A strategy to overcome the radiology lottery in the staging of head and neck cancer: an aid to attaining the 30-day rule

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ABSTRACT

INTRODUCTION Rapid access to radiological services is essential, if the British Association of Otolaryngologists – Head and Neck Surgeons Minimum Temporal Standards are to be met in the management of head and neck cancer patients. This study assesses a new initiative whereby the multidisciplinary team prioritises allocated imaging appointments rather than using the traditional radiological triage system.

PATIENTS AND METHODS This study was a prospective audit of all patients referred over a 3-month period with suspected head and neck cancer. The main outcome measures were: (i) median interval in days from general practitioner (GP) referral to staging scan; and (ii) median interval in days from first clinic appointment to staging scan.

RESULTS The new multidisciplinary team booking system led to a statistically significant reduction in the 'request-to-scan time' (from 12 days to 5 days). The time from 'GP to scan' also improved.

CONCLUSIONS This new multidisciplinary team-led booking system, could, in the future, speed up access to radiology services for head and neck cancer patients, allowing earlier definitive treatment.

KEYWORDS

Head and neck neoplasms – Diagnosis – Waiting lists

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Radiological staging is an essential part of planning treatment for head and neck cancer patients. The *NHS Cancer Plan* aims to initiate treatment in all cancer patients within 2 months of urgent general practitioner (GP) referral by 2005 and within 1 month by 2008.¹ With the implementation of these targets, any potential strategy for improving the speed of the patient's journey through the cancer staging process to allow the initiation of definitive treatment needs to be considered. One proposed area where waiting times may be reduced is access to radiology services for staging of cancers.²

Traditionally, requests for urgent computed tomography (CT) scans and magnetic resonance imaging (MRI) for patients with suspected malignancy enter a radiology lottery competing with all other urgent scan requests throughout the hospital. These are reviewed by radiologists and the provision of scan appointments are prioritised according to the radiologists' assessment based on the information provided on the request form. Our new, stream-lined system uses the same number of slots but allows a multidisciplinary team (rather than a radiology consultant) to prioritise the urgency of imaging appointments depending on clinical needs.

This prospective audit was carried out to determine if this new method of booking imaging appointments reduced the waiting time for scans and speeded up the staging process.

Patients and Methods

The main data collected for each patient group over a 3-month period were: (i) date of CT/MRI request; (ii) date of CT/MRI scan; and (iii) date of GP referral to head and neck clinic.

The head and neck cancer multidisciplinary team was provided with three CT and two MRI scan slots per week, which was the average used over a 6-month period.

Only patients with suspected malignant tumours of the head and neck (*i.e.* larynx, pharynx, sinonasal, parotid and oral cavity tumours) were allocated by the multidisciplinary team to the staging scan appointments.

Results

Request-to-scan time

The median request-to-scan time in the radiology-led group

Table 1 Duration in days of wait for scan

	Old radiology-led system	New MDT-led system
Request-to scan-time (days)	12 (<i>n</i> = 15)	5 (<i>n</i> = 18)
GP referral-to-scan time (days)	37 (<i>n</i> = 15)	23 (<i>n</i> = 15)
Number of patients	15	18*

MDT = multi-disciplinary team-

*Three of these patients were not referred by their GP.

was 12 days (upper and lower quartiles, 5 days and 20 days) and 5 days (upper and lower quartiles, 2.5 days and 7 days) in the multidisciplinary team-led group (Table 1). The request-to-scan time halved ($P = 0.015$, with the asymptotic 2-tailed significance test).

Referral-to-scan time

Three patients were excluded in the referral-to-scan time in the multidisciplinary team-led group because they were not referred by their GP.

The median referral-to-scan time in the radiology group was 37 days (upper and lower quartile, 16 days and 62 days) and in the multidisciplinary team-led group 23 days (upper and lower quartile, 13 days and 50 days; $P = 0.221$, with the asymptotic 2-tailed significance test).

Discussion

Did multidisciplinary team-led allocation of scan appointments work?

This new system resulted in a significant reduction in the time from the scan request to the imaging. The time from GP referral to scan was also reduced which, although not statistically significant, is important from the clinical point of view. These reductions in the waiting time for imaging not only provide an improved service for the patient but will also help attain UK Government targets.

