Nurses’ expectations and perceptions of a redesigned Electronic Health Record

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Abstract:
When a new Electronic Health Record is implemented or modifications are made, the full acceptance by end users depends on their expectations and perceptions about the possible benefits and the potential impacts on care quality. The redesign of an electronic nurse chart should consider the inherent characteristics of nurses’ practice and the variables that may influence the implementation and use of the new chart. In this study, a qualitative method evaluated nurses’ expectations and perceptions about the implementation impacts of a redesigned nurse chart in an electronic health record at Hospital Italiano de Buenos Aires. Seventy-four nurses participated in three operative groups. Following ground theory, three analytic dimensions were found: impact at work, communication and chart quality. In addition, time was a recurrent topic. Nurses found it difficult to think positively if reduction in time of documentation was not assured.

Keywords: communication, time perception, qualitative research, work-flow

Introduction

The implementation of an Electronic Health Record (EHR) may improve the quality of the care but also may generate unintentional consequences, introduce wrong information or impact the information recovery. The work of care providers and workflow may be affected, causing problems in communications and coordination of care. Nurses, in association with physicians, represent the majority of the task force at Hospitals (1). To assure a successful implementation of electronic documentation systems for nurses, it is mandatory to consider the process of care, the workflow, the needs and the perspectives of the nurses. The importance of measuring the impact associated with the implementation of an EHR system is supported in the literature with the evaluation of expectations, perceptions and attitudes from users of EHRs (2,3). For example, perceptions and experiences of senior nurses pre and post implementation of an EHR was observed in a study. They were more resistant to change and more skeptical about the improvement of communication and patient safety versus the less experienced nurses (2). Hence, it is important to study the impacts of the inherent implementation of an electronic information system. Hospital Italiano de Buenos Aires

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(HIBA) is in the process of implanting a redesigned nurse chart in the EHR and as a preliminary stage in survey creation, the objective of this study was to evaluate nurses’ expectations and perceptions about the impact of implementation.

1. Methods

HIBA is an academic tertiary level hospital founded in 1853 in Buenos Aires, Argentina. With more than 750 beds (200 for critical care), 800 home care beds and 41 operating rooms, there are 2800 physicians, 2800 non-physicians healthcare professionals and 1900 individuals in administrative services and management areas. HIBA has been gradually developing and implementing an “in house” Health Information System (HIS) that handles the medical and administrative information from point of capture to analysis. The HIS includes a single, modular, problem-oriented and patient-centered EHR and allows to record the patient care at different levels (outpatient, inpatient, emergency and home care). It also enables complementary studies, medication records, progress notes, consultations, physician’s orders imaging and laboratory reports.

The nurse chart has evolved from paper to a computerized system in the last years, included in the EHR as a specific module. By the time this study was performed, the electronic nurse chart was organized in 4 sections: assessment, planning, implementation and evaluation, each section independent of each other. The redesigned nurse chart was under testing and not implemented yet. The new chart is focused in the integration in order to go with work-flow and nursing process. The redesigned chart was done with User Center Design principles, leading to a more intuitive version that allows a sequential record.

1.1. Design

A qualitative study was done with nurses from inpatient units at HIBA. Operative group technique was the method of data collection. This method focuses on activities of specific groups, allowing learning, diagnosing and solving tasks in order to open, support, and records a space of different voices (4). Following this technique, the researchers proposed reflexive activities and group discussions on topics previously established by the research team. For this purpose a convenience sample of nurses were included. Participants were invited by the Head of the Department of Nursing in the context of the pre-implementation of a redesigned chart. The research team did not have any previous relationship with the participants. The activity was held during working hours, taking into account coverage for a minimum amount of nurses from involved units. In all meetings, the participants were separated in subgroups of five or six individuals, and a paper with a few questions were distributed. The questions were:

1) How do you believe that the new chart would change / modify / transform your work-flow?;
2) List the tasks that you believe would change / modify / transform with new chart;
3) How do you believe that the new chart would affect / would impact on patient care?. In addition the participants could add comments besides the questions given.

The coordinators (GG and SB) went over the subgroups to facilitate the active participation of everyone in the group. Once the questions were answered, at the end of the meetings, the ideas were compiled (ZG, JS) in an electronic document and shared
with the participants to allow feedback. In addition, every meeting was observed (JS, FR, AB, VG, AC) and information recorded with a field diary. Finally, the notes were edited and the collected material transcribed (AB, LC). The research process was carried out based on grounded theory. Using a flexible design, the researchers looked in everyday situations concerning the use of the EHR, trying to interpret the phenomena in terms of the meaning that people give them. Data collection, reading, transcription, and analysis were performed in a continuous and repeating sequence. Finally the research team manually compared the field notes, observations, feedback session and the content of papers distributed in the different sessions.

