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Oxford Cancer Intelligence Unit

NHS

Head and Neck Cancers

Data quality and completeness in the National Cancer Data Repository: 2008 registrations

NCIN
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Using information to improve quality & choice

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Contents

Introduction

The National Cancer Data Repository (NCDR) holds merged data from the eight English cancer registries for cancers diagnosed in the years 1990 to 2008. The purpose of this report is to compare the completeness and quality of coding of the main data items held in the National Cancer Data Repository by cancer registry, for head and neck cancers diagnosed in 2008.

We have used the template that West Midlands Cancer Intelligence Unit used for their report *The Completeness of Soft Tissue Sarcoma Data in the National Cancer Data Repository* (2)

Key findings

- **Patient details**. Level of completeness is generally high. Ethnicity coding for ECRIC is low in comparison to other registries. NWCIS has some imputed dates of birth.

- **Tumour details**. Site is 100% complete, as is morphology except for WMCIU (98.9% complete). However, 28.4% of site codes are in the unspecified subcategory and 7.3% of cases have a non-specific morphology code.

- **Diagnosis data**. Basis of diagnosis is more than 99% complete for all registries. Diagnosis date is 100% complete, but 5.7% of dates are partly imputed.

- **Treatment received**. Clarification is required as to what each registry means by "no treatment". "No treatment" should only be recorded when it is **known** that the patient definitely had no treatment. If it is **not known** whether or not a patient had any treatment, this field should be left blank. Only Trent and ECRIC have some treatment fields left blank.

- **Surgical treatment**. The level of surgical treatment recorded varies from 38.7% to 83.4%. It is not clear why this is but is probably more likely to reflect variations in ascertainment and in whether diagnostic procedures are counted rather than treatment practice.

- **Cause of death**. Level of completeness is high (96.8%) but the recording of cause of death is not standardised across all registries. In particular, NWCIS uses text instead of ICD10 codes to record 9.7% of its causes of death.

- **Place of death**. There are wide variations in the level of completeness, with Thames Cancer Registry not submitting any place of death data.

- **Stage**. Recording of stage is generally poor, with wide variations between registries. Trent have submitted no stage information at all and NYCRIS have not submitted any TNM data.

  Tumour grade, size, positive nodes and metastases have been recorded to some extent by most of the other registries. NYCRIS and OCIU have less than 0.5% with a size recorded, and Thames have 71.8% with metastases recorded compared to less than 21% for the other registries.

  NWCIS and SWCIS record clinical and pathological TNM. WMCIU records clinical, pathological and integrated TNM. OCIU only records pathological TNM and ECRIC only records integrated TNM. Thames records the component parts of clinical and pathological TNM but not the stage group.

Data

Head and neck cancers diagnosed in 2008 were extracted from the NCDR database:

- extract all tumours registered in 2008 – 428,472 records
- select records where the patient was resident in an English cancer registry – 426,765 records

  Cancer registry of residence [cancer_registry_code]* is a derived field calculated from the postcode at diagnosis. The NCDR database has 377 records for tumours diagnosed in 2008 without a postcode and therefore without a cancer registry code.

- remove duplicate records – leaving 409,746 records

  Where data relating to the same tumour was sent in by more than one registry, only the record from the registry where the patient was living at the time of diagnosis was retained. Records where the cancer registry of residence [cancer_registry_code] was different from the cancer registry that recorded the cancer [data_source], were excluded using the [Postcode_Matches_Registry_Supplying] flag.

- select head and neck cancers only (refer to appendix 1 for definition) – 9583 records

Figure 1: Number of head and neck cancers diagnosed in 2008 by cancer registry of residence

Cancer registry		Number of tumours
North West Cancer Intelligence Service	(NWCIS)	1440
West Midlands Cancer Intelligence Unit	(WMCIU)	943
South West Cancer Intelligence Service	(SWCIS)	1298
Oxford Cancer Intelligence Unit	(OCIU)	545
Thames Cancer Registry	(THAMES)	2027
Eastern Cancer Registration & Information Centre	(ECRIC)	996
Trent Cancer Registry	(TRENT)	952
Northern & Yorkshire Cancer Registry & Information Service	(NYCRIS)	1382
Total		9583

* when referring to actual fields in the dataset, the actual name of the field is given in square brackets, eg. [nhs_no_check].

Further information regarding the NCDR database can be found on the NCIN website (1).

Valid codes often include codes for “not known” and/or “not stated”, as well as for specific entities. If a field has a valid unknown code, this is not included as “complete” in the analysis for this report. Occasionally, valid unknown codes are shown separately in the charts.

