



The Royal College of Radiologists

Board of the Faculty of Clinical Radiology

Standards for Radiology Discrepancy Meetings

RCR Standards

The Royal College of Radiologists (RCR), a registered charity, exists to advance the science and practice of radiology and oncology.

It undertakes to produce standards documents to provide guidance to radiologists and others involved in the delivery of radiological services with the aim of defining good practice, advancing the practice of radiology and improving the service for the benefit of patients.

The standards documents cover a wide range of topics. All have undergone an extensive consultation process to ensure a broad consensus, underpinned by published evidence where applicable. Each is subject to review four years after publication or earlier if appropriate.

The standards are not regulations governing practice but attempt to define the aspects of radiological services and care which promote the provision of a high-quality service to patients.

Current standards documents

Standards in Vascular Radiology

Standards for Ultrasound Equipment

Standards For Iodinated Intravascular Contrast Agent Administration To Adult Patients

Standards for Patient Consent Particular to Radiology

Standards for the Reporting and Interpretation of Imaging Investigations

Cancer Multidisciplinary Team Meetings – Standards for Clinical Radiologists

Technical Standards for CT

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360° Appraisal – Good Practice for Radiologists

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Contents

	Foreword	4
1.	Introduction	5
2.	Definition of a reporting discrepancy	5
3.	Causes of a reporting discrepancy	5
4.	Radiological discrepancy meetings	6
4.1	Convener	6
4.2	Case collection	6
4.3	Preparation for the meeting	6
4.4	Conduct of the meeting	7
4.5	Recording outcome	7
4.6	Communication of outcome of discrepancy meetings	7
4.7	Annual medical discrepancy meeting report	8
5.	Biases	8
5.1	Sampling bias	8
5.2	Selection bias	8
5.3	Presentation bias	8
5.4	Information bias	8
5.5	Hindsight bias	9
5.6	Outcome bias	9
5.7	Attendance bias	9
5.8	Variation	9
6.	Recommended standards	9
	References	10

Foreword

In 2000, *An organisation with a memory*¹ by the Department of Health described how increasing patient safety by reducing error is a key priority of major health services. The Royal College of Radiologists responded to this with the publication of *To Err is Human: the Case for Review of Reporting Discrepancies*² in 2001, recommending that discrepancy meetings form part of the process of audit within a department of clinical radiology and the structure of these meetings must ensure that they engender an environment of learning rather than blame.

Learning from experience to prevent future recurrences is one of the cornerstones on which clinical governance is built and discrepancy meetings are an extremely important way of doing this. However, it has been noted that not all imaging departments are holding discrepancy meetings. This document offers general advice on how to establish and conduct such meetings to achieve the aim of active learning and to benefit all involved.

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The Royal College of Radiologists

1. Introduction

It is six years since The Royal College of Radiologists (RCR) published *To Err is Human: the Case for Review of Reporting Discrepancies*.² The purpose of discrepancy meetings is to facilitate collective learning from radiology discrepancies and errors and thereby improve patient safety. However, it is still the case that not all imaging departments hold discrepancy meetings.

The recent publication *Good doctors, safer patients*³ by the Chief Medical Officer, Sir Liam Donaldson, indicated a need for clear objective standards so that performance of individual doctors can be assessed satisfactorily. Satisfactory attendance at radiology discrepancy meetings is an example of an achievable objective standard. All radiology departments should have radiology discrepancy meetings and the purpose of this document is to provide updated and more structured guidance on how to set up and conduct these meetings so that they achieve their educational and governance purpose.

2. Definition of a reporting discrepancy

A reporting discrepancy occurs when a retrospective review, or subsequent information about patient outcome, leads to an opinion different from that expressed in the original report. Not all reporting discrepancies are errors.

3. Causes of a reporting discrepancy

It is well recognised that radiology discrepancies occur.^{4,5} The following are potential causes:

- Inadequate, misleading or incorrect clinical information
- Poor imaging technique
- Excessive workload or poor working conditions
- Observation (including false-positives) or interpretation errors
- Ambiguity of wording or summary of report.

There are no objective benchmarks for acceptable levels of observation or interpretation and ambiguity errors.^{6,7} However, it is acknowledged that they are a significant contributor to the potential causes of diagnostic error.⁸⁻¹⁷

Radiological interpretation is not an exact science. Even the quality of reporting of diagnostic accuracy in the medical and radiological journals is variable¹⁸⁻²⁰ and publications may not reflect what is achievable in practice.

