Introduction

Head & Neck cancer accounts for 6,700 newly diagnosed cases of cancer in England and Wales each year, it carries a significant disease burden requiring complex multiple treatments and lengthy rehabilitation. Earlier diagnosis is associated with a better outcome and late presentation has a poor prognosis. On average one in five patients diagnosed with Head & Neck cancer will die within a year. In recent years an attempt has been made by the National Health Service to encourage early detection of Head & Neck cancer and fast-track referrals to a specialist.

Since 2000, when the 2-week cancer wait initiative took form, as part of the NHS Cancer Plan, following the Governments push for “The new NHS – Modern, Dependable” there has been a limited amount of research into the success and effectiveness of this strategy. In the last ten years only six groups have published their findings on the 2-week Head & Neck cancer wait. Of these six groups only one has data for more than 200 patient referrals, the remainder being smaller studies. These previous studies have consistently found that there is a low detection rate of malignancy identified through the 2-week referral system. Mckie et al compared their study with three previous ones to show that 2 week wait targets were successful (95-100%) however “the 2 week wait route identified fewer early cancer cases compared to other referral routes” i.e. routine non-urgent routes. Mckie et al and Duvi et al both suggested through the support of their findings that if referrals adhered more closely to the Department of Health Guidelines (DoH) then cancer detection rates would improve. Hobson et al suggests patient education may have more effect than striving for a 2-week target. Shah et al points out the limited exposure university medical undergraduates have to oral and maxillofacial surgery, further improvement in ENT education being a point re-iterated by many of the authors.

In 2004 the National Institute for Health and Clinical Excellence (NICE) guidance on
Improving Outcomes in Head & Neck Cancers suggested in one of its seven key recommendations that “Diagnostic clinics should be established for patients with neck lumps.” An audit by Ganguly et al has since shown positive results in the benefits of a one-stop clinic for rapid Head & Neck cancer diagnosis. However a systematic review in 2009 by Cozens et al, evaluating one-stop neck lump clinics concluded that the statement by NICE “does not have the weight of objective evidence to justify such a categorical and specific recommendation.”

Other specialties report a mixed story, a prospective cohort trial in the 2-week wait breast cancer referrals revealed increasing numbers of patients being referred through the 2-week wait system but less cancer diagnosed. While the routine route had increasing waiting times and a higher pick up rate of cancer. However the 2-week rule in a one-stop haematuria clinic revealed increasing cancer detection rates and a one-stop approach was suggested to be beneficial to the patient and more cost effective in the urological setting.

Aim
The aim of our audit was to assess the cancer detection rate for 2-week wait Head & Neck cancer referrals and determine whether a one-stop clinic approach would be an appropriate use of resources in a 2-week wait Head & Neck cancer referral clinic, in our unit.

Materials and Methods
We retrospectively audited 622 patient case notes referred between July 2009 and July 2010 by their General Practitioners on the 2-week Head & Neck cancer referral system. These patients were seen in the ENT department of a tertiary university teaching hospital. Currently there is no one-stop clinic in our unit but patients will be seen and investigated within two weeks of the referral date.

Data was obtained for a number of variables including, decision to refer date, the date of first appointment, patient demographics, reason for referral, any intervention (FNAC) or imaging and the outcome of the first appointment. The total number of all Head & Neck malignancies (excluding any oral and maxillofacial or lymphoma referrals) diagnosed within the department in the same time frame, but not via the fast track 2-week referral system were also obtained through the Head & Neck Multi Disciplinary Team database.

Results
A total of 622 patients were referred via the 2-week wait system between July 2009 and July 2010. 335 were female (53.5%), 286 were male (46.0%) three (0.5%) were unknown. The mean age was 57 years old (age range 18-92 years old).

2-week target
In 98% of cases the 2-week wait target was achieved, however 6% of cases did not attend their clinic appointment (Figure 1). A consultant, head and neck fellow or specialist registrar saw 96% of patients (the remainder were either unknown or seen by a senior house officer).

Adherence to DOH guidelines
The most common presenting complaint was a hoarse voice, which made up a quarter of the total referrals. A neck mass accounted for 16% of cases and was closely followed by ‘other’ (15%), this included cases that did not adhere to the DoH guidelines or “red flag” symptoms, including cough, neck stiffness and headache. Therefore if the non-DoH referrals (‘globus’ and ‘other’) are excluded, 82% of cases were referred using the DoH recommendations (Figure 2).

