Lived Experience of Nurses who Work with Electronic Health Records

Abstract:
Driven primarily by concerns around patient safety, the electronic health record is now federally mandated in health care organizations across the United States as an auspicious approach to ensure that patients remain safe. The paradigm shift to electronic recording occurred because of the alarming rates of medical errors resulting from incorrectly deciphering physicians' handwritten documentation. The purpose of this study was to investigate the lived experiences of nurses working on a medical unit using the electronic health record to document nursing care. Nurses are the primary end-users of the electronic health record and little research is available on the qualitative aspect of nurses' perspectives regarding using electronic health records in documenting nursing care. Using a hermeneutic phenomenological research design, the study consisted of a sample of 14 nurses working in a major hospital in New York City. The analysis revealed six essential themes: comprehensive picture of the patient, user friendliness, decreased medication errors, effective documentation, optimized/prioritization of plan of care, and increased staff interactions. The findings could assist electronic health record system designers to refine a more nursing centered documentation system that will enhance nursing practice, patient outcomes, and promote excellence in health care delivery.
Title
Lived Experience of Nurses who Work with Electronic Health Records

Authors

Primary Author
Candace James-Marrast, PhD, RN
649 E 104 St, Brooklyn, NY, 11236
Phone: (917) 974-3372
Email: candacejames.marrast@gmail.com
Fax: (347) 413-7171
Affiliation: International Nurses Association (INA)

Co-author
Margaret Kroposki, PhD, RN, MBA
605 Crescent Avenue, Greenville, SC, 29601
Phone: (864) 235-1063
Email: mkroposki@att.net or mkro18@email.phoenix.edu
Affiliation: Faculty, School of Advanced Studies, University of Phoenix

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ABSTRACT

Driven primarily by concerns around patient safety, the electronic health record is now federally mandated in health care organizations across the United States as an auspicious approach to ensure that patients remain safe. The paradigm shift to electronic recording occurred because of the alarming rates of medical errors resulting from incorrectly deciphering physicians’ handwritten documentation. The purpose of this study was to investigate the lived experiences of nurses working on a medical unit using the electronic health record to document nursing care. Nurses are the primary end-users of the electronic health record and little research is available on the qualitative aspect of nurses’ perspectives regarding using electronic health records in documenting nursing care. Using a hermeneutic phenomenological research design, the study consisted of a sample of 14 nurses working in a major hospital in New York City. The analysis revealed six essential themes: comprehensive picture of the patient, user friendliness, decreased medication errors, effective documentation, optimized/prioritization of plan of care, and increased staff interactions. The findings could assist electronic health record system designers to refine a more nursing centered documentation system that will enhance nursing practice, patient outcomes, and promote excellence in health care delivery.

KEYWORDS

EHR; Nurses Lived experiences; EHR and Nursing Practice; EHR and Nursing Documentation, EHR and Medication Errors.
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BACKGROUND

To promote quality in the delivery of health care services, the Federal Government mandated the implementation of a national electronic medical record system by 2015.\(^1\) In 2004, President Bush called for the nationwide computerization of the documentation process in medical institutions as a measure to prevent medical errors and reduced health care cost. In the State of the Union Address, President Bush explicated the need for all health care organizations to adopt electronic documentation by 2015.\(^2\) President Obama continued support for the electronic health record (EHR) by signing the Health Information Technology for Economic and Clinical Health Act (Section 3011, 42, USC - 2009), which is part of the American Recovery and Reinvestment Act.

The impetus for the federal mandate derived from the increase in reported rates of medical and medication errors frequently occurring. Medical and medication errors occurred because of the misunderstandings of handwritten doctors’ orders that resulted in patient injuries. Nurses’ misinterpretation of physicians’ handwritten orders resulted in 50-61\% of medication errors.\(^3\) No hospital in the United States is immune to medication errors, which lead to 7,000 deaths and 1.3 million patient injuries annually.\(^4\) In 2006, the Institute of Medicine acknowledged medication errors are the main risk to patient safety and validated the use of electronic prescribing as an auspicious approach to circumvent the occurrences of medication errors.\(^5\)

