

Maturity of Clinical Audit Concept in Saudi Arabian Health Care Practice: A Review

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Abstract

Based on 2030 vision of the Kingdom of Saudi Arabia (KSA), improving the quality of preventive and therapeutic health care services is one of the targets that set out by the National Transformation Program (NTP). Clinical Audit (CA) is one of the great tools of quality improvement worldwide. Although a CA program was initiated just a while ago in Saudi Arabia, in this short duration the maturity of this practice in this country is evident in various documentations. However, it is still a long path to go in this practice as many health professionals are not yet mindful about the positive implications and benefits of this concept. In this consideration, this article was attempted to highlight the concepts, broad principles of and the mandatory stages in implementing CA practice to a success. Apart from that the leadership role in materializing CA, the barriers to its success, as well as, the pattern of CA practice in Saudi Arabian health care system in achieving its maturity have also been outlined.

Keywords: Clinical, Audit, Health care, Practice, Saudi Arabia.

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INTRODUCTION

It is evident that best practices in health care can only benefit patients if the knowledge is converted into practice [1]. Yet one of the most constant findings in health service studies is a large gap between ideal care and the actual care provided to patients. Suboptimal clinical practices have been observed for almost every type of patient problem, from primary prevention to trauma care, and for every type of professional practice, from investigations to prescribing [2, 3]. Many studies confirmed that there has been a great variability in the care that patients receive in different regions or between different physicians and specialities – sometimes even within the same clinical institution due to difference in educational backgrounds, clinical experience and other factors [4, 5]. This inconsistency may turn ends into some legal complications [6]. Moreover, it is claimed that [7] these variations in clinical knowledge and experience and in conjunction with lack of clear guidelines about the decision-making choices or the treatment modalities options might result in discrepancies in the care received which generate low quality of treatment.

In today's competitive world, quality is an integral part of our lifestyle. Actually, it is difficult to define 'quality' due to it being a subjective topic with ambiguous characteristics. However, it is claimed that [8] definitions of quality differ depending on the situation/context and on the person whose perspective is taken. The author found that the definition of health care quality changes depends on whether it relates to professionals, policy makers, managers, payers or clients. Thus, quality within the health service appears even harder to express and to assess. The Committee on Quality of Health Care [9], and The Institute of Medicine (IOM) in the USA defined six key dimensions for quality improvement known as STEEEP: safe, timely, equitable, efficient, effective, and patient centred. There is no doubt that promoting quality will increase patient satisfaction and loyalty [10].

Various efforts have been made to improve the quality of health care in general, such as, continuous education and training, enhance communication, management, and leadership skills, evolution in materials and technologies and shared decision making.

Along with these methods, Clinical Audit (CA) is considered one of the most well-known means to improve health care quality [11, 12].

Though CA program was initiated in Saudi Arabia [13] not much long ago, in this short period much enthusiastic effort to implement program has been observed at different hospitals in this country. Despite the fact that many health professionals in this country are still not aware about this concept, the growing concern in CA practice in the health system in this country is encouraging towards its positive implications and benefits. Thus the clinical audit concept, as well as, how this concept has been practicing in Saudi Arabia has been attempted to review in this article.

The Clinical Audit concept:

The idea of carrying out an audit of patient care is not a novel one. King Hammurabi of Babylon was the first known person who initiated an audit for clinicians based upon treatment outcome as early as 1750 BC where the clinician was vulnerable to serious financial penalties in the incidence of poor performance [14]. The clinical audit which was known as medical audits in the past mainly took place in the USA and in the UK from the 1970s onwards [15]. An article [16] was published about aspects of audits in the British Medical Journal. Clinical audits are extensively used in the USA under the term chart audit. In France, the clinical audit is compulsory for doctors [17], practised extensively across Europe, and established a practice in Commonwealth countries particularly Australia, and then spread around the world to a greater or lesser degree [15, 18].

CA has gained prominence with the increased emphasis on improving quality of life and reducing mortality and morbidity rates, as it is regarded as an effective tool for achieving this goal [19]. A CA is not the same as, for example, an organizational or financial audit [20]. It has been defined as a “quality improvement process that seeks to improve patient care and outcomes through systematic review of care against explicit criteria and the review of change. More simply, clinical audit is all about measuring the quality of care and services against agreed standards and making improvements where necessary” [15].

Several reports have stated about the professional advantages of CA that clinicians feel benefited from audits through enrichments in communication amongst professional groups, boosted professional satisfaction and knowledge, and increased staff enthusiasm [21, 22]. Moreover, CAs have brought many advantages to patient care and health services such as improvements in patient care quality, improved patient satisfaction, and involving the patients in decision making [23, 24].

