



Standards for radiology events and learning meetings

January 2020

Contents

Foreword	3
Summary of recommended standards	4
Definitions	5
Introduction	8
Standard 1.	10
Standard 2.	11
Standard 3.	12
Standard 4.	14
Standard 5.	15
Standard 6.	17
Standard 7.	19
Standard 8.	20
Standard 9.	21
Conclusion	21
References	22
Appendix 1. Recording of second opinions	25
Appendix 2. Causes of a reporting discrepancy	26
Appendix 3. Discussing discrepancies: differences between a REALM and a duty of candour process	27
Appendix 4. Template correspondence from the chair of REALM	29
Appendix 5. Biases	34
Appendix 6. The discrepancy meeting is dead long live the Educational Cases meeting (or REALM)	35
Appendix 7. Four things radiologists get wrong when reporting melanoma.	35

Foreword

A positive culture to develop learning is vital to improve outcomes and comply with the recommendations of the Francis Report.¹ 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. They will also have moments of brilliance.

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 or excellent spots 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. Excellent diagnoses are equally important. A learning system is essential in an attempt to avoid repetition of discrepancies and to learn from excellence.

Reviewing and learning from excellence, discrepancies and adverse events can provide evidence of reflective practice, improve outcomes and, if performed in a supportive learning environment, can contribute to the evidence for providers and users of the safety of a service.² 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 of discrepancies, to empower excellence and to contribute to the enhancement of patient safety. Documentation of reflection and learning outcomes of the meeting should be anonymous to encourage submission and enhance learning.

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It replaces the previously published document *Standards for learning from discrepancies meetings*, which has now been withdrawn.

This document emphasises the educational role of the radiology events and learning meetings (REALMs), where radiological discrepancies are anonymously reviewed, and how such meetings should form part of a radiology quality-assurance (QA) programme. This document should be read alongside the RCR documents *Lifelong learning and building teams using peer feedback* and *Cancer multidisciplinary team meetings – standards for clinical radiologists*, second edition.^{3,4}

The RCR is extremely grateful to the authors of the previous standards documents on which this updated guidance document is based, to Dr Jonathan Smith for his hard work in this major revision, Dr Catherine Parchment-Smith for help with editing and preparing the document and to members of the Clinical Radiology Professional Support and Standards Board (PSSB) and the former President, Dr Nicola Strickland for their input.

Dr Caroline Rubin
Vice-President, Clinical Radiology

Summary of recommended standards

Standard 1.

Clinical engagement: All radiologists should attend a minimum of 50% of departmental radiology events and learning meetings (REALMs) and should contribute at least one case a year to their REALM.

Standard 2.

Organisation of meeting: A minimum of six REALMs per year should be held in and facilitated by each trust. These may involve the whole radiology department.

Standard 3.

The chair: The chair of REALM should be appointed and remunerated fairly by the trust and should be able to demonstrate duties performed and output. This should be recorded in the job plan as an 'additional NHS responsibility'.

Standard 4.

The notifier: The radiologist who has detected a discrepancy or clinical incident (the notifier) has certain duties to record this which all radiologists have, and these should still be carried out regardless of whether or not the discrepancy or clinical incident is submitted to the REALM for anonymous discussion.

Standard 5.

The cases: The cases in a REALM should be anonymised and discussed for the purposes of education only. The REALMs should operate alongside but completely separately from candour, serious untoward incident (SUI), disciplinary or legal processes.

Standard 6.

The documentation: Standard emails should be sent to the radiologists involved in the submitted cases prior to discussion. Learning points from the cases discussed should be summarised and disseminated. Attendance and contribution should be recorded and distributed for appraisal.

Standard 7.

Feedback and reflection: Participating radiologists are encouraged to perform private reflection of the cases discussed. The chair is encouraged to identify patterns of errors and target teaching accordingly.

Standard 8.

The culture: The chair should ensure a culture of respectful sharing of knowledge with no blame or shame.

Standard 9.

Links with the RCR: The REALM chair of each trust should be identified to the RCR's Radiology Events and Learning (REAL) Panel as a contact point for exchange of views and with the aim of establishing an inclusive national network of individuals with an interest in and experience of radiology events and learning. The chair of the REAL Panel should ensure submission of at least one case per year for consideration for publication in the *REAL Newsletter*.

Definitions

REALM: Radiology events and learning meeting.

REAL: Radiology events and learning – an education resource overseen by a panel on behalf of the RCR to promote safety in radiological practice.

Primary reporter: The primary reporter is the reporter who originally reported the radiological study that a second reporter, or notifier, has highlighted. If a second reporter or notifier has noticed a discrepancy, good spot or educational case when reviewing the original radiological study, the primary reporter should be informed. The primary reporter can be the same person as the notifier if, for instance, the reporter notices a discrepancy with one of his/her own previous reports.

Notifier: The notifier is the second reporter who has noted a discrepancy, good spot or educational case potential upon review of a previously reported radiological study. Recording of discrepancies should take place in line with RCR guidelines (see Appendix 1. Recording of second opinions). The notifier should inform the primary reporter and, if relevant, should trigger the trust incident reporting system (for example, Datix) or duty of candour process. The notifier can be the same person as the primary reporter if, for instance, the reporter notices a discrepancy with one of his/her own previous reports. The notifier is typically the individual who submits the case to the REALM.

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 radiological study report. Reporting discrepancies are common (between 3–30% of reports in published literature) and have many causes (see Appendix 2. Causes of reporting discrepancies). Not all discrepancies are reporting errors, but some are. Recording of discrepancies should take place in line with RCR guidelines (See Appendix 1. Recording of second opinions). All discrepancy cases, whether they are errors or not, can be submitted to the REALM for separate anonymous discussion if there are useful learning points to be made.

A discrepancy that is not a reporting error: In some discrepancy cases it is only with the benefit of hindsight, usually with the benefit of further clinical, pathological or radiological information, that the radiological finding could reasonably have been expected to be identified. The majority of radiologists would not have reported the finding prospectively. In that case it is not an error, but the primary reporter should be informed by the notifier in the interests of peer-to-peer learning. If no subsequent imaging documentation is available, a non-judgemental informative addendum may be appropriate (ideally added by original reporter). In difficult cases it is for the trust candour process to decide whether a discrepancy case is an error or not; this is not the role of the REALM. All discrepancy cases, whether they are errors or not, can be submitted to the REALM for anonymous discussion if there are useful learning points to be made.

A discrepancy that is a reporting error: In some discrepancy cases the original reporter has overlooked a radiological finding which should reasonably have been expected to have been seen by the majority of radiologists. In that case, an error has been made and the primary reporter should be informed by the notifier in the interests of peer-to-peer learning. In addition, the responsible or referring clinician should be informed. If the responsible clinician thinks that the patient has come to significant harm as a result of the error the duty of candour applies. If the patient has come to significant harm the responsible clinician (not the radiologist) has a duty to inform the patient of the error and apologise after discussing the case with an appropriate radiology representative. The original report should be

amended in a non-judgemental and factual manner (for example 'Images reviewed at the multidisciplinary team meeting [MDTM] and in retrospect a 1 centimetre [cm] left upper lobe lung lesion has been identified. This case has been discussed with the referring clinician Dr XX on XX date who will determine if a duty of candour applies'). In difficult cases it is for the trust candour process to decide whether a discrepancy case is an error or not; this is not the role of the REALM. All discrepancy cases, whether they are errors or not, can be submitted to the REALM for anonymous discussion if there are useful learning points to be made.

A good spot: A 'good spot' occurs when a retrospective review, subsequent imaging or information leads to recognition that an observation or diagnosis has been made that might be readily have been overlooked. It is called a 'great catch' in United States (US) literature and is similar to some types of 'near miss' reporting in the aviation industry where skilful flying avoids an accident in dangerous conditions. These cases can have similar educational messages to discrepancies but without the negative connotations or loss of morale. If a 'good spot' is identified which has a learning message, the notifier should submit the case to the chair for discussion in the REALM. If the primary reporter gives permission, they can be identified and congratulated at the REALM, although the patient details should be kept anonymous.

