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EDITORIAL COMMENT

Teleradiological outsourcing—compromises and hidden costs

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Teleradiological outsourcing can be considered part of the "commoditization" of radiology [1]. Teleradiology may solve some problems relating to resources or cost, but the effects of reducing the radiologist's role to simple provision of an interpretive report are complex. In the current issue of European Radiology, Graham and colleagues [2] report a single-centre UK survey of referring clinicians' perspectives regarding outsourced radiology reporting. Disparities were found between in-house and externally-sourced reports, related mainly to issues of trust of outsourced reports. Direct discussion of queries with in-house radiologists was considered useful in the vast majority of situations, whereas only a small minority of referrers contacted external reporting radiologists with queries.

An ESR survey in 2016 found that outsourcing is practised to some degree in 70.8% of ESR National Member countries [3]. One reason for the growth in outsourcing is a major discordance between rapidly increasing imaging workload and much slower growth in radiologist workforce. This imbalance may be due to a variety of factors such as a lack of flexibility in central governmental planning, reimbursement regulations, professional incentives in national health systems, or increasingly strict regulations of working hours and compensations [4]. Between 2010 and 2016, the numbers of CT and MR studies performed in England increased by over 30%, with only an increase of 3% in consultant radiologist numbers. Unsurprisingly, the proportion of UK radiology departments outsourcing some reporting to external providers (usually within the private sector) increased from 33 to 78% in the same period [2]. This discordance between workforce and workload growth is mirrored in many countries. Inevitably, many healthcare systems lag substantially behind demand for services, leading to the need to implement practices that may be viewed as imperfect, but represent pragmatic solutions to a demand-capacity mismatch.

There are other drivers of increasing radiology outsourcing, not all based on poor planning or inadequacy of resources. Provision of on-call services from a central hub covering a number of institutions, utilising the availability of subspecialist opinions from a different centre and provision of specialist radiology interpretations for remote locations with insufficient activity to merit on-site radiologist presence are all good reasons for remote reporting and use of teleradiology [5].

Teleradiological outsourcing carries the potential for some compromises in quality of patient care. If the off-site radiologist does not have access to a patient's prior imaging studies, the relevance and quality of reports generated will diminish. The ESR 2016 survey confirmed that offsite access to PACS/RIS systems is definitely available in only 48.9% of circumstances, and definitely not available in 15.7%. Other major disadvantages of off-site reporting included insufficient communication with the off-site radiologist, and their unavailability to participate in multidisciplinary meetings (MDMs) [3]. In a recent paper on value-based radiology, the ESR has highlighted that the ease of availability of radiologists for direct consultations with referrers is one of many possible measures of radiology's contribution of value contributed to patient care [6].

MDMs have grown as contributors to radiologists' workload in recent years; this is laudable, recognising the centrality of our specialty to patient care, but has introduced challenges. While many referrers require little preparatory work before MDMs, review of available imaging (often from multiple institutions) is time-consuming for a radiologist. Preparation for a 1-hour MDM often requires about 2 hours of a radiologist's time [7]. Graham et al reported that their respondents used discussions at MDMs as an opportunity to discuss queries about reports, and

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that this opportunity was lost or diminished in the context of outsourcing. They suggested that outsourcing reporters should participate (physically or remotely) in MDMs and error/governance meetings to improve relationships and trust between them and referrers [2]. If teleradiological work is based on a fee-per-item model, this participation may need to be factored into the payment model to ensure it is fulfilled.

Most outsourcing provision is undertaken by individuals or companies for profit, with earnings dependent on productivity. Financial incentives are predominantly based on report numbers. Yet, conversely, if Graham's respondents are a true reflection of attitudes, outsourcing deflects resources from provision of in-house radiology services, while clinicians discount outsourced reports to a greater extent than they would reports from in-house radiologists. Respondents reported behaving differently in terms of communicating with radiologists and following up queries or perceived errors, depending on the source of the report. Does this mean that clinicians are willing to settle for a lesser level of two-way interaction with radiologists if it means they get a report (whatever about its quality)?

Outsourcing (whether used to offset excessive workload or for other reasons) can generate increased workload for in-hospital radiologists. A common scenario is for a hospital-based radiologist with whom a referrer has an established relationship of trust to be asked to review a study previously reported by an outside radiologist. A similar situation occurs when studies from outside institutions are being reviewed as part of an MDM. In effect, the in-house radiologist provides a second read for these studies, often without any acknowledgement that this is a legitimate work product, or any remuneration. If outsourcing is being used to control costs or because of lack of radiologists, there is a perversity in in-house radiologists being expected to take on unresourced second-read work. Outsourcing may thus become a hidden burden or cost for the base hospital radiology department, distorting any perception of cost reduction.

One positive finding from the survey is the reported stratification of the response of referrers to perceived errors in reports. Given that an error rate of 3–5% in day-to-day radiology practice seems to be the best achievable performance in the real world [8], it's refreshing to read that referring clinicians seem untroubled by typographical errors, and focus appropriately only on those possible errors or discrepancies relating to diagnoses or missed findings. Many of the "errors" cited in excitable media stories are of no consequence. It seems that referring clinicians are sensible, in following up only those possible errors that might affect a patient's welfare.

There is no doubt that teleradiology and outsourcing are here to stay, because the possibility of outsourcing broadens the range of solutions to provide radiology services in a variety of local settings. However their potential collateral effects on patient care should be recognised. We congratulate Graham and colleagues for providing another piece of the picture, detailing how and why referrers respond differently to outsourced radiology services as opposed to those delivered by traditional in-hospital radiologists.

While commoditisation of radiological services may be welcomed by hospital administrators and health politicians, its potential impacts on patient welfare and consequences for in-house multidisciplinary collaboration and radiologists' workload should be recognised. Radiologists must be active participants in discussions and decisions about the pros and cons of teleradiology and outsourcing.

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Methodology
• Invited editorial comment

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