



# Standards for Learning from Discrepancies meetings

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## RCR Standards

The 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 three 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.

Specific cancer standards are issued separately by the Department of Health, the Welsh Assembly Government, the Scottish Executive, and the Northern Ireland Government (Appendix 1). These RCR standards will therefore need to be interpreted in the light of separate standards issued by the separate national governments of the United Kingdom.

The RCR has committed to reviewing all relevant publications in line with the recommendations of the Francis report and where appropriate applying the category of standard defined by Francis (fundamental, enhanced or developmental).<sup>1</sup> This document contains standards that fall within the enhanced category.

## Current standards documents

*Standards for radiofrequency ablation (RFA), Second edition*

*Standards for patient confidentiality and PACS and RIS*

*Standards for the communication of critical, urgent and unexpected significant radiological findings, Second edition*

*Standards for patient consent particular to radiology, Second edition*

*Standards of practice and guidance for trauma radiology in severely injured patients*

*Standards and recommendations for the reporting and interpretation of imaging investigations by non-radiologist medically qualified practitioners and teleradiologists*

*Standards for the NPSA and RCR safety checklist for radiological interventions*

*Standards for the provision of teleradiology within the United Kingdom*

*Standards for the recording of second opinions or reviews in radiology departments*

*Standards for a results acknowledgement system*

*Standards for intravascular contrast agent administration to adult patients, Second edition*

*Standards for providing a 24-hour diagnostic radiology service*

*Standards for providing a 24-hour interventional radiology service*

*Standards for Self-assessment of Performance*

*Standards for the Reporting and Interpretation of Imaging investigations*

*Standards for Ultrasound Equipment*

## Foreword

As radiologists, we are constantly striving to improve the standards of service we provide to patients with a culture of learning, self-reflection and personal development.

Humans will always make errors and radiologists are no different. As part of the reporting process, we are constantly having to give an opinion under conditions of uncertainty. With hindsight, often combined with additional information, it is inevitable that discrepancies will be acknowledged in the original interpretation of a study. It is important that the concept that not all discrepancies are 'errors' is understood and managed so that harm or potential harm is minimised, and that a learning system is in place in an attempt to avoid repetition.

Reviewing and learning from discrepancies and adverse events can provide evidence of reflective practice and, if performed in a supportive learning environment, can contribute to the evidence for providers and users of a service as to its safety. Structuring the learning to help identify contributing factors can also help inform the organisation of potential trends that can be addressed to mitigate against recurrence and contribute to the enhancement of patient safety.

The Royal College of Radiologists (RCR) has produced this document to set standards and give guidance on how shared learning may be used. It replaces the previously published document *Standards for Radiology Discrepancy Meetings*, which has now been withdrawn.

The document emphasises the educational role of the learning from discrepancies meeting (LDM) and how such meetings should be part of a radiology quality assurance (QA) programme. The document should be read alongside the RCR documents *Quality Assurance in Radiology Reporting: Peer Feedback* and *Cancer multidisciplinary team meetings – standards for clinical radiologists, Second edition*.<sup>2,3</sup>

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## 1. Recommended standards

### Standard 1

All radiologists should regularly participate in radiology LDMs. Individuals should achieve at least a 50% attendance rate, and the attendance record should be made available to individual radiologists and the clinical director.

### Standard 2

The minimum frequency of meetings should be every two months.

### Standard 3

There should be a formal process for recording the outcome of LDMs. This should include:

- Consensus-aimed discussion of each case
  - Learning points and action points where appropriate
  - Whether the clinician in charge of the patient is aware of the discrepancy.
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### Standard 4

A summary of all cases discussed should be available to all radiologists in the department.

### Standard 5

There should be a formal process for confidential feedback.

### Standard 6

The convener should produce a formal bi-annual report documenting key learning and action points, including any recurrent patterns of error to demonstrate a departmental process for learning from mistakes.

### Standard 7

There should be a formal process for electing a convener for a fixed term (renewable by agreement).

## 2. Introduction

Since the publication of *Standards for Radiology Discrepancy Meetings* by the RCR in 2007, regular discrepancy meetings have been almost universally adopted by radiology departments in the UK.<sup>4</sup>

The RCR recognises that learning is the main outcome following review and discussion of reporting discrepancies and it is recommended that the title of the meetings should be changed to learning from discrepancies meetings (LDMs).

Whereas, in the past, scoring has been a feature of these meetings, this is no longer considered valid.<sup>5-11</sup> A greater emphasis on understanding error to improve radiologist performance is encouraged through the categorisation of discrepancies.

The LDM plays a crucial role in clinical governance. Alongside other inter-related processes, and as part of a QA programme, the LDM will facilitate an improvement in the quality of service provided, and is an important source of

shared learning, significantly contributing to patient safety.