Scoring of errors: Scoring or other categorisation of a suspected error is not recommended in the REALM, since this is a judgemental exercise and does not contribute to the learning process, which is the object of REALMs. REALMs are important for learning rather than individual performance assessment. A scoring culture can fuel a blame culture with less collective learning from discrepancies/near misses/excellence. This presents risks and adverse consequences for patients, teamworking and service improvement.⁵⁻¹⁹ Judgement or assessment of an error may occur in a duty of candour, SUI, legal or disciplinary process but the anonymity of a case discussed in the REALM should never be breached to feed into or facilitate any of these separate processes.

Peer review:³ Peer review involves reviewing previously reported studies. Peer review happens during the following work flow processes.

1. Most often it happens when reviewing prior reported imaging studies as part of normal reporting workflow.
2. During preparation for or participation in MDTMs.
3. Ad hoc review may take place upon request from a clinician for a second opinion (which most commonly happens in the same organisation but may occasionally take place in another organisation).

These instances of peer review provide opportunities for radiologists to give educational feedback to their peers to help them learn about the clinical course of patients whose images they have reported. It also may lead to cases with educational value being forwarded to the chair of the REALM for anonymous discussion. This should occur in addition to direct peer-to-peer feedback and should not replace it.

Peer feedback:³ Peer feedback is notifying a peer of an outcome. Radiologists would find it useful to receive feedback on studies in which they may have been involved especially when:

1. An addendum is added to a study they have previously reported
2. A further relevant study or follow-up study has been performed
3. The histology from a biopsy or surgery is available for a study they reported
4. An MDTM decision is made on a study they have been involved in.

When giving feedback, every radiologist must remember that it should be beneficial to the person receiving the feedback. Peer feedback within radiology teams should be concise, informative and non-judgemental. It also may lead to cases with educational value being forwarded to the chair of the REALM for anonymous discussion. This should occur in addition to direct peer-to-peer feedback and should not replace it.

Duty of candour (DoC):²⁰ There has been some confusion about the role of the REALM with regard to the duty of candour; this document aims to clarify the separate nature of the two processes.

The confusion has occurred because a case where a discrepancy or a suspected error has occurred may be discussed in a REALM and may also be discussed in a duty of candour process. It is the view of the RCR that the differences between these two very important processes should be clearly defined (see Appendix 3. Discussing discrepancies: differences between a REALM and a duty of candour process).

The duty of candour is enshrined in the Health and Social Care Act 2008 (Regulated Activities) Regulations 2014: Regulation 20.²¹

The intention of this regulation is to 'ensure that providers are open and transparent with people who use services ... in relation to care and treatment.' It also sets out some specific requirements that providers must follow when things go wrong with care and treatment, including informing people about the incident, providing reasonable support, providing truthful information and an apology. It is the duty of every radiologist who identifies a discrepancy in reporting or clinical incident in practice which may have resulted in patient harm to inform the responsible clinician so that they can determine if a duty of candour is applicable. If it is determined that an error has been made and a patient has come to significant harm as a result, the responsible clinician (who is not usually the radiologist) must inform the patient and apologise after discussion with an appropriate radiology department representative.²² The discrepancy case can also be submitted to the REALM for discussion, but this does not discharge the duty of candour of the notifier, which s/he should ensure occurs in parallel. The REALM is a completely separate, anonymous process which occurs alongside, but has no direct involvement with, the candour process. Some radiology departments have candour panels or candour meetings in which discrepancies and clinical incidents are discussed to determine if the duty of candour applies. These meetings should not be confused with nor combined with the REALM, in which discrepancies are discussed anonymously for learning only. The differences between the discussion of discrepancies in a candour meeting and in a REALM are outlined in this document (see Appendix 3. Discussing discrepancies: differences between a REALM and a duty of candour process).

For more details on candour please refer to: www.cqc.org.uk/guidance-providers/regulations-enforcement/regulation-20-duty-candour and www.rcr.ac.uk/posts/duty-candour-relation-diagnostic-radiology-position-statement^{20,22}

Introduction

Since the publication of the RCR's *Standards for radiology discrepancy meetings* (2007) and *Standards for learning from discrepancies meetings* (2014), regular discrepancy meetings have been almost universally adopted by radiology departments in the UK.⁵

New name for meetings and for the RCR panel

The RCR recognises that learning is the main outcome following review. Previously these departmental meetings were often called learning from discrepancy meetings (LDMs) or a variety of other names such as errors, discrepancy or educational cases meetings. It has been recognised that the discussion of excellent diagnoses, educational cases and targeted teaching at these meetings can be as valuable as reviewing reporting discrepancies and has a better effect on submission of cases and morale of the participants of the meeting. For this reason, it has been recommended that the title of the meetings should be changed to radiology events and learning meetings (REALMs). In line with this the RCR's Radiology Errors and Discrepancy (READ) Panel and *READ Newsletter* have both also changed their name to Radiology Events and Learning (REAL) Panel and *REAL Newsletter*. As the new chair of REAL, I have been involved in the writing of these guidelines. Moving away from errors and discrepancies and towards events and learning in the name of this meeting and panel should help to move the culture away from 'blame and shame' and towards non-judgemental knowledge sharing and positivity. Encouraging the standardisation of a clear, RCR-endorsed naming of these local anonymous departmental learning meetings will help to prevent confusion between REALMs and other important but separate non-anonymous processes such as SUIs, disciplinary, candour and legal processes.

We have been learning from you

Since the publication of *Standards for learning from discrepancies meetings* in 2014, the RCR has learned much from the radiologists who run, participate in and contribute to these local meetings. These learnings have been incorporated into this set of guidelines. Through the REAL Panel, the intention is to increase interaction with those participating in these meetings in trusts throughout the country. Visiting departments, speaking to radiologists at national meetings and reading the *REAL Newsletter* submissions has highlighted which issues are important at a local level. These include whether cases should be anonymised, how the REALM sits with the duty of candour and SUIs disciplinary and legal investigations, and whether it is appropriate to invite non-consultant colleagues, non-radiologist clinicians or even managers to REALMs. It is hoped that this guidance will address these issues with a consistent and practical approach. We recognise that these guidelines will be interpreted with some variation in different trusts depending on their size, culture and existing successful processes. The REAL Panel plan to increase links with the REALM chairs throughout the UK and hope to liaise with departments around the country to run annual National REAL courses in different trusts utilising the expertise of local radiologists. This should provide a route for continued learning from, dissemination and adoption of best practice from enthusiastic and effective colleagues who are doing great work around the country.

REALM and clinical governance

The REALM plays a crucial role in clinical governance. Alongside other inter-related processes, and as part of a QA programme, the REALM 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 and contribution to the REALM and a note to state that personal reflection on the learning from these meetings has taken place are both categories of evidence which form part of an enhanced appraisal portfolio for revalidation.²³

The REALM must be integrated into the standard for 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 separate processes in place to minimise any potential patient harm
- To have systems in place for shared learning from discrepancies or excellence within a blame-free culture.

Standard 1.**Clinical engagement: All radiologists should attend a minimum of 50% of departmental radiology events and learning meetings (REALMs) and should contribute at least one case a year to their REALM.**

All radiologists should regularly participate in REALMs previously known as learning from discrepancy meetings (LDMs). Individual consultants and staff grade, associate specialist and specialty (SAS) doctors should achieve at least a 50% attendance rate, or virtual attendance rate (three meetings per year). The attendance at the meetings should be recorded and the record should be made available to individual radiologists for use in their appraisal, and to the clinical director. Trusts should take into consideration less than full-time (LTFT) radiologists, radiologists who work split site, off site or dual trust contracts who may find it difficult to meet this requirement. To help with this, efforts could be made to rotate the day of the week the REALM is held in the same way that audit days are often rotated. This should ensure that more LTFT colleagues and those with restrictive job plans are able to benefit from these meetings. Radiologists who cannot attend the REALM should avail themselves of the teaching cases that are distributed by the chair after the meeting. They could then demonstrate in their appraisal that, like those who were able to attend the REALMs, they have reviewed the cases from at least 50% of the meetings privately, reflected on them and made efforts to learn from them.

