

Electronic Health Record Use by Nurses in Mental Health Settings: A Literature Review



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A B S T R A C T

Background: Electronic health records are being implemented in mental health clinical environments at an increasingly high rate. The primary clinicians who utilize this technology are nurses and physicians, with nurses constituting the largest user group. Implementing this technology is complex, especially in this unique context. Understanding the previous experiences of mental health nurses who use electronic health records is therefore important as a means of identifying strategies to best implement the technology.

Objectives: The purpose of this study is to review the literature on electronic health record use by nurses in mental health clinical settings in order to be able to provide recommendations for how this technology can be most effectively introduced.

Design: A literature review was conducted. Ovid/MEDLINE®, PubMed, and the Cumulative Index to Nursing and Allied Health Literature were searched utilizing the following key words: "electronic health record", "electronic medical record", "clinical information system", "mental health", "nursing", and "psychiatry". Studies were screened for inclusion and exclusion criteria by two researchers.

Results: Seven studies were included after duplicates were eliminated, and inclusion/exclusion criteria were applied.

Conclusions: The mental health setting is a unique environment in which special attention needs to be given during technology implementation. As mental health nurses may have less experience and comfort using technology in their practice, more and a longer duration of support during implementation may be required. Additional strategies to support successful EHR use are discussed.

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Electronic health records (EHRs) are comprised of a computerized system having all, or some of the following functions: clinical documentation, test and imaging results, computerized provider order entry, and decision support (Hayrinen, Saranto, & Nykanen, 2008). Today, the technology is continuously being implemented in hospital, community and alternative care environments in North America (Jha et al., 2009; Khangura, Grimshaw, & Moher, 2013), as way of improving both the effectiveness and efficiency of clinicians (Blumenthal & Glaser, 2007; Chaudhry, Wang, & Wu, 2006; Hersh, 2002). Organizations are often enticed to implement EHRs to improve the quality of care and patient safety (Bakken, 2006), as well as reduce healthcare costs (Institute of Medicine, 2000). Given these benefits, governments have urged healthcare organizations to adopt EHRs as quickly as possible (Canada Health Infoway, 2014), and have at times offered financial incentives to do so (Centers for Medicare and Medicaid Services, 2014).

Given the functions of EHRs, nurses make up the largest group of users in North America (Fetter, 2009). This group utilizes EHRs in many clinical settings including mental health, to conduct client

charting, document medications, and plan care (Fetter, 2009). Many studies have investigated the factors that influence nurses to best use EHRs in their practice (Alquraini, Alhashem, Shah, & Chowdhury, 2007; Huryk, 2010; Lee, Mills, Bausell, & Lu, 2008; Lium, Laerum, Schulz, & Faxvaag, 2006), as well as how organizations can best implement the technology (Carayon et al., 2011; de Veer, Fleuren, Bekkema, & Francke, 2011; Geibert, 2006; Nagle & Catford, 2008; Staggers & Kobus, 2000; Staggers & Parks, 1993). These studies have identified a number of strategies that organizations can do to effectively implement EHRs including: enacting principles of change management, ensuring buy-in and contributions from key stakeholders (including nursing), training before and after the transition, ongoing evaluation, effectively dealing with issues or breaks in a timely manner, and providing ongoing communication (Leonard, 2004).

Unfortunately, research has been primarily conducted in technology-laden clinical settings such as the intensive care unit, where clinician roles are often driven by the technology, and where nurses are familiar with using a number technologies in their daily practice. In fact, EHRs were originally developed for these kinds of acute care settings (Staggers, Bagley Thompson, & Synder-Halpern, 2001). The mental health setting has long been an environment in which complex and computerized technologies have not been routinely used, and in

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which there has been slow uptake of EHRs (Modai & Rabinowitz, 1993; Tiessen, Doan, & Benoit, 2001). Nursing routines are driven more by patient interactions, which include a number of formal and informal assessments and dialogue. Mental health nurses may have less experience and comfort using complex technologies in their practice, and therefore the factors that influence them to use EHRs may be different than nurses who work in other environments. Therefore, the strategies that mental health organizations enact when implementing an EHR among nurses may be different than those completed in other clinical settings.

RESEARCH QUESTION

The following question was asked: What research has been conducted on the experience mental health nurses have using electronic health records? By answering this question, it is hoped that a set of recommendations for EHR implementations can be developed, as well as areas for further research identified.

METHOD

This literature review was conducted utilizing the following electronic databases: Ovid/MEDLINE®, PubMed, and the Cumulative Index to Nursing and Allied Health Literature. Keywords used in the searches were, “electronic health record”, “electronic medical record”, “clinical information system”, “mental health”, and “psychiatry”. For studies to be included in the literature review, the following inclusion criteria was used: 1) studies needed to take place in a mental health/psychiatry clinical setting, 2) studies were required to be in English, 3) the sample included nurses, 4) an EHR, as defined as a repository of computerized patient records, accessed by multiple healthcare providers (ISO, 2005) was utilized in the study, 5) the focus of the study was on the user experience, and/or use of the EHR. For studies to be excluded from the literature review, the following exclusion criteria was used: 1) studies that did not meet the predetermined inclusion criteria, 2) studies that focused on personal health records (record primarily controlled by clients/patients), and 3) narrative/editorial style papers.