Results

1. Patient details

1.1 Sex

100% complete with an average of 60% of cases in males and 40% in females.

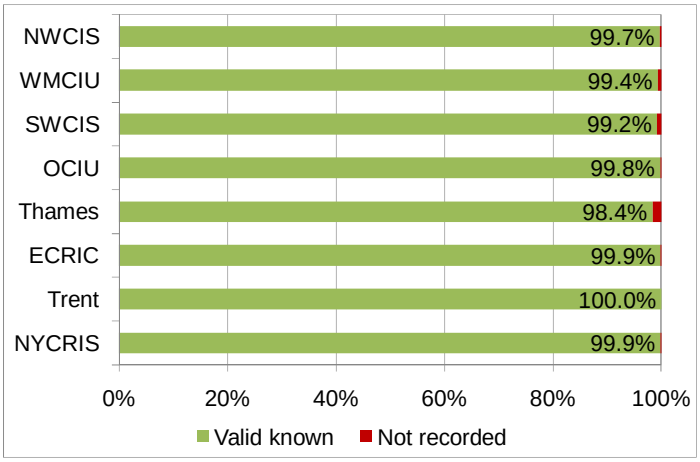
1.2 Date of birth

All records had a complete date of birth recorded. Three people were aged over 100 years when diagnosed, including one born in 1859, and one person was aged 0 years when diagnosed. NWCIS had 50 records with the date imputation flag [dob_flag] set to 8, which is not an allowed code. Either the day, or the day and month parts, of the date of birth were not known.

1.3 NHS number

NHS number is validated prior to inclusion in the database and a flag [nhs_no_check] is set accordingly. There is an average of 99.4% valid NHS numbers with 0.6% not recorded. There are no invalid NHS numbers.

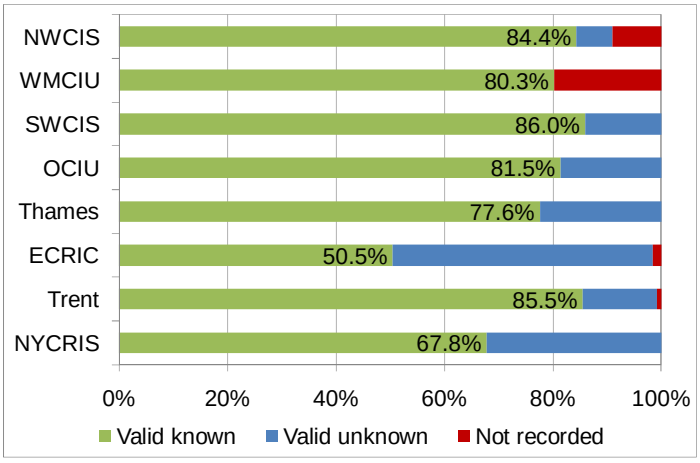
Figure 1.3 Completeness of NHS number



1.4 Ethnicity

Ethnicity is usually derived from HES by matching at patient level and extracting the most recent valid ethnicity code. Average completeness is 76.8%, ranging from 50.5% (ECRIC) to 86.0% (SWCIS).

Figure 1.4 Completeness of ethnicity coding



1.5 Postcode

The field [postcode7] should have all postcodes formatted to a length of 7 digits, padded out with spaces as necessary. Some of the London postcodes require two spaces in the middle to make the 7 digit format, eg. E2 7LD. Thames Cancer Registry has not padded these postcodes to 7 digits.

2. Tumour details

2.1 Tumour site

Tumour site is coded using the tenth revision of the International Statistical Classification of Diseases and Related Health Problems (ICD-10) (3). Tumour site was 100% complete for **all cancer sites** (not just head and neck cancers) diagnosed in 2008 in residents of the English cancer registries, but 2.5% were coded to ill-defined, secondary and unspecified sites (ICD-10 C76-C80). This ranged from 1.6% for SWCIS to 4.5% for NWCIS.

Figure 2.1 lists the head and neck tumour site groups in decreasing order of diagnosis, as percentages of all head and neck cancers. The registries show a similar distribution of the most diagnosed tumour sites. The top four sites - thyroid, larynx, unspecified parts of tongue and tonsil - are the same for all cancer registries. OCIU is an outlier, with a higher proportion of lip cancers.

