hour patient care[23] has received little attention.[24,25] It has been acknowledged in recent years that technology and therefore computerization will contribute to the decision-making

capabilities and skills of nurses, improve the quality of healthcare, reduce the costs of services,[26,27] and improve the safety of care.[28,29]

However, EHR systems have yet to be widely adopted for several reasons,[30,31] including the high cost of implementation, users' resistance to technology, concerns regarding practice disruption and loss of productivity, fear of technology failure, and the inability of some EHR implementations to integrate with existing healthcare systems.[32-34] Furthermore, unintended adverse consequences can surround the implementation and ongoing maintenance of these systems.[35-37] Recently, new kinds of medical errors have occurred, have negatively affected patient outcomes, and have resulted in higher overall medical costs for institutions implementing some EHR systems.[38-40] Thus, ongoing analysis of EHRs is needed to understand barriers experienced by users and to help find solutions.

Gap of Knowledge

One study found that nursing assessments and the work associated with EHR implementation increases the demand for nurses' hours per patient day by 15 to 26 percent.[41] However, the evaluation of EHR systems from the user viewpoint, and especially that of nurses, has received little attention. [42] In a study conducted in Turkey, nurses' views on electronic medical record systems were investigated in terms of use, quality, and user satisfaction. The study was conducted on nurses working in inpatient care units at one public university hospital, one Turkish Ministry of Health hospital, and one private hospital in Turkey. The mean score of use was very low in comparison to the mean scores of quality and user satisfaction.[43] However, nurses' evaluations of EHR adoption and barriers they experienced in the Saudi Ministry of Health sector have not been widely investigated and analyzed. Therefore, the author thinks that this study will be original to the Saudi healthcare system.

This research is a follow-up to an earlier study conducted in 2010.[44] The survey tool from the previous study was used in this research. However, the target population in this study was nurses instead of the heads of information technology departments. The Saudi Ministry of Health intends to apply this new EHR software in all governmental hospitals. Therefore, measuring its adoption rate and barriers is crucial to decision makers at the central level.

The project aimed to assess adoption and barriers of EHR system by nurses at three governmental hospitals implementing the same EHR software and functionalities in Eastern Province, Saudi Arabia.

Material and Methods

The study was conducted in three governmental hospitals adopting a new EHR system in Eastern Province, Saudi Arabia. These are general hospitals affiliated with the Ministry of Health. Two of the hospitals each have more than 300 beds. The third hospital has 150 beds and is located in a town near the border of Saudi Arabia and Kuwait.

The departments that participated in the study were as follows: surgery/anesthesia (general, plastic, and orthopedics), medical (internal medicine, nephrology, cardiology, diabetes mellitus and endocrinology, chest diseases, pediatric, and neurology and psychiatry), emergency departments (emergency room and intensive care unit), ancillary services (physiotherapy, laboratory, and radiology), and others (dentistry, dermatology, ophthalmology, and ear, nose, and throat departments). These departments had adopted the EHR at the time of data collection.

The study design was cross-sectional, and the data collection tool was a self-administered, paper-based questionnaire. The response choices for the use of functionalities of the EHR consisted of "used" or "not used." Formal approval was obtained before the research was conducted. The questionnaire was pilot tested by eight nurses in one of the study hospitals, and no changes were made. The questionnaire was distributed to nurses in February 2012. Confidentiality of the data collected from nurses was ensured. A convenience sample of the nurses using the EHR system who were available at time of data collection was included. Questionnaires were distributed as follows:

- Hospital A: Questionnaires were distributed to 110 potential participants. However, only 67 participated. The response rate was 60.9 percent.
- Hospital B: Questionnaires were distributed to 130 potential participants. However, only 78 participated. The response rate was 60 percent.

- Hospital C: Questionnaires were distributed to 65 potential participants. However, only 40 participated. The response rate was 61.5 percent.

The questionnaire collected the following data:

- Demographics of nurses (age, gender, nationality, years in nursing practice); department; computer literacy (computer availability at the workplace, ever attending a computer course, self-rated computer skills); and duration of EHR experience.
- Different functionalities of the EHR system[45] including the following:

    1. Chart review

        - Obtain and review lab results
        - Obtain and review radiology results
        - Obtain and review other test results
        - Create and review scanned documents
        - Review progress notes
        - Monitor current and past medications and medication refills

    2. Decision support

        - Receive drug interaction alerts when writing prescriptions
        - Receive drug allergy alerts when writing prescriptions
        - Highlight test results that are out of normal range
        - Clinical guidelines

