



Enhancing Radiology Services: The Value and Virtue of Voice Recognition Technology

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THE GLOBAL INCREASE in demand for radiology services, combined with chronic staffing shortages, has essentially placed radiologists on healthcare's endangered species list. As referring doctors continue to see ever more value from radiology, there appears to be no respite in their demand for high quality, high tech diagnostic services. Simultaneously, referring doctors and patients alike are now demanding both expedited scanning appointments and faster delivery of radiology reports. In this challenging environment, and despite the international outsourcing of countless cross

sectional imaging studies, radiologists frequently and understandably struggle to meet their stakeholder's increased expectations.

If supply ever hopes to meet demand in the radiology arena, the international medical community should ask itself, "What actually is the value proposition for radiology?" At first glance, one might argue that new and enhanced technological capabilities are the key to it all. Certainly, the exceptional imaging clarity and quality of multiplanar cross sectional imaging are advancing medical science and driving radiology demand.





However, exquisite images mean little to our referring colleagues (aside from some specialty consultants who often perform their own interpretations) unless they have a radiologist's report that translates these pictures into words.

Referring doctors generally make no patient care decisions until the images have been interpreted and the final report is available. This latter point is crucial. Sometimes we radiologists think our work is done after the patient has been scanned and the report has been interpreted. In truth, radiologists effectively create no value until our referring colleagues have access to a finalized report. After all, referring doctors are seeking the information inherent within the images. Until they have such information

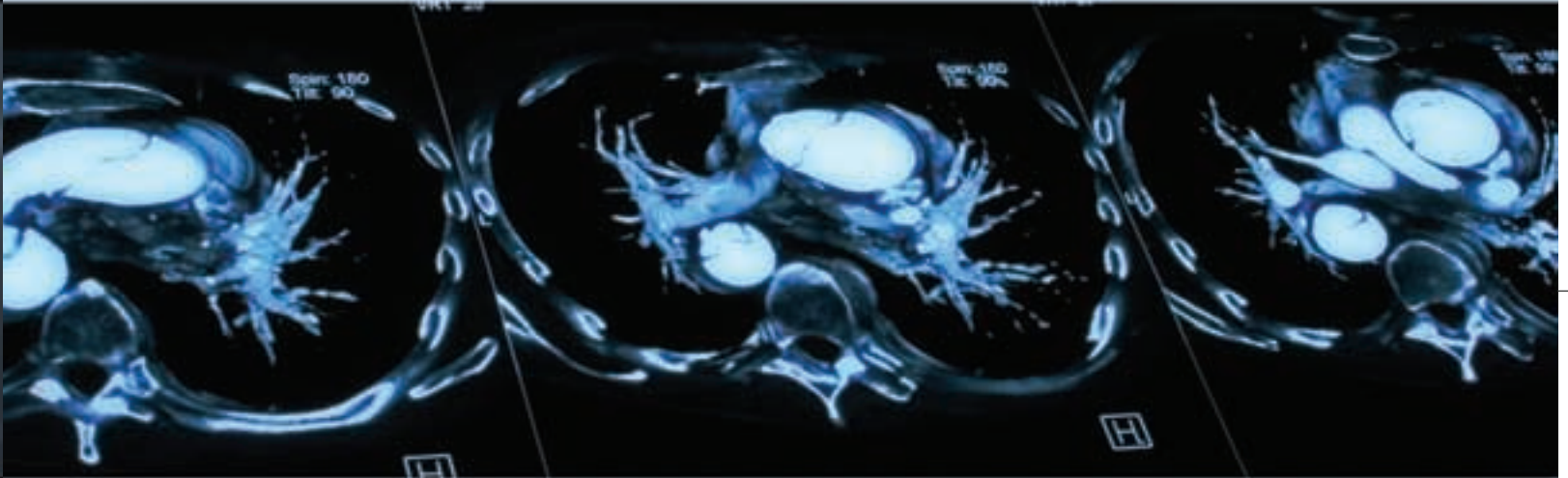
in hand, the scan, however sophisticated, means little to them.

