COMPARING MEDICAL AUDIT SYSTEMS AND REGULATING: A SYSTEMATIC REVIEW

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ABSTRACT

The aim of this study is to find out how system and regulations for medical auditing within a health agency (hospital). This research is a systematic review for problems regarding the medical audit system and regulation. The research procedure of this research are carried out using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) method. The result of this research shows that the Medical Audit Policy is truthfully aimed at an effort to professionally evaluate the quality of medical services provided to patients. It is an important aspect because shortages in medical services can be life threatening and loss of human life. In addition, with the enactment of Law No. RI. 36 of 2009 concerning Health, where the duties and obligations of health workers are getting complicated.

Keywords: Medical Audit System, Regulating, Systematic Review

INTRODUCTION

Hospitals are institutions that provide complete health services that provide outpatient, inpatient, and emergency departments. The hospital's main objective is to provide quality health services (Law No. 44 of 2009, 2009). Health services in hospitals are provided to clients by a healthcare team. A healthcare team is a group of professionals with clear rules, general goals and different expertise. The team will perform well when each member contributes well (Faizin & Winarsih, 2008). To realise quality health services, hospitals must have health workers in various professions. The various professions involved include medical personnel, clinical psychology personnel, nursing staff, midwifery staff, pharmaceutical personnel, nutritionists, physical therapy personnel, medical technical personnel, and engineering biomedicine (Law Number 36 of 2014). The diversity of existing professions must build good communication so that the service process can run as planned.

Good medical care is essential to achieve good management of medical work carried out by doctors, nurses, and other medical workers (Santis et al., 2017)rather than acute, diseases. The technologies developed to manager long-term, incurable illnesses have radically and irrevocably altered the organizational structure of health care, presenting us with a frequently bewildering array of medical specialties. Social Organization of Medical Work offers essential insight into this new era of health care. Through richly documented, often gripping case studies, Anselm Strauss and his co-authors show us exactly how health workers are confronting the problems created by chronic disease and coping with today's highly technologized hospitals. They guide us through the various hospital work sites, describing

in detail the kinds of tasks performed by medical personnel, the interactions of staff members with each other and with patients, and the overall resulting patient treatment and response. Focusing on the concept of illness trajectory, the authors vividly illustrate the complex, contingent nature of modern medical work. For example, open heart surgery keeps ill persons alive and may even improve them symptomatically, but those who do survive must face an uncertain future in terms of the physiological consequences of the surgery and the drugs required. They also have to adjust t altered lifestyles. In the new introduction, Anselm Strauss discusses the continuing importance of this work to sociologists, medical scholars, and medical professionals.","author":[{"dropping-particle":"De","family":"Santis","given":"Grace","non-dropping-particle":"","parse-names":false,"suffix":""},{"dropping-particle":"","family":"Strauss","given":"An selm","non-dropping-particle":"","parse-names":false,"suffix":""},{"dropping-particle":"","family":" Fagerhaugh","given":"Shizuko","non-dropping-particle":"","parse-names":false,"suffix":""},{"dropp ing-particle":"","family":"Suczek","given":"Barbara","non-dropping-particle":"","parse-names":false ,"suffix":""},{"dropping-particle":"","family":"Wiener","given":"Carolyn","non-dropping-particle":"- ","parse-names":false,"suffix":""}],"container-title":"Routledge","id":"ITEM-1","issued":{"date-parts ":[["2017"]]},"title":"Social Organization of Medical Work.","type":"book"},"uris":["http://www. mendeley.com/documents/?uuid=24be58ef-d7de-428d-8253-7291a368db8f","http://www.mendeley. com/documents/?uuid=710164b2-7d1b-4d3a-b799-22f54a7ff488"]}],"mendeley":{"formattedCitation" :"(Santis et al., 2017. Similar to administration at the management level, a hospital management system has now been created with the term Clinical Governance. Clinical Governance is a framework that aims to ensure that health services can be implemented effectively based on the level of practice and practice in a highly professional work environment. In this view, all officials involved in special services should understand and use measures that can prevent risks due to medical management (Sarihati & Santosa, 2021)

One of the efforts to ensure the implementation of quality medical services within the clinical governance framework is the implementation of medical audit activities (Vassos et al., 2019). In this approach, audit activities are not to find fault with a person but are systematic and independent review, surveillance, and assessment activities against deviations that occur in the service process that has been carried out. If there are deviations from existing standard procedures, there must be scientific solid considerations based on evidence that is medically and scientifically acceptable. This audit activity is hoped will can spur medical personnel to apply optimal service standards in every medical action they take (Usak et al., 2020). A medical audit is a file containing records and documents, including the patient's identity, examination results, the treatment given, and actions from other services provided to the patient (269 / MENKES / PER / III / 2008, n.d.). In addition, in the medical record, there is a collection of information about the patient's condition from the start of registration, examinations, and various actions taken while in the hospital. Therefore, the field of medical information specialists or medical record professionals is responsible for processing and managing all information.

