

Surgical Audit

samir A. Muhieldeen
*Cardiothoracic & vascular surgery department,
College of Medicine, Al-Nahrain University*

الخلاصة

التوثيق الجراحي هو تدقيق حسابات السجلات الجراحية الأحداث الماضية. هناك ثلاثة أنواع للتوثيق الجراحي وهي التوثيق التركيبي "البنوي"، التوثيق طرق العلاج، وأخيراً توثيق النتائج والحصيلة من طرق العلاج.

مراحل التوثيق السجلات الجراحية تمر عبر مراحل:

- 1 - جمع المعلومات الأولية.
 - 2 - التحقق من المعلومات الأولية خلال المراجعة السرية والنزاهة والمهنية.
 - 3 - تحليل المعلومات والخضوع إلى النتائج.
- كل هذا التوثيق يحتاج إلى إجراء الندوات بشكل دوري لإنجاح التوثيق.

Abstract

Surgical audit represent a retrospective studies, with three types of audit.
Audit of structure, process, and outcome.

Stages of audit:

- 1-Primary data collection.
- 2-Verification of primary data, through confidential peer review.
- 3-Submission of data analysis.

Surgical audit need meetings to get successful audit.

Definition

Surgical audit is the critical and systematic analysis of quality of surgical care, including the procedures used for diagnosis and treatment, the use of resources, and the resulting outcome and the quality of life for the patient, carried out by those personally engaged in the activity concerned.

Most audits [in clinical practice] represent retrospective studies.

History

Surgical audit is not a new phenomenon. As early as 1750 Bc; king Hammurabi of Babylon issued decrees for punishment of negligent physicians, particularly surgeons.

In such a decree discovered at Susa in Iran and inscribed on a 2-m high black diorite stone, Hammurabi states that: if a doctor inflicts a serious wound with his operation knife on a free man's slave and kill him, the doctor must replace the slave with another. If a doctor has treated a free man but caused a serious injury from which the man dies, or if he has opened an abscess and the man goes blind, the man is to cut off his hands.

Not surprisingly, internal medicine rather than surgery was popular at that time, indeed, to many surgeons today, this edict still seems to be exacted in a sublimated way.

John Cranut called the father of medical statistics, in 1662 drew attention to the high infant mortality and showed that the overall mortality in towns and cities was higher than in country districts. Dr. Willam Farr, credited with the association of ascribing the major outbreak of cholera to contaminated water in London in 1854, made significant contributions to vital statistics.

Florence Nightingale's revelations of the inadequacies of the British army's administrative and medical services during the Crimcan war led to a new wave of inquiry and reform in Britain. The first serious attempts to introduce national audits of outcome were made in Britain by Ernest Hey Groves (1908) and in USA by Ernest Amory Codman (1910).

Introduction

There has been mounting concern about processes involved in surgical care, to examine outcome and determine how process and outcome interact. Also, influence of cost on medical care is an additional concern. Hence, balance of recent developments, finance, and practice is essential to improve patient care. A systemic review of unwanted results with an emphasis upon connection is needed to improve the quality of surgical care.

Types of Studies

There are three main subtypes of surgical audit:

1. Audit of structure:

This refers to the organization and availability of resources to deliver the surgical service.

The structure is the organization, within which surgical practice is carried out, could be the hospital per se, the department or the operating theatre. Standards,

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to change the working environment for the better, can be set to improve the patient care and encourage the staff to function to the best of their abilities.

Audit of structure would include:

- Adequacy of surgeons, nurses, paramedical staff.
- Educational standards of the staff.
- Standard of operation theatre [OT] equipment.
- Efficiency of ICU care.
- Availability of drugs.
- Optimal functioning of blood bank.
- Maintenance of operation theatre equipment.
- Allocation of resources to meet the satisfactory maintenance of OT/ICU.

2. Audit of Process:

This refers to the way the patient has been received and managed from admission to discharge.