Figure 2.1 Most commonly diagnosed tumours (percentage of total number of cases)

ICD-10 code		Cancer registry								
		NWCIS	WMCIU	SWCIS	OCIU	Thames	ECRIC	Trent	NYCRIS	Total
C73	Thyroid gland	18.0	18.9	16.2	24.6	22.5	18.8	20.1	18.1	19.5
C32	Larynx	20.2	19.9	17.9	17.8	18.1	16.2	20.1	20.8	18.9
C02	Other & unspec. parts of tongue	12.3	10.3	11.1	11.6	10.7	11.6	11.3	9.3	11.0
C09	Tonsil	7.6	8.0	8.2	7.7	8.1	11.3	7.0	8.2	8.2
C06	Other & unspec. parts of mouth	6.4	7.7	4.6	3.7	4.4	4.9	4.4	5.1	5.2
C07	Parotid gland	4.2	4.6	5.8	6.2	4.6	4.7	4.5	4.0	4.7
C01	Base of tongue	2.3	3.1	5.3	4.8	4.1	6.6	4.2	5.6	4.4
C04	Floor of mouth	5.1	4.0	3.9	2.2	3.6	3.0	4.1	4.6	4.0
C05	Palate	3.9	2.9	3.9	1.1	3.8	2.9	3.3	4.1	3.5
C03	Gum	1.6	2.4	3.3	1.8	3.8	4.4	3.0	1.4	2.8
C30	Nasal cavity & middle ear	2.2	3.0	3.6	1.8	2.7	2.8	2.2	2.2	2.6
C00	Lip	1.8	2.0	4.3	7.5	1.2	4.0	1.3	1.9	2.6
C14	Ill-def. lip/oral cavity/pharynx	2.5	1.5	4.2	1.8	2.4	0.9	2.3	3.3	2.5
C12	Pyriform Sinus	2.6	3.1	0.8	0.7	2.2	1.9	3.1	2.7	2.2
C11	Nasopharynx	1.4	2.4	1.5	2.8	2.5	1.6	1.8	1.9	2.0
C10	Oropharynx	3.3	2.2	1.4	0.6	1.8	0.9	2.3	1.8	1.9
C13	Hypopharynx	1.7	1.9	1.4	0.9	1.7	1.6	1.6	1.2	1.5
C31	Accessory Sinuses	1.3	1.8	1.3	0.7	0.8	1.5	1.4	1.9	1.3
C08	Unspec. major salivary glands	1.6	0.3	1.3	1.7	1.0	0.4	2.0	1.9	1.2
Total of five most common sites		64.5	64.8	59.2	69.2	64.0	64.5	63.0	62.0	62.8

OCIU has a higher percentage of lip cancers than the other registries. Squamous carcinoma of lip, ICD-10 code C00, is often wrongly coded as skin of lip, ICD-10 code C44.0. OCIU has a corresponding lower percentage of skin of lip compared to the other registries.

The head and neck three character ICD-10 site codes categorise the cancer to its point of origin (a particular organ). They can be further categorised into parts of an organ. For example, malignant neoplasm of gum (ICD-10 C03) is subdivided into upper gum (ICD-10 C03.0) and lower gum (ICD-10 C03.1). There is also a subcategory .9 which is used when the sub site is not specified. Overall, 28.4% of head and neck tumours have been coded to an unspecified subcategory; this ranges from 20.2% for ECRIC to 33.7% for Thames.

2.2 Morphology system

The International Classification of Disease for Oncology (ICD-O) codes are used to code the morphology of the cancer. All cancer registries are in the process of implementing the third edition, ICD-O-03, but only NYCRIS and WMCIU have done so for 2008 registrations. Trent, ECRIC, Thames, OCIU, SWCIS and NWCIS are still using the second edition, ICD-O-02.

Figure 2.2: Morphology coding system used in 2008

Cancer registry	ICD-O-02	ICD-O-03	Not coded	Total
NWCIS	1412	28	-	1440
WMCIU	-	933	10	943
SWCIS	1298	-	-	1298
OCIU	545	-	-	545
Thames	2027	-	-	2027
ECRIC	996	-	-	996
Trent	952	-	-	952
NYCRIS	-	1382	-	1382
Total	7230	2343	10	9583

There are 14 records, 9 for Thames and 5 for ECRIC, using an ICD-O-03 morphology code but the morphology system field is coded for ICD-O-02. Behaviour code 5 was introduced in 1998 for microinvasive cancers coded in ICD-O-02, but is not allowed in ICD-O-03. NYCRIS have 1 case with a behaviour code 5.

2.3 Morphology coding

All registries except WMCIU are 100% complete in coding morphology (figure 2.3a). WMCIU have 10 cases (1.1%) with no morphology recorded. WMCIU also have 8 cases with a morphology code that relates to a secondary tumour. Overall, 7.3% of cases have a non-specific morphology code (8000 malignant neoplasm, 8001 malignant tumour cells and 8010 carcinoma NOS (not otherwise specified)). This ranges from 4.2% for ECRIC to 13.4% for OCIU.