Traditional paper-based recording used in patient care areas of the health care setting resulted in serious medication errors because of misinterpretations of handwritten documentation by various health care providers.\(^6\) Deciphering handwritten documentation incorrectly,
negatively affected patient safety in hospitals across the United States. The major effect of incorrect deciphering of physicians handwritten documentation resulted in an increase in medication errors. As nurses implemented nursing activities, medication errors represent the highest percentage of errors in the health care environment associated with the process of physician prescribing and nursing assessment. Some of the serious medical errors include administering the wrong drug, dose, at the incorrect time, using the wrong route, or omitting a prescribed medication. The transition from traditional paper-based recording to EHR transformed nursing care and affected all levels of the profession from nursing administrators to staff nurses. Some of the issues affected include the quality of patient care, the safety of patients, nurses’ view of themselves as professionals, morale with other nurses, and communication among various medical professionals.

Health care organizations implemented use the EHR to chart all data relating to patients that represents the patients’ entire medical history within the medical institution inclusive of personal data, treatments, and medications. The EHR comprises several components that enhance the documentation of care provided to the patient and the prescribing and administering of medications. Some of the components of the EHR include the nursing electronic medication administration record that may be linked with physicians’ orders, pharmacy, laboratory, radiology and several other departments (Figure 1). Within each health care organization, the EHR linkage among departments creates a means of comprehensive recording that facilitates interdisciplinary patient care. However, many EHR systems are implemented without adequate input from staff nurses. In addition, few peer-reviewed articles investigating nurses lived experiences documenting nursing care using the EHR exist.
A plethora of quantitative studies of physicians’ and nurse practitioners’ use of the EHR exist. Studies also investigated the use of EHR to improve patient care among physicians, medical students, and nurse practitioners. These studies examined nurses’ perceptions and acceptance to the adoption of the EHR and the manner of EHR introduction. Other studies focused on nurses’ perceptions on the use of the EHR as compared to paper recording system and the influence of the new system on medication errors.

Few studies addressed staff nurses’ lived experiences of documenting nursing care using EHR. This study was conducted to explore the lived experience of nurses using EHR in a setting that instituted EHR more than 10 years ago. The findings could inform nurses about EHR that has been used in a hospital for a long time. The findings of this study may improve overall documentation of patient care by nurses in medical facilities and improve health care delivery because nurses, enlightened by other nurses’ experiences, understand the benefits of a new documentation program thereby willingly accept and participate in the transition to EHR.

**METHODOLOGY**

The hermeneutic phenomenological design informed by the works of Ricoeur and Van Manen was an ideal design because of the intrinsic inherent characteristics of the design (Figure 2). Ten prompt questions guided by the principles of hermeneutics enabled the nurses to present feelings from a perspective that provided a construct for reflection and analysis of the nurses’ lived experiences and consciousness. Use of bracketing during the data collection and analysis phases facilitated suspension of any ontological judgments regarding the opinions of the participants and the phenomenon under investigation and preserved neutrality of the data collected.
Prior to commencing the interviews, participants completed a demographic questionnaire to confirm that each participant satisfied the inclusion criteria. Digital recording of the interview process with the tape recorder in full view of the participant was a significant part of the data collection plan. Field notes were taken during the interview to provide clarity during transcription of the interviews. The nurses provided answers to the 10 prompt questions, related to their lived experiences documenting nursing care using the EHR. The questions focused on the experiences with the EHR, medication administration, the delivery of nursing actions, and patient outcomes.

Data analysis methods followed the epistemological principles of hermeneutic phenomenological data analysis and achieved through Modell’s 1992 three-step method of data analysis (Table 1). The three steps encompassed—description, reduction, and interpretation, which were the mechanisms that assisted with coding the data and achieving meaningful themes. The process began with description by verbatim transcription of the data collected, repetitious readings of the transcriptions, and listening to the audiotaped interviews multiple times to live with the data and develop a sense of the participants’ experiences. The second phase of the analysis involved returning to the participants to verify the information received and ensured accuracy of the data collected. Returning to the nurses during data analysis confirmed the information in the data collection phase—validated the results, fulfilled the requirement of the Colaizzi approach used in the study, and added to the rigor and transferability of the study findings.

