

Obstacles faced when conducting a clinical audit in Botswana

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Keywords: clinical audit, medical records, intensive care unit, ICU, guidelines

Abstract

Background: A clinical audit is a method of addressing the clinical environment to bring about change and improvement. This paper describes the obstacles encountered while carrying out a clinical audit in a national referral teaching hospital in Botswana.

Method: A record was kept over a period of three months of reasons for the referral and admission of patients to the intensive care unit (ICU) and of major obstacles that could not be overcome during a clinical audit. This paper discusses the obstacles that may be faced in this regard.

Results: The following obstacles were found when carrying out the clinical audit. The medical records were difficult to find, both in the unit and in the medical records department. This led to abandonment of a retrospective pilot of the audit. When the medical records were available, the documentation was poor and unsatisfactory for the purposes of the study. Lack of local criteria and guidelines for ICU admission resulted in inappropriate referrals. Proposed guidelines had still not been adopted after 10 years. There was a fear by the many departments that refer patients to ICU of being “audited”, which resulted in reluctance to participate in the audit without assurance from hospital management.

Conclusion: Although the problems that were faced during our audit are not novel to the auditing process, it is important that they are resolved in order to develop an audit culture.

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South Afr J Anaesth Analg 2014;20(2):127-131

Introduction

Attention has been drawn to the poor quality of care provided at healthcare facilities in resource-poor settings.¹ This has an effect on the healthcare professionals who have to work in difficult circumstances. A clinical audit is a method of addressing the clinical environment to bring about change and improvement. Principally, factors are identified that need to be changed in order to achieve improvement. However, many hurdles have to be overcome for clinical audits to be a success, particularly in low-income settings. The poor quality of clinical audits conducted in low- and middle-income countries has been reported.² This paper describes the obstacles encountered while carrying out a clinical audit in a national referral teaching hospital in Botswana.

Literature review

Although the idea of a clinical audit has been around for over a century, it was essentially seen as an educational tool for professionals. Different professionals, e.g. doctors and nurses, conducted separate audits. In the 1980s, it became organised within healthcare organisations, such as the National Health Service in the UK.³

Multidisciplinary audits marked the change from “medical” to “clinical” audits. The later incorporation of quality assurance tools (standard setting, data collection, recording and reporting performance, and making improvements) advanced the clinical audit to its present status as a quality improvement tool. However, a number of problems continue to be faced by professionals who perform clinical audits, especially in resource-limited settings. The first is the definition of an audit.

A clinical audit model involves a cycle of:

- Identifying the standard.
- Measuring the practice against the standard.
- Making a comparison with the standard.
- Identifying areas for change and making recommendations.
- Making the changes or interventions as recommended.
- Re-auditing.

However, in practice, many published audits stop at making recommendations or identifying areas for change. In a review of published paediatric audits, only 38% defined a standard for the audit, and 5.9% completed the cycle to re-audit.⁴ Similar confusion existed among junior doctors conducting audits in the UK, whereby a re-audit was not identified as part of the initial audit.⁵

Another area of confusion pertains to the rigour with which the studies have to be designed and carried out. Because an audit is not considered to be research, it may be viewed as requiring less rigorous design, analysis and conduct than what is actually needed. Unlike research, audit results are immediately implementable locally. So the value of a good quality clinical audit is very high. Pirckle et al reported on a study of 69 clinical audits in obstetric care in low- and medium- income countries, of which only 10 met the quality criteria.²

There is also controversy about the actual benefit, i.e. with regard to a change in practice, that occurs as a result of a clinical audit, which is the main purpose of conducting it.⁶ It has been argued that the benefits are only small to moderate.⁷ Environments in which there is poor adherence to recommended standards and intensive feedback have been cited as settings in which clinical audits have improved effectiveness.⁷ However, even in these settings, barriers to the effectiveness of clinical audits limit their success. These are a lack of resources, expertise in clinical audit design and analysis, lack of planning, poor relationships between and within teams, and lack of integration with other activities.

