

Re-audit of Radiotherapy Waiting Times in the United Kingdom, 2007

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ABSTRACT:

This is the fourth Royal College of Radiologists' audit on radiotherapy waiting times. These have been conducted in 1998, 2003 and 2005 with the aim of determining how long patients wait for treatment following agreement with their doctor.

This and the previous audit have used an almost identical web based tool to collect data.

Results are presented on 2528 patients (2669 treatments) who commenced a course of radiotherapy in the week commencing Monday 24th September 2007. Data were obtained from 57 (100%) of NHS centres and 2/3 private centres.

The results show that the percentage of patients waiting more than 28 days for radical radiotherapy dropped from 53% in 2005 to 32% in 2007. This is a significant benefit for patients but further improvement is required to meet this standard for all patients as originally recommended in 1993.

Introduction

Delay in access to radiotherapy allows cancers to progress [1] and become unsuitable for radical treatment [2] resulting in decreased cure rates and worse patient outcomes [3-7]. Radiotherapy waiting times audits have been conducted by the Royal College of Radiologists since 1998 [8]. The previous re-audit in 2005 [9] showed an improvement compared to the earlier round in 2003 [10]. The current re-audit was undertaken to see if waiting times have continued to improve.

This study adopted the same waiting times targets as in 2005. These were set in 1993 by the Joint Council for Clinical Oncology (JCCO) [11] and by the Department of Health (DH) [12]. The targets are shown in Table 1 together with indicators used to determine whether they had been met. Terms were defined in a set of help notes for participants. The definitions are reproduced in Table 2.

Table 1 –Waiting times targets (JCCO, Nos. 1-3; DH, Nos. 4, 5) and indicators

Target	Indicator
1. First oncology consultation to start of urgent radiotherapy ≤ 48 hours	% of treatments where date of booking request to date urgent radiotherapy commenced ≤ 2 days
2. First oncology consultation to start of palliative radiotherapy (non-severe symptoms) ≤ 2 weeks	% of treatments where date of booking request to date palliative radiotherapy commenced ≤ 14 days
3. First oncology consultation to start of radical radiotherapy involving complex treatment planning ≤ 4 weeks ¹	% of treatments where date of booking request to date radical radiotherapy commenced ≤ 28 days ²
4. One month from diagnosis (decision to treat) to first treatment (start date)	% of treatments where date of decision to treat to date radiotherapy commenced ≤ 31 days ³
5. Two months from urgent GP referral for suspected cancer to first treatment (start date)	% of treatments where date of urgent referral by GP to date radiotherapy commenced ≤ 62 days ³

¹ Where additional specialist staging procedures are necessary.

² Radical skin cancer patients were excluded from this indicator.

³ Where first definitive treatment.

Table 2 – Definitions of terms

Term	Definition
Date of booking request	When a clinical oncologist and a patient have agreed to a plan of treatment including a course of radiotherapy, the clinical oncologist should complete a booking request; this date is the date a booking form request is completed or an electronic request is logged.
Date radiotherapy commenced	The date of the first fraction of treatment.
Date of decision to treat	The date of the consultation in which the patient and clinician agree the treatment plan for first treatment. It may be the same as the date of the booking request, but only if this was completed on the same day.
Date of urgent GP referral	This is the date the GP signs the referral request and trusts must respond within 24 hours.
Urgent (waiting list status)	This is locally determined according to clinical judgement.
Palliative (treatment intent)	Local definitions should be used.
Radical (treatment intent)	Local definitions should be used.
First definitive treatment	Normally the first intervention which is intended to remove or shrink the tumour. Where there is no definitive anti-cancer treatment, almost all patients will be offered a palliative intervention (e.g., stenting) or palliative care (e.g., symptom control), which should be recorded for these purposes.

Materials and Methods

All 57 National Health Service (NHS) and three private radiotherapy centres in the United Kingdom (UK) were invited to participate. Patients commencing treatment between Monday 24th September and Sunday 30th September 2007 inclusive were eligible to be included. The data collection time frame was Monday 24th September 2007 to Friday 4th January 2008.

The web-based data collection tool (see Appendix 1) was a modified version of that used in 2005 and was designed using Snap Survey Software, Version 9. Data were analysed using Microsoft Office Excel 2003. Non-responses and don't know responses were excluded from the analysis unless stated otherwise. Data collected on dose fractionation practices will be reported elsewhere.

Fifty-seven out of 57 (100%) NHS centres and 2/3 (67%) private centres participated in the project. Overall the response rate was 59/60 (98%). Data on

2715 treatments were received. Initially, 35 (1%) sets of data were excluded. In almost all cases this was because treatment had commenced outside the specified time period. After checking for duplicate records, a further 11 (0.4%) sets of data were excluded. Two thousand six hundred and sixty-nine sets of data from 2528 patients were audited. The following analysis is in terms of cancer sites irradiated, so that data on some patients appears twice. Thirteen (0.5%) of data sets were from the private sector and 2656 (99.5%) sets were from NHS centres; these will have included patients treated privately, but this item of information has not been requested in any of these audits.

Results

Patient diagnoses and sites treated are shown in Figures 1 and 2 respectively. With regard to the indicators, three hundred and fifty out of 2526 (14%) treatments were urgent by waiting list status. One thousand one hundred and forty-four out of 2647 (43%) were palliative and 940/2647 (36%) were radical by treatment intent. A summary of waiting list status and treatment intent is presented in Appendix 2. Four hundred and sixty-three out of 2538 (18%) treatments were first definitive treatments, but date of urgent GP referral was supplied for only 81/463 (17%) of these. Seven hundred and thirty-one out of 2550 (29%) treatments were subject to elective delay, and were excluded from the waiting times analysis. The reasons given for elective delays are shown in Table 3. Chemotherapy/hormone therapy was the most common explanation at 367/705 (52%).

Table 3 – Reasons for elective delays

Reason	n/N (%)
Chemotherapy/Hormone therapy	367/705 (52)
Intercurrent illness	27/705 (4)
Other	110/705 (16)
Patient request (holidays etc)	137/705 (19)
Post-chemotherapy delay	14/705 (2)
Recovering from surgery	50/705 (7)

Waiting Times Analysis

The cumulative percentage of urgent, palliative and radical treatments commenced at daily intervals from date of booking request and, where treatment was first definitive treatment, from date of decision to treat and date of urgent referral by GP are shown in Figures 3a, 3b, 4 and 5. Median waiting times together with each of the five waiting times targets are shown in Table 4.

Table 4 – Median waiting times and waiting times targets

Target	Median (interquartile range)
First oncology consultation to start of urgent radiotherapy ≤ 48 hours	12 days (6-23 days)
First oncology consultation to start of palliative radiotherapy (non-severe symptoms) ≤ 2 weeks	8 days (4-14 days)
First oncology consultation to start of radical radiotherapy involving complex treatment planning ≤ 4 weeks	25 days (19-32 days)
One month from diagnosis (decision to treat) to first treatment (start date)	15 days (8-22 days)
Two months from urgent GP referral for suspected cancer to first treatment (start date)	54 days (34-71 days)

The one month (31 days) and two month (62 days) targets only apply to England [12]. However, as a national audit project, comparisons against these targets, as well as against the 48 hours, 2 week and 4 week targets, were made for the UK as a whole (Table 5) and for England, Scotland, Wales and Northern Ireland separately (Table 6).

