National Radiology Quality Improvement Programme

1st National Data Report
1 JANUARY – 31 DECEMBER 2019

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WORKING GROUP, NATIONAL RADIOLOGY QUALITY IMPROVEMENT PROGRAMME

Dr Rachel Ennis (Chair)	Consultant Radiologist, University Hospital Galway
Dr Niall Sheehy	Dean of The Faculty of Radiologists, RCSI Consultant Radiologist, St James's Hospital, Dublin
Dr Patricia Cunningham	Consultant Radiologist, Our Lady of Lourdes Hospital, Drogheda and Our Lady's Hospital, Navan
Dr Peter Kavanagh	Consultant Radiologist, Connolly Hospital Blanchardstown, Dublin
Dr John Feeney	Consultant Radiologist, Tallaght University Hospital, Dublin
Prof Anthony Ryan	Consultant Radiologist, University Hospital Waterford
Dr Jane Cunningham	Consultant Radiologist, Beaumont Hospital, Dublin
Dr Ferdia Bolster	Consultant Radiologist, Mater Misericordiae University Hospital, Dublin
Dr Angela Byrne	Consultant Radiologist, Children's Health Ireland at Crumlin, Dublin
Dr Tadhg Gleeson	Consultant Radiologist, Wexford General Hospital
Dr Ian Brennan	Consultant Radiologist, St. James's Hospital, Dublin

PROGRAMME MANAGEMENT TEAM, RCPI

Joanna Swierczynska	Programme Manager, National Radiology QI Programme, RCPI
Philip Ryan	Data Analyst, RCPI
Caitríona McGrath	Department Manager, Specialty Quality Improvement Department, RCPI

Foreword

This is the first annual national data report issued by the National Radiology Quality Improvement (NRQI) Programme to receive circulation within the Irish health care service. This report presents anonymised and pseudonymised aggregate quality improvement (QI) data collected from Radiology Departments in 45 contributing public hospitals.

The main goal of this programme is to ensure a high-quality service nationally which translates into improved patient care through timely and accurate diagnoses. The key to achieving this is creating a safe and collaborative learning environment, where best practice is shared and followed and learning from experience can take place.

This cannot be achieved on the basis of volunteerism; the long-term success of this quality improvement programme in each of the participating sites requires continuous support from hospital management, their engagement and full commitment to quality improvement by ensuring availability of necessary resources.

The QI data collected as a part of this programme facilitates assessment of the volume and scope of Radiology practice in Ireland. Individual departments can compare their performance against national aggregate results. The output of this programme should be integrated into the day-to-day quality assurance and improvement functions becoming a part of the daily routine.

It is important to highlight that the conclusions drawn in this report are based upon available data recorded in participating hospitals. The data is in the early stages of maturity and gaps in data collection at a hospital level may be due to a wide variety of factors, and therefore local confirmation remains essential. Where findings suggest that there may be an area in need of improvement, they should be discussed locally using hospital's own QI data.

The NRQI Programme Working Group would like to acknowledge the ongoing work of the QI Lead Radiologists and QI Tech Leads within each hospital for leading the QI data collection, collation and quality improvement initiatives in their hospitals.

We also wish to thank our approving bodies the Specialty QI Programme Steering Committee and the Faculty of Radiologists, our funders the National Quality Improvement Team, HSE and the Programme Management Team, RCPI for their continued support and commitment to quality improvement in Radiology services.

Dr Rachel Ennis
Chair of the NRQI Programme Working Group

Key Recommendations

1 To ensure successful implementation of this programme at local level, the Faculty of Radiologists, supported by significant international research, strongly recommends that Radiology Departments be adequately resourced by the hospital management, in line with international best practice. This will help to maintain the highest quality of patient care.

See Chapter 3

2 The Working Group recommends broadening the scope of Turnaround Time (TAT) in future reporting cycles, measuring total turnaround time, and its two separate components, technical TAT and report TAT:
a. Technical TAT is defined as the time from when the examination was requested to when the examination is technically completed by the Radiographer.
b. Report TAT is defined as the time from when the examination was technically completed to when the report for the examination is finalised by the Radiologist.

See Chapter 4

3 The Working Group recommends more focused allocation of subspecialty Assigned Reviews, which will allow for a higher number of reviews to be completed, by reducing the number of reviews rejected due to inappropriately assigned subspecialty examinations.

See Chapter 5

4 The Working Group recommends that sites discuss possible process improvements to ensure Peer Review is recorded efficiently, with minimal impact on existing workload levels. This could include weekly reminders to colleagues either by email or through the NIMIS system. The QI Lead Radiologist should feed any departmental ideas back to the Working Group to develop a more coordinated national solution.

See Chapter 5

5	Radiology Quality Improvement meetings must take place once every two months at a minimum and attendance where possible should be mandatory for all departmental Radiologists including Radiologists in Training. *See Chapter 6*
6	A record of RQI attendance is be maintained by the QI lead Radiologist and CPD audit credits are awarded; no other physical record of cases discussed or conclusions reached is kept; summary attendance data must be uploaded manually on NQAIS Radiology. *See Chapter 6*
7	The Working Group recommends that language used in relation to RQI meetings avoid negative terminology such as "error", "miss" "review" and encourage a culture of mutual respectful learning with emphasis on positive learning and feedback with "good pick up" cases forming a central role. *See Chapter 6*

Glossary of Terms

Anonymisation	Anonymisation of data means that this data is processed in such way that identification of persons or other data subjects is prevented. When data is anonymised, it is not possible to link it back to an identified or identifiable natural person.
Case	A Case refers to a single examination. One case can contain one image (e.g. plain film) or multiple images (e.g. magnetic resonance).
CT	Computed Tomography, utilises x-ray photons and digital image reconstruction to create a two- or three-dimensional image.
DXA	Dual-energy X-Ray Absorptiometry, also called bone densitometry.
ED	An Emergency Department in a hospital. In this report ED relates to patients referred to a Radiology Department from an Emergency Department.
Exam	A request to a Radiology Department to carry out diagnostic imaging, an interventional procedure or some other service for a patient. For the Key Quality Indicators and purpose of this report, an Exam will be classified as a Case.
Ext	External Referral. When a patient is referred to a Radiology Department from another hospital/centre.
External Registry Review	A review of a Radiology procedure carried out by a third party.
FL	Fluoroscopy. This is an imaging modality that uses x-rays to allow real-time visualisation of body structures, often with the use of high-density contrast agents.
Focused Audit	A Focused Audit is a review carried out by a Radiologist into an aspect of the Radiology service.
GP	General Practitioner. In this report GP relates to patients referred to Radiology Department by a General Practitioner.
IP	Inpatient. This is a patient referred to Radiology Department after they have been admitted to a hospital.
IR	Interventional Radiology. This is a therapeutic and diagnostic specialty that includes a wide range of minimally invasive image guided therapeutic procedures, including minimally invasive diagnostic imaging.
KQI	Key Quality Indicator. These are standardised, evidence-based measures of health care quality e.g. Report Turnaround Time.

MDM	Multidisciplinary Team Meeting. These meetings form an essential part of the clinical care of patients with cancer, suspected cancer or other clinical conditions and involve specialists in many areas coming together to agree on the best treatment options for individual patients. Radiologists have a key role these meetings contributing to patient management.
MG	Mammography. This modality uses low energy x-rays specifically for imaging of breast tissue.
Modality	A term used in Radiology to describe the form of imaging (e.g. Computed Tomography, Ultrasound, Magnetic Resonance etc).
MR	Magnetic Resonance Imaging. This is the use of magnetic fields and radiowaves to visualise detailed internal structures, providing real time, three-dimensional image of body organs with good soft tissue contrast.
NM	Nuclear Medicine. This involves use of radioactive tracers to visualise various organs. The radioactive tracer emits gamma radiation, which is then imaged using a gamma camera. The tracer can be injected, inhaled or inserted.
NQAIS	National Quality Assurance & Improvement System. A platform for the generation of local and aggregate national QI data activity reports. It is part of a Health Atlas Ireland platform https://www.healthatlasireland.ie/
NQAIS Site	Refers to the hospital or hospitals that are uploading data to NQAIS. Some smaller hospitals upload information under joint NQAIS accounts with bigger, model 3 or 4 hospitals in their hospital group. Each NQAIS account is referred to as NQAIS Site.
NRQI	Refers to National Radiology Quality Improvement Programme
OP	Outpatient. This is a patient referred to a Radiology Department without hospital admission at the time of Radiological exam
OUS	Obstetric Ultrasound. This is performed to assess the foetus and related structures in pregnant women.
Outcome Meeting	An Outcome Meeting is a meeting between Interventional Radiologists to discuss interventional procedures.
PACS	Picture Archiving and Communication System. Software used in Radiology Departments to store, review and report on Radiology images across different modalities.
Patient Class	Describes the patient being examined based on referral source (i.e. General Practitioner referral, Inpatient referral).
peerVue QICS	peerVue Qualitative Intelligence and Communication System. This local data collection system used within PACS in Radiology departments, which enables anonymised QI data exports to NQAIS-Radiology

PET	Positron Emission Tomography. It uses small amounts of radioactive materials called radiotracers or radiopharmaceuticals to evaluate organ and tissue functions. By identifying changes at the cellular level, this imaging method may help the early detection of a disease.
Pseudonymisation	Pseudonymisation of data takes place when any identifying characteristics of data are replaced with a pseudonym or a value which does not allow the data subject to be identified. Pseudonymised data can no longer be attributed to a specific data subject without the use of additional information.
QI Activity	A QI Activity is a quality improvement task carried out on a study. It is described by multiple QICS records and linked by the Original Case ID. There will be one key QICS record that identifies the QI Activity; the remaining QICS records provide additional information on the QI Activity.
Radiology Alert Acknowledgement Time	The time between when the Radiology Alert is activated in the peerVue system to the time this alert is marked as acknowledged in the peerVue system.
Radiology Department	The organisational structure within which a Radiology service is provided. A Radiology Department can provide its service at one or more hospitals.
RCPI	Royal College of Physicians of Ireland
RCSI	Royal College of Surgeons in Ireland
Recommendation	Refers to suggestions for quality improvement put forward by the Working Group. They are based on the data presented in this report that should be implemented in each Radiology Department to support ongoing quality improvement activities.
RIS	Radiology Information System. The workflow engine supporting everyday activities of a Radiology Department in providing diagnostic imaging services to the hospital and patients.
RQI Meeting	Radiology Quality Improvement Meeting
SQI Team	Speciality Quality Improvement Team, based in RCPI.
TAT	Turnaround Time. This is the time between the moment an image is available for a Radiologist to report on, to the time when the Radiology Report is finalised and authorised by the reporting Radiologist.
TH	Surgical theatre
US	Ultrasound. This modality utilises high-frequency sound waves to provide cross-sectional images of the body.
VUS	Vascular Ultrasound. This is performed to assess heart and vascular structures.
XR	X-Ray (Radiography). Use of electromagnetic radiation with short wavelengths, to visualise the internal structures of a patient. Also called plain film.

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INTRODUCTION TO THE NRQI PROGRAMME

1. Introduction to the NRQI Programme

The National Radiology Quality Improvement (NRQI) Programme was initiated in 2009 by the Faculty of Radiologists, Royal College of Surgeons in Ireland (RCSI), in collaboration with the National Cancer Control Programme (NCCP) in response to earlier findings of reports into cancer misdiagnoses. The programme continues to be led by the Faculty of Radiologists, RCSI today.

The NRQI Programme is funded by HSE National Quality Improvement Team and is managed by the Specialty Quality Improvement (SQI) Team, Royal College of Physicians of Ireland (RCPI).

THE AIM OF THE NATIONAL RADIOLOGY QI PROGRAMME

1. To ensure a high quality, consistent and accurate service nationally which translates into an improved patient experience with consistently high standards of quality care
2. To improve patient safety and enhance patient care through timely, accurate and complete Radiology diagnoses and reports
3. To provide a safe space for learning and continuous improvement where QI activities are performed routinely by all

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The programme provides a national framework to standardise the service provided by Radiology departments across the country. This framework establishes routine reviews of performance and highlights areas for improvement within quality activities and against national aggregate results, recommendations and agreed targets, in line with international best practice.

QI culture is actively promoted by engaging key hospital stakeholders in gathering and reviewing of relevant quality improvement data, identifying gaps in best practice and areas of good practice, and recognising and encouraging opportunities for improvement locally.

The following chapters will detail how data is collected, the importance of data quality and the ICT systems that facilitate the programme's work.

PURPOSE OF THIS DATA REPORT

The national data report facilitates informed decision making on the future steps necessary to support ongoing quality improvement processes within Irish Radiology services.

This report presents both pseudonymised and anonymised aggregate quality improvement data available nationally. All hospital site-specific data represented in this report is psuedonymised.

The National RQI Working Group encourages participating hospitals to review their own data and discuss local performance against the targets, recommendations and national aggregate results with their colleagues in Radiology departments, local hospital management and Quality and Patient Safety teams. Where findings suggest that there may be an area in need of improvement, these should be discussed locally using the hospital's own data extracted from NQAIS-Radiology.

WHAT IS BEYOND THE SCOPE OF THIS REPORT

This report cannot and should not be used to produce league tables or to compare hospitals, as no two hospitals will have the same patient profile. Different hospitals specialise in treating patients with different and often more complex care needs, making comparisons between hospitals invalid.

Owing to varying resourcing levels some smaller hospitals must upload information under joint NQAIS site accounts with larger, model 3 or 4 hospitals in their hospital group. When interpreting the data displayed in the report, it must be taken into consideration that a NQAIS site may represent a pairing of two or more hospitals or a single hospital and that each NQAIS site is unique.

This report cannot distinguish the proportion of data that is recorded in an on-call environment or during high holiday season, versus normal working hours. This is important to highlight as differing levels of support are available.

OUTLIER MANAGEMENT

The participating hospitals are responsible for the management of outliers and resolving issues at local level. The NRQI Programme does not engage with individual sites that may be identified as outliers in this report. Locally participants are requested to report and manage the QI data within the Radiology department and ensure the necessary actions to improve quality are initiated and / or referred to the appropriate person.

The programme further requests that participating hospitals ensure QI data reports once generated and shared by the department, are reviewed by the Quality and Patient Safety Teams or appropriate local structure, linking with relevant hospital governance and programme structures as set out in the programme guidelines and taking action as required. All responsibility rests with participating sites to address any issues relating to their data and the potential to reach agreed targets or recommended standards.

OPPORTUNITIES AND CHALLENGES

This Quality Improvement Programme is a key component in maintaining quality within Radiology Departments.

Quality improvement, as with any other improvements, must be woven into all systems of the department to achieve the best possible outcome.

It is imperative that the hospital management provides the support and resources required for successful quality improvement. Local leadership and quality management systems should be in place to support and coordinate quality improvement activities.

HOSPITALS WE WORK WITH
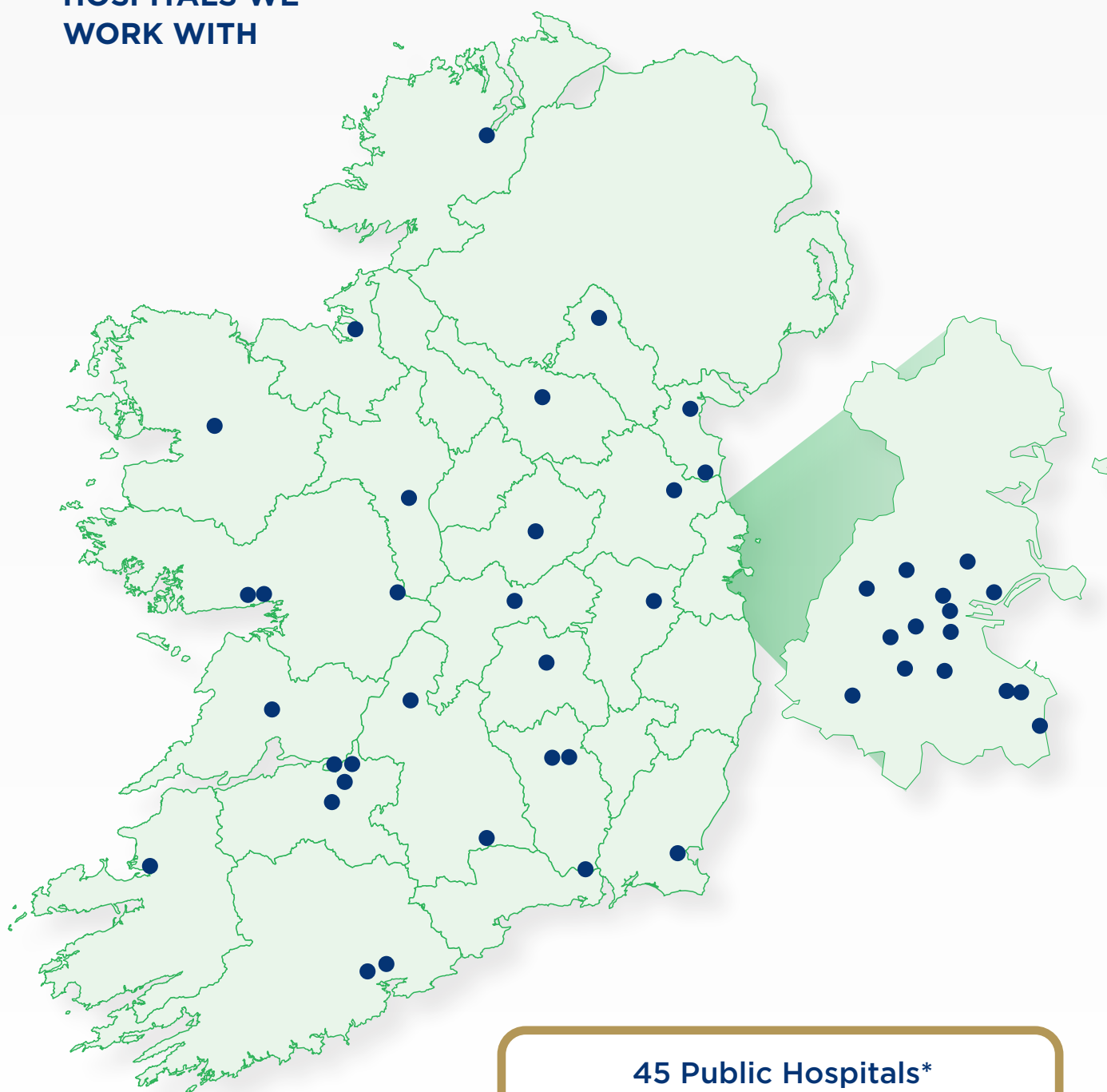
45 Public Hospitals*
Contributed QI Data to this
National Data Report 2019

The number of hospitals does not correlate with the number of NQAIS sites as some hospitals upload data under joint NQAIS accounts.

TABLE 1.1 List of Public Hospitals participating in NRQI Programme and contributing to National Data Report 2019.

Dublin Midlands Hospital Group	Saolta Hospital Group
Tallaght University Hospital	Letterkenny University Hospital
Coombe Women & Infants University Hospital	Mayo University Hospital
Midland Regional Hospital, Portlaoise	Portiuncula University Hospital
Midland Regional Hospital, Tullamore	Roscommon University Hospital
Naas General Hospital	Sligo University Hospital
St. James's Hospital	University Hospital Galway
St. Luke's Hospital, Rathgar	Merlin Park University Hospital
Ireland East Hospital Group	**South/South West Hospital Group**
Cappagh National Orthopaedic Hospital	Kilcreene Orthopaedic Hospital
Mater Misericordiae University Hospital	South Tipperary General Hospital
Our Lady's Hospital, Navan	University Hospital Kerry
Regional Hospital Mullingar	University Hospital Waterford
Royal Victoria Eye and Ear Hospital	South Infirmary Victoria University Hospital
St. Columcille's Hospital	Mercy University Hospital, Cork
St. Luke's General Hospital, Kilkenny	**Children's Health Ireland (incl. TUH Paediatric RCSI Group)**
Wexford General Hospital	Children's Health Ireland at Temple Street
RCSI Hospitals Group	Children's Health Ireland at Crumlin
Beaumont Hospital	**UL Hospital Group**
Cavan General Hospital	University Hospital Limerick
Connolly Hospital Blanchardstown	University Maternity Hospital Limerick
Louth County Hospital	Ennis Hospital
Monaghan General Hospital	Nenagh Hospital
Our Lady of Lourdes Hospital, Drogheda	Croom Hospital
Rotunda Hospital	St. John's Hospital
No Group	
National Rehabilitation Hospital	
St. Mary's Hospital	

Benefits of Participation

Benefits of Participation

1. Improve patient safety, reduce risk and enhance patient care

2. Improve communication between institutions

3. Increase public confidence in diagnostic reporting

4. Demonstrate that participants are performing to a level consistent with national and/or international standards

5. Recognise and encourage opportunities for quality improvement locally

6. Actively promote a culture of QI by engaging key hospital stakeholders

7. Identify and share good practice

2

ICT SYSTEMS AND DATA QUALITY

2. ICT Systems and Data Quality

Fundamental to the programme is the extraction of encrypted QI data from the local information system which is then uploaded to the National Quality Assurance & Improvement System (NQAIS) for Radiology. This online platform is an essential component of the National Radiology Quality Improvement (NRQI) Programme. NQAIS-Radiology is the central database developed and validated by HSE's Office of Chief Information Officer (OoCIO), for QI data storage, analysis and report generation.