Each consultant and SAS radiologist should contribute at least one case per year to the chair for discussion which s/he feels is of educational benefit to the department. The number of cases contributed should be recorded for the appraisal process (see Appendix 4. Template correspondence from the chair of the REALM). This will improve inclusivity, engage sub-specialities, give every radiologist in the department a voice and reduce bias and domination of the meeting by a few enthusiastic members. If everyone is engaged, even by contributing one case, the department should feel more cohesive and fairness and teamworking should improve.

Other members of the radiology department such as radiographers, trainees and ultrasonographers should be encouraged to submit cases. Non-radiology clinicians could also submit cases to the chair for consideration. The REALM should be considered an important part of the education of trainees and attendance of and reflection on the meetings should be included in their portfolios.

Members of the radiology department should also record any audit presentations, targeted teaching or other contribution made to the REALM for their appraisal.

Standard 2.**Organisation of meeting: A minimum of six REALMs per year should be held in and facilitated by each trust. These may involve the whole radiology department.**

For clarity and consistency and to bring all the trusts in line with RCR guidance, it is recommended that the radiology departmental meetings where cases are discussed for educational purposes should be renamed radiology education and learning meetings (REALMs). These meetings might currently be called a discrepancy meeting, an educational cases meeting, an errors meeting or a case discussion meeting. However, given the different reasons for discussing discrepancy cases such as candour, SUI, disciplinary and audit, there should be clear demarcation of the meeting during which radiology cases and events are discussed anonymously without judgement for the purposes of learning only. The minimum frequency of REALMs in each trust should be every two months (six per year). Depending on the facilities available and the wishes of the department, the RCR would encourage opening the meeting to trainees, radiographers, ultrasonographers and other relevant support staff, managers and clinicians. This has been found to be beneficial to an open and inclusive environment in the wider radiology department. It should run alongside but should not be replaced by, nor seen necessarily as a replacement for, subspecialty meetings where discrepancies, events and educational cases may also be discussed. These subspecialty meetings may feed into the larger departmental REALM by submitting interesting cases and contributing subspecialty targeted teaching.

Elective clinical sessions should be cancelled where possible to enable full engagement of the members of the department with learning from events and to facilitate individual required attendance standards.

Mandatory training, targeted teaching, external speakers, audit presentations and trainee presentations can be combined with the meeting, but the focus should be education gleaned from actual cases that have been recently reported in the department.

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

- Focusing on shared learning
- Encouraging constructive discussion of/reflection upon contributing factors
- Producing a consensus on structured learning outcomes, learning points and follow-up actions from the meeting as a whole
- Providing a comprehensive method for independent reflection and review of cases for those unable to attend the meeting through learning points, itemised per anonymised case.

Standard 3.

The chair: The chair of the REALM should be appointed and remunerated fairly by the trust and should be able to demonstrate duties performed and output. This should be recorded in the job plan as an additional NHS responsibility.

The success of the meetings will depend, to a large extent, on the chair, who should have a defined role within the trust and should enjoy the confidence of his/her peers. For some departments it may be suitable to have two chairs and other departments may prefer a rota to encourage teamworking and load sharing and to minimise bias (see Appendix 5. Biases). If one chair of the REALM is to be appointed, that individual should be appointed by the trust for a fixed term, renewable by agreement. This position should be open to all radiology consultants and radiology SAS doctors and the process of appointment should be fair, transparent, non-discriminatory and in line with human resources (HR) process in that trust for such positions of responsibility. The British Medical Association (BMA) guidance states:

Additional NHS responsibilities and external duties for consultants in diagnostic radiology

'Additional NHS responsibilities are special responsibilities not undertaken by the generality of consultants in the employing organisation, for example medical management, or clinical tutor/dean activities.

Additional paid duties can be added to the total value of a job plan, or can be undertaken in substitution to other duties by arrangement.²⁴

The RCR regards the chairing of REALMs to be classified for the purposes of job planning as additional NHS responsibility (AR). This post could be a stand-alone post or it could be combined with a suitable management role such as Clinical Governance Lead or Audit Lead depending on the clinical management structure of the trust. The RCR suggests that it would be reasonable for the chair of the REALM to claim at least 0.25 programmed activities (PAs) of AR per week for this post but recognise it could be substantially more depending on individual circumstances. The exact time allocated will depend on many factors including the size of the department, length, maturity and frequency of the meetings, and other activities incorporated into the meetings such as audit, external speakers, consultant meetings and mandatory training. As with all job-planned activities, the chair should be able to negotiate the appropriate time in their job plan meeting as recommended by the BMA and other unions.²⁴ This should include demonstration by way of a work-plan diary, timetable and the written output of the meetings, how many hours per week had been spent on planning, organising and developing the meetings, accepting, assessing and preparing the submitted cases, chairing the meetings, arranging the speakers, venue and lunch as applicable. Evidence should also include the time taken summarising, collating and distributing the written output, both the learning points as well as the annual clinical engagement and attendance data feedback. Keeping a detailed, contemporaneous work-plan diary in order to demonstrate the hours of work done both in job-planned hours and outside (for example during evenings and weekends) is strongly recommended to facilitate these discussions. The chair should have access to appropriate secretarial and administrative support. The chair should ensure submission of at least one of the cases with the most educational clinical relevance per year to the RCR REAL Panel for consideration of publication in the *REAL Newsletter*. This can be done via the RCR website at:

www.rcr.ac.uk/clinical-radiology/being-consultant/read/submit-case

In some trusts, no single individual is identified as the REALM chair and there is a rotating chair. This should ideally include all of the consultants and consultant equivalent grade radiologists to increase engagement and inclusivity, but this may not always be practicable. A rotating chair has many advantages such as involving more members of the department, giving everyone ownership and input and minimising case-selection bias. If no single individual has the additional responsibility and the additional pay for organising these meetings (for example in the case of a rotating chair) that gives the opportunity for everyone who has chaired a meeting to put that fact into their appraisal, their list of supporting professional activities (SPA) in job plan negotiations and into their Clinical Excellence Award (CEA) applications.

Standard 4.

The notifier: The radiologist who has detected a discrepancy or clinical incident (the notifier) has certain duties to record this which all radiologists have, and these should still be carried out regardless of whether or not the discrepancy or clinical incident is submitted to the REALM for anonymous discussion.

The notifier could be a reporter who has noticed a 'good spot' or an interesting or rare case with an educational message. If so, they need only send the case in to the chair for discussion at the REALM, inform the primary reporter for positive peer-to-peer feedback, and take no further action.

If, however, a case involves a discrepancy or clinical incident, the notifier has certain responsibilities as an individual radiologist. In all cases the discrepancy should be recorded (see Appendix 1. Recording second opinions) and the primary reporter should be informed as per RCR guidance.⁴ If the primary reporter is no longer contactable at the hospital (for, example trainee, locum, off work, external reporter or telemedicine reporter) efforts should be made by the notifier to feed back to the original reporter. This will depend on the processes and personnel in the trust, but could involve passing the feedback to one's line manager, clinical governance lead or a member of the corporate governance department to determine how to feedback where possible.

The notifier should then determine if the case is a discrepancy which needs discussion by the candour panel, or an incident which needs to be reported via the trust incident reporting system. If so, it is the responsibility of the notifier to ensure that this is done as per existing duty of candour (DoC) and General Medical Council (GMC) guidelines.²⁵ The duty of candour means that the notifier is obliged to inform the referring clinician if they feel an error has been made and the referring clinician can then determine if significant harm has resulted in which case the duty of candour applies.²⁰ If the notifier is not sure whether the discrepancy is an error or not, the case should be referred to the trust's radiology candour process. The 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.²⁵ It is the responsibility of the notifier to submit the case to the trust incident reporting system or to the candour panel, but the REALM chair may wish to facilitate this process, for example by incorporating a reminder of these duties to the notifier in a standard response to submission (see Appendix 4. Template correspondence from the chair of REALM).