Some radiologists might argue that it is often sufficient to simply have the report dictated, so at least the referring doctors can have access to a preliminary report. However, this situation is far from ideal, as the preliminary report may not be readily accessible. Even if the radiology team is using digital tape dictation, a report is not considered final until the radiologist has read the initial transcription, corrected it if necessary, and given final approval in the form of a signature. The same scenario holds true for a report that has been transcribed from tape onto a radiology or hospital information system: its value remains sub-optimal until it is finalized. If it were otherwise, referring

doctors would risk making inappropriate decisions for their patients based on a potentially incorrect radiology report.

What does this mean for radiologists? First, we need to understand how and where we create ultimate value. Clearly a final report is not our only value proposition - indeed, we develop imaging protocols, help direct patient care and discuss cases with referring doctors - but an accurate and timely final report is the pinnacle of our work process.

Second, if we are to deliver enhanced value to our referring doctors, then we must advocate for systems that help us to expedite finalized reports and deliver them promptly. For starters, this means interpreting all reports as quickly as possible and making sure that the initial dic-



tation is rapidly transcribed. Once transcriptions are signature-ready, then it is our obligation to sign them post haste. For many institutions, expediting this process will require checking the radiology information system (RIS) each day (ideally a few times a day) to determine which reports are awaiting final signatures. If there is no RIS in place, hard copy preliminary reports should be frequently analyzed and corrected if necessary. At that point, it becomes the hospital's responsibility to ensure that final reports are available as quickly as possible to their doctors, whether they are consultants or general practitioners.

This latter point raises a further potential bottleneck. If the finalized reports are only available as hard copies and no hospital information system (HIS) is available, it may take some time for reports to reach their intended destination, especially if the reports have to be posted to a general practitioner. In this scenario, the radiologist's value will remain undermined. ▶▶

Indeed, the radiologist's value proposition can only be truly realized through the use of digital platforms. If reports are electronically available as part of a RIS or HIS on a wide area network, then all caregivers -- whether within the institution or outside -- can have fast access to reports, anywhere, anytime: in the clinic, at the office, in the operating theatre, in the emergency room, or even at home.

Even greater efficiencies may be realized when the reporting mechanism itself becomes electronic. Fortunately this is now possible with the use of voice recognition technology (VRT), also known as speech recognition technology.

Radiologists have been using VRT for over 10 years, and the technology has been instrumental in transforming the value proposition of their services. With

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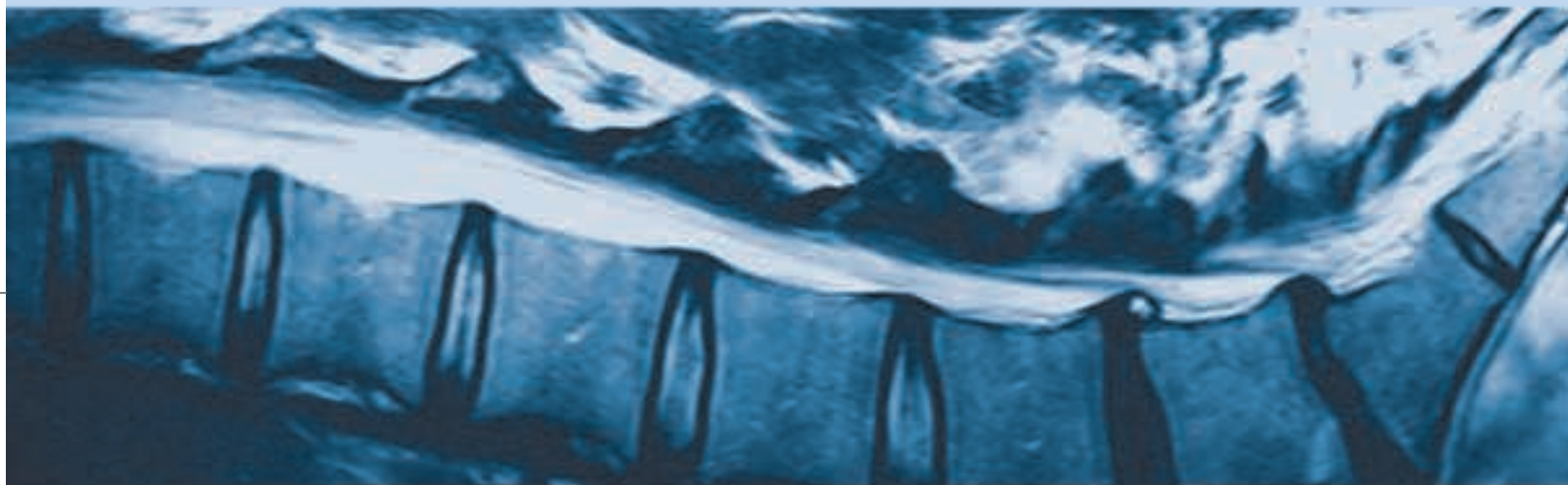
Beyond these efficiencies, there are additional, perhaps less obvious, advantages to VRT. Accuracy is one such advantage. Because the radiologist makes the final report at the time of dictation, the VRT reporting process eliminates transcription errors that sometimes occur in the traditional reporting algorithm. The VRT report is also likely to be more succinct, for two reasons. First, the radiologist can see the text on the computer screen as it's being dictated, which helps him/her craft a more meaningful report.