Setting

Botswana is a middle-income country in central southern Africa. It lies northwest of the Republic of South Africa, between Namibia and Zimbabwe, and borders Zambia to the north. The population is 2 million (2012 census) and in 2011, expenditure on health per capita was US\$734, which was 5.1% of GDP.⁷

Princess Marina Hospital is a 400-bed public tertiary referral hospital in the southern half of Botswana. It serves as the teaching hospital for the new School of Medicine at the University of Botswana, and is the only public sector intensive care unit (ICU) in the south of Botswana. The unit has eight ventilated beds, and also serves as a high

dependency unit. Overflow patients can be admitted to two private hospitals in Gaborone city, with ICU treatment at government cost. This facility is afforded free of charge to Botswana citizens. Restrictions apply to non-citizens.

During the study period, 21 nurses worked in the ICU, five of whom were ICU qualified and the remainder, general nurses. The ratio was one nurse to 2-3 patients for most shifts. The unit is multidisciplinary. It admits post-neonate to adult patients, with approximately 300 patients a year (2009 and 2010). There are 7-8 patients 80% of the time. The ICU is within the Department of Anaesthesia and is governed by the unit director. Historically, the junior medical officers in anaesthesia don't cover the unit as it is considered to be the responsibility of the anaesthesia consultants. When the Masters in Medicine (MMed) programme in Anaesthesia started in 2011, anaesthesia trainees rotated through the ICUs, with medical and paediatric trainees.

The audit

There was a perception by ICU anaesthetists that patients were being referred to ICU very late, i.e. peri-arrest, that many referrals were inappropriate, and that anaesthetists were often expected to immediately attend to critically ill ward patients, when they were unable to as they were in theatre. A clinical audit was designed to collect data over three months on the reasons and patterns of referral of patients to ICU, and the reasons for admission by the anaesthetists. However, during this period, a number of problems were identified which became insurmountable, and which needed to be addressed separately. A record of these issues was kept as a diary record and this is the subject of this paper. The data from the clinical audit were presented at a hospital clinical meeting, and only selected data included here to illustrate the discussion. A re-audit was planned to take place approximately six months after the first dataset had been presented for discussion, but three years later, this was still not possible.

The obstacles

Medical recordkeeping

It was determined that the study would commence as a retrospective review of the medical notes. However, the medical records of patients who had recently been discharged from ICU were difficult to find, both in the unit, and in the medical records department. This led to abandonment of a retrospective pilot of the audit.

Where the medical records were available, documentation within the records was inadequate in explaining the reasons for ICU admission. There was poor documentation of medical management of the patients and no clear indication why admission of patients to ICU was an appropriate

escalation of treatment. It would seem that the only clear reason given for the ICU referral was that the ward was unable to cope with the patient in terms of monitoring and staffing, but the medical benefit of the transfer to ICU was unclear.

As a result, a prospective audit was conducted instead. The records of patients who were admitted to the unit were reviewed immediately, and the referring medical staff followed-up immediately. The referring medical team was asked to complete a form indicating the diagnosis and reason for referral to the ICU, while the anaesthetic team members completed the section indicating their medical review and the reason for admission or denial of admission. Incomplete or unclear information was followed-up individually.

When the ICU was full (80% of the time) or closed (a number of times during the study period for differing reasons), patients were sent directly to private ICUs in the city from the wards or the accident and emergency section, bypassing the ICU and anaesthetic staff. Twenty-four patients were transferred to another hospital, of whom seven had no contact with the anaesthesia department. Thereafter, patient records could not be found. The ward notes should have remained behind, while a copy was transferred with the patient. However, when the patient returned (sometimes to the ICU), there was often only one copy of the current record from the referring hospital. If an anaesthetist was involved, the audit form was used as a record of the pre-transfer status.

