

Introducing Electronic Health Records at a Public Tertiary-Level Hospital, Pakistan

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Nurses are at the frontline of healthcare more than any other professionals [1]. Nurses communicate patients' information through the written document to interdisciplinary team members [2]. Patients' records should be based on solid scientific nursing knowledge, which is fundamental for nursing care [3]. High-quality nursing documentation is needed in every care area and every setting [4]. Therefore, it is essential to address the standards of nursing documentation to improve the quality of care being provided to the patient.

Aims of the Paper

This paper aims to address the following: (1) identify the knowledge translation (KT) gap of paper-based nursing documentation in Pakistan; (2) propose a change plan for electronic nursing documentation at a public tertiary-level hospital using KT process model; and (3) present potential barriers and facilitators to this change process.

KT Problem Identification

Although pieces of evidence are available, Electronic health record (EHR) serves better in terms of quality of data in an organized manner. Several developing countries, like Pakistan, have not progressed yet, to shift from paper-based health records to EHRs due to socioeconomic and technological constraints [5].

Pakistan's nurses still use paper-based methods to provide health care services and maintain patients' records [5]. Whereas, Yu et al. discussed that paper-based documentation is time-consuming, repetitive, and inaccurate. Furthermore, it does not comply with high-quality documentation and communication standards among healthcare professionals [6]. In Pakistan, a study reported that 43% of nursing staff never maintained proper nursing documentation because of no checks and balances from the higher authorities [7]. Due to paper-based documentation, higher authorities struggle to keep an immediate check and balance of patients' records. Whereas, the EHR has the potential to enhance healthcare professionals' access to a patient's healthcare information, improve patients' safety, ensure the appropriate

use of resources, and finally, improve communication among healthcare professionals [8].

Another study in Pakistan reported that nurses spent an average of 20 minutes on nursing diagnosis in paper form [9]. Moreover, Khattak et al. found that 23% of nurses considered that nursing documentation took extra time, and 6% responded that it was not essential to maintain it [7]. Whereas, EHR improves healthcare quality, increasing time efficiency and guideline adherence [10]. EHR promotes mutual understanding, enables health professionals to coordinate activities, and prevents duplication of activities such as laboratory tests [11].

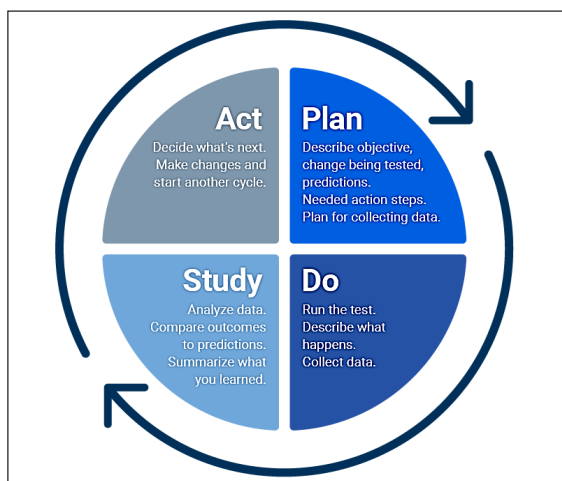
Another study in Pakistan showed that nurses lack knowledge about documentation [12]. Khattak et al. found that 17% of the participants did not maintain nursing documentation due to a lack of knowledge about proper nursing documentation [7]. While the EHRs are provided with a structured template containing the North American Nursing Diagnosis Association (NANDA) items related to the nursing diagnosis. The NANDA helps use the data to measure the quality of care [13]. Regarding the documentation structure, it was found that the EHRs had a better structure than the paper-based records [2]. The electronic system provides the caregivers with legible, more accurate and complete information at all data points [14].

KT Process Model

Applying KT theories, models, and frameworks is one of the methods for successfully incorporating evidence into clinical care [15]. The process model is best to utilize because of its specific steps (stages, phases) in translating research into practice, including the implementation and use of research [16]. For this change process, Plan-Do-Act-Study (PDSA) model will be used as the KT process model to bridge the paper-based nursing documentation gap at a public tertiary-level hospital in Pakistan.