4. Radiological discrepancy meetings

Comprehensive advice on how to set up and run these meetings is available in the literature.^{2,21-23} However, this review of the more important building blocks for successful meetings, together with some suggested methods, is aimed at encouraging departments without discrepancy meetings in place to take the first steps in initiating these meetings and encourage refinement of the processes where they already occur.

4.1 Convener

The success of the meetings will depend to a large extent on the convener who should be elected by, and have the confidence, of their peers. Conveners must avoid a blame culture at all costs, and always stress the mutual learning aspects of the meetings. They will need to maintain the anonymity of both the person who entered the case for discussion and also the person who issued the imaging report in question. They should encourage constructive discussion involving as many of the attendees as possible and summarise the learning points of each case. They must keep an impartial role and prevent any one person from dominating the meeting by specifically asking for the opinions of other attendees. Everyone is entitled to an opinion and honest, consensus-aimed discussion is vital when trying to ascertain if a discrepancy is actually an error. Discrepancy meetings must not be abused nor seen as an opportunity for harassment or bullying.

4.2 Case collection

However well organised it may be, case collection will always be prone to sampling error since it is not possible to collect absolutely every discrepancy, minor difference of opinion or unexpected outcome that occurs. A robust method of case collection is, however, an essential prerequisite for successful meetings and is the responsibility of the convener. The method chosen should make it easy for individuals to submit cases and be anonymous, so that fear of retribution does not discourage submission.

A secure and anonymous system for case collection may comprise locked boxes situated in appropriate reporting areas, together with short standardised 'case submission forms' available (and regularly replenished) next to the collection box. These forms need only list the essential information on the case for the meeting, and the person entering the case should be anonymous. Any case with learning potential (including false-positives) should be entered. Alternatively, electronic methods, such as discrepancy files on picture archiving and communication systems (PACS), may also work well as long as security is maintained.

The convener should also make clinicians aware of these meetings so that they can refer cases when appropriate.

As a guide, approximately five to ten cases for a 1–1.5 hour meeting held once a month will usually be sufficient for worthwhile educational discussion. To some extent, the numbers will depend on the size of the radiology department.

4.3 Preparation for the meeting

The convener will need to obtain the images together with the original request details before the meeting so that each case can be presented with the information that was available to the reporter. Case notes may also be required. For maximum efficiency, it may be helpful if

the relevant information for each case is entered onto a standardised radiology discrepancy meeting form as the convener is preparing the meeting. The sections of this form could include the date of original report, imaging modality, date of detection of reporting discrepancy and the reason for entering the case. A section for recording the outcome of the discussion (with learning points and action plan if applicable) should also be included, which will be completed at the meeting.

Time should be made available in the convener's job plan for this preparation.

4.4 Conduct of the meeting

There are various different ways in which meetings may be conducted and they can be tailored to local circumstances, but the emphasis on mutual learning and maintenance of anonymity during the presentation is essential. The cases should be presented with the information and images which were available at the time of reporting, accepting that it is never possible to recreate the original reporting conditions. Attendees can commit their opinion on paper without discussion, but cases often contain several facets and this method can be time-consuming. As the process is inevitably artificial, honest, consensus-aimed discussion can be more informative and is more likely to emphasise the learning rather than judgemental aspects if conducted in a non-blaming, anonymous manner. Further clinical information may be required during the discussion and having the clinical notes to hand may be helpful. All attendees should be encouraged to contribute to the discussion and the convener should prevent the discussion being dominated by a few individuals.

4.5 Recording outcome

The convener should guide the meeting to explicit consensus on whether an error has occurred. In addition, learning points and action points (if any) for each case should be discussed and agreed. These should be recorded on the standardised radiology discrepancy meeting form. Some may prefer not to include patient identifiers.²⁴

Although concern is sometimes expressed about grading discrepancies, in practice there will always be a binary system of grading; that is, does the reporting discrepancy constitute an error or not? Intuitively, some errors are larger than others. A possible grading system could be 0 = no error, 1 = minor, 2 = moderate and 3 = major error.

Judging the clinical significance for the patient of a false-negative (or false-positive) imaging report is much more problematic. Potential impact and actual impact on patient management are different. Both may depend on the clinical setting of the report and are often difficult to judge at a radiology discrepancy meeting. The situation where clinical management is solely determined by the imaging report is very different from the setting where many different clinical factors (including other forms of imaging) feed into the clinical decision-making process. Therefore, grading systems which combine the perceived severity of the error together with the clinical impact are inevitably much more complex.

