



# Achieving 18-week waiting times in elective hand surgery

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## DECLARATIONS

### Competing interests

None declared

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### Contributorship

All authors contributed directly to aspects of planning, execution and analysis of the work reported

## Summary

**Objective** The Department of Health proposed an 18-week referral-to-treatment time (RTT) as a measure of high quality healthcare, to be achieved by December 2008. In 2007, referrals for elective hand surgery, to the Plastic Surgery Hand Service, were either direct or indirect. Direct referrals were from the general practitioner (GP). Indirect referrals were from other specialties, to which patients had been initially referred. We audited the RTT in elective hand surgery patients to see if 18-week waiting times could be achieved.

**Design** The RTT for 152 patients who had elective hand surgery in 2007 were audited prospectively and retrospectively. After the initial audit, managers responsible for the 'Choose & Book' (CAB) GP referral system, managers responsible for 'Action on Orthopaedics' and colleagues who referred, were contacted, to explain the difficulties in meeting the 18-week wait target. The audit cycle was repeated prospectively in 2008 with the audit of a further 94 patients.

**Setting** This audit took place in a district general hospital, in the United Kingdom.

**Main outcome measure** The main outcome measure was referral-to-treatment time.

**Results** The mean RTT for direct referrals decreased from 15 to 12 weeks and that for indirect referrals decreased from 43 to 24 weeks ( $p < 0.0001$ ). The difference in the average RTT for direct and indirect referrals remained statistically significant ( $p < 0.0001$ ), in both audit cycles.

**Conclusions** The attempts to reduce the RTT, in both groups of patients, did not decrease the average RTT for indirect referrals, to within government targets. Increase in GP awareness of the limitations of the CAB system and availability of local hand surgery services, may help to reduce inappropriate referrals. However we are aware that a multispecialty approach is required to ensure that hand surgery referrals are passed on to plastic surgery as soon as possible.

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**Reviewer**

Shelain Patel

**Summary**

The Department of Health proposed an 18-week referral-to-treatment time (RTT) as a measure of high quality healthcare, to be achieved by December 2008.

In 2007, referrals for elective hand surgery, to the Plastic Surgery Hand Service, were either direct or indirect. Direct referrals were from the general practitioner (GP). Indirect referrals were from other specialties, to which patients had been initially referred. The RTT for these two groups were audited, changes were implemented, and the audit cycle was completed to see if 18-week waiting times could be achieved.

A total of 152 patients who had elective hand surgery in 2007 were audited. A further 94 patients were audited in 2008 to close the audit loop. After the initial audit, managers responsible for the 'Choose & Book' GP referral system, managers responsible for 'Action on Orthopaedics' and colleagues who referred, were contacted, to explain the difficulties in meeting the 18-week wait target.

The mean RTT for direct referrals decreased from 15 to 12 weeks and that for indirect referrals decreased from 43 to 24 weeks ( $p < 0.0001$ ). The difference in the average RTT for direct and indirect referrals remained statistically significant ( $p < 0.0001$ ) in both audit cycles.

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**Background**

Tertiary referral of patients with elective hand complaints from primary care has increased by 36% from 1990 to 2000.<sup>1</sup> There is a growing global awareness of the need to ensure cost-effective healthcare delivery in the face of increased public expectations.<sup>2,3</sup> Specialist care is perceived to be expensive in many healthcare systems, as it may require highly-trained staff, expensive equipment and complex procedures.<sup>4</sup> Cost savings may be achieved by increasing efficiency and reducing waiting times. In some

healthcare systems, there has been a reluctance to use specialist care.<sup>5</sup>

The 18-week waiting time target was first put forward in the Department of Health (DOH) publication *The NHS Improvement Plan: Putting People at the Heart of Public Services*<sup>6</sup> in 2004. This was a new measure of quality healthcare and referred to a maximum referral-to-treatment time (RTT) of 18 weeks, from the point of GP referral to elective consultant-led hospital treatment. Successful delivery of this programme would see the 18-week RTT achieved in 85% of patients who require admission to the hospital by March 2008, and in 90% of similar patients by December 2008.<sup>7</sup>

In highly specialized services, such as hand surgery, the initial referral may be to another specialty. Delays may then ensue, when the patient is referred on to the specialist hand service, or referred back to the GP, for a correct referral to be made.

