Guidelines for the Implementation of a National Quality Assurance Programme in Radiology - Version 2.0

Developed by

The Working Group, National QA Programme in Radiology,
Faculty of Radiologists,
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FOREWORD

Recent reported cases of cancer misdiagnoses have reaffirmed the critical role of Quality Assurance (QA) in the delivery of patient care. The highly professional work of all Radiologists in Ireland is commended but we are cognisant that Radiology like many diagnostic services involves decision making under conditions of uncertainty and a certain degree of error is inevitable.

Few formal measures are currently in place to reassure the public that error is kept to an absolute minimum and few national benchmarks for key aspects of diagnostic services are currently in place to measure performance. Recognising the importance of these elements, the National Quality Assurance Programme in Radiology is led by the Faculty of Radiologists, Royal College of Surgeons in Ireland (RCSI) in collaboration with the National Cancer Control Programme (NCCP), the HSE’s Directorate of Quality and Clinical Care and the Royal College of Physicians of Ireland (RCPI).

The objective of this QA programme (combined for diagnostic and interventional radiology) is to provide guidelines for practical and implementable QA measures, which, in conjunction with existing local quality systems, will enable each hospital to monitor and evaluate their own performance in an effort to improve patient safety. These guidelines have been developed following consultation with Radiologists within the Faculty and in a number of pilot hospitals. International QA standards and guidelines have been reviewed and adapted for this QA programme. The Faculty has made a number of recommendations within the guidelines and will assist in their phased implementation. These recommendations include the quality activities that should be carried out and how to conduct activities. Key quality indicators have been identified to collect QA data. As the data matures, each hospital will be able to monitor its own performance and compare it to the aggregate national performance and intelligent targets to be set by the Faculty. The type of data collected will provide key evidence of quality and completeness of the programme and endeavour to contribute to the continuance of the programme.

The Faculty of Radiologists, RCSI, accepts that this QA programme is an evolving process and that this document will require regular review. It is intended that the guidelines will be reviewed on an annual basis by the working group and approved by the Faculty of Radiologists and the Steering Group.

The views of the funding body, NCCP, have not influenced the content of the guidelines and there are no competing interests within the guideline development working or steering group members.
INTRODUCTION

Radiology, like many diagnostic services involves decision making under conditions of uncertainty and therefore cannot always produce infallible interpretations/reports. Few formal measures are currently in place in Ireland to demonstrate and reassure the public that Radiology professionals practice to the highest standards and that error is kept to an absolute minimum. Recent reported cases of cancer misdiagnoses have reaffirmed the critical role of QA in the delivery of high quality patient care. Consequently, the Faculty of Radiologists, RCSI, has undertaken the development of a National Quality Assurance (QA) Programme in Radiology.

The fundamental objective of the rollout of this QA Programme is to promote patient safety and enhancement of patient care with accurate, timely and complete Radiology diagnoses and reports. Access to diagnostic radiology and interventional radiology services is for all patients and therefore the benefit to improvements in patient safety through this QA programme will be for all population age and gender groupings.

This document provides guidance to Radiologists on the implementation of a QA programme in Radiology. Outlined within is a set of key quality activities and associated quality performance indicators. It is focused on the work of the Radiologist, by which a Radiology Department can monitor its own performance and, where necessary, initiate improvement. It will provide recommendations for how to carry out and measure each quality activity.

Local Quality Management Systems (QMS) should be in place to monitor, control and improve quality. A Quality Committee should be established within each Radiology Department to ensure routine review of quality data and to initiate improvements where required for both diagnostic and interventional radiology. This Quality Committee should work also with the Hospital Quality Structure.

Clinical Audit

As part of the enactment of Section 11 of the Medical Practitioner Act 2007, participation in clinical audit is now required for all registered medical practitioners. By May 2011, medical practitioners must enroll in a professional competence scheme and engage in professional competence activities. It is proposed in the Act that all Doctors should engage in clinical audit, and at a minimum participate in one audit exercise annually. The Act recommends that doctors spend a minimum one hour per month in audit activity.

The Faculty of Radiologists, RCSI, will facilitate the formalisation of audit activities for Radiology by:

a) Including regular audit activity as part of the Radiology Registrar Training Programme
b) Encouraging health service providers to resource the audit process with both personnel and time
c) Encouraging Radiology departments to undertake standard radiology audit cycle menus annually (e.g. Royal College of Radiologists Audit Live) and
d) Organising national audits as necessary

Clinical audit is a quality improvement process and this document recommends a number of clinical audit activities in which a Radiology Department should be engaged.
Context of the QA Guidelines

The scope of this programme has been defined within the context of other patient-safety focused reports and initiatives (e.g. instigated by the HSE and more recently the Directorate of Quality and Clinical Care: Report of the Commission on Patient Safety and Quality, Safety and Risk Management Framework). These QA guidelines will improve safe and effective patient care, using performance indicators to support system quality initiatives initially on the work of the Radiologists.

There are currently other programmes planned by different bodies which focus on quality and clinical care in radiology outside of this QA Programme which include:

- Access to Diagnostic Imaging: DQCC Programmatic Approach (ref HSE National Service Plan 2010)
- Incident Management: Quality and Risk Framework, DQCC (ref HSE National Service Plan 2010)
  - Standardised complaint and incident investigation process;
  - Incident Management Policy and Procedures Updated
  - Statutory Complaints framework implemented
- Incident Reporting; Medical Exposure Radiation Unit under SI 478
- European Commission Guidelines on Clinical Audit for Medical Radiological Practices 2009 (all aspects of Radiology services)
- Requirements for Clinical Audit in Medical Radiological Practices (Diagnostic Radiology, Radiotherapy and Nuclear Medicine) ; HSE and Faculty of Radiologists
- Radiology Programme, DQCC in conjunction with the Faculty of Radiologists encompassing clinical care pathways
- “Discrepancies and Errors” paper developed by the Faculty of Radiologists, RCSI, in conjunction with the National Incident Management Team of the HSE, the Dept. of Health & Children and HIQA. This is a separate initiative aimed at developing procedures for addressing radiological discrepancies if and when they arise. The Faculty’s QA programme is designed, among other functions, to minimise the likelihood and impact of discrepancies.
- The Implementation Committee of the Hayes Report Review of Radiology Reporting and the Management of GP referral letters at Tallaght Hospital November 2010

The Faculty recognises that there are other key components of a Radiology Department QA Programme, such as quality of radiographic studies, appropriateness of examinations, equipment maintenance programmes and protocols. The Faculty will address how best to incorporate these elements in a QA programme in a later phase of the current project.

Time and Resources

While the value of QA must be acknowledged, it is inevitable that this process will result in loss of some clinical activity.