Second, and perhaps more importantly, radiologists will naturally shorten their reports to avoid the excessive editorial work they might have to perform if their reports are too long. How wonderful: a crisp, succinct, easy-to-read report is pre-

significantly slow down their workflow.

While the reporting process for the radiologist may be slightly slower initially, at MGH our experience has been that there is minimal impact after a short initial training period.

Due to the current worldwide shortage of radiologists, my colleagues and I must work diligently to increase the value of our primary product, the radiology report. While our stakeholders may temporarily express a certain sympathy for our plight, at the same time they are beginning to expect -- and even demand -- faster RTAT. Radiologists can play a strategic role by insisting that their organizations pay the marginal costs of purchasing VRT (the upfront financial costs are usually recovered within a few months). The temporary disadvantages of implementing VRT -- name-



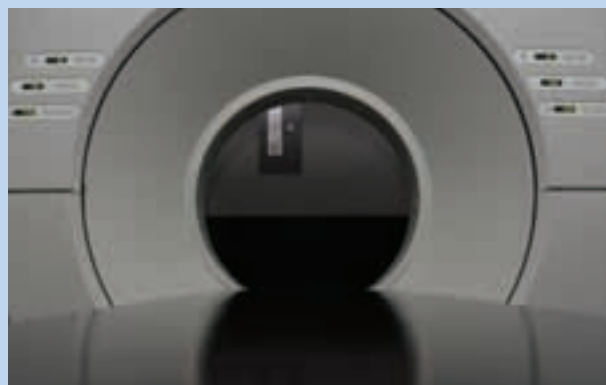
VRT, once the report has been dictated by the radiologist, it is immediately available electronically to all stakeholders. Transcription is no longer necessary, and the report is finalized via an automated electronic signature. At the Massachusetts General Hospital (MGH), our report turn around times (RTAT) for staff dictated reports were immediately reduced from several days to a matter of hours after VRT was implemented.

Compared to VRT, there has been little within radiology over the last decade that has had such an immediate and profound impact on our stakeholders. No longer do referring physicians expect to wait days for a report to become available - they have now become accustomed to having the report available within 24 hours (and usually just a few hours) after an examination has been completed. Indeed, MGH physicians have adapted their practices accordingly by making clinical decisions earlier and asking outpatients to return sooner to discuss their report findings

cisely what the referring physicians want in the first place! And by the way, VRT is ideally suited to standardized reporting through the use of macros and templates: the radiologist simply inserts text into pre-determined fields, depending on the type of scan or body part. At MGH, many referring doctors are now requesting standardized reporting, because the report structure is laid out in a consistent format, which helps them to quickly navigate the narrative.

All of these advantages notwithstanding, in the past some radiologists were highly critical of VRT, and rightly so, because early versions had suboptimal voice recognition accuracy rates. Today, however, the technology has improved and now there are an array of vendors whose speech engines deliver highly accurate speech recognition. Even so, some radiologists continue to resist VRT. They resent the shift of costs and resources away from transcriptionists and onto radiologists, and they perceive that VRT will

ly training and workflow adjustments -- are vastly outweighed by the long-term impact on all radiology stakeholders, including and especially our patients. ■



The next Imaging and Diagnostics conference will take place at Arab Health, 28th - 31st January 2008, Dubai International Exhibition Centre, Dubai, UAE. For further details please log on to www.ahcongress.com