Table 5 – Percentage of patients exceeding waiting times targets in the UK

Target	Non-compliance (%)
First oncology consultation to start of urgent radiotherapy ≤ 48 hours	239/278 (86%)
First oncology consultation to start of palliative radiotherapy (non-severe symptoms) ≤ 2 weeks	218/994 (22%)
First oncology consultation to start of radical radiotherapy involving complex treatment planning ≤ 4 weeks	159/500 (32%)
One month from diagnosis (decision to treat) to first treatment (start date)	33/393 (8%)
Two months from urgent GP referral for suspected cancer to first treatment (start date)	24/75 (32%)

Table 6 - Percentage of patients exceeding waiting times targets in England, Scotland, Wales and Northern Ireland

Target	Non-compliance (%)			
	England	Scotland	Wales	Northern Ireland
First oncology consultation to start of urgent radiotherapy ≤ 48 hours	184/215 (86)	36/38 (95)	11/15 (73)	8/10 (80)
First oncology consultation to start of palliative radiotherapy (non-severe symptoms) ≤ 2 weeks	177/862 (21)	28/67 (42)	12/52 (23)	1/13 (8)
First oncology consultation to start of radical radiotherapy involving complex treatment planning ≤ 4 weeks	126/424 (30)	17/40 (43)	16/32 (50)	0/4 (0)
One month from diagnosis (decision to treat) to first treatment (start date)	22/316 (7)	5/36 (14)	6/30 (20)	0/11 (0)
Two months from urgent GP referral for suspected cancer to first treatment (start date)	17/62 (27)	5/11 (45)	1/1 (100)	1/1 (100)

Levels of compliance with 2 weeks and 4 weeks targets were reported by centre rating in the previous audit rounds. For the current round, they are reported by centre ID number and are shown in Figures 8 and 9.

Discussion

This is the fourth round of audit which the RCR has conducted over a decade. In each audit a complete dataset has been obtained from all NHS radiotherapy centres in the UK. On this occasion we also have data from two of the three private providers in London.

Waiting list status categories were locally defined by each centre. Appendix 2 shows that 13% were categorised as urgent yet the median time to start treatment following the consultation was 12 days (Table 7). Table 4 and Figure 3a show that 86% were later than the JCCO target of treatment within 48 hours. It is likely that this reflects an inappropriate use of the term urgent. Similar problems have been identified in an audit of systemic therapy waiting times (paper in preparation). The JCCO did not use the term emergency but of the 3% of cases so categorised 77/79 (97 %) were treated within 48 hours. This may be a more appropriate term to identify such patients in future. Figure 3a shows that classifying a patient as urgent rather than routine only brought their treatment forward by about 4 days. Figure 3b shows that patients treated palliatively did receive treatment to relieve their symptoms sooner than patients who received radical treatment, as was the intent of the JCCO guidelines.

Table 7 and Figures 6 and 7 show the percentage of patients exceeding waiting times targets in each round.

Table 7 - Percentage of patients exceeding waiting times targets in the UK between 1998 and 2007

Target	Non-compliance			
	Round 1 (1998)	Round 2 (2003)	Round 3 (2005)	Round 4 (2007)
First oncology consultation to start of urgent radiotherapy ≤ 48 hours	-	-	-	86%
First oncology consultation to start of palliative radiotherapy (non-severe symptoms) ≤ 2 weeks	25%	60%	33%	22%
First oncology consultation to start of radical radiotherapy involving complex treatment planning ≤ 4 weeks	32%	72%	53%	32%
One month from diagnosis (decision to treat) to first treatment (start date)	-	-	29%	8%
Two months from urgent GP referral for suspected cancer to first treatment (start date)	-	-	26%	32%

The proportion of patients waiting longer than recommended has continued to fall since the previous audit, except for the two month (62 day) target set by the Department of Health. Data for this endpoint were compromised because the date of urgent GP referral was supplied for only 81/463 (17%) of patients who were receiving their first definitive treatment (FDT). The results show that in England, the number of patients exceeding the one month target was 22/316 (7%) and for the two month target it was 17/62 (27%). Much lower levels of non-compliance of 0.3 % and 2.8% respectively were reported by the DH for the quarter in which the audit took place [13]. However, the DH figures apply to all forms of cancer treatment and not just radiotherapy. In addition there is an analytical difference because we excluded patients with an elective delay, whereas the DH analysis uses a “stop the clock” approach. Further research would be required to determine the cause of the discrepancy but these results are not necessarily incompatible with each other.

Conclusion

Since 2003 there has been a steady reduction in radiotherapy waiting times for patients. This demonstrates that investment in equipment, staff and training is starting to produce benefits for patients. Investment plans have been established for Scotland [14] and Wales [15]. We welcome the recommendation in the English Cancer Reform Strategy [16] for a further £200m investment in radiotherapy to improve services for patients. It will be important that this investment addresses not only the waiting times described in this paper but also quality issues which include both the avoidance of interruptions to treatment which can have an adverse effect on patients [1] and the availability of modern and sophisticated treatment which can improve tumour control and reduce side effects.

References

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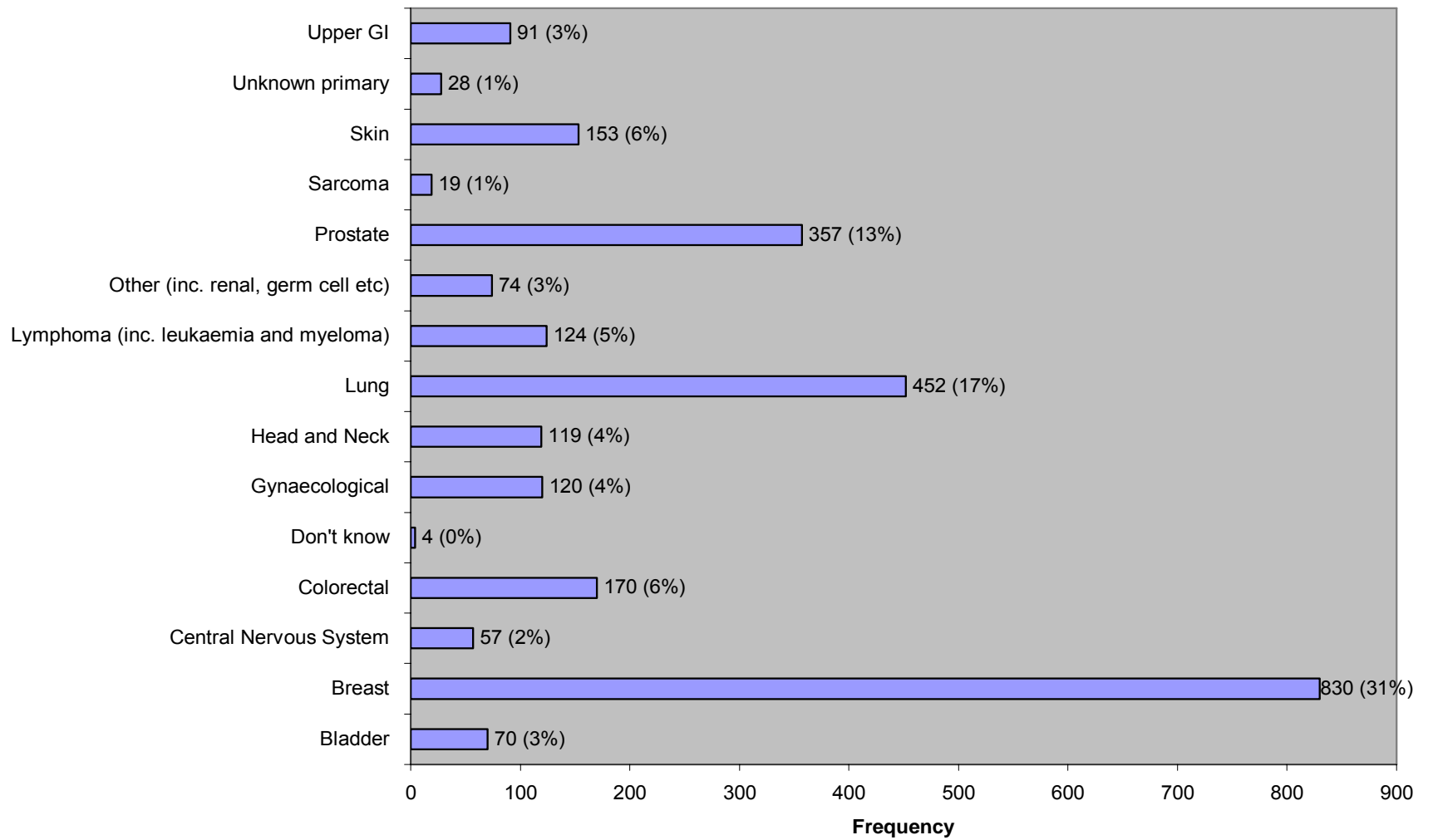