    3. Order entry

        - Enter lab orders
        - Enter radiology orders
        - Enter pharmacy orders

    4. Documentation

        - Create and maintain patient-related medical problem list
        - Create and maintain common medication list
        - Identify patient-specific allergies
        - Document patient discharge instructions

    5. Communication with other providers: e-mail, fax, and mobile phone short message service (SMS)
    6. Additional tools

        - Managing patient referrals
        - Allowing patients to use the Internet to access parts of their health records
        - International Classification of Diseases (ICD) codes
        - Generating health statistics
        - Data backup and disaster recovery

- Barriers to the utilization of EHR systems, identified in a literature review,[46-51] such as:

    1. Confidentiality, security, and data privacy (e.g., place of computer)
    2. Loss of access to medical records transiently if computer crashes or power fails
    3. Speed of utilizing the EHR system
    4. Additional time required for data entry (i.e., more workload)
    5. Complexity of technology
    6. Disturbed communication
    7. Lack of belief in EHR adoption

8. Lack of customizability of the system according to users' needs
9. Lack of continuous training/support from information technology staff in hospital
10. Problem with drug alert system (e.g., drug interactions, drug allergy, etc.)
11. Lack of pregnancy alert system
12. System hanging up problem

Response choices for barriers were *yes* and *no*.

SPSS version 20 was used for data entry and analysis. Descriptive statistics were calculated. Differences between groups were measured using chi-square and Monte Carlo tests. The statistical significance was determined at $p = .05$. The data collection tool was not tested for validity or reliability.

Results

Results (see Table 1) revealed that mean age of nurses was 29.31 ± 6.44 years. Nurses were mostly women (94.1 percent) and Saudis (55.7 percent). The difference between hospitals regarding age and nationality was statistically significant ($p < .05$). Nurses younger than 30 years and Saudis were the highest users of the EHR, especially in hospital A. The mean number of years of nursing experience was 6.26 ± 5.71 years, and the mean number of years of EHR experience was 2.08 ± 0.86 years. Regarding computer literacy, most of the nurses had a computer at their workplace (98.9 percent). The highest percentage of nurses self-rated their computer skills as "average" (66.5 percent, $p < .05$). Most of the nurses had not attended a computer course (51.4 percent, $p < .05$).

Table 1: Profile of Nurses at Governmental Hospitals Adopting Electronic Health Records in Eastern Province, Saudi Arabia

Profile	Hospital A (*n*=67)		Hospital B (*n*=78)		Hospital C (*n*=40)		Total (*n*=185)		Chi-Square	*P*-Value
	No.	%	No.	%	No.	%	No.	%		
Age	Mean = 29.31 ± 6.44 years									
<30 years	56	83.6	53	67.9	21	52.5	130	70.3	17.33	.002*
30–45 years	10	14.9	25	32.1	16	40.0	51	27.6		
>45 years	1	1.5	0	0.0	3	7.5	4	2.2		
Gender										
Men	60	89.6	76	97.4	38	95.0	11	5.9	4.08	.130
Women	7	10.4	2	2.6	2	5.0	174	94.1		
Nationality										
Saudi	46	68.7	51	65.4	6	15.0	103	55.7	34.37	.000*
Non-Saudi	21	31.3	27	34.6	34	85.0	82	44.3		
Years of nursing experience	Mean = 6.26 ± 5.71 years									
<10 years	61	91.0	64	82.1	30	75.0	155	83.8	8.03	.091
10–20 years	5	7.5	13	16.7	7	17.5	25	13.5		
>20 years	1	1.5	1	1.3	3	7.5	5	2.7		
Department										
Surgery	36	53.7	18	23.1	5	12.5	59	31.9	84.65	.000*
Medical	1	1.5	48	61.5	8	20.0	57	30.8		
ED	12	17.9	2	2.6	10	25.0	24	13.0		

Ancillary services	1	1.5	0	0.0	0	0.0	1	0.5		
Others	17	25.4	10	12.8	17	42.5	44	23.8		
Duration of EHR experience	Mean = 2.08 ± 0.86 years									
<5 years	66	98.5	76	97.4	40	100.0	182	98.4	1.10	.577
5 years or more	1	1.5	2	2.6	0	0.0	3	1.6		
Computer literacy										
Availability of computer at workplace										
Yes	66	98.5	78	100.0	39	97.5	183	98.9	1.71[a]	.425
No	1	1.5	0	0.0	1	2.5	2	1.1		
Ever attending computer course										
Yes	35	52.2	44	56.4	11	27.5	90	48.6	9.39	.009*
No	32	47.8	34	43.6	29	72.5	95	51.4		
Self-rating of computer skills										
Lowest	7	10.4	8	10.3	1	2.5	16	8.6	33.69	.000*
Average	53	79.1	35	44.9	35	87.5	123	66.5		
Highest	7	10.4	35	44.9	4	10.0	46	24.9		

