National Cancer Intelligence Network
Waiting times for the treatment of melanoma and squamous cell carcinoma in England, 2009-2011

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Glossary

Referral types
This describes the priority of a referral by the GP to services in secondary care.

Urgent - the referral is defined as clinically urgent, but it does not fall under the 'Two Week Wait (TWW) criteria'.

TWW – the referral meets the criteria for an urgent GP referral for suspected cancer in accordance with the National Institute for Health and Care Excellence (NICE) clinical guidelines (proforma) on referral for suspected cancer.[8]

Suspected cancer type
The GP needs to specify the type of cancer suspected. For skin cancer there is no requirement for the GP to record the specific type of skin cancer suspected.

Urgent GP referral date
Date the GP referral for suspected cancer was received by the health care provider. This marks the start of the 62 day pathway.

First seen date
Date the patient is first seen in the health care provider that received the referral.

Consultant Upgrade date
Date the consultant responsible for the care of the patient decided to upgrade the urgency of a patient that was not initially suspected of cancer, onto the cancer pathway. This also marks the start of the 62 day pathway.

Decision to treat date
Date the patient agrees a treatment plan for either their first or subsequent treatments within a cancer care plan. Only the first definitive treatment is considered for this report. This date marks the start of the 31 day pathway.

First Definitive treatment date
Date the first definitive treatment is received by the patient and this marks the end point for both the 31 day and 62 day targets considered in this report. The first definitive treatment is the first clinical intervention intended to manage the patient's cancer and avoid further clinical interventions.

TWW Conversion rate
The proportion of suspected skin cancers referred as a TWW that were confirmed as cancer.

1 Executive Summary

1.1 Aim of the study

To establish a national picture of waiting times for the treatment of melanoma and squamous cell carcinomas between 2009 and 2011

1.2 Objectives:

- to determine the proportion of skin cancer two week wait (TWW) referrals that are subsequently confirmed as cancer in England and how this varies across Cancer Networks in England

- to evaluate and compare the waiting times from decision to treat to first definitive treatment (31 day target) for confirmed skin cancers for a number of demographic and treatment pathway factors

- to evaluate and compare the waiting times from urgent GP referral for suspected cancer to first definitive treatment (62-day target) for confirmed skin cancers for a number of demographic and treatment pathway factors

1.3 Summary

The cancer waiting time targets for skin cancer only apply to suspected malignant melanoma (MM) and squamous cell carcinoma (SCC).

In the National Cancer Waiting Times Monitoring Dataset (NCWTMD) treatment table, 40% confirmed skin cancers were MMs. Of the confirmed non-melanoma skin cancer (NMSC) cases, 92% were SCCs.

The NCWTMD referral table indicated that 13% registered basal cell carcinoma (BCC) cases on the National Cancer Data Repository (NCDR) were referred as a TWW. However the NCWTMD treatment table indicated that only 0.3% registered BCC cases on the NCDR were recorded as confirmed skin cancer, which shows that they are not being recorded in the treatment table as they are not subject to cancer waiting time (CWT) targets.

In practice, it can be difficult, especially for non-dermatologists, to distinguish clinically between suspected skin cancers so referring doctors may be unsure of the skin cancer type suspected. As a result, non-SCCs and non-MMs are frequently referred under the TWW rule.

8% of TWW referrals were confirmed as cancer (42,938/518,894). This is called the conversion rate. There was wide variation in TWW conversion rates across Cancer Networks in England (5% to 13%).

A fifth of confirmed MMs (21%, 5,361/25,032) and more than two fifths of confirmed NMSCs (45%, 21,786/51,227) did not have a recorded suspected cancer type. This also leads to an under estimate of the skin cancer TWW conversion rate.

There was a statistically significant correlation between age standardised incidence rates for MM and SCC and TWW conversion rates. This may be related to more experienced GPs with better recognition of skin cancers in Cancer Networks with the highest incidence rates.

There were more MMs referred as TWW than NMSCs (73% vs 50%). This suggests that GPs are better at recognising MM than they are at recognising SCC, or that they are (legitimately) more concerned about the need to treat melanoma early.

The 14 day waiting time target for suspected skin cancers referred through the TWW system was met for 94% (489,125/518,894) of cases.

The 31 day waiting time target from decision to treat to first definitive treatment was met for 97% (24,339/25,032) of MMs and 96% (49,040/51,227) of NMSCs.

A quarter of confirmed MMs (28%) and a fifth of confirmed NMSCs (22%) had their first definitive treatment and decision to treat recorded on the same date as their first hospital assessment. In these cases, a clinical diagnosis is made and a decision to treat made immediately after the lesion is excised. This occurs at the first hospital appointment and is sometimes called 'see and treat'.

The 62 day waiting targets from urgent GP referral to first definitive treatment (for TWW referrals) and from consultant upgrade to first definitive treatment (for non-TWW referrals) was met for 98% (18,657/19,019) of MMs and 96% (26,950/28,101) of NMSCs.

More than two thirds of MMs (70%) and more than half of NMSCs (55%) have their first definitive treatment within 1 month of urgent GP referral or consultant upgrade.

Although the targets were met:

- there was wide variation in waiting times within the 31 day and 62 day cancer waiting time standards across Cancer Networks

- there were longer waiting times for NMSC cases than MM cases

- males have longer waiting times than females for NMSC but no difference for MM

- longer waiting times were observed in older patients; these delays could be for good clinical reasons (eg co-morbidities, in particular to allow for the effect of warfarin and aspirin to wear off before providing treatment)

- there was no difference in waiting times in relation to deprivation

2 Introduction

In 2010, MM was the sixth most common cancer reported in England, with 10,736 new cases[1] and 1,823 deaths.[1] MM incidence rates were almost three times higher in 2010 compared to 1990 (6.4 vs 17.3 per 100,000). NMSC is the most common cancer in England, with more than 80,000 cases per annum over the last five years,[2] although there are concerns around the under registration of NMSC and the true incidence is likely to be significantly higher.[3, 4] The registered incidence of NMSC increased between 2000 and 2010: NMSC (77.8 to 117.9 per 100,000), basal cell carcinoma (60.0 to 92.5 per 100,000) and squamous cell carcinoma (15.5 to 22.6 per 100,000). The increase in the incidence of MM and SCC is believed to reflect a true increase in diagnoses. It is difficult, however, to ascertain how much of the increase for BCC is due to a true increase in diagnoses as opposed to improved registrations.

The Routes to Diagnosis study showed that more than two fifths of newly diagnosed MMs in England between 2006 and 2008 presented to secondary care as an urgent referral suspected with cancer (TWW= 41%), while more than a quarter were referred via a standard GP referral to secondary care (27%).[5] The pathway leading to diagnosis for 18% of MMs was unknown. Only 3% MMs presented to secondary care as an emergency, while the remaining 10% of MMs were diagnosed via other inpatient and outpatient routes.

It is crucial that patients with suspected and diagnosed cancer have appointments, tests and treatments in a timely manner, both to improve outcomes and patient experience in the NHS. Late cancer diagnosis is a major explanation for poorer survival rates in the UK. In England, Improving Outcomes: A Strategy for Cancer is based on the premise that if patients were diagnosed at the same earlier stage as they are in some other countries, up to 10,000 deaths could be avoided every year. The strategy document states that the challenge is clear: "In order to improve early diagnosis, we need to encourage people to recognise the symptoms and signs of cancer and seek advice from their doctor as soon as possible. We also need doctors to recognise these symptoms and (if appropriate) refer people urgently for specialist care."[6]

A number of specific pathways have been introduced to support timely care for cancer in suspected cancer patients, see Figure 1. For skin cancer, the current national cancer waiting time targets in England apply to MM and SCC but exclude BCC, other NMSC such as merkel cell tumours, Bowen's intra-epidermal squamous cell carcinoma and other precancerous skin lesions (IOG).[7]

The current national cancer waiting time standards are:[8]

- a maximum of a two-week wait from an urgent GP referral (under the two-week wait rules) for suspected cancer to first hospital assessment

- a maximum of one month (31 day) wait, from diagnosis/decision to treat to first definitive treatment

- a maximum of two months (62 day) wait from an urgent GP referral (under the two-week wait rules) for suspected cancer to first definitive treatment (31 days for children)

- a maximum of two months (62 day) wait from a consultant's decision to upgrade the urgency of a non-TWW referral of a patient they suspect to have cancer to first definitive treatment

Figure 2.1 Flow diagram of the cancer pathway for patients referred through the TWW system
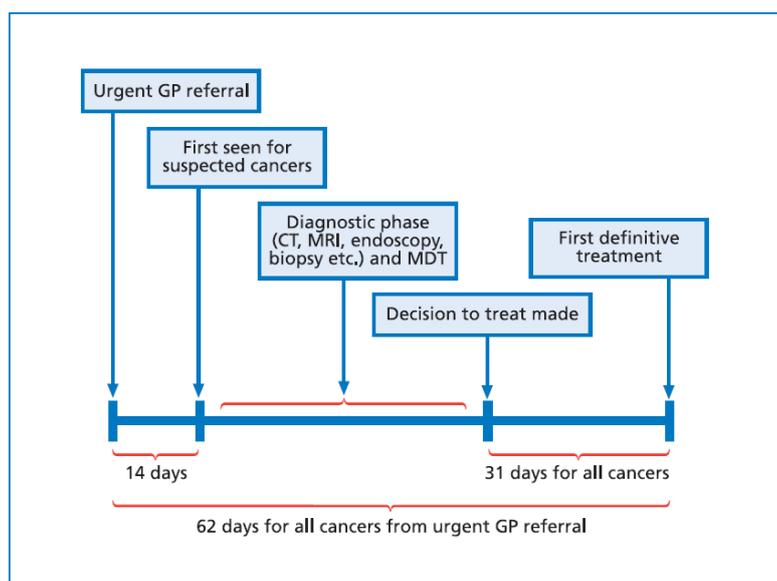
Source: Department of Health

Occasionally GPs refer patients with suspected cancer as an urgent referral although the criteria for a TWW referral have not been fulfilled. These types of referrals, as well as routine referrals, are also collected on the NCWTMD.

The NCIN Site Specific Clinical Reference Group (SCCRG) wanted to compare the waiting times for the treatment of melanoma and SCC between the old Cancer Networks (ceased to exist April 2013) to identify outliers and to determine to what extent the outliers and variation between networks are explained by a number of demographic and treatment pathway factors. Following extensive quality data controls of the data in this study, we did not feel that the data were sufficiently robust to be used to identify outliers. However, we felt that at a national level, using all available data there was sufficient validity to make some important observations on referral patterns for MM and SCC and achievement of the waiting time targets. It was also possible to make observations on the utility of the data for epidemiological study. This report aims to establish a national picture of waiting times for the treatment of melanoma and squamous cell carcinoma between 2009 and 2011.

This is the first national study that provides an in depth analysis of waiting times for the treatment of MM and SCC. Firstly, the proportion of suspected skin cancers (TWW referrals) that were confirmed to be cancer, and how this varied across Cancer Networks, was examined. The waiting times from decision to treat to first definitive treatment (31 day target for all

referrals) and from urgent GP referral to first definitive treatment (62 day target for TWW referrals) for all confirmed skin cancers were evaluated and compared for a range of demographic and pathway factors. Finally, multivariate linear regression was carried out to model the waiting time for the 62 day standard.

3 Methodology

The NCWTMD is split into a referral table and a treatment table. The referral table aims to capture all GP referrals (including non-TWW referrals) to secondary care. It is clear from comparison with the National Cancer Data Repository (NCDR) that many non-TWW referrals are not captured. Two fifths of MMs (41%) and more than half of SCCs (55%) are not recorded on the NCWTMD treatment table.
The treatment table records first definitive treatments for patients referred through the TWW system, whether they are subsequently diagnosed with cancer or a non-cancer condition. This also includes patients referred to secondary care where cancer was not initially suspected but was subsequently diagnosed and referred to a specialist.

The referral table was used to identify suspected skin cancers referred through the TWW system for England residents, between 2009 and 2011. The proportion of these TWW referrals that were confirmed of any cancer, by Cancer Network of residence, was calculated by linking to the treatment table using NHS number.

The treatment table was used to identify first definitive treatments for confirmed skin cancers (ICD-10 C43-C44) for England residents first seen in secondary care between 2009 and 2011. This defined the cohort for the waiting times analysis.

The waiting times from decision to treat to first definitive treatment (31 day target for all referrals) and from urgent GP referral for suspected cancer to first definitive treatment (62 day target for TWW referrals only) for all confirmed skin cancers was calculated for MM and NMSC separately. These were compared for the following demographic and treatment pathway factors: type of referral (routine, urgent, TWW, consultant upgrade, unknown); gender; age group (0-64, 65-84 and 85+ years); national income deprivation quintile; Cancer Network of residence. It was not possible to analyse data by ethnicity, number of core members in multi-disciplinary team (MDT) or co-morbidities. A child was defined as less than 16 years of age.

The reported waiting times data are presented as a median number of days with an associated 95% confidence interval, with a range and interquartile range. The waiting times data were found to have a skewed distribution with a tail of cases having long waiting times. To avoid making assumptions about the shape of these distributions, a bias corrected bootstrap technique[9] was used to estimate a confidence interval for the median value and to carry out significance testing.