Fig. 1 – Patient diagnosis.

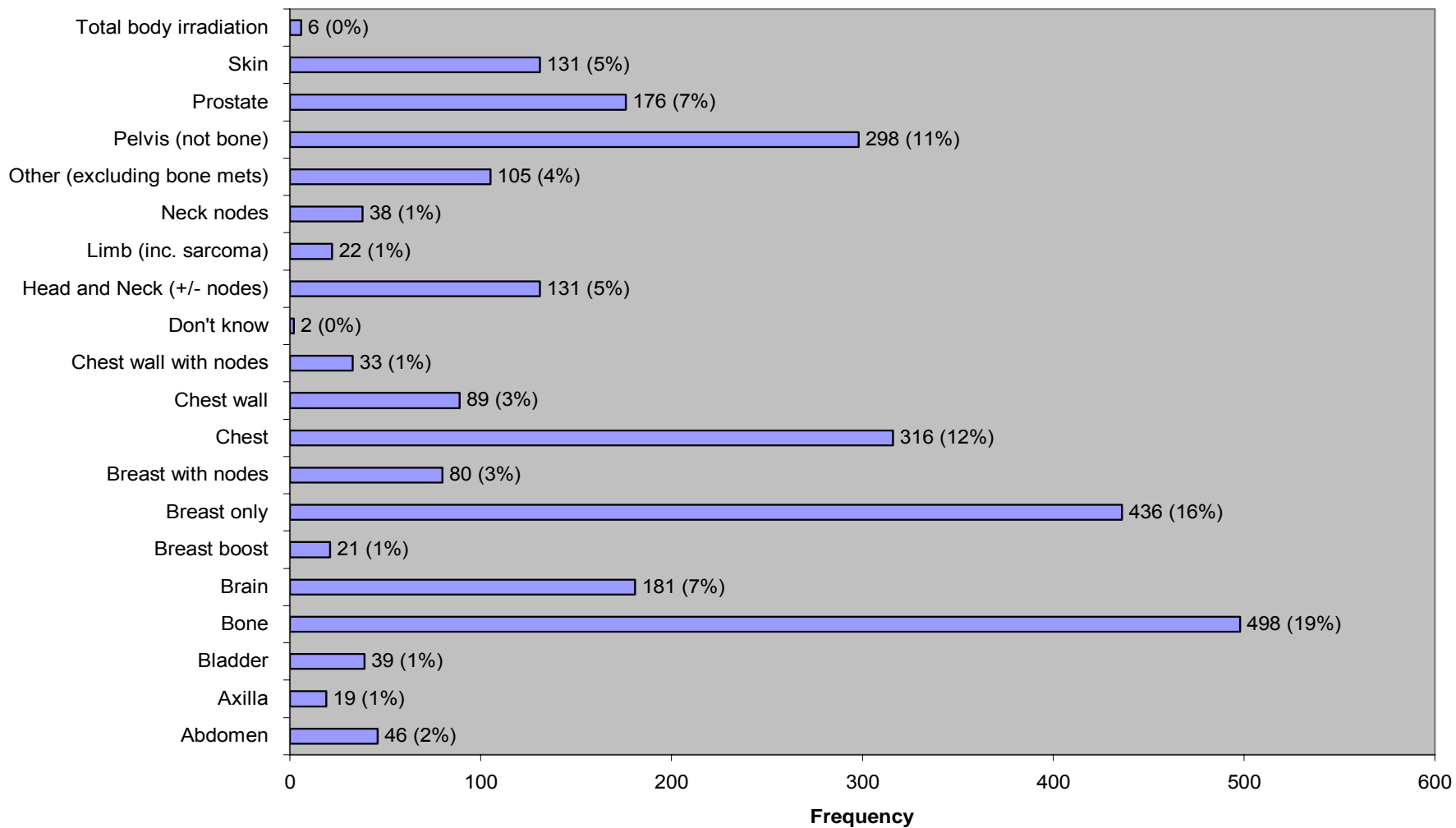


Fig. 2 – Site treated.