*$p \leq .05$

[a] Monte Carlo test

The survey revealed underutilization of almost all EHR functionalities among all hospitals (see Table 2). For chart review, "obtain and review lab results" represented the highest frequency of use (86.5 percent, $p < .05$). However, the rest of the functionalities showed lower utilization rates. Concerning decision support, "highlight test results that are out of normal range" showed the highest frequency of utilization (59.5 percent, $p < .05$). For order entry, "enter lab orders" represented the highest frequency of utilization (62.7 percent, $p < .05$). With respect to documentation, "document patient discharge instructions" was the most frequently used functionality (62.7 percent, $p < .05$). There was no utilization of any communication tool with other providers (e-mail, fax, or SMS). For additional tools, "managing patient referrals" was the most frequently used functionality (40.5 percent, $p < .05$).

Table 2: Extent of Utilization of Electronic Health Record (EHR) Functionalities at Governmental Hospitals in Eastern Province, Saudi Arabia

EHR Utilization	Hospital A (*n*=67)		Hospital B (*n*=78)		Hospital C (*n*=40)		Total (*n*=185)		Chi-Square	*P*-Value
	No.	%	No.	%	No.	%	No.	%		
Chart review										
Obtain and review lab results	63	94	68	87.2	29	72.5	160	86.5	16.99	.002*
Obtain and review radiology results	58	86.6	37	47.4	26	65	121	65.4	24.98	.000*
Obtain and review other test results	49	73.1	36	46.2	29	72.5	114	61.6	13.64	.001*
Create and review scanned documents	39	58.2	44	56.4	25	62.5	108	58.4	.405	.817
Review progress notes	37	55.2	27	34.6	31	77.5	95	51.4	22.15	.000*
Monitor current and past medications and medication refills	57	85.1	63	80.8	31	77.5	151	81.6	3.25	.517
Decision support										

Receive drug interaction alerts when writing prescriptions	43	64.2	43	55.1	20	50	106	57.3	4.44	.349
Receive drug allergy alerts when writing prescriptions	40	59.7	24	30.8	20	50	84	45.4	14.97	.005*
Highlight test results that are out of normal range	49	73.1	34	43.6	27	67.5	110	59.5	14.42	.001*
Clinical guidelines	29	43.3	39	50	27	67.5	95	51.4	5.97	.05*
Order entry										
Enter lab orders	56	83.6	38	48.7	22	55	116	62.7	23.13	.000*
Enter radiology orders	57	85.1	23	29.5	20	50	100	54.1	45.17	.000*
Enter pharmacy orders	47	70.1	26	33.3	19	47.5	92	49.7	22.35	.000*
Documentation										
Create and maintain patient-related medical problem list	43	64.2	28	35.9	30	75	101	54.6	20.2	.000*
Create and maintain common medication list	44	65.7	32	41	29	72.5	105	56.8	16.37	.003*
Identify patient-specific allergies	42	62.7	28	35.9	27	67.5	97	52.4	15.01	.001*
Document patient discharge instructions	49	73.1	38	48.7	29	72.5	116	62.7	13.74	.008*
Communication tools with other providers										
E-mail	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	No statistics	
Fax	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	No statistics	
Mobile phone short message service (SMS) system	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	No statistics	
Additional tools										
Managing patient referrals	22	32.8	25	32.1	28	70	75	40.5	19.6	.001*
Allowing patients to use the Internet to access parts of their health records	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	No statistics	
International Classification of Diseases (ICD) codes	29	43.3	19	24.4	15	37.5	63	34.1	10.2	.037*
Generating health statistics	26	38.8	0	0	3	7.5	29	15.7	170.3	.000*
Data backup and disaster recovery	6	9	0	0	3	7.5	9	4.9	175.3	.000*

*$p \leq .05$

The most frequently cited barriers among all hospitals (see Table 3) were “loss of access to medical records transiently if computer crashes or power fails” (88.6 percent). This was followed by “lack of continuous training/support from information technology staff in hospital” (85.9 percent), “additional time required for data entry (i.e., more workload)” (84.9 percent), and then “system hanging up problem” (83.8 percent). Complexity of technology (81.6 percent) and lack of customizability of the system according to users’ needs (81.1 percent) were also frequently reported problems.