The medical audit's content is entirely the patient's property, and the information in the medical records is confidential. This is because the medical record's contents explain the relationship between patients and doctors, who must be protected from leakage following the code of medical ethics, laws and regulations. The release of medical information must follow applicable procedures and may be provided if the patient signs and authorizes the third party to obtain medical information about the patient. Persons carrying a power of attorney must present valid identification (identity) to the hospital leadership. It aims to protect the hospital from further demands. The release of medical information must also be based on

the consent of the attending physician of the patient in question. Where this is revealed in the Minister of Health of the Republic of Indonesia Number 269 / MENKES / PER / III / 2008 article 11 paragraph (1) explains that "Explanation of the contents of medical records should only be done by doctors or dentists who treat patients with the patient's written permission or based on statutory regulations".

When viewed from the hospital certification program, a health check is a device that monitors and evaluates the use of medical standards set by the Indonesian Ministry of Health (Depkes, 1999). In the Law of the Government of the Republic of Indonesia Number 29 of 2004 concerning Medical Practice, it is stated that every doctor in carrying out medical work, either individually or in groups in health services, is obliged to provide medical services following professional standards and general practice, surgery according to patient's need. Therefore, medical personnel is required to conduct efficiency and control costs by implementing medical tests. The profession makes the operating instructions with reference to the medical standards of their professional organization. As a guideline and priority in conducting medical research, the tools provided by the Ministry of Health can be used (Tong et al., 2019).

Medical auditing in the National Institute for Clinical Excellence is a process of improving the quality of care for patients and their outputs through a systematic review of services based on explicit criteria and improvement efforts. The purpose of carrying out a medical audit is to maintain and continuously improve the quality of clinical services to achieve excellent service in the hospital. Medical audit activities are carried out to evaluate the quality of medical services, determine the application of medical service standards, and make improvements in medical services in accordance with patient needs and medical service standards (Meesala & Paul, 2018). The implementation of hospital medical audit activities may be carried out by the medical committee or the sub-committee of the medical quality improvement committee or the Subcommittee of the medical audit committee, involving the medical records section and the medical staff group. Medical Medical audits must be carried out with full responsibility to improve the quality of services, not to blame or judge someone, must be carried out objectively and independently, pay attention to aspects of patient confidentiality, and keep medical secrets. Analysis of the results of the medical audit must be carried out by a group of relevant medical staff who have competence, knowledge and skills in accordance with the field of service and or the audited case (Kementerian Kesehatan RI, 2007).

The Ministry of Health, through the Regulation of the Minister of Health No. 755/MENKES/PER/IV/2011 concerning the Organization of the Hospital Medical Committee, explains the medical examination as an effort to professionally assess the quality of medical services provided to patients through documentation carried out by doctors. The purpose of health examinations related to efforts to improve quality and organization is to achieve the best service in hospitals (Asmirajanti et al., 2018) with the following keywords: clinical pathway, care pathway, and interprofessional collaboration. Results: Evidence depicted the positive results of nursing care for clients, health care professionals and facilities. The research results were implemented at different facilities using several research designs, from descriptive to experimental. A clinical pathway was used as a tool in various clinical situations including in emergency, elective surgery, and pre-post-surgery, as well as in common clinical cases. It was administered by the health care professionals in providing care, encompassing the comprehensive process from diagnosis to clinical audit. Health care professionals should engage in active collaboration during the implementation of a clinical care pathway. In implementing the standard of input, process, and outcome of care to clients, health care professionals should emphasize the process and outcome of care and eliminate unnecessary or inefficient treatments. Conclusions: A clinical care pathway could