NQAIS-Radiology functions as a central repository for quality improvement data from participating hospitals' local information systems. It allows for generation of national reports on the data related to the Key Quality Indicators (KQIs). Radiology departments can use the report to identify best practice and any variations on this, to review, improve and sustain the quality of their work in the context of national recommendations and targets.

DATA COLLECTION

The data contained in this report was collected between 1st January 2019 and 31st December 2019.

DATA SOURCE

The majority of participating hospitals use peerVue QICS (Qualitative Intelligence and Communication System). peerVue QICS works within the Radiology PACS system and it is used to record data on QI activities input by Radiologists on a daily basis. Anonymous data related to predefined Key Quality Indicators (KQIs) are then automatically exported from peerVue to NQAIS-Radiology nightly. Some of the KQIs require data to be manually input into NQAIS by a QI Lead Radiologist, as shown in Table 2.1.

For the purpose of this report two database extracts have been used.

The first extract represents QI Activity recorded for cases completed in 2019 only. This allows the calculation of the annual workload and Radiology Report Turnaround Times in addition to the percentage of cases which were recorded as peer reviewed and the percentage of cases where a Radiology Alert was activated in the system in 2019.

The second extract includes all QI activities performed and recorded in the local information system, irrespective of related case completion date. This means that if a Peer Review has been performed and recorded within 2019 on a case which was completed prior to 1st January 2019, this activity is included in the data report. However, the actual case is not accounted for in these figures, as it was completed before 1 January 2019, rather only the Peer Review activity is recorded. For example, if the case was completed in May 2018 and retrospectively reviewed in February 2019, that case is not included in this national data report for 2019, but the Retrospective Review is accounted for as it a QI activity which has been completed within the 2019 reporting period.

It is important to highlight that some QI activities within Radiology departments include working with cases completed in previous years. It has been decided to use both database extracts as this permits the capture of QI activities related to not only cases completed in 2019 but also those performed on cases recorded prior to that, which contributes to a complete picture of the overall annual workload.

The Working Group have agreed that the first dataset should be the primary data set used. The second dataset is only used where differences were statistically significant. This is particularly applicable to Retrospective Peer Reviews due to the nature of this QI activity, which is further explained in Chapter 5 of this data report.

DATA PROTECTION

The data collected and analysed in Radiology departments contain no patient identifiable information.

It must be also noted that data collected by the NRQI Programme does not include information which could identify Radiologists or other members of the Radiology Department.

NQAIS accounts are pseudonymised and are presented in this report under randomly assigned codes. Each NQAIS account has the same code assigned throughout this report.

The principle of the NRQI Programme is that each participating hospital owns its data and is its own data controller. This means that the hospital is responsible for the integrity of its data and can authorise or deny access to data. This is performed under the direction and governance of local and hospital group management and in accordance with Data Protection Acts 1988 and 2003 and General Data Protection Regulation (GDPR).

LOCAL REPORTING

Each site has access to its own data and the ability to run reports on them using NQAIS-Radiology. They can use this information to identify areas for quality improvement in order to enhance patient care and minimise the potential for error.

The programme enables Radiology departments to compare themselves against national aggregate data and targets and recommendations set in the programme guidelines.

As outlined in the Memorandum of Understanding issued to all participating sites the NRQI Working Group recommend that the QI Lead Radiologist communicates the local QI data reports to Senior Hospital Management and Clinical Governance / Quality and Patient Safety Committees including Clinical Director / Consultant in Administrative Charge, at minimum on a quarterly basis.

DATA QUALITY

Here we consider the condition of the data under the following headings: accuracy, reliability, relevancy, completeness, consistency and timeliness[1].

ACCURACY:

Every effort is made to ensure data captured for the national data report is accurate; however, minor discrepancies may exist due to differences in data mapping and owing to the fact that some hospitals use multiple systems for recording QI activity (e.g. activation of Radiology Alerts) which cannot always be captured in the national data repository.

RELIABILITY:

All efforts are made to remove any subjectivity from the input or collection of the data. Data for selected KQIs are uploaded automatically on a nightly basis via peerVue QICS to NQAIS-Radiology. A portion of data requires manual input to NQAIS Radiology. This process of manual uploading introduces a risk that the data may be incomplete and therefore unreliable. The NRQI Programme is actively collaborating with the software providers to improve methods of data collection and to minimise manual input.

1. Health Information and Quality Authority (2018) "Guidance on a data quality framework for health and social care" https://www.hiqa.ie/sites/default/files/2018-10/Guidance-for-a-data-quality-framework.pdf

RELEVANCE:

The data reported on is used to aid decision-making. To aid visualisation of both instances of quality improvement and areas requiring increased scrutiny to facilitate greater learning locally and nationally.

COMPLETENESS:

Data presented in this report originates from automated data uploads from local information systems and, in some cases, manual uploads to NQAIS Radiology. There are issues related to completeness in selected areas owing to inconsistent recording of QI activities performed in the local information system as well as incomplete records for QI activities requiring direct input to NQAIS- Radiology.

CONSISTENCY:

The uploading of data is performed automatically and therefore all information available within peerVue, which is then uploaded to NQAIS Radiology, is available for analysis. Data gaps for some sites are related to inconsistent or lack of recording of QI activities in the local information system within Radiology departments.

The analysis of the data once extracted from the database is performed using a consistent process by the programme management team.

TIMELINESS:

Due to the automated process of data uploads, there are no specified timelines for the NRQI Programme.

DATA VISUALISATION

The 2019 data is presented on different types of charts and tables. Where possible, 2018 data have been presented along 2019 data within the same chart. This is to allow for easy comparison of selected records and visualisation of changes from one year to another.

TABLE 2.1: NRQI Programme Key Quality Indicators, as outlined in "Guidelines for the Implementation of a National Radiology Quality Improvement Programme".

KEY QUALITY INDICATORS	
peerVue QICS Data - Automatic Nightly Upload to NQAIS-Radiology	
PEER REVIEW	
Prospective Review	Number of accession numbers with Prospective Peer Review (expressed for each modality and as a % of total accession numbers for each modality
Retrospective Review	Number of accession numbers reviewed (expressed for each modality and accession number type and as a % of total accession numbers for each modality)
Assigned Review	Number of accession numbers referred for consideration at Radiology Quality Improvement meetings (expressed as a % of total cases reviewed, by modality) (Apply to both Retrospective and Assigned Review.)
RADIOLOGY ALERTS	
Critical	Number of Radiology Alerts where the acknowledgement was received within the guideline acknowledgement time (expressed as a % of the number of Radiology Alerts)
Urgent	Number of Radiology Alerts for each urgency level (expressed as % of total cases)
Unexpected – Clinically Significant	Number of acknowledged communicated cases of unexpected and clinically significant radiological findings (expressed as % of total cases)
REPORT TURNAROUND TIME	
The % of cases with Report Turnaround Times within either 24hrs or 72hrs by referral source and modality	
Summary Data - Require Manual Input to NQAIS Radiology by Consultant Radiologist	
RADIOLOGY QUALITY IMPROVEMENT (RQI) MEETINGS	
Attendance expressed as percentage of persons in attendance out of all invited Number of accession numbers (AN) reviewed at RQI meeting (expressed as a % of total workload) Number of accession numbers reviewed at RQI meeting by source: Peer Review, MDM (to include Clinico-Radiological conferences) (expressed as a % of total workload) Categorisation of ANs reviewed at RQI meeting according to outcomes (% of ANs discussed)	
MULTIDISCIPLINARY MEETINGS (MDM)	
Number of MDMs / Clinico-Radiological Meetings held Number of patients reviewed at these MDMs / Clinico-Radiological Meetings (expressed as a % of total patients) Number of patients referred to a Radiology Quality Improvement Meeting (expressed as a % of total patients reviewed at MDM / Clinico-Radiological Meeting)	
OUTCOME MEETINGS (Interventional Radiology)	
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).	

Detailed characteristics of each discussed Key Quality Indicator can be found in the respective chapters.

The NRQI Programme has set out nine Key Quality Indicators; however, not all of them are included in this report. The KQIs not covered in this report include those which are not easily measurable or where the data in NQAIS-Radiology may not be currently reliable due to a low level of data completion and data immaturity. Further information about all KQIs can be found in *"Guidelines for the Implementation of a National Radiology Quality Improvement Programme".*

APPROVAL PROCESS

This report has been developed by the Working Group of the National Radiology QI Programme and the Programme Management Team.

It was submitted to the Faculty of Radiologists, RCSI, and Specialty Quality Improvement Programme Steering Committee for approval.

This report was approved on 29 June 2020.

3

WORKLOAD
AND RESOURCES

3. Workload and Resources

Radiology is integral to high-quality patient care and effective patient management relies on appropriate and timely access to Radiology services. The workload of the individual Radiologist and Radiology department continues to grow in complexity and volume in response to advances in technology and the evolution of clinical standards[1]. In 2019, 2.85 million Radiology cases were interpreted, and reports generated in the 45 Irish public hospitals represented in this report, these cases range in complexity from chest x-rays to PET scans.

Radiologists now work in entirely digital environments which facilitates easy extraction of data; however, it cannot provide the context or challenges that accompany this workload, nor do they capture all the activities of the Radiologist or the Radiology department.

In the first national data report we outlined studies and findings that support the mounting challenges faced by Radiology departments across the country, as workload continues to increase and resourcing levels fail to grow in response. The National Clinical Programme for Radiology identified 267 whole time equivalent (WTE) consultant Radiologist posts in Ireland and highlighted staffing levels as being well below international benchmarks in 2010[2]. In 2017 the NDTP published startling figures in the Review of Clinical Radiology Medical Workforce reporting this number at 255 WTE posts[3]. The CAAC Annual Report 2019, published by the NDTP outlines that there are approximately 285 Radiology posts in Ireland as of 31 December 2019[4]. In April 2020, the Royal College of Radiologists, UK published concerning findings from the 2019 workforce census, stating that current Radiology services are unsustainable with growing costs associated with outsourcing, two thirds of departments stating they no longer have enough Radiologists to provide safe and effective patient care and the threat of an ever-decreasing workforce in the near future if action is not taken[5]. With the number of Radiologists in Ireland well below European average, similar challenges are faced here.

The Faculty of Radiologists agree that staff shortages and excess workloads contribute to some of the systems issues that may increase the risk of error. Ireland is one of many countries highlighting concerns regarding the effects of increasing complexity and volume of workload on both recruitment and retention.

Our healthcare system continues to face challenges with respect to waiting lists, reporting delays and service quality. The National Radiology Quality Improvement (NRQI) Programme attempts to harness the existing efforts of Radiology colleagues in recording QI data to drive improvements both locally and nationally. However, the Faculty of Radiologists and the NRQI Programme Working Group acknowledge that these activities can be difficult to build into the working day and that there is an inevitable trade-off between QI activities and reporting duties. The work of the consultant Radiologist can be divided into clinical or programmed activities and non-clinical or supporting professional activities (SPA). Quality improvement is categorised as a supporting professional activity, however, as illustrated in this report, its value and importance are underestimated. The RCR 2019 workforce census reports growing concerns that Radiologists continue to face inadequate time available to engage in SPA, and particularly for QA and QI activities which have the potential to result in improved care for patients[5].

Each department should, with the support of hospital management, appoint a QI Lead Radiologist and QI Tech Lead (Diagnostic Radiographer) to support and develop the programme on site.

The Faculty recommends that there should be protected time for Radiologists, amounting to 4 hours per week for the Lead QI Radiologist, and 2 hours per week for all other Radiologists to engage productively with the QI activities outlined in the programme's guidelines.

The Faculty of Radiologists continues to work with their colleagues across the country in developing the optimal method of assessing workload.

Successful quality improvement cannot be sustained on the basis of 'volunteerism' and requires incorporation as a routine part of clinical practice.

KEY RECOMMENDATION

To ensure successful implementation of this programme at local level, the Faculty of Radiologists, supported by significant international research, strongly recommends that Radiology departments be adequately resourced by the hospital management, in line with international best practice. This will help to maintain the highest quality of patient care.

Ongoing communication should take place between the Clinical Leads, QI Tech Leads and the programmes Working Group to ensure that the data collected is used to support local and national discussion around quality improvement and how obstacles can be overcome.

REFERENCES:

1. Brady A, Ó'Laoide, R, McCarthy P, McDermott R, (2012) "Discrepancy and Error in Radiology: Concepts, Causes and Consequences", Ulster Medical Journal, 2012: 81(1):3-9 https://www.ums.ac.uk/umj081/081(1)003.pdf

2. Health Service Executive Ireland (2010) Report of the HSE National Radiology Survey, December 2010. https://www.hse.ie/eng/services/publications/hospitals/radiosurvey.pdf

3. "Review of the Clinical Radiology Medical Workforce in Ireland" (2017) NDTP(HSE), https://www.hse.ie/eng/staff/leadership-education-development/met/plan/specialty-specific-reviews/clinical-radiology-chapter-for-web-2017.pdf

4. Consultant Applications Advisory Committee CAAC Annual Report 2019, NDTP (HSE) https://www.hse.ie/eng/staff/leadership-education-development/met/consultantapplications/rep1/caac-annual-report-2019.pdf

5. Royal College of Radiologists, London "Clinical Radiology UK Workforce Census 2019 Report", April 2020, https://www.rcr.ac.uk/clinical-radiology/service-delivery/rcr-radiology-workforce-census

2019 ACTIVITY

In 2019, hospitals participating in the NRQI Programme recorded over 2.85 million cases in peerVue QICS which is an increase of 150,000 from the previous year. (This includes only public hospitals who are on the NIMIS system and excludes public sites who are using a different system to record their activity and all private sites).

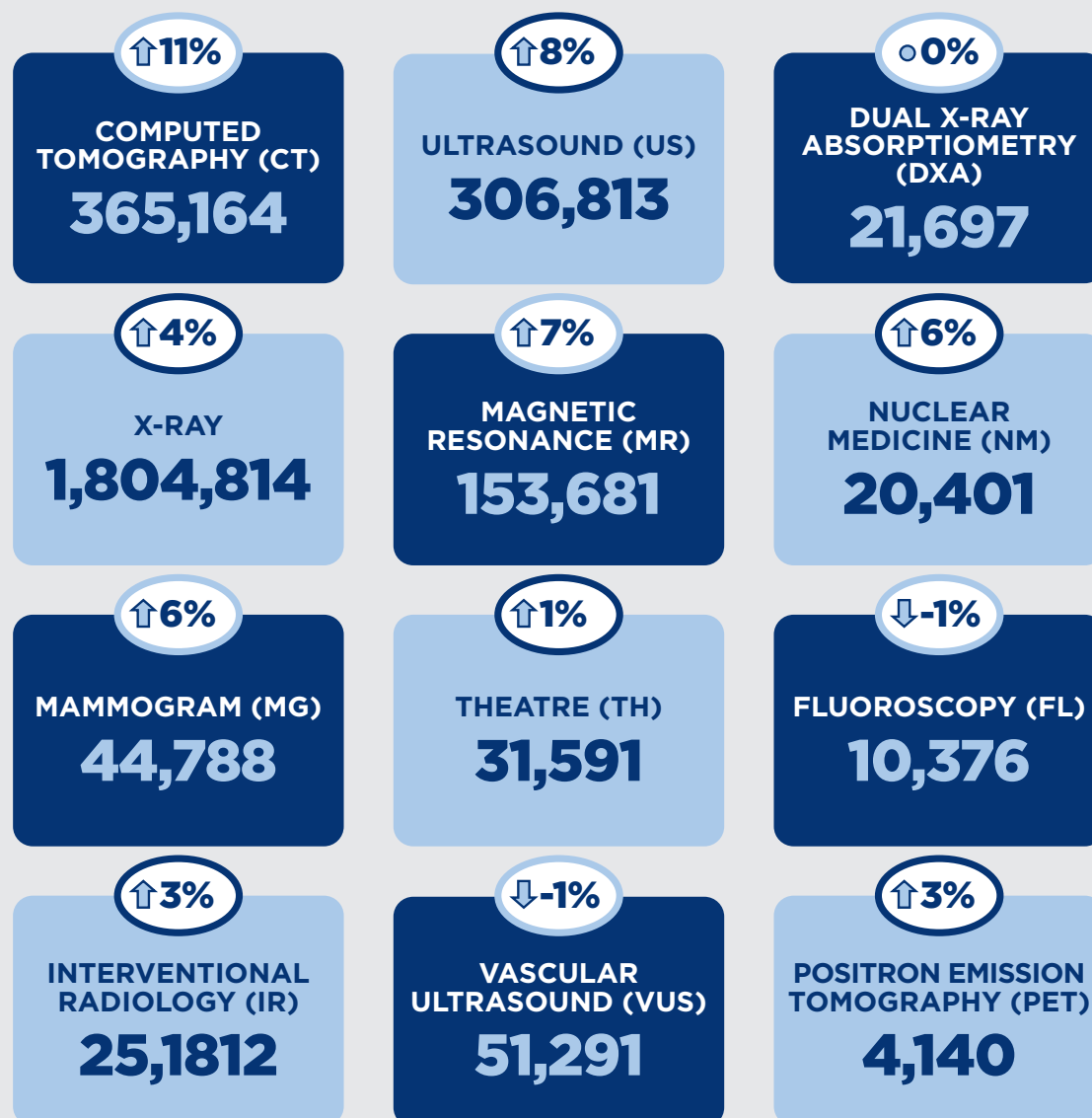## TOTAL CASES RECORDED
2,852,141
5% INCREASE FROM 2018