Attendance at the LDM and personal reflection on discrepancies are both categories of evidence which form part of an enhanced appraisal portfolio for revalidation.<sup>12</sup>

Every radiologist has a duty of candour as defined in the Francis report.<sup>1</sup> Reporting and learning from discrepancies cannot be undertaken in isolation from the concept of patient harm and the LDM must be integrated into the standard of practice for all individuals who provide reports on diagnostic images. The key principles should be:

- To accept that discrepancies will occur
- To mitigate against discrepancies through QA programmes
- To have processes in place to minimise any potential patient harm
- To have systems in place for shared learning from discrepancies within a blame-free culture.

## 3. 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.

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## 4. Causes of a reporting discrepancy

It is well recognised that radiology discrepancies occur.<sup>13–17</sup> Causes can be usefully categorised as individual or system related.<sup>18–21</sup>

### Radiologist-specific causes include:

- Cognitive: the finding was appreciated but attributed to the wrong cause. This may be due to a lack of knowledge
- Perceptual:
  - Observational: the finding is identifiable but was missed
  - Satisfaction of search: detection of one abnormality on a study results in premature termination of the search, allowing for the possibility of missing other related or unrelated abnormalities
- Ambiguity of wording or summary of report.

### System-related causes include:

- Inadequate, misleading or incorrect clinical information: the clinical diagnosis has been shown to change in 50% of cases following communication between the clinician and the radiologist<sup>22</sup>
- Poor imaging technique
- Excessive workload or poor working conditions.

There are no objective benchmarks for acceptable levels of observation, interpretation or ambiguity discrepancies. There is published literature with radiological reporting discrepancy rates varying from 3–30%. Case-mix, selection bias, imaging modality and inter- and intra-observer variability render standard setting very difficult.<sup>5–7,14,23–47</sup>

## 5. Running LDMs

There is no prescriptive way of running the LDM. A successful meeting will, however, make a significant contribution to patient safety by:

- Focusing on shared learning
- Encouraging constructive discussion of contributing factors
- Producing a consensus on structured learning outcomes, learning points and follow-up actions
- Recognising professional responsibilities to consider the potential for patient harm.

### Convener

The success of the meetings will depend, to a large extent, on the convener(s), who should be elected by, and have the confidence of, their peers. For some departments it may be more suitable to have two conveners and other departments may prefer a rota to encourage team working and load sharing and to minimise bias.

The convener(s) should have time in their job plan to prepare for the meeting, summarise and distribute the outcomes and submit a bi-annual report to the clinical management team.

The convener(s) will have specific key roles to ensure a successful meeting.

- The convener must avoid a blame culture at all costs, and always stress the shared learning aspects of the meetings. LDMs must not be abused or seen as an opportunity for harassment or bullying.

- The convener 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.
- The convener must encourage constructive discussion involving as many of the attendees as possible, and summarise the learning points of each case.
- The convener must remain impartial 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.

### Case collection

Identifying discrepancies usually occurs in one of three ways:

- Systematic review as part of the department QA programme
- Double reporting/second look at multidisciplinary team meetings (MDTMs). This is a particularly rich source of learning material as the radiologist will have access to the full range of clinical information including outcomes of other investigations
- Ad hoc when undertaking first reporting through review of previous films.

Case collection will always be prone to sampling error bias 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 anonymously, 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 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.

It is recommended that departments should schedule at least one meeting per year to review and reflect on the cases published in Radiology Errors and Discrepancies (READ, [www.rcr.ac.uk/READ](http://www.rcr.ac.uk/READ)).<sup>48</sup>

### 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. Clinical follow-up, outcome and/or 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 learning from discrepancy form (Appendix 1). The sections of this form to be completed prior to submission/presentation could include:

- The date of original report
- The imaging modality
- The date and circumstances of detection of reporting discrepancy, for example, MDTM
- Whether the clinician in charge is aware of the discrepancy
- The reason for entering the case.

The LDM form should also include a section for recording the outcomes (as discussed below) which will be completed at the meeting.

To foster shared learning, consideration should be given to the inclusion of 'near misses' and 'good catches' in the case selection.

### Conduct of the meeting

There are various different ways in which meetings may be conducted that can be tailored to local circumstances, but the emphasis on shared learning and maintenance of anonymity during the presentation is essential. The cases should be presented with the information and images that 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 from being dominated by a few individuals.

### Standards

All radiologists should regularly participate in radiology LDMs. Individuals should achieve at least a 50% attendance rate, and the attendance record should be made available to individual radiologists and the clinical director.

The minimum frequency of meetings should be every two months.

There should be a formal process for electing a convener for a fixed term (renewable by agreement).