reduce the average length of stay for patients, increase cost effectiveness, and, consequently, improve the quality of service. To optimize the care process, the pathway should be implemented of multidisciplinary health care team.","author":[{"dropping-particle":"","family":"Asmirajanti","given":"Mira","non-dropping-particle":"","parse-names":false,"suffix":""},{"dropping-particle":"","family":"Syuhaimie Hamid","given":"Achir Yani","non-dropping-particle":"","parse-names":false,"suffix":""},{"dropping-particle":"","family":"Hariyati","given":"Tutik Sri","non-dropping-particle":"","parse-names":false,"suffix":""}],"container-title":"Enfermeria Clinica","id":"ITEM-1","issued":{"date-parts":[["2018"]]},"title":"Clinical care pathway strenghens interprofessional collaboration and quality of health service: a literature review","type":"article-journal"},"uris":["http://www.mendeley.com/documents/?uuid=ef142394-6743-4326-b237-6adddf917d06","http://www.mendeley.com/documents/?uuid=323e5d27-b976-4d21-abf0-c57f42537a49"]}],"mendeley":{"formattedCitation":"(Asmirajanti et al., 2018. Medical audit work is carried out to evaluate the quality of medical services, ensure the use of medical standards, and improve medical services that are more in line with the needs of patients and medical conditions.

According to Mishra (Lestari et al., 2017), A medical record recording system that is not integrated can cause inefficiency between other units and units in the process because the inputted data is made repeatedly, starting from admission, polyclinics, and reporting in medical records. Meanwhile, integrated medical records provide opportunities for health workers to make corrective and clinical decisions in analyzing and maintaining the patient's condition. Seeing from the reality that occurs, hospitals need to make innovations in filling out medical record files as one of the qualities of health services. As a result, creating an integrated medical record that records health status is required.

The consequences that can be caused by the incompleteness of filling out the medical record file are that the officer will have difficulty in identifying the patient, the officer will have difficulty determining the next treatment or therapy activities that will be carried out on the patient, if there is a medical audit, the medical audit implementation team cannot find out whether the standards and procedures that have been set have been implemented or not, affect BPJS or insurance claims, if the hospital is involved in a legal dispute, it will be problematic if the medical record file is incomplete and negatively impacts the hospital's accreditation value because it has not complied with one of the accreditation graduation requirements (Wirajaya & Nuraini, 2019) (Chamy Rahmatiqa, Elfetriani, 2020).

In the laws and regulations concerning hospitals, the implementation of medical audits is carried out as a function of the implementation of hospital management in the context of implementing good management in hospitals. Medical audits are not used to determine whether medical staff made a mistake in one case. If there is a report of an accident with the doctor's alleged negligence, the machine is used as a professional test, not a medical test. Medical audits are conducted with respect for all medical personnel (a culture of no blame) through anonymity (anonymous), non-accusation (without blaming), and non-shaming (without violation). Medical audits conducted by hospitals are a special example of professional tests that include peer groups, which include peer review, monitoring, and evaluation of medical services in hospitals. According to the medical tests mentioned above, hospitals, medical councils or individual groups of medical staff can organize a special professional evaluation (Bilimoria et al., 2019).

Medical audit is one of the health topics that is often researched, so the amount of research on medical audits is quite large. Therefore, this study uses a meta-analysis approach to examine the topic of medical audits, especially regulations and medical audit systems simultaneously.

The systematic review is a research method that is reviews of a particular topic that emphasizes a single question that has been systematically identified, assessed, selected, and concluded according to predetermined criteria based on high-quality research evidence relevant to the research question. The systematic review is systematic research (in identifying literature), explicit (in statements of objectives, materials, and methods), and developing (in research methodology and conclusions). The advantage of using this systematic review approach is to obtain valid and applicable findings from several previous studies on a specific phenomenon. The purpose of this study using a systematic review approach is to find out how the medical audit system and regulations are in the environment of health agencies (hospitals) (Laela Indawati, 2017).