Since all cases discussed in the REALM are anonymised, their discussion at the REALM does not interfere with these processes. They should be discussed at the REALM in the same way regardless of any parallel candour, SUI, disciplinary or legal processes which are occurring simultaneously. This is one of the reasons why anonymity of the cases is so important.

Standard 5.

The cases: Cases should be anonymised and discussed for the purposes of education only. The REALMs should operate alongside but completely separately from candour, SUI, disciplinary or legal processes.

Ideally the REALM should give every radiologist in the department the opportunity to select cases for presentation that are clinically important and have an educational message that would benefit their colleagues. This ethos of shared knowledge should encourage teamworking and ultimately improve performance and outcomes. Cases will be passed to the chair of the REALM from a number of sources including: department QA programmes, double reporting, second look at MDTMs, ad hoc when reviewing previous imaging during reporting or from new clinical or pathological information.

When a departmental member identifies a case they think should be discussed at the REALM they should send the full case details to the chair. The case could be a discrepancy, a 'good spot', a near miss or a communication, systems or procedural event. It may also be a case of clinical interest with an educational message such as a rare diagnosis or an unusual clinical story.

The chair should try to present every case submitted if possible to avoid introducing their own bias (see Appendix 5. Biases). They 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. It is up to the chairs of individual trust REALMs whether these cases are anonymised prior to submission, or if the chair anonymises the cases after they have received them. Ideally the cases should be submitted to the chair anonymised by the notifier with all the relevant information, but this can act as a deterrent to submission of cases, and it is often more convenient for the chair to be able to fully collate the clinical details, previous imaging and prepare the case for presentation before anonymising it. Either way the case must be anonymised by the time it is presented at the REALM.

It may be useful for an anonymous record of the cases discussed to be kept by the chair, for example, to:

- Quantify the output of the meeting
- Present an annual summary if s/he wishes
- Audit the pattern of cases discussed over a period of time
- Identify recurrent themes for future targeted teaching.

This database of cases can be kept in any format, but the identifying details of the patient, notifier and primary reporter should never be shared with anyone except the chair and therefore it is safest for the chair not to keep any such identifiable information. There is no requirement by the RCR to retain a database of cases at all once they have been discussed. Cases with clinically relevant learning points should be forwarded to REAL for consideration for publication in the *REAL Newsletter* for wider dissemination. The RCR would expect at least one case per year per department to be submitted to REAL. As the cases discussed are anonymous, by definition the outcome of the meeting can never be recorded in the patient's notes, unlike the outcome of candour, clinical incidents, disciplinary or complaints processes. If the chair is approached by the trust management to feed back on the outcome of the discussion of any case to inform a candour process, an SUI, disciplinary or legal process this should be refused. It is against the principles of the REALM to break the

anonymity of the cases. The misuse of records of discrepant cases or of the meetings for trust disciplinary processes has the potential to inhibit provision of cases to the meeting, destroy the trust and psychological safety of participants and lead to failure of a safe learning environment in the REALM. As previously mentioned (see Standard 4), if a case involves a discrepancy which is a suspected error or a clinical incident it is the responsibility of the notifier to inform the primary reporter and to submit the case to the trust incident reporting system or the duty of candour process if appropriate. These processes should be adequate for any trust to facilitate the above processes without involvement of the REALM.

Review of the merits of a case for candour should be through a separate confidential candour process which may involve a panel of selected members, not in an open REALM meeting (see Appendix 3. Discussing discrepancies: The difference between a REALM and a duty of candour process). Review of cases for an SUI, disciplinary or legal reason should be carried out confidentially and separately to the REALM. In discussion with a patient in a candour case, the responsible clinician is at liberty to say that the case has been submitted for discussion at the REALM so that the department can learn from any mistakes made. This might be reassuring for the patient and the family as this is often one of their main concerns. However, once the case is submitted and anonymised, whether the case is discussed or not, any details of that discussion cannot be fed back to the responsible clinician or the patient as this would breach anonymity. Other reasons why the RCR recommend anonymity of both reporter and patient in REALM cases is that it encourages submission of cases, increases the feeling of psychological safety and allows impartial, frank discussion without personalisation. In addition, it is accepted best practice for discussions in any open forum to be carried out without identifying patient details. The anonymity of the cases also increases the transparency and inclusivity of the meeting, as attendance by non-clinical staff such as guest speakers, caterers, sponsors, managers, mandatory training personnel, secretarial staff and trainees is less of an issue if neither the notifier, primary reporter nor the patient are identifiable when the cases are discussed. The exception to reporter anonymity is 'good spots', where, with their permission, radiologists responsible for a 'great catch' can be identified and celebrated for excellent radiology at the educational meeting.

Standard 6.

The documentation: Standard emails should be sent to the radiologists involved in the submitted cases prior to discussion. Learning points from the cases discussed should be summarised and disseminated. Attendance and contribution should be recorded and distributed for appraisal.

There are several standard documents which the chair will need to produce and use; suggested templates for these are included as appendices. It may be useful to have a standard form for the submission of cases, but the chair may feel that it is simpler and reduces the friction in the system to allow department members to simply forward the details of the case by secure email. On receipt of a case for discussion at a REALM the chair could send an acknowledgement email to the notifier (see Appendix 4. Template correspondence from the chair of the REALM) checking that they have informed the primary reporter as per RCR guidance and fulfilled their duties with respect to the trust incident reporting and duty of candour process if appropriate.³ It is also best practice for the chair to send a standard 'heads up' email to the primary reporter and any other radiologists involved in the case (see Appendix 4. Template correspondence from the chair of the REALM) so they do not feel 'ambushed' at the meeting when a case they were involved in comes up for discussion. It also affords the primary reporter the opportunity to review the case, reflect on the discrepancy and contribute learning points to the meeting. This does not breach confidentiality as the primary reporter would undoubtedly be able to recognise their own report and remember the case when it was presented anonymously at the meeting. The 'heads up' email is a courtesy which should enhance trust, improve engagement and optimise the learning opportunity. Once the acknowledgement email and the heads up emails are sent, the clinical details of the case should be collated by the chair. The case should be anonymised with respect to notifier, primary reporter and patient and relevant images and notes prepared for presentation at the meeting. So long as no patient or reporter identifying information is displayed, presentation of the cases can be done in any way the chair sees fit, such as showing the picture archiving and communication system (PACS) images, printing a handout or using still images on a computer. There may be instances where author finds it easiest to transfer the images onto a PowerPoint slide with a new case-identifying number and the learning points. This can be convenient as the PowerPoint slide can then be used as the output slide for circulation after the meeting. However, the images will be presented as single slice, a disadvantage compared with reviewing PACS images. An example slide has been included in the appendix, but is just one possible way of presenting the cases and is meant to be helpful, not proscriptive (see Appendix 4. Template correspondence from the chair of the REALM). Learning points should be documented. These slides can then be used as the basis of the formal output of the meeting and should be disseminated to members of the department to provide a comprehensive method of reflection and review of cases. This will also form a useful learning resource for those unable to attend the meeting but who can review the anonymised cases independently.

It is useful for the chair to audit the cases discussed periodically (for example, once a year) documenting key learning and action points, including any recurrent patterns of error or good spots. This review can help guide targeted teaching sessions to focus on areas of repeated problems. It might also highlight special interest areas or modalities which are under-represented at the meetings, so future programmes can be modified accordingly.³² The aim is to demonstrate a departmental process for learning from events, discrepancies and excellence.

Attendance and contribution of participants should be recorded and circulated annually to each consultant and SAS doctor in the department so that it can be used in their appraisal (see Appendix 4. Template correspondence from the chair of REALM).

Standard 7.

Feedback and reflection: Participating radiologists are encouraged to perform private reflection of the cases discussed.