## 6. Outcomes of LDMs

The main outcome of the LDM is learning. However, radiologists within the meeting have a professional duty of care to ensure that the discrepancy being discussed has not been the cause of patient harm. The General Medical Council (GMC) guidance *Raising and acting on concerns about patient safety* (2012) sets out the expectation that all doctors will, whatever their role, take appropriate action to raise and act on concerns about patient care, dignity and safety.<sup>49</sup>

### Learning

The convenor should guide the meeting to an agreed learning point. After the meeting a summary of each case should be prepared along with the learning point(s). This could take the form of a single PowerPoint slide which can be easily made available to all radiologists to encourage reflection and learning.

Confidential feedback to the person who reported the original investigation 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). The standard feedback form should include a short summary of the discussion at the discrepancy meeting including the agreed learning point(s). This will allow individual reflection which can be used as evidence of audited practice in the radiologist's appraisal/revalidation portfolio.<sup>50</sup>

All discrepancies discussed should be considered for submission to READ to promote national shared learning.<sup>48</sup>

### Categorising discrepancies

The main purpose of categorising the cases discussed is to help direct learning towards understanding the likely cause of the discrepancy, to assess the need for clinical action and help the reporter and/or clinical director to identify trends that may need to be addressed to mitigate against it happening again. A structured learning matrix is included in the LDM form in Appendix 1.

LDMs are important for learning rather than individual performance assessment. Adopting a grading or scoring system to decide if an error has occurred is unreliable and subjective as there is often poor agreement between scorers.<sup>5-8</sup> Simply allocating a score to a discrepancy is of questionable value as it is unlikely, on its own, to lead to a specific outcome or action.

A scoring culture can fuel a blame culture with less collective learning from discrepancies/near misses. This has adverse risks and consequences for patients, team working and service improvement.<sup>4,8,9,14,51-61</sup>

### Clinical significance

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, may depend on the clinical setting of the report and are often difficult to judge at a radiology LDM. 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. 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.

### Standards

There should be a formal process for recording the outcome of LDMs. This should include:

- Consensus-aimed discussion of each case
- Learning points and action points where appropriate
- Whether the clinician in charge of the patient is aware of the discrepancy.

A summary of all cases discussed should be available to all radiologists in the department.

## 7. Discrepancies and incident reporting

Incident reporting is a well-established national tool to encourage learning. Every radiologist has a duty of candour. This is defined by Robert Francis as, 'The volunteering of all relevant information to persons who have or may have been harmed by the provision of services, whether or not the information has been requested and whether or not a complaint or a report about that provision has

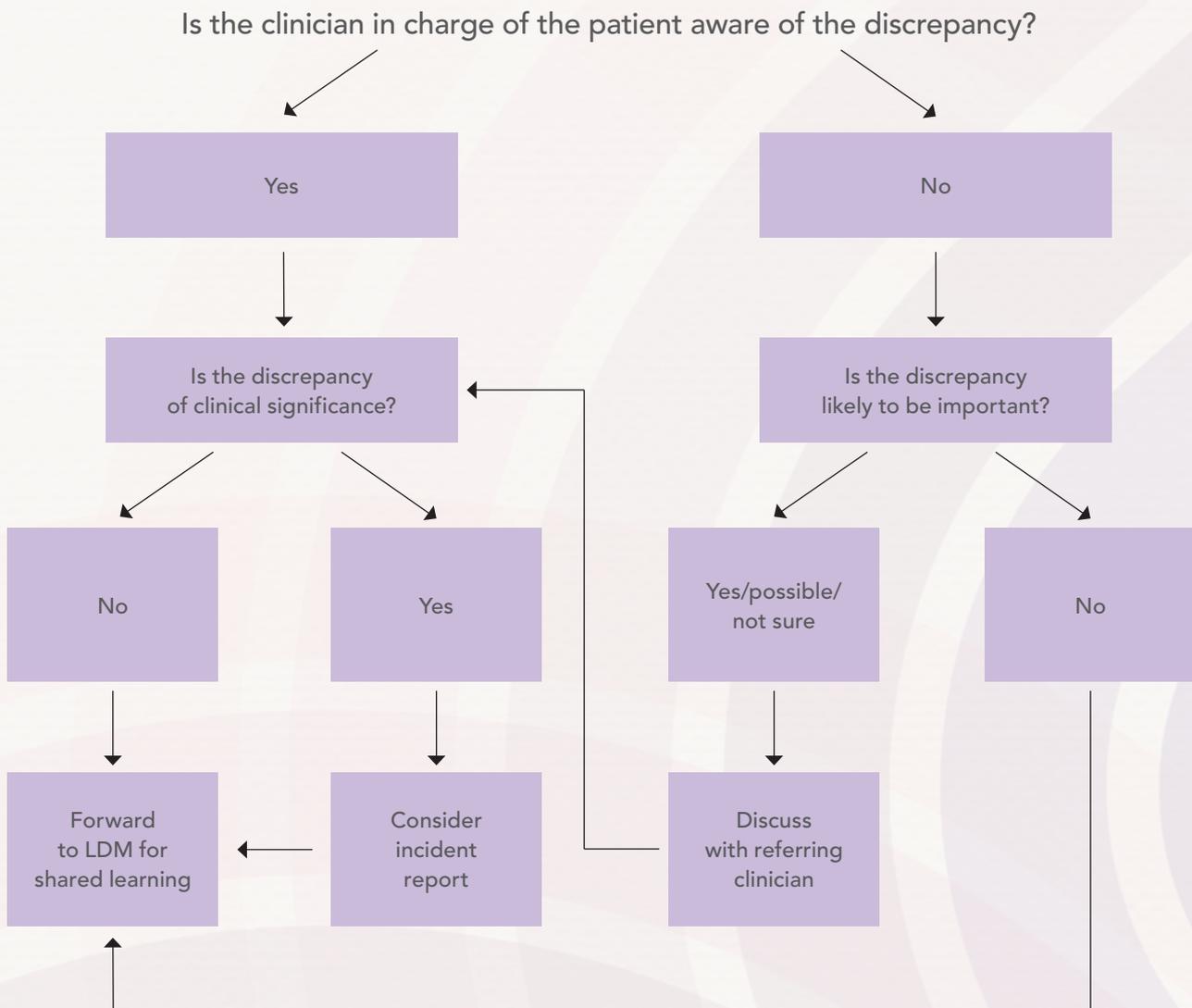
been made'.<sup>1</sup> It is recognised that one of the barriers to reporting incidents is the lack of clear definitions leading to confusion as to what to report and when.