Each department should establish a QA committee and should identify a quality co-ordinator and administrative support.
The Faculty, supported by HSE ICT, is committed to the development of an IT solution which will assist the recording, collation, analysis and reporting of data pertaining to these guidelines in a manner which minimises the impact on service delivery. This IT solution, co-ordinated with a Faculty IT working subgroup, will strive to satisfy the needs of as many participating departments as possible. The programme will be designed to integrate fully with existing and emerging IT systems in Radiology.

Additionally, adequate resourcing by hospital management is essential to ensure successful implementation of this QA programme at local level beyond IT. Radiologists should work with hospital management to ensure that the agreed QA processes are appropriately resourced. It is noted that in other jurisdictions, it is common to have one mandatory afternoon session every two months for all Radiologists in the department devoted only to QA activities as described in this guideline. The Faculty recommends such an approach.

**Professional Competence Scheme**

A fundamental element of a QA programme is that all Consultant Radiologists providing services in the Irish healthcare environment should be on the Specialist Register of The Medical Council, and be registered for, and fully participate in a Faculty-provided Professional Competence Scheme also known as Continuing Professional Development (CPD) programme, as required by Section 11 of the Medical Practitioner Act 2007. While these statutory requirements are not specifically included in this QA programme, they form a foundation upon which this programme is built. The intention behind this QA programme is to provide recommendations for QA, in addition to (but not replacing) each individual's responsibility to manage their own continuing medical education and professional development.

The Faculty has developed a separate document on the Professional Competence Scheme which is available on the Faculty website [http://www.radiology.ie/education/cme.htm](http://www.radiology.ie/education/cme.htm).

### 1. DIAGNOSTIC RADIOLOGY GUIDELINES

#### 1.1. Peer Review

Peer review is a very useful mechanism for evaluating diagnostic accuracy of Radiologists’ reports. Accuracy of image interpretation by Radiologists is crucial to patient management. As Medical Registration requires that a doctor’s performance be continuously assessed in as objective a way as possible (CPD programme), the practice of peer review should be encouraged to maintain good and safe patient care.
1.1.1 Retrospective Peer Review

This is a process of evaluating diagnostic accuracy of the original report.

- Occurs during the routine interpretation of current images. During interpretation of a new examination, when there are prior images of the same area of interest, the interpreting Radiologist can form an opinion of the previous interpretation of another Radiologist while interpreting the new study.
- Evaluating previous interpretations of another Radiologist can also occur during routine preparation of cases for discussion at MDT.
- The reviewing Radiologist should score and record the level of agreement with the original reporting Radiologist’s diagnosis. If the opinion of the previous interpretation is scored, a peer review event has occurred. The report of the previous interpretation is scored by the reviewer using the suggested Peer Review Score scale shown in Table 1.
- Departments should try to Peer-Review a representative number of cases across a range of modalities.
- Focused Peer Review: Consideration should be given to this form of peer review where a specific set of cases is retrospectively reviewed against a set of verified reports.

Key Quality Indicators

- Number of accession numbers reviewed (expressed for each modality and accession number type and as a % of total accession numbers for each modality)
- Number of accession numbers referred to discrepancy meetings (expressed as a % of total cases reviewed, by modality.)

1.1.2 Prospective Double Reporting

Double Reporting is where a consultant Radiologist seeks a second opinion from another consultant Radiologist within his/her department on a particular case prior to authorisation. Generally a Radiologist should seek a second opinion if there is any doubt about the correct diagnosis. Radiologists should record the involvement of colleagues, with their agreement, in the Radiology report.

Key Quality Indicators

- Number of accession numbers double reported (expressed for each modality and as a % of total accession numbers for each modality)

1.1.3 Communication of Outcome:

- Clinically significant discrepancies should be submitted to the local discrepancy meeting for review for validation and appropriate action.
- Local policies and procedures should be in place to deal immediately with significantly discrepant peer review findings (Confidential feedback to the original reporter should be provided if a discrepancy has occurred).
### Table 1: Scoring for Peer Review Score Table (adaption of RADPEER Scoring Language)

<table>
<thead>
<tr>
<th>Score</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Concur with interpretation</td>
</tr>
<tr>
<td>2a</td>
<td>Minor discrepancy – no further action</td>
</tr>
<tr>
<td>DM</td>
<td>Discrepancy in interpretation &lt;br&gt;- Refer to Discrepancy Meeting (DM) for RadPeer Scoring and teaching points</td>
</tr>
</tbody>
</table>

### Table 2: RADPEER Scoring Language (for Discrepancy Meetings only)

<table>
<thead>
<tr>
<th>Score</th>
<th>Meaning</th>
<th>Optional</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Concur with interpretation</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Discrepancy in interpretation &lt;br&gt;- Diagnosis not ordinarily expected to be made (understandable miss)</td>
<td>a. Unlikely to be clinically significant  &lt;br&gt;b. Likely to be clinically significant</td>
</tr>
<tr>
<td>3</td>
<td>Discrepancy in interpretation &lt;br&gt;- Diagnosis should be made most of the time</td>
<td>a. Unlikely to be clinically significant  &lt;br&gt;b. Likely to be clinically significant</td>
</tr>
<tr>
<td>4</td>
<td>Discrepancy in interpretation &lt;br&gt;- Diagnosis should be made almost every time</td>
<td>a. Unlikely to be clinically significant  &lt;br&gt;b. Likely to be clinically significant</td>
</tr>
</tbody>
</table>

### 1.2. Multi disciplinary Team Meetings

The concept of Multidisciplinary Team (MDT) meetings has formed an essential part of the clinical care of patients with cancers, suspected cancer or other clinical conditions and it is becoming increasingly critical that all such patient cases be discussed at such team meetings. It is clear that patient care benefits significantly from a multidisciplinary team approach, and Radiologists should embrace this fully in their own hospitals. Radiologists are in a key position to participate fully in such meetings, and play an important role in patient management. It is recognised that the consultant Radiologist’s time required to plan and prepare for such meetings will be significant, and the time for such preparation should be allowed during normal working hours.

#### Responsibility of MDT Coordinator

It is recognised that a key role is played by the MDT coordinator. It is recognised that such resources are not in place in most hospitals in Ireland, at present, and that clinicians working in MDT groups are frequently working under considerable time and resource constraints. This should be corrected in order that a full MDT capability is possible to enhance patient outcomes. This role may need to be supplemented by an MDT secretary, but the MDT Coordinator should certainly be a person of sufficient stature and clinical experience to perform a high quality liaison role within the group. It is this person’s responsibility
- To organise MDT meetings and determine cases for review.
• To prepare and disseminate all images and reports to the named lead Radiologist in a timely fashion at agreed intervals prior to the meeting. It is not appropriate to request ad hoc reviews of imaging outside of the locally agreed interval.

• To record the clinical decisions made by the MDT group, whether this is done in note form or electronically and the record of all meetings kept and distributed to all members of the group within a timely period after the meeting has been completed.