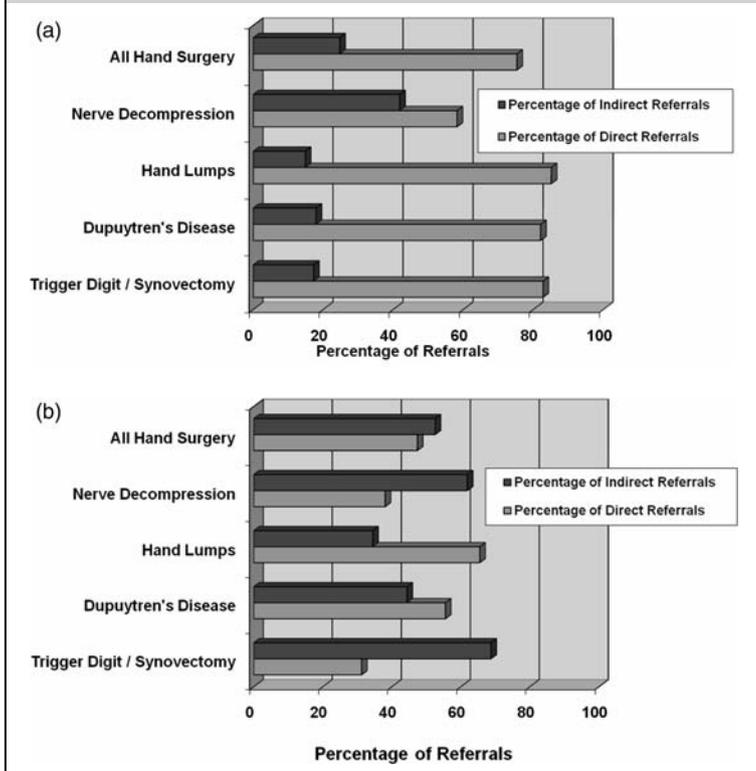
During the year 2007, two common pathways of referrals for elective hand surgery were identified at Sandwell. One pathway was direct referral (DR) by the GP to the Plastic Surgery Hand Service. The other path of indirect referral (IDR) was an initial referral by the GP to orthopaedic surgery, rheumatology, neurology and other specialists, followed by a subsequent re-referral to the Plastic Surgery Hand Service.

It was noted that many of the patients who were indirectly referred waited longer for hospital surgical treatment than directly referred patients. This audit was undertaken, to compare the RTTs for these two groups of patients and to see if these referral pathways were compatible with the 18-week RTT government target.

**Materials and methods**

The initial audit studied 152 patients, who underwent elective hand surgery, under the care of one plastic surgery consultant between 1 January and 5 October 2007. Patients were chosen with trigger finger, synovitis, Dupuytren's disease, hand lumps (ganglions, cysts, vascular malformations, etc.), and nerve compression syndromes. Patients were identified using the theatre registers in the day surgery unit (DSU) and in the main theatre. A retrospective and prospective case-note review was undertaken of all 170 surgical episodes of the patients treated.

**Figure 1**  
**(a) Histogram of elective hand surgery cases in the initial clinical audit;**  
**(b) histogram of elective hand surgery cases in the clinical re-audit**



Following the audit, an information campaign was started, to reduce the RTT for elective hand surgery. This included meeting with the local 'Choose & Book' (CAB) network managers. The limitations of the online referral system were explained and the complexity of the referral system was pointed out. The CAB system was shown to have no clear pathways for referral of hand surgery patients. In addition, it was explained to colleagues who referred patients to plastic surgery for hand conditions, that referral letters should be re-directed on arrival, so as to minimize any delays in patient waiting times.

The re-audit involved the prospective recruitment of 94 patients undergoing elective hand surgery, for the same hand complaints, under the same consultant from 19 February to 15 December 2008. A total of 97 surgical episodes were identified for these patients.

Statistical analysis was performed with the GraphPad Prism™ version 4 software (GraphPad Software®, San Diego, CA, USA). The Mann-Whitney test was used to identify differences between the waiting times for direct and indirect referrals.

