In-house referral: a primary care alternative to immediate secondary care referral?

Paul Kinnersley, Frances Maggs Rapport, Penny Owen and Nigel Stott


**Background.** Methods are needed to ensure that those patients referred from primary to secondary care are those most likely to benefit. In-house referral is the referral of a patient by a general practitioner to another general practitioner within the same practice for a second opinion on the need for secondary care referral.

**Objective.** To describe whether in-house referral is practical and acceptable to patients, and the health outcomes for patients.

**Methods.** Practices were randomized into an intervention or a control group. In intervention practices, patients with certain conditions who were about to be referred to secondary care were referred in-house. If the second clinician agreed referral was appropriate the patient was referred on to secondary care. In control practices patients were referred in the usual fashion. Patient satisfaction and health status was measured at the time of referral, 6 months and one year.

**Results.** Eight intervention and seven control practices took part. For the 177 patients referred in-house, 109 (61%) were judged to need referral on to secondary care. For patient satisfaction, the only difference between the groups studied was that at 12 months patients who had been referred in-house reported themselves as being more satisfied than those referred directly to hospital. For health status, the only difference found was that at the time of referral, patients who had been referred in-house and judged to need hospital referral reported themselves as being less able on the ‘Physical function’ subscale of the SF-36 than patients who were referred in-house and judged to not need hospital referral.

**Conclusion.** In-house referral is acceptable to patients and provides a straightforward method of addressing uncertainty over the need for referral from primary to secondary care.

**Keywords.** General practice, hospital referral, primary care, secondary care.

Introduction

Each year in the United Kingdom, 10 million new patients are referred from primary to secondary care.1 The considerable variation in referral rates between GPs suggests that some refer patients whilst others manage similar patients themselves.2 In these circumstances, the provision of a second opinion on the need for referral by referring the patient ‘in-house’ to a colleague within a practice might improve clinical decision-making while benefiting patients and the NHS. This may already happen in larger practices;3,4 however, no studies have explored the practicability and effects of systematic ‘in-house’ referral.

This study explores whether ‘in-house’ referral is practical and acceptable to patients and describes the consequences in terms of patient outcomes. We have already reported qualitatively on the largely positive views of practitioners and patients.5

Method

Practices in East Cardiff and Gwent with three or more partners were approached sequentially until 15 practices were recruited.6 The practices were not using in-house referral systematically prior to the study.

Practices were randomized into an intervention or a control group. A comparative group was judged necessary to provide normative data for the outcomes measured. Furthermore, by comparing the patients in the two groups we were able to judge whether in-house referral altered practitioners’ referral thresholds. The study was restricted to patients aged 18 years and over.
with dermatological, gynaecological, ophthalmological, ENT and musculo-skeletal (orthopaedics/rheumatology) problems. In the intervention group, when GPs judged that referral to secondary care was appropriate, they referred patients to colleagues within their practice. Patients were informed that a second opinion was considered necessary, consented and asked to make an appointment with the second GP. It was emphasized that this clinician need not have a special interest in the problem but was to give a generalist opinion. At the second consultation, if referral to hospital was judged necessary, this was arranged; if not, further management in primary care was organized.

In the control group, patients were consented, informed that they would be sent questionnaires, and referred to hospital as usual. All practices were asked to recruit 30 patients.

**Measurement of outcomes**

**Patient satisfaction and health status.** The Medical Interview Satisfaction Scale\(^7\) and the SF-36\(^8\) with additional demographic questions were bound into a single questionnaire. This was sent to control patients after the consultations at which they were referred to hospital and to intervention patients after their referral in-house. At 6 months and 1 year, all patients were sent similar questionnaires. Non-responders were sent a single reminder.

**Referral to hospital and management after in-house referral.** Consultations and hospital referrals for the years preceding and following entry into the study were counted from the general practice records. For patients referred in-house, the outcome of this referral was identified (either hospital or primary care management), along with whether the patient was referred to hospital subsequently.