Multivariate linear regression was carried out to model the combined effect of variables on the waiting time from urgent GP referral to first definitive treatment (62 day target). This enabled the contribution of each variable towards the waiting time to be examined, after allowing for the effects of the other variables. The variables considered were: type of referral (TWW vs consultant upgrade); age group (65-84 years, 85+ years vs 0-64 years); gender (males vs females); and national income deprivation quintile (quintile 2, quintile 3, quintile 4, quintile 5 most deprived vs quintile 1 least deprived). A model was built to only include those variables that were statistically significant, while minimising the number of variables in the model. This was done separately for MM and NMSC.

It was not feasible to model the waiting time from decision to treat to first definitive treatment (31 day target). Nearly half the data had a median waiting time of zero as the decision to treat date occurred on the same date as first definitive treatment, and therefore there is no variation for a model to explain.

<u>Box plot and statistics interpretation</u>

A box plot provides a graphical representation of the spread of the waiting times. If the waiting times are ordered from shortest to longest, the box represents the middle 50% of values (interquartile range, 25%-75%). The horizontal line within the box is the median value. The dots show outlier waiting times beyond the whisker and these were truncated at 3 months (90 days) for 31 day waiting times and 6 months (180 days) for 62 day waiting times in order to improve clarity of the boxes. The range is the difference between the minimum and maximum waiting times (including outliers).

4 Results

4.1. Cohort definition

4.1.1. Data exclusions

Records of first definitive treatment of skin cancer (N=77,389; ICD 10 code C43 or C44) were extracted from the Cancer Waiting Time treatment table for the years 2009 to 2011. This only included patients that had been first seen during this time period.

Between 2009 and 2011, 518,894 suspected skin cancers were referred through the TWW system for England residents and recorded on the Cancer Waiting Time referral table.

A number of cases were excluded for subsequent analysis:

- Second or subsequent treatments; recurrence and metastatic disease following unknown primary treatments. These cases are not subject to the NCWTMD standards considered for this project. They make up (1.1%) (863/78,252) of all skin cancer treatments on cancer waiting times.

- NCWTMD referral numbers with multiple treatment records; this would perhaps include duplicates (0.2%) (182/77,389)

- pathway dates not in the following order: GP referral date, hospital appointment date, decision to treat date, first definitive treatment, even though we are aware that this may exclude pathways in such cases where excision was made prior to the referral (0.05%) (42/77, 207)

- patients who declined all treatment (0.02%) (12/77,207)

4.1.2. Data limitations

- The NCWTMD referral table does not distinguish between suspected skin cancer types (ie between MM and SCC or any other type). Only the ICD-10 code and not morphology is recorded on the NCWTMD treatment table. So ICD-10 C43 is used for MM, but ICD-10 C44 is used for all types of NMSC. Therefore is not possible to distinguish SCC from BCC or any other type of NMSC.

- Both NCWTMD tables were linked to the NCDR for 2009-2010 data in an attempt to distinguish ICD-10 codes. Only patients with one skin cancer diagnosis were considered, as tumour matching was not possible.

- 40% of the confirmed skin cancers on the NCWTMD treatment table were MMs

- 92% of the confirmed NMSCs were SCC

- the NCWTMD referral table indicated that 12.6% registered BCCs on the NCDR were referred as a TWW; however, the NCWTMD treatment table indicated that only 0.3% registered BCCs on the NCDR were recorded as confirmed skin cancer

- 41% MMs (7,858/18,966) and 55% SCCs (18,966/34,192) registered on NCDR are not recorded on the NCWTMD treatment table

- 28% MMs (4,282/15,367) and 39% NMSCs (10,604/27,034) confirmed on the NCWTMD treatment table are not registered on NCDR; this may be a data quality issue, especially for MM

- nearly half of the data (48% MMs and 46% NMSCs) had a decision to treat recorded on the same date as first definitive treatment (ie waiting time equal to zero)

4.2. Two-Week Wait referrals

4.2.1 Urgent GP referral for suspected cancer to first hospital assessment

The current national cancer waiting time standard for TWW referrals is a maximum of two weeks (14 days) from an urgent GP referral for suspected cancer to first hospital assessment. 94.3% (489,125/518,894) of suspected skin cancers referred through the TWW system met the two-week target between 2006 and 2008. The proportion of suspected skin cancer cases that met the two-week target by Cancer Network of residence for England residents between 2009 and 2011 are shown in Table 4.2.1.

Table 4.2.1: Number and proportion of cases that were within target from urgent GP referral for suspected cancer to first hospital appointment, by Cancer Network of residence, England, 2009-2011.

Cancer Network of Residence	Number of cases within target	% of cases within target	Total number of cases
Sussex	15,071	93	16,286
Avon, Somerset and Wiltshire	20,941	93	22,592
North Trent	14,435	93	15,519
3 Counties	9,194	93	9,876
Central South Coast	21,275	93	22,829
Merseyside and Cheshire	26,461	93	28,367
Pan Birmingham	15,860	93	16,986
Anglia	27,660	93	29,595
Lancashire and South Cumbria	14,732	94	15,724
Arden	9,934	94	10,599
East Midlands	37,377	94	39,869
Greater Midlands	19,261	94	20,501
North London	18,022	94	19,146
Surrey, West Sussex and Hampshire	10,957	94	11,631
Peninsula	21,846	94	23,132
Humber and Yorkshire Coast	6,668	95	7,047
West London	10,251	95	10,833
Kent and Medway	18,146	95	19,163
Yorkshire	24,777	95	26,145
Dorset	7,793	95	8,219
Thames Valley	22,967	95	24,212
North of England	27,122	95	28,557
South East London	15,468	95	16,208
Essex	14,103	96	14,746
South West London	14,301	96	14,930
Mount Vernon	11,343	96	11,806
Greater Manchester and Cheshire	22,642	96	23,561
North East London	10,518	97	10,815
England	489,125	94	518,894

Source: Public Health England; Health & Social Care Information Centre.

There was little variation in the proportion of suspected skin cancer cases that met the two-week target across Cancer Networks in England (92.5% vs 97.4%), see Table 4.2.1.

4.2.2 Suspected skin cancers confirmed as skin cancer (TWW conversion rate)

A skin cancer TWW conversion rate is the proportion of suspected skin cancers referred as a TWW that were confirmed as any cancer. The NCWTMD is comprised of two tables: a referral table and a treatment table. By assuming that appearance in the NCWTMD treatment table confirms the cancer, two week conversion rates were calculated by linking the NCWTMD referral table to the NCWTMD treatment table.

The NCWTMD referral table does not record the type of skin cancer suspected at time of GP referral. It is therefore not possible to calculate TWW conversion rates for MM and NMSC separately.

TWW conversion rates by Cancer Network of residence for England residents between 2009 and 2011 are shown in Figure 4.2.2.1.

Figure 4.2.2.1: TWW conversion rates (%) for skin cancer by Cancer Network of residence, England, 2009-2011.
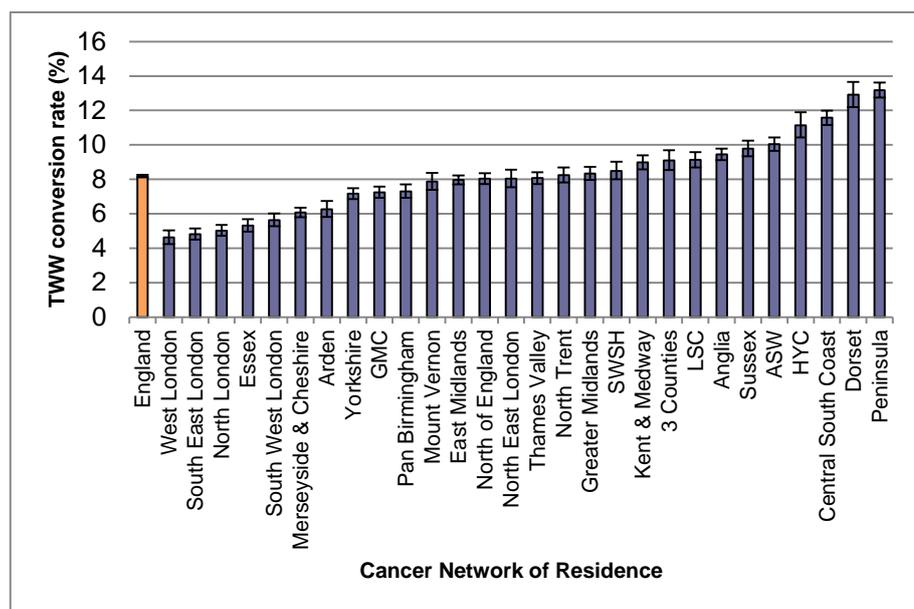
Key: ASW – Avon, Somerset and Wiltshire; LSC – Lancashire and South Cumbria; SWSH – Surrey, West Sussex and Hampshire; GMC – Greater Manchester and Cheshire; HYC – Humber and Yorkshire Coast.

Source: Public Health England; Health & Social Care Information Centre.

Suspected skin cancers (N=518,894) were referred through the TWW system between 2009 and 2011 for England residents. The number of TWW referrals has increased by 25% (152,716 vs 190,164, p<0.01) over this time period. Approximately 8% (42,938/518,894) of these were confirmed as cancer.

TWW conversion rates varied almost threefold (4.6% to 13.2%) across Cancer Networks. The lowest rates were observed in West London (4.6%), South East London (4.8%), North London

(5.0%), Essex (5.3%) and South West London (5.6%). The highest rates were observed in Avon, Somerset and Wiltshire (10.0%), Humber and Yorkshire Coast (11.1%), Central South Coast (11.6%), Dorset (12.9%) and Peninsula (13.2%).

The skin cancer TWW conversion rates by Cancer Network were compared to the corresponding directly age standardised incidence rates (based on 2009-2010 data only) for MM and SCC separately. The scatter plots for MM and SCC are shown in figures 4.2.2.2 and 4.2.2.3 respectively.

Figure 4.2.2.2: Scatter plot of age standardised MM incidence rates against skin cancer TWW conversion rates, by Cancer Network of residence.
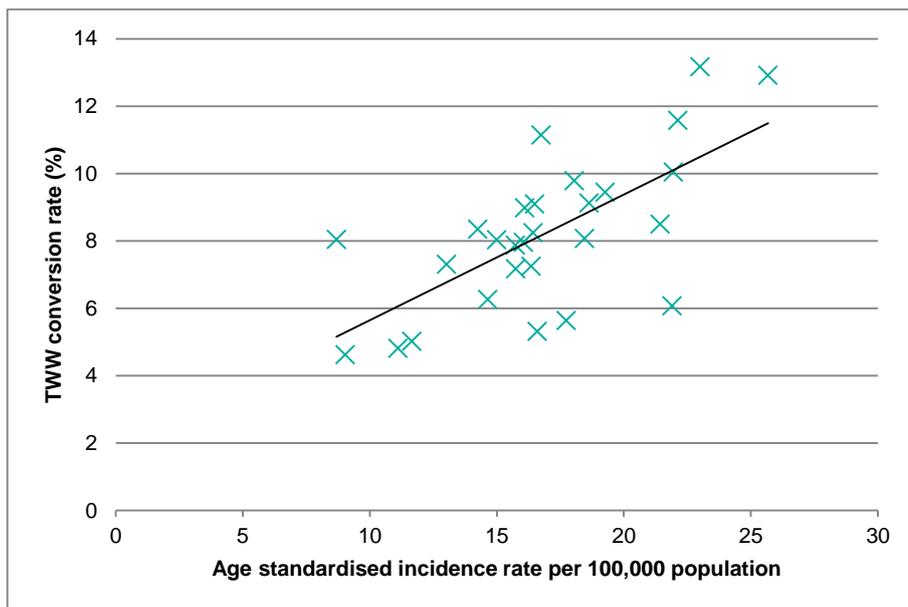
Source: Public Health England; Health & Social Care Information Centre; Office for National Statistics.

Figure 4.2.2.3: Scatter plot of age standardised SCC incidence rates against skin cancer TWW conversion rates, by Cancer Network of residence.
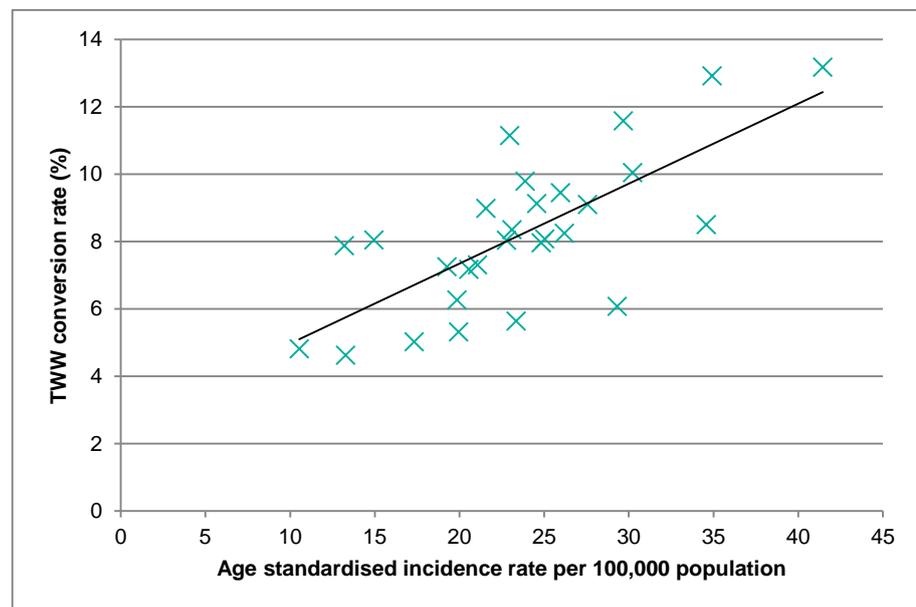
Source: Public Health England; Health & Social Care Information Centre; Office for National Statistics.