I- Data collection:

- a- Manual: è Audit forms.
 è Discharge Summary.
- b- Computer:

Data collection for audit depends on:

- 1-Proper case records – complete, comprehensive.
- 2-Accurate recording of details.
- 3-Effective maintenance and easy retrieval.

II- Analysis:

Some performance indicators:

- 1-Actual length of stay.
- 2-Expected length of stay.
- 3-Turn over interval.
- 4-Actual throughput.
- 5-Expected throughput.
- 6-Percentage of day cases.
- 7-Percentage of cases not operated.
- 8-Preoperative stay.
- 9-Postoperative stay.
- 10-Waiting list per 1000 population.

Most important of these from surgeon's view point concern the use of beds, of out patient clinics and of operating theatre.

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- Actual length of stay = (No. of occupied beds) × (No. of days in study period) / (No. of patients discharge or dead during the study period).
- Turn over interval = (No. of available beds – No. of occupied beds) × (No. of days in study period) / (No. of discharges in study period).
- Actual throughput per year = (No. of days in the year) / (length of stay + turn over interval).
- An audit of operating theatre time utilization for example. In the unit of cardiothoracic and vascular surgery in a Alkadhyia teaching hospital, Baghdad, Iraq between July 2005 – August 2006 revealed the following observations:
 - Ø 78% of the operative list, started later than scheduled time.
 - Ø Delay in starting the list was due to the late arrival of the anesthetist doctor 35%, late of the arrival of the patient 10%, late of arrival of the theatre staff 15%.
 - Ø 90% of scheduled list finished well before the appropriate closing time.
 - Ø 13% of cases, the interval between cases was more than 30 minutes.
 - Ø Major reasons for cancellation were over scheduling “because of emergency surgery undertaken during working hours, unexpected prolonged duration for an individual case”.

Operative theatre usage concerns:

- 1-No. of cancelled cases.
- 2-Reasons for cancellation.
- 3-Available / utilized theatre time.
- 4-Type of surgeries performed.
- 5-Reasons for delay in starting the theatre.

3. Audit of Outcome;

This refers to the results of surgical intervention. Quality of life after surgery, what matters, is how the patient feels, rather than what the doctor thinks he ought to feel.

Karnofsky Scale: To evaluate quality of life after an intervention.

- 1-Moribund.
- 2-Very ill.
- 3-Severely disabled.
- 4-Disabled.
- 5-Need assistance.
- 6-Need occasional help.
- 7-Can care for self but can't carry on normal activities.

8-Has some symptoms, normal activity is an effort.

9-Has some symptoms, but can carry on normal activities.

10-No complaints.

and this was also used to assess the outcome of treatment of cancer with chemotherapy.

Barthel Index:

Measures the physical activities in postoperative patient in institutions.

- Feeding. }
- Ability to get from bed to chair. } 0 – Totally dependent.
- Ability to wash and shave. }
- Ability to get on and off to toilet. }
- Ability to take bath. }
- Ability to walk on level surface. }
- Ability to walk up and down stairs. } 100 – fully independent.
- Ability to dress. }
- Continence. }

Also we have Visick Score – to assess quality of life after gastric operation, Spitzer et al patient with cancer.

Patient Satisfaction

It is essential to have a honest and comprehensible communication with the doctor, taking time to listen to the patient's story and then to explain the disease and treatment options.

Ø Morbidity / Mortality assessment:

a. Technical factors

Enormous problems occur in assessing the professional competence of doctors in terms of the outcome of their care, as the purpose of raising the sub-standard surgeon is to achieve better skills may be misinterpreted. Improvements in the operative skills are more important in determining postoperative outcome than attention to preoperative nutritional care.

b. Nosocomial infections – Surveillance;

Prospective surveillance has four elements:

- 1-Stratification of surgical operations.
- 2-Detection of wound infection.
- 3-Reporting of infection rates.
- 4-Feedback to the operating team.

It was found that the regular feedback regarding the nosocomial infection to the surgeon kept the wound infection rate low.

The diagram will show the steps of the surgical audit , figure(1).

