

Electronic Patient Record (EPR) System in South Africa: Information Storage, Retrieval and Share amongst Clinicians

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The adoption and use of technology in South African (SA) hospitals is not new. Some SA researchers have undertaken research on this topic with an aim towards improving existing health technologies at hospitals. A recent review of the literature highlights some of these researches on this topic such as by Kerry (2006), Smit and de la Harpe (2008), O'Mahony (2009), Mostert-Phipps, Pottas and Korpela (2012), Hartmann and Sooklal (2012), Cilliers and Flowerday (2013), and Weeks (2013). A summary of the researches is highlighted here.

Kerry's (2006) research investigated Patient-held Record (PhR) system. He employed the quality assurance (QA) methodology which was qualitative in nature involving focus group discussions. In conclusion, Kerry (2006: 23) stated that PhRs are important at district health levels with the objectives of improving the standard of health care, as well as the continuity of care between the district hospital, the clinics and community health centres that the hospital supports. In addition, the PhRs form a vital link, not only between facilities, but as a link through time. Kerry suggests that patients need a definitive PhR for themselves, a record that is problem-orientated and tracks their health and illnesses throughout their respective lives.

Smit and de la Harpe's (2008) study sought to investigate if electronic information system has any benefit over paper-based systems. It noted that the medical industry was slow to adopt technology as compared to industries like finance and engineering (Smit and de la Harpe, 2008: 126). The authors proposed a computer-based system owing to the vast benefits over paper-based systems. Computer benefits according to Smit and de la Harpe (2008: 127) will include central data maintenance, non-existing duplicate information, improved information accuracy as well as storage capacity over a long period.

O'Mahony (2009) in his study implemented an EMR system in a rural general practice in SA. Reasons for this included a very high patient engagement (68 912 registered patients), each with a paper record. This resulted in the record system needing more storage space, records seemed increasingly misfiled, and thick records were falling apart (O'Mahony, 2009: 346). Lessons learned and suggestions after EMR implementation included a physician's ability to manipulate computer as being vital, technical and infrastructural support should be readily available, transition to a computer-based system should incorporate the user(s) to allow for smooth and uninterrupted work (O'Mahony, 2009: 347).

Mostert-Phipps, Pottas and Korpela's (2012: 327) research is based on a literature review to identify various types of electronic records that could be employed to improve continuity of care in the SA healthcare setting by developing a technological model that employs several of these electronic record systems. The research concluded that paper-based methods of recordkeeping are inadequate in supporting informational continuity of care, making the adoption of electronic methods of recordkeeping more important.

Hartmann and Sooklal (2012: 192) critically evaluated the current state of a hospital's health record system; established a global best practice in record storage and management; as well as determine the desirability of introducing more technological record storage mechanisms and quantified the benefits of alternative systems. The authors proposed a tablet-computer-disseminated EMR system with the benefits of reducing space, infrastructure dedicated to medical record storage, maintenance and associated costs.

In the case of Cilliers and Flowerday (2013), they investigated user acceptance as a factor for the poor uptake of telemedicine in the Eastern Cape Department of Health in SA. The results showed majority of health care workers believed in the value and benefit of HIS to improve the effectiveness and efficiency of the healthcare system. Using the Unified Theory of the Use and Acceptance of Technology (UTUAT) model, the authors developed a questionnaire to make use of existing literature and distributed to various clinics around the province where telemedicine has been implemented. The authors identified barriers to the effective implementation of a HIS to include a lack of knowledge and awareness regarding the telemedicine system. This in turn means that the user is apprehensive when using the system thus contributing to less frequent usage.

Weeks (2013) research study notes that beliefs, perceptions and culture of clinicians are important when adopting technology. His research exposes cultural attributes which are deeply engrained in clinicians and suggests a managed approach. Weeks (2013) research is an indication of how technology can be integrated into hospitals with minimal disruptions to clinician's way of work, that is, the use of paper.

Through these researches, it is obvious that technology at hospitals is visible. But a monitoring and evaluation of these systems has not been undertaken in all literature sourced, thus a special interest as a Syllff fellow to undertake this study. The monitoring and evaluation of a system is necessary to align the objectives of implementing the technology with users and expected outcomes. Clinicians who are the primary users of hospital technology need to be investigated to understand their expectations before and after technology adoption.

Technology at hospitals still take place in SA but no study as at current has being undertaken to hear the voices of the users, which are clinicians. Clinicians are not necessarily involved in the design, development and implementation of technological systems at their workplace so there is a discomfort expressed by some of them with regards this. For example two clinicians expressed their views of the technological system at their hospital saying:

“useless..... because theres no continuity, you see a patient now, you see him again in a week later for follow up, all ECM notes is not on, you cant find it, you must go there for this date, there for that date, it’s a mess....”

“about it is it’s a good program so theres nothing wrong with the program, its just like I said its implemented badly.....”

The reason for such discomfort can be traced to clinicians’ non-participation in decisions regarding technology adoption and implementation. Though their perceptions towards technology are positive, it is evident their input will make a positive difference as one clinician said:

“.....I think clinician input would be quite important in developing the software to work for us as well as educating the scanners of the documents to tell them exactly what is important to scan and what is not important to scan, what should be labelled and certain things.....”

It is important to note that improving technology use at hospital in SA will aid the adoption and use of technology in Namibia as well. This is because most Namibian clinician are trained in SA, Namibia as a country adopts the SA health standards as well as currently implements similar or identical health reforms. The challenges faced by SA clinicians when using hospital technologies can be mitigated by Namibian clinicians if lessons are learnt now.

While many Namibian hospitals have not being digitized, this study offers insight into clinicians’ perceptions towards technology use. And while Namibian clinicians are optimistic of the benefits of technology, it is important to involve them right from the design up to the implementation stages and at every decision stage to reduce the many shortcomings and problems experienced by their SA counterparts.

This study contributes towards improving health delivery especially at primary level where the burden of disease is high, clinician-patient ratio is high so the need to have technology will aid clinicians work. This study also contributes

towards the improvement of existing technology systems in use through clinicians' input.

These are my recommendations as a Sylff fellow having spent my SRA in Windhoek, Namibia. Although there is still a long way to go in delivering quality and affordable healthcare to its populace in both countries, a thousand miles starts with a single step.

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