Implementation of Clinical Audit (CA):

A successful clinical audit development is implemented by five stages, such as, planning for audit (stage-1), Standard and criteria selection (stage-2), measuring performance (stage-3), implementing changes (stage-4) and sustaining improvements (stage-5) (shown in Fig. 1).

At stage-1 of clinical audit, a successful planning and preparation are crucial to the success of an audit project outcome. This stage can be broken down into three elements, such as, stakeholder engagement, choosing audit topic and planning the delivery of audit fieldwork. Stakeholder engagement is a complex process, which encompasses the need for connection with the emotional, cognitive, and behavioral styles of all stakeholders [25].

According to Deegan and Parkin [26], there are two different levels of stakeholder engagement; the first is a manner of “information giving and consultation” for fostering the knowledge of stakeholders around a project, and the second involves a higher level of engagement – contribution – that lowers the resistance of stakeholders to the project.

Therefore, all relevant stakeholders, including clinical or support staffs, users and managers should be given the opportunity to contribute to the CA and each one of them must know his/her role in the CA program. Choosing audit topic will be determined by both the clinical priorities and requirements of the organization’s senior management team [11]. Every health care organization will have its own priorities for audits, and these will usually be discussed and selected by a committee, group, or team with a remit for managing a CA program. Topics may be given priority because of a demand for public accountability or because of a specific event. Planning the delivery of audit fieldwork throughout the planning stage of an audit, it is vital to consider the mechanisms for project management.

Audit methodology, including the aims and objectives, criteria and target levels of performance, data requirements, data collection tool, and agreed terms, should all be acknowledged and documented [27]. At the planning stage, it is crucial to draw up and follow an audit timescale, determine the scope of the project and the inclusion and exclusion criteria for the target population to avoid any time, energy or resource wasting [28].

At stage-2, it is important to developing a standard and appropriate audit criteria. The terms ‘standard’ and ‘criterion’ frequently cause confusion since these terms have been used differently by numerous authors and professional groups across health care. For some, a standard is the performance level or target for predictable compliance (typically expressed

as a percentage). For others, a standard is a statement of best practice. Therefore, the audit team must be agreed on the definitions of the terms from the beginning, otherwise misinterpretation and possible weaknesses in the phrasing of those aspect of care that are going to be measured in the audit are likely to occur [28].

The Quality & Patient Safety Directorate [29] states that for criteria to be valid and to lead to improvements in service user care, they should be Specific (explicit statements, not open to interpretation), Measurable, Achievable (of a level of acceptable performance agreed with stakeholders), Relevant (related to important aspects of care) and Theoretically sound or timely (evidence-based). Donabedian [30] states that it is useful to consider audit criteria in terms of structure (what you need), process (what you do) and outcome (what you expect to happen as a result). Research suggests that audit criteria are not always based on research evidence [31]. Where possible, audit criteria should be retrieved from the best evidence available, as this will offer objective and obvious statements about what should be done for patients in definite topic areas.

At stage-3, measuring performance is comprised of data collection, data analysis and result presentation. It is necessary that data collected in the course of any CA is accurate and relevant to the audit being executed [29]. Before data collection is initiated, a structured approach ought to be taken to identify any relevant data and to make sure that the data collection process is effective, efficient and accurate. The audit team should specify and approve the source of data. The choice of which source to use will depend on various factors, including accessibility, accuracy and completeness. However, such records may be deficient. Thus, data collection from numerous sources may overcome this problem [32].

The basic goal of data analysis is to convert a collection of data into valuable information in order to

detect the level of compliance with the agreed standard. As with collection data, analysis should be tightly connected to the audit drivers and purpose so that the results emphasize what is planned for, and if anything needs to be modified in order to achieve that audit's aims [33]. The data should be organized into a format that lends itself to accurate analysis and correct interpretation [32]. The findings of results should be presented simply and clearly to support understanding and induce open discussion among all relevant stakeholders. It is stated [32] that various presentation methods, such as, visual presentations, written reports and verbal presentations may be utilized to certify that the results are delivered in a timely manner to all stakeholders.

According to stage- 4, implementing changes should be performed. All good audit projects must comprise a program of change activity and post-identification of the audit findings, to confirm that essential changes happen [34].

At stage-5, sustaining improvements is also crucial. Any systematic approach to changing professional practice should include plans to monitor and evaluate the change, as well as, maintain and reinforce the change [35]. To monitor the implementation of the action plan a small number of key performance indicators may be generated for each quality improvement program. Once the audit team is satisfied with the performance levels that have been attained, ongoing monitoring arrangements should be set in place. To maintain and reinforce improvement, it has been outlined [36] a number of practical ways, such as, meeting agenda, CA showcase, leading by example, induction of new staff, making changes visible, user friendly system and processes, trial and error, supportive and dynamic culture through which improvements can be maintained and reinforced successfully over time.

