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Guide to Carrying Out an Audit Project: What is Clinical Audit, and Who Should do it?

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Clinical audit has an image problem in Europe. Firstly, there is wide variation in the way the term is interpreted. It can be used in a way that variously overlaps with regulation, accreditation, management and research. The second is encapsulated in the word 'audit' and its common usage in financial management, where it refers to evaluation carried out by outside agencies to uncover mistakes, poor performance or even fraud. This perception does not encourage radiologists to participate in the process. In fact, clinical audit should be viewed primarily as a learning and quality improvement tool, and in some countries where clinical audit is well established in practice, it has a very positive role.

The 'clinical' part of clinical audit is the key. It is the evaluation of structure, process or outcome of medical care by professionals, usually those directly involved in providing that service. The local performance is measured and compared with a pre-selected standard. If the standard is met, this provides reassurance about the quality of the service, if not, the reasons are investigated, change implemented, and re-audit carried out to see if the standard has been reached. This is described as the audit cycle (see Fig. 1, Page 18).

What can be Audited in Radiology?

All parts of the patient pathway, from referral to final patient outcome, can be audited. By convention, clinical audit is classified into:

• **Structure Audit:** audit of the facilities, staff and management structures in place to provide the service. Examples might include numbers of MRI scanners per unit of population, staff sickness rates, or availability of interventional radiology for emergency cases.

• **Process Audit:** audit of all or specific parts of the patient pathway through the service. Examples are waiting times for investigations, evidence of satisfactory justification processes, radiation doses received, or report turnaround times.

• **Outcome Audit:** audit of the final result of the delivery of the service. Examples of outcome audit would include patient satisfaction ratings, procedure complication rates or breast cancer detection rates on screening mammography.

The most difficult type of audit to carry out is outcome audit. This is because quantitative measurement of patient outcome is in itself difficult, and standards for outcome are scarce.

Who Should Carry out an Audit?

An audit is a professionally led activity and those responsible for delivering the service should be fully involved in the process. It can involve all members of the radiology team including radiologists, radiographers, physicists and ancillary staff. Local staff are most likely to know where there are areas that might benefit from detailed evaluation, and also to suggest what changes might be made if the standard is not met. Since it is an improvement tool, audit should be carried out within a positive 'no blame' culture, and appropriate confidentiality should be observed. If outside teams are invited to carry out audit, they should only carry this out with the full knowledge and cooperation of the local team.

Carrying out an Audit Project

When part of a service is selected for audit, the desired level of performance or standard should be selected in advance of any data gathering. Services can of course be sampled and performance measured, but without a pre-set standard, the measured performance cannot readily be judged as satisfactory or unsatisfactory, and this is a prerequisite for clinical audit. It is not always easy to find published standards, although they may be found in articles of legislation, national targets, peerreviewed literature, from learned societies or professional consensus. If no published

standard is available, a local agreement may be required between interested parties on an appropriate target standard before the audit is undertaken.

Setting Audit Indicators

As clinical audit is a numerical rather than qualitative process. One or more measurable indicators are selected for data gathering to determine whether the standard is met. These can include widely differing factors such as waiting times, scanner occupancy rates, radiation doses, consent form completion, staff training courses attended, procedure complication rates, reporting times and patient satisfaction ratings.

Measurement and subsequent evaluation of this indicator should allow a conclusion to be drawn as to whether or not the target standard has been reached.

Sufficient data should be gathered to give a good sample on which to base the evaluation. However, audit remains a sampling process, and is not designed to be statistically robust in the same way as a research study. This must always be borne in mind when interpreting the results.

Dealing with the Results of an Audit

If properly designed, the results of an audit should be clear; the standard will or will not have been achieved. Even if achieved, it is possible to decide to raise the target standard to encourage further improvement, though usually, achieving the standard provides reassurance that the quality of the service is satisfactory. If not achieved, then the reasons for this should be explored in an open, honest and non-accusatory atmosphere of professional cooperation. All possible reasons (and there may be more than one) why the standard was not reached should be explored, including everything from sampling error through to inadequate funding for the service. Once the causes have been identified and appropriate changes have been instituted, it is necessary to repeat the audit to ensure that the changes have been successful. This is often referred to as ‘closing the loop’.

Should we Fear Audit?

As professionals, we all have a duty to examine our work and systems within which we work to ensure that patients receive the best possible care. It can nevertheless be worrying and intimidating if we feel that the service we offer may be judged unfairly or harshly. However, when properly and professionally conducted in a fair, open and blame-free culture with the sole aim of benefiting patients, it is a process to which most of us can subscribe.

Further Reading

• The Royal College of Radiologists. Clinical Audit in Radiology: 100+ Recipes, Goodwin R, de Lacey G, Manhire A. (eds), The Royal College of Radiologists (1996)

• European Society of Radiology (ESR): Good Practice Guide for European Radiologists (2004)

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