LITERATURE REVIEW

Medical Audit

Medical audit, according to the National Institute for Clinical Excellence, is a process of improving the quality of care for patients and their outputs through a systematic review of services based on explicit criteria and making improvement efforts. The purpose of carrying out medical audits is to maintain and continuously improve the quality of clinical services to achieve excellent service in hospitals (Asmirajanti et al., 2018)with the following keywords: clinical pathway, care pathway, and interprofessional collaboration. Results: Evidence depicted the positive results of nursing care for clients, health care professionals and facilities. The research results were implemented at different facilities using several research designs, from descriptive to experimental. A clinical pathway was used as a tool in various clinical situations including in emergency, elective surgery, and pre-post-surgery, as well as in common clinical cases. It was administered by the health care professionals in providing care, encompassing the comprehensive process from diagnosis to clinical audit. Health care professionals should engage in active collaboration during the implementation of a clinical care pathway. In implementing the standard of input, process, and outcome of care to clients, health care professionals should emphasize the process and outcome of care and eliminate unnecessary or inefficient treatments. Conclusions: A clinical care pathway could reduce the average length of stay for patients, increase cost effectiveness, and, consequently, improve the quality of service. To optimize the care process, the pathway should be implemented of multidisciplinary health care team.”,”author”:[{“dropping-particle”:””,”family”:”A smirajanti”,”given”:”Mira”,”non-dropping-particle”:””,”parse-names”:false,”suffix”:””},{“dropping-particle”:””,”family”:”Syuhaimie Hamid”,”given”:”Achir Yani”,”non-dropping-particle”:””,”parse-nam es”:false,”suffix”:””},{“dropping-particle”:””,”family”:”Hariyati”,”given”:”Tutik Sri”,”non-dropping-particle”:””,”parse-names”:false,”suffix”:””}],”container-title”:”Enfermeria Clinica”,”id”:”ITEM-1”,”issued”:{“date-parts”:[[“2018”]]},”title”:”Clinical care pathway strenghens interprofessional collaboration and quality of health service: a literature review”,”type”:”article-journal”},”uris”:[“http://www.mendeley.com/documents/?uuid=323e5d27-b976-4d21-abf0-c57f42537a49”,”http://www.mendeley.com/documents/?uuid=ef142394-6743-4326-b237-6adddf917d06”]}],”mendeley”:{“formattedCitation”:”(Asmirajanti et al., 2018. Medical audit activities are carried out to evaluate the quality

of medical services, determine the application of medical service standards, and acknowledge medical service improvements in accordance with patient needs and medical service standards (Meesala & Paul, 2018).

The implementation of hospital medical audit activities may be carried out by a medical committee, a medical quality improvement sub-committee, or a medical audit sub-committee involving the medical records section and a group of medical staff. Medical audits must be carried out with full responsibility to improve the quality of services, not to blame or judge someone, must be carried out objectively and independently, pay attention to aspects of patient confidentiality, and keep medical secrets. Analysis of the results of medical audits must be carried out by relevant groups of medical staff who have competence in knowledge and skills in accordance with the field of service and or the audited case (Depkes., 2005).

According to Hatta (1985), the purpose of the medical audit entails a number of aspects, including administrative, legal, financial, research, educational, and documentation components, which are described as follows:

a. Administrative Aspects, a medical record file has administrative value because its content relates to actions based on authority and responsibility as medical personnel and paramedics in achieving health service objectives.
b. A medical record file has importance from a medical perspective since it serves as the basis for treating a patient.
c. Legal Aspects, a medical record file has legal value because its content concerns the issue of guaranteeing legal certainty based on fairness to uphold justice.
d. Financial Aspects, Because a medical record file contains data and information that may be used to estimate the cost of treatment, it has value for research. A medical record is valuable from a research perspective since it contains information that may be used for scientific research and advancement in the healthcare industry.
e. Educational Aspects, a medical record file has educational value since the data/information it contains pertains to the progression, chronology, and activities of medical services rendered to patients. This information can be utilized in the health professions as a teaching aid or as a reference.
f. Documentation Aspect, a medical record file has documentation value, because its content concerns memory sources that must be documented and used as material for accountability and reports on healthcare facilities.

The steps for preparing, planning, and implementing medical audits in Indonesian hospitals have been stated in the Decree of the Minister of Health of the Republic of Indonesia Number 496/MENKES/SK/IV/2005. Before carrying out a medical audit, the hospital needs to carry out the following preparatory steps:

1. Determination of the organization of the implementing of the medical audit along with the job description of the members with the Decree of the Director of the hospital
2. Develop hospital medical audit guidelines, standard medical audit operating procedures and standards, and criteria for the type of case or type of disease to be audited.
3. Cultivate self-assessment efforts or evaluation of services, including evaluation of medical services, so that everyone/work units in the hospital are familiar with the PDCA (Plan, Do, Check, Action) cycle.

4. Make a provision that every doctor/dentist who provides medical services is required to make a medical record and it must be completed immediately after the patient has finished receiving medical services.
5. Conduct socialization or training on matters related for the preparation of the implementation of medical audits to all doctors/dentists who provide medical services in hospitals.

In addition to these preparatory steps, before a medical audit is carried out it is necessary to make an audit plan which includes:

1. What the audit wants to know must be established.
2. How to set standards/criteria that become a reference in analyzing data.
3. How to conduct a literature search to establish standards/criteria.
4. How to guarantee that a medical audit can measure medical services.
5. How to establish a strategy for data collection and where it is collected.
6. How to establish a sample of a worthy patient.
7. How the collected data is analyzed and presented.
8. Compile an estimated audit time, the start time of the audit until the audit is completed.