⇧11%
COMPUTED TOMOGRAPHY (CT)
365,164

⇧8%
ULTRASOUND (US)
306,813

○0%
DUAL X-RAY ABSORPTIOMETRY (DXA)
21,697

⇧4%
X-RAY
1,804,814

⇧7%
MAGNETIC RESONANCE (MR)
153,681

⇧6%
NUCLEAR MEDICINE (NM)
20,401

⇧6%
MAMMOGRAM (MG)
44,788

⇧1%
THEATRE (TH)
31,591

⇩-1%
FLUOROSCOPY (FL)
10,376

⇧3%
INTERVENTIONAL RADIOLOGY (IR)
25,1812

⇩-1%
VASCULAR ULTRASOUND (VUS)
51,291

⇧3%
POSITRON EMISSION TOMOGRAPHY (PET)
4,140

FIGURE 3.1: Number of Cases Recorded in 2018 vs 2019, by NQAIS Site

NQAIS SITE

NUMBER OF CASES

2018   2019
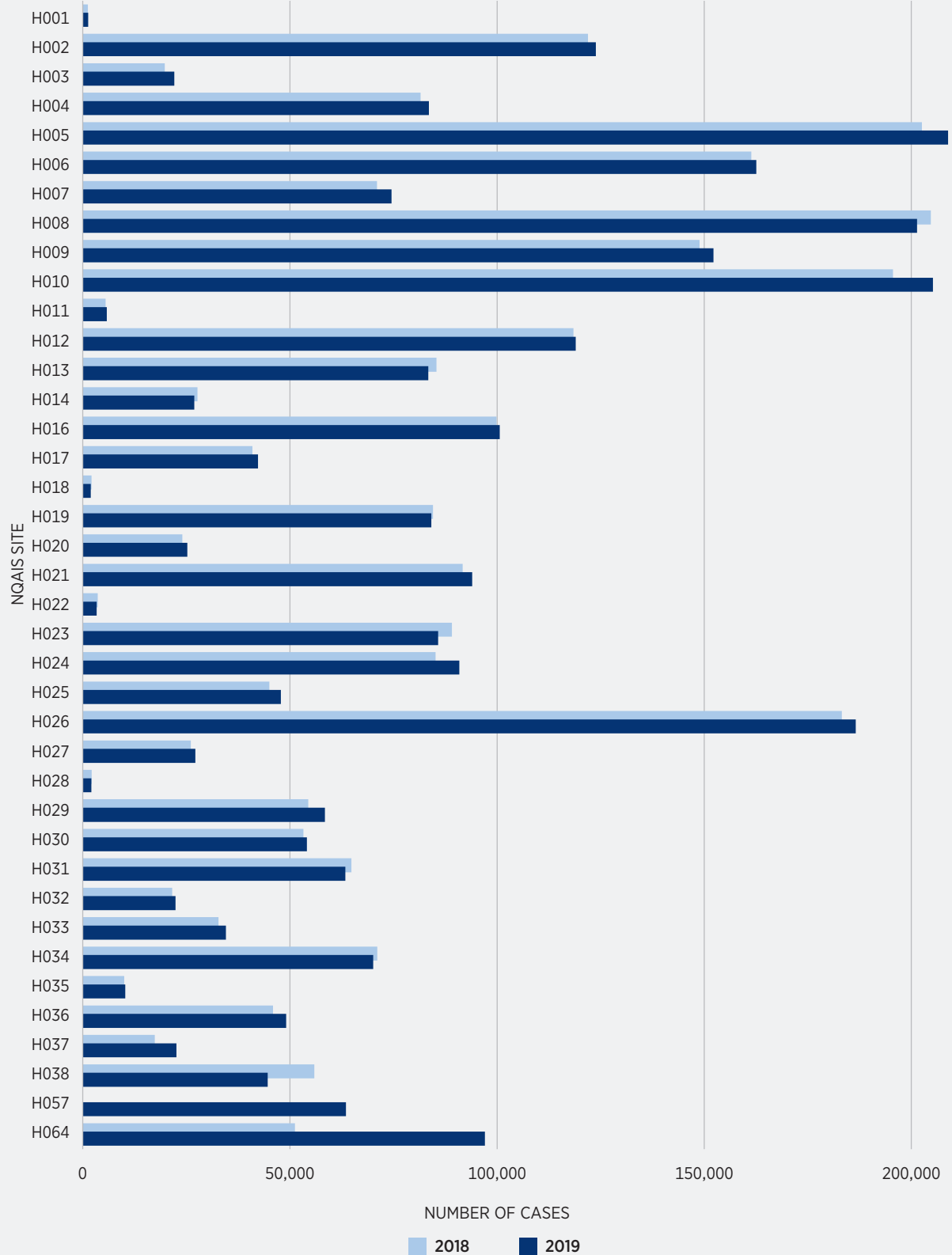
FIGURE 3.2: Number of Cases Recorded in 2018 vs 2019, by Patient Class (Referral Source)
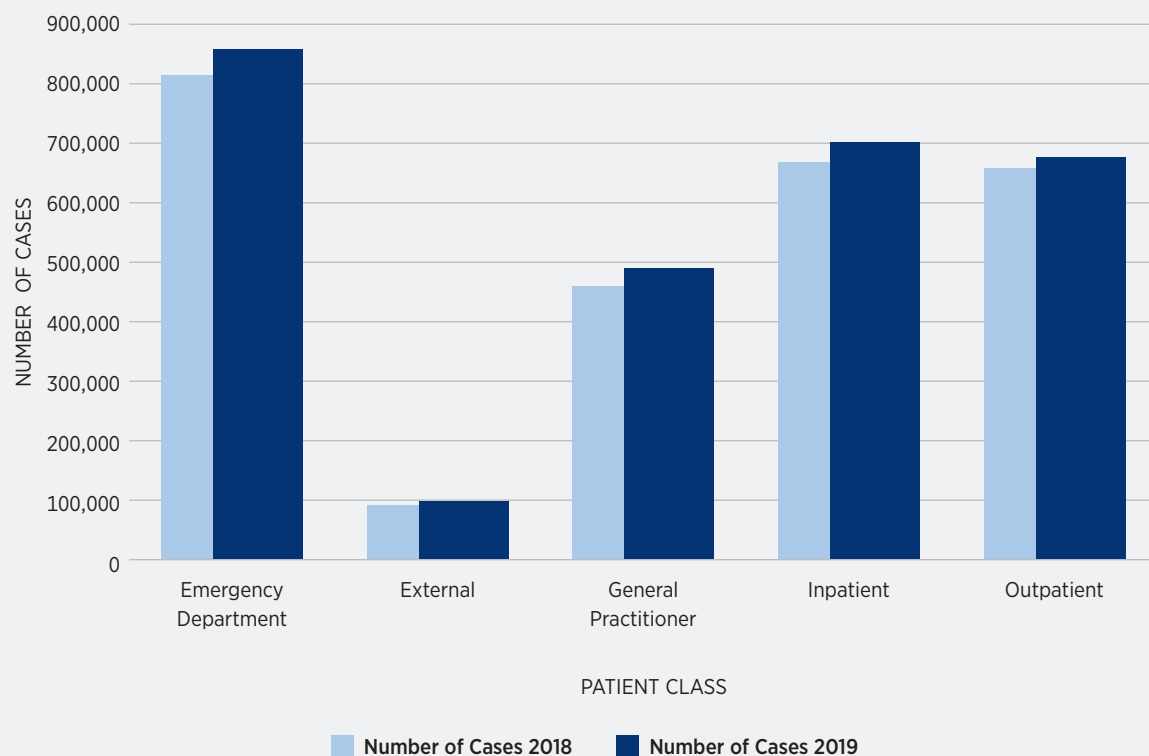
Patient Class is determined based on referral source. As illustrated in Figure 3.2, in 2019 an increased number of cases was recorded across all patient classes, in comparison to the previous year. Cases which have been referred to Radiology Departments from emergency departments within the same hospital (ED) amount to over 860,000. Nearly 700,000 cases have been categorised as Inpatient (IP) and almost 680,000 as Outpatient (OP) referrals. As presented above, both figures are very similar. Cases referred for Radiology exam in 2019 by a General Practitioner increased to 487,000. Close to 100,000 cases were categorised as External (Ext) referrals from another site.

REPORT TURNAROUND TIME

4. Report Turnaround Time

Report Turnaround Time (TAT) is the time from when the images from a completed examination are made available to the Radiologist for interpretation, to the time the report is authorised.

This quality indicator is a marker of the resources available in a department compared to the volume and complexity of work demanded of it and is thus not widely generalisable.

KEY QUALITY INDICATOR

The % of cases with Report Turnaround Times within defined timescales for all cases and by referral source and modality.

The aim is to achieve 90% reports completed within the set Turnaround Time, averaged over a 3-month period.

There are a number of factors that have a direct impact on Radiology Report TAT. One of the most significant is Radiologist resourcing which is instrumental in determining reporting capacity. Many other factors, such as the level of exam complexity and subspecialty expertise available, and the ratio of unscheduled to scheduled care have a direct impact on time required for reporting. In addition, the demands on Radiologists' time go beyond 'simple' reporting, such as interventional caseload, multidisciplinary team meetings, administrative duties, quality improvement activities, teaching and research all have a 'negative' impact on TAT. The percentage of these activities within departments varies widely and thus comparing TATs between hospitals has very limited value in isolation. TAT on its own takes no account of the correctness or accuracy of a report, providing argument against its use a sole arbiter of quality.

TABLE 4.1: Report Turnaround Time maximum targets for each modality depending on patient class (referral source).

Patient Class (Referral Source)	CT	MRI	US	XR
Emergency Department	12 hours			48 hours
Inpatient	24 hours			72 hours
Outpatient	10 days			
General Practitioner	10 days			

Report Turnaround Time targets are only defined for those four modalities with the highest national aggregate cases count: Computed Tomography (CT), Magnetic Resonance (MR), Ultrasound (US) and X-Ray (XR). As outlined in the above table (Table 4.1), the NRQI Programme Guidelines specify target time for report completion depending on referral source for each modality. For outpatients (OP) and General Practitioner (GP) referrals, the time in which a consultant Radiologist is asked to complete a Radiology Report has been set at 10 days for all four modalities. Cases referred for imaging from Emergency Department and Inpatient cases should be reported on within a matter of hours, as appropriate for each modality.

FIGURE 4.1: Percentage of Cases Where Specified Report Turnaround Times Have Been Achieved, for MR, CT, US, XR Only, for All Patient Classes (2018 vs 2019)

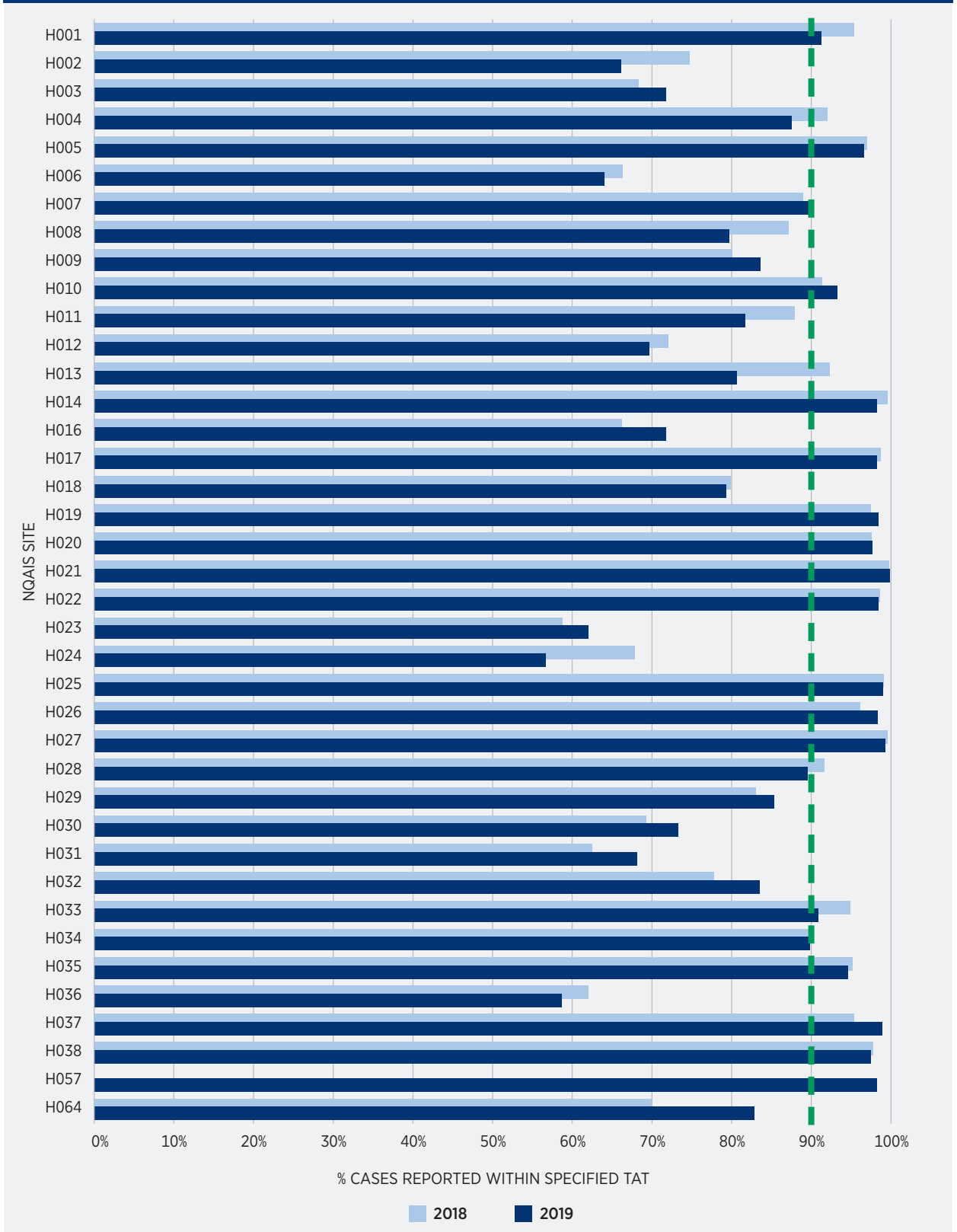% CASES REPORTED WITHIN SPECIFIED TAT

2018　2019

Figure 4.1 represents the percentage of Radiology Reports authorised within defined timelines, as outlined in Table 4.1. It must be highlighted that this data only includes reports authorised for four modalities (CT, MR, US, XR). Data demonstrate that in 2019, 17 out of 39 sites met or exceeded the recommended 90% TAT, with a majority achieving over 95% Radiology reports authorised within the defined timescale. This is a small decrease from 19 out of 38 sites in 2018. Out of the 38 sites that provided data in 2018, the sites that achieved the recommended target of 90% reports completed within set timeframe have done so consistently.

Only seven out of 39 sites have authorised less than 70% reports within the defined timeframe in 2019, which is a decrease from eight out of 38 sites in 2018.

Overall, the results are consistent over two years, with an insignificant change noted for number of NQAIS sites. The data does not provide context with respect to complexity and volume of workload. However, when this data is compared with the volume of cases (Figure 3.1), it can be assumed that the results for individual sites are heavily dependent on workload and the resources available.

The number of consultant Radiologists and availability of sub-specialty expertise vary across different Radiology departments and this should be taken into consideration when reviewing report turnaround time records. The effective Whole Time Equivalent (WTE) figure for Radiologists, per unit population, is the key variable in this analysis. (Refer to Chapter 4 for details)

FIGURE 4.2: Percentage of Reports Completed Within 10 Days for All Outpatient Referrals for Listed Modalities, with Focus on: CT, MR, US and XR (2018 vs 2019)

Similar to 2018, national aggregate results for outpatient cases completed in 2019 show that over 96% of CT, MR and US cases were authorised within 10 days. Reports of XR studies had a slightly lower rate at just over 70% reports authorised within that timeframe. This is likely to reflect a significantly higher overall number of XR cases in comparison to other modalities, and a prioritisation of the more complex cases performed for patients requiring urgent or unscheduled care. It should be noted, that for almost all modalities the percentage of reports "on time" remains consistently high.

FIGURE 4.3: Percentage of Reports Completed Within 10 Days for GP Referrals, for All Modalities, with Focus on: CT, MR, US and XR (2018 vs 2019)
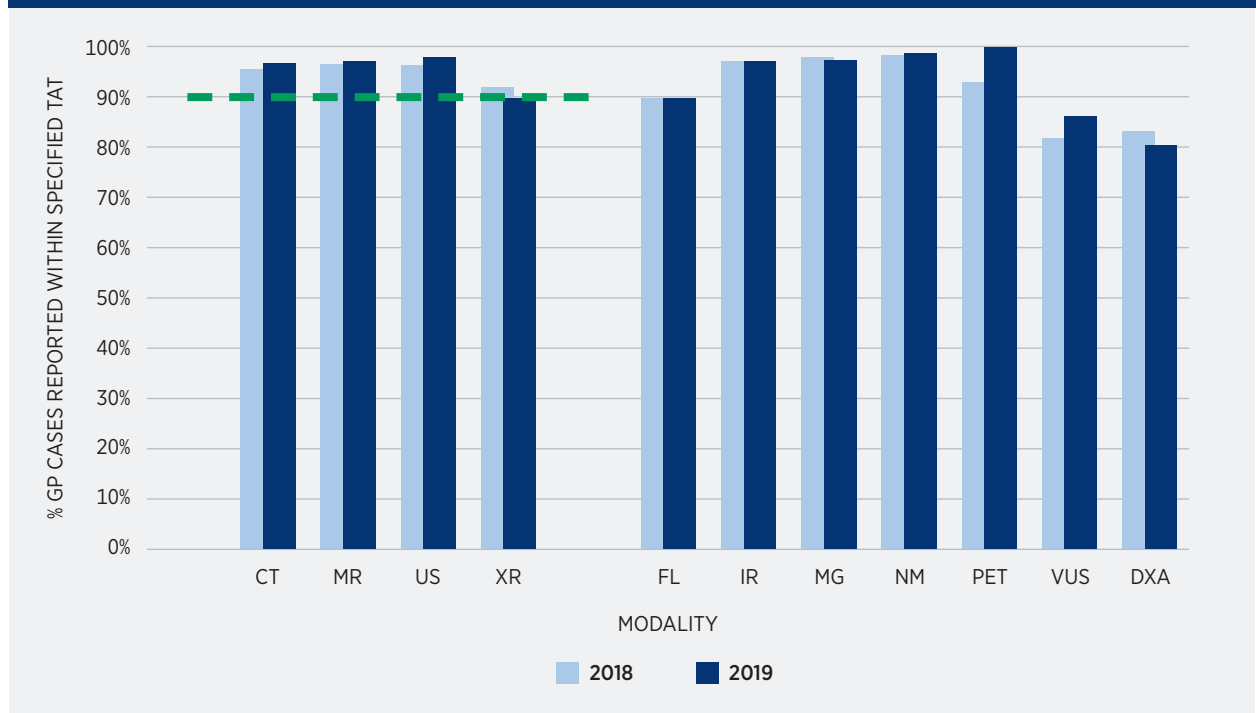
Cases referred for CT, MR, US or XR imaging by General Practitioners should also be reported on within 10 days. The above data shows that for three of those modalities in 2019, close to 100% reports have been authorised within the required 10-day timeframe. Similar to 2018, this also applies to IR, MG, NM and PET reports, for which there is currently no specified reporting timeframe.

FIGURE 4.4: Percentage of Reports Completed Within Defined Timeframe for Emergency Department Cases, with Focus on CT, MR, US and XR (2018 vs 2019)
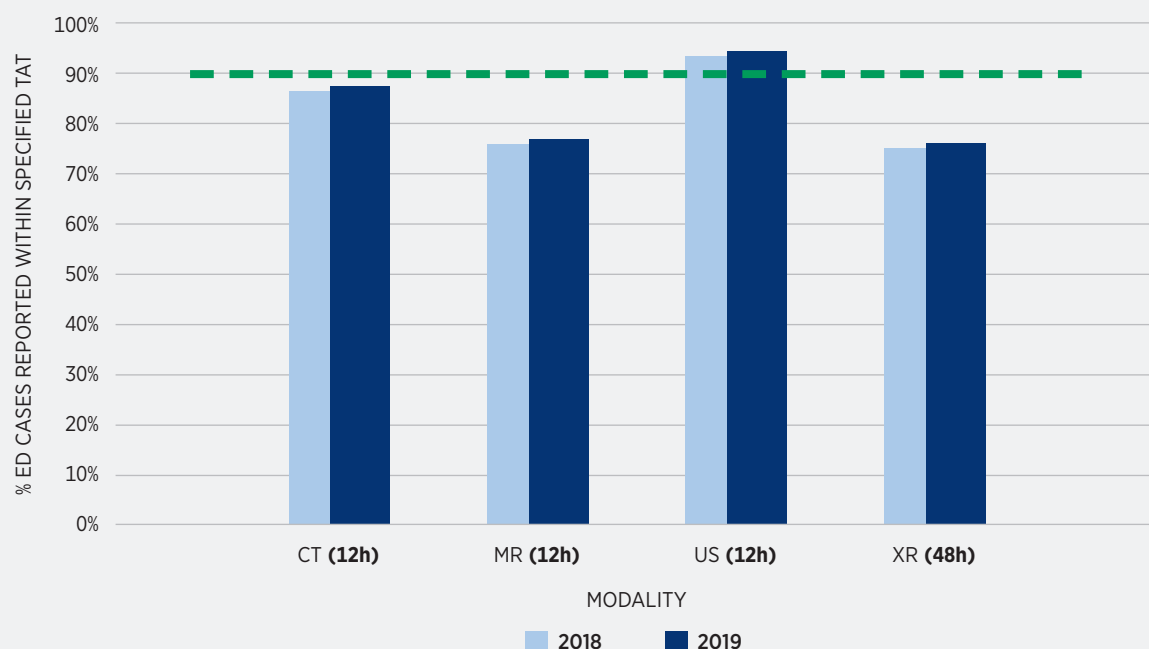
As outlined in Table 4.1, the specified report TAT for CT, MR and US referred from the Emergency Department is 12 hours, while XR reports should be completed within 48 hours from when an image is available.

As shown in Figure 4.4, reporting time for all four modalities have improved in 2019, despite increasing workload.

KEY RECOMMENDATION

The Working Group recommends broadening the scope of Turnaround Time (TAT) in future reporting cycles, measuring total turnaround time, in its two separate components, technical TAT and report TAT:

a. Technical TAT is defined as the time from when the examination was requested to when the examination is technically completed by the Radiographer.

b. Report TAT is defined as the time from when the examination was technically completed to when the report for the examination is finalised by the Radiologist.

The resulting data should be cross-referenced with other research being carried out on Radiology waiting lists.