Stages of single audit:

- 1- Primary data collection. This is best performed by junior doctors or an audit officer. Specific audit forms are widely used computers are particularly useful.
- 2- Verification of primary data through confidential peer review.
- 3- Submission of data to analysis
 - a. Regularly, (e.g.) fortnightly, and
 - b. Should be attended by all members of surgical team.
 - c. Including representatives of the nursing staff [theatre and surgical wards].

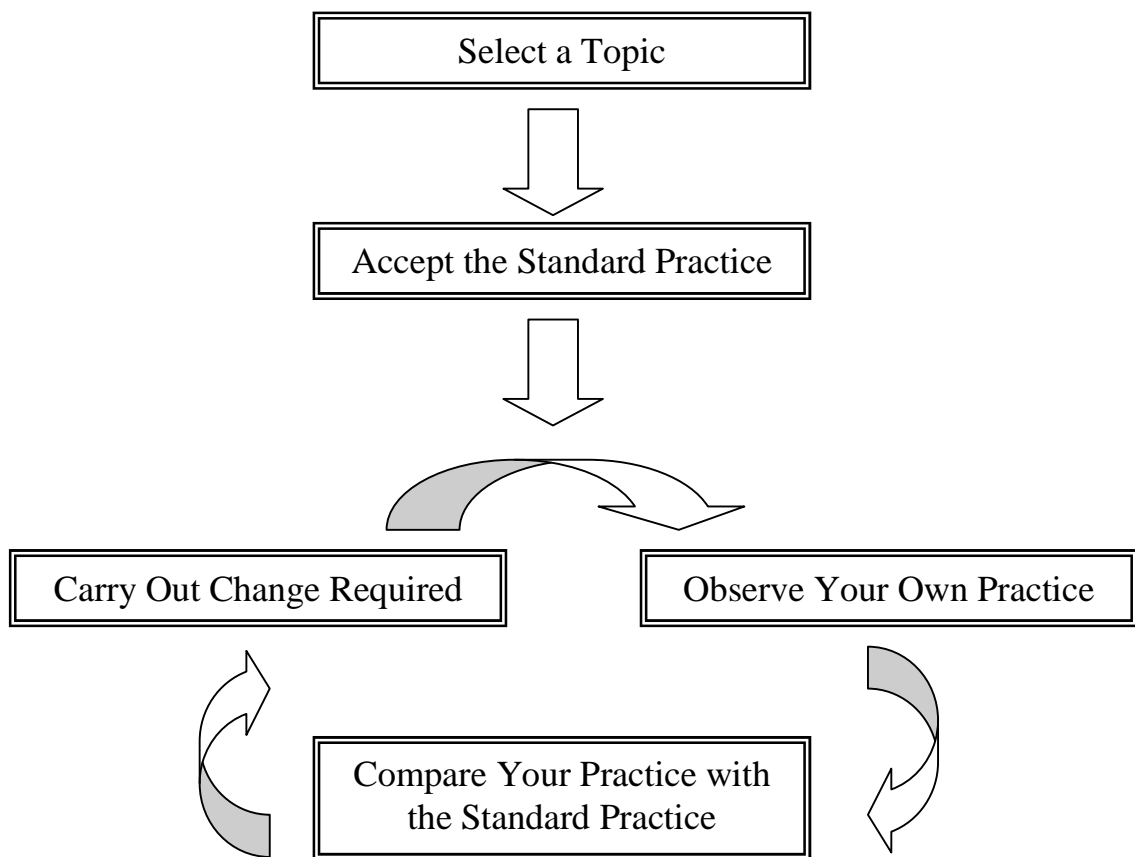


Figure 1: Audit Cycle

Techniques in audit:

1- Basic clinical audit

Analysis of throughput, broad analysis of case type, complications, mortality and morbidity. To be under taken once three monthly.

