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Pre-implementation investigation of the readiness of allied health professionals to adopt electronic health records

David Hailey [a], Ping Yu [a,1], Esther Munyisia [b]
[a] *School of Information Systems and Technology, University of Wollongong, Wollongong, NSW 2522, Australia*
[b] *Illawarra Shoalhaven Local Health District, New South Wales Health, Australia*

Abstract. There has been limited uptake of electronic health records (EHR) by allied health professionals. Yet, not much attention has been given to their information needs. For EHR to work for these health professionals, it is essential to understand their current practice of information management and their perceptions towards EHR. A qualitative interview study was thus conducted with four managers in four allied health practices in Sydney to understand their perceptions for the adoption and use of a new Australian e-health standards compliant EHR system. We found that these allied health professionals were highly confident with the use of electronic information system and were enthusiastically expecting the introduction of the EHR system to support their information management and practice. A number of issues related to the use of EHR in practice for small, independent allied health practices were also discussed. It appears that allied health professionals today are information technology (IT) savvy and ready to adopt EHR. EHR for allied health practices in Australia are long overdue. The health informatics community can no longer ignore the need and want of allied health professionals for EHR that are tailored and built to support their information and practice management.

Keywords. Electronic health records, allied health professionals, perception, health information technology, adoption, information needs

Introduction

To date, little knowledge is available about allied health professionals' adoption and usage of health information technology, such as electronic health records (EHR). For EHR to work for these professionals, it is essential to understand their practice of information management and readiness in adaptation to use EHR. Therefore, this research investigates these issues. Several allied health clinics in Sydney are at the pre-implementation stage of introducing an Australian e-health standards compliant EHR system. We conducted the study at four of these clinics. The results of the study will be of interest to major stakeholder groups: allied health professionals, other health practitioners, health informatics researchers, the Commonwealth, state and territory governments, medical software vendors and tertiary educators.

1. Literature Review

An electronic health record is a repository of patient data. Its primary purpose is to support the continuity, efficiency and quality of integrated healthcare [1]. The promise of EHR in improving the management of healthcare organisations was recognised decades ago. Sterling et al. suggested EHR as a solution for allocating goods and services through an interactive information system [2]. However, the uptake and use of EHR have not been evenly applied across healthcare.

Schaper and Pervan found the evidence to suggest that health professionals are reluctant to accept and utilise ICT [3]. The information needs of general practitioners (GPs) in Australia have been relatively well looked after by government, but allied health professionals have not received the same level of attention. Physiotherapists in Australia have been concerned about a lack of support in the computerisation of their practices and compatibility of their electronic clinical record keeping systems with the Personally Controlled Electronic Health Record (PCEHR) system. [4]. Similar concerns have been raised by the same population group in other countries. Other concerns are confidentiality, especially regarding information kept in a database, risk of losing medical records or information when transferring to an electronic system, and not being able to effectively use the current information [5].

According to Buyl & Nyssen, one of the major concerns for the use of an electronic registry to replace a paper-based system for physiotherapy was the rationale behind acquiring the electronic registry. Physiotherapists would show an interest in electronic record keeping only if the new practice would lead to a positive return [6].

In discussing best practice for EHR in small businesses, Hunter notes that a breach of security can be intentional, for example hacking and theft,, or unintentional, for example sharing passwords or leaving systems open for unauthorised access [7]. Thus it is an organisation's responsibility to protect privacy and security of information. In an occupational health setting, it is essential that only individuals with a need to know be granted access to EHR. This can vary based on the role and the type of information being accessed. A healthcare professional may need edit, full view, and print access; a supervisor may only need to view non-confidential information, such as the clearance form associated with a return to work document [7].

Vreeman et al. [8] reviewed the role of EHR systems in physical therapist practice. The investigators in all 18 reviewed studies reported benefits, including improved reporting, operational efficiency, interdepartmental communication, data accuracy, and capability for future research. In seven studies, the investigators reported barriers, including challenges with behavior modification, equipment inadequacy and training.

2. Methods

This pre-implementation readiness study was conducted in four small clinics that provided physiotherapy or psychotherapy services. The EHR system that will be introduced is the HTR Telhealth EHR system. The system provides functions for appointment scheduling, secure electronic referral and tracking, clinical resource allocation, patient management and electronic clinical record, practice performance and activity reporting, reimbursement claiming, patient accounts management, and access to the national PCEHR. The HTR Telhealth EHR is fully tested and certified by the National Electronic Health Transition Authority and by an independent laboratory

accredited by the National Association of Testing Authorities. In addition, the HTR Telhealth EHR is approved by the Department of Health to integrate and interoperate with the national PCEHR. Therefore, it complies with the Australian e-health standards.

2.1. The Clinical Practices

Brief details of the participating organisations are shown in Table 1. All are located in the Sydney region. The clinicians in these practices were competent computer users.

Table 1. Details of the participating allied health professional clinics.

	1	**2**	**3**	**4**
Type of service	Physiotherapy	Psychology	Physiotherapy	Physiotherapy
Number of people who will use the EHR system	4	5	15 (about 10 FTE)	4
Current use of IT	Separate diary and billing program	Web-based diary	Separate diary, client data base, and billing systems	Separate diary, client database, and billing systems
Paper records	Some notes and forms	Mostly paper	None	None

2.2. Data Collection Methods

A researcher conducted single semi–structured interview with each practice manager. As they were also practicing clinicians, their views would represent those of both clinicians and management. The data gathered included details of the current information management system in the clinic and the challenges to use it, the computer skills of the staff, the expected benefits and concerns with the new EHR system that will be introduced, and the perceived challenges for integrated continuity of care of clients. Each interview was recorded and later transcribed verbatim into a text file and analysed using the qualitative data analysis method [9]. The analytical unit was identified and coded using the method developed by Zhang et al. [10].