The third phase of data analysis involved using reduction and interpretation. Reduction included transforming the participants’ words into expressions suitable to the scientific discourse supporting the research, identifying units of significance, and categorizing the data into themes.
Phenomenological interpretation entailed capturing, extracting, and assigning meaning of the participants’ discourse. Careful analysis of the participants’ texts identified explicitly the nurses’ lived and conscious experiences that facilitated the emergence of themes. Employing logical inferences was also a vital component of the analysis, which assisted in the accurate interpretation of the participants’ lived and conscious experiences to elements of meaning perceived and expressed in the words of the participants. During the procedure crosschecking the data resulted in identifying the commonalities in the salient texts and phrases among the nurses that similarly lead to the identification of the themes. Use of crosschecking reduced researcher bias by minimizing any preconceived personal and theoretical concepts from interjecting into the analysis and maintained authenticity of the interpretations.21

The fourth phase of data analysis comprised the use of the QSR Nvivo 10© qualitative software, which assisted with organizing and categorizing the data. The organization of data produced three level of nodes. Nodes with the highest percentages and frequencies determined the themes. Nodes mentioned by 13 to 14 participants were considered essential themes. Nodes with frequencies of 11 to 12 participants were identified as sub-themes. Nodes with frequencies of one to four participants were considered outliers. Analysis resulted in six essential themes, two sub-themes, and three outliers.

**Setting**

Three medical units in two government supported health care agency hospitals in a large metropolitan area served as the setting for the study. The hospitals provided various types of medical, surgical, mental health, ambulatory care and outpatient clinics services.22 The intensity of patient care and workload of the acute care medical units made these units appropriate to conduct a research study of nurses’ perceptions who use the EHR. The two government
supported health care agency hospitals were an appropriate setting in which to conduct the study because the hospitals implemented the system-wide electronic recording of patient information in 1999 and continued with day-to-day use of the EHR. Drawing participants from the two government supported health care agency hospitals rather than multiple facilities was advantageous primarily because it allowed the use of one agency institutional review board approval or to investigate different types of electronic health recording systems. This strategy also facilitated the ease of interviewing in an agency in which the participants have extensive and consistent EHR experience.

**Participants**

The author’s educational institution and the institutional review board of the government supported health care agency approved the study. Permission to conduct the one-on-one interviews was obtained from the Chief of Patient Services Education and through collaboration with the medical unit nurse managers, the Associate Director of Patient Services, and the Nursing Educator Affiliate for all outside schools of nursing. The nurses who volunteered for the study signed an informed consent form before the interview session began. To protect the participants, the nurses were assigned a pseudonym before data collection to ensure confidentiality of any identifying personal information. To protect the participants’ identities and maintain confidentiality, the names of the nurses were kept secure and separate from the pseudonyms. No intentional omission of information was done that could influence the ethical standard of the research or violate the respect of the participants. The participants were informed that they could withdraw from the study at any time without penalty and that any data collected prior to their withdrawal would not be used. In addition, the nurses were told the data would be
kept confidential and stored in a locked cabinet until it was destroyed in accordance with institutional review board’s policy.

Nurses on three medical units were recruited by placing one advertising flyer on the bulletin board in each of the nursing lounges. Purposive sampling technique with subsequent snowballing was employed to obtain candidates. The final homogenous group of 14 nurses \( (n=14) \) aligned with the qualitative design because the group was large enough to provide a rich description of the lived experience of working with EHR. Interviews were conducted by the researcher in a private room at the work site. At the time of data collection, the participants reviewed the prompt questions, signed the informed consent, and then the interview began.

The participants consisted of two male and 12 female nurses. Thirteen nurses held a bachelor’s degree and had one or more years of nursing experience. One nurse who held an associate’s degree and was enrolled in a bachelor of nursing program had more than five years of nursing experience. All nurses had worked six or more months on the medical unit and used EHR to document nursing care for six or more months.