In the majority of cases discussed at the LDM, the discrepancy will already be known to the clinical team looking after the patient. Discussion between the radiologist and clinician will establish whether the discrepancy constitutes an incident. It should be decided after such discussion whether the responsibility lies with the

radiologist or the clinician to escalate this through the organisation's incident reporting system.

Discrepancies submitted to the LDM which are not known to the clinical team can be assessed by the radiologists with a view to deciding whether the nature of the discrepancy is likely to constitute a risk to patient care. Where there is uncertainty, further discussion with the referring clinician should take place (Figure 1).

Figure 1. Discrepancy recognised



## 8. Bi-annual radiological LDM report

Recurrent patterns of discrepancies may only become apparent when reviewing the cases discussed during the year. Consequently, the production of an anonymised bi-annual LDM report is an important way of discovering recurrent department-wide discrepancies and alerting colleagues to be particularly vigilant for these sources of error. Through the use of such reports, important changes in practice can be achieved, including addressing issues such as standardisation of technique, equipment and training requirements.

It is important to bear in mind, when reviewing the bi-annual report, that the cases submitted to, and decisions made at LDMs may be subject to a variety of biases as outlined in Appendix 2.

The bi-annual report should go to all radiologists attending the LDM and also to the clinical director. It should also feed into the trust's clinical governance process.

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

### Standards

The convener should produce a formal bi-annual report documenting key learning and action points including any recurrent patterns in discrepancies to demonstrate a departmental process for learning from mistakes.

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## Appendix 1. Learning from discrepancies template

**Case to be discussed:**

Name:

DOB:

Ref no:

Imaging studies:

Date of study:

Discrepancy to be discussed:

Clinical information provided at the time of request:

Is the clinical team aware of the discrepancy? Yes  No

**Assessment of discrepancy: learning and outcome**

Discrepancy	Reporting discrepancy			System discrepancy		
	Perceptual	Cognitive	Effective communication	Clinical information	Poor imaging/patient factors	Working conditions
No						
Yes						

Agreed learning points:

Agreed outcome/further action:

## Appendix 2. Biases

### Sampling bias

It is not possible to uncover all radiology discrepancies, and meetings will review only a percentage of the radiology discrepancies.<sup>4</sup> This sampling bias will mean that LDMs cannot be used to derive error rates for individual radiologists.

### Selection bias

Selection bias 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 LDMs 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 who there is friction.<sup>52,55,56</sup>

### Presentation bias

Presentation bias 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.

### Information bias

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

### Hindsight bias

Hindsight bias is an inevitable result of the fact that the review of cases takes place in the setting of an LDM rather than the setting in which the original report was issued.<sup>62</sup>

### 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.<sup>63</sup>

### Attendance bias

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

### Variation

All processes are subject to variation in performance over time, this is 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 allowing 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. In contrast, special cause variation is due to factors which are extraneous to the process. Efforts to reduce special cause variation need to identify such factors so that they can be addressed without radically altering the whole process.<sup>44</sup>

### Commercial bias

Commercial bias is when the perception of commercial gain or loss for a group or company in competition distorts the fairness of review.

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