## Results

In the initial clinical audit, there were 177 patients, who underwent 195 surgical episodes. Twenty-five sets of patient notes could not be tracked and these patients were excluded. One hundred and fifty-two patients and 170 surgical episodes were audited. Figure 1a illustrates the distribution of hand conditions in this patient cohort and whether they were direct or indirect referrals. Most patients were direct referrals (direct:indirect referral ratio 3:1). The largest proportion of indirect referrals was in patients with nerve compression syndromes.

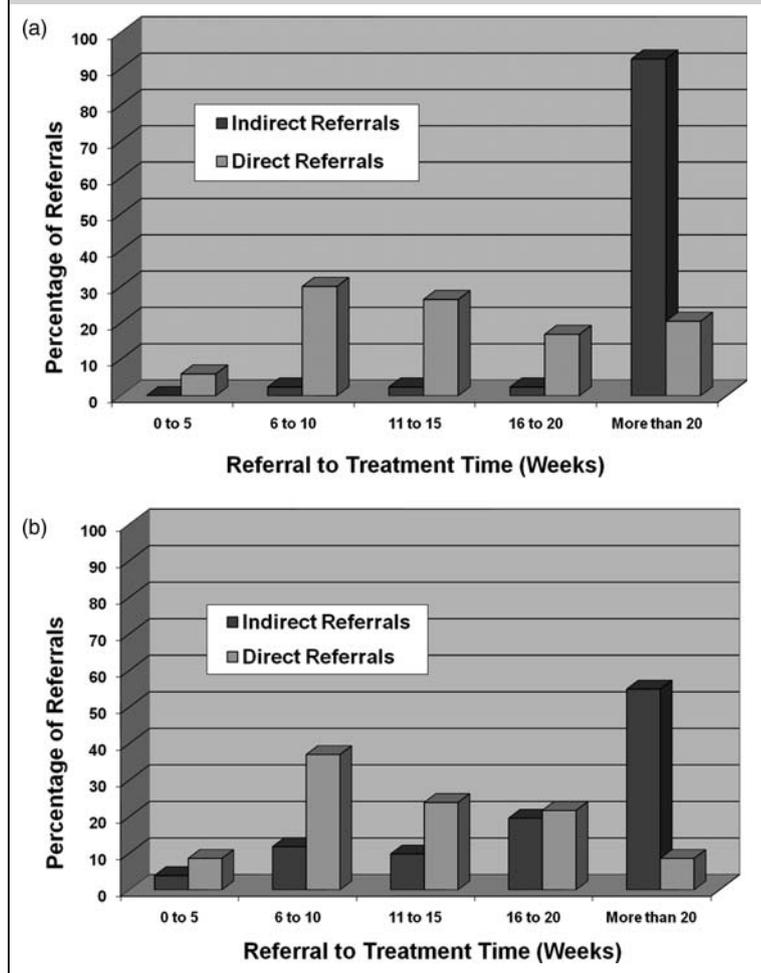
The prospective clinical re-audit had 96 patients and 99 surgical episodes. Data entry for two patients was incomplete and they were excluded. Ninety-four patients who had 97 surgical episodes were audited. Figure 1b shows the distribution of hand conditions, for direct and indirect referral patients, in the re-audit. The proportion of indirect referrals had increased to one for every direct patient referral overall. Indirect referrals exceeded direct referrals in patients with nerve compression and trigger finger.

The 18-week RTT was achieved in 79/109 (72.5%) of direct referrals before the information campaign and in 37/46 (80.4%) direct referrals in the re-audit. The government RTT target was achieved in 2/41 (4.9%) of indirect patient referrals in the initial audit, and 20/51 (39.2%) in the re-audit.

Figure 2a shows the distribution of RTT in direct and indirect episodes prior to the information campaign. Most indirect referral patients waited for more than 20 weeks, before they received treatment. After the information campaign, there was a decrease in the proportion of indirect referral episodes with the RTT more than 20 weeks, and an increase in the percentage of direct referral episodes with the RTT of 6–10 weeks (Figure 2b).