Figure 2.3b shows the top sixteen most common morphology codes recorded, by cancer registry, with the top five highlighted in green. Records coded in ICD-O-03 were converted into ICD-O-02 codes for this analysis.

The top five most common morphology codes recorded include 77.8% of all head and neck cancers. The top two morphology codes are the same for all the registries; 80703 squamous cell carcinoma, NOS and 80713 squamous cell carcinoma, keratinising NOS.

Figure 2.3a Specificity and completeness of morphology coding

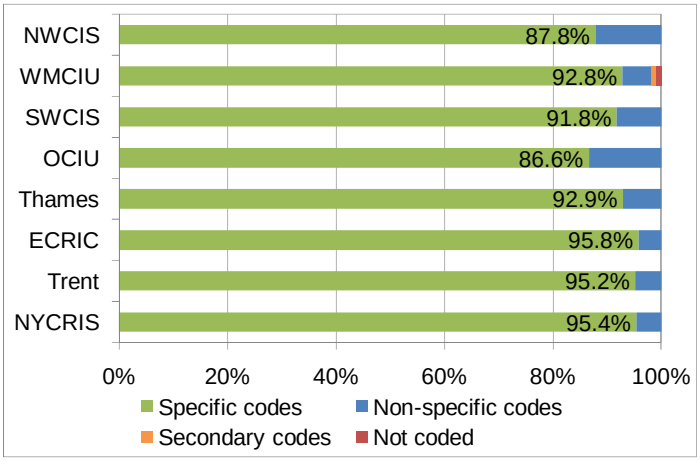


Figure 2.3b Most common morphology codes (percentage of total number of cases)

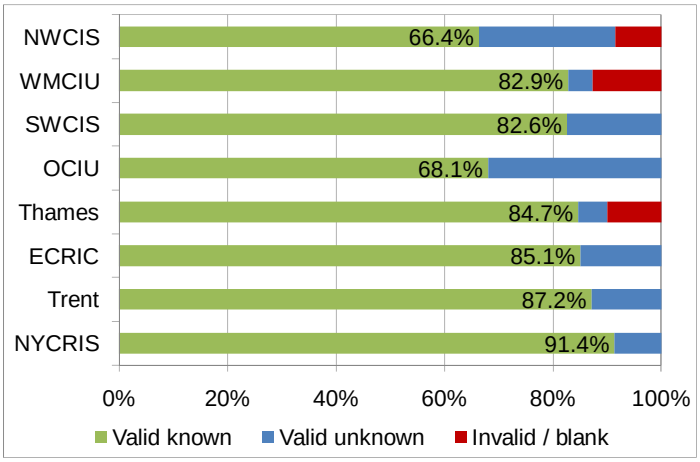
ICD-O-02 code	Description	Cancer registry								
		NWCIS	WMCIU	SWCIS	OCIU	Thames	ECRIC	Trent	NYCRIS	Total
80703	Squamous cell carcinoma NOS	55.3	54.0	51.5	49.9	55.5	57.5	51.6	53.9	54.1
80713	Squamous cell carcinoma, keratinising NOS	7.8	10.8	12.4	5.1	4.5	9.9	9.9	14.6	9.3
82603	Papillary adenocarcinoma NOS	2.5	5.8	5.7	10.5	11.5	8.9	5.1	6.6	7.1
80103	Carcinoma NOS	5.3	4.0	3.2	4.6	5.6	3.8	2.3	2.5	4.1
80003	Neoplasm, malignant	6.8	1.3	4.9	8.8	1.5	0.4	2.3	2.2	3.2
83303	Follicular adenocarcinoma NOS	2.0	3.1	1.8	5.0	3.1	3.3	4.2	3.2	3.0
80503	Papillary carcinoma NOS	5.6	2.4	3.3	0.9	2.5	0.3	2.6	1.2	2.6
83403	Papillary carcinoma, follicular variant	4.0	3.1	1.4	3.3	0.2	2.3	4.6	3.5	2.5
81403	Adenocarcinoma NOS	1.2	1.8	2.1	1.1	2.4	1.8	1.9	1.8	1.8
84303	Mucoepidermoid carcinoma	1.4	1.4	1.6	1.6	2.0	1.6	1.6	1.6	1.6
80723	Squamous cell carcinoma, large cell, nonkeratinising	1.6	0.4	1.5	0.0	1.8	0.9	2.7	0.3	1.3
82003	Adenoid cystic carcinoma	1.2	1.4	1.5	0.9	1.6	0.8	0.8	1.4	1.3
85503	Acinar cell carcinoma	0.4	0.7	1.2	1.5	0.8	0.6	1.2	0.9	0.8
82903	Oxyphilic adenocarcinoma	0.6	0.5	0.4	1.1	0.8	1.0	0.5	1.2	0.8
85103	Medullary carcinoma NOS	0.7	0.7	0.4	0.4	0.6	0.8	1.1	0.7	0.7
80213	Carcinoma, anaplastic type NOS	0.1	1.1	0.6	0.9	0.1	1.0	0.6	0.6	0.5
Total of most common types		96.5	92.5	93.5	95.6	94.5	94.9	93.0	96.2	94.7
Total of five most common types		80.8	77.7	77.8	79.3	80.2	83.4	75.4	81.8	77.8