Process

• In each department providing such MDTs, and in particular disciplines, a named lead Consultant Radiologist and a deputy Consultant Radiologist, both of whom have significant interest in the discipline, should be named. It is hoped that such lead Radiologists would have the primary interest in the imaging discipline within their own departments. The primary role of the named lead consultant Radiologist is in the prior review of all the appropriate imaging, reconciling any discrepancies noted prior to MDT, organising the issuing of an addendum report if required, and attending and providing a robust radiological opinion at MDT.

• The review of a case by the lead Radiologist will be performed with respect to the issue being discussed at the MDT meeting and not other issues raised by the reporting Radiologist in the initial report.

• The named lead consultant Radiologist is not responsible for clinical follow-up.

• The original reporting Radiologist has primary responsibility for the full report of the study.

• It is recognised that differences of opinion between the lead Radiologist in the MDT and the original reporting Radiologist may arise due to additional information becoming available at the time of the MDT which is subsequent to the initial imaging. Many of these differences of opinion arise because the MDT Radiologist is in possession of the entire clinical facts, for example, additional supportive reports, studies and pathology reports, relating to the patient care, this may not have been the case in respect of the original reporting Radiologist.

• If, in light of MDT discussion, a discrepancy has been noted, consideration should be given by the named lead consultant Radiologist to inform the original reporting Radiologist. Additionally, all discrepancies should be discussed at the departmental discrepancy meetings.

• If the discrepancy is significant enough to impact on clinical care, a discussion between the patient and clinician in this regard may be appropriate, or if deemed necessary with the Radiologist through consultation with the clinical team.

Key Quality Indicators

• Number of conferences held

• Number of patients reviewed at MDT (expressed as a % of total patients)

• Number of patients with disagreement (expressed as a % of total patients reviewed)
  o Disagreement due to new clinical information (expressed as a %)
  o Disagreement due to discrepancy with Original Radiology Diagnosis (expressed as a %)

1.3 Discrepancy Meetings

The purpose of discrepancy meetings is to validate reported discrepancies and to facilitate collective learning from Radiology discrepancies and errors, and thereby improve patient safety. The process should be seen as educational for all attendees and not as an opportunity for denigration of another’s performance. It must be recognised by all involved that accession
numbers discussed in discrepancy meetings do not form a statistically significant sample, and represent only a small part of any individual’s practice.

General
- There should be a supportive process within departments if concerns are raised about repeated lapses in performance, such that the individual has the opportunity to discuss these, and take steps to put them right.
- There have to be mechanisms within the employing authority to ensure that when errors are consequent upon process or system problems, the will and the resources exist to rectify the causative factors.
- There must be a robust process for critical incident reporting.

Convenor:
- Should be selected by, and have the confidence of his/her peers.
- There should be a formal process for Convenor selection, for a fixed term.
- Convenor should have sessional time available to collect cases and prepare reports.
- Needs to avoid blame culture and always stress mutual learning aspect of meetings.
- Needs to ensure anonymity of original reporter and person who submitted case.
- Responsibility of Convenor- (hospital management to be informed)
  - The Convenor acts as a facilitator only and does not take clinical responsibility for any case, this rests with the original reporter in the normal clinical pathway.
  - The discrepancy meeting is a teaching and learning forum for quality assurance and has no direct link with the clinical management of a particular patient.
  - Radiology departments should ensure that procedures are in place that ensures that any discrepancy is dealt with by the original reporting radiologist immediately on being discovered and that the appropriate clinicians are informed as dictated by the clinical situation.

Case collection:
- Should be easy for individuals to submit cases.
- Should be anonymous e.g. Locked box for paper submission (with standard case submission form), discrepancy files on PACS.
- Centrally-placed “discrepancy book” is not advised, because of confidentiality issues.
- Non-Radiologist clinicians should also be able to submit cases.
- Discrepancies of score above 2a discovered as part of MDTs, peer review process and audits should be submitted for review at discrepancy meetings.

Conduct of Meeting:
- Minimum frequency should be at least every two months.
- Bias is inherent in this process and steps should be taken when possible to reduce this.
- Convenor should present images with only the original request details and images available to the original reporter and where possible patient and consultant ID should be anonymous.
- Attendees may be asked to commit their opinion on paper (this can be time-consuming), or honest, consensus-aimed discussion can be fostered.
- All attendees should contribute as much as possible, and attendance should be mandatory for all departmental radiologists.
- Having the additional clinical information available may facilitate further discussion.
- Consensus should be arrived at, where possible, as to whether an error has occurred and on the associated clinical significance.
- Learning points and action points (if any) for each case should be discussed and agreed, and formally recorded.
• Meeting records should also include all “missed” diagnoses on images that, for whatever reason, were not reported at all.
• Meeting records and outcomes should not be subject to legal discovery.

Communication of outcome:
• Confidential feedback to the original reporter (even if the individual doesn’t work in the hospital, e.g. rotating SpR, teleradiologist) should be provided by the Convenor on a standardised feedback form (refer to appendix II), if an error has occurred, with a summary of the discussion at the meeting
• If discrepancy/error has clinical implications for the patient, this should be communicated to the referring clinician by the Convenor. In the majority of cases, this will already have occurred, given that identification of a discrepancy has led to the case’s inclusion in a meeting
• Dissemination of lessons learnt – summarised agreed learning points from the meeting should be circulated to all in the Radiology department to ensure information sharing and learning. Nationwide dissemination of specific lessons learnt at a national level could be channeled through the QA Programme and Faculty office.

Key Quality Indicators
• % Attendance
• Number of accession numbers reviewed (expressed as a percentage of total workload)
• Number of accession numbers reviewed by source: Peer Review, MDT, other
• Number of accession numbers with a score of 2b (expressed as a percentage of total workload)
• Number of accession numbers with a score of 3b (expressed as a percentage of total workload)
• Number of accession numbers with a score of 4b (expressed as a percentage of total workload)

See Table 2: RADPEER Scoring Language in section 1.1

1.4 Communication of Unexpected Clinically Significant, Urgent and Critical Radiological Findings

Communication of critical, urgent and clinically significant unexpected radiological findings is an important patient safety issue. It is recommended that a clear pathway for communicating critical, urgent and unexpected clinically significant findings between Radiology departments and referring clinicians is defined. It is recognised that the processes for communication will be different in each hospital depending on the IT infrastructure and communication systems. It is recommended that each hospital/radiology department, in conjunction with the referring clinicians and hospital management, establish a local policy that clearly defines the processes for communication, and the responsibilities of the radiologists, the referring clinicians and hospital management. The policy will need regular updating as communication and IT structures evolve.

It is recommended that any department policy for communication of unexpected clinically significant, urgent and critical findings contain the following elements:

Definitions
The following are recommended definitions. It will be a matter of local policy and professional judgment on the part of the reporting Radiologist when additional steps need to be taken to supplement the normal systems of reporting to referrers.
• Critical findings – Where emergency action is required as soon as possible.
• Urgent findings – Where medical evaluation is required within 24 hours.
• Clinically significant unexpected findings – These are cases where the reporting Radiologist has concerns the findings are clinically significant for the patient and will be unexpected. The decision will require professional judgement on the part of the Radiologist and should be made in conjunction with the clinical details on the request.