3. Results

The main findings were:

3.1. Current Health Information Management Arrangements

All sites used some form of electronic software for management of diary, client data, and billing information. The system in one clinic could automatically send a short message service (SMS) request to remind patients about appointments. However, communication with the major referral source was still by hard-copy letters or faxes.

All four managers were not satisfied with the labour intensive process for tracking information scattered between separate software.

Two practices used several pieces of software to replace paper records, such as remote access, client resource management and Microsoft Calendar to manage client appointment, patient information and billing. Two practices used both paper and electronic systems. A manager complained that their paper records were duplicated and it was difficult for clinicians to track progress. The whole information management and work practices in their clinic were inefficient.

The electronic diary for managing patient appointment was highly important for the practice, as a manager said:

"... we've got the online diary which automatically messages clients about their appointments and receives messages and faxes. It's really good because you can see what is going on in your diary really well"

3.2. Communication with Other Health Professionals

Communication with other health professionals was regarded as highly important but not satisfactory. It was mostly carried out by mailing hard copies. Communication with GPs tended to be slow as the later did not use email. It affected the promptness of client referrals and, to some extent, the review of patients.

3.3. Challenges in Delivering Services to Clients

The challenges in delivering services to clients were mainly caused by a lack of communication with other healthcare providers and clients, and the inefficiencies in maintaining records.

"main challenge I have - they don't turn up for their appointment"

"Keeping track that everything gets done."

"...inaccuracies are huge. ...loss of billings .... billings may not match diaries ..."

3.4. Expectations for the New EHR System

All practitioners were eager to have an easy-to-use EHR system that integrates patient details, diaries, billing and secure electronic messaging in one place, and to standardise their practices. They also wished the new system to work equally well on a desktop, an iPad or a phone.

3.5. Training Strategies Suggested for the Introduction of the New EHR System

Two managers suggested to provide group training to the users. Expertise and competency with the system should be shared in the team, but the time devoted to training would be different among staff members in a clinic. Therefore, team communication was seen as important to ensure that everybody was informed on progress and could share experiences.

3.6. Consideration for Security and Data Access

Current data security provisions at the practices varied from a password protected server and nightly site data backup to regular data backup on portable USB Flash Drives. The managers also expressed their concern regarding data access in the new EHR system:

"I will assume this is something I'll have to ask – who has access to what and where the information is stored."

The manager of the psychology practice raised her concern for privacy of patient information.

"clients would be really reluctant to have their psychological information up there in an electronic system. It's horrifying for them …"

However, she acknowledged

"It's good to see the information flow – where it goes and who has access to it".

4. Discussion

Allied health professionals' involvement with the use of EHR is still limited. The study, through the interviews, has given some indications about the current status of information technology adoption in this health professional group. Also, the study provided the allied health professional's perceptions towards EHR. It revealed the practice and organisational realities for managing EHR in allied health businesses that are small and independent with no major support for their use of ICT.

Although there is no specific, purpose-built software to effectively support allied health practices, all four practices that we studied already had years of experience using general software to manage their organisations. However, the managers were dissatisfied with the current systems which do not meet all their needs. Their current systems are cumbersome, labour-intensive to use, and information is scattered in isolated and different software packages.

Contrary to a previous finding [3], the managers, we interviewed, were positively anticipating the introduction of the new EHR system. As all their staff members had experience using electronic systems to manage client data, IT skill deficiency, which was the barrier for EHR introduction in some previous studies, did not seem to be a problem in these practices.

What the practitioners really require is that the new EHR system be tailored to support their information needs, workflow and practice. They expect the EHR would improve the management of their business, particularly the core processes of appointment scheduling, billing, referral processes, and communication with patients. With all information in one EHR system, they anticipate it would be more efficient to manage clinical and financial records, and improve communication with other health professionals and clients. Similar desired benefits were reported by Sterling et al.[2] and Vreeman et al. [8].

Contrary to previous findings [4], as the expected new EHR system would use the Internet Service Provider model, the managers did not have any concern with support for the system in their small practices. A formally tested and certified Australian e-health standards compliant EHR system gave them the confidence they need regarding compatibility with the national PCEHR, which was seen as a core benefit by a manager.

Same as the findings of [6, 7], the managers need to have confidence with the level of confidentiality, privacy and security of data, and access and ownership that are provided in an EHR system.

An IT savvy practice manager stated that his major motivation to move to the new HTR Telhealth EHR was the opportunity to use a system that supports the allied health practice, instead of using a documentation management system which is simply an electronic version of paper records. This opinion is similar to the views of Buyl & Nyssen [6].

The information obtained from these initial interviews will provide part of the baseline for comparison between the pre-implementation of the new EHR system and its routine use after allied health professionals and their colleagues have become fully familiar with the use of EHR in their practice programs. The contents of the practice managers' responses were similar; few new issues emerged. It appears that the saturation point for qualitative enquiry was reached [9]. However, it would be desirable to supplement this research with further interviews with other allied health professionals.

5. Conclusion

The allied health professionals were highly positive towards the introduction of the EHR system. They already had a rich experience using general software to manage sophisticated professional practices and deep feeling about the limitations of their current systems. They strongly expected the new EHR system would overcome the limitations of their current systems and bring improvements in information and practice management. Future stages in this project will include evaluation of the implementation process and the outcomes from use of the new EHR system.

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