**FINDINGS**

To explore the participant’s lived experiences, the nurses responded to 10 questions that explored their lived experiences using the EHR to document nursing care. Six essential themes, two sub-themes, and three outliers emerged from the detailed analysis of the participants’ answers to the prompts and research questions (Table 2). The research questions were—What are the lived experiences of nurses working on a medical unit using the EHR to document nursing care? What are the lived experiences of nurses who work on the medical unit in regards to medication errors while using the EHR? and What are the lived experiences of nurses who use the EHR to deliver various aspects of nursing interventions and how do they describe these
experiences on patient care outcomes? The most common themes discovered were in the areas of the nurses’ general experience documenting with the EHR, medication administration, the nurses’ ability to perform various aspects of nursing care, the interactions between the nurses and the patient, and the interactions between the nurses and other staff members.

**Essential Themes**

Essential themes consisted of themes that were identified by 13 or 14 of the participants. Six essential themes emerged from the discourse with the nurses regarding their lived experiences documenting nursing care with the EHR (Figure 3). The essential themes of the lived experience of working with EHR were–1) having a comprehensive picture of the patient, 2) documenting on a user-friendly system, 3) feeling able to prevent medication errors, 4) feeling able to document effectively, 5) feeling able to optimize/prioritize care, and 6) increasing interactions with other staff members. Each theme is presented with examples derived from the participants’ interviews.

**Theme 1: Having a comprehensive picture of the patients.** Thirteen participants agreed the EHR provides a comprehensive picture of the patients. One participant said, “There are links to the total picture of the patients. I can see other disciplines notes, and see how everyone is looking at the patient’s care. I can also see whether the nursing care is working or not working.” Another remarked, “I can easily and readily see and review a specialist note like the wound care specialist note, which positively influences my decisions to provide better patient care.”

**Theme 2: Documenting on a user-friendly system.** The participants indicated their lived experience is positive because the EHR's documentation process is very user friendly. Participants noted that EHR was structured, integrated, and easy to navigate. An example of a
participant’s typical comment was “The program is great, simple, convenient, and user friendly because all aspects of patient care are embedded with the program.”

**Theme 3: Avoiding medication errors.** All participants elucidated using a bar-coded medication administration system to administer medications reduces medication errors. The consensus among the participants indicated the margin for making a medication error decreased tremendously since the adoption of the EHR as a documentation system. One participant stated, “There is no more deciphering of handwritten communication because of the electronically written orders, there is reduced medical errors and decreased omission in administering medication.” All of the participants also alluded to the accuracy of medication administration as one of the fundamental benefits of using the EHR in the form of the bar-coded medication administration system. Another participant stated, “If I am not paying attention and I pick up the wrong medication, a warning alert stops me from proceeding further until I correct the error and scan the correct medication.”

**Theme 4: Documenting effectively.** All participants reported that using the EHR to document nursing care generates accurate documentation, which makes the documentation process more effective. A participant stated, “The prefilled documentation template contains targeted information of all the body systems and for all categories of care, so this assists me to document more effectively.” Furthermore, “The documentation is very systematic because the template contains a head-to-toe assessment approach, so I complete an effective and complete assessment of my patient when I document my nursing care.” Another nurse stated, “With the electronic recording, the documentation is accurate and clearer because there are no longer illegible handwriting and no chance for discrepancies or miscommunication.” However, some participants noted that documentation could be made more effective by removing redundancy,
adding a flag to alert the nurse to new orders, and adding a free text feature to allow the nurse to elaborate on follow up intervention after assessment of a new patient problem.

**Theme 5: Optimizing and/or prioritizing patient care.** Optimized/prioritization of the plan of care was the fifth essential theme discovered from the participants’ discourse. All participants indicated that using the EHR assists in optimizing and prioritizing the plan of care for the patients. One participant stated, “I can pull up other disciplines notes and review everyone’s plan of care and the care provided by other disciplines. The information helps me to prioritize and optimize the patients’ care, which in turn improves patient satisfaction, and makes me feel more competent and safe.” Another participant said, “I can easily and readily review a specialist note, which positively influences me to better plan, optimize, and prioritize care for my patients.”

**Theme 6: Facilitating staff interactions.** Thirteen nurses agreed that using the EHR to document nursing care increased the interactions among the other members on the unit. Some examples of how the EHR increased staff interactions included: “Using the EHR increases communication and interaction among us for clarification.” and “The EHR enhances interaction between staff” and “The EHR promotes interaction because we need to clarify and discuss ways among each other to better provide patient care.”