Cancer diagnosed
Of the 622 cases that were analysed a diagnosis of cancer was made in 35 cases (5.6%). 37.1% of malignancies presented with a neck mass, 25.7 % with a hoarse voice and 14.3% with a sore throat (Table 1). In the same time period 110 (2.4%) malignancies (excluding lymphoma or oral and maxillofacial malignancy) were diagnosed in the ENT department, via the routine or urgent referral pathway. This difference is probably not significant but the small number of 2-week wait referrals compared to the large number of routine referrals makes statistical comparison unreliable.
Of these 110 malignancies, presenting complaints were obtained. 17% of cases were non-GP referrals, such as patients already followed up within the system or referred from another specialty. 40% of cases presented with red flag symptoms that would ideally be referred through the 2-week wait pathway, however length of symptom was not always documented therefore limiting the value of this data. 7% of patients presented with symptoms appropriate for a routine follow up and 37% of cases were unknown. Of the total malignancies diagnosed between July 2009 and July 2010 in our department 50% were through routine referral, 26% urgent referrals and only 24% via the 2-week fast track system.

**Further intervention**

181 patients underwent imaging, of which 76 had an ultrasound, 40 of these were ultrasound guided FNAC. Of the 93 patients who had a FNAC, 53 (60%) were performed in clinic without ultrasound guidance (Figure 3 and Figure 4).

230 patients received a follow-up appointment for clinical review or for results of their imaging/FNAC. 104 patients went on to have a procedure (most commonly a biopsy) and 26 patients were referred to another specialty (usually Speech and Language), the remainder were discharged after the first visit (243) or were unknown (19).

**Discussion**

**2 -Week Wait**

The rate of cancer detection is higher in the 2-week fast track system compared to that of routine referrals (5.6% and 2.4% respectively). However, one might expect the pick up rate, from a system designed specifically to pick up cancer, to be very much higher. With the current position the system is overloaded with large numbers of non-urgent cases, which in most cases would be seen in 5-6 weeks if they had been referred as a routine case.

We suggest therefore that more resources are invested in furthering GP education in Head & Neck cancer symptoms, many of the online resources available focus on cancer as a whole. Information solely devoted to focusing on the “red flag” referral criteria, should be more easily obtainable. GP education in Head & Neck cancer could be further improved with the aid of an ‘e-Learning for Healthcare’ module online as well as regular ENT consultant feedback and therefore an opportunity to re-evaluate the success of the 2-week wait.

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**Table 1:** No of referrals via the 2-week wait system and number of total malignancies detected.

<table>
<thead>
<tr>
<th>Presenting Complaint</th>
<th>No. of referrals</th>
<th>As a % of total referrals</th>
<th>No. of malignancies diagnosed</th>
<th>Malignancy as a % of the presenting complaint</th>
<th>As a % of total malignancies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hoarse Voice</td>
<td>156</td>
<td>25.0</td>
<td>9</td>
<td>5.8</td>
<td>25.7</td>
</tr>
<tr>
<td>Major Salivary Gland Mass</td>
<td>47</td>
<td>7.5</td>
<td>2</td>
<td>4.3</td>
<td>5.7</td>
</tr>
<tr>
<td>Neck mass (may include thyroid)</td>
<td>100</td>
<td>16.0</td>
<td>13</td>
<td>13</td>
<td>37.1</td>
</tr>
<tr>
<td>Sore throat</td>
<td>73</td>
<td>11.7</td>
<td>5</td>
<td>6.8</td>
<td>14.3</td>
</tr>
<tr>
<td>Ulcer</td>
<td>42</td>
<td>6.7</td>
<td>4</td>
<td>9.5</td>
<td>11.4</td>
</tr>
<tr>
<td>Unilateral pain (+otalgia)</td>
<td>6</td>
<td>1.0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Thyroid mass</td>
<td>13</td>
<td>2.1</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Dysphagia</td>
<td>24</td>
<td>3.8</td>
<td>2</td>
<td>8.3</td>
<td>5.7</td>
</tr>
<tr>
<td>Erythroplakia/Leukoplakia</td>
<td>30</td>
<td>4.8</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Other</td>
<td>94</td>
<td>15.0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Globus</td>
<td>22</td>
<td>3.5</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Not stated</td>
<td>18</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>625</td>
<td></td>
<td><strong>35</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(Total = 625 as 3 patients presented with more than one presenting complaint).