FIGURE 4.5: Percentage of Reports Completed within Specified Turnaround Time for Inpatient Cases, with Focus on: CT, MR, US and XR (2018 vs 2019)
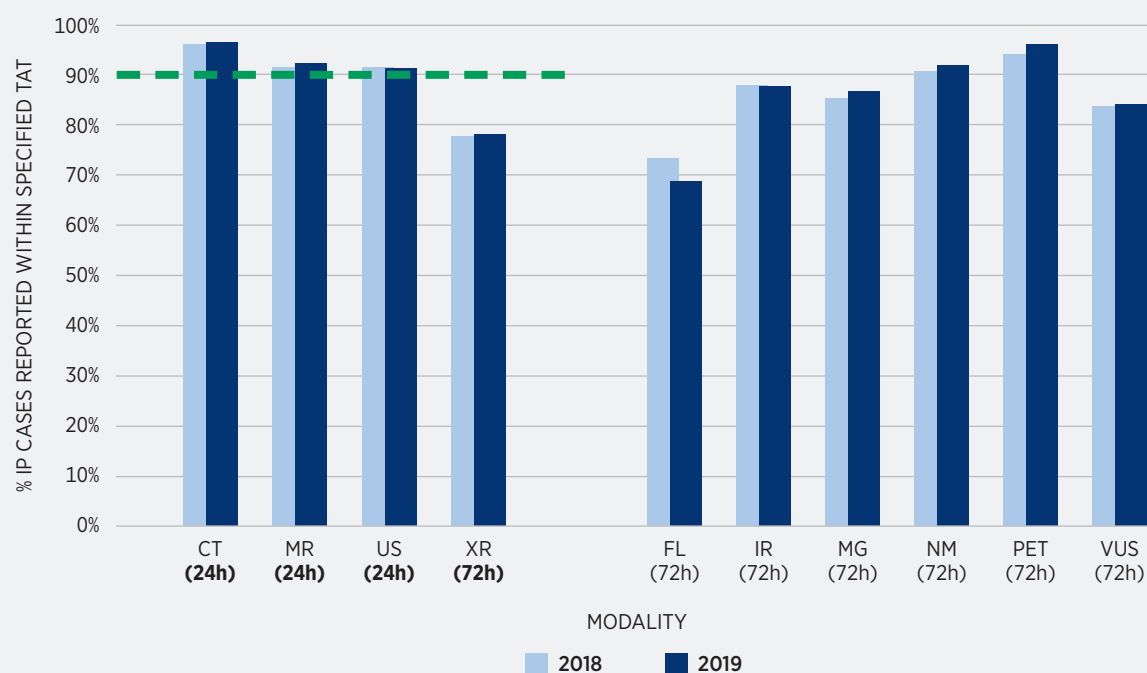
For inpatient cases, CT, MR and US images should be reported on within 24 hours, while the specified TAT for reporting on XR images is 72 hours. The report turnaround time for modalities without a specified reporting timescale target has been drafted as 72 hours in order to capture the modalities in question on the above graph. This is for information purposes only, as is the case in Figures 4.2 and 4.3. Currently there is no set report TAT for these modalities.

> These results show that Irish Radiologists not only continue to perform well but are aiming to improve reporting times. Despite the increasing number of exams to report on and with consistently under resourced teams, the data clearly show that in 2019 a higher percentage of cases were reported within the defined timeframe, which contributes to more timely diagnoses and improved patient care.

To improve the TATs overall will require a national uplift in Radiologist numbers. As numbers improve, in time, sub analysis may identify capacity in one hospital to aid another in the same health region via NIMIS.
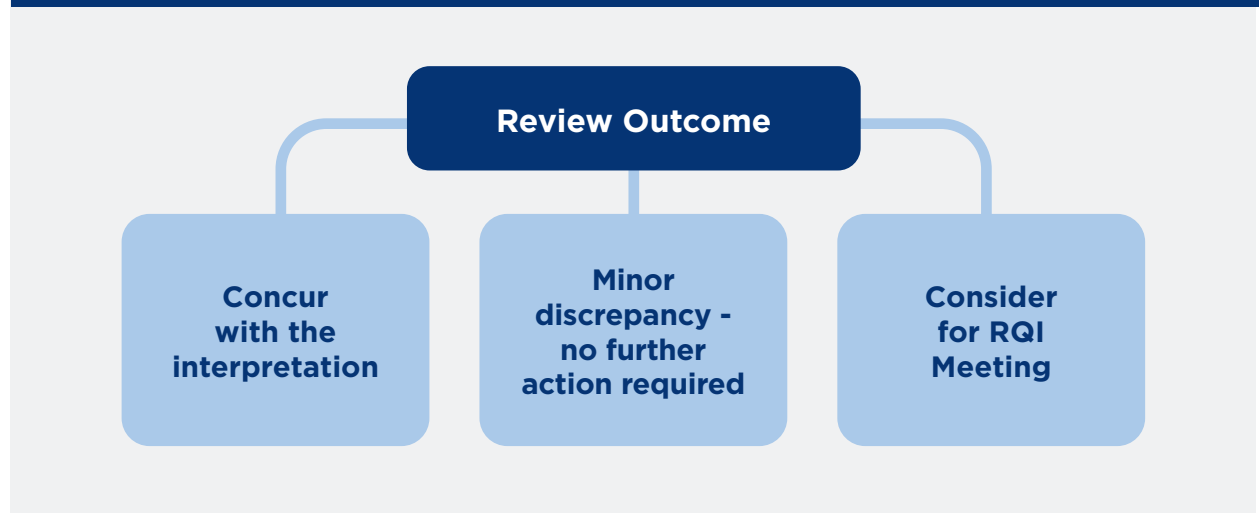
5

PEER REVIEW

5. Peer Review

Peer Review is the process of evaluating the diagnostic accuracy and completeness of Radiology reports on past and current exams.

The practice of peer review is being promoted by the NRQI Programme to maintain safe, high quality patient care.

The Guidelines for the Implementation of a National Radiology Quality Improvement outline three types of peer review:
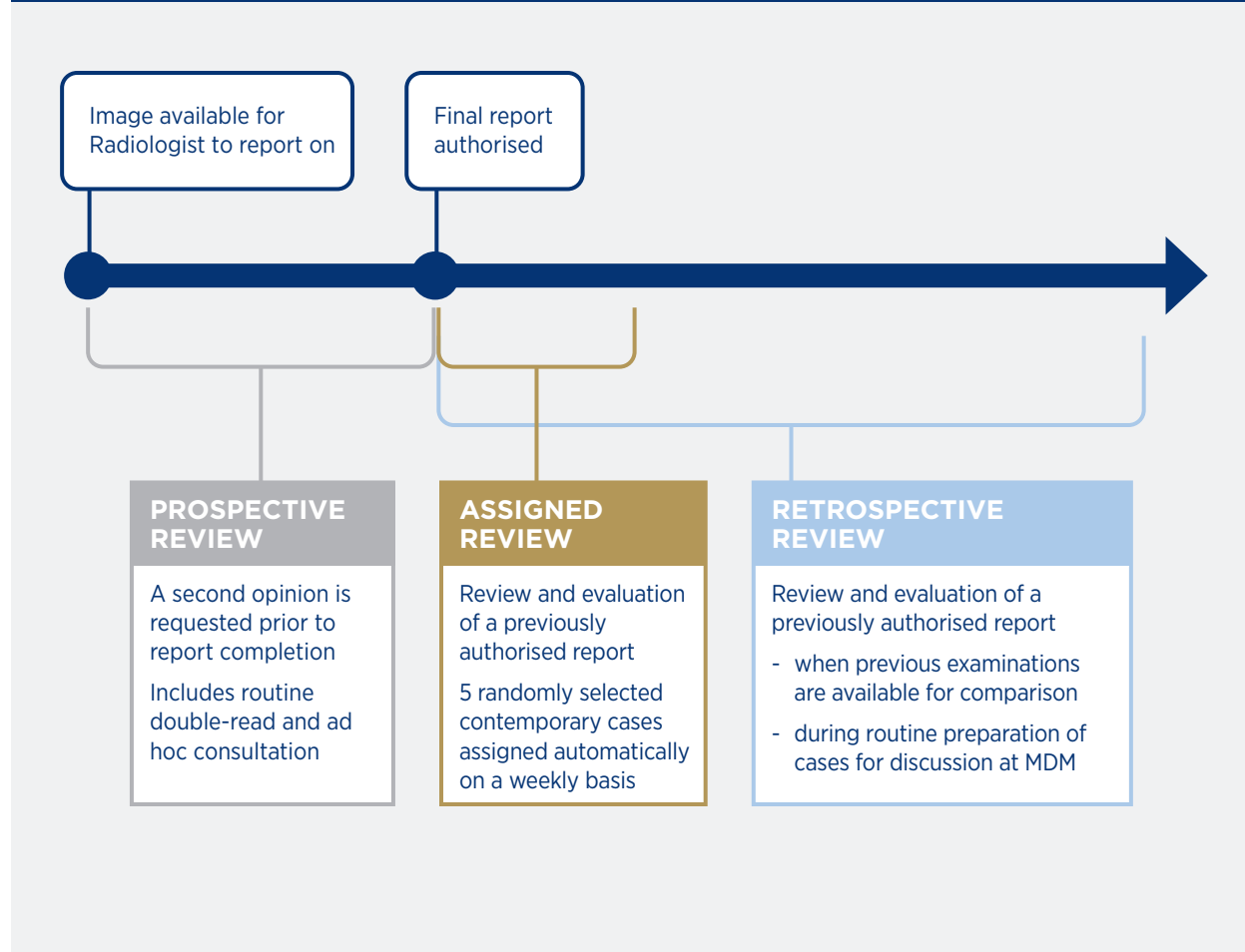
✔ **PROSPECTIVE** – review conducted on a report which has not been yet authorised.
✔ **RETROSPECTIVE** - process of evaluating the diagnostic accuracy of a previously authorised report.
✔ **ASSIGNED** – performed on a previously authorised report where cases completed within the previous seven days are randomly assigned by the peerVue system on a weekly basis.

FIGURE 5.1: Possible Peer Review outcomes available for selection in peerVue

Review Outcome

- Concur with the interpretation
- Minor discrepancy - no further action required
- Consider for RQI Meeting

3 TYPES OF PEER REVIEW

FIGURE 5.2: Time-line of a Radiology Report from the Moment and Image is Available for Reporting, Through to the Moment of Authorisation, to When the Completed Report is Stored and Available for Future Referencing.

Image available for Radiologist to report on

Final report authorised

PROSPECTIVE REVIEW

A second opinion is requested prior to report completion

Includes routine double-read and ad hoc consultation

ASSIGNED REVIEW

Review and evaluation of a previously authorised report

5 randomly selected contemporary cases assigned automatically on a weekly basis

RETROSPECTIVE REVIEW

Review and evaluation of a previously authorised report

- when previous examinations are available for comparison
- during routine preparation of cases for discussion at MDM

As the nature of each peer review type is different, to represent reviews that were recorded in 2019 two separate sets of data were analysed.

The first dataset used allows analysis of peer reviews recorded for cases completed in 2019 only. The second set shows the real volume of this QI activity recorded in 2019, irrespective of case completion date. This means that it captures all peer reviews recorded in the system between 1st January 2019 and 31st December 2019, even if the reviewed case was actually completed in a previous year

This has different implications for each of the review types.

PROSPECTIVE REVIEWS

As these are completed before report authorisation, the number of reviews recorded for cases completed outside of 2019 is insignificant and relates to a small number of cases completed in December of the previous year which were reported on in the first days of January 2019.

RETROSPECTIVE REVIEWS

This type of review is often recorded while reporting a new case, when past images are reviewed for comparison purposes. This means that a reporting Radiologist can look back at cases completed a few months or even years previously to compare with the current imaging. The number of retrospective reviews recorded for cases completed in 2019 in addition to all retrospective reviews recorded in 2019 will be represented on the following pages of this report. It is important to understand that a significant number of retrospective reviews are recorded for cases completed in previous years. This would be typical for oncology cases, where the Radiologist may need to compare a number of images and their respective reports recorded over a long period of time. It also takes place in the process of preparing for MDMs where multiple previous studies may need to be compared going back several years.

ASSIGNED REVIEWS

Cases for those reviews are randomly selected from a list of contemporary completed cases list. Therefore, similar to prospective reviews, the difference between assigned reviews recorded for cases marked as complete in 2019 and all assigned reviews completed in 2019 is insignificant.

PROSPECTIVE PEER REVIEW

Prospective Peer Review occurs where a Radiologist seeks a second opinion from another Radiologist on a particular case prior to authorisation of a Radiology report.

Prospective Review currently includes both double reporting (routine double-read) and ad hoc prospective reviews (consultation) to achieve optimal reporting.

Generally, a Radiologist is advised to seek a second opinion if there is any doubt regarding the reported diagnosis, particularly if the consulted colleague has subspecialty training or particular expertise in the type of case. This serves as an important peer-to-peer education function and is likely to improve the reporting Radiologist's performance on similar cases in the future. Radiologists should record the involvement of colleagues, with their consent, in the Radiology report.

KEY QUALITY INDICATOR

Number of accession numbers with Prospective Peer Review (expressed for each modality and as a % of total accession numbers for each modality)

This Key Quality Indicator demonstrates the proportion of cases that were completed within a chosen timeframe and were reviewed before completion of the Radiology report.

FIGURE 5.3: Percentage of Cases Completed in 2018 vs 2019 (National Aggregate) Where Prospective Review Has Been Recorded in the peerVue System for the Four Modalities with the Highest Number of Cases
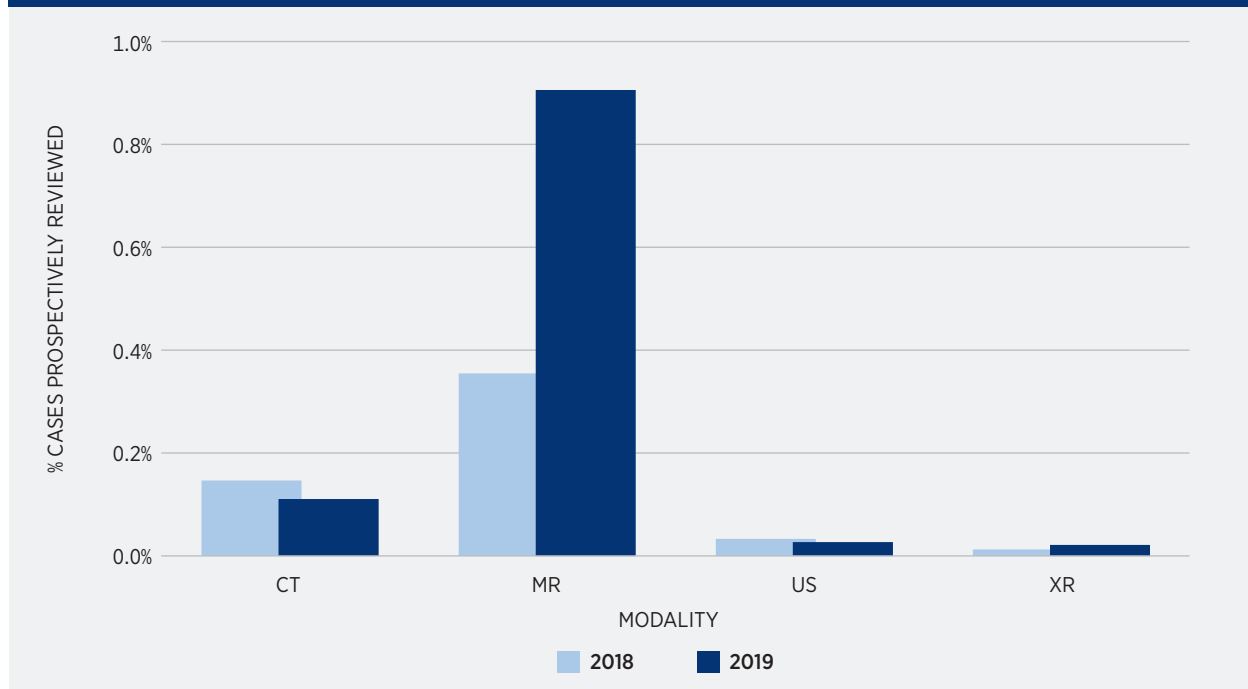
FIGURE 5.4: Percentage of All Cases Completed in 2018 vs 2019 (National Aggregate) Where Prospective Review Has Been Recorded, by Modality
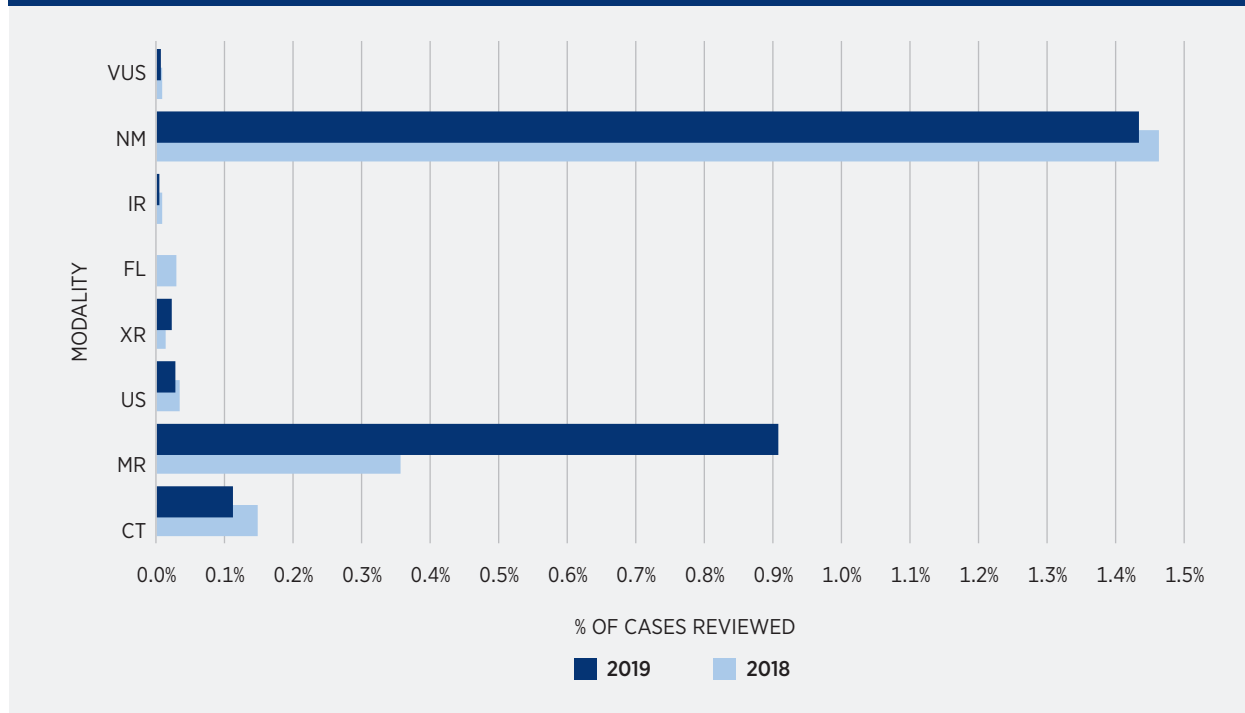
Figure 5.3 represents records for modalities with the highest number of cases, while Figure 5.4 includes all modalities for which Prospective Review was recorded in the peerVue system. Both graphs present the percentage of cases for which Prospective Review has been recorded in the peerVue system out of all cases completed within 2019 (dark blue bars). This is shown in comparison to data recorded in 2018 (light blue bars).

In 2019 the highest percentage of cases prospectively reviewed was recorded in NM (Nuclear Medicine), where such reviews were recorded for 1.4% of cases. This is consistent with data recorded in 2018.

When analysing these graphs (Figures 5.3 and 5.4), the workload differences must be considered. The second modality for which Prospective Peer Review was recorded most frequently is MR (Magnetic Resonance). As can be seen on both graphs, the percentage of cases where this type of review was recorded in 2019 was more than double in comparison to 2018, from 0.4% to 0.9%. In the context of workload this means that Prospective Review was recorded for approximately 900 more MR cases in 2019 than in the previous year. As shown in Figure 5.5, this accounts for over 54% of all cases completed in 2019 where Prospective Review was recorded. The percentage of XR (X-Ray) prospectively reviewed cases also increased from the previous year.

It is important to highlight that due to the interruptive nature of the communication required, only a portion of Prospective Peer Reviews that are taking place in hospitals are being recorded in the system. The NRQI Programme and the Faculty of Radiologists continue to work with the software suppliers to develop improved ways of recording this activity.

FIGURE 5.5: Percentage of Prospective Review by Modality Expressed Against All Prospective Reviews Recorded for Cases Completed in 2019

VUS 0.1%

US 3.2%

NM 11.4%

MR 54.2%

XR 15.3%

CT 15.8%

IR <0.1%

DXA <0.1%

Legend: NM CT MR US XR DXA IR VUS
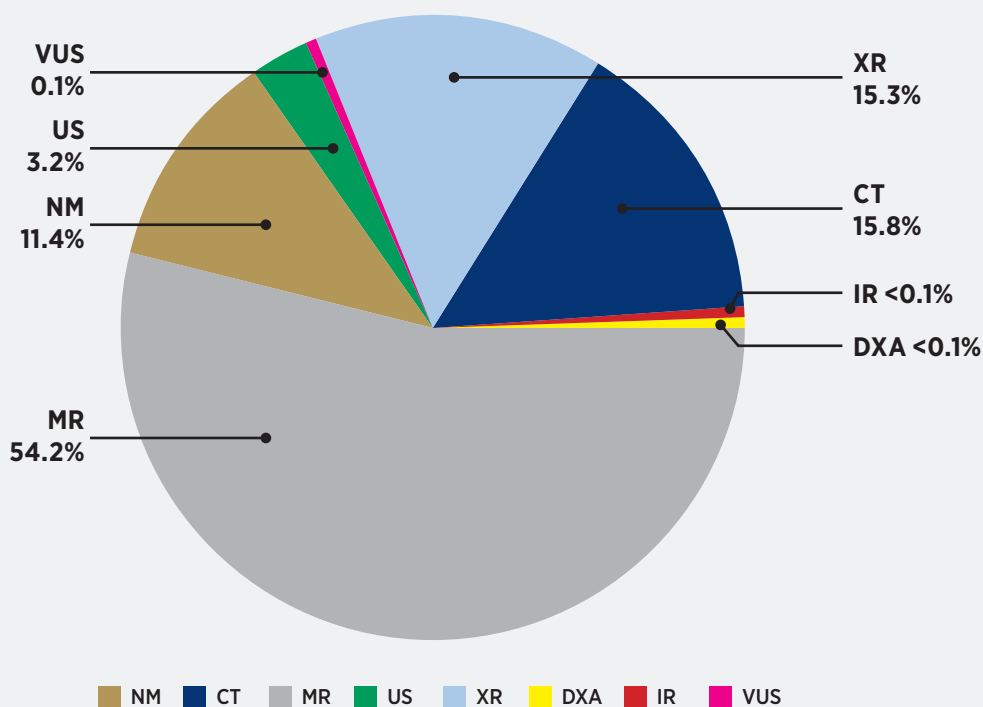
When workload is considered, peer reviews recorded for CT (Computed Tomography) and XR prior to report completion account for 15.8% and 15.3% of all recorded reviews, respectively.