There was a significant and strong positive correlation between age standardised incidence rates and TWW conversion rates for both MM (r=0.68, p<0.01) and SCC (r=0.71, p<0.01). The Cancer Networks with the highest skin cancer TWW conversion rates also had in general the highest incidence rates. This may suggest that GPs who see more skin cancers are better at identifying and referring them.

4.3. Skin cancer referral, treatment and pathways

4.3.1 Number of confirmed skin cancers by referral type

The number and proportion of confirmed skin cancers on the NCWTMD treatment table broken down by skin cancer site and referral type is shown in Table 4.3.1.

Table 4.3.1: Number and proportion of confirmed skin cancers on the NCWTMD treatment table by referral type, England, 2009-2011.

Referral type	Malignant Melanoma	%	NMSC	%
TWW	18,382	73	25,852	50
Routine	3,873	15	15,773	31
Urgent	2,574	10	8,848	17
Unknown	203	1	754	1
Total	25,032	100	51,227	100.0

Source: Public Health England; Health & Social Care Information Centre.

Table 4.3.1 shows more MMs were referred as TWW compared to NMSCs (73% vs 50%), and there were more NMSCs referred as routine or urgent than MMs (31% vs 15% and 17% vs

10% respectively). This suggests that GPs are better at recognising MM than they are at recognising SCC. It is important to note, however, that two fifths of MMs (41%) and more than half of SCCs (55%) are not recorded on the NCWTMD treatment table.

4.3.2 Skin cancers referred via non-skin cancer referral pathways

The number of confirmed skin cancers on the NCWTMD treatment table broken down by skin cancer type and the suspected cancer type is shown in Table 4.3.2.1. This includes non-TWW referrals that recorded the type of suspected cancer. A small number of skin cancers proved to have been referred into non-skin cancer pathways and a greater number still where the cancer suspected was not recorded.

Table 4.3.2.1: Number of confirmed skin cancer cases on the NCWTMD treatment table that were not referred as 'suspected of skin cancer', by suspected cancer type, England, 2009-2011.

Suspected cancer site	Confirmed skin cancer		Skin Total
	Malignant Melanoma	NMSC	
Not recorded	5,361	21,786	27,147
Head and neck	90	501	591
Other cancer	37	52	89
Breast	38	41	79
Sarcoma	21	32	53
Lower gastro-intestinal	20	26	46
Children's cancer	12	17	29
Lung	20	3	23
Haemotology excluding acute leukaemia	14	9	23
Gynaecology	15	4	19
Breast symptoms	5	13	18
Upper gastro-intestinal	9	6	15
Urology excluding testis	6	5	11
Testicular cancer	3	1	4
Brain and CNS	1	1	2
Acute leukaemia		1	1
Total	5,652	22,498	28,150

Source: Public Health England; Health & Social Care Information Centre.

There were 291 cases of confirmed MMs that were not suspected of skin cancer. The majority of these were recorded as suspected head and neck cancer (31%), probably because of their anatomical location. Other specified cancers (13%), breast cancer (13%), sarcomas (7%) and lower gastro-intestinal cancers (7%) were also suspected to be confirmed MMs. It is not clear whether this specification was in the referral or a coding error on NCTWMD. Many of these referral pathways may be appropriate; for example, anal MMs presenting to lower gastro-intestinal MDTs. There were 712 cases of confirmed NMSCs that were not suspected to be skin cancer. A similar pattern followed for confirmed NMSCs, with 70% of these suspected as head and neck cancer. Other specified cancers (7%), breast cancer (5%), sarcomas (4%) and lower GI cancers (4%) were also suspected for confirmed NMSCs.

A fifth of confirmed MMs (21%, 5,361/25,032) and more than two fifths of confirmed NMSCs (45%, 21,786/51,227) did not have a recorded suspected cancer type. This also leads to an under estimation of the skin cancer TWW conversion rate (see section 6.2.2), as these confirmed skin cancers had no record of suspected skin cancer and therefore were not considered.

Table 4.3.2.2 shows the number of confirmed skin cancers that did not have a recorded suspected cancer type as illustrated in Table 4.3.2.1, broken down by referral type and skin cancer type.

Table 4.3.2.2: Number and proportion of confirmed skin cancers that did not have a recorded suspected cancer, broken down by referral type and skin cancer type, England, 2009-2011.

Referral type	Malignant Melanoma	%	NMSC	%
TWW	27	0.5	40	0.2
Routine	3,007	56.1	13,054	59.9
Urgent	2,161	40.3	8,087	37.1
Unknown	166	3.1	605	2.8
Total	5,361	100.0	21,786	100.0

Source: Public Health England; Health & Social Care Information Centre.

It is not clear from Table 3 whether confirmed skin cancers that did not have a recorded suspected cancer had not been referred via the TWW because they were not recognised as such. There may also be problems with the recording of referral patterns on NCWTMD.

4.3.3. Number of confirmed non-skin cancers suspected of skin cancer

It is also clear from the data that there were some lesions referred as skin cancer that were subsequently diagnosed as other types of cancer or were wrongly recorded.
The number of confirmed non-skin cancers suspected of skin cancer on the NCWTMD treatment table, broken down by confirmed cancer type is shown in Table 4.3.3. A small number of skin cancer referrals were confirmed as other non-skin cancers and a greater number still did not have an ICD-10 code recorded.

Table 4.3.3: Number of confirmed non-skin cancers suspected of skin cancer, England, 2009-2011.

Confirmed cancer	Number of cases	
Not recorded	268	

Confirmed cancer	Number of cases	% cases
Other	168	26
Haematological	128	20
Sarcoma	123	19
Head and neck	76	12
Gynaecological	33	5
Breast	31	5
Urological	24	4
Lower gastro-intestinal	22	3
Lung	15	2
Brain and CNS	9	1
Upper gastro-intestinal	9	1
Total	638	100

Source: Public Health England; Health & Social Care Information Centre.

There were 906 cases on the NCWTMD treatment table suspected of skin cancer that did not have a recorded skin cancer. 30% (268/906) did not have any specific recorded confirmed cancer. Of those with a recorded confirmed cancer (638), the most frequent were: other specified cancers (26%), haematological cancers (20%), sarcomas (19%) and head and neck cancers (12%).

4.3.4. Patient Pathway

The number and proportion of confirmed skin cancers on the NCWTMD treatment table receiving a first definitive treatment on the same date as their first hospital assessment by skin cancer type is presented in Table 4.3.4.

Table 4.3.4: Number of confirmed skin cancer cases on the NCWTMD treatment table, by waiting time interval mode, England, 2009-2011.

	Melanoma		NMSC	
Interval	Cases	%	Cases	%
Date first seen same date as decision to treat	15,989	64	27,600	54
Decision to treat date same date as first definitive treatment	12,005	48	23,455	46
Date first seen same date as decision to treat and first definitive treatment.	6,937	28	11,144	22
Total	25,032	100	51,227	100

Source: Public Health England; Health & Social Care Information Centre.

Table 4.3.4 shows that 64% (15,989/25,032) MMs and 54% (27,600/51,227) NMSCs have a decision to treat recorded on the same date as their first hospital assessment. 48% (12,005/25,032) MMs and 46% (23,455/51,227) of NMSCs have a first definitive treatment recorded on the same date as decision to treat. 28% (6,937/25,032) MMs and 22% (11,144/51,227) of NMSCs have their first definitive treatment recorded on the same date as their first hospital assessment.

4.3.5. MDT discussion

The number and proportion of skin cancers on the NCWTMD treatment table that had a recorded MDT date by Cancer Network of residence are presented in Table 4.3.5.

Table 4.3.5: The number and proportion of skin cancer cases on the NCWTMD treatment table with a recorded MDT date, by Cancer Network of residence and skin cancer type, England, 2006-2008.

Cancer Network of Residence	Malignant Melanoma			NMSC		
	Reviewed at MDT	Total number of cases	% Reviewed at MDT	Reviewed at MDT	Total number of cases	% Reviewed at MDT
3 Counties	347	502	69	561	857	65
Anglia	799	1,607	50	1,004	3,101	32
Arden	321	438	73	442	651	68
Avon, Somerset and Wiltshire	468	1,464	32	932	3,344	28
Central South Coast	789	1,637	48	1,651	2,737	60
Dorset	354	598	59	914	1,670	55
East Midlands	611	1,649	37	800	3,314	24
Essex	116	459	25	175	535	33
Greater Manchester and Cheshire	369	1,190	31	562	2,174	26
Greater Midlands	590	967	61	1,323	2,360	56
Humber and Yorkshire Coast	163	586	28	323	1,006	32
Kent and Medway	266	898	30	630	2,041	31
Lancashire and South Cumbria	200	958	21	646	2,334	28
Merseyside and Cheshire	307	1,081	28	392	2,441	16
Mount Vernon	418	571	73	643	952	68
North East London	132	486	27	128	612	21
North London	137	397	35	368	879	42
North of England	630	1,493	42	1,407	3,227	44
North Trent	394	715	55	745	1,314	57
Pan Birmingham	346	747	46	503	1,409	36
Peninsula	755	1,555	49	1,556	4,131	38
South East London	378	519	73	545	787	69
South West London	415	709	59	830	1,358	61
Surrey, West Sussex and Hampshire	259	685	38	350	1,181	30
Sussex	291	690	42	671	2,270	30
Thames Valley	327	1,004	33	502	1,970	25
West London	162	276	59	246	406	61
Yorkshire	284	1,151	25	731	2,166	34
England	10,628	25,032	42	19,580	51,227	38

Source: Public Health England; Health & Social Care Information Centre.

Nationally, only 43% (10,628/25,032) of MMs and 38% (19,580/51,227) of NMSCs had a recorded MDT date, see Table 4.3.5. There was a wide variation in the proportion of cases with a recorded MDT date by Cancer Network of residence for both MM (21% in Lancashire and South Cumbria vs73% in Arden) and NMSC (16% in Merseyside and Cheshire vs 70% in South East London). It is not clear whether this truly reflects the situation or whether there are problems with recording.

4.4 Decision to treat to first definitive treatment (31 day target)

4.4.1. Distribution of waiting times from decision to treat date to first definitive treatment

In this section, waiting times are based on confirmed skin cancers on the NCWTMD treatment table. The reported waiting times data are presented as a median number of days with an interquartile range and range. The waiting times data were found to have a skewed distribution with a tail of cases having long waiting times. The median was calculated as this would not be affected by these extreme values. The median waiting times for the 31 day cancer waiting time standards are compared for a number of demographic and treatment pathway factors.

The current cancer waiting time 31 day standard is a maximum of 31 days wait from decision to treat date to first definitive treatment date. This applies to all skin cancer referrals. The distribution of waiting times (in days) by confirmed skin cancer type for England residents first seen between 2009 and 2011 is presented in Table 4.4.1.

Table 4.4.1: Distribution of waiting times (in days) from decision to treat to first definitive treatment (31 days) by confirmed skin cancer type, England, 2009-2011.

	Malignant Melanoma		NMSC	
Number of days	Number of cases	%	Number of cases	%
Same date (0)	12,005	48	23,455	46
1-7	3,424	14	4,367	9
8-14	3,292	13	6,355	12
15-31	5,618	22	14,863	29
32-90	672	3	2,092	4
90 +	21	0	95	0
Total	25,032	100	51,227	100

Source: Public Health England; Health & Social Care Information Centre.

The vast majority of MMs (97%; 24,339/25,032) and NMSCs (96%; 49,040/51,227) met the 31 day waiting time target, see Table 4.4.1.

As seen earlier, just under half of confirmed skin cancers had a decision to treat recorded on the same date as their first definitive treatment: 48% of MMs (12,005/25,032) and 46% of NMSCs (23,455/51,227).

Figure 4.4.1: Box plot of waiting times (in days) from decision to treat to first definitive treatment (31 days) by confirmed skin cancer type, England, 2009-2011.
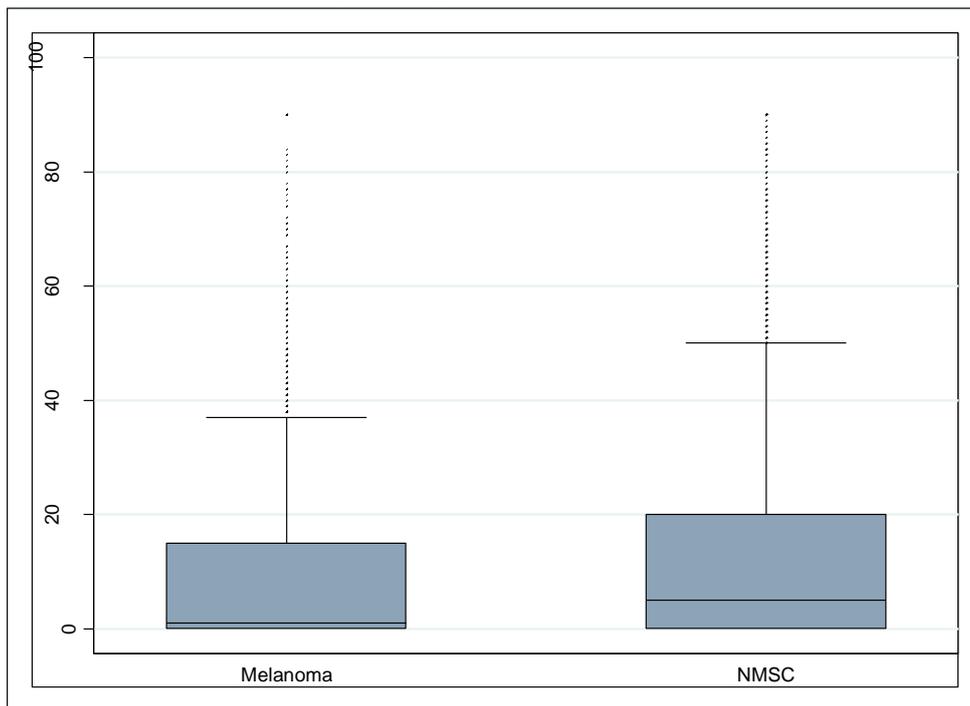

Source: Public Health England; Health & Social Care Information Centre.