The more detailed definitions for the communication of unexpected critical, urgent and significant results are set out below. The Faculty QA Guidelines set these out on the basis of recommendations for local policies.

CRITICAL RESULTS

A. Definition
Critical Results are any new or unexpected findings on an imaging study that suggest conditions that are life-threatening or would require an immediate change in patient management. The following six findings are always defined as Critical Results:
* tension pneumothorax
* evidence of ischemic bowel
* intracerebral haemorrhage
* leaking or ruptured aortic aneurysm
* significantly misplaced tubes or catheters
* unstable spine fracture

B. Requirements for Communication
Critical Results require immediate, interruptive communication to the ordering clinician, a covering clinician or other care team member who can initiate the appropriate clinical action for the patient. Additional details are as follows:
* the communication must be made via a live conversation within 60 minutes of the time that the finding was noted
* the communication must be from the radiologist to either a responsible clinician or other caregiver
* if the primary contact cannot be reached in a timely fashion, a defined escalation process must be in place to assure that the communication occurs within 60 minutes

When the interpreting radiologist has specific knowledge that a clinician or other caregiver who is responsible for the patient is aware of the Critical Results (either by prior communication with the responsible clinician, or by identification of a note by the responsible clinician regarding the imaging findings) this communication protocol need not be followed. In such a case, the interpreting radiologist must document in the final radiology report the name of the clinician or caregiver who was aware of the Level 1 Results and the manner in which he/she became aware.

C. Requirements for Documentation
The details of the communication of Critical Results must be clearly documented in the final radiology report, including:
* date and time of the communication
* name of the individual who communicated the Critical Results
* name of the individual who received the Critical Results
A sample statement might read: “These findings were communicated by Dr. [Full name] to Dr. [Full name] at 3:15 PM on Monday, February 2, 2012”. Documentation of Critical Results communication in the final radiology report should be constructed so that it is possible to determine the amount of time that elapsed between the observation of the Critical Results and communication of the Critical Results to the responsible caregiver.

D. Monitoring and Compliance

Each radiology department will monitor and measure compliance with the standards for non-routine communication of Critical Results by reviewing the equivalent of one full (non-weekend) day's worth of final radiology reports each quarter. The review should be completed by the department chair, division heads, or their designees. The results of this review should be reported to Radiology departments, and should include the following:

* the total number of reports reviewed
* the number of reports that included Critical Results
* the number of reports in which Critical Results were included where communication was handled and documented according to the standards described in this document

The department should take appropriate actions to assure adherence to the standards.

URGENT RESULTS

A. Definition

Urgent Results are any new or unexpected findings on an imaging study that suggest conditions that could result in mortality or significant morbidity if not appropriately treated urgently (within 2-3 days). Examples of Level 2 Results include: a new or unexpected intra-abdominal abscess; an impending pathological hip fracture.

B. Requirements for Communication

Urgent Results require notification of the ordering clinician or other licensed caregiver who can initiate the appropriate clinical action for the patient.

* the communication must be made within 24 hours of the time that the finding was noted
* the communication must be from the radiologist to either a responsible physician or other licensed caregiver

* if the communication is not via a live conversation, it should be via an alternative method that is approved by the institution and that permits accurate documentation and auditing
* if the primary contact cannot be reached in a timely fashion, a defined escalation process must be in place to assure that the communication occurs within 24 hours

When the interpreting radiologist has specific knowledge that a clinician or other licensed caregiver who is responsible for the patient is aware of the Urgent Results (either by prior communication with the responsible clinician, by use of an alternative communication method that complies with institutional policies and procedures, or by identification of a note by the responsible clinician regarding the imaging findings) this communication protocol need not be followed. In such a case, the interpreting radiologist must document in the final radiology report the name of the clinician or licensed caregiver who was aware of the Urgent Results, and the manner in which he/she became aware.

C. Requirements for Documentation

The details of the communication of Urgent Results must be clearly documented in the final radiology report or another auditable medium.
Documentation should include:
* date and time of the communication
* name of the individual who communicated the Urgent Results
* name of the individual who received the Urgent Results

SIGNIFICANT AND UNEXPECTED RESULTS

A. Definition
Significant and Unexpected Results are any new or unexpected findings on an imaging study that suggest conditions that could result in significant morbidity if not appropriately treated, but are not immediately life-threatening. Examples of Significant and Unexpected Results include: a lung nodule or a solid renal mass.

B. Requirements for Communication
Significant and Unexpected Results require notification of the ordering clinician who can initiate the appropriate clinical action for the patient.
* the communication must be made within 6 days of the time that the finding was noted
* the communication must be from the radiologist to either a responsible clinician or other licensed caregiver
* if the communication is not via a live conversation, it should be via an alternative method that is approved by the institution and that permits accurate documentation and auditing
* if the primary contact cannot be reached in a timely fashion, a defined escalation process must be in place to assure that the communication occurs within 6 days
When the interpreting radiologist has specific knowledge that a clinician or other licensed caregiver who is responsible for the patient is aware of the Significant and Unexpected Results (either by prior communication with the responsible physician, by use of an alternative communication method that complies with institutional policies and procedures, or by identification of a note by the responsible clinician regarding the imaging findings) this communication protocol need not be followed. In such a case, the interpreting radiologist must document in the final radiology report the name of the clinician or licensed caregiver who was aware of the Significant and Unexpected Results, and the manner in which he/she became aware.

C. Requirements for Documentation
The details of the communication of Significant and Unexpected Results must be clearly documented in the final radiology report or another auditable medium. Documentation should include:
* date and time of the communication
* name of the individual who communicated the Significant and Unexpected Results
* name of the individual who received the Significant and Unexpected Results

Process
- Define acceptable mechanisms of communication based on the degree of urgency of the findings and the local resources. For critical findings, typically a direct vocal communication of results may be required. For less urgent reports individual hospitals may permit other mechanisms of reporting, for example electronic mail, fax or a ‘flagging’ mechanism on an electronic patient record. The mechanism chosen must ensure that the clinician is informed in a timely manner. The process should make it clear to the Radiologists what mechanism of communication is to be used in each degree of urgency.
• Identify clearly the responsibilities of personnel, other than Radiologists, who may be integral to the communication process.
• Define a mechanism whereby both the sending of the critical, urgent or unexpected clinically significant report and the acknowledgement of its receipt is recorded (closing the loop). This system should highlight reports that have not been reviewed within their agreed timeframes as per local policy. The mechanism should contain an appropriate escalation policy if it is not possible to notify the referring clinician within the timeframe determined by the hospital policy. For example, if a given consultant has failed to respond within a timeline, the Radiologist should inform his/her Clinical Director.
• Should be subject to audit, transparent and clear.