Guidelines for admission to the intensive care unit

Lack of local criteria and guidelines for ICU admission resulted in inappropriate referrals. These are defined as the admission of patients with irreversible organ damage (too ill to benefit), or without serious organ damage (too well to benefit). During the study period, 105 requests for an ICU bed were made. Sixty-eight patients were admitted to Princess Marina Hospital, and 24 transferred to private hospitals. The admitting anaesthetist indicated that for 20% of patients, the reason for admission was that he or she was already intubated, irrespective of the medical prognosis. The anaesthetist declined admission in respect of a further 12% as it was deemed to be inappropriate. This created a large zone of uncertainty as to who to admit, particularly when the decision was made by an individual clinician. Attempts to consult guidelines were made, but implementation thereof was difficult. The alternative to ICU, i.e. palliative care, has not yet become part of the clinical culture in our setting. Denying a patient ICU admission is perceived to be failure to adequately care for the patient. This may underlie some of the resistance to addressing “gatekeeping” at the ICU.

Within the hospital the (modified) early warning score was not in use, although its implementation was attempted in another hospital in the country. This could “red flag” ill or deteriorating patients. Discussions on ICU could take place before the situation becomes an emergency. It might help to precipitate an “intubation” admission too. These factors may contribute to the late referral of patients to the ICU.

In addition, there was no formal booking system for ICU beds for elective surgical patients who might require postoperative intensive care management. This resulted in failure of the audit to quantify the number of patients whose operations were postponed in the event of there being no available beds in the ICU. During the study period, only three patients occupied a bed that had been booked preoperatively. In total, only 12 patients were postoperative. One of the ways in which to facilitate admission when an ICU is full most of the time is through “early” discharge of another patient.

Fear of blame

There was no hospital ethics committee at the time that the audit was proposed. Consent for the audit was given by the hospital superintendent. There was an overall delay in the consent process for the audit as each department had to be consulted individually. Many concerns related to whether or not the clinical audit would identify and blame individuals. Several amendments to the audit form were made to remove identifiers, but this also created the possibility that completeness of data could not be guaranteed. Assurances were required and sought from authorities before individuals or departments would participate. Although this “fear” gradually subsided as the audit continued, it never went away completely.

Some doctors reported that in general, the anaesthetic department took too long to respond and review patients who were referred or who were “eligible” for ICU admission. Doctors thought that they should audit themselves, as opposed to trying to shift the blame to other departments through a general clinical audit. The data collection included recording of the “time of referral” and the “time of review”. Response times were evenly spread from less than 10 minutes to two hours. The main cause of delay was that the anaesthetist was in theatre. During this period, anaesthesia trainees developed ICU experience and were the “first” responders, especially when on call.

Other clinical departments always first made referrals to either medicine or surgery before considering the ICU team, and believed that they were not responsible for requesting beds in the ICU for critically ill patients, and so felt they should be excluded from any clinical audit of “their” patients. They did not want to be “blamed” for any of their patients being referred to ICU.

Staff issues

Before the start of the anaesthetic MMed programme, medical officer grade doctors were not assigned to ICU. They only rotated through anaesthesia. Five senior anaesthetists covered the theatres and the ICU when on call, and responded to requests for patient reviews and procedures in the wards. Of the five, one was the ICU director who managed the ICU during the daytime as well. The long response time to patient assessment could be attributed to low anaesthetic staffing levels. A respiratory physician intensivist joined the ICU team during this period. Nurse anaesthetists covered some of the routine elective and emergency anaesthesia, under supervision.

Junior doctors complained of lack of supervision and management by the specialist doctors in the general wards. The specialist doctors also complained that there was no time to establish systems for supervision and management, as their time was occupied by crisis management. This clearly reflected understaffed departments and the resultant impact on the quality of the health care provided.

Discussion

The primary purpose of medical records is to document patient care. Well documented and readily accessible medical records are the foundation of medical record review studies.⁸ Up until 2009, Botswana doctors were trained abroad, and over 80% of doctors in Botswana were expatriates from a wide variety of countries, which resulted in a mixed medical clerking culture. In addition, the storage and retrieval of patient records was poor. A retrospective study had to be abandoned because records could not be found. Similar studies in developing countries have reported comparable findings.⁹ In our case, sometimes, patients bypassed the ICU team (in the absence of an available ICU bed), and were referred to external ICUs. Their notes went “missing” in the process.