The median waiting time for NMSCs (5 days) was significantly higher (p<0.01) than the median waiting time for MMs (1 day), see Figure 4.4.1.

The waiting times data was found to have a positively skewed distribution with a tail of cases having long waiting times. For MMs, the interquartile range was 15 days (0-15). The 25% percentile is not displayed for MMs as this was the same as the median waiting time (0 days). The waiting times ranged from 0 to 203 days (not shown here as waiting times beyond 90 days were truncated). The waiting times for NMSCs varied more (0-329 days) with an interquartile range of 20 days (0-20).
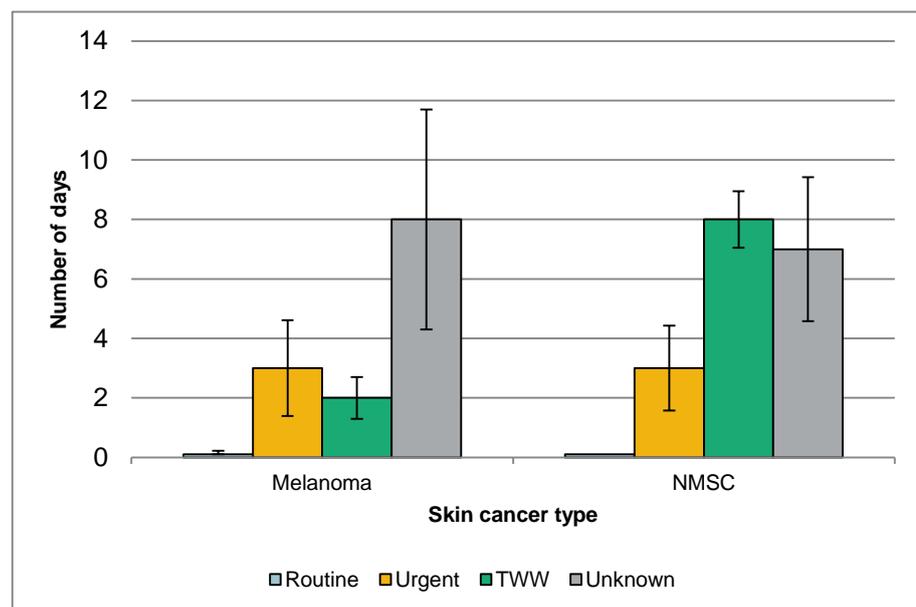
4.4.2. The influence of the type of referral on waiting times from decision to treat to first definitive treatment

Table 4.4.2: Waiting times (in days) from decision to treat to first definitive treatment (31 days) by confirmed skin cancer type and referral type, England, 2009-2011.

Confirmed cancer	Referral type	Median	Interquartile range	Range	cases within target	% of cases within target	Total number of cases
Malignant Melanoma	Routine	0	(0-14)	(0-203)	3,785	98	3,873
	Urgent	3	(0-16)	(0-95)	2,496	97	2,574
	TWW	2	(0-15)	(0-125)	17,864	97	18,382
	Unknown	8	(0-16)	(0-95)	194	96	203
	Total	1	(0-15)	(0-203)	24,339	97	25,032
NMSC	Routine	0	(0-17)	(0-329)	15,196	96	15,773
	Urgent	3	(0-19)	(0-209)	8,455	96	8,848
	TWW	8	(0-20)	(0-210)	24,674	95	25,852
	Unknown	7	(0-22)	(0-109)	715	95	754
	Total	5	(0-20)	(0-329)	49,040	96	51,227

Source: Public Health England; Health & Social Care Information Centre.

Figure 4.4.2: Median waiting times (in days) from decision to treat to first definitive treatment (31 days) by confirmed skin cancer type and type of referral, England, 2009-2011.

Source: Public Health England; Health & Social Care Information Centre.

Routine referrals for both MMs and NMSCs had a median waiting time of zero indicating that their first definitive treatment was received on the same date as decision to treat, see Table 4.4.2.

The median waiting time for MMs did not significantly differ between TWW and urgent referrals (2 vs 3 days, p=0.32), see Figure 4.4.2. However for NMSCs, the median waiting time for TWW referrals was statistically significantly higher than the median waiting time for urgent referrals (8 vs 3 days, p<0.01).

4.4.3. The influence of Cancer Network of residence on waiting times from decision to treat to first definitive treatment

Table 4.4.3.1: Median waiting times (in days) from decision to treat to first definitive treatment (31 days) for MMs by Cancer Network of residence, England, 2009-2011.

Cancer Network of Residence	Median	95% confidence interval	Number of cases within target	% of cases within target	Total number of cases	Compared to England	
						p-value	Result
3 Counties	0	NC	496	99	502	NC	NC
Arden	0	NC	429	98	438	NC	NC
Central South Coast	0	NC	1594	97	1,637	NC	NC
Kent and Medway	0	NC	880	98	898	NC	NC
Lancashire and South Cumbria	0	NC	942	98	958	NC	NC
Mount Vernon	0	(0-0.8)	559	98	571	0.13	T
North East London	0	NC	475	98	486	NC	NC
North of England	0	NC	1473	99	1,493	NC	NC
North Trent	0	(0-0.3)	710	99	715	> 0.05	T
South East London	0	NC	513	99	519	NC	NC
South West London	0	(0.0-1.0)	693	98	709	0.16	T
Surrey, West Sussex and Hampshire	0	(0-1.0)	673	98	685	0.17	T
Thames Valley	0	NC	983	98	1,004	NC	NC
Yorkshire	0	NC	1110	96	1,151	NC	NC
North London	1	(0-2.6)	386	97	397	NC	NC
West London	1	(0-3.5)	268	97	276	NC	NC
Greater Midlands	2	(0.0-4.6)	930	96	967	0.48	T
Humber and Yorkshire Coast	4	(1.8-6.2)	572	98	586	0.02	H
Merseyside and Cheshire	5	(3.2-6.8)	1066	99	1,081	< 0.01	H
Pan Birmingham	5	(2.3-7.7)	727	97	747	< 0.01	H
Greater Manchester and Cheshire	6	(4.9-7.1)	1161	98	1,190	< 0.01	H
Peninsula	6	(4.1-7.9)	1475	95	1,555	< 0.01	H
Anglia	7	(6.1-7.9)	1560	97	1,607	< 0.01	H
Dorset	7	(5.9-8.1)	570	95	598	< 0.01	H
East Midlands	7	(6.0-8.0)	1612	98	1,649	< 0.01	H
Essex	11	(9.3-12.7)	447	97	459	< 0.01	H
Avon, Somerset and Wiltshire	12	(10.6-13.4)	1362	93	1,464	< 0.01	H
Sussex	12	(10.1-13.9)	673	98	690	< 0.01	H
England	1	(0.0-2.0)	24339	97	25,032	NA	NA

Key: NA – Not Applicable; NC – Not Calculable; T – Typical; L – Low; H – High
Source: Public Health England; Health & Social Care Information Centre.

Half of the Cancer Networks (14/28) had a median waiting time of zero for their MMs indicating that their first definitive treatment was recorded on the same date as decision to treat, see Table 4.4.3.1.

The highest reported median waiting times existed in the Essex (11 days), Avon, Somerset and Wiltshire, and Sussex (both 12 days) Cancer Networks compared to England overall (1 day). All statistical differences compared to England are also reported.

Table 4.4.3.2: Median waiting times (in days) from decision to treat to first definitive treatment (31 days) for NMSCs by Cancer Network of residence, England, 2009-2011.

Cancer Network of Residence	Median	95% confidence interval	Number of cases within target	% of cases within target	Total number of cases	Compared to England	
						p-value	Result
3 Counties	0	NC	842	98	857	NC	NC
Lancashire and South Cumbria	0	NC	2,263	97	2,334	NC	NC
North East London	0	NC	598	98	612	NC	NC
North of England	0	NC	3,127	97	3,227	NC	NC
North Trent	0	(0-0.6)	1,300	99	1,314	< 0.01	L
South East London	0	(0-0.6)	758	96	787	< 0.01	L
Surrey, West Sussex and Hampshire	0	(0-0.7)	1,139	96	1,181	< 0.01	L
Thames Valley	0	NC	1,900	96	1,970	NC	NC
South West London	1	(0-3.2)	1,313	97	1,358	< 0.01	L
Central South Coast	2	(0-4.7)	2,611	95	2,737	0.03	L
Merseyside and Cheshire	3	(0.9-5.1)	2,402	98	2,441	0.07	T
Kent and Medway	4	(0.9-7.1)	1,980	97	2,041	0.53	T
Mount Vernon	5	(2.5-7.5)	913	96	952	> 0.05	T
Greater Midlands	6	(4.7-7.3)	2,276	96	2,360	0.14	H
West London	6	(3.2-8.8)	392	97	406	0.49	T
East Midlands	7	(6.5-7.5)	3,192	96	3,314	< 0.01	H
Peninsula	7	(5.7-8.3)	3,776	91	4,131	< 0.01	H
Yorkshire	7	(5.6-8.4)	2,075	96	2,166	0.01	H
Dorset	8	(6.4-9.6)	1,590	95	1,670	< 0.01	H
North London	8	(6.7-9.3)	831	95	879	< 0.01	H
Arden	9	(7.2-10.8)	624	96	651	< 0.01	H
Greater Manchester and Cheshire	9	(7.9-10.1)	2,102	97	2,174	< 0.01	H
Avon, Somerset and Wiltshire	10	(7.7-11.3)	3,029	91	3,344	< 0.01	H
Essex	10	(8.3-11.7)	523	98	535	< 0.01	H
Anglia	11	(10.1-11.9)	2,984	96	3,101	< 0.01	H
Pan Birmingham	11	(9.2-12.8)	1,340	95	1,409	< 0.01	H
Sussex	11	(9.6-12.4)	2,178	96	2,270	< 0.01	H
Humber and Yorkshire Coast	13	(11.3-14.7)	982	98	1,006	< 0.01	H
England	5	(4.6-5.4)	49,040	96	51,227	NA	NA

Source: Public Health England; Health & Social Care Information Centre.

Less than a third of all Networks (8/28) had a median waiting time of zero for their NMSCs indicating that their first definitive treatment was recorded on the same date as decision to treat, see Table 4.4.3.2.

The highest reported median waiting times existed in the Anglia, Pan Birmingham, Sussex (all 11 days), and Humber and Yorkshire Coast (13 days) Cancer Networks compared to England (5 days). All statistical differences compared to England are also reported.
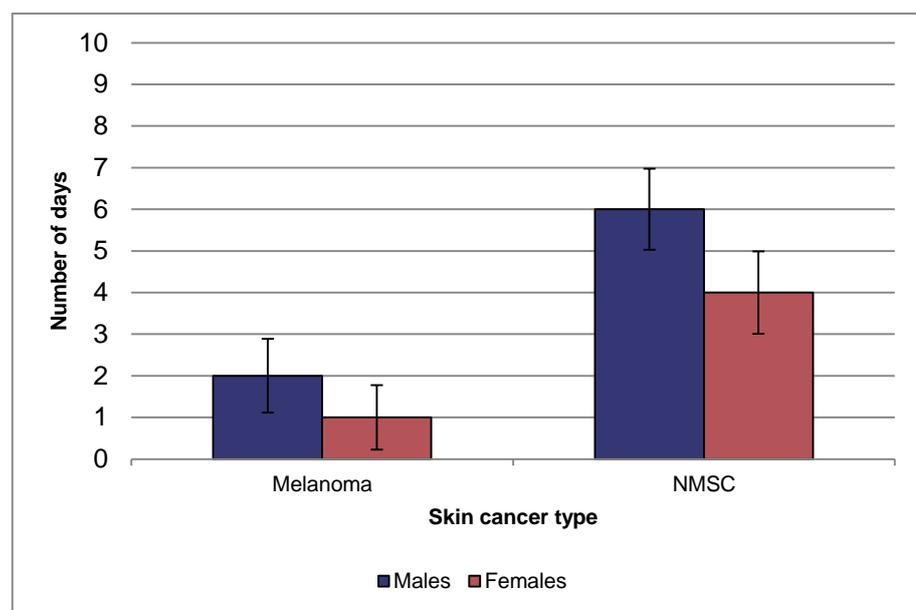
4.4.4. The influence of gender on waiting times from decision to treat to first definitive treatment

Table 4.4.4: Waiting times (in days) from decision to treat to first definitive treatment (31 days) by confirmed skin cancer type and gender, England, 2009-2011.