**Sub-Themes**

Sub-themes consisted of concepts that were identified by 11 or 12 of the participants. The two sub-themes were providing a research tool and enhancing nurses’ accountability (Figure 4).

**Sub-Theme 1: Accessing a ready resource for patient teaching.** Eleven nurses stated the EHR is a great research tool. Comments made by participants included: “The EHR contains a lot of update resources, I can use the system to look up any medication, disease process when I
am in the patients’ room, so I have the answer to give them if they ask me a question.” and “I do not need to go and conduct any research, all I have to do is use the resources in the EHR to search for any information I need; this makes me feel confident that I have the answers to give the patients.” and “The tools in the EHR are great—the system helps me with researching drug information, so when I am administering my medications, I can look up the medication before I start and have an answer for the patients.”

**Sub-Theme 2: Enhancing nurses’ accountability for medication administration.** The second sub-theme derived from the analysis was the accountability of each nurse regarding administering the right patient the correct medication at the correct time. Many of the nurses reported that with use of the EHR, there is increased accountability of each nurse related to timely documentation of medications. Eleven nurses supported the discovery of this theme. Comments about this sub-theme included “We must be accountable for everything we do, the machine tells everything, we have no excuses, and we cannot lie because the EHR is the gatekeeper for all documentation.” and “The EHR is a permanent legible record with time stamping that generates accountability for everything we document, so we need to be cognizant of the time we administer our medications.”

**Outliers**

Outliers were themes identified by one to four of the participants. Although these concepts were not mentioned by a majority of the participants, each of the outliers has the potential for improving the EHR system. These themes included a suggestion for an evaluation committee, a suggestion to streamline the system and make it less cumbersome, and an awareness of the potential for errors that can be traced back to pharmacy accountability, and the
procedure for scanning intravenous fluids and medications administered in small volume intravenous fluid bags (Figure 5).

**Outlier 1: Desiring an EHR evaluation committee.** One participant voiced the concern of having an evaluation committee review the documentation system in the HER at regular intervals. The participant envisioned a committee that would examine nursing documentation and medication administration records to determine if changes to the system could be made to make the system more effective. The important part of the committee was to include the nursing staff’s perspective on the effectiveness of the EHR system.

**Outlier 2: Working with a cumbersome system.** One nurse noted the EHR was cumbersome because the templates contained words that were redundant and not specific to the type of patients on the medical unit. Although the participant spoke positively of the electronic system, the participant felt that the information contained in the template was not always useful and did not reflect actual patient care.

**Outlier 3: Proposing pharmacists’ accountability.** Four participants voiced the need for pharmacy accountability because the pharmacy is responsible for generating and affixing labels to large and small volume bags of intravenous fluids when the intravenous fluid bags contain medications. The current procedure requires the nurse to scan the pharmacy generated label instead of the scanning the bag. If the nurse simply scans the pharmacy generated label and does not also read the medication name of the medication on the bag, an error may occur if the medication name is not correctly transcribed to the pharmacy generated label.

**DISCUSSION**

Based on the major concern surrounding the negative outcome of medical errors, the hermeneutic phenomenological study was conducted to investigate the lived experiences of
nurses documenting nursing care using the EHR. A specific problem was that deciphering handwritten documentation incorrectly negatively lead to medication errors in hospitals across the United States. However, this inquiry adopted a broader focus investigating not only medication errors, but also the nurses’ overall experiences using the EHR to document nursing care. In past studies, many researchers focused on the quantitative aspect of using the EHR whereas other researchers using qualitative approach used different qualitative designs and not the hermeneutic phenomenological design. Nurses are at the forefront of patient care and function as conduits among various other health care providers, their voices are crucial in the conversation on the usability of the EHR.

The major findings of the study indicated the user-friendliness of documenting with the EHR, the usefulness of the system in enhancing the nurses’ job performances, and the effectiveness electronic recording. During the study, the nurses spoke freely and with enthusiasm. The nurses delineated the positive experiences as well as the challenges of using the EHR to document nursing care. The engaging and thought provoking discussions demonstrated their frustrations, but more important the appreciation in using the EHR as a documentation tool.