FIGURE 5.6: Percentage of Prospective Review by Modality Expressed Against All Prospective Reviews Recorded for Cases Completed in 2018 vs 2019

% PROSPECTIVE REVIEWS

NM DXA CT MR US XR FL IR VUS
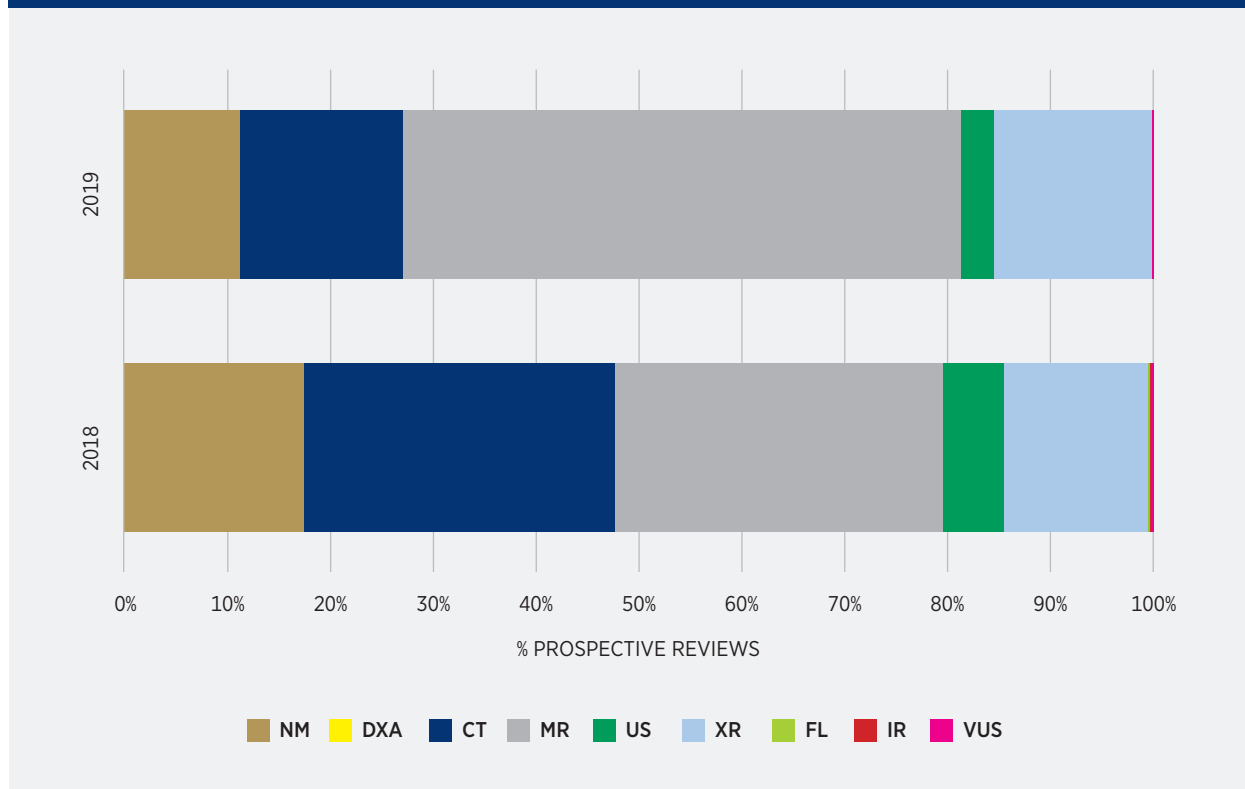
Figure 5.6 illustrates changes in the proportion of Prospective Reviews completed for each of the modalities where cases were completed in 2018 and 2019. While the percentage of XR cases forms a similar portion of all Prospective Reviews, a significant change can be noted in the dynamic between MR and CT cases reviewed before report authorisation.

RETROSPECTIVE PEER REVIEW

Retrospective Peer Review occurs when an opinion is formed regarding the accuracy of a patient's previous report when the previous examination is reviewed. The reviewing Radiologist should record the level of agreement with the original reporting Radiologist's report, using the scale shown in Figure 5.1.

Departments should aim to retrospectively Peer Review a representative number of cases across a range of modalities.

Focused Peer Review is an additional category. These are retrospective reviews commonly performed as Radiology academic exercises that attempt to highlight best practice. These cases are included within all retrospectively reviewed case count.

Where potential quality issues arise, the details should be communicated to the original reporting Radiologist to afford them the opportunity to engage in further discussion.

KEY QUALITY INDICATOR

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 for consideration at Radiology Quality Improvement Meetings (expressed as a % of total cases reviewed, by modality.)

Similar to Prospective Reviews, Retrospective Reviews are routinely performed as a part of everyday activity in Radiology departments, but only a small portion of Retrospective Reviews are being recorded. This is mostly due to the existing cumbersome process of recording peer review coupled with limited time available for recording QI activity in addition to daily workload.

When interpreting Figure 5.7, it should be considered that percentages represent only those Retrospective reviews which were recorded in the peerVue system and not all reviews that may have been completed.

Most Radiologists will perform multiple Retrospective Reviews as part of their daily reporting and MDM preparation but many of these are not being submitted to peerVue for documentation as it adds extra time to each report which can be cumulatively significant over the course of the day.

FIGURE 5.7: Percentage of Cases Completed in 2018 vs 2019 Where Retrospective Review Has Been Recorded, by NQAIS Site
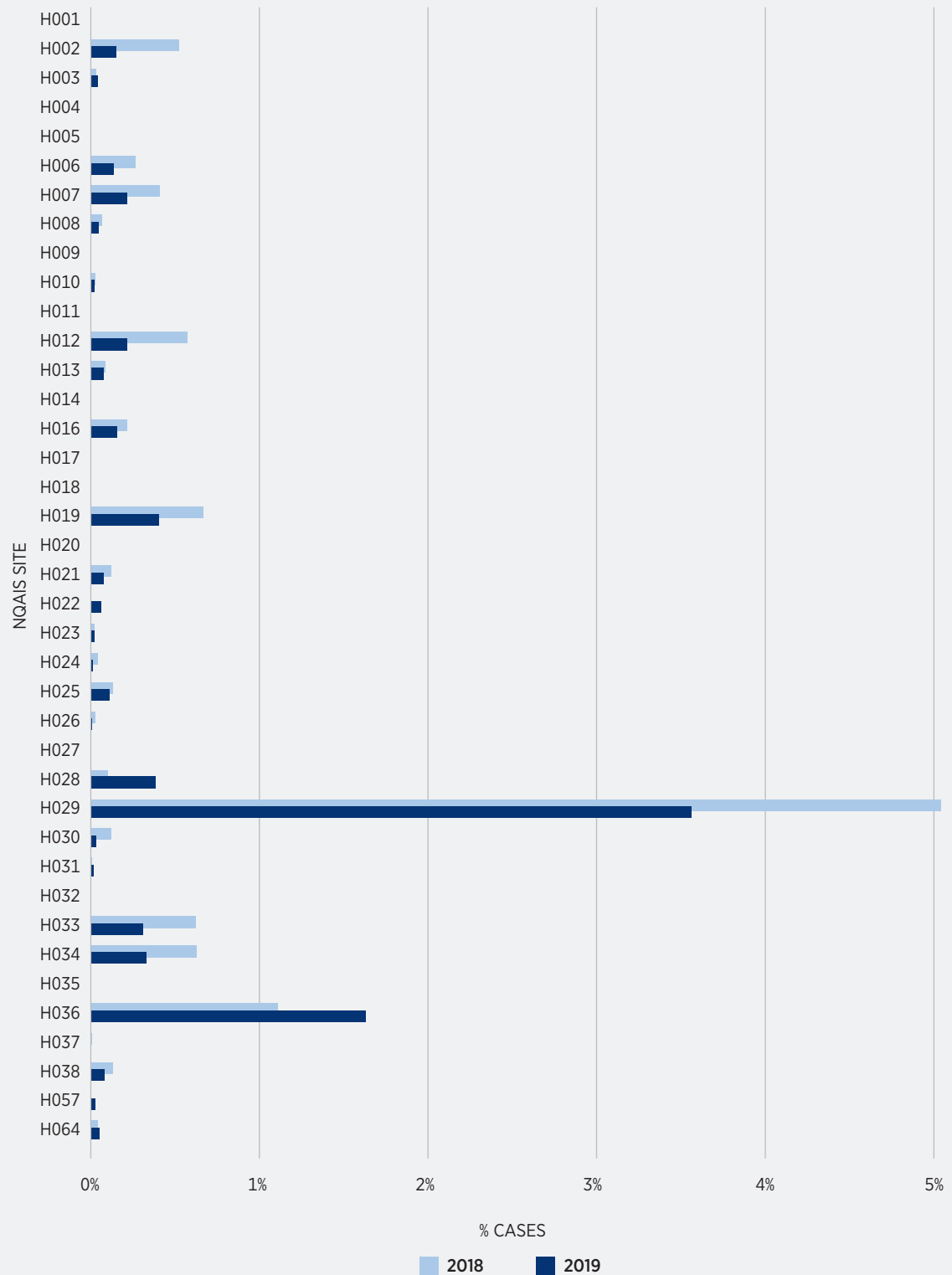
Overall, the percentage of cases completed in 2019 which were retrospectively reviewed is lower than in 2018. It can be assumed that one of the factors contributing to this result is the increased workload recorded in 2019. Other factors could include individual usage of peerVue, particularly if the current system continues to be time consuming. Sites with increased staff turnover e.g. with Locum Radiologists may also find a reduced inclination by more transient staff to be involved in peer review. Departments should ensure that Locums know how to use peerVue and encourage them to use it as an important part of their duties.

In 2019 most sites recorded Prospective Peer Reviews for less than 1% completed cases, similar to 2018. The site which recorded the highest percentage of retrospectively reviewed cases in the previous year, achieved also the highest result in 2019, however it was significantly lower than in 2018. Another site has improved by 0.5% in comparison with the previous year, achieving the second highest result. Fifteen out of 39 NQAIS sites have recorded less than 0.01% of cases completed in 2019 as retrospectively reviewed.

FIGURE 5.8: Percentage of Cases Completed in 2018 vs 2019 (National Aggregate) Where Retrospective Review Has Been Recorded, by Modality
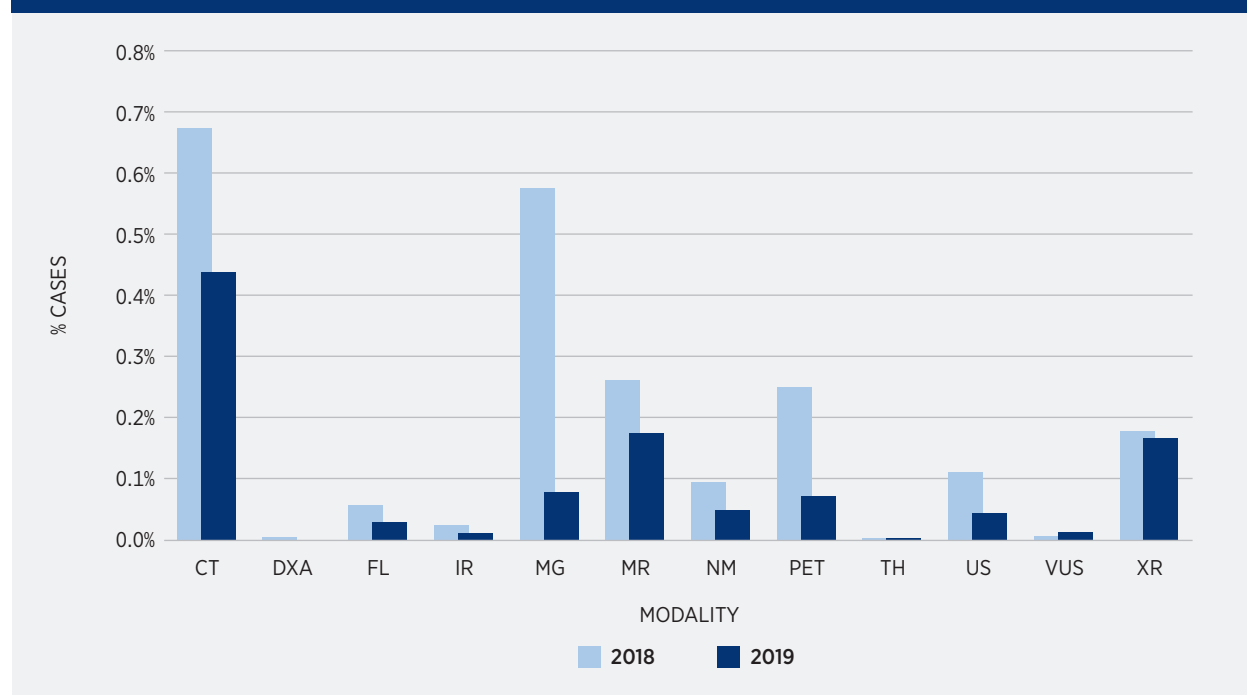

Figure 5.8 above shows Retrospective Reviews recorded for cases completed in 2019 only. Although 2019 records differ from 2018, the highest percentage of reviewed reports was again, amongst CT cases. The percentage of MG (Mammogram) cases where Retrospective Review has been recorded in peerVue system have dropped from 0.6% to 0.1%.

TABLE 5.1: Number of Cases Completed in 2019 by Modality

Modality	Number of Cases 2019
CT	365,164
DXA	21,697
FL	10,376
IR	25,812
MG	44,788
MR	153,681
NM	20,401
OUS	10,862
PET	4,140
TH	31,591
US	306,813
VUS	51,291
XR	1,804,814

Although these percentage values may seem insignificant, it is important to look at the above records in the broader context of the overall workload for each modality (see Table 5.1). It should also be taken into consideration that most cases consist of multiple images which must be reviewed with equal attention.

In the process of Retrospective Peer Review, the original image and report are reviewed by a second Radiologist. This type of Peer Review may be performed during:

✔ Routine review of prior images while interpreting a new image
✔ Routine preparation of exams for discussion at an MDT Meeting
✔ Review based on new clinical findings or information
✔ Focused peer review of a specific set of exams

As previously outlined (page 28), Retrospective Reviews recorded for cases completed in 2019 form only a part of all Retrospective Reviews recorded in 2019. It is important to highlight that over 3,200 out of 8,320 recorded Retrospective Reviews were linked to cases completed before 2019. This is a substantial amount of QI activity recorded in the system which should not go unnoticed.
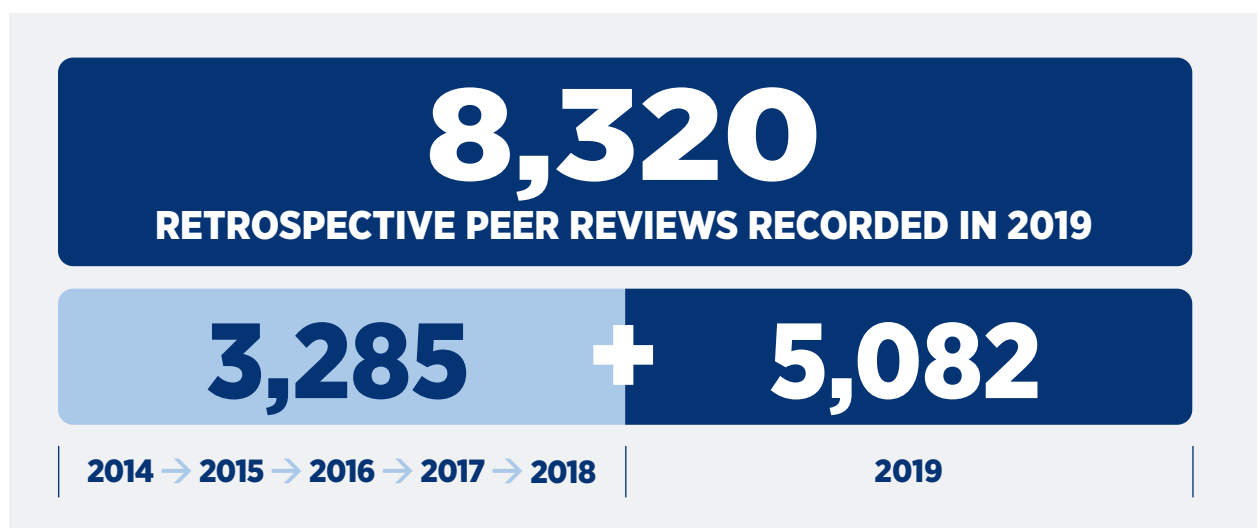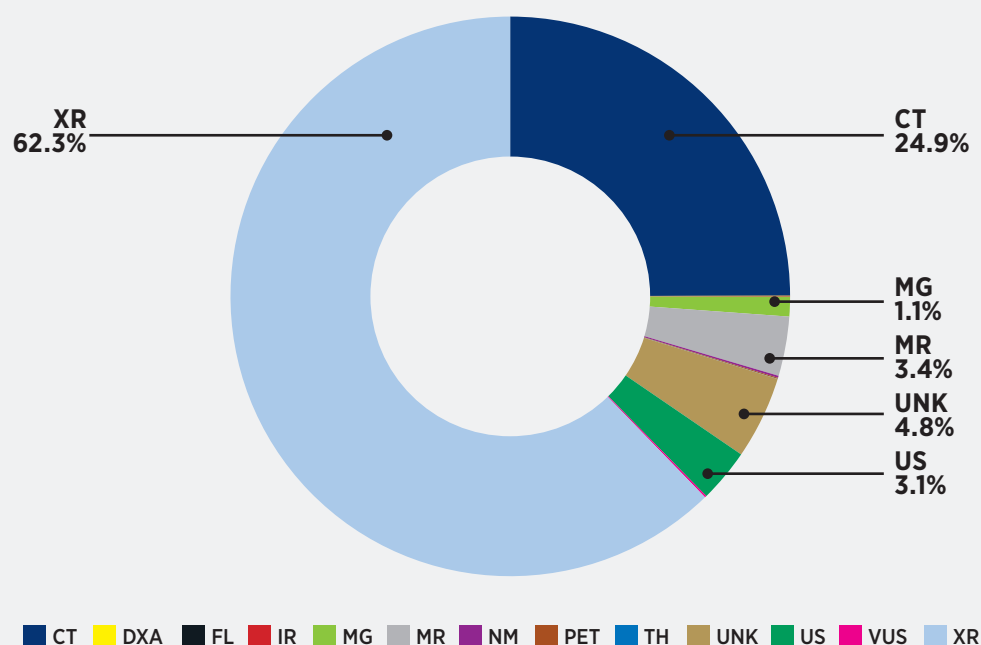
8,320
RETROSPECTIVE PEER REVIEWS RECORDED IN 2019

3,285 **+** **5,082**

| 2014 → 2015 → 2016 → 2017 → 2018 | 2019 |

FIGURE 5.9: All Retrospective Peer Reviews Recorded in 2019, Irrespective of Case Completion Date, by Modality

Legend: CT | DXA | FL | IR | MG | MR | NM | PET | TH | UNK | US | VUS | XR

XR 62.3%
CT 24.9%
MG 1.1%
MR 3.4%
UNK 4.8%
US 3.1%

As illustrated in Figure 5.9 the vast majority, 62% of all Retrospective Reviews, were recorded in 2019 for XR reports. This can be explained by the fact that XR forms the largest portion of the national Radiology case count. Second on the list are CT reports, where 25% of all Retrospective Reviews were recorded that year.