Confirmed cancer	Gender	Median	Interquartile range	Range	cases within target	% of cases within target	Total number of cases
Malignant Melanoma	Females	1	(0-15)	(0-203)	12,449	96.8	12,863
	Males	2	(0-14)	(0-157)	11,840	97.3	12,169
	Persons	1	(0-15)	(0-203)	24,339	97.2	25,032
NMSC	Females	4	(0-19)	(0-210)	17,925	95.6	18,748
	Males	6	(0-20)	(0-329)	31,115	95.8	32,479
	Persons	5	(0-20)	(0-329)	49,040	95.7	51,227

Source: Public Health England; Health & Social Care Information Centre.

Figure 4.4.4: Median waiting times (in days) from decision to treat to first definitive treatment (31 days) by confirmed skin cancer type and gender, England, 2009-2011.

Source: Public Health England; Health & Social Care Information Centre.

The median waiting time for NMSCs was statistically significantly higher in males compared to females (6 days vs 4 days, p=0.02), but not for MMs (2 days vs 1 day, p=0.23), see Figure 4.4.4.

4.4.5. The influence of age on waiting times from decision to treat to first definitive treatment

Table 4.4.5: Waiting times (in days) from decision to treat to first definitive treatment (31 days) by confirmed skin cancer type and age group, England, 2009-2011.

Confirmed cancer	Age group	Median	Interquartile range	Range	Number of cases within target	% of cases within target	Total number of cases
Malignant Melanoma	0-64	0	(0-14)	(0-157)	13,213	98	13,549
	65-84	3	(0-16)	(0-203)	9,340	97	9,621
	85+	6	(0-18)	(0-114)	1,786	96	1,862
	All ages	1	(0-15)	(0-203)	24,339	97	25,032
NMSC	0-64	2	(0-17)	(0-126)	6,412	96	6,660
	65-84	5	(0-20)	(0-329)	28,602	96	29,782
	85+	7	(0-20)	(0-209)	14,026	95	14,785
	All ages	5	(0-20)	(0-329)	49,040	96	51,227

Source: Public Health England; Health & Social Care Information Centre.

Figure 4.4.5: Median waiting times (in days) from decision to treat to first definitive treatment (31 days) by confirmed skin cancer type and age group, England, 2009-2011.
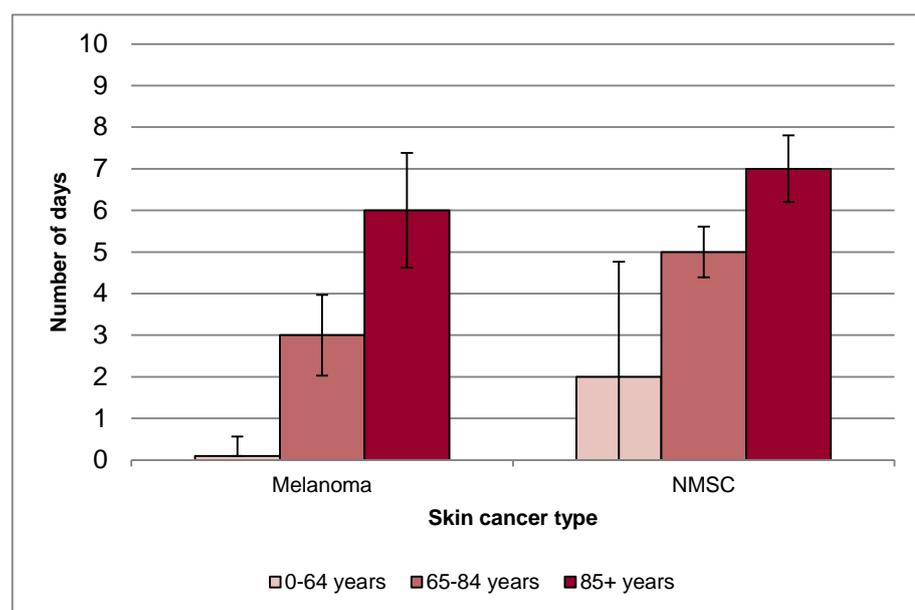
Source: Public Health England; Health & Social Care Information Centre.

There was a statistically significant increasing trend in the median waiting times with age for both MMs (p<0.01) and NMSCs (p<0.01), see Figure 4.4.5.

For MMs, the median waiting time for persons aged 0-64 was zero, indicating that their first definitive treatment was received on the same date as decision to treat, see Table 4.4.5. The median waiting time for persons aged 85+ was statistically significantly higher than the median waiting time for persons aged 65-84 (6 vs 3 days, p<0.01), which in turn was statistically significantly higher than the median waiting time for persons aged 0-64 (3 vs 0 days, p<0.01).

For NMSCs, the median waiting time for persons aged 85+ was statistically significantly higher than the median waiting time for persons aged 65-84 (7 vs 5 days, p<0.01), which in turn was statistically significantly higher than the median waiting time for persons aged 0-64 (5 vs 2 days, p<0.01).

4.4.6. The influence of socio-economic deprivation on waiting times from decision to treat to first definitive treatment

Table 4.4.6: Waiting times (in days) from decision to treat to first definitive treatment (target=31 days) by confirmed skin cancer type and socio-economic deprivation, England, 2009-2011.

Confirmed cancer	Deprivation quintile	Median	Interquartile range	Range	cases within target	% of cases within target	Total number of cases
Malignant Melanoma	1 (Least deprived)	1	(0-14)	(0-157)	6,396	97	6,572
	2	2	(0-16)	(0-129)	6,076	97	6,283
	3	2	(0-15)	(0-203)	5,351	98	5,486
	4	1	(0-14)	(0-125)	3,978	97	4,088
	5 (most deprived)	1	(0-14)	(0-118)	2,538	98	2,603
	Total	1	(0-15)	(0-203)	24,339	97	25,032
NMSC	1 (Least deprived)	4	(0-19)	(0-271)	10,918	96	11,409
	2	4	(0-19)	(0-329)	12,243	96	12,761
	3	6	(0-20)	(0-147)	11,156	95	11,704
	4	6	(0-20)	(0-182)	8,863	96	9,261
	5 (most deprived)	5	(0-19)	(0-209)	5,860	96	6,092
	Total	5	(0-20)	(0-329)	49,040	96	51,227

Source: Public Health England; Health & Social Care Information Centre.

Figure 4.4.6: Median waiting times (in days) from decision to treat to first definitive treatment (target=31 days) by confirmed skin cancer type and socio-economic deprivation, England, 2009-2011.
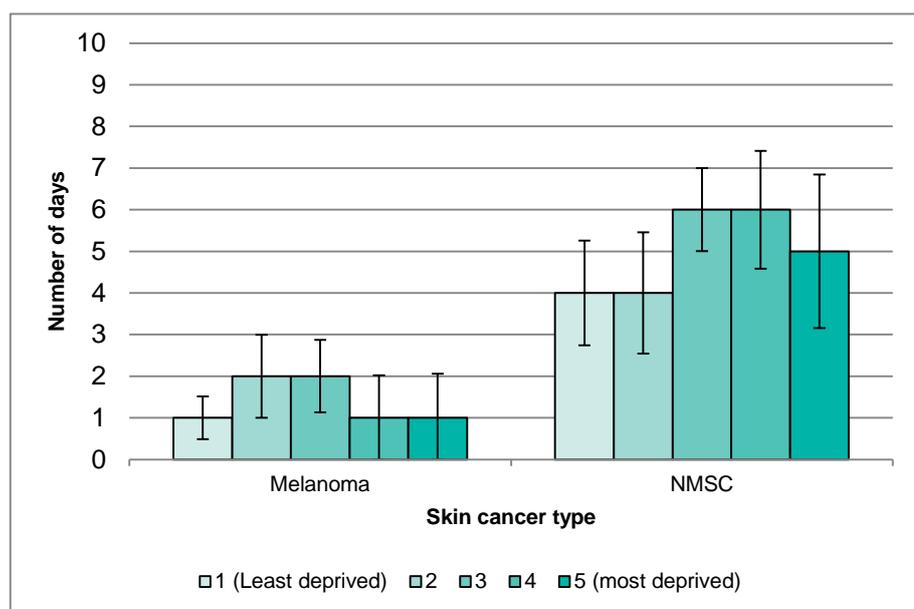
Source: Public Health England; Health & Social Care Information Centre.

There was no difference in the median waiting time in the least deprived fifth population of England compared to the most deprived fifth population of England for both MMs (1 vs1 day, p=0.83) and NMSCs (4 vs 5 days, p=0.33), see Figure 4.4.6.

4.5. Urgent GP referral for suspected cancer (or consultant upgrade) to first definitive treatment (62 day target)

4.5.1. Distribution of waiting times from urgent GP referral for suspected cancer (or consultant upgrade) to first definitive treatment

In this section, waiting times are based on confirmed skin cancers on the NCWTMD treatment table. The reported waiting times data is presented as a median number of days with an inter-quartile range and range. The waiting times data wa found to have a skewed distribution with a tail of cases having long waiting times. The median was calculated as this would not be affected by these extreme values. The median waiting times for the 62 day cancer waiting time standards are compared for a number of demographic and treatment pathway factors.

The current cancer waiting time 62 day standard is a maximum of two months (62 day) wait from an urgent GP referral for suspected cancer to first definitive treatment. **This only applied to TWW referrals**. This target is 31 days for children. There is also a maximum of two months (62 day) wait from a consultant's decision to upgrade the urgency of a patient they suspect to have cancer to first definitive treatment. The numbers of children with skin cancers are reported separately in Table 4.5.1.1.

Table 4.5.1.1: Number of childhood cancers (0-15 years) that were within target from urgent GP referral for cancer (or consultant upgrade) to first definitive treatment (31 days) by confirmed skin cancer type, England, 2009-2011.

Confirmed cancer	Referral Type	Number of cases within target	Total number of cases
Malignant Melanoma	TWW Referral	6	8
	Consultant Upgrade	1	1
NMSC	TWW Referral	13	16
	Consultant Upgrade	2	2

Source: Public Health England; Health & Social Care Information Centre.

The distribution of waiting times (in days) by confirmed skin cancer type for England residents first seen between 2009 and 2011 is presented in Table 4.5.1.2.

Table 4.5.1.2: Distribution of waiting times (in days) from urgent GP referral for suspected cancer (or consultant upgrade) to first definitive treatment (62 days) by confirmed skin cancer type, 16+ years, England, 2009-2011.

| Number of days	Malignant Melanoma		NMSC	
	Number of cases	%	Number of cases	%
Same date (0)	404	2	305	1
1-7	1,630	9	1,861	7
8 -14	4,935	26	4,920	18
15-31	6,305	33	8,215	29
32-62	5,383	28	11,649	41
63-90	275	1	802	3
90 +	87	0	349	1
Total	19,019	100	28,101	100

Source: Public Health England; Health & Social Care Information Centre.

98% (18,657/19,019) MMs and 96% (26,950/28,101) NMSCs met the 62 day waiting time target, see Table 4.5.1.2.

Many cases are seen more quickly than the 62 day target. More than two thirds of MMs (70%, 13,274/19,019) and more than half of NMSCs (55%, 15,301/28,101) have their first definitive treatment within 1 month from urgent GP referral or consultant upgrade.

The total number of cases reported are slightly higher than the number of TWW referral reported as they also consist of other referrals that were upgraded by the consultant, which are also subject to the 62 day target.

Figure 4.5.1.1: Box plot of waiting times (in days) from urgent GP referral for suspected cancer (or consultant upgrade) to first definitive treatment (62 days) by confirmed skin cancer type, 16+ years, England, 2009-2011.
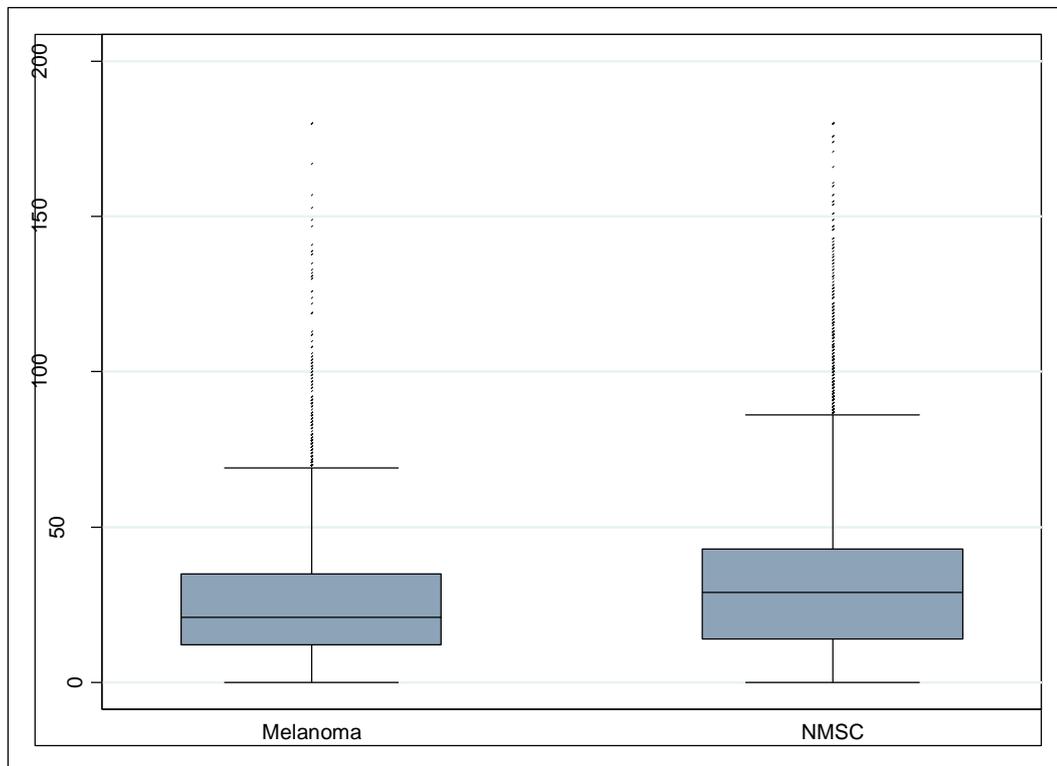
Source: Public Health England; Health & Social Care Information Centre.