Table 3: Nurses’ Barriers to Use of the Electronic Health Record (EHR) System at Governmental Hospitals in Eastern Province, Saudi Arabia

Barriers	Hospital A (*n*=67)		Hospital B (*n*=78)		Hospital C (*n*=40)		Total (*n*=185)		Chi-Square	*P*-Value
	No.	%	No.	%	No.	%	No.	%		
Loss of access to medical records transiently if computer crashes or power fails	55	82.1	71	91	38	95	164	88.6	4.9	.086
Speed of utilizing EHR system (minimal wait between screens, minimal boot-up time, etc.)	55	82.1	65	83.3	33	82.5	153	82.7	.04	.98

Additional time required for data entry (i.e., more workload)	57	85.1	64	82.1	36	90	157	84.9	1.3	.521
System hanging up problem	53	79.1	65	83.3	37	92.5	155	83.8	3.32	.189
Lack of customizability of the system according to users' needs	54	80.6	65	83.3	31	77.5	150	81.1	.60	.74
Lack of continuous training/support from information technology staff in the hospital	54	80.6	70	89.7	35	87.5	159	85.9	2.6	.273
Complexity of technology	57	85.1	61	78.2	33	82.5	151	81.6	1.16	.56
Problems with confidentiality, security and data privacy (e.g., place of computer)	38	56.7	62	79.5	34	85	134	72.4	13.4	.001*
Disturbed communication	53	79.1	56	71.8	35	87.5	144	77.8	3.87	.144
Problem with pregnancy alert system	49	73.1	61	78.2	32	80	142	76.8	.82	.664
Lack of belief in EHR adoption	49	73.1	62	79.5	32	80	143	77.3	1.04	.594
Problem with drug alert system (drug interactions, drug allergy, etc.)	51	76.1	34	43.6	34	85	119	64.3	26.12	.000*

*$p \leq .05$

Discussion

Over the past 20 years, research findings have accelerated our knowledge of healthcare providers' opinions about adopting and using information technology in healthcare.[52,53] Nurses in Saudi Arabia currently cannot fully utilize computer technology in their practices, and their use of computerized systems was, in general, limited to certain functions, including "obtain and review lab results," "highlight test results that are out of normal range," "enter lab orders," "document patient discharge instructions," and "managing patient referrals." On the other hand, other functionalities such as "review progress notes," "receive drug allergy alerts when writing prescriptions," "enter pharmacy orders," and "identify patient-specific allergies" were underutilized. In addition, there was no utilization of functionalities "allowing patients to use the Internet to access parts of their health records." These findings go hand in hand with those of studies conducted in Turkey, where most EHR functionalities related to nursing were poorly utilized.[54,55]

Nurses not utilizing health informatics will not be able to view the entries of other healthcare professionals, which may result in communication issues within the team and, in turn, may affect the quality of nursing care.[56] Results of the present study showed no utilization of any communication tool with other providers (e-mail, fax, or SMS). This finding was likely due to lack of access to the Internet inside these hospitals at the time of data collection. Access to e-mail or web communications can allow staff to seek specialist advice from remote physicians.[57,58] In addition, Internet access allows more flexible system designs with external communication of data and off-site backup.[59]

An immediate benefit of the use of EHRs is the increased accessibility of the patient record. Healthcare providers who want information are no longer limited by the boundaries of wards and time because the record is always available from different places.[60] However, participants in the present study cited "loss of access to medical records transiently if computer crashes or power fails" as the most frequent problem (88.6 percent). Prolonged system failures (lasting hours) can so dramatically halt the flow of clinical information that outpatient activities may be curtailed or canceled and emergency rooms at trauma centers may divert admissions until vital systems are restored. The more widely and deeply diffused the technology, the more difficult it becomes to work without it. Planning for management of unexpected downtime is critical.[61]

When an organization gears up for the implementation of an EHR system, restraining forces should be identified, and suggestions for minimizing these restraining forces should be provided to the EHR implementation team.[62] Healthcare providers are still concerned with privacy and security, workflow changes, distraction from direct patient care, and other unintended consequences of using EHRs.[63-65] The present study demonstrated that nurses reported problems with confidentiality, security, and data privacy (e.g., place of computer) (72.4 percent, $p < .05$).