A total of 677 articles were identified through the three databases. After removing duplicates, as well as screening the title, abstract, and full article for the inclusion and exclusion criteria, 7 articles were

included in the review. Both authors completed this exercise, and discussions between the authors settled any discrepancies in findings. A summary of the literature review process is shown in Fig. 1.

FINDINGS

A total of 7 articles were found on the topic of mental health nurses' experiences with EHRs (Table 1). Research was conducted in several countries including Germany, England, France, Finland, USA and Sweden. Multiple study methodologies including questionnaires, interviews and focus groups were employed. One study utilized a previously developed instrument called the “Staggers Nursing Computer Experience Questionnaire” (Koivunen, Valimaki, Koskinen, Staggers, & Katajisto, 2009), however all other studies developed their own instruments for their proposed research.

Several studies reported that nurses experienced a number of immediate benefits of the EHR once implemented (Ammenwerth et al., 2001; Baillie, Chadwick, Mann, & Brooke-Read, 2012; Boyer, Samuelian, Fieschi, & Lancon, 2010; Edwards, Chiweda, Oyinka, McKay, & Wiles, 2011). These findings are encouraging and suggest that implementing EHRs in mental health settings may be less different than doing so in other clinical environments than previously thought. On the contrary, several studies found that mental health nurses felt that there were a number of deficiencies in their experience using the EHR (Ammenwerth et al., 2001; Baillie et al., 2012; Boyer et al., 2010; Edwards et al., 2011; Saloman et al., 2010; Stahl, Granlund, Gare-Andersson, & Enskar, 2011). A summary of the findings of the literature review is detailed below.

As previously stated, there were a number of studies that reported positive experiences of mental health nurses using EHRs. One of the greatest cited benefits is clinicians' improved access to patient information. As multiple clinicians (and students) can simultaneously access a patients' chart using separate computers, a more efficient review and entry of patient information can be completed. Both nurses and students saw how this improved the quality of care provided, and also allowed them to spend more time with their patients (Baillie et al., 2012; Boyer et al., 2010). Given the importance of the therapeutic relationship in the mental health setting, freeing the nurse from charting to be able to spend more time with patients was seen as highly valuable.

Other positive experiences were also shared in the literature. In Ammenwerth et al.'s, 2001 study, care planning was completed more quickly by nurses who used a computer in comparison to those who used paper. This occurred as a set of standardized mental health-related goals, and process steps were listed for the nurse to find and select in the computerized system, but not on the paper form. This study also noted that documentation in the EHR was easier to read, more complete, and that the quality of documentation was better, which was a similar finding among a number of the papers reviewed (Baillie et al., 2012; Boyer et al., 2010; Edwards et al., 2011).

Additionally, Ammenwerth et al. (2001) noted that over time there was a statistically significant increase in nurses' acceptance of the EHR. This is to be expected given that there is a learning curve associated with the use of any new technology. Another study discussed the characteristics of nurses who made them more open to using EHRs initially. In Koivunen et al.'s (2009) study, nurses who had more experience and were more interested in using computers, were more likely to use them right away. Men, administrators, and newly graduated nurses were also more likely to use the EHR.

In the literature reviewed, the positive experiences that mental health nurses had using EHRs are consistent with those of clinicians in other settings (Khangura et al., 2013). It is in the areas that mental health nurses found deficiencies in EHRs that was different than other groups of nurses. One study found that care planning, albeit quicker due to the more standardized approach was more applicable to patients' physical health goals, rather than their mental health goals. Nurses felt that the standardized items that they could select from in the care

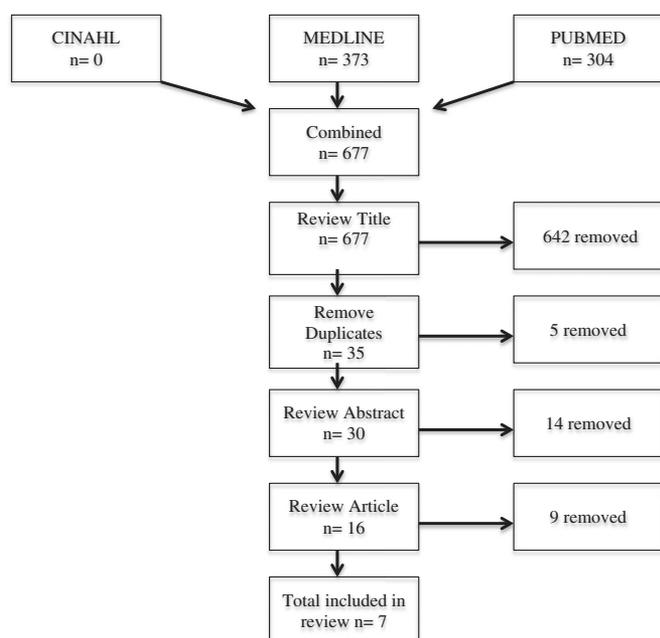


Fig. 1. Summary of the literature review process.

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