The fact that personal reflection of the cases discussed has taken place should be recorded in the radiologists' appraisal folders in the form of 'I undertook reflection on the summary learning points accruing from the REALM held on dd.mm.yy'. The summary learning points from the whole REALM could be included in the radiologists' appraisal documentation if desired. Subsequent to the Hadiza Bawa-Garba case radiologists are presently advised not to record written reflection on identifiable individual cases.²⁶

Standard 8.**The culture: The chair should ensure a culture of respectful sharing of knowledge with no blame or shame.**

With respect to the conduct of the meeting, the chair will have specific key roles to ensure a successful meeting and should lead by example. The chair must avoid a blame culture at all costs and should always stress the shared learning aspects of the meetings. Honest, consensus-aimed discussion should emphasise the educational rather than judgemental or critical aspects of each case in a non-accusatory, respectful manner. Use of a standard introductory slide (see Appendix 4. Template correspondence from the chair of the REALM) can be useful in this regard.

The chair of the REALM must not be abused, harassed or bullied, nor should they use their position as an opportunity for abuse, harassment or bullying. They should dissuade this behaviour between participants during the meeting and should encourage a culture of mutual respect, shared learning and civil discussion.

The chair will need to maintain the anonymity of the person who entered the case for discussion (the notifier), and the person who issued the imaging report in question (the primary reporter). No identifiable patient details should be included in the discussion and participants should be dissuaded from breaching anonymity during discussions.

The chair must encourage inclusive, constructive discussion involving as many of the attendees as possible and summarise verbally the learning points of each case.

The chair 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 what the learning points are from a case

The type of language used in the meeting is important. Judgemental terms such as 'a terrible mistake', 'I wouldn't have missed that', 'they shouldn't have missed that', 'negligent', 'unacceptable', 'indefensible', and even 'unfortunate' should be avoided. The chair could remind the participants: it might not be your mistake being discussed this week, but every radiologist has a significant error rate, so it might be your mistake being discussed next week. The discussion should be based upon facts, knowledge sharing and recognition of radiological signs rather than opinion. The aim is not to criticise, it is to learn.

Scoring is no longer considered valid.^{6,7,27-31} A greater emphasis is placed on understanding excellence or error to improve radiologist performance.

Auditing of discrepancies or excellent diagnoses over a period of time with reflection and action points provides a platform for learning.^{2,32}

Standard 9.

Links with the RCR: The REALM chair of each trust should be identified to the RCR's REAL Panel as a contact point for exchange of views and with the aim of establishing an inclusive national network of individuals with an interest and experience of radiology events and learning. The chair should ensure submission of at least one case per year for consideration for publication in the *REAL Newsletter*.

The RCR is keen to create a network of members with an active interest in learning from events, discrepancies and excellence. It is also committed to engaging with members with respect to their ideas, experiences, innovations and challenges in this fast-developing area of continuing medical education. To this end the REAL Panel would like to set up a register of the chairs of the REALM in each trust as a contact point for exchange of information. Trusts are also encouraged to submit to the REAL Panel, via their local REALM chair, at least one case per year which is regarded as being of clinical importance and with an educational message worth being shared more widely. These submitted cases will be considered for publication in the *REAL Newsletter* and should be submitted via the RCR website: www.rcr.ac.uk/clinical-radiology/being-consultant/real/submit-case

Conclusion

The RCR appreciates the hard work that radiologists and their colleagues put in every day to produce large volumes of high-quality reporting. As with many clinicians, the feedback radiologists receive is almost always negative. This can be a blow to morale for doctors already working under challenging conditions. Mistakes happen, and when they do the proper processes must be followed to ensure patient harm is minimised and referring clinicians and their patients are fully informed. However, in learning from these mistakes, judgement and blame towards individuals is unlikely to lead to a reduction in errors, a positive working environment or good staff health and retention. Departments throughout the country should benefit from well run, supportive and non-judgemental meetings where interesting cases are discussed in a safe environment without blame. The aim is to learn from both mistakes and excellence; to use those with expertise to educate their colleagues, encourage good team working and raise the quality of radiology reporting. As always, the ultimate aim is improved patient care.

Please send any feedback on this guidance to publications@rcr.ac.uk

This document was approved by the Clinical Radiology Professional Support and Standards Board at their meeting on 20 September 2019.

References

1. The Mid Staffordshire NHS Foundation Trust Public Inquiry. Chaired by Robert Francis QC. *Report of the Mid Staffordshire NHS Foundation Trust Public Inquiry*. London: The Stationery Office, 2013.
 2. Donnelley L, Dorfman S, Jones J, Bissett, GS. Transition from peer review to peer learning: experience in a radiology department. *J Am Coll Radiol* 2018; **15**: 1143–1149.
 3. The Royal College of Radiologists. *Lifelong learning and building teams using peer feedback*. London: The Royal College of Radiologists, 2017.
 4. The Royal College of Radiologists. *Cancer multidisciplinary team meetings – standards for clinical radiologists*, second edition. London: The Royal College of Radiologists, 2014.
 5. Prowse SJ, Pinkey B, Etherington B. Discrepancies in discrepancies meetings. Results of the UK National Discrepancy Meeting Survey. *Clin Radiol* 2014; **69**(1): 18–22.
 6. Larson DB, Nance JJ. Rethinking peer review: what aviation can teach radiology about performance improvement. *Radiology* 2011; **259**(3): 626–632.
 7. National Advisory Group on the Safety of Patients in England. *A promise to learn a commitment to act. Improving the safety of patients in England*. London: NHS England, 2013.
 8. FitzGerald R. Radiological error: analysis, standard setting, targeted instruction and teamworking. *Eur Radiol* 2005; **15**(8): 1760–1767.
 9. Hussain S, Hussain JS, Karam A, Vijayaraghavan G. Focused peer review: the end game of peer review. *J Am Coll Radiol* 2012; **9**(6): 430–433.
 10. Eisenberg RL, Cunningham ML, Siewert B, Kruskal JB. Survey of faculty perceptions regarding a peer review system. *J Am Coll Radiol* 2014; **11**(4): 397–401.
 11. Alkasab TK, Harvey HB, Gowda V, Thrall JH, Rosenthal DI, Gazelle GS. Consensus-oriented group peer review: a new process to review radiologist work output. *J Am Coll Radiol* 2014; **11**(2): 131–138.
 12. Gerada C, Jones R, Wessely A. *Young female doctors, mental health and the NHS working environment*. London: British Medical Journal Careers, 2014.
 13. Esmail A. The prejudices of good people. *BMJ* 2004; **328**(7454): 1448–1449.
 14. Rosenthal MM. Promise and reality: professional self-regulation and problem colleagues. In: Lens P, van der Wal G (eds). *Problem doctors: a conspiracy of silence*. Amsterdam: JOS Press, 1997.
 15. FitzGerald R. Audit, GMC and Serious Professional Misconduct. *Newsletter of The Royal College of Radiologists* 2005; **83**: 11–12.
 16. Ullström S, Andreen Sachs M, Hansson J, Ovreteit J, Brommels M. Suffering in silence: a qualitative study of second victims of adverse events. *BMJ Qual Saf* 2014; **23**(4): 325–331.
 17. No authors listed. After Mid Staffs: the NHS must do more to care for the health of its staff. *BMJ* 2013; **346**: f1503.
 18. Dyer C. GMC and vulnerable doctors: too blunt an instrument. *BMJ* 2013; **347**: f6230.
 19. Gunderman R, Chan S. Knowledge sharing in radiology. *Radiology* 2003; **229**(2): 314–317.
 20. Care Quality Commission. *Duty of candour guidance for health care providers*. London: Care Quality Commission, 2014.
 21. The UK Government. *Health and Social Care Act 2008 (Regulated Activities) Regulations 2014*. London: The Stationery Office, 2014.
 22. The Royal College of Radiologists. *Duty of candour in relation to diagnostic radiology: position statement*. www.rcr.ac.uk/posts/duty-candour-relation-diagnostic-radiology-position-statement
 23. The Academy of Medical Royal Colleges. *The reflective practitioner: guidance for medical students and doctors*. London: The Academy of Medical Royal Colleges, 2018.
 24. www.bma.org.uk/advice/employment/job-planning/job-plan-overview
 25. General Medical Council. *Raising and acting on concerns about patient safety*. London: General Medical Council, 2012.
 26. Academy of Medical Royal Colleges. *The reflective practitioner*. London: Academy of Medical Royal Colleges, 2018.
-