As was paralleled in existing literature—decreased medication errors, effective documentation, and user friendliness emerged as three of the six primary themes discovered. However, the three new themes discovered—increased staff interaction, comprehensive picture of the patients, optimized/prioritized plan of care—could contribute to a better understanding of the nurses’ lived experiences. Key change agents such as system designers and information technologists in the health care environment can reflect on these discovers and implement the necessary modifications. The section on the implication of the findings listed strategies that hospital administration, information technologists, nurse educators, policy makers, and EHR
system designers could consider in discussions regarding any modifications to the current system. The recommendations section similarly delineated areas for future research mentioning a few specific ideas. The recommendations section also provided suggestions policy makers could contemplate regarding the current procedure for administering medications using the EHR. Two specific recommendations are noteworthy to reiterate at this point. The first recommendation was that procurement officers should coordinate with a company that supplies bar-coded intravenous and intravenous piggy back medications and changing the procedure for intravenous and intravenous piggyback medication administrations from scanning of patient labels to scanning of bar-coded medication bags. The second recommendation was including staff nurses in leadership meetings that discuss the concerns of the EHR and formulation of an information technology evaluation committee to listen to the concerns of the nurses on a quarterly basis. These types of changes would be dependent upon collaboration with various personnel within the facility. Therefore, an effective collaboration with hospital leaders and information technology personnel inclusive of staff nurses is essential to facilitate a broader scope of opinions and efficient exchange of information needed to maximize the functionality of the EHR.

The interviews occurred at one facility with one group of nurses. However, this health care agency is the only facility in the United States that has over 10 years of comprehensive and nationwide electronic recording in its 172 point of care facilities. Other health care agencies have struggled with the startup of the EHR and many are currently in the formative stages of implementation. In addition, the nurses interviewed are all working with the EHR for over one year. Therefore, although the interviews are specific to the research facility and to the group of nurses interviewed many of the themes and ideas offered by the nurses are transferable to other
nurses operating in similar acute care settings in the health care delivery system. The results of this study provide the impetus for future refinements of the EHR.

**IMPLICATIONS AND RECOMMENDATIONS**

The findings from this study suggest several implications for practice and beneficial to nurse educators, information technology personnel, EHR system designers, hospital administration, policy makers, nursing leaders, pharmacists, nurse researchers, as well staff nurses at the bedside. These change agents could use the discoveries as a guide to modify the electronic recording system based on the nurses’ voices and their needs based on their lived experiences. EHR system vendors usually make software systems updates annually to integrate changes recommended by regulatory agencies, repair reported software issues, enhance data collection, improve the worker workflow processes, and add changes recommended by the end-users. A user-friendly system that aligns with the perspectives of nurses as the primary end users might enhance the delivery of nursing care indirectly and have a direct improvement in the quality of patient care.

One of the outliers identified was *cumbersome* of the EHR. The nurses highlighted the template does not reflect accurately the care provided but contains fillers that do not specify an individualized patient record and do not reflect a nurse’s ability to think critically. They also voiced the concern of removing the repetitive information from the template and noted that new orders are at the bottom of the page; consequently, they can miss important orders prescribed by the physicians. The nurses also recommended that the template contain a built-in flag for new orders and a free text feature to input the exact rationale for not performing a task because the reason for not performing the task is not part of drop down menu.
The second and third outliers identified were evaluation committee and pharmacy accountability. The nurses recommended including staff nurses in leadership meetings that discuss the concerns of the EHR and formulation of an information technology evaluation committee to listen to the concerns of the nurses on a quarterly basis. Members of an information technology evaluation committee are important stakeholders, integral in the role of assessing the strengths and weaknesses of the EHR system and making recommendations to senior leadership.26

In addition, participants noted that the procedure for scanning intravenous solutions is to scan the pharmacy generated patient label on the large and small volume bags of intravenous medication. The label does not always agree with the type of solution that is on preprinted intravenous bag. Therefore, a medication error may occur if the nurse scans the patient label without verifying that the solution or medication in the bag is correct. The participants recommended that hospital’s procurement officer should purchase bar-coded bags of intravenous solutions and medications with bar codes that can be scanned. Furthermore, the procedure for scanning the bar-coded bags of intravenous solutions and medication should be changed from scanning just the patient labels to include scanning the bar-coded bags that contain intravenous solutions and medications.