The median waiting time for NMSCs (29 days) was statistically significantly higher (p<0.01) than the median waiting time for MMs (21 days), see Figure 4.5.1.1.

The waiting times data were found to have a positively skewed distribution with a tail of cases having long waiting times. For MMs, the interquartile range was 23 days (12-35). The waiting times ranged from 0 to 215 days (not shown here as waiting times beyond 180 days were truncated). The waiting times for NMSCs varied more (0-245 days) with an interquartile range of 29 days (14-43).

4.5.2. The influence of the type of referral on waiting times from urgent GP referral for suspected cancer (or consultant upgrade) to first definitive treatment

Table 4.5.2: Waiting times (in days) from urgent GP referral for suspected cancer (or consultant upgrade) to first definitive treatment (62 days) by confirmed skin cancer type, 16+ years, England, 2009-2011.

Confirmed cancer	Referral type	Median	Interquartile range	Range	Number of cases within target	% of cases within target	Total number of cases
Malignant Melanoma	Consultant upgrade	21	(9-33)	(0-113)	638	99	645
	TWW	21	(13-25)	(0-215)	18,019	98	18,374
	Total	21	(12-35)	(0-215)	18,657	98	19,019
NMSC	Consultant upgrade	26	(14-41)	(0-174)	2,200	97	2,265
	TWW	29	(14-43)	(0-245)	24,750	96	25,836
	Total	29	(14-43)	(0-245)	26,950	96	28,101

Source: Public Health England; Health & Social Care Information Centre.

Figure 4.5.2: Median waiting times (in days) from urgent GP referral for suspected cancer (or consultant upgrade) to first definitive treatment (62 days) by confirmed skin cancer type, 16+ years, England, 2009-2011.
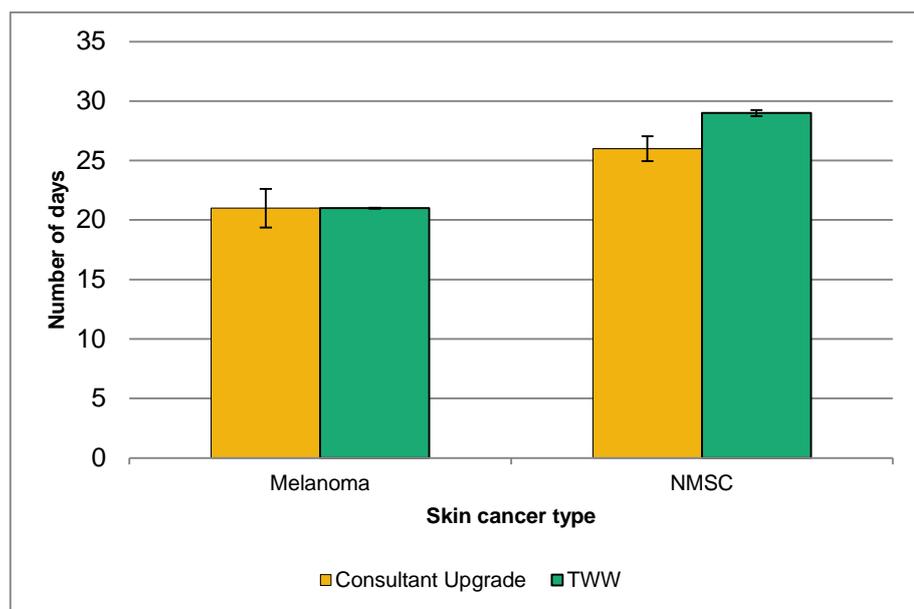
Source: Public Health England; Health & Social Care Information Centre.

The median waiting time for NMSCs is statistically significantly higher for TWW referrals than consultant upgrades (29 vs 26 days, $p < 0.01$) although there was no difference for MMs (21 vs 21 days, $p=0.87$), see Figure 4.5.2.

It is important to note that consultant upgrades mark the start of the 62 day cancer pathway once the patient is in secondary care, whereas patients initially suspected of cancer start the pathway in primary care and are referred as a TWW.

4.5.3 The influence of Cancer Network of residence on waiting times between urgent GP referral for suspected cancer (or consultant upgrade) to first definitive treatment

Table 4.5.3.1: Median waiting times (in days) from urgent GP referral for suspected cancer (or consultant upgrade) to first definitive treatment (62 days) for MMs by Cancer Network of residence, 16+ years, England, 2009-2011.

Cancer Network of Residence	Median	95% confidence interval	Number of cases within target	% of cases within target	Total number of cases	Compared to England	
						p-value	Result
North of England	14	(12.9 - 15.1)	1,016	98	1,036	< 0.01	L
South East London	14	(13.0 - 15.0)	365	99	369	< 0.01	L
Arden	15	(13.3 - 16.7)	349	98	357	< 0.01	L
Kent and Medway	15	(12.8 - 17.2)	658	99	668	< 0.01	L
Thames Valley	15	(13.8 - 16.2)	787	98	799	< 0.01	L
Lancashire and South Cumbria	16	(14.6 - 17.4)	630	98	642	< 0.01	L
Mount Vernon	17	(13.9 - 20.1)	414	99	420	< 0.01	L
North Trent	17	(15.0 - 19.0)	583	99	586	< 0.01	L
Humber and Yorkshire Coast	18	(15.2 - 20.8)	373	97	384	0.03	L
Merseyside and Cheshire	18	(16.7 - 19.3)	761	99	772	0.00	L
Greater Midlands	19	(17.2 - 20.8)	715	98	733	0.03	L
Pan Birmingham	19	(16.6 - 21.4)	620	99	627	0.10	T
Dorset	20	(18.1 - 21.9)	434	98	442	0.31	T
North London	20	(17.8 - 22.2)	340	97	350	0.38	T
West London	20	(16.5 - 23.5)	232	98	237	0.57	T
3 Counties	21	(18.5 - 23.5)	416	99	422	1.0	NC
Greater Manchester and Cheshire	21	(19.8 - 22.2)	945	98	966	1.0	NC
Surrey, West Sussex and Hampshire	21	(19.2 - 22.8)	455	99	461	1.0	NC
Yorkshire	21	(19.8 - 22.2)	869	96	906	1.0	NC
East Midlands	22	(21.0 - 23.0)	1,380	99	1,401	0.05	H
Peninsula	22	(20.1 - 23.9)	1,128	98	1,148	0.31	T
Central South Coast	23	(21.1 - 24.9)	1,271	98	1,295	0.04	H
South West London	25	(22.1 - 27.9)	395	98	405	0.01	H
Anglia	27	(25.9 - 28.1)	1,215	98	1,238	< 0.01	H
North East London	27	(23.9 - 30.1)	424	98	434	< 0.01	H
Sussex	27	(25.5 - 28.5)	509	98	521	< 0.01	H
Avon, Somerset and Wiltshire	28	(26.8 - 29.2)	977	98	999	< 0.01	H
Essex	29	(27.2 - 30.8)	396	99	401	< 0.01	H
England	21	(21.0 - 21.0)	18,657	98	19,019	NA	NA

Key: NA – Not Applicable; NC – Not Calculable; T – Typical; L – Low; H – High
Source: Public Health England; Health & Social Care Information Centre.

Figure 4.5.3.1: Median waiting times (in days) from urgent GP referral for suspected cancer (or consultant upgrade) to first definitive treatment (62 days) for MMs by Cancer Network of residence, 16+ years, England, 2009-2011
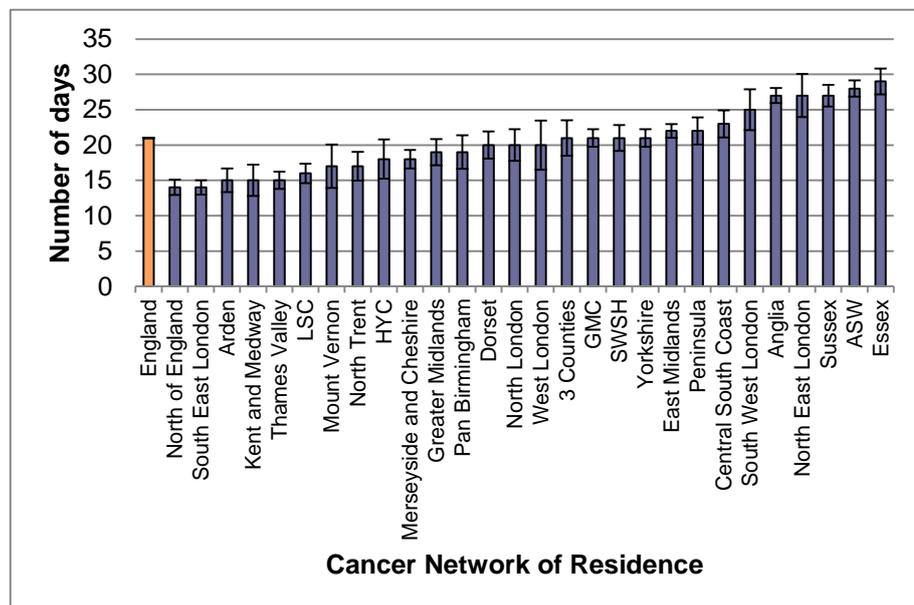
Key: ASW – Avon, Somerset and Wiltshire; LSC – Lancashire and South Cumbria; SWSH – Surrey, West Sussex and Hampshire; GMC – Greater Manchester and Cheshire; HYC – Humber and Yorkshire Coast.
Source: Public Health England; Health & Social Care Information Centre.

There was wide variation in median waiting times for MMs across Cancer Networks in England, with a two-fold difference in the number of days (14 days vs 29 days), see Figure 4.5.3.1. (What is this variation between?

In England, 98% of MMs met the target, but many are seen more quickly. The median waiting times indicated that at least half of all MMs across all Cancer Networks have a first definitive treatment less than a month (31 days) from urgent GP referral or consultant upgrade.

The highest reported median waiting times were observed in Anglia, North East London, Sussex (all 27 days), Avon, Somerset and Wiltshire (28 days) and Essex (29 days) Cancer Networks compared to England (21 days), see Table 17. The lowest reported median number of days was observed in North of England, South East London (both 14 days), Arden, Kent, and Medway and Thames Valley (all 15 days) Cancer Networks compared to England (14 days).

Table 4.5.3.2: Median waiting times (in days) from urgent GP referral for suspected cancer (or consultant upgrade) to first definitive treatment (62 days) for NMSCs by Cancer Network of residence, 16+ years, England, 2009-2011.

Cancer Network of Residence	Median	95% confidence interval	Number of cases within target	% of cases within target	Total number of cases	Compared to England	
						p-value	Result
Thames Valley	20	(18.6 - 21.4)	1,218	96	1,272	< 0.01	L
Kent and Medway	21	(18.6 - 23.4)	1,090	97	1,128	< 0.01	L
North Trent	22	(20.3 - 23.7)	827	98	843	< 0.01	L
Merseyside and Cheshire	24	(22.4 - 25.6)	1,166	98	1,189	< 0.01	L
South East London	26	(22.6 - 29.4)	522	96	542	0.08	T
West London	26	(23.1 - 28.9)	317	94	337	0.04	L
Sussex	27	(25.6 - 28.4)	1,313	98	1,333	0.00	L
East Midlands	28	(27.1 - 28.9)	1,955	97	2,021	0.03	L
Lancashire and South Cumbria	28	(26.1 - 29.9)	984	96	1,025	0.30	T
Peninsula	28	(27.1 - 28.9)	2,056	97	2,128	0.04	L
3 Counties	29	(26.5 - 31.5)	527	97	542	1	NC
Central South Coast	29	(27.8 - 30.2)	1,543	97	1,596	1	NC
Dorset	29	(26.8 - 31.2)	725	95	760	1	NC
Mount Vernon	29	(27.2 - 30.8)	551	97	569	1	NC
Surrey, West Sussex and Hampshire	29	(27.6 - 30.4)	621	97	639	1	NC
Greater Midlands	30	(27.9 - 32.1)	1,305	95	1,379	0.36	T
Humber and Yorkshire Coast	30	(27.9 - 32.1)	416	96	435	0.36	T
North of England	30	(28.6 - 31.4)	1,320	96	1,376	0.16	T
Pan Birmingham	30	(28.4 - 31.6)	854	97	882	0.22	T
Arden	31	(27.8 - 34.2)	357	95	377	0.22	T
Greater Manchester and Cheshire	31	(29.2 - 32.8)	1,042	94	1,106	0.03	H
North London	31	(28.2 - 33.8)	723	95	762	0.16	T
Anglia	33	(32.0 - 34.0)	1,699	95	1,797	< 0.01	H
North East London	33	(28.9 - 37.1)	480	97	497	0.054	T
Avon, Somerset and Wiltshire	34	(32.9 - 35.1)	1,458	96	1,523	< 0.01	H
South West London	34	(31.9 - 36.1)	523	94	558	< 0.01	H
Essex	35	(32.8 - 37.2)	389	97	401	< 0.01	H
Yorkshire	41	(39.1 - 42.9)	969	89	1,084	< 0.01	H
England	29	(29.0 - 29.0)	26,950	96	28,101	NA	NA

Key: NA – Not Applicable; NC – Not Calculable; T – Typical; L – Low; H – High
Source: Public Health England; Health & Social Care Information Centre.