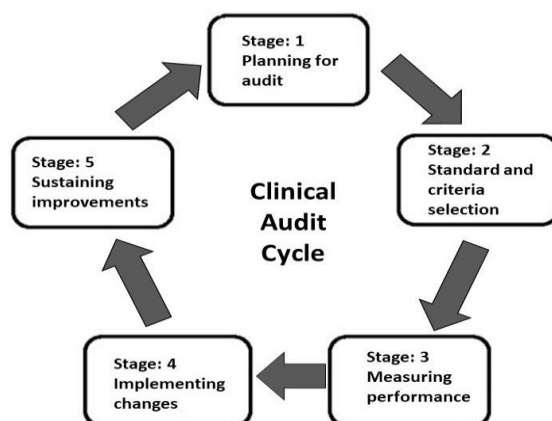


Fig 1: Cycle of clinical audit stages

Leadership Role

Many reports stated that the leadership and the attitude of senior management are the main features of successful audit programs [37-39]. According to Walshe [9], the continuing failure of CA in many NHS organizations is not due to a failure of knowledge, but to a failure of leadership and organizational culture. The pragmatic approach argues that leaders need to create the vision that quality matters and quality issues are worth striving for [40]. It was suggested that [41] the concern for quality should pervade all aspects of the organization's work and be sustained through monitoring and re-auditing. Respect and understanding between different professional groups is established by effective leadership, such leadership can help openness about performance and creativity. Managers also need to be aware that teams can become dysfunctional through poor leadership. Since there is continuous change within the health care environment, so too must there be continuous change in clinical leaders' roles and responsibilities [42].

Leaders of the future will require new skills and behaviors in order to achieve improved results for staff, patients, and the organization as a whole [43]. There is an abundance of leadership styles and theories; however, it is argued [44] that shared leadership perfectly leads to individual staff members fostering leadership behaviors, superior autonomy, and improved patient care outcomes. However, this leadership style, to be efficient, needs active teamwork to work effectively, with a focus on identifying team vision, values, and optimising team efficiency to improve practices. Moreover, it was suggested [45] that mutual trust, closed-loop communication and shared mental models are significant mechanisms for successful teamwork.

Barriers to a Successful Clinical Audit:

Identifying and understanding barriers facing the CA in an organizational setting would help organizations to conduct audit programs more effectively, and achieve the desired outcomes, which would in turn encourage staff to participate in future CA programs [46]. The main barriers to successful CAs are:

1. *Failure to provide a supportive environment for audit:*

The organizational environment must be conducive to the development of a successful audit program. Poor progress in conducting audits mainly linked with perceived lack of support at all stages of auditing, in conjunction with a range of structural and organizational problems [47, 48]. Lack of protected time is an obvious example of this barrier. The people who are directly involved in the audit need to be allocated protected time to inspect the audit topic and collect and analyze data, and time to complete an audit cycle [21]. The second example of a weak supportive environment [46] is a lack of resources (inadequate

financial and practical resources) such as poor-quality information systems and a lack of information specialists to help clinicians. In addition, there were perceived problems with the financial management of audit funds nationally as well as uncertainty over funding arrangements at a local level [49]. It was identified [50] that resources are the most necessary requirements of CA programs. Because of the resource limitations, decision-makers do not give priority to CA in most organizations. Moreover, the absence of a supportive working relationship between clinicians and managers may also impose organizational barriers to audits and the implementation of findings [51].

2. *Lack of training in audit methodology and evidence-based skills:*

Audit support staff and health practitioners require adequate knowledge and skills for leading audits. Absence of person who is expertised in CA methods results usually in poor design, problems with standard setting, inappropriate and arbitrary data collection, a deficiency of good audit instruments, absence of education and training in audit methodology [52-54].

3. *Human factors:*

A failure of non-technical skills is known to be liable for 70-80% of errors within the health care field as demonstrated in a paper [55] claiming that a profound understanding of how and why these faults occur is crucial for improvement; some of these factors include leadership, teamwork, communication, awareness of situations and decision making. Consequently, paying attention to human factors, for example team, culture, fatigue, stress and cognitive workload, are critical to encourage individuals to sustain the new way of doing things [56]. A close partnership with health care leaders and the building of durable trust and effective communication are mandatory.

4. *Lack of an overall plan for audit:*

The absence of an overall plan for many audit programs is reflected negatively in the audit projects' success since this is usually combined with a lack of common vision about the goals and purposes [22]. As a result, success is frequently determined by one passionate leader holding everything together. However, in the same way, well-resourced projects can collapse and fail to make an impact because of weak links with management, or projects might fail because support in terms of time and funding have been underestimated by the participants [57, 58].