Responsibilities

Consultant Medical Staff:
• Consultant medical staff maintains responsibility for ensuring that team members are aware of the hospital/radiology communication policy and that it is implemented appropriately.

Referring Clinicians:
• Maintain the responsibility to read and act upon all radiology reports for investigations which they generate. A recognised procedure to ensure all results are checked should be included in the protocol.
• Must ensure their contact details are clearly identified on the request form
• Are responsible for adhering to the procedural steps of the policy
• Ensure that they are ready at all times to receive critical, urgent and unexpected clinically significant communications by the mechanisms agreed by the hospital in agreement with the clinicians or to delegate this responsibility to some other person.
• All critical, urgent and unexpected clinically significant finding reports must be notified by the delegated team member(s) to the consultant.

Reporting Radiologists:
• Maintain responsibility for ensuring that critical, urgent and clinically significant unexpected radiological findings are reported and available to the referring consultant or delegate in an agreed timeframe. Confirmation must be received e.g. if the communication is by voice mail, email or sms, the communication is not legally deemed to have occurred until an acknowledgement is received. This should be done in a timely fashion as determined by the agreed protocol. The protocol should include the documentation of a register of cases and close out confirmation. It is acknowledged that the support of the referring clinicians is required and the Faculty recommends that individual Radiology departments consult with the referring clinicians for the protocol.

Hospital Management:
• Should ensure appropriate resources are in place to achieve compliance with the policy. This may need the development and provision of appropriate IT support.
• Should ensure appropriate resources are in place to ensure audit of the policy.
• Should ensure governance structures are in place to allow development and review of the policies.

Key Quality Indicators
• Number of cases of unexpected significant radiological findings (expressed as % of total cases)
• Number of acknowledged communicated cases of unexpected significant radiological findings (expressed as % of total cases)

1.5 Focused Audit

Currently ad hoc audit is a frequent activity in many Radiology Departments but may not be recorded in a formalised manner or credit given for participation. As part of the enactment of Section 11 of the Medical Practitioner Act 2007, participation in clinical audit is now required for all registered medical practitioners. Clinical audit should be conducted in all aspects of Radiology services covering structure, process and outcomes. Routine focused audit of report turnaround time and report completeness should be conducted. Local protocol will determine what other audit(s) to conduct, frequency of audit(s) and number of cases to be considered. As far as possible the audit cycle should be completed through the implementation of change and the assessment of improvements made.

The Royal College of Radiologists (UK) has an extensive list of audit recipes which could assist radiology departments in the selection of audits Link to RCR Audit Live.

Key Quality Indicators

• Number of Audits
• Name of Audit
• Audit Type
  Individual can be divided into the following categories:
  o Structure
  o Process
  o Outcome
• % of Audits with Audit Cycle complete
• % of Audits cancelled

1.6 Report Turn Around Time (TAT)

Report turnaround time is considered a critical element of quality because of the impact on clinical management of patients. Quality patient care can only be achieved when study results are conveyed in a timely fashion to those ultimately responsible for treatment decisions. Radiologists play an important role in ensuring the timely reporting of studies but it must be acknowledged that report turnaround time has a number of influencing factors including Radiologist staffing numbers, clerical staffing numbers, staff efficiency, voice recognition capability, case complexity and IT infrastructure. The definition of report Turn Around Time (TAT) is the time from when the image is made available to the Radiologist, that is the exam is complete and the image made available for interpretation, to the time the report is finalised.

Process

• Typically, a report is dictated at the completion of a radiologic examination, subsequently transcribed and either entered directly into a computer network or printed. Finally, it is verified and signed by the radiologist.
• As a minimum departments are recommended to monitor overall report turnaround time.
• Overall Report turnaround time is calculated from the time the imaging is made available to the Radiologist to the time the report is sent to the requesting clinician. Turnaround time calculation is based on working days and does not include weekends or bank holidays.
• It is recommended that departments collate all cases into the following recommended subgroups, measure and analyse TAT, and report by subgroup classification. Subgroups could be formed on the basis of case turnaround time priority e.g.
  o {Subgroup A} – {In-patients}
  o {Subgroup B} – {GP studies}
  o {Subgroup C} – {OPD studies}
  o {Subgroup D} - Other cases

• Each department is responsible for improving and maintaining report TAT. To this end TAT targets can be set locally for each of the above subgroups until intelligent National Benchmarks are made available.

• Subsequently the overall TAT can be broken down into its constituent processes to identify key rate limiting steps within the overall process. Inefficiencies may be directly attributable to the Radiologist, the department or hospital management.

• It is recognised that in order to enable the routine review of report turnaround time adequate IT capabilities should be in place.

Key Quality Indicators
• Median Turnaround Time for all and by referral source and modality

1.7 Report Completeness

The Faculty ultimately intends to develop National Standards in line with international guidelines. However, initially, it is recommended that local departments should develop and/or utilise their own local standards for auditing completeness. There are a number of existing standards including Staging, RECIST, NCCP Symptomatic Breast Reporting and CT Colonography which could assist in the development of local standards.

Measuring the completeness of Diagnostic Radiology reporting is an important component of a department Quality Assurance and Quality Improvement plan. Studies have shown that standardised reporting forms, including synoptic reports or checklists, are effective in improving report adequacy, particularly for cancer reporting, and help work towards a consistent approach for reporting.

The ability to audit report completeness in a meaningful way on a national level is dependent on the availability of nationally recognised minimum datasets. The Faculty acknowledges that the development and implementation of minimum datasets in Radiology is a recently evolving practice which will see many advances in coming years. The value of this activity is nevertheless recognised and its implementation, initially targeting common cancers and drawing on existing national and international standards is encouraged. The following guidance is offered:

Proposal
• Target the common cancers initially
• Audit the completeness of a report against standard minimum datasets if available. It is suggested that the completeness of a report could be reviewed at the same time as a peer review is conducted.
• In addition, structured yearly audits for particular diseases with agreed local minimum datasets should be conducted to evaluate the completeness of previous reports.
Key Quality Indicators
- No of accession number numbers reviewed (expressed as a % of total cases)
- No of reports Complete (% Completeness = the no of complete reports by accession number expressed as a % of the total number of accession numbers reviewed)
- No. of reports where there is not yet an agreed minimum dataset to assess completeness

1.8 External Review

1.8.1 Inter-Institutional Review

Inter institutional case review provides a necessary unbiased mechanism for evaluating diagnostic accuracy at the original institution. It is a very useful form of peer review.