Figure 4.5.3.2: Median waiting times (in days) from urgent GP referral for suspected cancer (or consultant upgrade) to first definitive treatment (62 days) for NMSCs by Cancer Network of residence, 16+ years, England, 2009-2011.
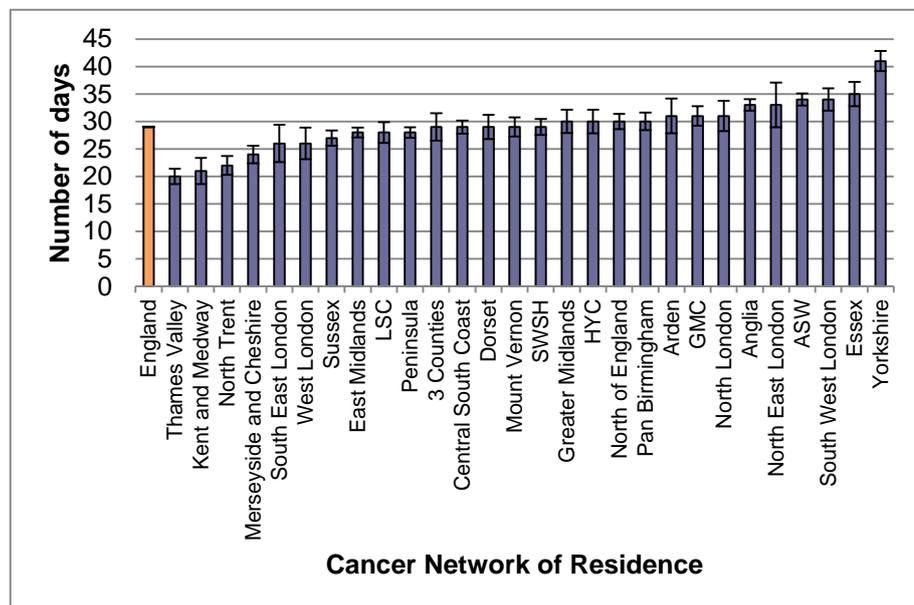
Key: ASW – Avon, Somerset and Wiltshire; LSC – Lancashire and South Cumbria; SWSH – Surrey, West Sussex and Hampshire; GMC – Greater Manchester and Cheshire; HYC – Humber and Yorkshire Coast.
Source: Public Health England; Health & Social Care Information Centre.

There was wide variation in median waiting times for NMSCs across Cancer Networks in England, with a two-fold difference in the number of days (20 vs 41 days), see Figure 4.5.3.2.

In England, 96% of NMSCs met the target, but many are seen more quickly. The median waiting times indicated that at least half of all NMSCs across the majority of Cancer Networks (22/28) have a first definitive treatment less than a month (31 days) from urgent GP referral or consultant upgrade.

The highest reported median waiting times were obserevd in Avon, Somerset and Wiltshire and South West London (both 34 days), Essex (35 days) and Yorkshire (41 days) Cancer Networks compared to England, see Table 18. The lowest reported median waiting times were observed in Thames Valley (20 days), Kent and Medway (21 days), North Trent (22 days) and Merseyside and Cheshire (24 days) Cancer Networks compared to England (29 days).
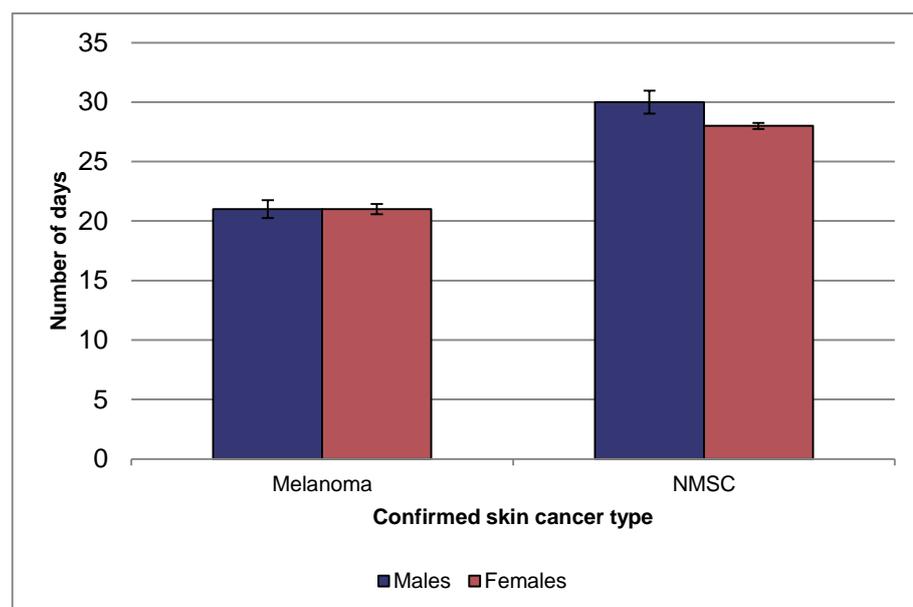
4.5.4. The influence of gender on waiting times from urgent GP referral for suspected cancer (or consultant upgrade) to first definitive treatment

Table 4.5.4: Waiting times (in days) from urgent GP referral for suspected cancer (or consultant upgrade) to first definitive treatment (62 days) by confirmed skin cancer type and gender, 16+ years, England, 2009-2011.

Confirmed cancer	Sex	Median	Interquartile range	Range	Number of cases within target	% of cases within target	Total number of cases
Malignant Melanoma	Females	21	(13-35)	(0-215)	9,667	98	9,856
	Males	21	(12-34)	(0-200)	8,990	98	9,163
	Persons	21	(12-35)	(0-215)	18,657	98	19,019
NMSC	Females	28	(14-42)	(0-245)	10,445	96	10,879
	Males	30	(15-43)	(0-204)	16,505	96	17,222
	Persons	29	(14-43)	(0-245)	26,950	96	28,101

Source: Public Health England; Health & Social Care Information Centre.

Figure 4.5.4: Median waiting times (in days) from urgent GP referral for suspected cancer (or consultant upgrade) to first definitive treatment (62 days) by confirmed skin cancer type and gender, 16+ years, England, 2009-2011.

Source: Public Health England; Health & Social Care Information Centre.

The median waiting time for NMSCs is statistically significantly higher in males compared to females (30 vs 28 days, p=0.02), but not for MMs (21 vs 21 days, p>0.05), see Figure 4.5.4.

4.5.5. The influence of age on waiting times from urgent GP referral for suspected cancer (or consultant upgrade) to first definitive treatment

Table 4.5.5: Waiting times (in days) from urgent GP referral for suspected cancer (or consultant upgrade) to first definitive treatment (62 days) by confirmed skin cancer type and age group, 16+ years, England, 2009-2011.

Confirmed cancer	Age group	Median	Interquartile range	Range	Number of cases within target	% of cases within target	Total number of cases
Malignant Melanoma	16-64	19	(12-32)	(0-194)	10,654	99	10,793
	65-84	23	(13-36)	(0-215)	6,779	97	6,959
	85+	28	(15-43)	(0-200)	1,224	97	1,267
	Total	21	(12-35)	(0-215)	18,657	98	19,019
NMSC	16-64	25	(13-39)	(0-174)	3,758	97	3,863
	65-84	29	(14-42)	(0-245)	15,494	96	16,088
	85+	32	(18-47)	(0-204)	7,698	94	8,150
	Total	29	(14-43)	(0-245)	26,950	96	28,101

Source: Public Health England; Health & Social Care Information Centre.

Figure 4.5.5: Median waiting times (in days) from urgent GP referral for suspected cancer (or consultant upgrade) to first definitive treatment (62 days) by confirmed skin cancer type and age group, 16+ years, England, 2009-2011.
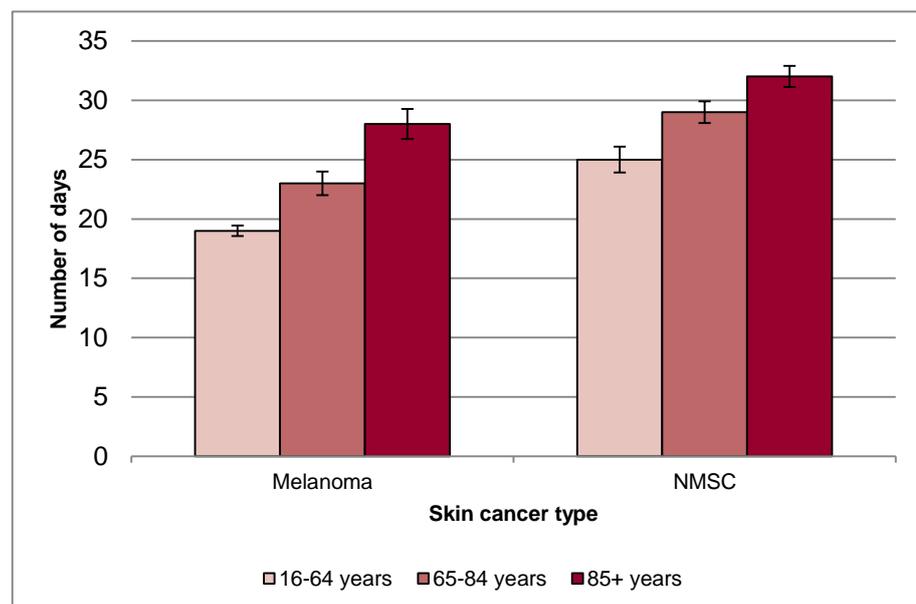
Source: Public Health England; Health & Social Care Information Centre.

There was a significantly increasing trend in the median waiting times with age for both MMs (p<0.01) and NMSCs (p<0.01), see Figure 4.5.5.

For MMs, the median waiting time for persons aged 85+ was statistically significantly higher than the median waiting time for persons aged 65-84 (28 vs 23 days, p<0.01), which in turn was statistically significantly higher than the median waiting time for persons aged 16-64 (23 vs 19 days, p<0.01).

For NMSCs, the median waiting time for persons aged 85+ was significantly higher than the median waiting time for persons aged 65-84 (32 vs 29 days, p< 0.01), which in turn was significantly higher than the median waiting time for persons aged 16-64 (29 vs 25 days,   p < 0.01).

4.5.6. The influence of socioeconomic deprivation on waiting times from urgent GP referral (or consultant upgrade) to first definitive treatment

Table 4.5.6: Waiting times (in days) from urgent GP referral for suspected cancer (or consultant upgrade) to first definitive treatment (62 days) by confirmed skin cancer type and socioeconomic deprivation,16+ years, England, 2009-2011.

Confirmed cancer	Deprivation quintile	Median	Interquartile range	Range	Number of cases within target	% of cases within target	Total number of cases
Malignant Melanoma	1 (Least deprived)	21	(12-34)	(0-200)	4,919	98	5,010
	2	21	(13-35)	(0-167)	4,628	98	4,716
	3	21	(12-35)	(0-194)	4,080	98	4,148
	4	21	(12-35)	(0-132)	3,074	98	3,131
	5 (most deprived)	20	(12-35)	(0-215)	1,956	97	2,014
	Total	21	(12-35)	(0-215)	18657	98	19019
NMSC	1 (Least deprived)	28	(15-42)	(0-245)	5,988	96	6,226
	2	28	(14-42)	(0-176)	6,723	96	7,000
	3	29	(14-42)	(0-227)	6,106	96	6,369
	4	30	(14-44)	(0-204)	4,904	96	5,109
	5 (most deprived)	30	(16-47)	(0-160)	3,229	95	3,397
	Total	29	(14-43)	(0-245)	26950	96	28101

Source: Public Health England; Health & Social Care Information Centre.

Figure 4.5.6: Median waiting times (in days) from urgent GP referral for suspected cancer (or consultant upgrade) to first definitive treatment (62 days) by confirmed skin cancer type and socio-economic deprivation, 16+ years, England, 2009-2011.
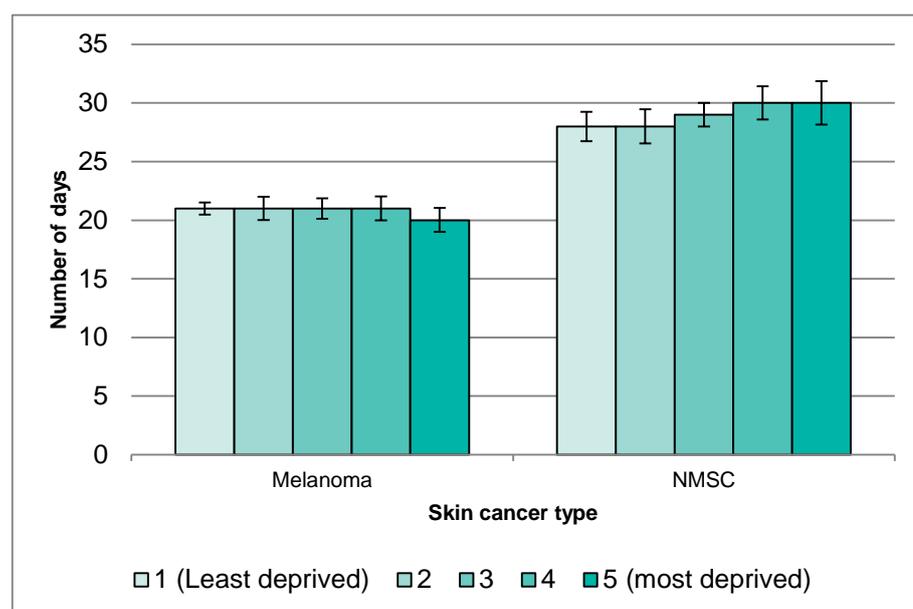
Source: Public Health England; Health & Social Care Information Centre.