27. Mucci B, Murray H, Downie A, Osborne K. Inter-rater variation in scoring radiological discrepancies. *Br J Radiol* 2013; **86**(1028): 20130245.
28. Bender LC, Linnau KF, Meier EN, Anzai Y, Gunn ML. Interrater agreement in the evaluation of discrepant imaging findings with the Radpeer system. *AJR Am J Roentgenol* 2012; **199**(6): 1320–1327.
29. Semelka RC, Ryan AF, Yonkers S, Braga L. Objective determination of standard of care: use of blind readings by external radiologists. *AJR Am J Roentgenol* 2010; **195**(2): 429–431.
30. Iyer RS, Swanson JO, Otto RK, Weinberger E. Peer review comments augment diagnostic error characterization and departmental quality assurance: 1-year experience from a children's hospital. *AJR Am J Roentgenol* 2013; **200**(1): 132–137.
31. McCoubrie P, FitzGerald R. Commentary on discrepancies in discrepancy meetings. *Clin Radiol* 2014; **69**(1): 11–12.
32. Koo A, Smith JT. Does learning from mistakes have to be painful? Analysis of 5 years' experience from the Leeds radiology educational cases meeting identifies common repetitive reporting errors and suggests acknowledging and celebrating excellence (ACE) as a more positive way of teaching the same lessons. *Insights Imaging* 2019; **10**(1): 68.
33. FitzGerald R. Error in radiology. *Clin Radiol* 2001; **56**(12): 938–946.
34. Berlin L. Accuracy of diagnostic procedures; has it improved over the past five decades? *AJR Am J Roentgenol* 2007; **188**(5): 1173–1178.
35. Berlin L. Radiological errors and malpractice: a blurry distinction. *AJR Am J Roentgenol* 2007; **189**(3): 517–522.
36. Kim YW, Mansfield LT. Fool me twice: Delayed diagnosis in radiology with emphasis on perpetuated errors. *AJR Am J Roentgenol* 2014; **202**(4): 465–470.
37. Jones DN, Thomas MJ, Mandel CJ *et al.* Where failures occur in the imaging care cycle: lessons from the Radiology Events Register. *J Am Coll Radiol* 2010; **7**(8): 593–602.
38. Lee CS, Nagy PG, Weaver SJ, Newman-Toker DE. Cognitive and system factors contributing to diagnostic errors in radiology. *AJR Am J Roentgenol* 2013; **201**(3): 611–617.
39. Forman HP, Larson DB, Kazerooni EA *et al.* Masters of radiology panel discussion: hyperefficient radiology – can we maintain the pace? *AJR Am J Roentgenol* 2012; **199**(4): 838–843.
40. The Royal College of Radiologists. *Standards for the communication of radiological reports and fail-safe alert notification*. London: The Royal College of Radiologists, 2016.
41. Dalla Palma L, Stacul F, Meduri S, Geitung JT. Relationships between radiologists and clinicians; results from three surveys. *Clin Radiol* 2000; **55**(8): 602–605.
42. Quekel LG, Kessels AG, Goei R, van Engelshoven JM. Miss rate of lung cancer on the chest radiograph in clinical practice. *Chest* 1999; **115**(3): 720–724.
43. Shimal AK, Jones R, Vohrah A. *Reporting discrepancies in chest radiographs at Coventry Hospitals, UK: a pictorial review of six years experience*. European Congress of Radiology, Vienna, 2006 (Poster C-166).
44. Armato SG 3rd, Roberts RY, Kocherginsky M *et al.* Assessment of radiologist performance in the detection of lung nodules: Dependence on the definition of 'truth'. *Acad Radiol* 2009; **16**(1): 28–29.
45. Lim KY, Kligerman SJ, Lin CT, White CS. Missed pulmonary embolism on abdominal CT. *AJR Am J Roentgenol* 2014; **202**(3): 738–743.
46. Abujudeh HH, Hani H, Boland G *et al.* Abdominal and pelvic computed tomography (CT): discrepancy rates among experienced radiologists. *Eur Radiol* 2010; **20**(8): 1952–1957.
47. Horton KM, Johnson PT, Fishman EK. MDCT of the abdomen. Common misdiagnoses at a busy academic center. *AJR Am J Roentgenol* 2010; **194**(3): 660–667.
48. Levine CD, Aizenstein O, Lehavi O, Blachar A. Why we miss the diagnosis of appendicitis on abdominal CT: Evaluation of imaging features of appendicitis incorrectly diagnosed on CT. *AJR Am J Roentgenol* 2005; **184**(3): 855–859.

49. Blackmore CC, Terasawa T. Optimizing the interpretation of CT for appendicitis: modelling health utilities for clinical practice. *J Am Coll Radiol* 2006; **3**(2): 115–121.
50. Gangi S, Fletcher JG, Nathan MA *et al*. Time interval between abnormalities seen on CT and the clinical diagnosis of pancreatic cancer: retrospective review of CT scans obtained before diagnosis. *AJR Am J Roentgenol* 2004; **182**(4): 897–903.
51. Briggs RH, Rowbotham E, Johnstone AL, Chalmers AG. Provisional reporting of polytrauma CT by on-call radiology registrars. Is it safe? *Clin Radiol* 2010; **65**(8): 616–622.
52. Zan E, Yousem DM, Carone M, Lewin JS. Second-opinion consultations in neuroradiology. *Radiology* 2010; **255**(1): 135–141.
53. Jordan YJ, Jordan JE, Lightfoote JB, Ragland KD. Quality outcomes of reinterpretation of brain CT studies by subspecialty experts in stroke imaging. *AJR Am J Roentgenol* 2012; **199**(6): 1365–1370.
54. Erly WK, Ashdown BC, Lucio RW 2nd *et al*. Evaluation of emergency CT scans of the head: is there a community standard? *AJR Am J Roentgenol* 2003; **180**(6): 1727–1730.
55. Jarvik JG, Deyo RA. Moderate versus mediocre: The reliability of spine MRI data interpretations. *Radiology* 2009; **250**(1): 15–17.
56. Modic MT, Obuchowski NA, Ross JS *et al*. Acute low back pain and radiculopathy: MR imaging findings and their prognostic role and effect on outcome. *Radiology* 2005; **237**(2): 597–604.
57. van Rijn JC, Klemetsö N, Reitsma JB *et al*. Observer variation in MRI evaluation of patients suspected of lumbar disk herniation. *AJR Am J Roentgenol* 2005; **184**(1): 299–303.
58. Offiah AC, Moon L, Hall CM, Todd-Pokropek A. Diagnostic accuracy of fracture detection in suspected non-accidental injury: the effect of edge enhancement and digital display on observer performance. *Clin Radiol* 2006; **61**(2): 163–173.
59. Krief OP, Huguet D. Shoulder pain and disability: comparison with MR findings. *AJR Am J Roentgenol* 2006; **186**(5): 1234–1239.
60. Zanetti M, Pfirrmann CW, Schmid MR *et al*. Patients with suspected meniscal tears: prevalence of abnormalities seen on MRI of 100 symptomatic and 100 contralateral asymptomatic knees. *AJR Am J Roentgenol* 2003; **181**(3): 635–641.
61. McCreadie G, Oliver TB. Eight CT lessons that we learned the hard way: an analysis of current patterns of radiological error and discrepancy with particular emphasis on CT. *Clin Radiol* 2009; **64**(5): 491–499.
62. Smidt N, Rutjes AW, van der Windt DA *et al*. Quality of reporting of diagnostic accuracy studies. *Radiology* 2005; **235**(2): 347–353.
63. Shewhart WA. *Economic control of quality of manufactured product*. New York: D Van Nostrand Company, 1931. (Reprinted by ASQC Quality Press, 1980).
64. Soffa DJ, Lewis RS, Sunshine JH, Bhargavan M. Disagreement in interpretation: a method for the development of benchmarks for quality assurance in imaging. *J Am Coll Radiol* 2004; **1**(3): 212–217.
65. Borgstede JP, Lewis RS, Bhargavan M, Sunshine JH. RADPEER quality assurance program: A multifacility study of interpretative disagreement rates. *J Am Coll Radiol* 2004; **1**(1): 59–65.
66. Wu MZ, McInnes MDF, Macdonald DB, Kielar AZ, Duigenan S. CT in adults: Systematic review and meta-analysis of interpretation discrepancy rates. *Radiology* 2014; **270**(3): 717–735.
67. Berlin L. Hindsight bias. *AJR Am J Roentgenol* 2000; **175**(3): 597–601.
68. Berlin L. Outcome bias. *AJR Am J Roentgenol* 2004; **183**(3): 557–560.
69. Hulson O and Smith JT. *The discrepancy meeting is dead, long live the educational cases meeting: how we started and ran a successful Governance meeting addressing radiological errors in the largest UK hospital trust*. Radiological Society of North America conference, 2015.
70. Smith JT, Hulson O. *Four things radiologists get wrong when reporting melanoma*. RCR radiology events and discrepancies 2017: 1–6.