2. Results

From September to October of 2014 three operative groups were performed. One of the operative groups consisted of twenty-four supervisors and assistant nurses. They were from different shifts (morning, afternoon, and night). 87% were from General Care Units (79% adult care and 21 % paediatric care), and 13% from Intensive Care Units. Nineteen of the nurses were women. The age ranged from 23 to 56 years with experience working at HIBA ranging from one to 29 years. The remaining operative groups were with 50 clinical nurses. 75% were from General Care Units (69% adult care and 31 % paediatric care), and 25% from Intensive Care Units. Thirty six of them were women, all of them from morning and afternoon shifts. They had been working at HIBA from one to 40 years.

Three big analytic dimensions were found related to: work impact, communication and EHR quality. With respect to the impact at work, they believe the new chart will help to better manage time, resulting in decreased documentation time and an increase in patient care time.

“If it were unified in one or two windows, it will make it faster and will reduce the administrative time, increasing the time devoted to patients”.

“That the use of the [EHR] should not be a pain, it is annoying and in an emergency it’s even worse”

Communication was referenced in different ways communication within the nurse department communication with other health professionals, and communication with the patient. They expressed the importance of improving communication between departments, and how the new chart would improve communication within the nurse department; improve the professional communication between physicians and nurses, and between patients and nurse. They maintained the idea that if the communication improve, the handoffs would also improve.

“The information of the electronic health record should be useful ... [it should not be] on the fly, the doctor [should not be] ... to ask us [about information of EHR]”.

Regarding the quality of the EHR, it should improve task planning to avoid omissions of care, and it should give importance to the validation of medications. They appreciate that the records would be according to the needs of a given specific area, such as the Emergency Department and Inpatient areas, among others.
“Will decrease the redundancy of information; even though free text adds important information, it is not always positive because of grammar mistakes. At present, we don't record progress or change in the patient.”

The necessity of training was suggested and also the need for maintaining open communication. With the current chart, there were disconformities because the chart was done partially, damaging the completeness of the record.

3. Discussion

This analysis corresponds to the expectations and perceptions of nurses of a redesigned nurse chart. In our study, the dimensions found include communication, quality of EHR, impact at work, and the impact of documentation time. In a similar way, the literature on expectations and perceptions of providers related to EHR systems was associated to communication, teamwork, documentation time and work-life changes, support and resources, access of information, improved care and quality of record (5-7). Even though the dimension of support and resources is mentioned in the literature, in our experience it did not emerge as a relevant category. On the other hand, remarkably, they had difficulty to focus on the “new chart” without complaining about the ongoing record. Fortunately, as meetings continued, they could elaborate on the complaint and transform it, developing constructive thinking about what they believed they needed. They tended to focus on topics that they supposed helped to better administrate time towards documentation, and increase time with the patient. As long as it was quick, easy, practical, simple and dynamic, it contributed towards facilitating communication between nurses and others professionals.

Time was the conditional recurrent factor. Nurses found it difficult to think positively if time reduction for documentation was not assured. They felt if more time was needed for documentation, less patient care time was available. Other experiences show that nurses do not trust electronic records; their past personal experience with documentation suggested that they considered electronic records increased time requirements (8). While this information is important, it only reflects part of the phenomenon. Based on these results, we planned a study in order to quantify their perceptions. The findings of this study provided useful information as a first approach on nurse’s expectations and perceptions about a redesigned nurse chart, but there are limitations to extrapolate from these results. Even though three operative groups were performed, they included nurses from a large variety of units from morning and afternoon shifts. Only a few night and weekend shifts nurses participated in the meetings. Perceptions and expectations may vary as they may have different work-flow and tasks necessary to perform more activities. Operative groups took place during pre-implementation looking for expectations but we also collected perceptions of the ongoing chart. We think this is a reasonable finding because the formulation of expectations is based on personal perceptions. Finally, we planned to complete the evaluation in the post implementation phase, to evaluate the perceptions of the redesigned chart and compare it with the expectations described. Further research is needed to better understand this situation and perform improvements during the process. It is mandatory to consider the process of care, the work-flow, the needs and the perspectives of the nurses in order to achieve a successful implementation of an electronic nurse chart.
Acknowledgments

This study was done under the Residency Program in Health Informatics at HIBA. We want to thanks to Leonel Cameselle (LC) and Agustina Bertoia (AB) for observation and translation tasks, Victoria Giussi (VG) and Agustin Ciancaglini (AC) for the observation tasks at operative groups, and to the nurse personnel who participated. A special thanks to Patricia Yao that assisted us in proofreading this text.

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