After the steps for preparing and planning a medical audit are carried out, the following steps of medical audit activities are carried out as follows:

1. Selection of topics for which the audit will be carried out
   The selection of topics can be in the form of overcoming certain diseases in the hospital, the use of certain drugs, certain procedures or actions, nosocomial infections in the hospital, deaths from certain diseases, and others. Topic selection needs to be carried out with careful consideration because each activity certainly has a consequence on the investment of hospital resources, therefore in choosing a topic, it is necessary to set priorities by considering: whether there is sufficient evidence that can be used to compile guidelines or standards, is a serious quality problem, opportunities to be improved, by established policies, and according to with organizational priorities.
2. Setting standards and criteria.
   After the topic is selected, it is necessary to determine the precise, objective, and detailed criteria or professional standards related to the topic. The establishment of these standards and procedures by peer groups (related medical staff groups) and or with local professional ties. There are two levels of standards and criteria, namely, must do, which is the absolute minimum criterion, and should do, which is an additional criterion that is the result of evidence-based research.
3. Determination of the number of samples to be audited.
   In taking samples, you can use the sampling method, but it can also be in a simple way, which is determining the cases that will be audited within a certain period, for example, the case of abdominal typhus in the period from January to March.
4. Compare standards/criteria with service implementation.
   The medical audit implementation team studies the medical records to find out whether the criteria or standards and procedures that have been established have been implemented or have been achieved in the problem or cases studied. Data on cases that do not meet predetermined criteria are separated and collected for analysis.
5. Analyze cases that do not meet standards and criteria.
   The medical audit implementation team submits cases that do not meet the standards/criteria to a "peer-group" or group of medical staff for further assessment. Such cases are analyzed, and dis-

cussed the possible causes and why there is a discrepancy with the standard.

6. Corrective action

Peer groups make efforts to fix the cause of the problem encountered.

7. Re-audit plan

Relearn the same topic later, for example, after six months. The purpose of the re-audit is to determine whether there have been any improvement efforts. This does not mean that the audit topic is the same continuously. The audit conducted 6 (six) months later is more to see improvement efforts. However, while looking at these improvement efforts, the audit implementation team and peer groups can choose other topics.

As mentioned above, the implementation of medical audit measures is highly dependent on the medical staff's motivation to improve service quality. Medical audit programs are usually published at most every 6 months in medical committee meetings that discuss the results of medical audits. Medical audit programs are usually published at most once every 6 months in medical committee meetings that specifically discuss the results of medical audits. The success of the audit program requires the involvement of the entire medical staff group. Therefore the medical committee meeting discussing the results of the medical audit must be attended by the entire medical staff group, at least the medical staff group related to the medical audit topic. The meeting begins with a presentation from the chairman of the medical committee on the background or basis for topic selection, followed by a presentation of the audit results by the head of the audit implementation team. The audit results are discussed freely among the medical staff groups, and conclusions are made in the meeting minutes, simply and entirely by the secretary of the medical committee. The medical committee's chairman closed the meeting with the conclusion of alternative problem-solving and establishing an upcoming audit/presentation plan. Through the mechanism of medical audit meetings, case discussions can also be carried out, which are a simple or initial form of medical audit (Morley & Cashell, 2017)family, and a diverse team of often highly specialized health care professionals. Involvement of all these team members in a cooperative and coordinated way is essential to providing exceptional care. This article introduces key concepts relating to interprofessional collaborative teamwork. Approaches to measuring and studying collaboration and evidence demonstrating the benefits of collaboration are presented. The structural, psychological, and educational factors which may determine collaborative behaviour are described. Learning Objectives: By the end of this CME article, participants will be able to1. Distinguish between multifunctional and interdisciplinary teams,2. Define collaboration in a health care setting,3. Describe the value of collaboration to patients, staff, and organizations,4. Understand approaches to measuring collaboration, and5. Identify factors that determine the ability of teams to collaborate. This article is a CME article and provides the equivalent of 2 hours of continuing education that may be applied to your professional development credit system. A 20-question multiple choice quiz follows this reading, and answers can be found on page 216. Please note that no formalized credit (Category A. Case discussion can be carried out for death cases, morbidity cases, rare cases, difficult cases, court cases and so on, where the cases can come from the board of directors, medical committees, heads of medical staff groups, demands/ complaints from patients/third parties etc. (Depkes., 2005).