Proposal
- Occurs when a patient’s treatment is transferred to another institution and a review of original diagnosis is requested. It can also occur when a clinician requests a review of original diagnosis by an external institution.
- It is the responsibility of the referring institution to ensure all images, reports and relevant clinical information is disseminated to the reviewing Radiologist in a timely fashion. A full record is deemed to include images and reports and one without the other is incomplete.
- The reviewing Radiologist forms an opinion of the previous interpretation of the original Radiologist.
- The reviewing Radiologist should score and record the level of agreement with the original reporting Radiologist’s diagnosis. The report of the previous interpretation is scored by the reviewer using the suggested three point peer review rating scale as outlined in Table 1 in section 1.1.
- It is recognised that differences of opinion between the reviewing Radiologist and the original reporting Radiologist may arise due to the availability of additional information subsequent to the initial imaging. Many of these differences of opinion arise because the new interpreting Radiologist is in possession of the entire clinical facts relating to the patient care; this may not have been the case in respect of the original reporting Radiologist.
- If a discrepancy has been noted, the reviewing Radiologist should inform the original reporting Radiologist if deemed necessary. The specialist opinion of the reviewing Radiologist and any additional clinical information should be made available to the Radiology department of the original institution. Clinically significant discrepancies should be discussed at the departmental discrepancy meetings of the original institution.

Key Quality Indicators
- Number of accession numbers received in for review
- Number of accession numbers with discrepancies (expressed as a % of total accession numbers reviewed, by modality, by peer review score table 1 section 1.1)

1.8.2 External Quality Assessment (EQA)

This is a process whereby an external accredited unit would assess the diagnostic capabilities of a department. This is done by submitting images of known diagnosis to a
Radiology department to report. The accreditation unit evaluates and scores the responses and feeds back the score to the department. This is a continual assessment in which a radiology department voluntarily participates.  
- Few established EQA Schemes currently in place for Radiology.  
- PERFORMS is an EQA scheme for Mammography operating in UK.  
- The Faculty of Radiologists, RCSI, will evaluate existing schemes with respect to efficacy, cost and adaptability to the Irish Healthcare System.  
- Depending on the outcome of this evaluation the Faculty of Radiologists, RCSI, will make recommendations on best practice EQA for diagnostic radiology.  

2 INTERVENTIONAL RADIOLOGY GUIDELINES

In addition to the guidelines for diagnostic radiology which will apply equally to interventional radiology, there are some specific areas of quality assurance to interventional radiology which are outlined in this section.

2.1 Outcomes Meetings

Outcomes Meetings should include all procedure-related radiology in the department (formal Interventional Radiology is likely to contribute most of the activity reviewed). Discrepancy meetings may also apply to Interventional Radiology, for example in cases where invasive procedures are performed on the basis of findings on non-invasive imaging, which may not prove accurate. Outcomes meetings can include Morbidity & Mortality (M&M) meetings. The purpose of outcomes meetings is to review indications for, outcomes and potential complications of, interventional radiological procedures. Outcomes can be defined as radiology outcomes and clinical outcomes. Particular cases should be reviewed where an unexpected outcome has occurred or where there has been a complication or learning point.

Equally a series of cases may be reviewed where the outcomes of a group of similar procedures within a given unit may be analysed. These meetings should be seen as an opportunity to review, learn and improve a service. In addition, nationally there is a forum at the bi-annual meetings of The Irish Society of Interventional Radiologists for the discussion of outcomes and complications. Cases with a particular learning point can be presented at this meeting improving learning nationally.

Key Quality Indicators
- Number of meetings held
- Number of patients reviewed (expressed as a percentage of total accession numbers)
- Number of patients for which learning points were listed or difficulties perceived (expressed as a percentage of total accession numbers)

2.2 MDT meetings

Interventional Radiologists will be present at many MDTs and will sometimes participate as lead Radiologist. All aspects of MDT meetings described in section 1.2 above apply equally to Interventional Radiologists.
2.3 Communication of Unexpected Clinically Significant, Urgent and Critical Radiological Findings

Findings and outcomes of interventional radiological procedures should be communicated as rapidly as possibly usually by verbal communication and/or written summary in the patient notes. It is also recommended that a formal report is generated either as a typed report in the patient notes, care pathway (where they exist) or, increasingly, as a report available on the hospital PACS (picture archiving and communications system).

Key Quality Indicators
- Number of accession numbers of unexpected significant radiological findings (expressed as % of total cases)
- Number of acknowledged communicated accession numbers of unexpected significant radiological findings (expressed as % of total cases)

2.4 Focused Audit

Audit should be used by all practitioners of radiology be it basic biopsy and drainage work or more complex embolisation work. For interventional Radiologists these audits should be steered towards patient outcome, procedure success, complication rate and patient experience.

Within the Royal College of Radiologists’ (UK) list of audit recipes there is a category for audits which are applicable to Interventional Radiology which could assist radiology departments in the selection of audits [Link to RCR Audit Live - Intervention Audits]

Key Quality Indicators
- Number of Audits commenced
- Name of Audit
- Number of Audits where the audit cycle is completed
- Number of Audits cancelled
- Audit Type: audits can be based on any aspect of interventional practice including,
  - Indications for procedures
  - Patient (and procedure) outcomes
  - Radiation exposure
  - Equipment and disposable usage
  - Procedure success
  - Complication rate
  - Peri-procedural care
  - Patient experience

2.4.1 Report Completeness

Measuring the completeness of Interventional Radiology reporting is an important component of a department Quality Assurance and Quality Improvement plan and serves as one indicator of quality of care. Many studies have shown that standardised reporting forms, including synoptic reports or checklists, are highly effective in improving report adequacy, and help work towards a consistent approach for reporting.

There are a large number of documents and standards published for interventional radiology procedures, examples of which are those published by the Journal of
Vascular and Interventional Radiology which can be found at http://www.jvir.org/content/reporting. For specific procedures, it is recommended that these published documents should be reviewed.

Interventional Radiology departments can then develop reporting for other procedures and it is suggested here that a good complete report should include:

- Indication for procedure
- Consent from patient
- Technical aspects of the procedure (include disposables, implantables, medications used)
- Final outcome
- Any complications
- Any follow up treatment
- Any post procedure care
- Any further recommendations

It is acknowledged that the assessment of completeness of a report could prove difficult given the range of procedures, associated minimum datasets and other reports generated with varying subjectivity on report completeness. An approach to consider is to audit report completeness on those reports submitted for outcomes meetings and submission to external registries.

**Key Quality Indicators**

- Number of accession numbers reviewed for report completeness as a % of total Interventional Radiology Reports carried out
- Number of accession numbers deemed complete expressed as a % of reports submitted to outcomes meetings and external registries.
2.5 External Review - Registries

A number of registries of Interventional Radiology procedures are in existence internationally.

Application to such confidential registries provides very robust information concerning the practice of an individual Radiologist or unit in comparison to a large peer group. Departments can submit cases for procedures they perform and this allows a large cohort of cases and outcomes. The outcomes for a large group practising throughout the UK and Ireland are available. Some of the registries (e.g. iliac stents) will give feedback to the individual operator/unit as to where they sit in terms of their peers for success rates, complications etc. Some do not provide this service, but a comparison can still be made between an individual unit's outcomes and that of the larger cohort.