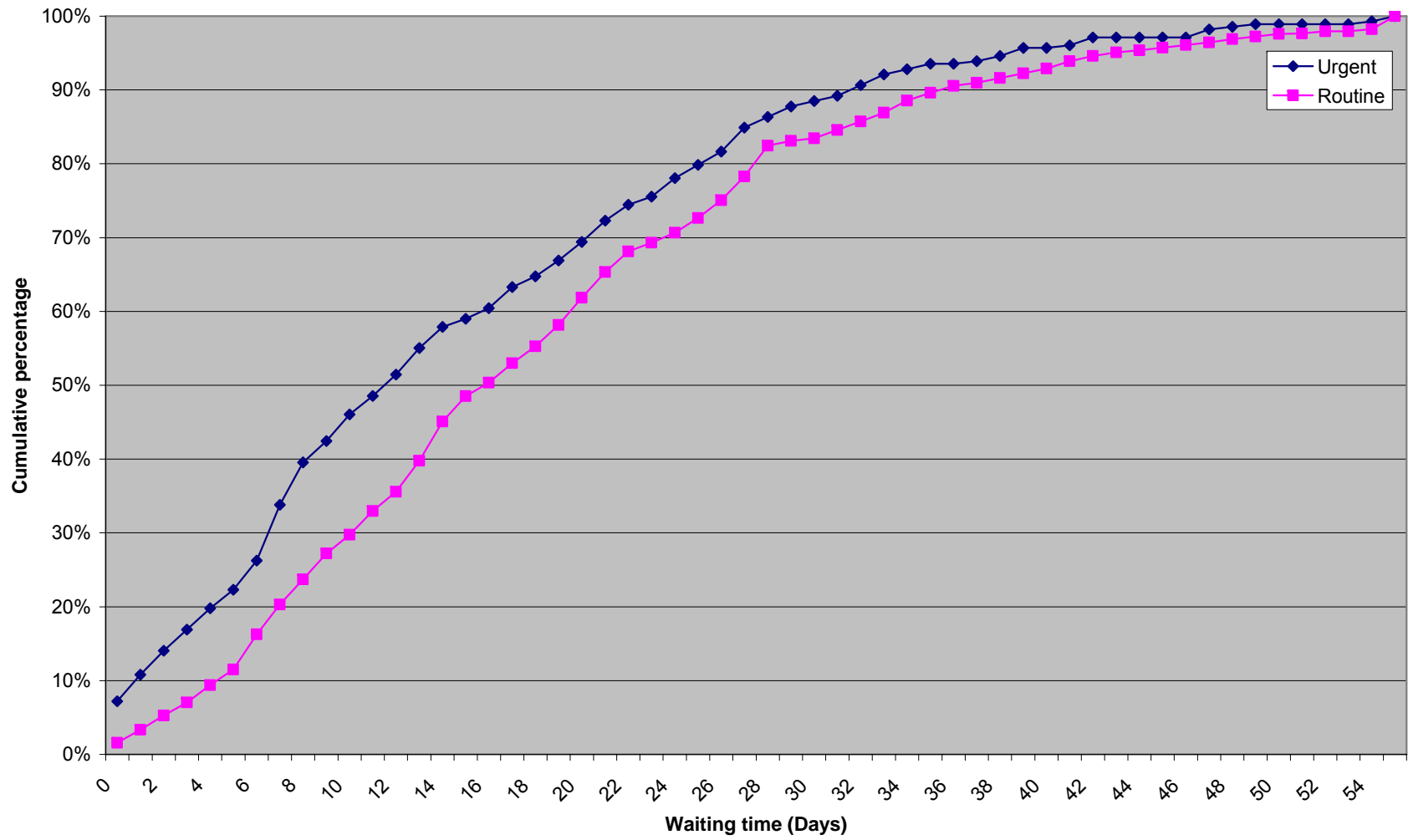


Fig. 3a – Cumulative percentage of urgent and routine treatments commenced from date of booking request.

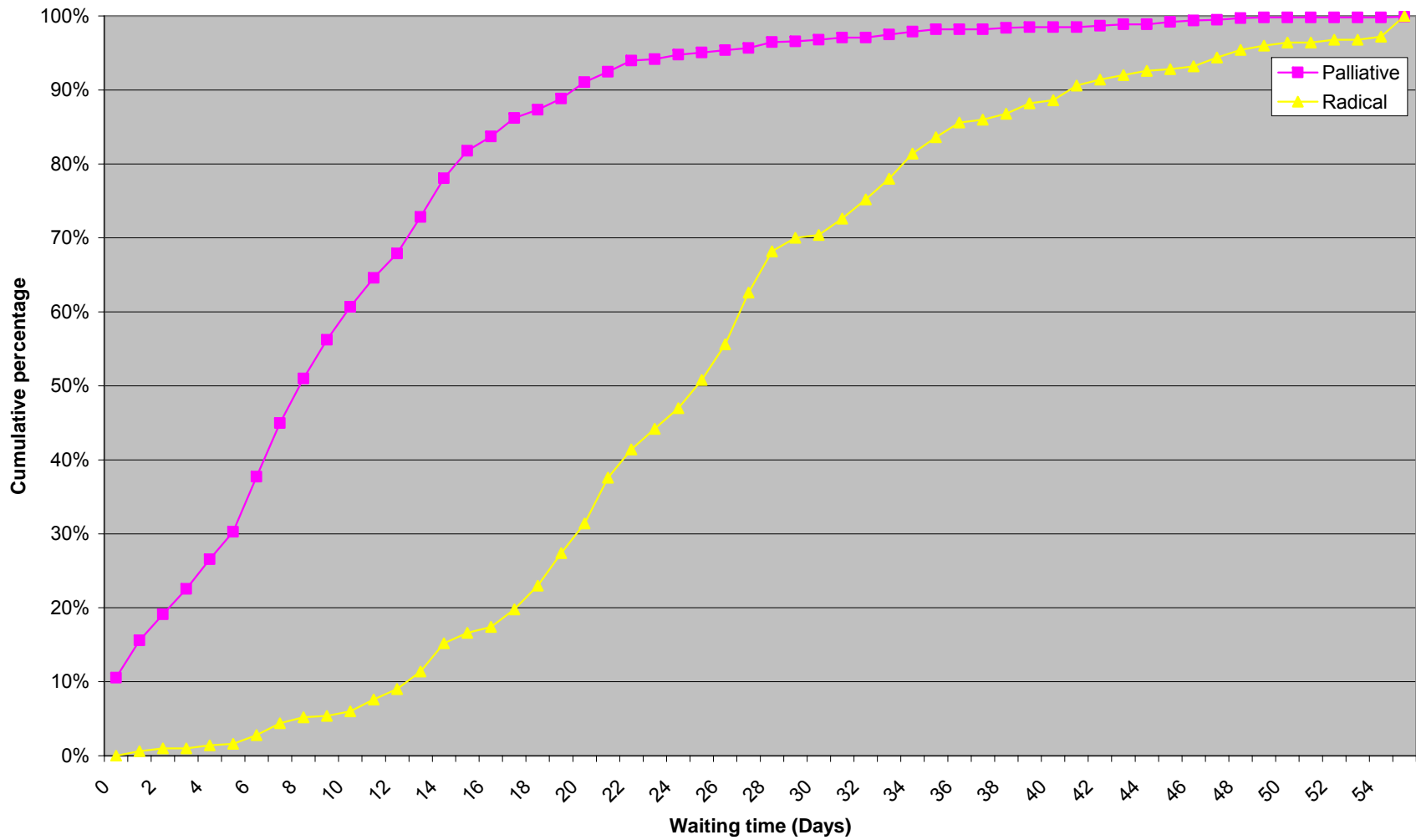


Fig. 3b – Cumulative percentage of palliative and radical treatments commenced from date of booking request.