**Figure 2**

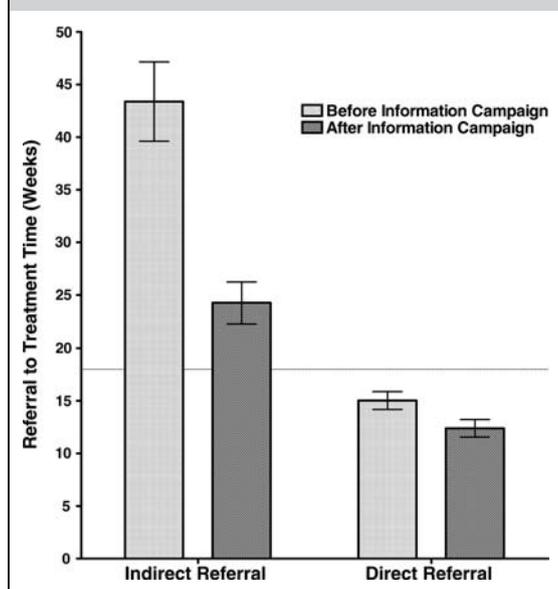
(a) Graph of percentage of referrals and the referral-to-treatment times before information campaign; (b) graph of percentage of referrals and the referral-to-treatment times after information campaign



The average RTT in direct referral patient episodes was 15 weeks (range 3–59) in 2007 and 12.4 weeks (range 3–26) in 2008 (Figure 3). The mean RTT for indirect referral patient episodes was 43.4 weeks (range 10–141) in 2007, and 24.3 weeks (range 3–71) in 2008 (Figure 3). The difference in the median RTT between direct and indirect episodes in 2007, before the information campaign, and in the clinical re-audit in 2008, was statistically significant (Mann-Whitney test,  $p < 0.0001$ ). The decrease in median RTT in indirect referral episodes from 2007 to 2008 was also

**Figure 3**

Graph shows a comparison of the referral-to-treatment times for direct and indirect referral patients before and after instituting changes to improve the indirect referral pathway. Columns show the mean RTT and error bars indicate the standard error of the mean. The dotted line shows the 18-week RTT target



statistically significant (Mann-Whitney test,  $p < 0.0001$ ).

Most of the referral-to-treatment waiting time for all patients was taken up by the period from referral to plastic surgery outpatient review. The average waiting time from referral to outpatient review was shorter for direct referral than indirect referral episodes. Mean referral to outpatient times for direct referrals was 8.6 weeks (range 1–57) in 2007 and 6.3 weeks (range 0–20) in 2008. The mean time from referral to outpatient review in indirect referral episodes was 36.5 weeks (range 8–135) in 2007 and 19 weeks (range 1–65) in 2008.

## Discussion

The results of this investigation have shown that inappropriately directed (indirect) referrals, to a hand surgery specialist service, resulted in significant delays. Most patients who were correctly

referred by the general practitioner received treatment within the government target of 18 weeks.

This is the first study describing the application of the 18-week RTT to elective hand surgery. A thorough audit was conducted in response to a clinical impression of discrepant waiting times for two groups of patients. Changes were implemented and a re-audit showed changes in the RTT for patients in both groups. The initial audit was carried out on consecutive patients retrospectively and in the re-audit, patients were recruited prospectively. A smaller number of patients in the re-audit suggested that overall referrals had decreased or that some patients may have been missed from the audit. The information campaign carried out to reduce the RTT changed referral patterns, but we were not informed about the actual changes to the CAB pathway and had no access to the system. We communicated with hospital specialties who indirectly referred patients but not with primary care teams who were the sources of the referrals.

### History of waiting time targets

In the year 2000, the maximum waiting time target for outpatient appointments, in the National Health Service (NHS) in England, was set as three months by the Department of Health (DOH).<sup>8</sup> These targets were to be achieved by 2005. By 2004, the maximum wait for an outpatient appointment had decreased to 17 weeks and that for an operation was nine months.<sup>6</sup> A new empirical waiting time target of 18 weeks from RTT was then set, to be achieved by the end of 2008.<sup>6</sup>

These 18-week pathways were for patients who wanted treatment, and for whom treatment was clinically appropriate.<sup>7</sup> An 18-week delivery programme was set up in 2005 with a supporting resource website<sup>9</sup> to help achieve the new RTT target. The rules for starting, pausing and stopping the '18-week clock' have been modified in 2007 and 2009, with growing complexity, since their introduction in 2006.<sup>10</sup>

### Applying the waiting time targets

In April 2007, DOH statistics showed that 58% of plastic surgery patients completed their patient

pathway within 18 weeks.<sup>11</sup> Our study showed that in the year 2007, 72% of direct referrals in our hand service had waits within this target, and 95% of indirect referral episodes failed to meet government targets.