According to the medical audit guidelines from the Ministry of Health of the Republic of Indonesia in 2005, it is stated that for the medical audit process to run well, it is necessary to monitor and evaluate the implementation of medical audits at most every year. Monitoring and evaluation can be done by developing quality indicators, including:

a. The number of case discussions per year.
b. Number of medical audits per year
c. Percentage of recommendations from the discussion of cases that have been implemented
d. Percentage of recommendations from the results of medical audits that have been carried out
e. Percentage decrease in medical error.

Evaluation and monitoring can also be carried out through the hospital accreditation program, including:

a. The existence of a medical audit implementation team
b. Medical audit guidelines
c. The number of cases audited is at least 3 (three) pieces
d. Medical audit activity report
e. Recommendations from the results of the audit
f. Follow-up implementation of the recommendations.

Systematic Review

This article uses a Literature Review design where this type of research collects, selects, and examines various international and national scientific articles/journals to produce a scientific paper. This research was conducted using the criticize and compare technique, namely finding similarities in journals conducted research and then providing a view where the author made his own opinion on the source being read and concluding. The data source in the Literature Review is secondary data, namely articles from previous research, so the quality of the data is determined in the Literature search.

Many terms are related to the systematic review, such as integrative literature (Baxter et al., 2018). Integrative literature is known as a method that combines many original studies. There are two types of integrative literature: a literature review (article review or state-of-the-art review) and a systematic review. A systematic review is a meta-analysis if it includes a rigorous statistical analysis (MacDonald, 2014). There is a distinction between a literature review and a systematic review. In general, the search in a literature review is not conducted systematically, is not classified using previously established criteria, and is not a critical evaluation. There is also no systematic evaluation of the article's quality. A systematic review has criteria for conducting an article review in a structured and planned manner. Systematic reviews improve the depth of evaluation and create a research evidence summary (Xiao et al., 2018)and illustrate various deep learning architectures for analyzing different data sources and their target applications. We also highlight ongoing research and identify open challenges in building deep learning models of EHRs. Design/method We searched PubMed and Google Scholar for papers on deep learning studies using EHR data published between January 1, 2010, and January 31, 2018. We summarize them according to these axes: Types of analytics tasks, types of deep learning model architectures, special challenges arising from health data and tasks and their potential solutions, as well as evaluation strategies. Results We surveyed and analyzed multiple aspects of the 98 articles we found and identified the following analytics tasks: disease detection/classification, sequential prediction of clinical events, concept embedding, data augmentation, and EHR data privacy. We then studied how deep architectures were applied to these tasks. We also discussed some special challenges arising from modeling EHR data and reviewed a few popular approaches. Finally, we summarized how performance evaluations were conducted for each task. Discussion Despite the early success in using deep learning for health analytics applications, there still exist a number of issues to be addressed. We discuss them in detail including data and label availability, the interpretability

and transparency of the model, and ease of deployment.",”author”:[{“dropping-particle”:””,”family”:” Xiao”,”given”:”Cao”,”non-dropping-particle”:””,”parse-names”:false,”suffix”:””},{“dropping-particle” :””,”family”:”Choi”,”given”:”Edward”,”non-dropping-particle”:””,”parse-names”:false,”suffix”:””},{“d ropping-particle”:””,”family”:”Sun”,”given”:”Jimeng”,”non-dropping-particle”:””,”parse-names”:false, ”suffix”:””}],”container-title”:”Journal of the American Medical Informatics Association”,”id”:”ITEM-1”,”issued”:{“date-parts”:[[“2018”]]},”title”:”Opportunities and challenges in developing deep learning models using electronic health records data: A systematic review”,”type”:”article”},”uris”:[“http://www.mendeley.com/documents/?uuid=4a199933-1285-4d45-8cab-7b41ff28bb39”,”http://www.mendeley.com/documents/?uuid=f60c7f91-9554-408f-8c34-b5d43738af93”]}],”mendeley”:{“formattedCitation”:”(Xiao et al., 2018.

A systematic review's objectives include answering questions in a specified, relevant, and focused manner. A systematic review also examines research results, lowers review bias, synthesizes results, and identifies the research gap (Siddaway et al., 2019). A systematic review is also widely used, especially for determining research goals as part of a dissertation or thesis, and it is a component that supports research grant applications (Radianti et al., 2020).