The British Society of Interventional Radiology provides several registries available to members to whom cases can be contributed Link to BSIR Registries. In some cases comparative information is provided to the contributor to see where they sit in terms of their peer group with respect to complications, outcomes and other indicators. Examples of such registries include aortic stents, iliac stents, biliary drainage, caval filters, carotid stents, vertebroplasties, and colorectal stents. It is recommended that all Radiology departments performing interventional procedures should submit cases to a recognised registry of Interventional Radiology. The registries are considered useful and should be encouraged, but their use should never be compulsory.

Key Quality Indicators

- Number of accession numbers submitted to a recognised Interventional Radiology Registry (expressed as a % of total cases)
- Rates of complication, relative to registry successful outcomes and use of medication in comparison to peers.

3 ANNUAL REPORT

An anonymised annual report is helpful in identifying department-wide errors and should be circulated to all participating Radiologists and the hospital Clinical Director outlining performance to KPI's. This anonymised annual report should document key learning and action points, including any recurrent patterns of error to demonstrate a departmental process for learning from mistakes. It is recognised that the identification of patterns of error should be sensitive to workload and work pattern.
## Glossary of Terms

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accession number</td>
<td>The term Accession number refers to an identifier assigned to a radiology image. The identifier is unique within the hospital. The identifier is typically associated with one radiology image but may be associated with multiple images (for example taken from different angles)</td>
</tr>
<tr>
<td>Audit Cycle</td>
<td>The basic framework upon which all audit projects are based. An audit topic is chosen and a standard to be met is defined. Data is collected to identify what is really happening and this is compared with the standard. If the required standard is not achieved, changes are introduced to improve performance. The cycle should then be repeated to assess whether changes have led to the standard now being met.</td>
</tr>
<tr>
<td>Urgent result acknowledgement</td>
<td>The term urgent result acknowledgement refers to a message being communicated from a sender to a recipient and subsequent acknowledgement that the urgent result is available. In relation to the QA programme the term is used to describe the communication by a Radiologist to a referring Clinician and the acknowledgement by the referring Clinician that he/she is aware of the report and what the radiology finding is.</td>
</tr>
<tr>
<td>Clinical Audit</td>
<td>Clinical Audit is a subset of Quality Assurance. It is a quality improvement process that seeks to improve patient care and outcomes through systematic review of care against explicit criteria and the implementation of change.</td>
</tr>
<tr>
<td>Critical Incident Reporting</td>
<td>Errors that lead to mismanagement with resultant significant morbidity or mortality should be recorded as critical incidents. What constitutes a radiological critical incident needs to be clearly defined in advance and not decided arbitrarily on a case by case basis. Critical incident reporting should be used appropriately to avoid errors being covered up or Radiologists being unfairly treated. (European Society of Radiology)</td>
</tr>
<tr>
<td>Discrepancy</td>
<td>Disagreement/Discrepancy is defined as a difference in opinion between the original interpretation and the interpretation at review representing a significant difference in diagnosis which may affect patient care.</td>
</tr>
<tr>
<td>Exam</td>
<td>The term examination or exam refers to an order for a radiology image and the resultant radiology images and radiology report. There will typically be one radiology report for each exam and may contain links to a number of accession numbers. An exam may also be called a case, a study or an order.</td>
</tr>
<tr>
<td>Outcomes</td>
<td>A result of the procedure: radiology outcome, clinical outcome and financial outcome.</td>
</tr>
<tr>
<td>Percentage Attendance</td>
<td>% of attendees from total number of Radiologists in a department</td>
</tr>
<tr>
<td>Report Completeness</td>
<td>When reviewing a report for completeness it is recommended that the report be evaluated for the presence of core items defined by a standard. If any one of these core items is omitted the report is considered incomplete. If all core items are present the report is considered complete.</td>
</tr>
<tr>
<td>Percentage Completeness</td>
<td>% of reports which are 100% complete when compared to a minimum dataset.</td>
</tr>
<tr>
<td>-------------------------</td>
<td>---------------------------------------------------------------------</td>
</tr>
<tr>
<td>RADPEER</td>
<td>A radiology peer-review process developed by American College of Radiology (ACR).</td>
</tr>
<tr>
<td>Registry</td>
<td>A medical registry is a record of actual medical procedures and associated outcomes. International registries provide the opportunity to gather and analyse a large volume of data better to inform practice.</td>
</tr>
<tr>
<td>Quality Assurance</td>
<td>Quality Assurance (QA) involves proactive activities focused on ensuring that a service will be delivered consistently. It can also be described as a framework for a complete and organised approach to quality improvement comprising a systems approach for strategies for error reduction and prevention.</td>
</tr>
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</table>
## REFERENCES

<table>
<thead>
<tr>
<th></th>
<th>Reference</th>
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<tbody>
<tr>
<td>1</td>
<td>Irish Statute Book Medical Practitioner Act 2007, Section 11</td>
</tr>
<tr>
<td>5</td>
<td>Guidelines for Quality Assurance in Mammography Screening. Breast Check. The National Screening Programme. (Ireland)</td>
</tr>
<tr>
<td>7</td>
<td>Clinical Audit in Radiology: 100 + Recipes</td>
</tr>
<tr>
<td></td>
<td>Gerald de Lacy, Ray Godwin and Adrian Manhire</td>
</tr>
<tr>
<td>8</td>
<td>Clinical Practice in Interventional Radiology, from the task force on clinical practice in IR, CIRSE (Cardiovascular and Interventional Radiology Society of Europe)- this comprehensive 2 volume report details standards for individual procedures and peri-procedural care</td>
</tr>
<tr>
<td>9</td>
<td>Interventional Radiology- improving quality and outcomes for patients. A report of the National Imaging Board, UK, Nov 2009. This report details how a health service can improve quality, safety and productivity while delivering comparable or better outcomes for patients with shorter hospital stays and fewer major complications. It describes how IR services can help to ensure patient safety whilst delivering the highest quality care</td>
</tr>
<tr>
<td>10</td>
<td>Shaping the Future of interventional Radiology, Royal College of Radiologists, London, 2007. This document aims to identify the challenges facing the field of Interventional radiology over the next 10 years and advise on how the service should be adapted to meet future needs including patient safety, provision of 24 hour care etc.</td>
</tr>
<tr>
<td>No.</td>
<td>Organization</td>
</tr>
<tr>
<td>-----</td>
<td>------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| 11  | Royal College of Radiologists, UK                                            | [www.rcr.ac.uk](http://www.rcr.ac.uk) | 2010   | BFCR(10)6 Standards for the recording of second opinions or reviews in radiology departments  
|     |                                                                               |                          |        | BFCR(10)5 Standards for a results acknowledgement system                             |
| 12  | American College of Radiologists (ACR)                                      | [www.acr.org](http://www.acr.org)       | 2005   | BFCR(08)12 Standards for the communication of critical, urgent and unexpected significant radiological findings  
<p>|     |                                                                               |                          |        | BFCR(07)8 Standards for Radiology Discrepancy Meetings                               |
|     |                                                                               |                          |        | BFCR(05)9 Cancer Multidisciplinary Team Meetings - Standards for Clinical Radiologists |
| 13  | ACR Practice Guideline for Communication of Diagnostic Imaging Findings      |                          |        |                                                                                   |
| 14  | Radiological Society of North America (RSNA)                                | <a href="http://www.rsna.org">www.rsna.org</a>     |        |                                                                                   |
|     |                                                                               |                          |        | ACR RADPEER™ Programme - accreditation Programme of Physician Peer-Review Requirements |
| 15  | Rethinking Peer Review: What Aviation Can Teach Radiology about Performance Improvement. <a href="http://www.rsna.org">Radiology.rsna.org</a> volume 259 number 3. Larson, Nance |
| 16  | American Roentgen Ray Society (ARS)                                          | <a href="http://www.ars.org">www.ars.org</a>       |        |                                                                                   |</p>
<table>
<thead>
<tr>
<th></th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>National QA Programme in Histopathology, Faculty of Pathology, RCPI: Guidelines and Implementation</td>
</tr>
</tbody>
</table>
FOOTNOTES

