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Getting the Measure of Radiological Workload

Interviewee

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What Prompted Your Research into the Overburdening of Radiologists, Recently Published in Insights into Imaging?

For many years, inappropriate measures of radiologist workload have been in use among many healthcare authorities in Ireland, and possibly in other countries. Some of these methods have been used for purposes for which they were never intended, while others are simply outdated. Employing authorities have often lacked the tools to accurately assess the workload of radiologists in the 21st century, and thus decisions regarding resources have sometimes been based on erroneous assumptions, or on specific pressures arising locally, rather than on verifiable, accurate assessments of actual work performed. Rather than being deliberate, I believe that the inadequate measurement tools used in the past were a function of a lack of clear direction from practitioners as to what should be measured, and a lack of an adaptable method of measurement which could be understood, widely applied and modified for new developments.

Bearing this in mind, the Faculty of Radiologists, RCSI, decided in 2009 to advise the Irish public hospital employing authority (The Health Service Executive, HSE) that measures then in use were not fit-for-purpose, and to propose the introduction of a more accurate measurement methodology. In 2010, the Faculty proceeded to perform a nationwide radiologist workload survey using such a method, which we published in March 2011 [Faculty of Radiologists, 2011].

Which Negative Consequences Out of those Experienced by Overburdened Radiologists are Most Troubling in Your Opinion?

In many jurisdictions, increasing workload in any medical specialty is accommodated by a corresponding increase in staff and facilities needed to cope with demand. In radiology, for example, if workload rises to a level where additional radiologists are needed, additional radiologists are hired. The situation in Ireland (and in the UK, and some other countries) is different: Consultants in the public hospital system are paid a salary, and their numbers are centrally controlled by the HSE. Obtaining approval for additional consultant numbers is a slow and difficult process, requiring approval at multiple levels for the funding and hiring process. Thus, consultant numbers invariably lag significantly behind need.

Despite this, demand for radiology services continues to grow: Recent data collection associated with the development of a national RIS/PACS system in Ireland found an annual average growth rate of five percent for radiology procedures and studies. Thus, we work in an environment that demands more year-on-year, without having a robust method of matching supply to that demand. Radiologists have increasingly found that they are expected to cope with whatever is asked of them, without provision being made for the inevitable pressures created, such as longer working days, the requirement to work faster and the continued interruptions to work generated by competing simultaneous demands.

Are There Elements of the Irish Healthcare System That Make Recruiting Difficult?

The method by which consultant staff are recruited in the Irish healthcare system places significant pressure on the existing workforce. The central control of consultant numbers denies hospital departments the flexibility to deal with local needs. The length of time in-built in the complicated system of consultant post approval and recruitment frequently results in the situation of a replacement for a retiring radiologist being recruited long after the individual has already left his/her post, with a gap in staffing numbers often lasting months or years. Lack of an agreed workload measurement system has heretofore hindered the process of convincing the funding authorities that existing workload requires more staff than are available; we hope that acceptance of the methodology behind our workload survey will convince the HSE of the need to match consultant numbers to the demands placed upon them, and to take account of workload when formulating new policies which bring increased demands with them.

You Used a New Way of Assessing Radiologist Workload: Can You Tell Us About it?

We didn't develop the workload measurement method used in our survey ourselves; credit for this must go to the Royal Australian and New Zealand College of Radiologists, and, in particular, to Drs. Alex Pitman and Neil Jones, who published this method first in 2006 [Pitman 2006, Pitman 2009]. When we set about finding a valid method to use in Ireland, we were somewhat surprised to find a relative dearth in the literature of radiologist workload measurement tools that were not primarily driven by reimbursement or influenced by non-radiologist technical elements. This, of course, is a function of the centrally controlled system in which we work. In those countries where radiologist numbers are decided by local needs, tools such as we required are less necessary.

The Pitman/Jones model of measuring radiologist workload was an ideal fit for our purposes. It focuses on radiologist work (as opposed to radiographers and technical aspects of studies). It involves lumping together studies in a relatively small number of categories, to which relative value unit (RVU) measurements are attached, these RVUs roughly equating to the radiologist time commitment to the different study groups. The key element of this method, however, involves recording the amount of radiologist time devoted to those activities which cannot be easily counted in terms of study reports generated; these include interventional and procedural time, preparation and conduct of multidisciplinary team meetings, formal teaching and administrative work. Total departmental RVU activity is then divided by the number of whole-time equivalent radiologists available to produce a Crude RVU/WTE figure; a similar calculation, after allowing for the proportion of the radiologist workforce committed to non-countable activity, produces the Net RVU/WTE figure. These two final figures allowed comparison across radiology departments in different locations, and facilitated establishing national benchmarks of the amount of work being done in 2009 (the calendar year for which data returns were calculated).

Full details of the calculation method used are available in our papers [Faculty of Radiologists 2011, Brady, Insights into Imaging 2011, Brady, European Radiology 2011].

In Your Study, What did You Discover About How Radiologists' Time is Divided Up?