The reviewing Radiologist should record the level of agreement with the original reporting Radiologist's report, in the peerVue system, using one of the following options:

✔ Concur with interpretation
✔ Minor discrepancy – no further action required
✔ Consider for RQI Meeting

FIGURE 5.10: Retrospective Reviews by Outcome, as a Percentage of All Retrospective Reviews Recorded for Cases Completed in 2019 and a Comparison Between 2018 and 2019 Records
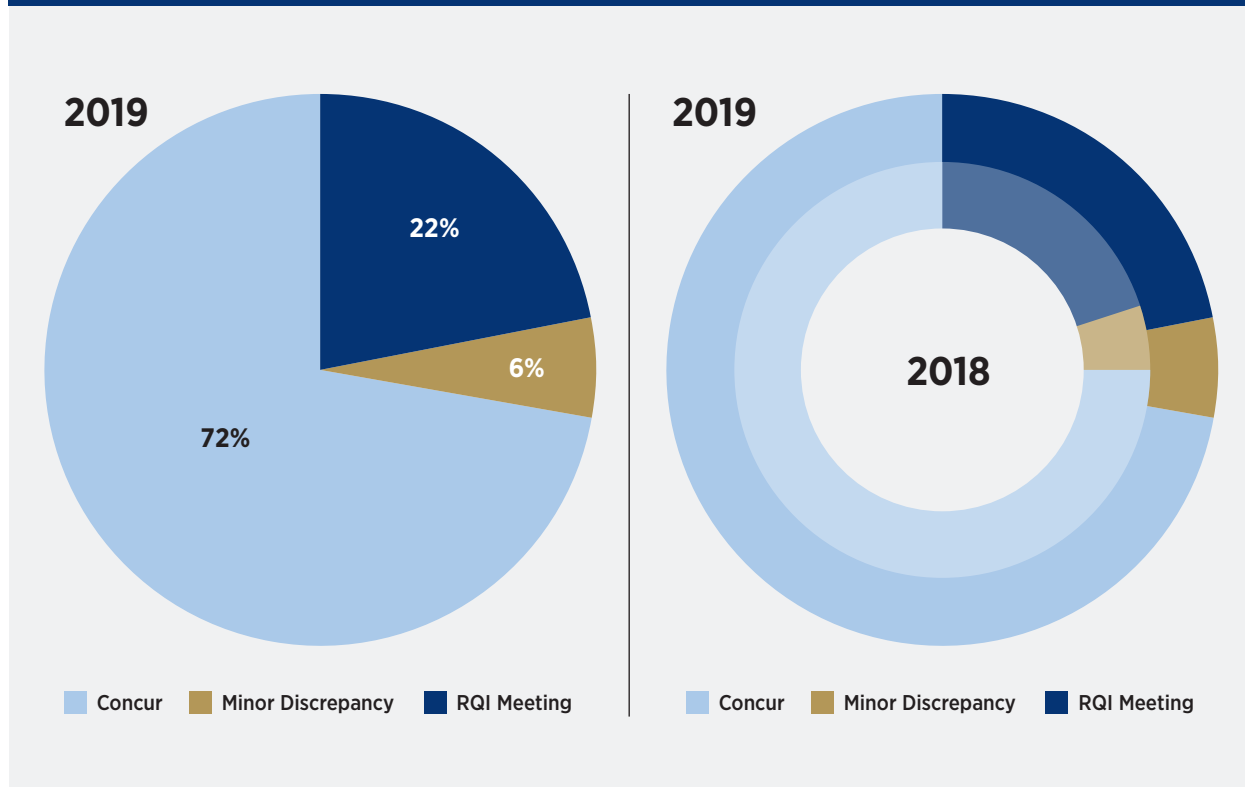
Figure 5.10 represents the percentage breakdown of all Retrospective Reviews performed on cases completed in 2019 by review outcome. The outcome of 72% of all recorded Retrospective Reviews was to concur with the original report. Only 6% of recorded Retrospective Reviews suggested minor discrepancy, while 22% were submitted to RQI Meetings. Those results are similar to previous year, with a minimal difference.

Figure 5.11: Retrospective Reviews by Outcome, as a Percentage of All Retrospective Reviews Recorded in 2019, Irrespective of Case Completion Date, and Retrospective Reviews Recorded for Cases Completed in 2019

Legend: Concur (light blue), Minor Discrepancy (gold), Consider for RQI Meeting (dark blue)
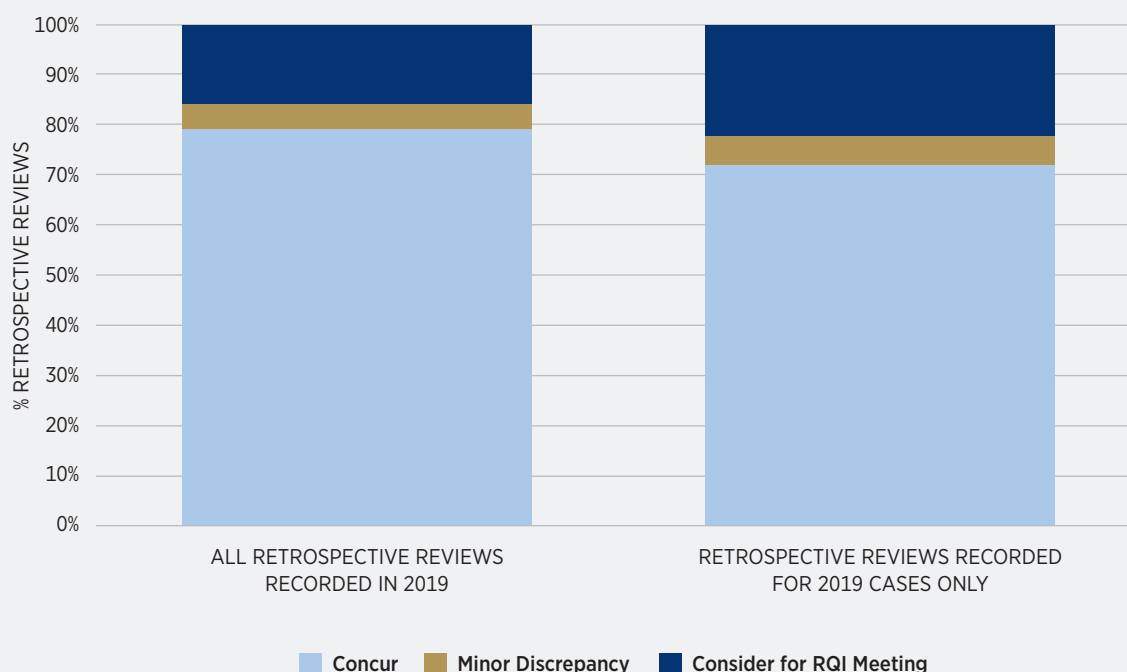
When all Retrospective Reviews recorded in 2019 are taken into consideration, the results are similar. In 79% of cases, the reviewing Radiologist was in agreement with the original report, 5% had minor discrepancies, not requiring any further action and 16% of retrospectively reviewed cases recommended referral to the RQI meeting. This suggests that when the old report is reviewed, there is a lower probability of finding a significant reason to present it for discussion at the RQI Meeting.

> Studies are submitted to RQI meetings as shared learning exercises and such studies will therefore comprise examples of both best practice and learning opportunities for improvement.

ASSIGNED PEER REVIEW

The purpose of Assigned Peer Review is to make contemporary cases available to Radiologists for review.

The cases assigned for review will sample a range of modalities. Ideally Radiologists will be provided with cases to review across a spectrum representative of their usual practice, however cases can be assigned across all subspecialties. If the Radiologist does not practice the subspecialty in the assigned case, they can choose to reject the case and not complete that Peer Review.

KEY QUALITY INDICATOR

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 for consideration at Radiology Quality Improvement meetings (expressed as a % of total cases reviewed, by modality)

Only cases reviewed, as a percentage of total cases, contribute to the data set. The percentage of cases reviewed out of those assigned is not calculated here.

KEY RECOMMENDATION

The Working Group recommends more focused allocation of subspecialty Assigned Reviews, which will allow for a higher number of reviews to be completed, by reducing the number of reviews rejected due to inappropriately assigned subspecialty examinations.

The Working Group will collaborate with the software suppliers to develop a tailored approach within the current system to ensure that Radiologists are not assigned cases outside their usual practice.

FIGURE 5.12: Percentage of Cases Reviewed as a Part of Assigned Reviews in 2018 vs 2019, by NQAIS Site
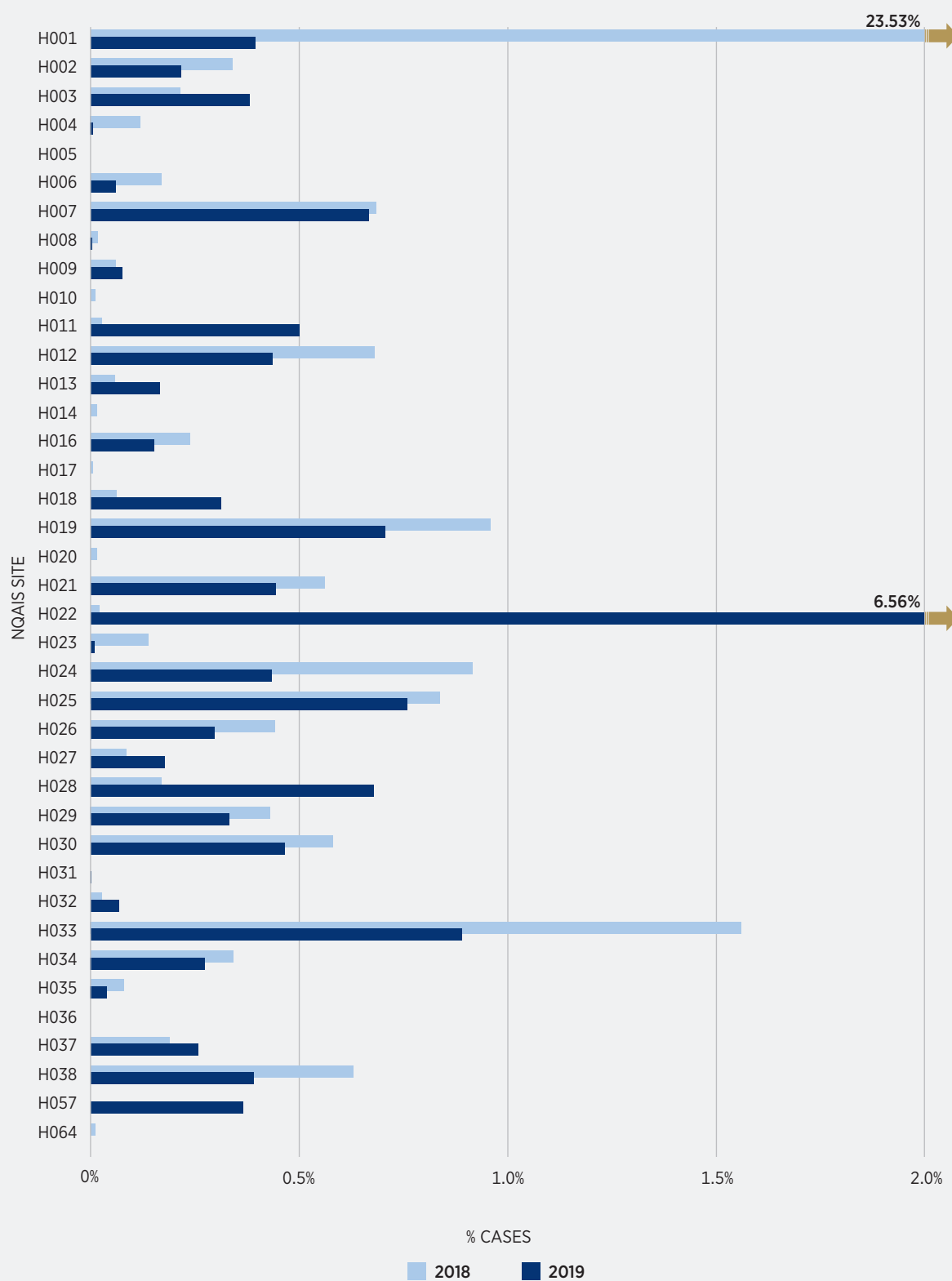
As illustrated in the Figure 5.12 the percentage of cases reviewed in the Assigned Review process varies between 2018 and 2019 for almost all NQAIS sites.

Six NQAIS sites completed a number of Assigned Reviews representing over 0.5% of their cases in 2019. The site with the highest result in 2018 (23.4%) has recorded below 0.5% in 2019. Another site with a minimal percentage recorded in 2018 achieved the highest result of 6.6% in 2019.

Such large differences year on year and lack of consistency in percentages of cases reviewed as a part of assigned reviews suggest that this QI activity is heavily reliant on resources available.

In a busy department, Assigned Peer Review may be deemed less of a priority and so may be neglected in favour of clinical work and more urgent administrative activity.

Similar to performing Retrospective Peer Review, the Radiologist completing an Assigned Review should record the level of agreement with the original reporting Radiologist's report using the scale shown in figure 5.1:

✔ Concur with interpretation
✔ Minor discrepancy – no further action required
✔ Consider for RQI Meeting

FIGURE 5.13: Assigned Reviews by Outcome, as a Percentage of All Assigned Reviews Recorded in 2019 and a Comparison Between 2018 and 2019 Records
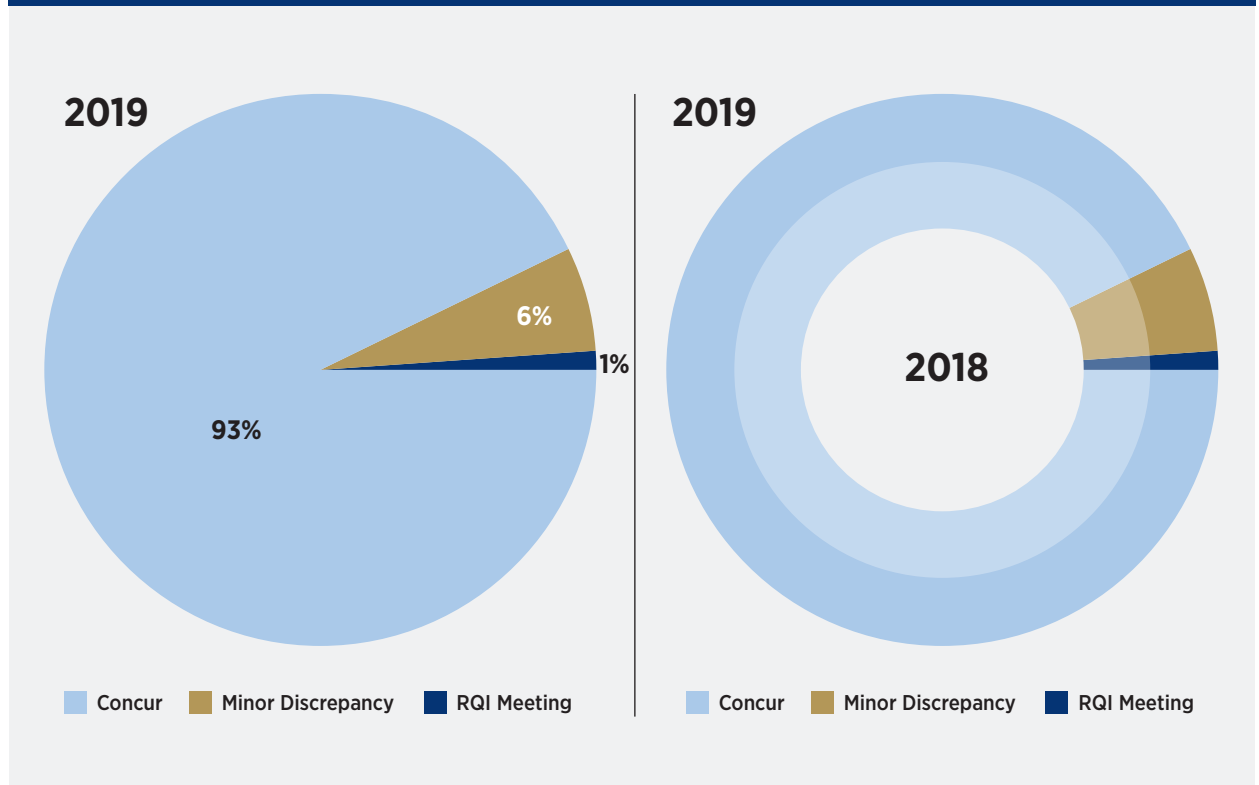
As shown on Figure 5.13, the results of the Assigned Peer Review process are very similar. In 93% of completed Assigned Reviews the reviewing Radiologist recorded their agreement with the previously authorised report. In 6% of Assigned Reviews minor discrepancy was identified. Only 1% of reports reviewed as a part of the Assigned Review process were recommended for referral to the RQI Meeting. The same result was achieved when all Assigned Reviews recorded in 2019 were taken into account, irrespective of the case completion date.

The above data draws attention to the difference between Retrospective and Assigned reviews. Although both types of reviews are completed retrospectively, after the report has been authorised, the reasoning behind initiation of the review process is different for both.

As explained in section 5.2 of this report, Retrospective Review is usually conducted in conjunction with another process, such as routine review of patient's records when a new case or unknown earlier clinical information has become available, or during preparation for MDM. Assigned Reviews are randomly chosen by the system and always include contemporary cases, not older than seven days. This may help to explain a disproportionate number of reviewed cases which are recommended for RQI meeting, from 20% for Retrospective Reviews to only 1% for Assigned Reviews.

Work is underway to implement software changes and improve the method of recording Peer Review to make this process less cumbersome and time consuming.

KEY RECOMMENDATION

The Working Group recommends that sites discuss possible process improvements to ensure Peer Review is recorded efficiently, with minimal impact on existing workload levels. This could include weekly reminders to colleagues either by email or possibly through the NIMIS system. The QI Lead Radiologist should feed any departmental ideas back to the Working Group to develop a more coordinated national solution.

Compliance may be improved if reporting Radiologists can be automatically notified with monthly or quarterly anonymised reports documenting their number of Prospective, Retrospective or Assigned Reviews. This would provide incentivisation as well as simplifying data for the Radiologist to submit as part of their annual CME requirements. Current software limitations prevent this automated list being generated but it is hoped this will be addressed in the next NIMIS upgrade.

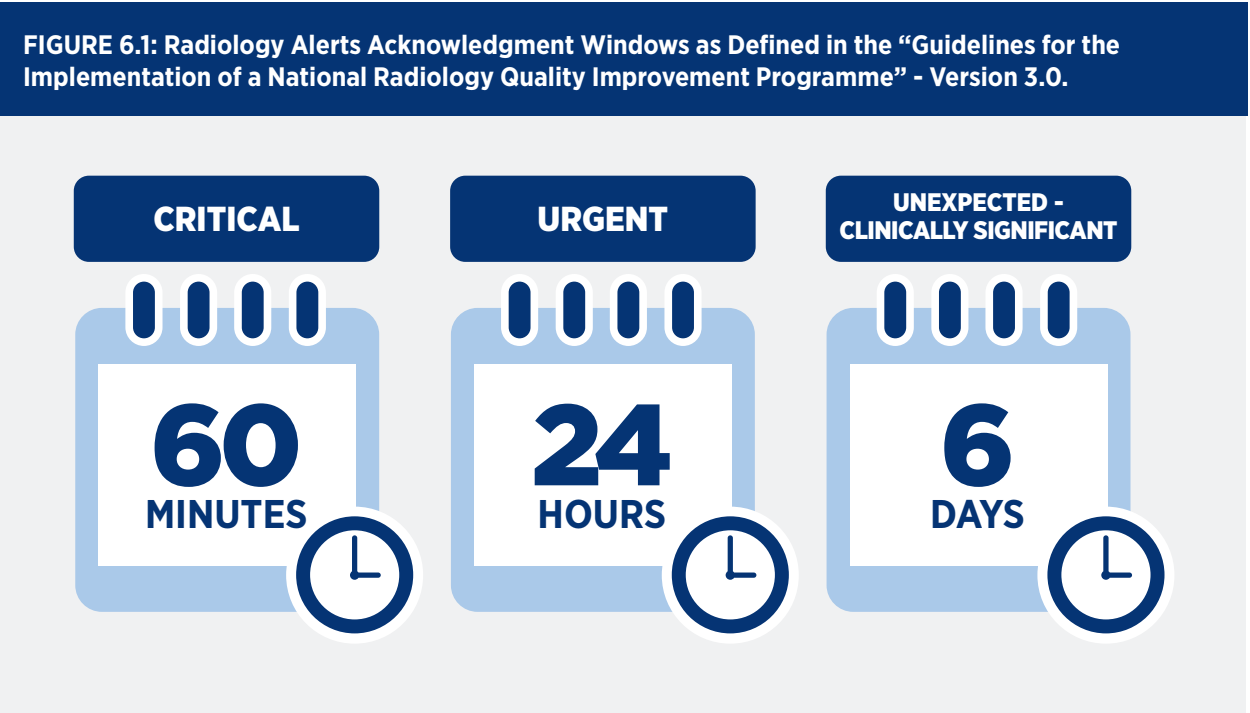# RADIOLOGY ALERTS

6

6. Radiology Alerts

An Alert is defined as the communication of a high priority finding or report from one healthcare professional to another.

Radiology alerts require acknowledgement from the appropriate recipient, typically the referring physician or an appropriate member of their team.