Hospital administration can collaborate with information technology personnel and system designers to discuss strategies based on the nurses’ recommendations. One of the responsibilities of Information Technology personnel is to protect patients by eliminating the mistakes nurses make and by creating an environment, which decreases nurses from negative exposure.27 These recommendations could result in making the system more user friendly, enhance the nurses’ work processes by generating an improved EHR system suited better for the
nurses’ work processes and decreasing the time expended documenting, and better reflect the care the patient receives.\textsuperscript{28}

The findings also have implications for nurse educators in terms of information significant to orienting and preparing new nurses as well as seasoned staff nurses to document care using EHR. Nurse educators could use the results to formulate an effective orientation process and provide ongoing training and supervision. Literature in support of staff education indicates the value of incorporating appropriate resources in the improvements of nursing educational programs. Incorporating the recommendations from nurses familiar with the EHR process could assist in determining the direction of a comprehensive orientation program for new employees, improve educational updates, and enhancements of the product after initial implementation of the EHR system.\textsuperscript{29}

**CONCLUSION**

The mandate by the Federal Government required comprehensive electronic recording systems in all health care facilities across the United States. This paradigm shift occurred because of the alarming rates of medical errors resulting in patient injury and death. Patients are the most important elements in the health care industry and patient safety is essential at the delivery-point to the patient. At each nurse-patient interaction, a possibility of making errors exists. These errors can trigger an adverse or sentinel event that may result in serious consequences against both the organization and individual employees, but more importantly the errors could result in harm or death to a patient. Patient safety should be of principal importance to nurses in the process of executing medical care.\textsuperscript{30}

Findings of this study indicated that nurses felt that EHR was a user-friendly system that contributed to patient safety by assisting nurses to view a comprehensive picture of the patient,
avoid medication errors, document patient care effectively, and to optimize patient care plans and promote staff interactions. Some nurses identified that EHR assisted them with accessing a ready resource of information for patient teaching and enhanced the nurses’ accountability for medication administration. A few nurses recommended a special committee to allow nurses to make suggestions make the system less cumbersome. Another recommendation was to augment safe intravenous medication administration by using intravenous medication bags with bar codes that could be scanned for accuracy.

Research indicates that nurses are the highest percentage of health care workers that interact with patients 24-hours each day and consequently the perception of nurses on using the EHR is integral to the concept of nurses as meaningful users of this technology. Nurses lobby for legislation, in which their voices create needed changes to the quality of patient care. This study similarly gave nurses–the primary end users of the EHR–the voice to elaborate freely and openly about their lived experiences working alongside the EHR. Incorporating the nurses’ viewpoints as key stakeholders in the decision-making process is vital to achieving effective refinements in the usability of the EHR.
REFERENCES


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Hermeneutic Phenomenological Data Analysis

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<td>- Repetitious reading of the transcribed data</td>
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Frequencies and Percentages of the Essential Themes, Subthemes, & Outliers

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<th>Essential Themes</th>
<th>Frequencies</th>
<th>Percentages</th>
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<tr>
<td>Comprehensive Picture of Patient</td>
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<tr>
<td>User Friendliness</td>
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<td>100%</td>
</tr>
<tr>
<td>Decreased Medication Errors</td>
<td>14</td>
<td>100%</td>
</tr>
<tr>
<td>Effective Documentation</td>
<td>14</td>
<td>100%</td>
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<tr>
<td>Optimized/Prioritization of Plan of Care</td>
<td>14</td>
<td>100%</td>
</tr>
<tr>
<td>Increased Staff Interaction</td>
<td>13</td>
<td>93%</td>
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<tr>
<th>Sub-Themes</th>
<th>Frequencies</th>
<th>Percentages</th>
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<tbody>
<tr>
<td>Research Tool</td>
<td>11</td>
<td>78%</td>
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<tr>
<td>Nurse Accountability</td>
<td>11</td>
<td>78%</td>
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<table>
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<th>Outliers</th>
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<tr>
<td>Evaluation Committee</td>
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<tr>
<td>Cumbersome</td>
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<tr>
<td>Pharmacy Accountability</td>
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