Maturity of clinical audit in Saudi Arabia:

Gradual maturity of clinical audit practice on various health concerns is distinguishable in Saudi Arabia as evident through different studies.

A study [59] was conducted at Al-Manhal Family Practice, Aseer Region, Saudi Arabia aiming to assess the quality of hypertension care through clinical audit. The process and outcome of hypertension care was assessed based on the standards of quality assurance manual issued by the Ministry of Health. Clinical audit conducted at this hospital concludes with the recommendation to provide essential facilities to the practice to optimize hypertension care.

A clinical audit on venous thromboembolism risk assessment, risk categorization and prophylaxis in the ICU of King Saud Medical City in the central region of Saudi Arabia reported [60] that all three parameters improved significantly in the second cycle of clinical audit compared to those of first audit concluding that these parameters could be improved by performance improvement projects like clinical audit.

A cataract surgery audit [61] was performed at a private Eye Hospital in Riyadh, Saudi Arabia to study the visual outcomes following cataract surgery. The audit suggests that the benchmark for success in achieving "good visual outcomes" postoperatively through intentional overcorrection in one eye following modern cataract surgery to provide some functional near vision may need to be revised.

An audit [62] on infection control service was conducted in six community hospitals in Makkah area, Saudi Arabia for four consecutive years annually during the Hajj period over 10 days. In this study, the first audit reveals deficiencies on various infection control service items, whereas these deficiencies were resolved in the subsequent audits concluding the fact that regular hospital infection control audits lead to significant improvement of infection control practice.

To ensure the integrity, security, and accuracy of data held in the electronic health record (EHR), an audit [63] was conducted on EHR systems adopted by King Abdul-Aziz Medical City (KAMC) hospital in Riyadh, Saudi Arabia. The overall evaluation on the assessment of four categories of the audit functions of the KAMC hospital EHR system revealed 71% functions compliant, while the rest of the functions were found non-compliant.

An audit [64] was carried out to assess the prescribing pattern of primary health care (PHC) physicians in Riyadh city, the capital of Saudi Arabia. The result of the audit suggests that physicians should be educated on more appropriate and cost-effective prescribing. It was also suggested that the detection and management of psychological disorders need special emphasis.

A study [65] on the audit of acute pain service (APS) was conducted in the Armed Forces Hospital, Riyadh, Saudi Arabia by retrospective analysis to

evaluate the epidural and patient-controlled analgesia (PCA) with respect to their indications, duration and quality of pain control, dosage regimen and common side effects. The study shows that APS has provided a safe and efficient service to over 10 thousand postoperative obstetric and gynecology patients in the past decade. The study also reveals that As compared to PCA, though Epidural analgesia demonstrated superior analgesia, this pain control method was found to cause more frequent minor side effects as revealed in the study. The study suggested for more resources to be available to provide good quality APS to all eligible postoperative patients for the desirable period.

Multiple reports are available about the diabetic-care clinical audits performed at different hospitals in Saudi Arabia, the outcome of a few of these reports are attempted to mention here.

A cross-sectional study [66] assessing the medical records of 45 diabetic patients visiting the Family and Community Medicine Clinic at King Faisal University, Saudi Arabia regularly during a one-year period showed that the level of care for diabetic patients was relatively inappropriate, and some important parameters were under-recorded. The audit result suggests to undertake specific measures to improve and promote diabetic care in the Family and Community Medicine Clinics including formulating and using protocols for diabetes management and better training of health-care providers.

To assess the adherence to safety monitoring for pioglitazone use in patients with type 2 diabetes, another clinical audit [67] was performed at Al-Wazarat primary care center, Saudi Arabia that reports an appropriate initiation of pioglitazone but suboptimal adherence to pioglitazone safety monitoring in a primary care setting.

Audit of diabetes mellitus among patients attending an employee health clinic at a tertiary care centre in Riyadh, Saudi Arabia was carried out [68] that reports the conclusion that current clinical practice at that clinic for management of type 2 diabetes mellitus patients is not comprehensive, and that the quality of healthcare should be improved with continuous monitoring of patient records.

To find means of improving diabetes management, a series of clinical audits [69] was conducted at King Saud City Family and Community Medicine Centre, Saudi National Guard Health Affairs in Riyadh city, Saudi Arabia. The audit report concludes that it is possible to improve providers' behaviour regarding implementation of given guidelines through periodic process audits and feedbacks.

CONCLUSION

Despite the fact that many health care organizations in Saudi Arabia came forward in implementing clinical audit, many health care professionals are still not aware of the concept, positive implications and benefits of this process. As, in order to develop quality of care in evidence-based medical practice in Saudi Arabia alike other developed countries, clinical audit may play a crucial role, hence, an insight of medical practitioners of Saudi Arabia on clinical audit program is of immense importance.

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