For satisfaction, total scores were calculated after adding the scores on the 29 items within the MISS. For the SF-36, total scores on the eight subscales were calculated. The study was designed to detect a standardized difference of one-third of a standard deviation for differences in these two outcomes between the study arms. The point of interest was that there should be no detriment to patients referred in-house.

**Results**

**Recruitment**

Participating GPs were similar to other GPs taking part in research projects in South Wales.\(^8\) The seven control practices recruited 145 patients and the eight intervention practices recruited 177 patients. There were no statistically significant differences in terms of age or gender between the two groups (Table 1).

### Table 1 | Age and sex distributions for the patients recruited into the Control and Intervention (in-house referral) groups

<table>
<thead>
<tr>
<th>Age (years)</th>
<th>Control (n = 145)</th>
<th>Intervention (n = 177)</th>
</tr>
</thead>
<tbody>
<tr>
<td>18–44</td>
<td>53 (38%)</td>
<td>68 (39%)</td>
</tr>
<tr>
<td>45–65</td>
<td>57 (40%)</td>
<td>61 (35%)</td>
</tr>
<tr>
<td>Over 65</td>
<td>31 (22%)</td>
<td>47 (27%)</td>
</tr>
<tr>
<td>Mean age (SD)</td>
<td>51.2 (16.1)</td>
<td>51.6 (18.3)</td>
</tr>
<tr>
<td>% male</td>
<td>36%</td>
<td>39%</td>
</tr>
</tbody>
</table>

Missing data: for age, control group 5 patients, intervention group 1 patient; for gender, control group 1 patient, intervention group 2 patients.
For age, t-test: \(P = 0.87, 95\% \text{ CI} -4.19 \text{ to } 3.54\).
For gender, chi-square = 0.37; d.f. 1; \(P = 0.54\).

**The outcomes of in-house referrals**

For the 177 patients who were referred in-house, 109 (61\%) were judged to need immediate referral to hospital and 68 (38\%) were judged suitable for further management in primary care. The latter patients were younger than those referred immediately (mean difference 5.8 years; \(P = 0.04\); 95\% CI 0.25–11.25).

**Patient satisfaction and health status**

Two hundred and seventy (84\%) of the 322 patients returned the initial questionnaires. Of these, 214 (79\%) returned the questionnaire at 6 months, and, of these, 184 (86\%) returned the final questionnaire at 12 months.

The notable differences between the study groups for the outcomes measured are shown in Table 2, along with the relevant intra-cluster correlations. For satisfaction, statistically significant differences were only found at 12 months when patients referred in-house reported themselves as being more satisfied than those referred directly to hospital. The only SF-36 subscale to show differences between the groups at any time was ‘Physical function’. After the initial consultation, within the in-house referral group, patients judged to need referral to hospital reported themselves as less physically able than those judged not to need referral.

**Management in primary care before and after referral**

The numbers of consultations and referrals in the years before and after the initial consultation are also shown in Table 2. For the groups as a whole, the number of consultations and referrals were similar. However, within the intervention group, patients managed in primary care initially were more likely to be subsequently referred to hospital for some other problem than those who had been referred on to hospital initially. More specifically, for the 68 patients not referred to hospital after their referral in-house, 34 (50\%) were not referred to any
hospital in the following year; 13 (19%) were referred to the same hospital speciality as their in-house referral and 17 (25%) were referred to other hospital specialities (missing data for 4 patients).

**Discussion**

Methods are needed to reduce inappropriate referrals to secondary care while providing patients with second opinions on their management and confidence in their care. Although the study design led to clustering of patients within each practice, the intra-cluster correlations were moderate to small. Furthermore, any clustering which did occur is likely to diminish differences found between groups. It was our intention to test whether in-house referral had the potential to reduce referrals to secondary care whilst ensuring that patients not referred suffered no harm as a consequence. With regard to the outcomes measured, this would appear to be the case.