4.6 Communication of outcome of discrepancy meetings

Radiologists have a duty to share knowledge with colleagues.²⁵ If an error has occurred, then confidential feedback to the person who reported the images using a standardised feedback form is required even if the individual does not work in that hospital (for example, teleradiologists, rotating specialist registrars, locums, reporting radiographers, and so on). It is

helpful to include a short summary of the discussion at the discrepancy meeting rather than just stating that an error has occurred.

In the majority of cases, errors will already be known to the clinical team looking after the patient and appropriate action will have been taken. If an error has significantly adversely affected their care, patients have a right to this information. However, communication with the patient must be undertaken in a sensitive manner following discussions between the radiologist and the clinical team. There must be no fraudulent concealment.

4.7 Annual radiological discrepancy meeting report

Recurrent patterns of error may only become apparent when reviewing the cases discussed during the year. Consequently, the production of an anonymised annual report is an important way of discovering recurrent department-wide errors and alerting colleagues to be particularly vigilant for these sources of error. Important changes in practice can be achieved by doing this, including addressing issues such as standardisation of technique, equipment and training requirements. This annual report should go to all radiologists attending the discrepancy meetings and also to the clinical director. It should also feed into the trust's clinical governance process.

The percentage attendance record during the year for department members should be made available to individuals, as it is important for appraisal and revalidation purposes.

5. Biases

5.1 Sampling bias

It is not possible to uncover all radiology discrepancies and meetings will review only a percentage of the radiology discrepancies.^{21,26,27} This sampling bias will mean that discrepancy meetings cannot be used to derive error rates for individual radiologists.

5.2 Selection bias

This can arise in different ways. If only one radiologist interprets a particular type of examination then there is potential for their discrepancies to remain undiscovered. Ultrasound discrepancies also tend to be under-represented in discrepancy meetings compared with more easily demonstrated plain film, CT and MR images. If two radiologists have identical accuracy, but one reports far more examinations than the other, the discrepancies of the more productive radiologist are more available for selection. It is also feasible that some may be reluctant to enter a discrepancy of their own or of their close colleagues, yet have a lower threshold for entering apparent discrepancies of a colleague with whom there is friction.^{28,29}

5.3 Presentation bias

This is difficult to avoid as it is frequently necessary to select or focus the review to avoid lengthy and cumbersome reviews of large image data sets which would be tedious and impact adversely on the learning process.

5.4 Information bias

This may be minimised by only giving clinical information that was available at the time of reporting.

5.5 Hindsight bias

This is an inevitable result of the fact that the review of cases takes place in the setting of a discrepancy meeting rather than the setting in which the original report was issued.³⁰

5.6 Outcome bias

There is a recognised tendency to attribute blame more readily when the clinical outcome is serious. This may be reduced by withholding information on the subsequent clinical course of the patient when coming to a consensus decision on the degree of error.³¹

5.7 Attendance bias

Poor attendance at meetings may result in an inability to reach a reasoned consensus on whether an error has occurred, or its severity because of lack of critical mass of individuals who carry out the same type of work.

5.8 Variation

All processes are subject to variation in performance over time, referred to as common cause variation. Sometimes that variation is greater than expected, suggesting that there is a specific cause for performance falling outside the usual range. This is referred to as special cause variation. When identified, this should lead to all steps in the process being examined to see if a specific cause for the exceptionally poor (or good) performance can be pinpointed and thus allow appropriate action to be taken.

In summary, variation cannot be eliminated and the important difference between common cause and special cause variation needs to be recognised. As common cause variation is inherent in a process, its reduction can only be brought about by fundamental changes to the process itself. Special cause variation, in contrast, is due to factors which are extraneous to the process. Thus, efforts at reducing special cause variation need to identify such factors so that they can be addressed without radically altering the whole process.^{32,33}

6. Recommended standards

- 6.1 All radiologists should regularly participate in radiology discrepancy meetings. Minimum individual attendance should be at least 50% at all meetings held³⁴ and the attendance record of individual radiologists should be made available to them and the clinical director.
- 6.2 The minimum frequency of meetings should be at least every two months.
- 6.3 There should be a formal process for recording the outcome of consensus-aimed discussion for each case, including learning points and action points where appropriate.
- 6.4 There should be a formal process for confidential feedback.
- 6.5 The convener should produce a formal annual report documenting key learning and action points including any recurrent patterns of error to demonstrate a departmental process for learning from mistakes.
- 6.6 There should be a formal process for electing a convener for a fixed term (renewable by agreement).

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