> **Acknowledgement by the referring clinician is treated as a confirmation that the receiver is aware that the report contains high priority information, is aware of the urgency and will follow-up and act on the Radiology alert as appropriate.**

The term "Radiology Alert", for the purposes of the NRQI Programme, refers to three categories of findings: Critical, Urgent, or Unexpected-Clinically Significant. Additional details and specific data relating to this categories can be found on pages 62-64. Each of those categories has a defined acknowledgement timeline, as illustrated in Figure 6.1.

The acknowledgement window begins when a Radiology Alert is activated in peerVue QICS, its duration is calculated from the moment that the alert is marked in the system as acknowledged.

FIGURE 6.1: Radiology Alerts Acknowledgment Windows as Defined in the "Guidelines for the Implementation of a National Radiology Quality Improvement Programme" - Version 3.0.

CRITICAL	URGENT	UNEXPECTED - CLINICALLY SIGNIFICANT
60 MINUTES	**24** HOURS	**6** DAYS

KEY QUALITY INDICATOR

Number of Radiology Alerts where the acknowledgement was received within the guideline acknowledgement time (expressed as a % of the number of Radiology Alerts)

Number of Radiology Alerts for each urgency level (expressed as % of total cases)

Number of acknowledged communicated cases of unexpected and clinically significant radiological findings (expressed as % of total cases)

In the event where communication of a Radiology alert has not been acknowledged, a locally agreed escalation procedure should be put in place.

It is the responsibility of each hospital / Radiology department, in conjunction with the referring clinicians and hospital management, to establish a local policy that clearly defines the processes for communication, and the responsibilities of the Radiologists, the referring clinicians and hospital management within that process (See Memorandum of Understanding 2019 issued to all hospitals for further details on all roles and responsibilities).

This escalation procedure should involve the Radiology department and specifically the Radiology Clinical Director / Consultant Radiologist in Administrative Charge and be managed by a designated person within the department. The department should take appropriate actions to ensure adherence to the standards.

Not all NQAIS sites use peerVue QICS for Radiology Alerts as there may be other local systems in their hospitals deemed more appropriate. Therefore, numbers included in this report represent only a portion of Radiology Alerts related to cases completed in 2019.

FIGURE 6.2: Percentage of Activated Radiology Alerts for Each Patient Class Broken Down by the Urgency Level (2019)
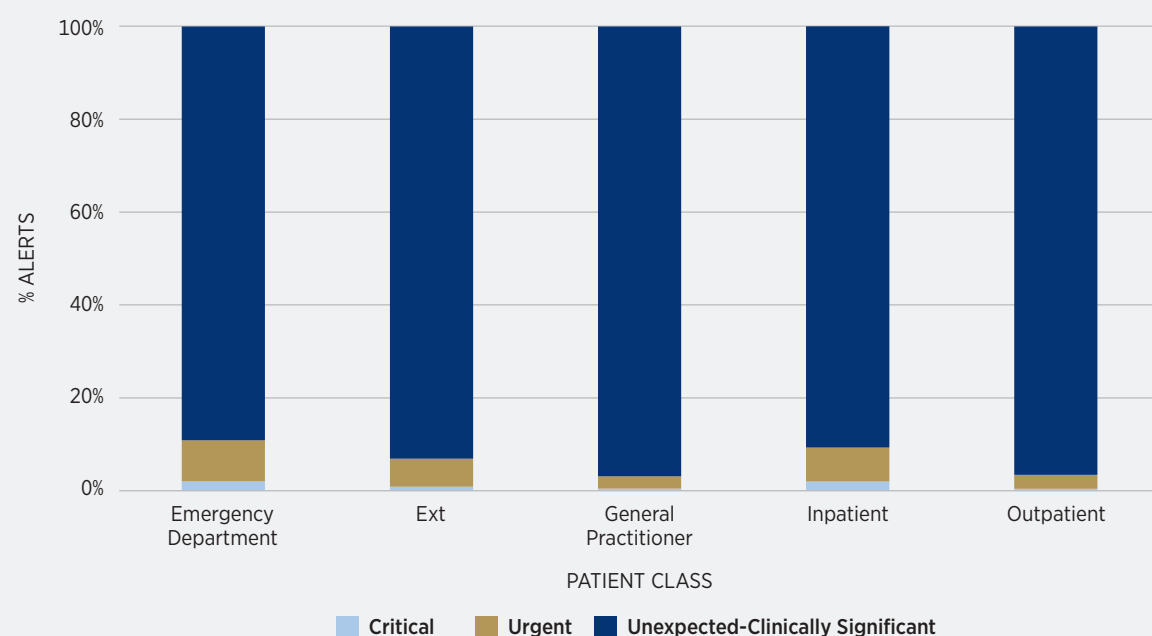
The above graph (Figure 6.2) represents all alerts activated in 2019 in the peerVue system and demonstrates that a vast majority of all Radiology Alerts recorded refer to Unexpected-Clinically Significant (U-CS) results. It is evident from the presented data, that the peerVue system is used to activate Critical Alerts only on very rare occasions across all patient classes.

FIGURE 6.3: Percentage of All Radiology Alerts Activated in peerVue for Each Patient Class in 2018 vs 2019 (National Aggregate), Broken Down by the Urgency Level
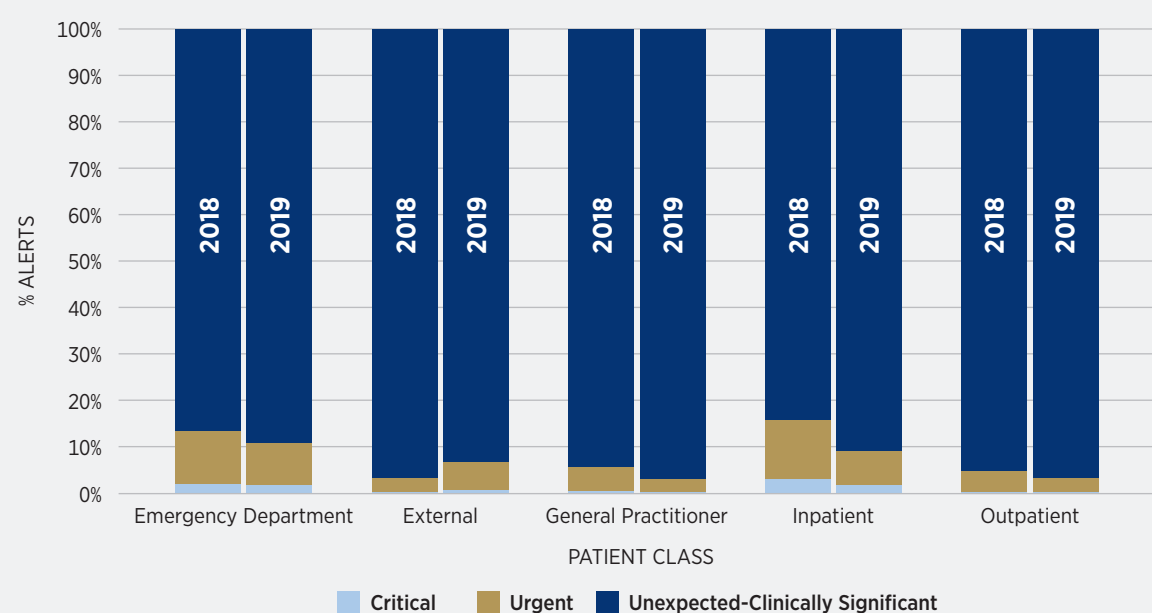
As presented in Figure 6.3, when the 2019 dataset is compared with 2018 records, the difference between the two is minimal. The most significant change has been noted in the proportion of alerts for IP cases and for cases referred from External sites, this is when a patient is referred for specific Radiology imaging from another hospital/centres. The percentage of Urgent alerts in relation to U-CS alerts dropped substantially for GP referred cases. This could be attributed to an increase in the use of peerVue alert system for U-CS alerts, which could increase proportion of this type of alerts.

When interpreting the information presented in Figures 6.2 and 6.3, it is worth taking into consideration the number of alerts raised for each referral source, as per below graph (Figure 6.4)

FIGURE 6.4: Number of All Radiology Alerts Recorded in 2019 by Referral Source (Patient Class), National Aggregate
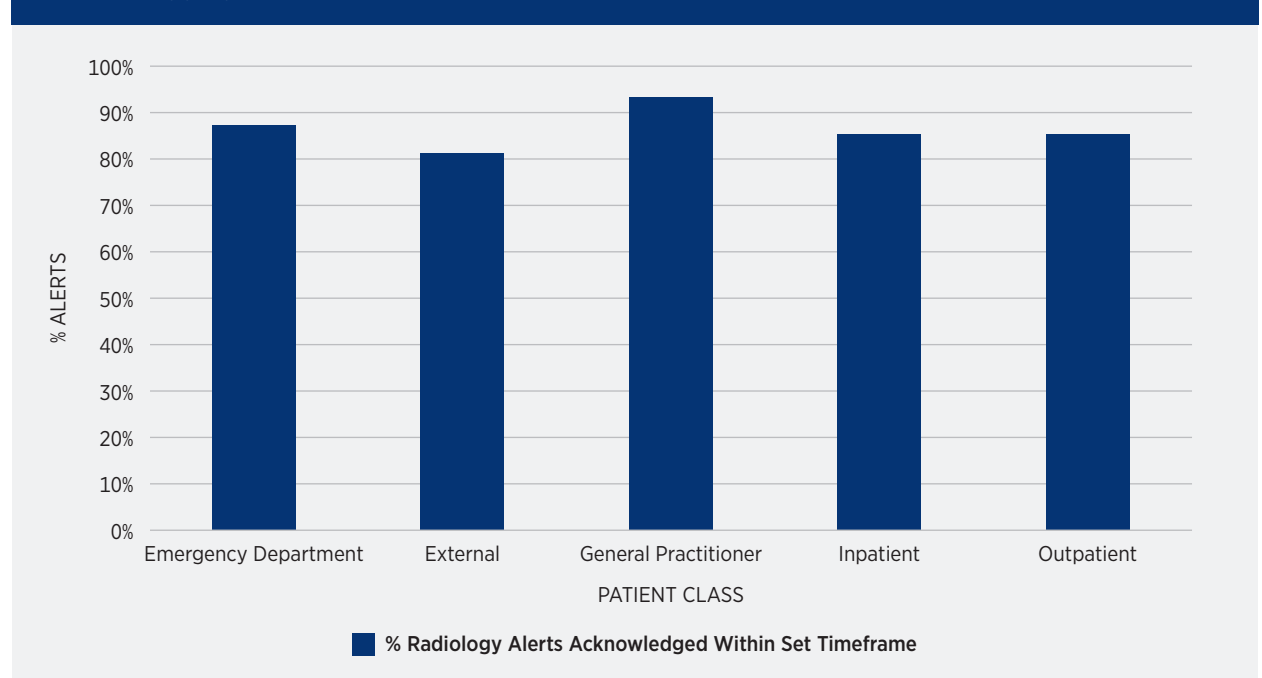
The highest number of cases with activated Radiology Alerts, almost 11,500, has been recorded for Outpatient cases, followed by Inpatient cases, nearing 10,000 and Emergency Department referred cases (c.9,400 cases with activated alerts). The lowest number of cases recorded in 2019 where a Radiology Alert has been activated (less than 2,000) has been referred for Radiology examination from External sites. Figure 6.4 provides further context for interpreting Figure 6.7, where the percentage of Radiology Alerts acknowledged within the defined timeframe is presented.

FIGURE 6.5: Number of All Radiology Alerts Recorded in 2018 vs 2019 by Urgency Level, National Aggregate
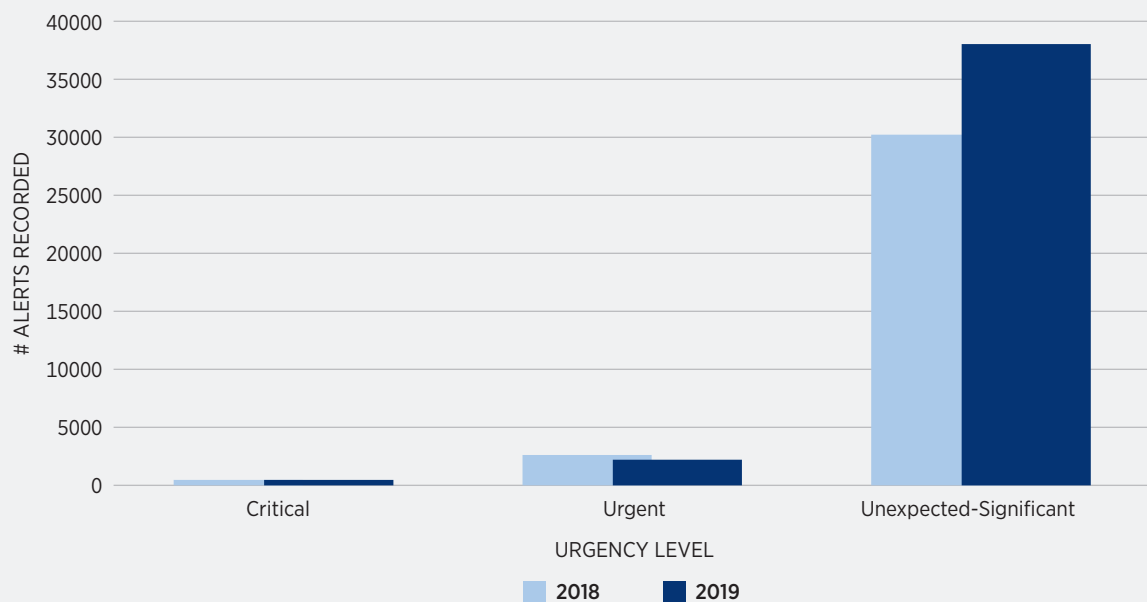

As illustrated in Figure 6.5, the highest number of alerts has been activated in the category of Unexpected-Clinically Significant alerts. In 2019 this category of Radiology alerts saw an increase of nearly 8,000 activated alerts in comparison to 2018 records.

FIGURE 6.6: Percentage of All Radiology Alerts Acknowledged Within Set Timeframe out of All Recorded Radiology Alerts (Collectively), by Patient Class 2018 vs 2019, National Aggregate
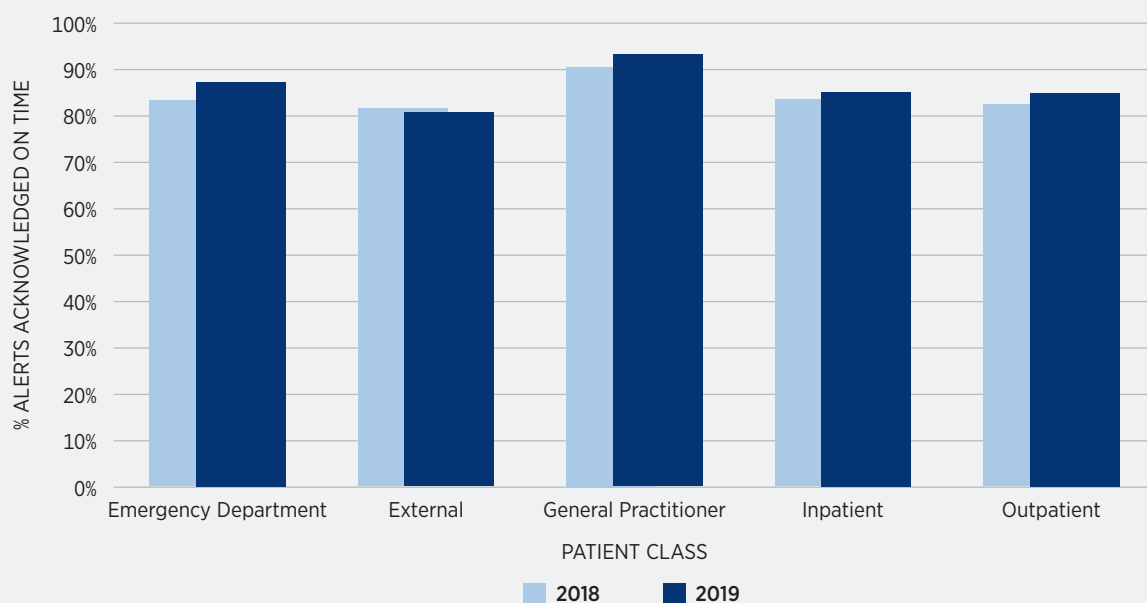
As shown on the Figure 6.6 there is no significant difference in the percentages of Radiology Alerts acknowledged within the set timeframe for each of the patient classes. When 2019 records are compared with 2018, results show a consistent improvement in percentages of alerts acknowledged within the timeframe defined for each type of alert as per QI Guidelines.

The data indicate that each alert activated (approx. 4200) in peerVue system in 2019 has been followed-up on average 1.7 times.

ALERT ACTIVATED

FOLLOW UP

ALERT ACKNOWLEDGED
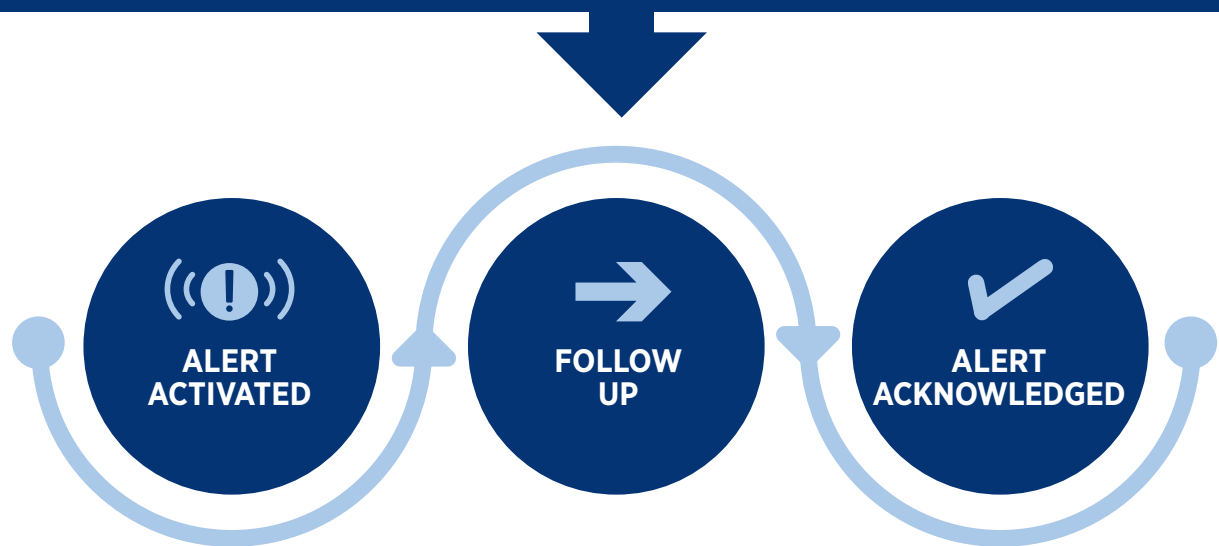
The number of actions recorded against one alert varies from zero, where the acknowledgement has been received without repeated contact with referring clinician, to up to 20 actions, where multiple attempts of executing alert acknowledgements have been made. The preferred methods of communications are phone call, email and/or text message.

It is important to note that Unexpected–Clinically Significant alerts (U-CS) are usually monitored with support from administrative staff that play a crucial role in executing and recording U-CS alerts acknowledgements.

Depending on the local system being used in a hospital, some alerts are captured in a manner different to what has been described above.

UNEXPECTED – CLINICALLY SIGNIFICANT RADIOLOGY ALERTS

Any new or unexpected findings that suggest a patient's condition could result in significant morbidity if not appropriately managed but are not immediately life-threatening are classified as Unexpected – Clinically Significant (U-CS).

> **Unexpected–Clinically Significant Alerts should be acknowledged within six days of alert activation.**

Similar to the other types of alerts, this communication should be from the reporting Radiologist to either the referring clinician or appropriate member of their healthcare team, either via a direct conversation or via an alternative locally approved method of communication. The dictated report should clearly specify the clinical finding of concern. As for all alerts, a defined local escalation process must be in place.