METHODOLOGY

This study provides a rigorous examination of medical audit systems and regulatory issues. The steps taken in this study were carried out using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) method (Sadeghi & Treglia, 2017). The Systematic Review implementation process starts with preparing a Systematic Review Protocol. The protocol comprises background, Research Questions, Searching for the literature, Selection Criteria, Practical Screen, Quality Checklist and Procedures, Data Extraction, and Data Synthesis (Johnston et al., 2019)and greater subjectivity in, design and execution compared with other SRs in clinical epidemiology. We provide review authors structured direction on how to design and conduct methodologically rigorous SRs of CPGs. Study Design and Setting: A guidance paper outlining suggested methodology for conducting all stages of an SR of CPGs. We present concrete examples of approaches used by published reviews, including a case exemplar demonstrating how this methodology was applied to our own SR of CPGs. Results: Review context and the unique characteristics of CPGs as research syntheses or clinical guidance statements must be considered in all aspects of review design and conduct. Researchers should develop a “PICAR” statement to help form and focus on the research question(s.

RESULTS

Medical Audit System Policy

Systems are made up of parts or groups that cooperate, are interconnected, and are difficult to separate to accomplish a single objective. A system consists of subsystems that can also be a system in its environment. The components of the system consist of inputs, processes, outputs and outcomes or, according to Donabedian, consisting of Infrastructure, processes and outcomes (Tossaint-Schoenmakers et al., 2021)the integration of eHealth into regular health care is challenging. It requires organizations

to change the way they work and their structure and care processes to be adapted to ensure that eHealth supports the attainment of the desired outcomes. Objective: The aims of this study are to investigate whether there are identifiable indicators in the structure, process, and outcome categories that are related to the successful integration of eHealth in regular health care, as well as to investigate which indicators of structure and process are related to outcome indicators. Methods: A systematic literature review was conducted using the Donabedian Structure-Process-Outcome (SPO.

Medical audit work has been performed in all research locations because TKMKB comes from a medical committee. The medical committee has a legal aspect of conducting medical audits. However, the practice of medical auditing has not been optimal in one hospital because the hospital management did not authorize TKMKB to carry out its duties. Ross et al. (2017) stated that before conducting an audit, health workers had unfavorable assumptions about audits, such as audits threatening performance, inability to share knowledge, and having no clear goals. However, after they were exposed to the audit, there was a change in understanding. They have some awareness of how Clinical Audit can enhance communication, verify professional competence, clarify audit objectives, use auditor comments to discuss audit findings, enhance personality and behavior, and represent the demands of medical staff. At the study location, there was also a lack of comprehension of medical audits. TKMKB did not conduct medical audits because the management did not have a sufficient understanding of medical audits.

Hospitals in Indonesia currently employ a variety of quality control and cost management strategies, including medical audits. There are even more, such the development, implementation, and application of clinical pathways. Mukti (2007) lists a number of actions that can be used to attain quality, including utilization review (UR), medical audit, clinical pathway, peer review, and algorithm.

TKMKB in hospitals has access to data in each hospital. According to WHO, access to data and the ability to analyze UHC data at the national and regional levels is essential for monitoring the success of UHC (Tracking Universal Health Coverage: First Global Monitoring Report, World Health Organization 21 Jul 2015). This did not happen at the research location. Data access and processing activities for medical audits were carried out by TKMKB at the hospital based on BPJS Kesehatan's findings so that the results of the TKMKB audit at the hospital were used as a basis for decision-making for improvement. Data processing competence can be supported by data processing applications, such as applications that can visualize data processing results starting from collecting, processing, analyzing, and sharing data (Inseok, 2017).

The implementation of medical audits is carried out by TKMKB, most of whom are members of the medical committee at hospitals, namely doctors. They feel they have the ability to conduct medical audits because there are legal aspects that regulate them. So BPJS Kesehatan regulation number 8 of 2016 states that TKMKB coming from a medical committee is the right thing because they can do AM. Doctors play an important role in improving the quality of service. Physician leadership is an essential but not exclusive contribution to quality improvement in health care. However, there are also influences from organizational culture, team development and microsystems and information technology (Dickinson, 2013).

A medical audit provides many benefits, including identifying and measuring risk areas in services, assessing the quality of services provided to patients, providing opportunities to increase job satisfaction, creating a culture of improving clinical quality, improving the quality and effectiveness of health services

(Quality and Patient Safety Directorate, 2017). Medical audit data is also used for drug use per disease to reduce antibiotic abuse and overuse (FarooquiI et al., 2019). We assess and evaluate constantly to produce an effective and efficient reference by examining the reference's components as a system and how much we need to focus on. Medical audits are actions taken to assess the quality of nursing and medical care given to patients (Effendi et al., 2022).

Quality control and cost control policies are prepared following Donebedian's quality care framework, namely input, process and output standards. The medical audit policy component refers to Permenkes No.755/2011, explaining that the professional quality subcommittee conducts medical audits to maintain the professional quality of medical committee medical staff. In addition, this component is also based on BPJS Health Regulation No.8/2016, explaining that the KMKB Team comes from medical committees from every hospital in the BPJS Kesehatan work area.