Indirect referral patients generally spent a long time receiving outpatient investigation and clinic follow-up by the referring specialty, before being re-referred. Some of these patients were first seen by extended scope practitioners and waited again for a separate consultant outpatient episode. This resulted in an increased wait from GP referral to the plastic surgery outpatient review of 19–37 weeks, creating a 'bottleneck' at the point of re-referral.

Pilot studies by the DOH suggested that requests for investigations after the first hospital outpatient appointment were the main cause of prolonged waiting times.<sup>12</sup> Solutions proposed to reduce other causes of delays include<sup>13</sup>: ensuring smooth progression of the patient toward treatment; balancing patient demand and service delivery; allocation of resources to 'bottlenecks' in patient pathways; and reducing backlog of work resulting from delayed inter-specialty transfer.

In order to achieve the 18-week waiting time limit for elective hand surgery, all the steps leading up to the point of re-referral were addressed:

- (1) The CAB system should be optimized so that all elective hand referrals are routinely streamed to the Plastic Surgery Hand Service, converting potential indirect referrals to direct referrals;
- (2) We have highlighted to other specialist departments that hand surgery referrals should be identified early and forwarded to the Plastic Surgery Hand Service, reducing the potential for 'bottlenecks' in patient pathways;
- (3) A monthly combined hand clinic with a consultant plastic surgeon and a consultant neurophysiologist was set up at the end of 2007. Nerve conduction studies were carried out on the same day for patients who require this investigation for diagnosis, improving the coordination of resources.

The information campaign reduced the RTTs in both direct and indirect referral patients, but

failed to decrease the average RTT for indirect referrals to within acceptable government targets. The proportion of direct referral episodes achieving treatment within 18 weeks increased to 80%. Some of the improvement in RTT for direct referral patients may be the result of the one-stop combined nerve compression clinics.

Only 39% of indirect referral episodes were completed within the same time frame. The small number of indirect referral patients with RTT within 18 weeks suggested that the referring specialists, in the main, did not change their practice despite our requests during the information campaign.

The re-audit also found that, ironically, the proportion of indirect referrals had increased. This may be a reflection of inadequate communication with the primary care teams during the information campaign, or unfavourable changes to the CAB system, which have made it more difficult for GPs and patients to access the hand clinic directly.

### Excessive delays

Ten patients in 2007 (nine indirect and one direct referrals) and three indirect referral patients in 2008 experienced a RTT in excess of 52 weeks (average 72 weeks, range 53–141). In all cases, the time from GP referral to first hand clinic appointment (average 65 weeks, range 45–135) was much longer than the time from appointment to surgery (average 8 weeks, range 2–25). Five patients were seen by two subspecialists prior to a hand clinic referral. On average, two investigations or interventions were requested by other subspecialists before the hand clinic referral. The longer delays caused by investigations were a four- to six-month wait for nerve conduction studies, and for magnetic resonance imaging. One patient deferred his follow-up with another subspecialist for one year and had a doctor-initiated delay for a further six months before finally being referred to the hand clinic. Once seen in the hand clinic, only two patients waited more than nine weeks for their operation. These delays were caused by a three-month wait for an anaesthetic review and patient-initiated delay to operation. The medical diagnoses in this subgroup of patients appeared more complex, involving

more than one subspecialty in 38% and requiring  $\geq 2$  investigations in 46%.

In the future, we hope to increase the awareness of local GPs to locally available plastic surgery services and highlight the limitations of the CAB system, e.g. that there is no available option to select 'hand surgery' as a surgical subspecialty to help direct referrals to the Plastic Surgery Hand Service. These measures may help to increase the proportion of direct referrals and reduce the overall RTT for our patients.

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