FIGURE 6.7: Number of Cases Completed in 2018 vs 2019 With Unexpected – Clinically Significant Radiology Alerts, and Percentage of Those Alerts Acknowledged Within 6 Days, per NQAIS Site
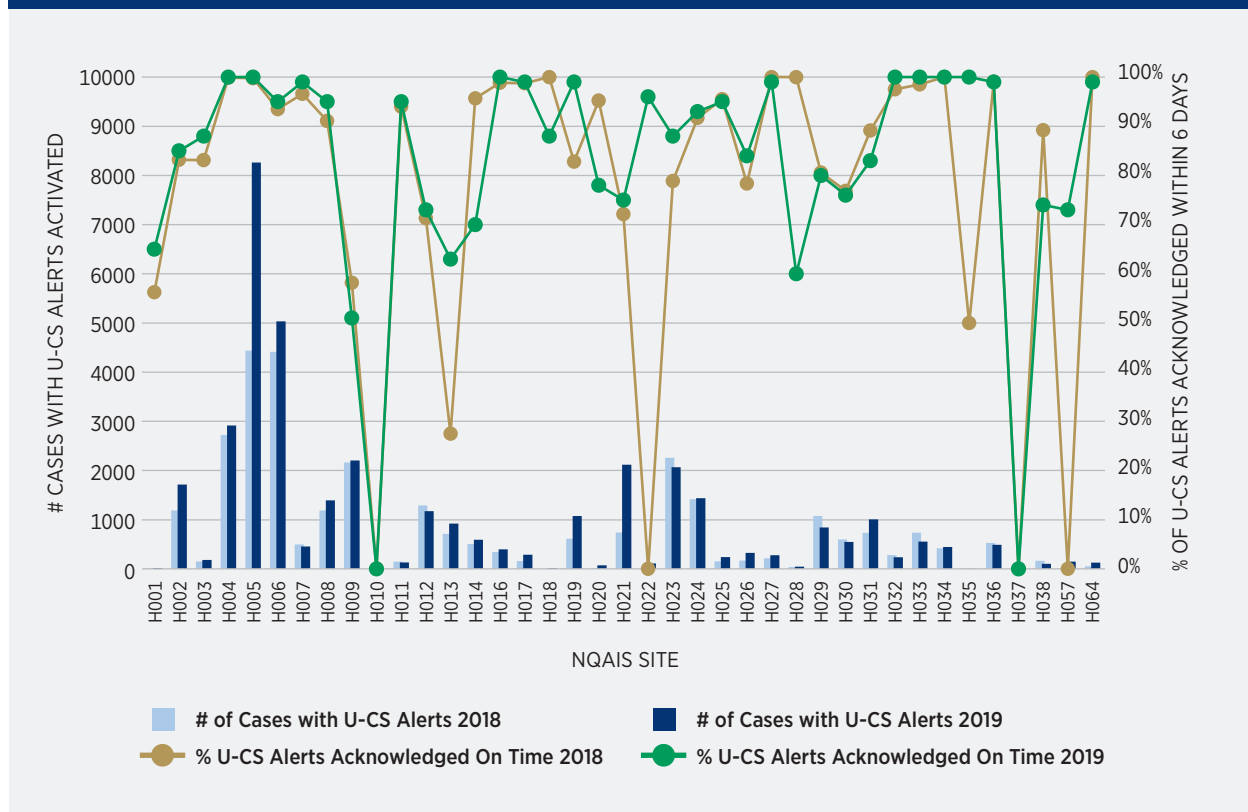
Figure 6.7 shows the percentage of cases with U-CS alerts, where alerts were acknowledged within the defined timeframe in the context of alerts activated in each NQAIS Site.

Similar to 2018 records, in 2019 the percentage of U-CS alerts acknowledged within the set timeframe was high for most NQAIS Sites. In 2019, 19 out of 39 sites recorded over 90% Alerts acknowledged on time, while 14 sites recorded between 70% and 90% U-CS Alerts acknowledged within six days. This shows an increase from 2018, where only 31 out of 38 NQAIS sites recorded over 70% cases with activated U-CS alerts where the alert was acknowledged within the set timeframe.

Comparison of 2018 and 2019 records for Unexpected-Clinically Significant (C-US) alerts show no apparent correlation between the number of alerts activated within NQAIS sites and the percentage of alerts acknowledged. The difference between the number of alerts recorded in 2018 and 2019 was not reflected in the change in percentage of those alerts being acknowledged within the defined timeframe.

The data presented suggest that there may be other factors contributing to the duration of alert acknowledgment windows other than number of activated alerts. This could be related to the availability of resources for individual sites and their caseload ratio to workload.

In the case of U-CS Alerts, clinicians are supported by hospital administrative staff in tracking acknowledgements and recording them in the system. Availability of such support varies between sites and may also contribute to the length of time in which acknowledgement is recorded in the ICT system.

It is worth highlighting that none of the participating NQAIS sites have noted significant decrease in number of cases where alerts have been activated. It shows consistency in recording this QI activity, with a few sites where number of alerts was substantially raised in 2019 when compared to 2018 records.

CRITICAL RADIOLOGY ALERTS

A new or unexpected clinical finding that is potentially life-threatening or requires immediate clinical action in patient management requires a Critical Radiology Alert.

Critical Radiology Alerts must be communicated by a Radiologist via a direct conversation with the referring clinician or a member of their team. A defined escalation process should be put in place by the participating hospital.

Critical Results require immediate, interruptive communication with the referring clinician, a covering clinician or other healthcare team member who can initiate the appropriate clinical action for the patient.

> **The acknowledgement should be recorded by the reporting Radiologist within 60 minutes of initial alert activation.**

The nature of Critical Alerts requires immediate action by the reporting Radiologist. Communication of those alerts very often happens outside usual routine written reports. This may result in delays in recording acknowledgements in the local recording system while immediate patient care is prioritised. It is not unusual for critical alert acknowledgement to be recorded in the local recording system long after a conversation with the referring clinicians has occurred. The impracticality of this often does not facilitate the recording of communication acknowledgements in the reporting system within the required 60 minutes.

The NRQI Programme continues to collaborate with the Faculty of Radiologists and software suppliers to ensure the mechanisms for recording are continuously improved.

URGENT RADIOLOGY ALERTS

Urgent Alerts should be activated for any new or unexpected findings in conditions that could result in mortality or significant morbidity if not addressed urgently.

Communication of Urgent Alerts should come from the reporting Radiologist to either the responsible clinician or other healthcare team member who can initiate the appropriate clinical action for the patient.

> **Urgent Alerts should be acknowledged within 24 hours from initial alert activation.**

If possible, Urgent Alerts are best communicated via a direct conversation with the responsible clinician or other licensed caregiver, otherwise, via an alternative method approved by the participating hospital, with a defined escalation process.

Although Radiology Alerts are extremely important, the current ICT system is not appropriately tailored for recording and monitoring Critical and Urgent Alerts, therefore it is not being used in many cases.

The data reveal that the system is used predominantly to record Unexpected-Clinically Significant Alerts (Figure 6.2). Radiology reports are a critical part of patient care and overall diagnostic decision making. Communicating this information in a timely manner is crucial for ensuring the best possible patient outcomes. Currently hospital ICT systems are not tailored to recording and monitoring Critical and Urgent alerts. Direct verbal communication remains the safest method for communicating these findings at present. This can be recorded via peerVue and more education / communication is required with Radiologists to ensure this occurs. Most hospital ICT systems deal well with U-CS Alerts and acknowledgements.

7

RADIOLOGY QUALITY IMPROVEMENT MEETINGS

7. Radiology Quality Improvement Meetings

The primary purpose of Radiology Quality Improvement (RQI) Meetings is the facilitation of collective learning and promotion of safe environment in which to practice Radiology.

They are a vital component of the departmental educational process by permitting routine review and discussion of examples of best practice in addition to providing opportunities for continuous quality improvement. This creates knowledge sharing opportunities for all, which are key to the improvement of patient care.

KEY QUALITY INDICATOR

Percentage of Attendance

**Number of accession numbers reviewed at RQI meeting
(expressed as a percentage of total workload)**

**Number of accession numbers reviewed at RQI meeting by source:
Peer Review, MDM (to include Clinico-Radiological conferences) or other**

**Number of accession numbers reviewed at RQI meeting with assigned
category (expressed as a percentage of total workload)**

The numbers of cases discussed in RQI meetings form a very small proportion of any individual Radiologist's work, but its overall importance in terms of learning and positive feedback should not be underestimated.

Regular RQI meetings promote learning and awareness amongst participants. They afford the opportunity to highlight review areas and can allow identification of suboptimal practice in certain instances. A mutually beneficial and non-adversarial environment promotes learning for all attendees and results in service improvements that benefit patients. With the benefit of hindsight, missed diagnoses or misinterpretations may be more easily studied, but it is important that we all learn from these cases in a professional environment which is as anonymous as possible and avoids any potential perception of wrongdoing, liability or recrimination. Positive feedback and examples of good practice are equally as important in promoting excellence and self-reflection. Denigration of performance must be avoided.

The meetings provide a forum for peer to peer education where a Radiologist with subspecialty training or particular expertise in an area can provide educational feedback to colleagues without such training / expertise, usually in the realms of misinterpretation, educational feedback and report completeness.

RQI is a separate but parallel process to peer feedback and open disclosure and cases should only be listed for meetings when appropriate alert systems and open disclosures have been initiated and ideally concluded.

FIGURE 7.1: Percentage Attendance at Radiology QI Meetings in 2018 vs 2019, by NQAIS Site as Recorded in NQAIS Summary Data
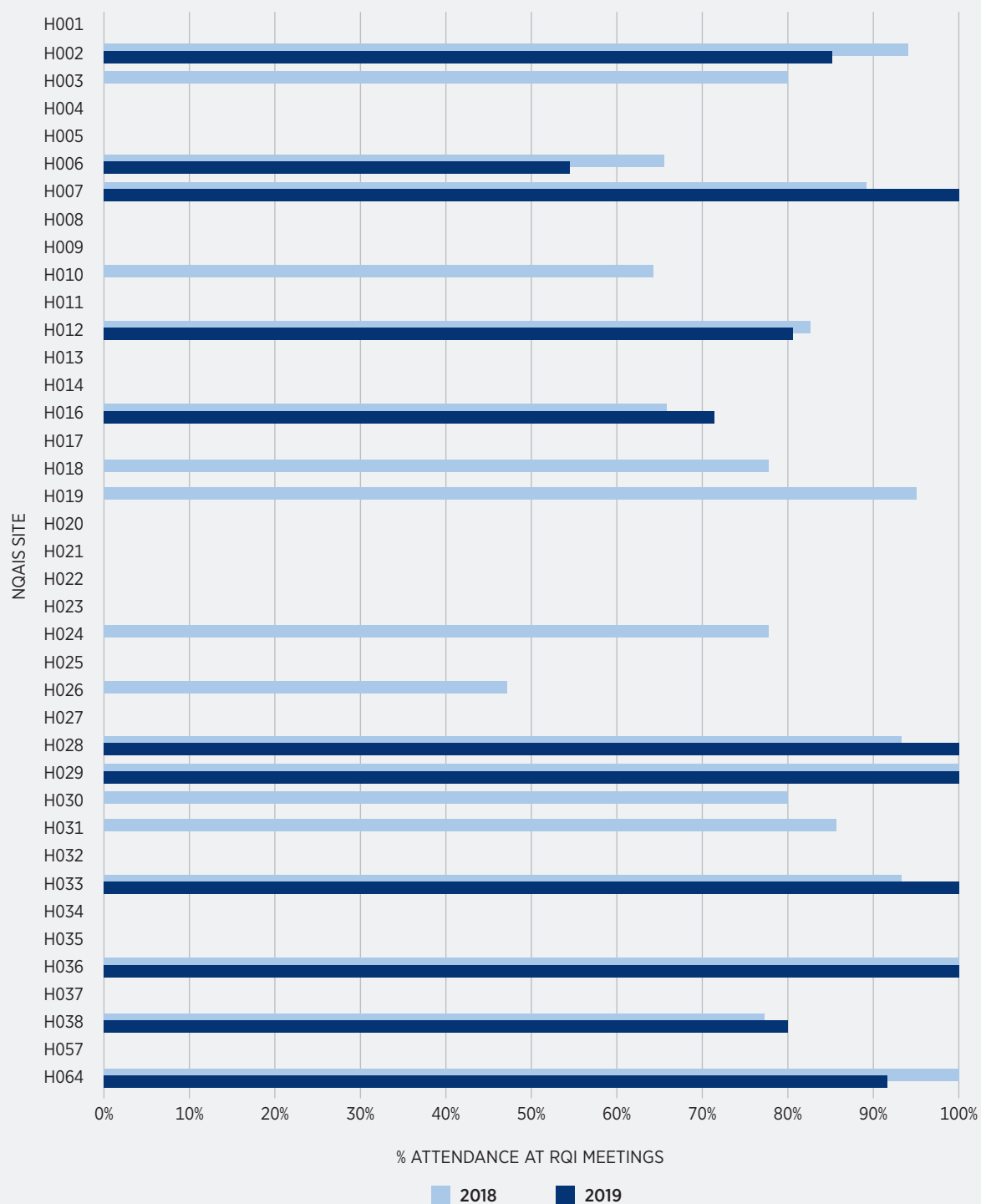
Figure 7.1 represents a comparison of attendance records for RQI meetings between 2018 and 2019. These data were inputted manually to NQAIS-Radiology under the Summary Data section for each NQAIS site. As seen from this graph, not all departments are recording attendance in NQAIS, which results in difficulties regarding the accurate measurement and reporting on this quality indicator.

The data reveal that there is a significant decrease in the number of NQAIS sites recording this KQI, from 19 (50% of 38 participating sites) in 2018 to only 11 (28% of 39 participating sites) in 2019. This means that the majority of sites are not recording RQI meeting attendances in NQAIS. Furthermore, what is not visible in the data presented is that a large proportion of sites recording this KQI, perform it very sporadically.

It is important to highlight that RQI meetings are routine activity in every Radiology department and data presented in this report illustrates attendance for a few selected sites only where data were manually recorded in NQAIS. For the other sites, it should be assumed that RQI meetings are taking place, however attendance levels are not recorded in the online data repository. Where data is recorded, the attendance at RQI Meetings is consistently high.

KEY RECOMMENDATION

Radiology Quality Improvement meetings must take place once every two months at a minimum and attendance where possible should be mandatory for all departmental Radiologists including Radiologists in Training.

Following review at RQI Meetings, cases are assigned to one of the below categories in peerVue (adapted from *Guidelines for the Implementation of a National Radiology Quality Improvement Programme*):

TABLE 7.1: Categories Outlining Rationale for Review at RQI Meeting

Rationale	Description
Observation	The consensus is that the report failed to highlight a finding that may have had an impact on patient care.
Interpretation	The consensus is that the significance of an observed finding may have been overstated or understated.
Misleading Patient Data	The consensus is that there was inadequate or ambiguous patient data upon which the original report was based.
Report Completeness	The consensus is that the initial report was incomplete and the missing information may have been material to the patient's episode of care.
Inter-observer Variability	The consensus is that of a persistent difference in interpretation and/or perception of clinical relevance of the same finding between Radiologists.
Information and Educational Feedback	This refers to the provision of clinical and radiologic follow up to aid more informed judgments in the future.
Compliment	The consensus is that this case illustrates a high standard of performance by the Reporting Radiologist with resultant benefit of shared learning.
Technical	The consensus is that an opportunity to form an accurate diagnosis was impaired by the poor technical quality of the source data.
Other	The "Other" category can be used if the outcomes do not fall into one of the reasons above.

FIGURE 7.2: Percentage of Cases Reviewed at RQI Meetings Categorised by the Rationale Offered (2018 vs 2019)
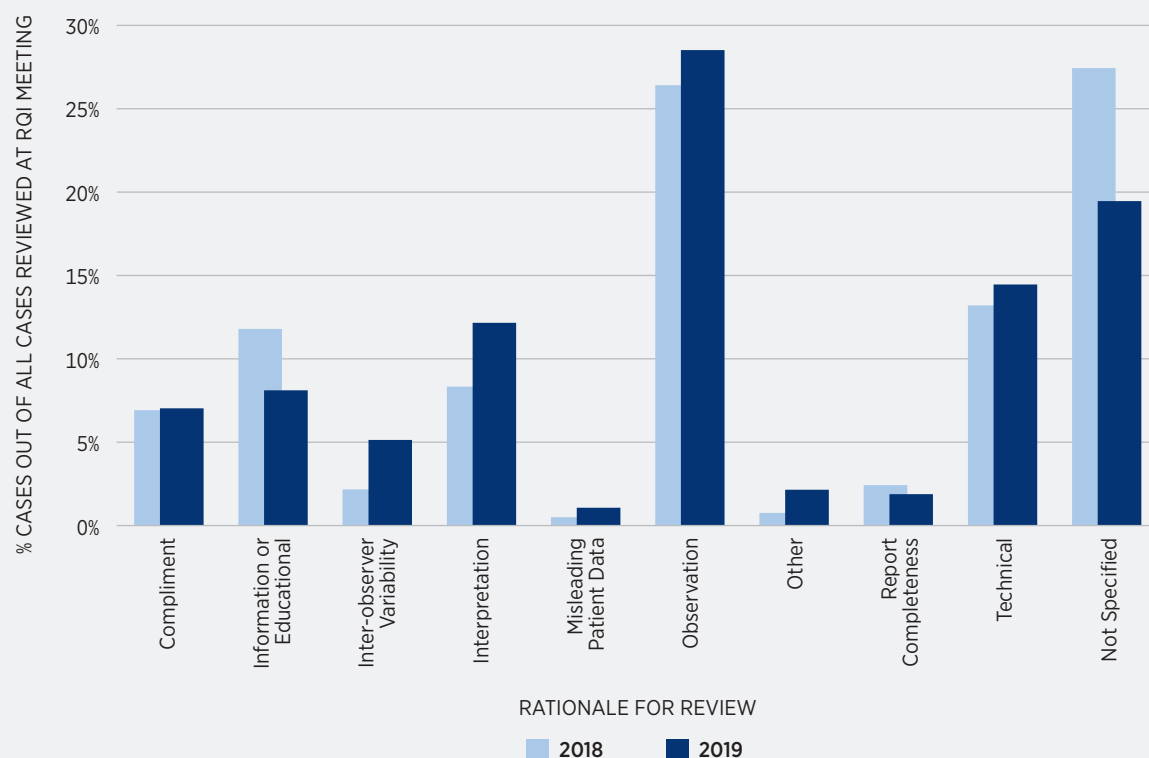
As shown in Figure 7.2, 29% of cases put forward for review at RQI Meeting in 2019 have been classified as an "Observation", which is a slight increase from 26% recorded in 2018. An increase can be also noted for the rationale of "Interpretation" (from 8% in 2018 to 12% in 2019) and for "Inter-observer Variability (from 2% to 5% in 2019). The rationale of "Technical" which refers to the technical aspect of image quality noted a minimal increase of 1% (from 12% to 13%) in 2019, while "Information or Educational Feedback" was offered in 8% of cases reviewed (decrease from 12% in 2018). The most notable change between the 2018 and 2019 data can be noted for cases "Not Specified", were these cases dropped by 8% from 27% to 19% in 2019 suggesting improved data recording accuracy by the QI Lead Radiologists in charge of the relevant RQI meeting.

KEY RECOMMENDATION

A record of RQI attendance is be maintained by the QI lead Radiologist and CPD audit credits are awarded; no other physical record of cases discussed or conclusions reached is kept; summary attendance data must be uploaded manually on NQAIS Radiology as in previous years.

NQAIS records are usually maintained by one individual, normally the nominated QI Lead Radiologist in the department, who either directly or with RISPACs Manager input, logs relevant data into the NQAIS online portal to record attendance. Data required in NQAIS includes only the date of the meeting, number of invitees and number of attendees. No further information is collected. It is recommended that individual Radiologists also record this activity as part of their personal PCS submission.

Protected sessions for the additional administrative duties this entails are recommended for all QI Lead Radiologists.

Radiology Department Leads, or QI Lead Radiologists should be reminded of their responsibility and the importance of submitting the relevant RQI data to NQAIS on a regular basis to improve accuracy of the data presented.

KEY RECOMMENDATION

The Working Group recommends that language used in relation to RQI Meetings avoid negative terminology such as "error", "miss" "review" and encourage a culture of mutual respectful learning with emphasis on positive learning and feedback with "good pick up" cases forming a central role.

Cases should be anonymised where possible though this may not be feasible with current software constraints on NIMIS. It is hoped will be addressed in future system upgrades.

Conclusion

The main goal of this programme is to ensure a high-quality service nationally which translates into improved patient outcomes through timely and accurate diagnoses, and improved communication with service users. The key to achieving this is creating a safe and collaborative learning environment, where best practice is shared and followed and learning from experience can take place.

This cannot be achieved on the basis of volunteerism; the long-term success of this quality improvement programme in each of the participating sites requires continuous support from hospital management, their engagement and full commitment to quality improvement by ensuring availability of all necessary resources.

The Faculty and programme Working Group recommends that there be protected time for Radiologists, amounting to 4 hours per week for the Lead QI Radiologist, and 2 hours per week for all other Radiologists to engage productively with the QI activities outlined in the programme's guidelines.

The data is in the early stages of maturity and gaps in data collection at a hospital level may be due to a wide variety of factors, and therefore local confirmation remains essential. Where findings suggest that there may be an area in need of improvement, they should be discussed locally using the hospitals QI data. Additionally, efforts are ongoing with the software suppliers to improve the functionality of the systems in use to streamline the input of data.

The NRQI Programme and The Faculty of Radiologists continue to work tirelessly to support their colleagues nationally to ensure that quality improvement remains integral to the service they provide to patients in Ireland.

Notes

www.radiology.ie

www.rcpi.ie/quality-improvement-programmes/radiology/

SQIProgrammes@rcpi.ie