A study conducted in Turkey on nurses' views in three hospitals representing different health sectors found that 59 percent of participants felt that EHR systems were not well integrated into their workflow. In addition, half of all respondents had not been trained in using EHR systems.[66] The same problem was reported in another study, in which nursing staff found that the EHR system was implemented well, but follow-up problems and necessary additions and changes were largely ignored by information technology staff.[67] This finding is parallel to those of the present study, in which "lack of continuous training/support from information technology staff in the hospital" was the second most frequently reported problem experienced by nurses (85.9 percent). These results are believed to provide guidance in planning and implementing computer training programs for nurses in Saudi Arabia.

Clinical workflows are complex, and clinical computer technology integration significantly influences healthcare workflows.[68-70] Modeling clinical workflows is difficult because clinical practice is inherently complex, interruption driven, and constantly changing. No EHR system fits all workflows of a given hospital perfectly. Even if a system initially did so, it would not eliminate the need for constant adaptation to changing workflows in the future.[71] This finding is in line with the current study, which identified lack of customizability of the system according to users' needs as a common problem (81.1 percent).

EHR systems often dramatically alter traditional communication patterns among care providers, ancillary services, and clinical departments. The EHR, a computer system, replaces the nexus of previously interpersonal conversations regarding provision of care.[72] The present study demonstrated that 77.8 percent of nurses cited "disturbed communication" as a barrier. However, another study revealed that the majority of nurses (n = 160, 64.8 percent) agreed that an EHR increased patient safety via improved communication among members of the patient care team.[73]

A study conducted by Miller and Sim identified that difficulties with technology are an important barrier hindering utilization of EHRs.[74] In addition, a majority of nurses in another study expressed frustrating experiences related to operational failures such as software issues (screen abruptly shutting off or freezing), power loss, difficulties logging on due to forgotten passwords, and difficulty with scanning a particular medication.[75] These findings correspond with those of the present study, in which 81.6 percent of nurses identified complexity of technology as a barrier.

EHR systems can significantly increase clinician workload.[76] This finding was reflected in the present study, in which 84.9 percent of nurses complained of "additional time required for data entry (i.e., more workload)." Developers should rework clinical system interfaces to reduce the collection of redundant information, display relevant information in logical locations, and reduce the amount of required typing. The lesson is that more work for the clinician is inevitable and must be addressed in the planning process. Successful implementations balance required new work with system-based reductions in old work to make the use of the system tolerable to users.[77]

As technology diffuses and becomes entrenched within organizations, clinical care delivery becomes inextricably dependent on it.[78,79] System failures affect clinical work when paper backup systems are not in place. Nurses in the current study experienced barriers related to "system hanging up problem" (83.8 percent) and "speed of utilizing EHR system (minimal wait between screens, minimal boot-up time, etc.)" (82.7 percent).

Lack of perceived benefit for users was one important pitfall in the implementation of EHR systems in developing countries.[80,81] This finding was parallel to those of the present study, in which 77.3 percent of nurses reported "lack of belief in EHR adoption" as a barrier.

Accordingly, aggressive detection and management of adverse unintended consequences is vital for EHR success.[82]

Conclusions and Recommendations

Underutilization of almost all EHR functionalities was identified among all study hospitals, as was identified in studies conducted in Turkey and other developing countries. There was no use of any communication tool with other providers (e-mail, fax, or SMS). Many barriers were cited by nurses employed in the hospitals in this study. Study results can be generalized because the sample included all available nurses at the three hospitals adopting EHRs in Eastern Province, Saudi Arabia, at time of data collection. In addition, nurses from all the departments that had adopted the EHR system in each hospital were included.

The following recommendations are offered to improve the utilization of EHRs in Saudi Arabia:

1. Periodic assessments should be conducted to assess the extent of utilization of different system functionalities and make improvements accordingly.
2. Orientation training should be provided for new nurses, and continuous training should be provided for current nurses. In addition, the hospitals should coordinate with the EHR system vendor to conduct initial and follow-up training.
3. Information technology technical support should be available 24 hours a day in the hospitals.
4. Improvements to communication tools for use with patients, such as SMS and fax, should be made by the information technology staff.
5. Attention should be directed to the use of e-mail between nurses and with other providers. To use this functionality, Internet access will need to be provided in the hospitals.
6. The Ministry of Health must customize the EHR system according to each hospital's needs.
7. Nurse managers and/or informatics personnel could conduct periodic focus groups with nurses (and other healthcare professionals) to identify and discuss perceived benefits and limitations of the current EHR system. In addition, each hospital should develop a communication mechanism (perhaps a newsletter or web page) that summarizes the EHR issues perceived by the staff nurses along with the hospital's planned response.
8. An EHR committee should be formed to discuss problems with the EHR system in Saudi hospitals. This team should include members from all disciplines.

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