The median waiting time for NMSCs is statistically significantly higher in the most deprived fifth population of England compared to the least deprived fifth population of England (30 vs 28 days, p<0.01), although there was no difference for MMs (21 vs 21 days, p=0.28), see Figure 4.5.6.

4.6. Multivariate linear regression

After exploring the variation in median waiting times between urgent GP referral to first definitive treatment (62 day target) for each variable separately, multivariate linear regression was carried out to model the combined effect of the variables on the waiting time. This would enable the contribution of each variable towards the waiting time to be examined, after allowing for the effects of the other variables. The variables considered were: type of referral (TWW vs consultant upgrade); age group (65-84 years, 85+ years vs 0-64 years); sex (males vs females); and national income deprivation quintile (quintile 2, quintile 3, quintile 4, quintile 5 most deprived vs quintile 1 least deprived). A model was built to only include those variables that were statistically significant, while minimising the number of variables in the model. This was done separately for MM and NMSC, see table 22 and table 23 respectively.

Table 4.6.1: Multivariate linear regression model for the 62 day target for MM, 16+ years, England, 2009-2011.

Factor	Strata	Coefficient	p-value
Type of referal (compared to consultant upgrade)	TWW	2.6	< 0.01
Gender (compared to females)	Males	-0.5	0.04
Age group (compared to 16-64 years)	65-84 years	3.7	< 0.01
	85+ years	8.4	< 0.01
Deprivation (compared to least deprived quintile 1)	Deprivation quintile 5	0.9	0.03
	Constant	20.5	< 0.01

Source: Public Health England; Health & Social Care Information Centre.

The model provided a statistically significant model of the data to explain the variation observed in waiting times for MMs (F=81.0, p<0.01), see Table 4.6.1. After allowing for the effects of the other variables in the model: being referred as a TWW increased the waiting time by 2.6 days (p<0.01) compared to consultant upgrades; being aged 65-84 years old significantly increased the waiting time by 3.7 days (p<0.01) compared to being aged 16-64 years old; being aged 85+ years old increased the waiting time greater still by 8.4 days (p<0.01) compared to being aged 16-64 years old. There was a statistically significant effect due to gender and the most deprived quintile on waiting time in the model, but the small difference in the number of days was not considered to be clinically significant.

Table 4.6.2: Multivariate linear regression model for the 62 day target for NMSC, 16+ years, England, 2009-2011.

Factor	Strata	Coefficient	p-value
Type of referral (compared to consultant upgrade)	TWW	3.9	< 0.01
Gender (compared to females)	Males	1.8	< 0.01
Age group (compared to 16-64 years)	65-84 years	3.1	< 0.01
	85+ years	6.6	< 0.01
Deprivation (compared to least deprived quintile 1)	Deprivation quintile 4	0.9	0.01
	Deprivation quintile 5	2.5	< 0.01
	Constant	22.6	< 0.01

Source: Public Health England; Health & Social Care Information Centre.

The model provided a statistically significant model of the data to explain the variation observed in waiting times for NMSCs (F=77.6, p<0.01), see Table 23. After allowing for the effects of the other variables in the model, being referred as a TWW increased the waiting time

by 3.9 days (p<0.01) compared to consultant upgrades; being male increased the waiting time by 1.8 days (p<0.01) compared to being female; being aged 65-84 years old significantly increased the waiting time by 3.1 days (p<0.01) compared to being aged 16-64 years old; being aged 85+ years old increased the waiting time greater still by 6.6 days (p<0.01) compared to being aged 0-64 years old; being resident in the most deprived quintile increased the waiting time by 2.5 days (p<0.01).

Caution is required when interpreting the TWW coefficients in the models. It is important to note that consultant upgrades mark the start of the 62 day cancer pathway once the patient is in secondary care, whereas patients initially suspected of cancer and referred as a TWW start the pathway in primary care.

5 Discussion

This is the first national study that provides an in depth analysis of waiting times for the treatment of MM and SCC.

The CWT targets for skin cancers only apply to suspected MMs and SCCs. BCCs are referred through normal referral mechanisms. Based on 2009-2010 NCWTMD treatment data linked to the National Cancer Data Repository (NCDR), 40% of the confirmed skin cancers were MMs (11,085/27,515). Of the confirmed NMSCs, 92% were SCCs (15,144/16,430). Therefore confirmed NMSCs in this report mainly represent SCCs, in line with CWT guidelines.

In practice, it can be difficult, especially for non-dermatologists, to distinguish clinically between suspected skin cancers. As a result, non-SCCs and non-MMs are frequently referred under the TWW rule, and if in doubt, this might be seen as appropriate. BCCs and other NMSCs are not captured because they are not subject to CWT standards. Based on 2009-2010 NCWTMD data linked to the NCDR, 13% registered BCCs on the NCDR (16,252/125,517) were referred as suspected skin cancer. However, the NCWTMD treatment table indicated that only 0.5% registered BCCs on the NCDR (611/125,517) were recorded as confirmed skin cancer. We do not know whether some of the patients referred under the TWW guidelines were diagnosed with BCC and these were not recorded. So for the GP and patient there was a positive outcome, but one the system does not recognise. The referrer does not have to specify the type of skin cancer suspected, although it is only supposed to be MM or SCC. This means that the accuracy of clinical diagnosis for referring under the TWW rule, for specific types of skin cancer, cannot be assessed.

The 14 day waiting time target for suspected skin cancers referred through the TWW system was met for 94% (489,125/518,894) of cases.

Approximately 8% of TWW suspected skin cancers are confirmed as any cancer in England, although there was wide variation in TWW conversion rates across Cancer Networks in England where rates vary almost threefold (5- 13%). There was a strong positive correlation between age standardised incidence rates and TWW conversion rates for both MM and SCC. The Cancer Networks with the highest skin cancer TWW conversion rates also had the highest incidence rates. This may be related to more experienced GPs providing better recognition of skin cancers in Cancer Networks with the highest incidence rates, and referring them into secondary care. These data might also suggest that education in primary care may also improve conversion rates.

A fifth of confirmed MMs (21%, 5,361/25,032) and more than two fifths of confirmed NMSCs (44.6%, 21,786/51,227) did not have a recorded suspected cancer type. This leads to an under estimation of the skin cancer TWW conversion rate as these confirmed skin cancers had no record of suspected skin cancer and therefore were not considered.

There were more MMs referred as TWW compared to NMSCs (73% vs 50%). This suggests that GPs are better at recognising MM than they are at recognising SCC. It is important to note, however, that two fifths of MMs (41%) and more than half of SCCs (55%) are not recorded on the NCWTMD treatment table.

Nationally, only 42.5% (10,628/25,032) of MMs and 38.2% (19,580/51,227) of NMSCs had a recorded MDT date, see Table 6. There was a wide variation in the proportion of cases with a recorded MDT date by Cancer Network of residence for both MM and NMSC. It is not clear whether this truly reflects the situation or whether there are problems with recording.

The 31 day waiting time target from decision to treat to first definitive treatment was met for 97% (24,339/25,032) of MMs and 96% (49,040/51,227) of NMSCs. However nearly half of confirmed skin cancers had a decision to treat on the same date as their first definitive treatment: 48% of MMs (12,005/25,032) and 46% of NMSCs (23,455/51,227). Furthermore, 28% (6,937/25,032) of MMs and 22% (11,144/51,227) of NMSCs have their first definitive treatment and decision to treat recorded on the same date as their first hospital assessment. In these cases, a clinical diagnosis is made and a decision to treat made immediately after the lesion is excised. This occurs at the first hospital appointment, and is sometimes called 'see and treat'.

The 62 day waiting targets from urgent GP referral to first definitive treatment (for TWW referrals) and from consultant upgrade to first definitive treatment (for non-TWW referrals) was met for 98% (18,657/19,019) of MMs and 96% (26,950/28,101) of NMSCs. Although these targets are being met, many cases are seen more quickly. More than two thirds of MMs (70%, 13,274/19,019) and more than half of NMSCs (55%,15,301/28,101) have their first definitive treatment within 1 month of urgent GP referral or consultant upgrade.

The waiting times for both the 31 day and 62 day targets were compared for a number of demographic and treatment pathway factors. Based on this waiting times data, a number of key points can be made:

- there was wide variation in waiting times for both cancer waiting time standards across Cancer Networks

- the median waiting times indicated that at least half of all MMs and NMSCs across all Cancer Networks have a first definitive treatment less than two weeks from decision to treat

- the median waiting times indicated that at least half of all MMs across all Cancer Networks have a first definitive treatment less than a month (31 days) from urgent GP referral or consultant upgrade, while this occurred for the majority of Cancer Networks for NMSCs

- there were longer waiting times for NMSCs than MMs

- males have longer waiting times than females for NSMC but no difference for MM

There were longer waiting times observed in older patients. These delays may be for good clinical reasons eg to allow for the effects of warfarin and asparin to wear off before providing treatment. These delays may also be explained by: the need for more extensive treatment; the patient being unfit for treatment; or patient choice due to difficulty in accessing services. The

increased frailness and co-morbidities associated with older patients will also have complex diagnostic and treatment pathways resulting in longer waiting times. The data suggest however that skin cancer services should be alert to the possibility that non-avoidable delays might be occurring in older patients.

Key conclusions included:

- there were no differences in waiting times across socioeconomic deprivation

- TWW referrals had longer waiting times than consultant upgrades from urgent GP referral to first definitive treatment for NMSC, but not for MM; it is important to note that consultant upgrade marks the start of the 62 day cancer pathway once the patient is in secondary care, whereas patients initially suspected of cancer and referred as a TWW start the pathway in primary care

- the multivariate regression analysis for the 62 day target indicated that even after controlling for the effects of the other variables considered in this study, there was an effect of the variables described above for both MM and NMSC

6 Recommendations

The following data should be collected on the National Cancer Data Repository:

1. The suspected cancer type should be completed for all TWW referrals. A fifth of confirmed MMs and more than two fifths of confirmed NMSCs did not have a recorded suspected cancer type. This leads to an underestimate of the proportion of suspected skin cancers confirmed with cancer. Furthermore, it is consequenty not currently possible to evaluate the efficiency of the TWW system.

2. The specific type of skin cancer suspected for all TWW referrals. This would enable the accuracy of clinical diagnosis and distinguishing between suspected skin cancer types to be assessed.

3. The histology of confirmed NMSCs to distinguish BCCs, SCCs and other NMSC types.

4. The procedure code (OPCS4) to break down the treatment modality recorded for the first definitive treatment. This would identify procedures that are being considered as a first definitive treatment for skin cancer and whether this varies across Trusts in England.

Further work is required to understand the case mix of cases that exceed the waiting time standards. It is expected that registered skin cancer cases would be recorded on both the NCDR and NCWTMD, but this is not the case. Further work is required to understand these discrepancies.

The tumour characteristics (ie size of the tumour, stage of presentation) and other factors such as co-morbidities, number of core MDT members and ethnicity should also be considered to determine whether these would explain the variation observed in waiting times. However these were not recorded on NCWTMD.

7 References

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8 Appendices

8.1 Matching NCWTMD with NCDR to identify the morphology type of suspected and confirmed skin cancer cases recorded on NCWTMD

As detailed in the methodology, the NCWTMD does not differentiate the type of skin cancer as it is referred under the generic terminology of 'suspected skin cancer' in the referral table. It is also not possible to differentiate the morphology type of the confirmed cases diagnosed as C44 (non-melanoma skin cancer (NMSC)) in the treatment table. In order to gain a better understanding of the distribution of morphology types referred via the TWW pathway, we used the most recent years available on the National Cancer Dataset Repository (NCDR) (2009-2010).

Cases from the NCWTMD referral and treatment tables were linked to those on NCDR by their NHS number. Tumour matching was not possible, therefore patients with only one record on the referral table or one confirmed skin cancer on the NCWTMD treatment table were linked to patients with only one skin cancer diagnosis on NCDR to minimise the risk of linking incorrect records.

8.1.1. Suspected skin cancers by morphology

Table 8.1.1: Proportion of registered skin cancers on the NCDR recorded on the NCWTMD referral table as a TWW referral, England, 2009-2010.

Morphology group	NCWTMD suspected skin cancers recorded on NCDR	%
Malignant melanoma	10,624/18,966	56
BCC	15,748/124,495	13
SCC	10,714/34,192	31
Other NMSC	842/4,394	19

Source: Public Health England; Health & Social Care Information Centre.

8.1.2 Confirmed skin cancers by morphology

Table 8.1.2: Proportion of registered skin cancers on the NCDR recorded on the NCWTMD treatment table as a confirmed skin cancer that was referred as a TWW, England, 2009-2010.

Morphology group	NCWTMD confirmed skin cancer recorded on NCDR	%
Malignant melanoma	8,557/18,966	45
BCC	319/124,495	0.3
SCC	8,383/34,192	25
Other NMSC	380/4,394	9

Source: Public Health England; Health & Social Care Information Centre.