THE EFFECTIVENESS OF A DIGITALLY BASED RECORDS MANAGEMENT SYSTEM IN HOSPITALS: A LITERATURE REVIEW

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Abstract

The purpose of medical record management in hospitals is to promote the achievement of orderly administration in order to improve the quality of healthcare services in hospitals. Medical record management must be effective and efficient to support the quality of hospital services. However, the number of medical record personnel is still insufficient, so the officers cannot perform their duties according to the established job descriptions, then the compilation process related to checking the completeness of outpatient medical records is not performed because there is no request from the hospital, then the coding process has not been performed according to the standard because it does not include medical action coding and is not performed when the diagnosis is not read by the officer, and the filling process has not been performed according to the hospital standards. This research is a literature review; articles were collected by searching databases such as Pubmed, Proquest, Ebscohost, Sciencedirect, Scopus and CINAHL for the period 2013-2022. Article searches use key words or phrases (AND, OR NOT or AND NOT) to expand or narrow the search, making it easier to determine which articles to use. Based on the review, 7 articles discuss the effectiveness of a digitally based record management system in the hospital to achieve orderly administration in the context of efforts to improve health services.

Keywords: Digital-based record, medical record, EMR, management system

Introduction

The function of hospitals is to provide treatment and recovery services, and to maintain and improve the health of individuals through comprehensive health services based on medical needs, as well as to organise education and training of human resources to increase service capacity in accordance with hospital service standards. health; and to conduct research and development of technology in the health sector to improve health services, taking into account the ethics of science. (2009, Permenkes No.44).

According to WHO (2006), medical records are an important aspect of health care for current and future patients. In addition, medical records are used in the management and planning of health facilities and services, medical research, and the compilation of health statistics. A medical record is a file containing records and notes relating to the patient's identity, examination, treatment, activities and other services received. Regulation of the Minister of Health No. 269 of 2008. Medical record services are one of the medical support services provided in hospitals, which are the basis for assessing the quality of hospital medical services.

The function or purpose of medical records is to help achieve orderly administration as part of efforts to improve health services. Orderly administration will fail without the help of a proper medical records management system The medical records storage system is very important in a health facility because the storage system makes it easy to store medical records. in storage shelves, speed up the search or retrieval of medical records stored in storage shelves, facilitate returns, and protect medical records from theft, physical, chemical, and biological damage. (Susanto, Sukadi 2012).

Medical record services, which are designed to support the patient's healthcare process in the hospital, often face several obstacles. This condition occurs because the quality of service provided is still not good in terms of reliability, service time, service attitude, facilities and infrastructure, as well as accuracy in recording and grouping when storing client data. This syndrome makes it difficult and time consuming to search for the patient's medical history, which leads to delays in health service activities. (Nugraheni, 2015).

The purpose of medical record management in hospitals is to promote the achievement of orderly administration in order to improve the quality of health services in hospitals. Medical record management must be effective and efficient to support the quality of hospital services (Giyana, 2012). The function of medical records, among others, is to help achieve orderly administration in the context of efforts to improve health services. Orderly administration will fail without the help of a proper medical record management system.The medical record file storage system is very important in a health care facility because the storage system makes it easy to store medical record files.In storage shelves, it speeds up the search or retrieval of medical record files stored in storage shelves, facilitates returns, and protects medical record files from theft, physical, chemical, and biological damage. (Susanto, Sukadi 2012).

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The process of organising medical records begins when patients enter the hospital by providing direct health services to patients who collect the patient's medical records. As long as the patient receives medical services at the hospital, the processing of medical record files continues, which includes organising storage and moving files from storage to meet request/loan needs as patients come for treatment, are treated, or for other reasons. The process of processing medical records starts with assembling medical records, followed by coding, tabulating (indexing), analysing and storing (filling) (Ministry of Health, 2006).

Research conducted by Nuraini, in 2018 on the analysis of the medical record management system in the medical record installation of Tangerang "X" Hospital, the number of medical record personnel is still insufficient, so the officers can not perform their duties according to the established job descriptions, then the assembling process related to checking the completeness of outpatient medical record files is not carried out because there is no request from the hospital, then the coding process is not carried out according to the standard because

it does not include medical action coding and is not carried out if the diagnosis is not read by the officer, and the filling process is carried out according to the hospital standard, namely with a centralized system using the Terminal Digit Filling (TDF) alignment system, but is limited by the file retrieval system not being carried out by the medical record officers at a door.

Methods

The method used to search for articles based on the period 2013-2022 by searching databases such as Pubmed, Proquest, Ebscohost, Sciencedirect, Scopus, and CINAHL. Article searches use keywords or phrases (AND, OR NOT, or AND NOT) to expand or narrow the search, making it easier to determine which articles to use.