Appendix 1. Recording of second opinions

General principles

It is essential that the radiologist who is reviewing images previously reported by a different radiologist and therefore giving a second opinion has access to the original report. It is best practice to provide second opinions on images in the original report. The original reporter will usually have had more time to review and report the imaging and often has access to other relevant local, patient and clinical information. When a second opinion is given, the established value of double reporting should always be recognised.

Similarly, it is well recognised that face-to-face clinicoradiological discussions in an MDTM improve patient care and clinical quality, allowing images to be viewed in a different setting and frequently with additional clinical information. Second opinions significantly altering the content of a report in this setting should be further reviewed in discrepancy meetings as part of the radiology department's clinical governance arrangements.

In the NHS, an increasingly large proportion of cross-sectional and isotope imaging is subject to second opinion at MDT meetings and through audit.

If a radiologist is providing a verbal second opinion on an imaging investigation – particularly if this differs significantly from the original opinion – it is important that this is documented. It is unwise for a radiologist to offer a different verbal opinion to an original report without documentation of such within the original RIS/picture archiving and communication system (PACS). Having no documentation puts referring clinicians in difficulty as the different opinions will be in different systems: the RIS/PACS documenting the original opinion and the patient's notes recording the second opinion.

From a patient safety perspective, it is important that second opinions given in MDT meetings, if they differ significantly from the initial report, are recorded immediately on the RIS. The additional time required for a radiologist to do this should be recognised during job planning as part of a radiologist's commitment to clinicoradiological meetings.

From a clinical quality and patient safety point of view, it is important that if a referrer finds that a radiology opinion does not fit with the clinical picture, he/she must be able to request a second opinion on the same examination without considering any issues of professional competence. The referrer must also know that such a requested second opinion will be officially recorded.

The radiologist providing the second opinion/review should always make the primary reporter aware of such addenda. Where possible, it is good practice to discuss different views and opinions with the radiologist issuing the initial report for the reasons stated above. Such discussions can occasionally be difficult and will always require a sensitive and empathetic approach to stimulate learning and improvement in radiological performance.

Where addenda to primary reports are added by secondary reporters, the RIS should credit the secondary reporter with the appropriate workload unit.

From The Royal College of Radiologists. *Standards for recording of second opinions and reviews in radiology departments*. London: The Royal College of Radiologists, 2010.

Appendix 2. Causes of a reporting discrepancy

It is well recognised that radiology discrepancies occur.^{8,33–36} Causes can be usefully categorised as individual or system related.^{37–40}

Reporter-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 radiologist⁴¹
- 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%. There is markedly varying methodology used and widely differing criteria for defining 'error' in the many studies in the literature. Case-mix, selection bias, imaging modality and inter- and intra-observer variability render standard setting very difficult.^{8,27–29,42–66}

Appendix 3.
Discussing
discrepancies:
differences between
a REALM and a duty
of candour process

	Radiology events and learning meeting (REALM)	Duty of candour (DoC) process
Purpose	To learn from interesting cases, including discrepancies. Focus is on education.	To decide if cases in which a discrepancy has been notified should trigger a DoC process Education is not a principal aim
Anonymity	Anonymous	Not anonymous
Decision-making	Non-judgemental	Judgement (on whether discrepancy was prospectively identifiable) is mandatory
Recording and investigation	Outcomes do not form part of medical record. Cannot be used by the trust to instigate disciplinary or investigative processes (eg complaints, SUIs, coroners' inquests) though anonymised outcomes can be used where learning needs to be demonstrated. No need to inform responsible clinician that the case is being discussed.	Outcomes form part of medical record in the usual manner and therefore could be used by the trust to inform or instigate disciplinary or investigative processes (eg complaints, disciplinary, SUIs, coroners' inquests). In addition, the responsible clinician must be informed if the meeting determines that the discrepancy was prospectively identifiable and a DoC applies.
Professional driver	RCR	GMC, CQC
Frequency	Recommended 6 meetings attended per year	No recommendation
Nature	Inclusive, open meeting may be attended by trainees, non-consultant radiology staff and managers	Confidential, closed, experienced panel only
Quorum	None set	3 consultant radiologists (with relevant expertise) minimum
Target group	Multidisciplinary	Not usually appropriate for anyone but consultants with established expertise

	Radiology events and learning meeting (REALM)	Duty of candour (DoC) process
Sharing	Outcomes widely disseminated for learning	Outcomes confidential and recorded in radiology record using prescribed terminology. If it is decided that the discrepancy was prospectively identifiable and is therefore an 'error', DoC applies and it is for the responsible clinician (not the radiologist) to decide whether this error is of clinical significance and if so to inform the patient.
Crossover	The notifying radiologist should ensure that cases discussed at the REALM where it is considered DoC processes may apply are discussed separately at a DoC meeting (notifying radiologist would normally arrange this as per the usual trust DoC process)	Cases discussed at a DoC meeting where it is considered that the wider department would benefit from the learning from the case could be submitted in the usual manner to the REALM. The patient can be informed that this has been done but no feedback will be given as the case will be immediately anonymised.

Appendix 4. Template correspondence from the chair of REALM

These templates are sample documents based on the REALM documentation at one trust. They are intended as guidance only and do not form part of the College standards, which is why they are included only as appendices. REALM leads may find it useful to use these documents as a guide, but they are also welcome to draw up their own communication documents, which might vary depending on their own trust policies. So long as they meet the standards outlined in this document then any form of communication is acceptable. Similarly, the PowerPoint slides are a guide and not proscriptive. The REALM chair may prefer to present cases on PACS, or as printed handouts or on another computer program; so long as anonymity of primary reporter, notifier and patient are preserved then any presentation method is acceptable.

4a. Template: email response to a submitted case from a notifier

Dear Dr X

Thank you for your submission of a case for discussion at the next REALM.

I note this case is

1. A discrepancy*
2. A good spot
3. Neither a discrepancy nor a good spot but a good educational case
4. A clinical event, SUI or technical or systems error**

This case will be anonymised and presented for discussion at an upcoming REALM and the learning points will be disseminated afterwards.

Yours sincerely

REALM chair

*In the case of a discrepancy with a previous report, it is advised to add a non-judgemental addendum to the primary report such as:

'Please see subsequent CT scan and report dated XX'.

May I remind you that in the case of a discrepancy you have a responsibility to inform the primary reporter in the interests of peer-to-peer learning in line with college guidance. This can be in the form of a non-judgemental email to the primary reporter saying,

'Re CRIS number XXXX. Please see your report of XX date and my subsequent report of XX date.'

If the primary reporter is not contactable within the trust (trainee, teleradiologist, locum etc) please forward the details of the case to the clinical governance lead for radiology. If you and the primary reporter agree that this discrepancy is an obvious error that the majority of radiologists would not have missed (prospectively easily identifiable without the benefit of hindsight) you also have the responsibility to inform the referring clinician in line with duty of candour requirements. You may have already done this (for example in the MDTM) but you should record that you have done so in your report, for example:

'The discrepancy with the previous scan of XX has been noted and discussed with the referring clinician. They will assess whether the duty of candour applies.'