**Figure 3:** Percentage of patients requiring FNAC.
Of the 35 cases that were diagnosed with cancer 27 (77.1%) of the presenting complaints included hoarse voice (9), neck mass (13) and a sore throat (5). Currently the DoH referral guidelines allow an urgent referral to be made on the basis of one of the criteria being present.11 As Gardner et al recognised following a GP based audit in 2009 there is a poor predictive value of many of the 2-week wait referral criteria.18 Further research with the aim of providing a more accurate referral system needs to be developed. One idea is a threshold scoring system that appropriately refers patients based on symptoms most likely to be associated with Head & Neck cancer combined with other risk factors e.g. age, smoking habit, co-morbidities, this could then direct GP’s as to which clinic to refer the patient, a higher score needed for a 2-week wait referral than a routine one.

One-stop clinic

Our results have demonstrated that a one-stop clinic approach in the setting of the 2-week wait Head & Neck cancer referral system may not be the most efficient use of resources. 15% of all patients required a FNAC and 12.6% an ultrasound scan, therefore the presence of a consultant radiologist, pathologist and surgeon in clinic is unlikely to be cost effective. For every seven patients seen in clinic a radiologist would be required for one scan, 6:1 for a pathologist to interpret a FNAC. However a low demand for further intervention in the 2-week wait referrals does not mean that a one-stop clinic approach may not be successful in an alternative setting e.g. a neck lump clinic.

In patients with a neck lump the cytology results are vital in determining further management. Ganguly et al has recently demonstrated good results for onsite cytology in providing rapid diagnosis in a one-stop neck lump clinic.12 Providing appropriate cytopathology expertise has resource implications. For a clinic to significantly speed up the patient pathway, FNAC results must be available the same day to allow a full discussion with the patient regarding further management rather than at a further follow-up appointment. The disadvantage of this method being that if bad news is given to a patient, they have had no time to mentally prepare for it, for many patients a short wait of a few days for cytology results is an opportunity to process the information that they have been given.

At present the 2-week wait Head & Neck cancer clinic does not allow for any routine referrals to be placed in this clinic (in our unit). If routine referrals for neck lumps were hand picked from GP referral letters and placed in the 2-week wait cancer clinic, then there may be scope for a one-stop clinic approach. This would require administrative resources and consultant time to triage the referrals into appropriate appointment slots. It may be simpler to do away with ‘urgent’ clinic slots and decide whether cases are urgent enough for a 2-week wait appointment or continue with a routine one.

Conclusion

This audit confirms that the greatest proportion of patients diagnosed with Head & Neck cancers were referred through routine referrals. The 2-week wait pathway has a higher rate of cancer detection, but the difference probably doesn’t justify the increased organisational costs of providing such a service (although this requires a more formal health economic assessment). Given that the 2-week wait system was designed specifically to increase the early diagnosis of Head & Neck cancers, one would expect something approaching a 30% pick
The 2-Week Wait Head & Neck Cancer Referrals: Is this System Working?

The limited need for FNAC and ultrasound scans suggests that there is unlikely to be any significant benefit in implementing a one-stop clinic, either to the patient or as a more efficient use of resources in the 2-week wait referral setting.

Suggestions for limiting inappropriate referrals include focusing GP education on “red flag” symptoms and providing further online support such as an “e-Learning for Healthcare module” on Head & Neck cancer. If a regular line of open communication between ENT consultant and GP were encouraged, a reduction in inappropriate referrals may be achieved. ENT consultants would need to regularly feedback to GP’s the latest figures including cancer pick up rates from the 2-week wait and routine clinics as well as explain any inappropriate referrals.

Lastly, we suggest re-evaluating the current criteria for the Head & Neck cancer 2-week wait referral system and researching into the possibility of a new system where not only the presenting complaint but other risk factors (e.g. smoking, age, co morbidities) are combined to help determine the need and urgency of a referral. If a patient has to reach a threshold score for a routine referral and an even higher score before they were deemed urgent enough for a 2-week wait appointment then maybe cancer pick up rates in fast track clinics would increase.

Conflict of Interest

All authors have no conflict of interest to declare. No extraneous funding was obtained.

References