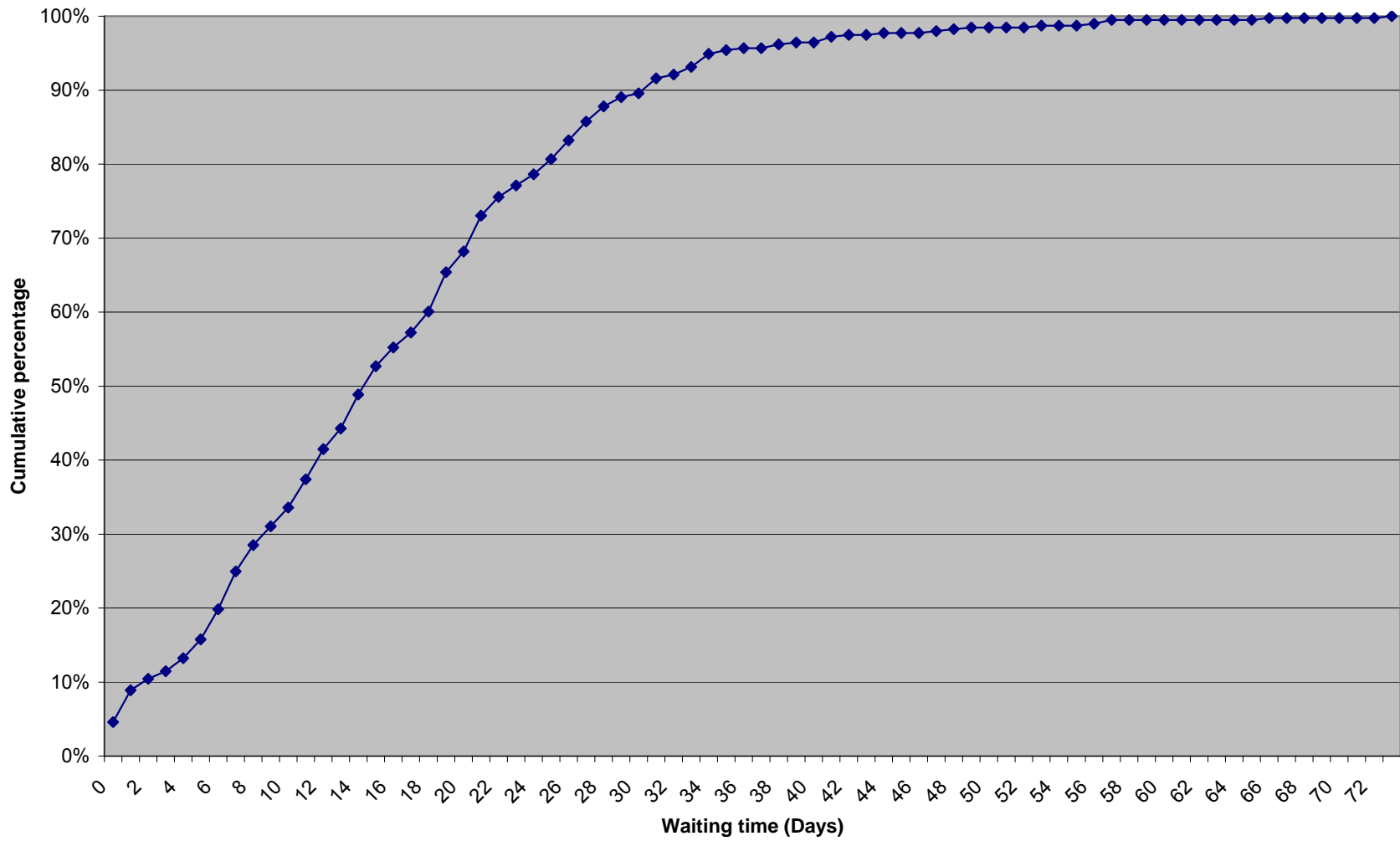


Fig. 4 - Cumulative percentage of first definitive treatments commenced from date of decision to treat.

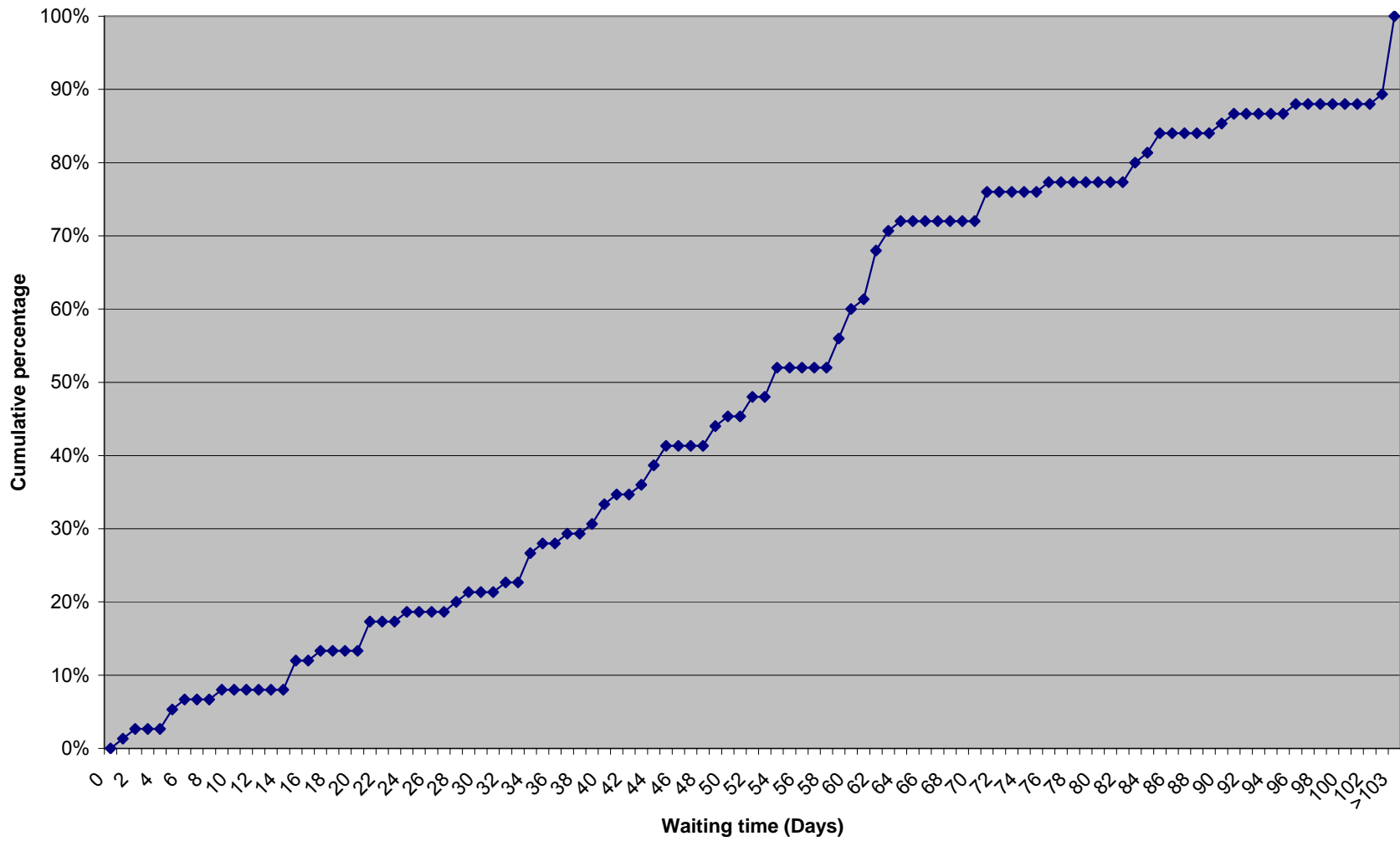


Fig. 5 - Cumulative percentage of first definitive treatments commenced from date of urgent referral by GP.