Highlights, of which you will find full details in the report, included the following:

- In 2009, the mean Crude RVU/WTE measurement across all hospitals was 57,659 (compared to the Australian measurement of 40,000 from 2006 [Pitman 2006], updated to 45,000 in 2009 [Pitman 2009]), and the mean Net RVU/WTE number was 103,897.
- A mean of 32.47 percent of WTEs were engaged in non-countable activity. This is a very important finding, validating the personal experience of practicing radiologists that a substantial portion of their working lives is devoted to activities which are difficult to quantify in terms of study report output. The role of the radiologist in the 21st century is about much more than sitting in front of view-boxes or a work-station dictating reports of plain films or cross-sectional studies.
- Of this non-countable activity, more than 40 percent was accounted for by interventional and procedural work and nuclear medicine.
- Plain films accounted for 28 – 41 percent of recorded activity, mammography for 0.8 – 5.8 percent, ultrasound for 16 – 20 percent, CT for 27 – 32 percent and MRI for 5.9 – 15.8 percent. (MR activity was under- reported, given that MR services in many Irish hospitals are contracted by private providers, and such private activity was not included in the calculations.)
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Was Your Study, Which Investigated Workload at 28 of the 38 Radiology Departments in the Country, in Concordance with the Portrayal of Radiological Overload in the Hayes Report (see page 10)?

The numbers given above, and reported in our survey, indicate that Irish public hospital consultant radiologist numbers are insufficient for the workload currently being demanded and delivered, by comparison to international benchmarks. The Hayes report looked at the situation in one hospital; our survey indicates that understaffing exists across the country, although the severity of the staffing deficit varies from one institution to another.

Since the publication of the Hayes report, efforts have been made, under the aegis of the National Radiology Programme, to deal with some of the issues raised. For example, a policy is now in place to determine what study types may not need the report of a consultant radiologist (when insufficient radiologists are available) and under what circumstances these studies may be reported by other individuals.

In Your Opinion, What Role Should Referring Clinicians and Hospital Managers Play in Keeping Radiologist Workload Manageable?

Inflation in radiology demand is not a local Irish phenomenon; it is a worldwide issue. In a recent issue of this publication, data from Canada was cited, showing a 58 percent increase in CT examinations and a 100 percent increase in MR studies since 2003 [Abbott, 2011]. Decisionmaking tools may assist requesting physicians in identifying when requests for diagnostic imaging studies are necessary, and we are looking at such tools in the Irish context. Notwithstanding such efforts to control demand, we cannot ignore the frequently appropriate role of imaging and radiological intervention in patient management. It is vital that the contribution of radiology departments and radiologists be understood and resourced appropriately. In planning new services, or in developing existing ones, radiology support should be an intrinsic element of resource allocation, rather than, as is often the case, an afterthought, or totally outside consideration.

What Alternative Steps to Increased Recruitment Might Contribute Towards the Alleviation of Overburdened Radiologists and a Backlog in Reporting?

Ireland, fortunately, does not have a shortage of qualified radiologists. The specialist training programme in diagnostic radiology run by The Faculty of Radiologists produces between 10 and 15 qualified, trained radiology specialists per annum (most of whom then go overseas for further, fellowship- level training), which should be sufficient to meet the needs of the country. The difficulty lies not with the production of qualified specialists, but rather with the provision of funded posts in which to employ them. Equally, should reporting backlogs develop, the issue

lies not with supply of appropriate individuals to deal with the demand, but with the supply of posts in which they can be employed.

What is Your Opinion on the Delegation of Greater Responsibility to Radiologic Technologists in the Medical Imaging Department to Cope with Demand?

This is a matter being considered by the National Radiology Programme. Radiologists and radiographers work closely together throughout our health system, and there is undoubted scope for role expansion to deal with some elements of demand. However, given the current shortage of radiographer staff in many departments at present (arising from a number of factors, including recruitment moratoria, nonreplacement of staff on extended leave, etc.), attention should first be paid to ensuring that sufficient staff numbers are available to deal with traditional work responsibilities before seeking to expand those responsibilities.

What is Your Advice to Other Radiologists in Terms of Dealing with Overload, Stress and Potential Burnout?

Our survey was designed to achieve two main outcomes: establishing an agreed, valid method of measuring radiologist workload in the current era, which could be used in future in our health system, and identifying what the workload was at a given point in time (2009). The next steps are to find a means of translating the method and data into a meaningful basis for provision of adequate resources, and we have been usefully engaged with the HSE since publication of our survey to make this happen.

Radiologists are well aware that demand will continue to increase; this is, to some extent, a validation of the centrality of what we do in patient care, and we should welcome it. My advice to radiologists who feel the pressures of our working life (as we all, from time to time, do), is to concentrate on obtaining hard data (such as we have done with our survey) demonstrating just how much work we are doing, to advocate strongly on the basis of this data for appropriate resources, and at all times to emphasise that the work we do must be safe and at the highest standards for our patients.

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