The keywords used to search for articles in this study are "effectiveness" AND "management" AND "medical record" AND "hospital". Inclusion criteria include articles published less than ten years (2013-2022), in English, full text. Exclusion criteria include medical record management outside of hospitals, methods used systematic review and mixed methods.

The article search also uses the PICO method, where P (population): hospitals implementing digital or conventional health record management, I (intervention): hospitals implementing digital health record management, C (comparison): no comparison used, O (outcome/outcome): effective or ineffective health record management using digital methods.

The PRISMA (The Preferred Reporting Items for Systematic Reviews and Meta-Analyses) framework was used for the analysis. The use of PRISMA guidelines and checklists allows for productivity, transparency, and clarity in the

reporting of results. The stages of the overall study included identification of the research question, identification of relevant studies, quality assessment and selection of studies for inclusion.

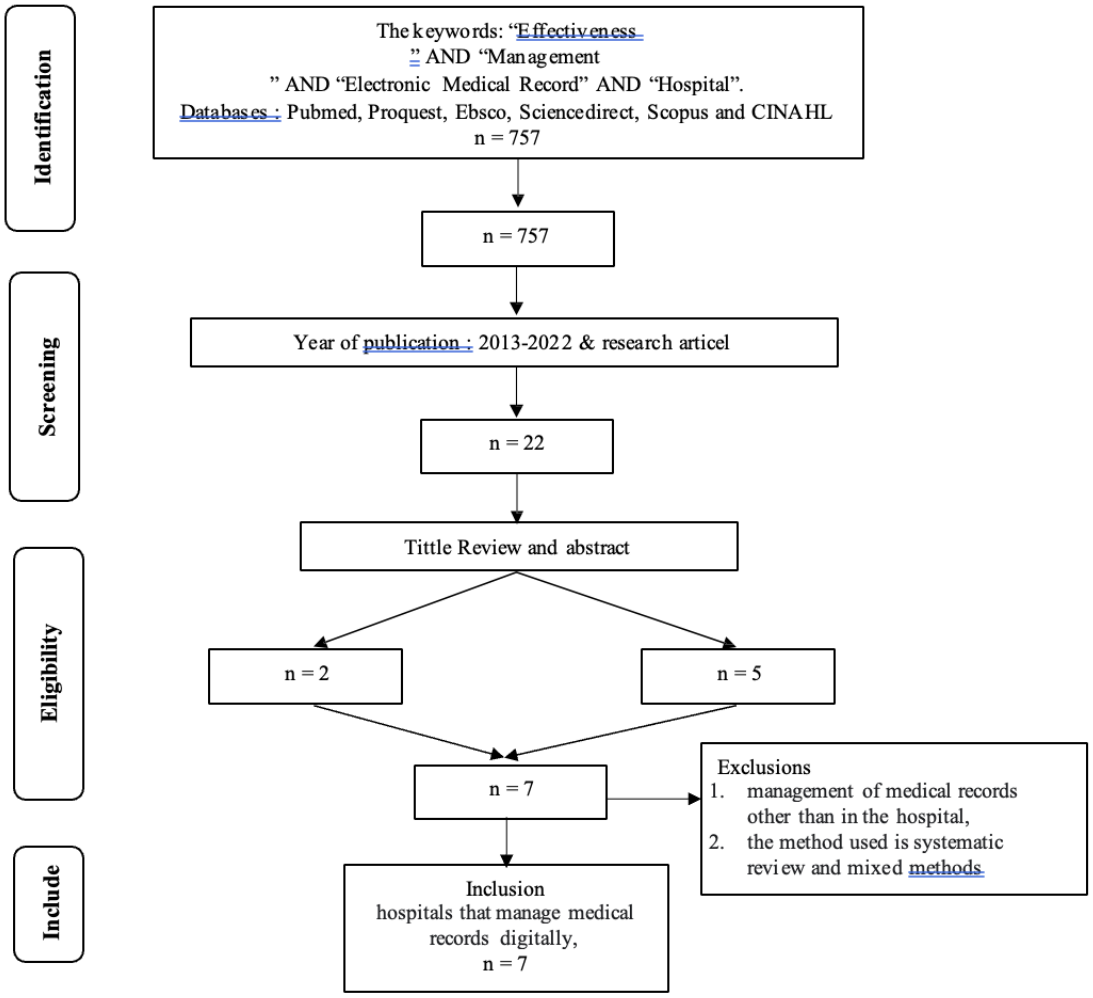

Image 1

PRISMA Flow Chart

Results

The results of the search for articles related to the topic identified in this article, using the keywords identified, are obtained 7 articles that are reviewed and meet the criteria presented in the following table:

Table 1
List of Search Result Articles

No	Journal Identity	Method	Results
1	Assessment of the impact of time to complete medical record using an electronic medical record versus a paper record on emergency department patients: a study (Perry, et al., 2014)	A cohort study	A cohort study at the Ottawa Hospital Emergency Department that examined the time taken to complete medical records using electronic medical records compared with physical medical records. It took 5-9 minutes to complete the electronic chart compared to 2-6 minutes for the physical chart.
2	Usage of the HINTS exam and neuroimaging in the assessment of peripheral vertigo in the emergency department (Quimby, A.E., et al., 2018)	Randomized study: 500 randomly selected emergency department visits	Nearly half (44%) of the documented HINTS interpretations consisted of the ambiguous use of "HINTS negative" as opposed to the terminology suggested in the literature ("HINTS central" or "HINTS peripheral").
3	Frequent mobile electronic medical records users respond more quickly to emergency department consultation requests: retrospective quantitative study (Jung, K. Y., et al., 2018)	Quantitative retrospective study: 24,454 consultations	There was a significant inverse relationship between the frequency of mobile EMR use and the time from ED request to consultation completion by specialists (coefficient=-0.19; 95% CI -0.32 to - 0.06; P=.005). Secondary analysis was performed with response time. There was also a significant inverse relationship between the frequency of mobile EMR use by specialists and the response time to consultation requests (coefficient=-0.18; 95% CI -0.30 to -0.04; P=.009).

No	Journal Identity	Method	Results
4	Using electronic medical record to reduce unnecessary ordering of coagulation studies for patients with chest pain. (Hinson, J.S., et al., 2017)	A pre and post quasi-experimental study design	That a simple EMR-based intervention was an effective deterrent to ordering non-value-added diagnostic tests.
5	Electronic Prescribing reduces prescribing errors in public hospital. (Shawahna et al., 2014)	A cohort study	A cohort study that calculated the number of errors in medication administration with manual prescribing and e-prescription. The number of errors with manual prescribing was 418/2,480 (16.9%), while the number of errors with e-prescribing was 123/2,790 (4.4%).
6	Comparison of risk adjustment methods in patients with liver disease using electronic medical record data (Xu, Y., 2017)	Qualitative Peer Review	EMR embedded risk adjustment methods for predicting in-hospital mortality in cirrhosis.
7	The effectof electronic medical record adoption on outcomes in US hospitals (Lee J, 2013)	Cohort study	Hospitals that adopted EMRs experienced a 0.11 (95% CI: -0.218 to -0.002) day reduction in length of stay and a 0.182 percent reduction in 30-day mortality, but a 0.19 (95% CI: 0.0006 to 0.0033) percent increase in 30-day rehospitalization in the two years after EMR adoption. The association of EMR adoption with outcomes also varied by type of admission (medical vs. surgical).

Table 1 shows that electronic medical records with quick embedded tools, protocols, and treatment plans helped the staff and healthcare providers to have quickly find sources of differential diagnoses and diagnoses with corresponding signs and symptoms, appropriate tests, laboratory workup, and ancillary procedures.

Discussion

This literature review identifies seven articles, most of which discuss that electronic medical records require more time than physical medical records, improved quality of patient care and reduction of patient boarding time, e-prescribing can reduce the number of medication errors, improved quality of patient care, improved prediction of in-hospital mortality and hospitals adopting EMRs experience shorter length of stay and lower 30-day mortality.

Electronic medical records fast embedded tools, treatment plans and protocols could help decongest patient volume and promote the smooth flow of patient care by reducing the waiting time between patients, and by reducing the current boarding time and improving the quality of ED patient care, electronic medical records show benefits in improving medical communication compared to manual medical records. Electronic prescribing, electronic prescription receipt, and electronic reconciliation systems have shown benefits in reducing medical errors (Porterfield,

2014). Unlike physical medical records, which can only be viewed in one location. Electronic medical records can be accessed in multiple locations simultaneously, both inside and outside the hospital. Physicians can quickly access patient information (clinical, laboratory, radiology, and hospital administrative documents) (Paterick, 2018).

Conclusion

Based on the results of the review, it can be concluded that electronic medical records have shown benefits in preventing medical errors, recording more complete medical histories, and facilitating monitoring. Electronic medical records are more effective than physical medical records.

Acknowledgments

The author expresses his deepest gratitude to Fatmawati College of Health Sciences for the opportunity to facilitate the author to complete this literature review.

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