Targets for head and neck cancer

The *NHS Cancer Plan* aims for treatment of cancer patients to be initiated within 2 months by 2005 and within 1 month by 2008 from urgent GP referral.¹ The introduction of the 'fourteen-day rule', whereby suspected cancers are fast-tracked for specialist review, aims to improve the time to initial treatment; however, further improvements need to be made to attain these targets.

The National Institute for Health and Clinical Excellence *Improving Outcomes in Head & Neck Cancers* report³ has

suggested that the longest delays are between initial assessment and treatment. By 2008, it is hoped that treatment will commence within 30 days from GP referral. The time taken for staging imaging is a part of the patient journey which may be improved to increase speed to initial treatment.

British Association of Otolaryngologists – Head and Neck Surgeons (BAO-HNS) Minimum Temporal Standards document⁴ suggests that the suspected head and neck cancer patient should be seen as an out-patient within 14 days of GP referral. Ablative surgery, commencement of chemotherapy or radiotherapy planning should be within 14 days from the multidisciplinary head and neck clinic. No specific standards are set for time-frames for imaging.

Two studies have outlined time taken to imaging, Tandon *et al.*⁵ found the time from request to CT was 3.2 weeks (22.4 days) and request to MRI 3.3 weeks (23.1 days). Jones *et al.*⁶ found the time from request to CT was 5.6 weeks (39.2 days) and request to MRI was 4.1 weeks (28.7 days).

Our results show that, in the radiology-led group, the median request-to-scan time was 12 days; in the multidisciplinary team-led group, the median request-to-scan time was 5 days.

Our control (radiology-led) group had a favourable request-to-scan time compared with the literature but the multidisciplinary team-led group demonstrated significant improvement compared with current available data.

Why did the request-to-scan time improve?

Traditional radiology-led requests for scans rely on the data entered on the request form. The quality of the information provided can be variable and may not relay the scope of urgency for a scan. The radiologist may also be provided with multiple similar requests with insufficient information to differentiate which is most urgent. The advantages of a multidisciplinary team-led booking system are that the multidisciplinary team have assessed the individual patients and are aware of the problems encountered by each individual patient and of the service as a whole, making prioritisation of scan appointments easier within the scope of having allocated appointment slots for the service.

With allocation by the multidisciplinary team there is also a reduction in time of transfer of forms around the hospital and awaiting review by different clinicians and administrative staff resulting in improved efficiency of scan allocation.

The multidisciplinary team applied strict criteria for allocating scan requests in order to ensure the appointments were utilised for appropriate patients. All the scans were used for staging purposes. Three out of 18 patients in the multidisciplinary team-led group with suspected cancer turned out, eventually, to have benign disease on histology.

Other considerations with the implementation of a multidisciplinary team-led booking service

It is essential that the full multidisciplinary team is in

agreement with the implementation of a new booking service such as the one described. As part of the multidisciplinary team, radiologists should be fully involved in determining criteria of which groups of patients can be booked by the multidisciplinary team into their allocated appointment slots. It is essential to be aware that this service is not trying to replace any existing radiology service, but act as an adjunct. The radiologist continues to play an essential role in the multidisciplinary team and obtaining the best possible staging imaging and interpretation of these data.

No scan appointments were wasted; if they were not filled by cancer patients, then the slots were used by patients admitted to the hospital as emergencies.

If there had been any short-comings in the number of radiology slots, then we would adjust the appointments accord to the degree of urgency.

The number of scan slots for the multidisciplinary team-allocated appointment system was calculated by taking the total number of patients with positive head and neck cancer scans and averaging them out over a 6-month period. This figure was used to calculate the number of head and neck cancer imaging slots with the new booking system.

Conclusions

Despite this study being performed in a designated head and neck cancer centre, the study population is small. There was, however, a statistically significant improvement in the request-to-scan time with the multidisciplinary team-led booking system. The patients triaged for use of the

imaging appointments were appropriately selected with a high cancer pick-up rate. This new method of booking scans can speed up the patient journey and improve the attainment of meeting national NHS cancer targets. It is anticipated that this will lead to earlier diagnosis and staging and, in turn, possibly to improved prognosis.

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