The study was limited in its clinical scope to avoid overburdening practices with an activity of uncertain benefits. The GPs have reported that in-house referral was applicable to all clinical specialities, the common theme being uncertainty in patient management. The availability of the option of referral in-house may lower practitioners’ ‘referral thresholds’. Thus some patients may not have been referred had the study not taken place. However, the patients referred in-house and the patients in control practices were of similar age, had similar numbers of consultations and referrals in the year before the study and had similar health status. This suggests that they were at least broadly similar.

In-house referral should not be thought of as an absolute replacement for direct referral to hospital but rather as a readily available method of addressing uncertainty about the need for secondary care and providing quality assurance for patients. The benefits of second opinions before expensive decisions are taken has been explored in other settings. While the absolute numbers of patients for whom care is changed may be small, the savings can be considerable. This study supports the careful review of important clinical decisions and contrasts with the largely disappointing results of establishing specialist outreach clinics in primary care.

**Table 2**  
Mean satisfaction scores, mean Physical Function scores and mean numbers of consultations and referrals in the years before and after the study for the two groups of patients

<table>
<thead>
<tr>
<th></th>
<th>Controls (referred directly to hospital)</th>
<th>Intervention (referred in-house)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Referred immediately on to secondary care</td>
<td>Not referred</td>
</tr>
<tr>
<td>After initial consultation (n = 270):</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Satisfaction</td>
<td>79.2 (SD 10.3)</td>
<td>80.7 (SD 11.1)</td>
</tr>
<tr>
<td>SF-36 Physical Function Subscale</td>
<td>67.9 (SD 29.6)</td>
<td>64.4 (SD 33.5)</td>
</tr>
<tr>
<td>At 6 months (n = 214):</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Satisfaction</td>
<td>71.9 % (SD 12.5)</td>
<td>75.9 (SD 10.1)</td>
</tr>
<tr>
<td>SF-36 Physical Function Subscale</td>
<td>70.3 (SD 28.2)</td>
<td>66.2 (SD 32.6)</td>
</tr>
<tr>
<td>At 12 months (n = 184):</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Satisfaction</td>
<td>81.7% (SD 13.1)</td>
<td>85.2 (SD 12.4)</td>
</tr>
<tr>
<td>SF-36 Physical Function Subscale</td>
<td>72.3 (SD 31.4)</td>
<td>60.7 (SD 35.4)</td>
</tr>
<tr>
<td>Consultations and referrals in year before initial consultation:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consultations</td>
<td>5.8 (SD 5.3)</td>
<td>5.1 (SD 4.2)</td>
</tr>
<tr>
<td>Referrals</td>
<td>0.32 (SD 0.59)</td>
<td>0.21 (SD 0.41)</td>
</tr>
<tr>
<td>Consultations and referrals in year after initial consultation:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consultations</td>
<td>5.4 (SD 4.8)</td>
<td>4.3 (SD 3.8)</td>
</tr>
<tr>
<td>Referrals</td>
<td>0.36 (SD 0.65)</td>
<td>0.25 (SD 0.50)</td>
</tr>
</tbody>
</table>

Statistical significant differences:

a Between patients referred directly to hospital and referred in-house: for patient satisfaction at 12 months: mean difference 4.1%, t-test, $P = 0.30$, 95% CI 0.4–7.7, intra-cluster coefficient -0.014.

b Within the in-house referral group: for Physical Function immediately after the initial consultation: mean difference 12.6, t-test, $P = 0.02$, 95% CI 2.0–23.3, intra-cluster coefficient 0.028; for referrals to hospital in the year after the initial consultation: mean difference 0.31, t-test, $P = 0.003$, 95% CI 0.11–0.52, intra-cluster coefficient 0.005.
Acknowledgement

This research was funded by a grant from the National R & D Programme in the area of the Primary Secondary Care Interface—North Thames NHS Executive. Thanks are due to the patients, doctors and practice staff in Cardiff and Gwent who participated in the study and to Dr Kerry Hood who assisted with the analysis.

References