As discussed above, a medical audit is an effort to evaluate the quality of medical services provided to patients. It is essential because deficiencies in medical services can be life-threatening and the loss of human lives. In addition, with the enactment of UU RI No. 36 of 2009 Article 27 and Article 28 concerning Health, where the duties and obligations of health workers are not getting lighter. The demand for high-quality medical services will increase (Kruk et al., 2018). In order to avoid these demands, they must provide services following the applicable professional "Standards" and satisfy internal customers (all service providers), intermediate customers such as third parties who support the implementation of services (health insurance) and external customers (clients).

Several variables that affect the setting of standards include those that may be measured practically and others that are less significant and difficult to quantify (Ross, 2017). Therefore, the evaluation and interpretation of those aspects require very thoughtful consideration. The key component of this medical audit is a qualified analysis of the variables influencing patient service standards. Objectively, the elements of medical services can be measured using statistical calculations, analyzed, and used as a starting point for determining qualitative assessments. Subjectively, the above elements require qualitative assessment through administrative clinical and medical evaluation (Ten Cate & Regehr, 2019).

The factors assessed include all activities: energy, methods, facilities/tools, funds and measurement methods. Some examples that can be measured: (Mittag & Rinne, 2018)

- Gross Death Rate: Total mortality divided by all patients out of the hospital, the average ranges from + 3%
- Net Death Rate: The number of deaths > 48 hours after entering a service facility, usually < 2.5%.
- Complications: As long as the patient is treated in the hospital, 2-4%
- Infection: Infection rate 1-2%
- Action: Section Cesarea 3-4% of all births.
- Maternal mortality rate: < 0.25%
- Infant mortality rate: < 2%, etc.

The presence of a Guest Consultant is highly beneficial when conducting the Medical Audit since the Medical Auditor (Consultant) will be free to assess all aspects of the quality of services being provided objectively (Turetken et al., 2020). In addition, various committees of medical staff are also needed for hospitals, which are assisted by other hospital staff according to their needs.

Every program implementation, especially one that is brand-new or different in some other way, is

evaluated, including the implementation of medical audits. There will be benefits and drawbacks, so the following factors need to be taken into account:

Medical audit implementation is hindered by the following factors: (1) It requires time and money; (2) Audits are typically conducted retrospectively; and (3) There may occasionally be a dispute between the auditor and the audited. It must be underlined that the goal of this audit is to enhance the standard of patient care, not to determine the assessment's score; (5) In medical audits, there appears to be a sense of incidental and selective efforts in choosing difficulties/aspects that are addressed; these efforts are not yet systematic and comprehensive, and the scientific aspects and clinical concerns are of particular significance. The obligation of service providers to patients as service customers is not about quality (Riduan, 2021).

Steps to Conduct a Medical Audit: (1) A container/structure is required to arrange the audit operations to carry out a Medical Audit. The Medical Committee is the name of this container. This container is called the Medical Committee. The structured container as a medical committee has not yet been implemented at all service levels and can only be used in hospitals. (2) Determine specific problems to research and analyze. (3) Establish clear, objective, and precise criteria or professional standards; (4) Examine medical records; (5) The doctors investigate cases that do not meet the criteria, analyzing and debating the possible causes. (6) Suggest validating and overcoming cases that do not meet the requirements. (7) Relearn the same material at a later date, for example, six months later, to analyze and persuade that the detected flaws/deficiencies have been fixed and will not be repeated. (8) It should be noted that the purpose of this medical audit is to improve service quality, not to litigate the existing service delay from higher to lower-level hospitals. This higher level's role is specified as a resource person for increasing the quality of these services. As we all know, health services can be adequately delivered provided a strong team is in place (Wulandari et al., 2019). Nurses work with doctors to provide services at various healthcare institutions. Thus, audits focus on medical and nursing care services (O'Cathain et al., 2019).

CONCLUSION

Medical Audit Policy is obtained as an effort to professionally evaluate the quality of medical services provided to patients. It is considered as an important aspect because shortages in medical services can be life threatening and loss of human life. In addition, with the enactment of Law UU RI No. 36 of 2009 Article 27 and Article 28 concerning Health, where the duties and obligations of health workers are getting complicated. In addition, the demand for good and quality medical services will increase. Objectively, elements of medical services can be measured using statistical calculations and analyzed and used as a starting point for determining qualitative assessments. Subjectively, the above elements require a qualitative assessment through clinical and administrative medical evaluation.

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