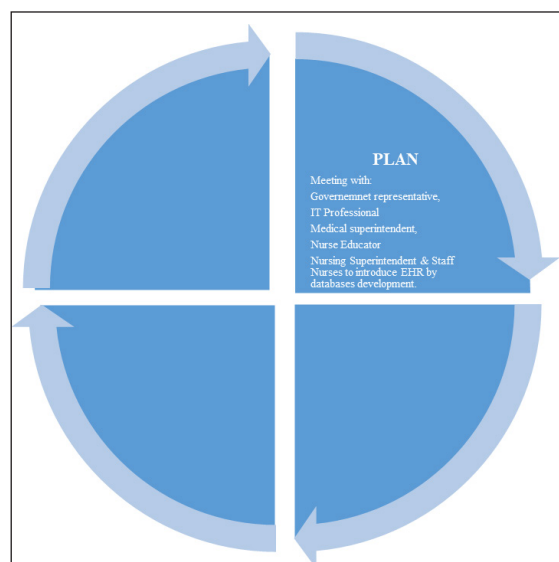
PDSA Model

PDSA is widely accepted in healthcare systems [17]. PDSA is easy to adopt regardless of practice size or resources, providing a straightforward iterative approach to quality improvement [18]. This is a small-scale test for testing the intervention, which helps improve the quality of the intervention to get the desired outcome as a continuous process [17]. PDSA follows a circular process: planning out how the test will be carried out, testing the change and collecting data, evaluating that data, and then either dropping the idea or using the information to run another cycle, thus creating a feedback loop of constant learning and improvement [19]. (See Appendix, Figure 1).



The components of PDSA are critical to consider because the first step, “plan,” provides an attempt to predict the outcomes and scientific investigation of the capacity to understand the change. The second step, “DO,” allows bringing change slowly and iteratively while testing the hypothesis and allowing us to understand why the output was improved/ not improved by changes enacted. The third step, “Study,” will show this stage’s planning and implementation outcomes. The last step, “ACT,” is the process’s final stage and the next cycle’s first stage. It helps in the implementation of improvements into the current setting and the implementation of new knowledge into the system.

Using the PDSA model to address the KT issue of nursing documentation is outcome-oriented. As it can be easily implemented in low-resource countries such as Pakistan, it can be tested on a small scale by introducing electronic health records in one public hospital in Pakistan. If successful, it can be gradually implemented in other public health sectors. The planning includes meeting with the government official representative, medical superintendent, information technology professionals, nursing superintendent, nurse managers, nurse educators, and one charge nurse from each unit to explain the plan and outcomes prediction for introducing EHR by developing databases. (Figure 2). Collaboration between researchers and decision-makers may reveal differing perspectives, expectations, and values, leading to greater understanding and improved communication, enabling more effective and sustained partnerships and increasing the successful implementation of KT [20]. Facilitators and barriers are most important to consider and must be identified before initiating any change. To address this KT gap in nursing documentation at a public tertiary-level hospital and propose a plan, the following possible barriers and facilitators are considered to implement KT successfully.



Barriers and Facilitators

Few studies have identified common barriers to implementing electronic health records in Pakistan’s health care system. In Pakistan, the most crucial factor hindering the government from achieving the health sector’s goals is the unavailability of a computerized record base or databases [5]. Fear of productivity among practitioners was a significant concern for change [21]. Not adequate training of users for the new software made end users less confident about the technology [22]. However, other possible barriers include less knowledge of nurses about the computer. Senior staff nurses in the working units may resist the change.

Some facilitators include, in Pakistan, the participant nurses’ perceptions of electronic documentation were positive [12]. It is essential to consider all aspects, including the behavior and readiness of nurses for change. It is more important to address than resources. The people involved in implementation, including their views, beliefs, and established ways of practice, can significantly affect the ease of introducing innovation or change [23]. The recipient construct should be considered to help identify the recipient as a barrier or facilitator. The relationship between the innovation and the recipients is often interdependent [23]. Other possible facilitators include nurse managers to supervise the change and contribution of young nurses in change process having computer literacy. KT Strategies include proper guidance and training of nurses to enhance their positive perception of this change - incentives and appreciation of the team for participating in this project.

Facilitation is the construct that activates implementation by assessing and responding to the characteristics of the innovation and the recipients (both as individuals and in teams) within their contextual setting [23]. Facilitation can smooth the process by supporting EHR and identifying the issues at the recipient level. The role of the facilitator and a set of strategies and actions is essential to the facilitation process to enable implementation [23]. Therefore, facilitation to every member of the team at every step will be ensured by trained individuals, not just by explaining the process or interventions, but taking part in the activities to make the implementation easier.

In conclusion, EHR will enable healthcare professionals to exchange information and improve the standard of nursing documentation. However, it will also improve patient outcomes, disease prevention, will provide general health information to the public, and provide data to the researchers and government for policy making.

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