i Disagreement is defined as a difference in opinion between the original interpretation and the interpretation at review representing a significant difference in diagnosis which may or may not affect patient care.

- **Sampling bias** – only a percentage of radiology discrepancies will be uncovered and reviewed. Therefore, discrepancy meetings cannot be used to derive error rates for individual Radiologists

- **Selection bias** – can arise if a certain type of study is reported by only one Radiologist, if a Radiologist reports more examinations than others (and thus may be over-represented in discrepancies), or if there is friction between individuals, which can lead to a lower threshold for submission of cases. Ultrasound also tends to be under-represented relative to CT, MR and plain films, because of the nature of the permanent record.

- **Presentation bias** – presentation and discussion needs to be focused to learning points, so inevitably, discrepancies provide the focus of the discussion

- **Information bias** – can be minimized by only giving the clinical information that was available at the time of the original report

- **Hindsight bias** – cases are being reviewed in a discrepancy meeting, so inevitably participants know a discrepancy has occurred

- **Outcome bias** – there is a recognised tendency to attribute blame more readily when the clinical outcome is serious. This can be reduced by withholding information on the subsequent clinical course of the patient when coming to a consensus decision on the degree of error

- **Attendance bias** – poor attendance may inhibit ability to reach a reasoned consensus on whether an error has occurred, or its severity, because of a 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 (common cause variation). Sometimes variation is greater than expected, suggesting a specific cause for performance falling outside the usual range (special cause variation). Causes for special cause variation need to be sought in particular, once it is identified [1,2]

ii **Audit Cycle** - a cycle that encompasses the clinical audit through to the implementation of change and improvements made
Appendix I Governance Structure

Steering Committee
With representation from Project Sponsors:
Faculty of Radiologists, NCCP, DOCC, ISD, HSE ICT, IHA, RCPI

Executive Management
Head of Operations, Project Manager, RCPI

HSE ICT

Faculty of Radiologists

Working Group

Technical Support Group

Local Coordinator

Local Team
Appendix II: Standardised Feedback Form from Discrepancy Meeting

Purpose of this form:
A discrepancy meeting was held at the hospital named below in accordance with the quality assurance activity described in the National QA Guidelines in Radiology by the Faculty of Radiologists. The purpose of the discrepancy meeting is a learning session. An accession number that you originally reported on was discussed at this meeting and in line with the Guidelines, this form sets out the feedback to you:

- Confidential feedback to the original reporter (even if the individual doesn’t work in the hospital, e.g. rotating SpR, teleradiologist) should be provided by the Convenor on a standardised feedback form (refer to Appendix II), if an error has occurred, with a summary of the discussion at the meeting
- If discrepancy/error has clinical implications for the patient, this should be communicated to the referring clinician by the Convenor. In the majority of cases, this will already have occurred, given that identification of a discrepancy has led to the case’s inclusion in a meeting

Required Action:
The Convenor of the Discrepancy meeting by informing you of the discrepancy and summary discussion has discharged his/her duty of the discrepancy meeting. If the discrepancy identified has any clinical implications, the responsibility and duty of care to the patient remains with the original reporting radiologist.
WITHIN THE HOSPITAL

Discussed at Discrepancy Meeting Date:

Hospital:

Convenor Name:

Feedback to original reporting Radiologist : YES/NO

**Scoring:**

RADPEER Scoring Language (for Discrepancy Meetings only)

<table>
<thead>
<tr>
<th>Score</th>
<th>Meaning</th>
<th>Optional</th>
<th>Accession Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Concur with interpretation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Discrepancy in interpretation</td>
<td>a. Unlikely to be clinically significant</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Diagnosis not ordinarily expected to be</td>
<td>b. Likely to be clinically significant</td>
<td></td>
</tr>
<tr>
<td></td>
<td>made (understandable miss)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Discrepancy in interpretation</td>
<td>a. Unlikely to be clinically significant</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Diagnosis should be made most of the time</td>
<td>b. Likely to be clinically significant</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Discrepancy in interpretation</td>
<td>a. Unlikely to be clinically significant</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Diagnosis should be made almost every time</td>
<td>b. Likely to be clinically significant</td>
<td></td>
</tr>
</tbody>
</table>

Comment:

EXTERNAL HOSPITAL

Discrepancy noted within Hospital : Name of Hospital

Notification sent to Chair of the Radiology Unit/Lead Radiologists of External Radiology Dept:

Name of Chair /Lead Radiologist:
Name of External Radiology Dept:

Scoring:

**Table 1:** Scoring for Peer Review Score Table (adaption of RADPEER Scoring Language)

<table>
<thead>
<tr>
<th>Score</th>
<th>Meaning</th>
<th>Accession Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Concur with interpretation</td>
<td></td>
</tr>
<tr>
<td>2a</td>
<td>Minor discrepancy – no further action</td>
<td></td>
</tr>
<tr>
<td>DM</td>
<td>Discrepancy in interpretation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Refer to External Radiology Dept</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Discrepancy Meeting (DM) for RadPeer</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Scoring and teaching points</td>
<td></td>
</tr>
</tbody>
</table>

Comments:
REVISION HISTORY

<table>
<thead>
<tr>
<th>Name</th>
<th>Date</th>
<th>Reason For Changes</th>
<th>Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC</td>
<td>24.09.10</td>
<td>Original Baseline Guidelines</td>
<td>1.0</td>
</tr>
<tr>
<td>LC</td>
<td>20.03.12</td>
<td>Revisions for consistency with ICT specification, further clarifications on peer review scoring, discrepancy meetings and general updating. General Updating minor comments. Expanded definitions of the critical, urgent and significant clinically unexpected radiological results and inclusion of standardised form for communication of results from Discrepancy meeting.</td>
<td>2.0</td>
</tr>
</tbody>
</table>