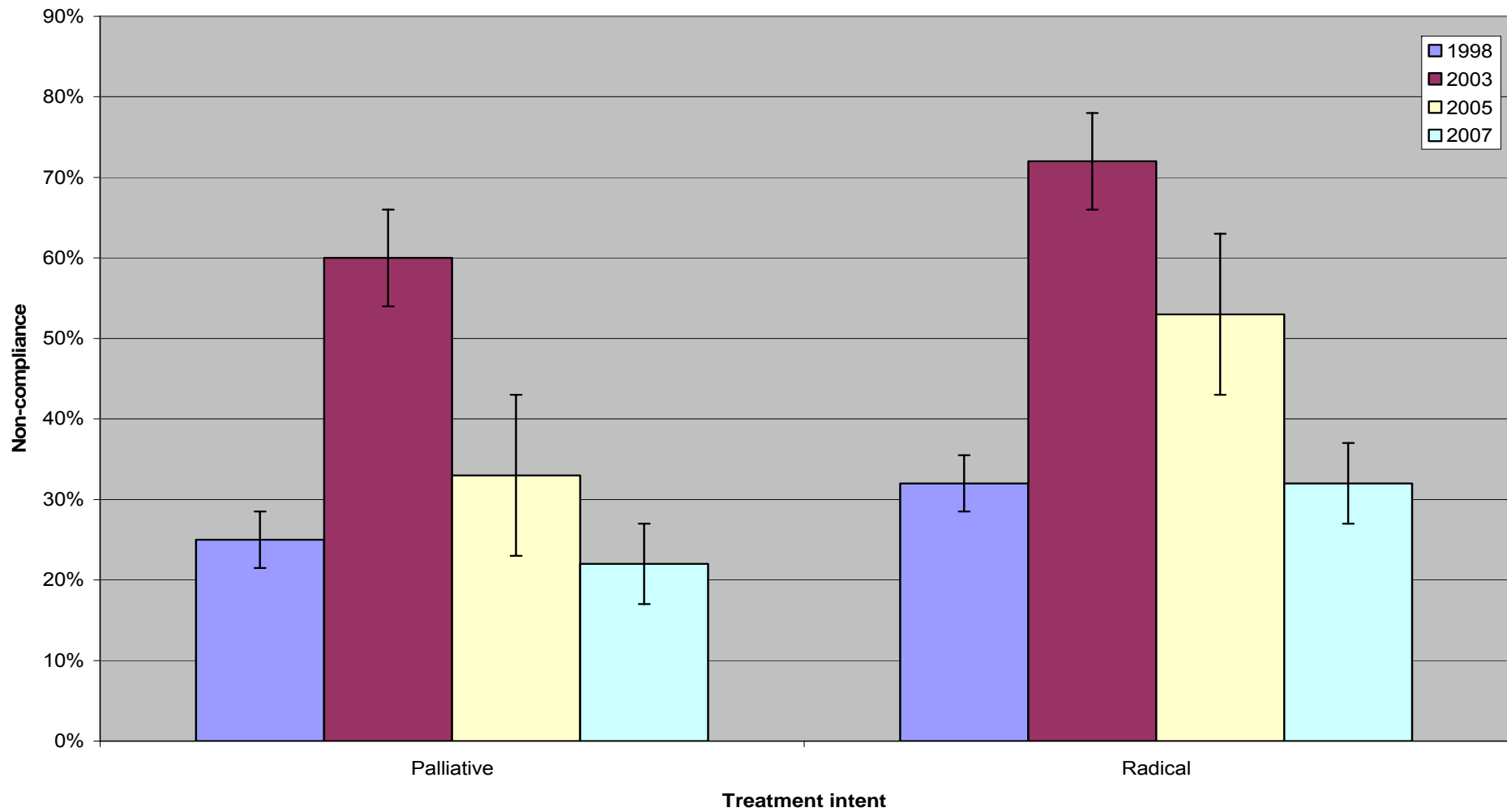


Fig. 6 – Percentage of patient treatments exceeding JCCO waiting time targets for palliative and radical radiotherapy between 1998 and 2007. Error bars represent the standard error.

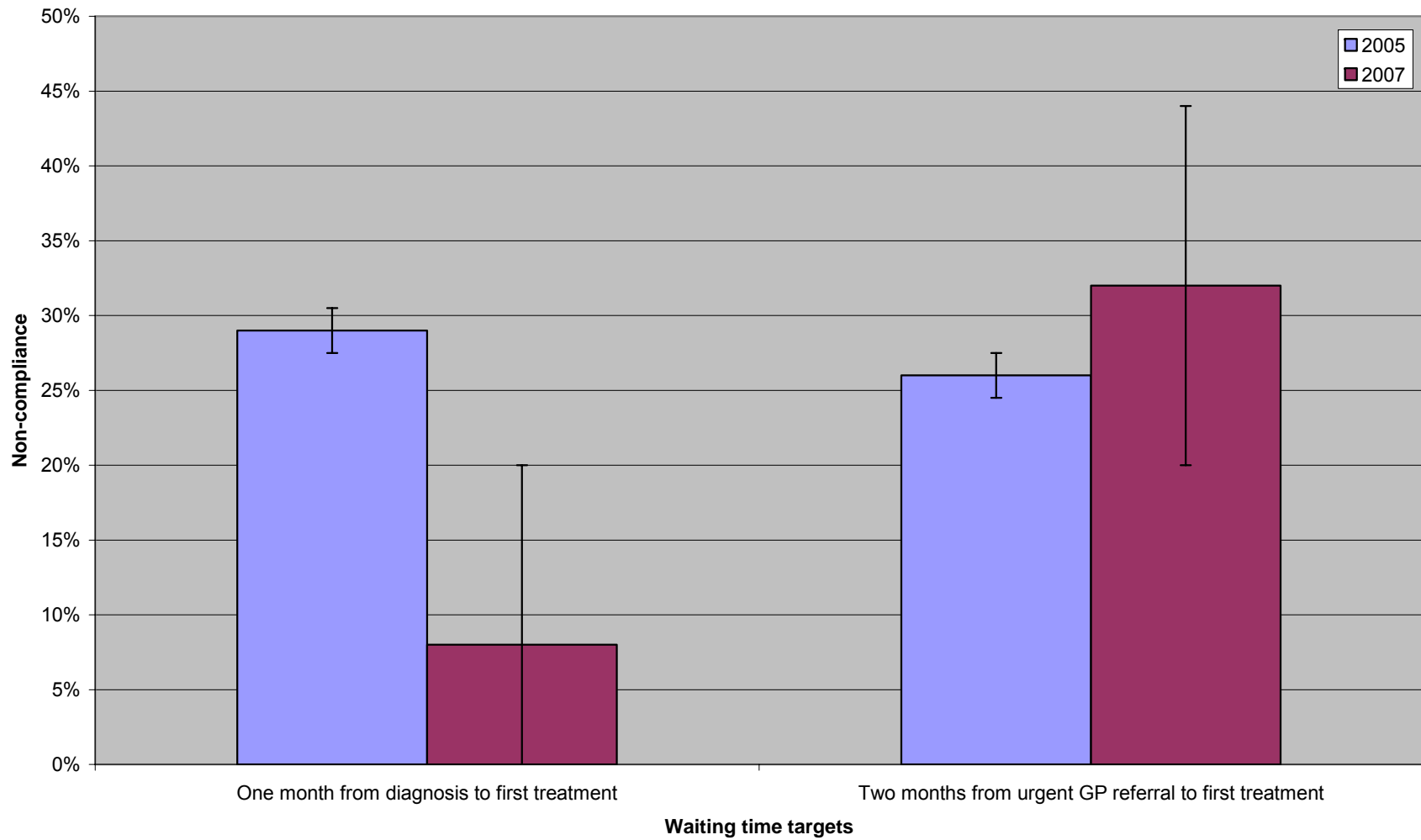


Fig. 7 – Percentage of patient treatments exceeding DH waiting time targets between 2005 and 2007. Error bars represent the standard error.