Assessment is based on:

- 1) Appropriateness of the operation.
- 2) Appropriateness of preoperative preparation.
- 3) Appropriateness of grade of surgeon.
- 4) Soundness of organization.
- 5) Equipment failure.
- 6) Adverse drug reaction.
- 7) Human failure:
 - a - Lack of knowledge.
 - b - Failure to apply.
 - c - Lack of experience.
 - d - Lack of care.
 - e - Fatigue.
 - f - Physical / Mental impairment.
 - g - Inadequate supervision.
 - h - Others.

2- Incident review:

Discussion of strategies to be adopted in certain clinical scenarios which would result in the production of guidelines for a given scenario e.g. uncontrolled variceal bleed.

3- Clinical record review

Clinical records to be audited by a member of same speciality from another hospital in the presence of a third person to avoid too much concentration on quality of record keeping than on patient care.

4- Criterion audit

Retrospective analysis of case records is made to judge against a set of chosen criteria like assessment of:

- Quality of writing operative records.
- Quality of discharge summary.
- Appropriateness of investigations for a particular diagnosis.
- Appropriateness of treatment.

5- Adverse occurrence screening

Details of adverse occurrence such as wound infection, unplanned readmissions, delay / error in diagnosis are reviewed to identify trends and perform co-operative analysis.

6- Focused audit studies

Outcome from any area of audit may dictate the need for a more closely focused area of research. Such a study assumes academic.

7- Global audit

The entire process of health care delivery during a patient's stay in hospital including the spectrum of administration, nursing staff, paraclinical staff and doctors, is assessed as outcome which is an important measure of the quality of care.

National studies:

These are vital to study the overall health trends in the country, for the audit to be meaningful, it should satisfy the following:

- Open data / self evaluation.
- Interesting.
- Confidentiality of surgeon / patient to be maintained.
- Demonstrate change with improvement of patient care.
- Resources spent for audit should be kept bare minimum.
- Should set standards and review periodically.
- Audit priority topics.

Characteristics of a successful audit:

1. Complete.
2. Honest.
3. Accurate.
4. Educational.
5. Confidential.
6. Objective.
7. Reproducible.
8. Cost – effective.

Surgical audit have limitation:

1. Comparison of an individual's result with published results is extremely difficult.
2. Accurate assessment of patient's quality of life is difficult.
3. Surgeons may select cases to affect the outcome.
4. Alternative treatments or the no-treatment options are not assessed.

Reasons for audit:

1. Time utilization / cost effectiveness. A surgeon must know how he is spending his time and the resources of the hospital before attempting to improve on time utilization.
2. Mortality / morbidity assessment. In order improve investigate the avoidable complications, mortality / morbidity data must be available.
3. Quality of diagnostic services – inefficient / misuse. Assessment of a patient’s stay in the hospital might bring to light the misuse or inefficient use of diagnostic services.
4. Monitoring performance – monitoring the performance of the staff is an essential outcome of audit.
5. Assessment of newer technologies – whether addition of newer diagnostic / therapeutic modalities has improved health care can be determined.
6. Knowledge of patient satisfaction – the patient’s view of health care delivery can be assessed.
7. Legal implications – In case of accusation of malpractice, audit data can help to establish that the rate of complications compares favorably with that of accepted standards.
8. Research – The borderline between audit for improvement of clinical practice and audit for research is thin. Many surgeons start auditing their practice, find deficiencies which lead onto different ways of doing things (e.g.) research. Scientific research asks “Are we doing the right operation?”: Audit research asks “Are we doing it the operation right?”.

Conclusion

Every doctor cares more for his reputation than his efficiency and is tempted to spend his time in concealing his ignorance rather than increasing his knowledge.

Found that disaster arose frequently when surgeons attempted procedures for which they possessed insufficient skills and training.

The overall correction of the factors would increase the available time for surgery by nearly 20% without increase in the working hours.

Audit data can be presented formally or informally but is essential to maintain the interest of the audience. Informed presentation could be made in weekly grand rounds, journal clubs, morbidity/mortality conference. In addition, data can be presented formally at intervals (e.g.) monthly / quarterly.

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