If you are not sure if this discrepancy is an error or not, or you disagree with the primary reporter as to whether this finding was prospectively easily identifiable, the case should be referred to the radiology clinical lead in order to be put to a radiology candour panel. In which case your annotation should read:

'The discrepancy with the previous scan of XX has been noted and referred to the radiology candour panel on XXX date to assess whether this finding was prospectively obvious in the absence of hindsight.'

**May I remind you that, in the event of a clinical event, SUI or technical or systems error, you have a responsibility to ensure that a trust clinical incident form has been filled in.

4b. Template: 'heads up' email to primary reporter(s) prior to meeting

Dear Dr X

The case(s) below will be discussed at the next radiology events and learning meeting (REALM)

CRIS number XXXX

The patient, primary reporter and notifier will not be identified during the presentation, which will be anonymous in line with RCR guidelines. It is being presented because there is thought to be an educational message that might be of value to others. All the radiologists recently involved in the case have been informed, so please do not assume that notification implies criticism. Your involvement may have been very limited. However, as you have been involved, you may wish to re-familiarise yourself with the details of the case before it is discussed in the upcoming meeting.

Regarding feedback, all the radiologists in the department, including you, will be sent an outcome document summarising the discussion of the cases at the meeting, regardless of whether they attend.

As chair of the meeting I will endeavour to ensure that the discussion of this case is performed in an educational, non-judgemental and constructive manner. Please email or speak to me in person after the meeting if you feel that this did not happen. Any feedback will be gratefully received.

Yours sincerely

REALM chair

4c. Template: introductory slide

Welcome to the radiology events and learning meeting date XX

Ground rules

- The cases in this meeting are discussed for the purposes of our learning and education only
- All cases, patient details, primary reporters and notifiers will be kept anonymous (except good spots)
- If you recognise the case please try to maintain the anonymity
- Please be respectful when discussing the work of your colleagues
- Apart from those who do no work we ALL make mistakes – we could be discussing your error next week so do as you would be done by
- Avoid judgemental language and condescension
- If you are an expert in the field then please do not judge us; help us!
- Emphasise the learning points
- How could this be avoided next time?
- Any top tips?
- Advice and encouragement!

Remember

Everyone is entitled to an opinion even if you disagree with it
Allow your colleagues to speak and listen respectfully
Constructive civil discussion please

4d. Example teaching PowerPoint slide for presentation at the REALM

The chair should summarise each case for presentation at the REALM. One way of doing this is on a standard PowerPoint slide - a template and example of which are shown below. This slide can then be used as the output slide for dissemination after the meeting and can also be used as slide to submit the case to REAL Panel for publication in the newsletter. It may be possible to embed these anonymised teaching cases into the PACS system or distribute them in other ways. The important thing is that the case is anonymous, presented in a non-judgmental way and lists the educational or learning points.

PowerPoint summary slide template

Non-identifying educational case
number:
Scenario:
Report:
Diagnosis:
Educational points:

PowerPoint summary slide example

Case number: 524

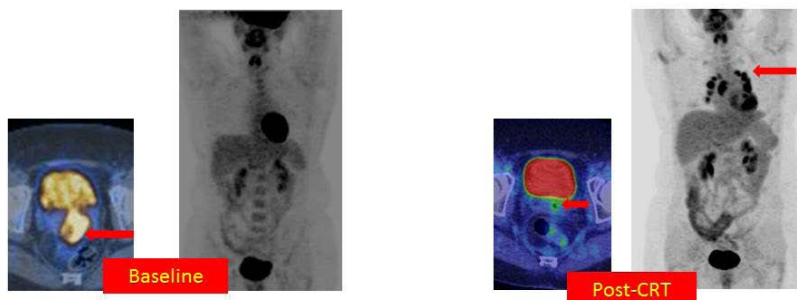
Scenario: Response assessment post-CRT for cervix cancer

Report: New FDG avid mediastinal and hilar nodes consistent with new metastatic disease. Consider FNA correlate

Diagnosis: Sarcoidosis like reaction at EBUS and FNA

Educational points:

1. A benign sarcoidosis-like reaction may mimic metastatic disease (pitfall)
2. Sarcoidosis like reaction present with symmetrical hilar and mediastinal FDG uptake
3. Sarcoidosis like reaction may be present on staging PET or may develop during or post therapy.
4. Sarcoidosis-like reaction has been described now in multiple different cancer sub-types



4e. Template: clinical engagement letter to each consultant at the end of the year summarising participation through the year for inclusion in the appraisal folder

Dear Dr X

I am writing to thank you for your contribution to the REALM in the year Jan xxxx to Jan xxxx.

During this time you attended five out of six meetings. The RCR standard is a minimum of three meetings a year.

You contributed two educational cases for discussion. The departmental standard is a minimum of one case a year.

[Please note: additional information such as audit, mandatory training or teaching input may be included in this summary depending on local trust or departmental standards. For example:]

You presented one audit and one targeted teaching session in the last three years. The departmental standard is a minimum of one audit or teaching session per three years.

I hope that documenting individual attainment of these three standards in this annual letter will help colleagues produce evidence demonstrating their involvement with education, audit and/or governance in their individual appraisals and revalidation. It should also improve the quality of the meeting and encourage inclusivity and equity.

If you feel my records are incorrect please contact me directly. May I remind you to sign the register when you attend and to email apologies when you cannot to ensure these records are accurate. A record of attendance by all radiologists is sent to the clinical lead. Elective work should be cancelled to allow attendance at these meetings. If you have difficulty arranging this with your line manager, please inform me so I can contact them and facilitate your attendance.

Once again thank you for your contribution and I look forward to your ongoing participation next year. The next meeting is on XXX date.

Yours sincerely

REALM chair

Appendix 5. Biases

Sampling bias

It is not possible to uncover all radiology discrepancies, and meetings will review only a percentage of the radiology discrepancies.⁴ This sampling bias will mean that REALMs 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 REALMs 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.^{10,13,14}

Presentation bias

Presentation bias is difficult to avoid as it is frequently necessary to select or focus the task 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 a REALM rather than the setting in which the original report was issued.⁶⁷

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.⁶⁸

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 to 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. In contrast, special cause variation is due to factors that 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.⁶²

Commercial bias

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


Appendix 6. The discrepancy meeting is dead long live the Educational Cases meeting (or REALM)

A poster created by Dr Smith and Dr Hulson is available for reference online: *The Discrepancy meeting is dead long live the Educational Cases meeting (or REALM)*.⁶⁹
www.rsna.org/uploadedFiles/RSNA/Content/Science/Quality/Storyboards/2015/Hulson_QS008.pdf

Appendix 7. Four things radiologists get wrong when reporting melanoma.

Smith JT, Hulson O. Four things radiologists get wrong when reporting melanoma. RCR radiology events and discrepancies 2017: 1–6.⁷⁰
www.rcr.ac.uk/sites/default/files/0.16_read-newsletter_16.pdf

The Royal College of Radiologists
63 Lincoln's Inn Fields
London WC2A 3JW

+44 (0)20 7405 1282
enquiries@rcr.ac.uk
www.rcr.ac.uk
 @RCRadiologists

The Royal College of Radiologists. *Standards for radiology events and learning meetings*. London: The Royal College of Radiologists, 2019.

Ref No. BFCO(20)1

© The Royal College of Radiologists, January 2020.

The Royal College of Radiologists is a charity registered with the Charity Commission No 211540.

For permission to reproduce any of the content contained herein, please email: permissions@rcr.ac.uk

This material has been produced by The Royal College of Radiologists (RCR) for use internally within the specialties of clinical oncology and clinical radiology in the United Kingdom. It is provided for use by appropriately qualified professionals, and the making of any decision regarding the applicability and suitability of the material in any particular circumstance is subject to the user's professional judgement.

While every reasonable care has been taken to ensure the accuracy of the material, the RCR cannot accept any responsibility for any action taken, or not taken, on the basis of it. As publisher, the RCR shall not be liable to any person for any loss or damage that may arise from the use of any of the material. The RCR does not exclude or limit liability for death or personal injury to the extent only that the same arises as a result of the negligence of the RCR, its employees, officers, members and Fellows, or any other person contributing to the formulation of the material.