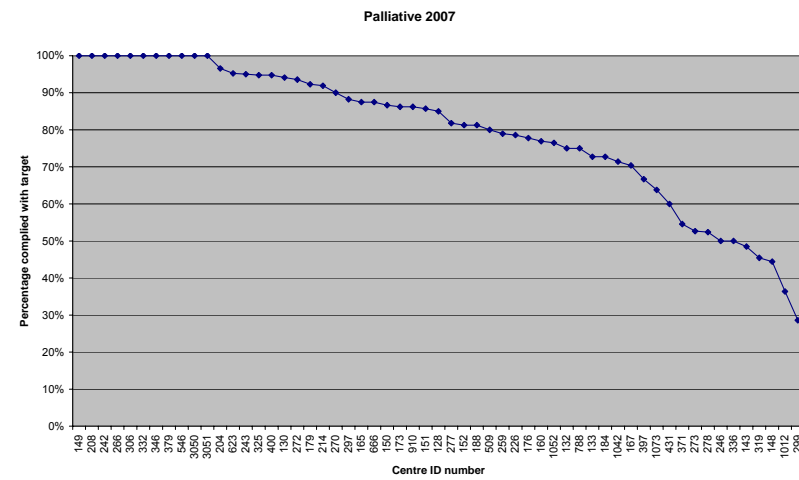
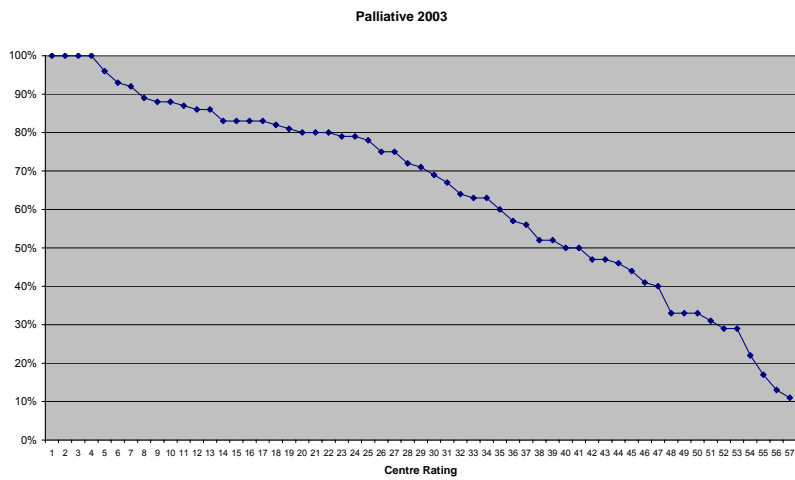
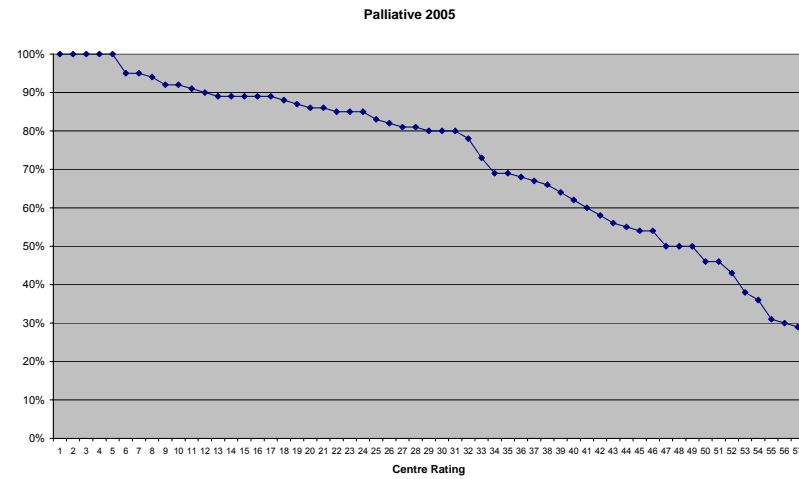
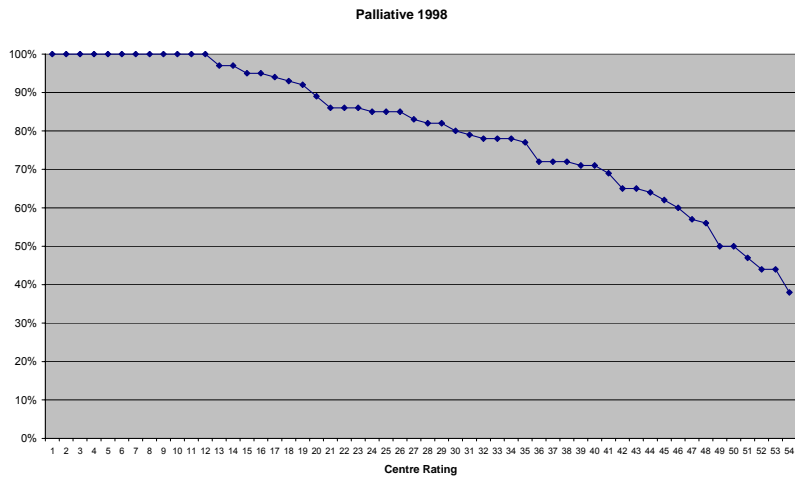


Fig. 8 – Percentage of patients treated within 2 weeks waiting time target between 1998 and 2007. As the curve shifts to the right, more patients are treated within the target.

