



# Non-interpretive radiology: an Irish perspective

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## ARTICLE INFORMATION

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**AIM:** To describe and quantify the range of non-interpretive tasks engaged in by consultant radiologists in Ireland today.

**MATERIALS AND METHODS:** A multiple-choice electronic survey was circulated to over 200 Irish consultant radiologists and results were analysed.

**RESULTS:** Responses were received from approximately 40% of the 267 full-time equivalent consultants in Ireland at the time of the survey. There was a wide sub-specialty mix, and responses from both clinical directors and those without designated administrative responsibility. Overall, the three most time-consuming activities were reported to be multidisciplinary meetings, vetting, and informal consultations. Non-interpretive tasks were estimated to account for 35% of the working week, with higher figures (up to 60%) for clinical directors.

**CONCLUSION:** Consultant radiologists in Ireland spend a significant proportion of their time engaged in non-interpretive radiology; acknowledgement and scheduling of non-interpretive tasks will need to be supported by appropriate workforce planning. Non-interpretive skills will also need to be addressed during training to adequately prepare trainees for the reality of the workplace.

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## Introduction

Non-interpretive radiology is any process not directly related to image interpretation or performing an image-guided interventional procedure. It includes a wide range of tasks such as quality improvement (including audit), multidisciplinary meetings (MDMs), department productivity, analysis, data management, analytics and statistics, informal consultations, responding to complaints, meetings with management, radiation protection, risk management,

patient safety issues, morbidity and mortality meetings, staff scheduling, teaching, and vetting requests.

With the increasing complexity and diversity of radiological investigations and interventions, the radiologist's role has evolved significantly over time. A radiologist now has a more central role in patient care, with considerable involvement in MDMs, performing interventional procedures, and the many non-interpretive tasks previously listed.

These non-interpretive tasks necessitate a broad skill set and require a significant amount of time; however, they can be invisible to those not familiar with the day-to-day routine of a radiologist. Despite the change in the content of workload over time, there has been no corresponding change in *how* workload is measured. Historically, radiologists' activity, and therefore manpower planning, was based

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on counting the number of imaging studies interpreted. In 2009, the Faculty of Radiologists of the Royal College of Surgeons in Ireland stated that:

*“The use of crude study numbers to determine radiologist workload and throughput is an old-fashioned, discredited and inappropriate misuse of data”*.<sup>1</sup>

A more appropriate assessment of workload, the relative value unit (RVU) model, is used in various other countries to help assess the activity of radiologists. The RVU model gives a weighted numerical value to a study depending on the time and mental energy generally needed. These units do not take into account some aspects of day-to-day tasks, particularly interventional and nuclear procedures. In addition to this, RVUs do not address the issue of non-interpretive tasks.

In Ireland, despite the above guidance, a radiologist's workload continues to be routinely measured by looking at the number of studies read or interventions performed. This is overly simplistic and not always representative of work completed. Non-interpretive tasks are time-consuming and are necessary for ongoing improvement of patient care, but are not appropriately counted in any current workload measurement system, with the exception of MDMs, which can be crudely counted.

If the workload cannot be measured accurately, it is difficult to identify and allocate the appropriate number of staff needed. In the Republic of Ireland today, consultant radiologist staffing levels are well below international levels.<sup>1</sup> The Royal College of Radiologists recommends a minimum of eight clinical radiologists per 100,000 of population,<sup>2</sup> whereas in Ireland there are five per 100,000<sup>3</sup>, according to census carried out by the National Clinical Programme for Radiology in 2015, with 267 full-time equivalent consultant radiologists<sup>3</sup> in Ireland (public and private). According to previous research by A Brady in 2012, between 38 and 107 additional radiology consultants would have been necessary to achieve the target workload per year.<sup>4</sup>

The present survey was performed to describe and quantify the range of non-interpretive tasks engaged in by consultant radiologists in Ireland today. It is important to raise awareness of the extent of non-interpretive tasks among both colleagues and policymakers.

## Materials and methods

A multiple-choice electronic survey was circulated to over 200 practising radiologists. The survey gathered information on respondent demographics and investigated the time spent on various non-interpretive tasks such as audit; department productivity; informal consultations; meetings with management; MDMs; quality improvement; radiation protection; responding to complaints; risk management; staff scheduling; teaching; and vetting.

The limitations of this survey include the fact that multiple choice questions are intrinsically directional rather than open-ended, as well as the obvious subjectivity and

bias in self-reporting. Some forms of non-interpretive tasks were excluded (i.e., time spent logging into computer systems as was suggested by one respondent). A 39-hour working week was assumed in calculations, which may be inaccurate given part-time contracts and overtime, as the latter often goes unrecorded.

## Results and discussion

The survey was distributed to over 200 consultant radiologists and 129 responses were received. Twenty-two incomplete responses were excluded, leaving 107 responses, which is approximately 40% of the 267<sup>3</sup> full-time equivalent consultants in Ireland at the time of the survey. Of the 107 complete responses, 10% were clinical directors ( $n=11$ ), giving a balanced representative mix. There were also two respondents who were not clinical directors, but were the administrative heads of the department and they were grouped with the clinical directors for analysis. Results hereby stated relate to the group overall (i.e., consultants and clinical directors) unless otherwise specified.

The majority of responses came from public hospitals, with only 6% working in a fully private capacity. Fifty-six percent worked in an accredited teaching department. Fifty percent reported that they work with over 10 other consultant colleagues ( $n=53$ ). There was a wide specialty mix with most respondents working in general, interventional and breast imaging (Fig 1).

In an average week, the majority of respondents took part in quality improvement, audit activity, vetting requests, MDMs, and informal consultations. The percentages partaking in each activity per week can be viewed in Fig 2. Overall, the three most time-consuming activities were reported to be MDMs, informal consultations, and vetting, as seen in Fig 3, and this is where the discussion will be centred.

### MDMs

Ninety-seven percent of the respondents attended MDMs in an average week. MDMs improve cancer outcomes and are also recommended for non-oncological conditions such as respiratory, vascular, and neurological illnesses.<sup>5</sup> It is acknowledged that MDMs could legitimately be regarded as direct clinical activity; however, as almost all radiology investigations reviewed at MDMs in Ireland have previously been interpreted and reported, it was elected to include MDMs under the umbrella of non-interpretive activity for the purposes of this study. MDMs require several hours of preparation prior to the actual meeting, and were identified as the most time-consuming non-interpretive task, accounting for 3.4 hours of work per week. A large Irish teaching hospital may have 10 MDMs per week, which could equate to 30 hours dedicated to MDMs alone throughout the consultant radiologist group. Currently, most, if not all, radiology departments do not set aside time for MDM preparation. International figures show 60% of radiologists use out-of-hours' time for MDM preparation.<sup>5</sup>

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