The staff shortage which created a high workload, combined with the high turnover of rotating junior medical personnel, was given as an explanation for the poor medical clerking. Medical clerking is a transferable skill which appropriately trained junior doctors can apply, whatever the rotation. As part of their internship, assessment junior doctors should be trained in correct medical clerkship. There have been only a few studies on the quality of anaesthetic and medical records within anaesthesia and critical care medicine.¹⁰

It is expected that ICU personnel should create policies that are specific to their unit, and to define the scope of services provided and patient populations served. Local institutional guidelines were drafted, but never adopted, in our hospital. Because of the absence of local admission criteria, there was no general understanding of when an ICU referral was

appropriate, and ward patients were often referred in a peri-arrest situation, several days after deteriorating in the ward. An early warning system or ICU outreach system would help to identify patients likely to benefit from appropriate referral, and allow others to make appropriate palliative care management decisions timeously. Similarly, critical care exposure during the internship period could improve understanding by junior doctors of critical care medicine.

To overcome perceived obstacles to audits, especially as conducting an audit is a requirement for MMed trainees and MBBS final-year students, the School of Medicine at the University of Botswana established a clinical audit office. This has had the additional benefit of assisting hospitals with the development of clinical audits capable of meeting Council of Health Services Accreditation of Southern Africa (COHSASA) requirements. The Ministry of Health in Botswana has signed up a number of its hospitals to acquire COHSASA accreditation. A clinical audit is one of the competencies that hospitals need to demonstrate.

Recommendations

Patients' medical records

Daily ward clerking^{11,12} often consisted of “continue with the same treatment” or “no abnormalities detected” (NAD), for example, without documenting the patient's clinical state. Accepted templates for daily clerking in the medical literature can be adopted, adapted and monitored. A template for daily patient clerking in the ICU has since been introduced, and is in use. Electronic (paperless) medical records have been suggested, but unless a culture of proper clerkship is promoted, the record will contain nothing when it is opened, i.e. NAD.

Medical record department

Medical records are legal documents, as well as primary sources for clinical research, so their storage is a matter of key importance. An alternative way of retaining patient case notes is to create a shadow file that remains in the department, e.g. ICU, or keep a comprehensive summary in the ICU on discharge. A regular audit of the medical records department should help to establish what needs to be carried out to improve the filing system.

Intensive care unit

An early warning system and ICU outreach to the wards is essential for early identification of patients who may benefit from ICU admission before they are “too ill to treat”. Local criteria for ICU admission and discharge have long been proposed, and need adoption and updating. These could be used for future audits in respect of ICU admission. Validating an early warning system in the local setting could be an important first step. ICU outreach may not be feasible

with the current staff levels, but this may be feasible using postgraduate trainees.

Institutional “buy-in”

Institutional support is required in order for clinical audits to be accepted by staff.^{13,14} Clinical audits need to be viewed as part of a quality improvement initiative. A clinical audit office was established within the School of Medicine, partly as a result of our experiences during the clinical audit. A number of clinical audit training initiatives have been conducted by the clinical audit office to improve the climate in which to conduct audits. Clinical audits have been included in the curriculum of MMed and medical undergraduates as audits of adverse patient outcomes need to be investigated in a manner that does not stigmatise and or single out staff. Recommendations arising from audits need to be taken seriously and implemented by departments and hospital management.

Conclusion

The problems that we faced during our audit are not novel. However, they need to be resolved in order to facilitate a re-audit, and for other audits to be carried out. Clinical audits should not be performed as a single event, but should rather be carried out as part of a continuous quality improvement process using re-audits and other tools, such as root-cause analysis of sentinel events. The necessary infrastructure needs to be in place to ensure adequate audit quality as more clinical audits are published from Africa.

Conflict of interest

The authors declare no conflict of interest.

Acknowledgements

We wish to acknowledge the support of the superintendent of the Princess Marina Hospital in granting permission to publish this report. The costs of the study were borne by the Department of Anaesthesia and Critical Care of the School of Medicine, University of Botswana.

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