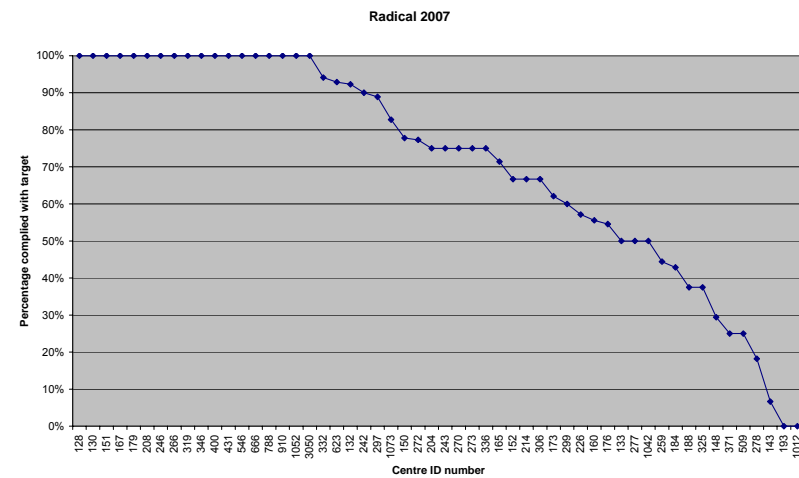
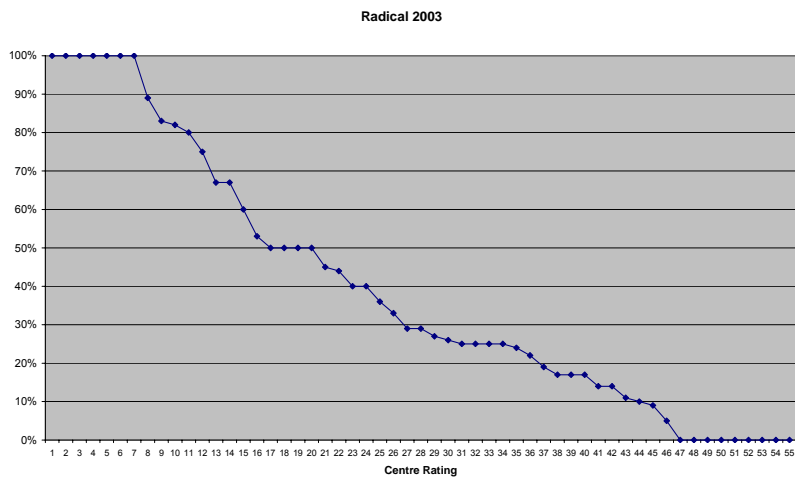
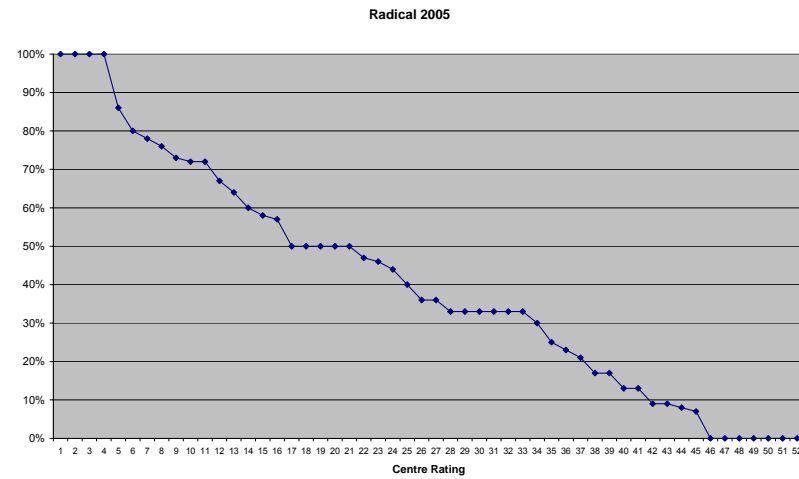
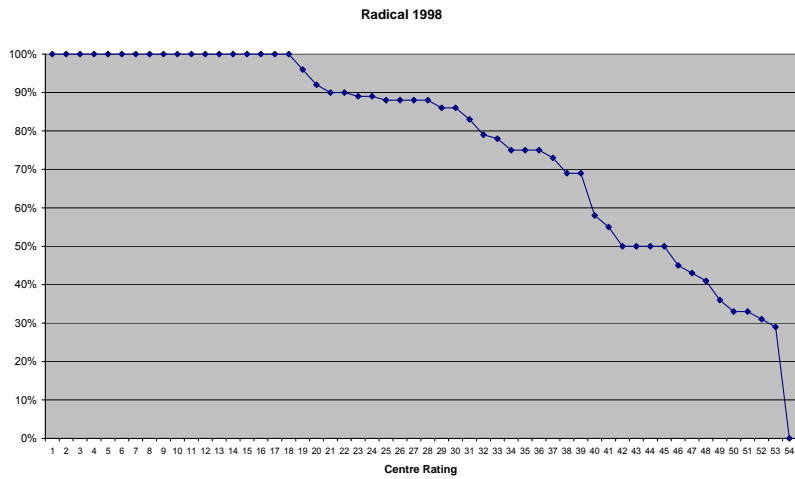


Fig. 9 – Percentage of patients treated within 4 weeks waiting time target between 1998 and 2007. As the curve shifts to the right, more patients are treated within the target.

Appendix 1

Radiotherapy Waiting Times Re-Audit (V2.7)

Q1 Centre ID Number (as allocated by the RCR audit officer) _____

Q2 Audit identification number (one for each patient - **to be allocated locally**) _____

Q3 Contact email address of person entering the data

Q4 Verify contact email address

Q5 Have you already submitted data about this patient - other than NRAG patient category information - **AND** now you want to submit NRAG patient category information?

Yes (You will be directed to Q23)

No (You will be directed to Q6)

Q6 Has this patient previously received radiotherapy for any indication? (Note that two or three phase treatments are considered a single course, as is breast boost)

Yes

No

Don't know

Diagnosis

Q7 Patient Diagnosis

Bladder

Breast

Central Nervous System

Colorectal

Gynaecological

Head and Neck

Lung

Lymphoma (inc. leukaemia and myeloma)

Prostate

Sarcoma

Skin

Upper GI

Unknown primary

Other (inc. renal, germ cell etc)

Don't know

Site to be Treated

Q8 Site Treated

Abdomen

Axilla

Bladder

Bone

Brain

Breast only

Breast with nodes

Breast boost

Chest

Chest wall

Chest wall with nodes

Head and Neck (+/- nodes)

Neck nodes

Limb (inc. sarcoma)

Pelvis (not bone)

Prostate

Skin

Total body irradiation

Other (excluding bone mets)

Don't know

Prescription Details

In previous rounds of this audit, there seemed to be some erroneous answers in this section (e.g. 5 Gy in 20 fractions instead of 20 Gy in 5 fractions). Please ensure that data are entered into the correct fields.

Q9 Total dose (Gy) _____

Q10 Number of **FRACTIONS** _____

WARNING: NUMBER OF FRACTIONS (Q10) IS GREATER THAN TOTAL DOSE (Q9) - PLEASE QUERY YOUR DATA.

Q11 Number of **FRACTIONS** per week _____

Dates

Please enter dates dd/mm/yy (e.g. 31/03/08)

Q12 Date of booking request

Q13 Date patient able to start treatment. This date is requested for ALL patients. It should only differ from "Date of booking request" if there was an elective delay.

Q14 Date radiotherapy commenced

Q15 Was there an elective delay?

- Yes (if yes you will be directed to question 16 asking why there was a delay)
No (You will be directed to question 17)
Don't know (You will be directed to question 17)

Q16 If yes why

- Chemotherapy/Hormone Therapy
Recovering from surgery
Patient request (holidays etc)
Post-chemotherapy delay
Intercurrent illness
Other
Don't know
If other, please specify _____

Treatment Intent and Priority

Q17 Treatment intent

- Radical skin
Radical non-skin
Palliative
Adjuvant pre-operative
Adjuvant post-operative
Don't know

Q18 Waiting list status

- Emergency (within 24 hours)
Urgent (category 1)
Routine (category 2)
Don't know

Q19 Is this the patient's first definitive treatment for cancer?

- Yes (if yes you will be directed onto questions 20 and 21 for further dates).
No (You will be directed to Q22)
Don't know (You will be directed to Q22)

Q20 Date of urgent referral by GP. Please enter dates dd/mm/yy (e.g. 31/03/08). If this date is unknown please leave blank.

Q21 Date of decision to treat

Appendix 2

Number of entries submitted arranged by treatment intent and waiting list status

Treatment intent	Waiting list status					Grand Total
	Don't know	Emergency	Routine	Urgent	Missing	
Adjuvant post-operative	2	0	382	11	0	395
Adjuvant pre-operative	0	0	34	9	0	43
Don't know	7	0	14	1	0	22
Palliative	39	80	799	200	26	1144
Radical non-skin	28	0	750	123	39	940
Radical skin	0	2	115	6	2	125
Missing	0	0	0	0	0	0
Grand total	76	82	2094	350	67	2669
	3%	3%	78%	13%	3%	100%