2.4 Laterality

For paired sites, for example the tonsils, if there is a tumour in one side, the laterality of that side, left or right, is recorded. For some paired sites, if there is a tumour in both sides then two tumours are registered, one a left and the other a right. If there is a tumour in both sides (and they have other factors such as morphology the same) then only one registration is made and the laterality is coded as bilateral. If the site of the primary cancer is not part of a pair then laterality is coded as not applicable. A definitive list of paired cancer sites has been produced as part of the UKACR Information and Training Manual for Cancer Registration in England and Wales. (see appendix 2 for a list of paired head and neck cancer sites).

Figure 2.4 shows the completeness of laterality coding for cases with paired sites only (1665 cases diagnosed in 2008). Average completeness is 82.0%, ranging from 66.4% for NWCIS to 91.4% for NYCRIS. Cases with an unpaired site should be coded 100% "not applicable". Thames Cancer Registry has only 22.3% of cases with an unpaired site coded as "not applicable" and 50.6% coded as left, right or bilateral. WMCIU has 59.0% of cases with an unpaired site coded as "not applicable" and 35.3% coded left, right or bilateral.

Figure 2.4 Completeness of laterality coding for paired sites only



3. Diagnosis data

3.1 Basis of diagnosis

Completeness of basis of diagnosis is good. Trent and WMCIU are 100% complete. OCIU has the lowest percentage completeness at 99.1%.

Figure 3.1a Completeness of basis of diagnosis coding

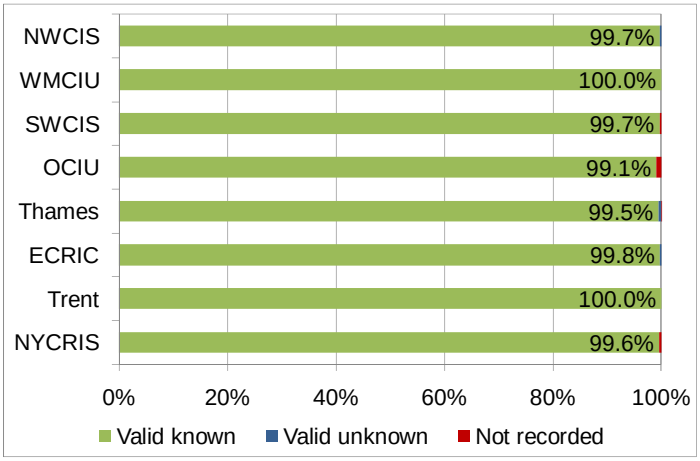
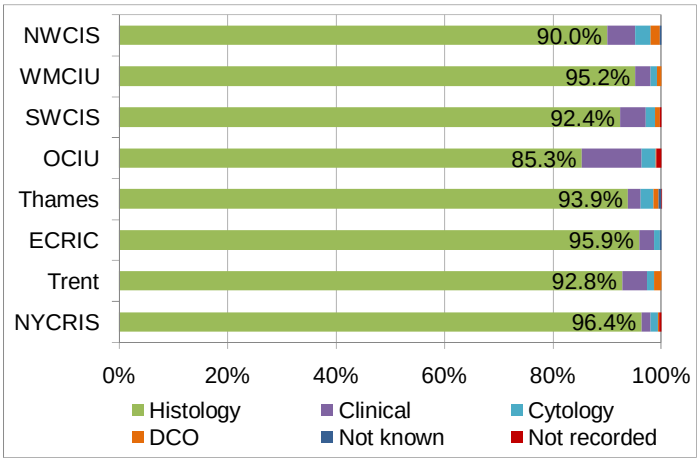


Figure 3.1b compares the main classifications for basis of diagnosis. Histology is the most common basis for diagnosis, with an average of 93.2% of all head and neck tumours diagnosed this way. All registries show a similar distribution of type of basis. NYCRIS have the highest percentage of histology diagnoses and OCIU have the lowest, with a corresponding higher percentage of tumours clinically diagnosed.

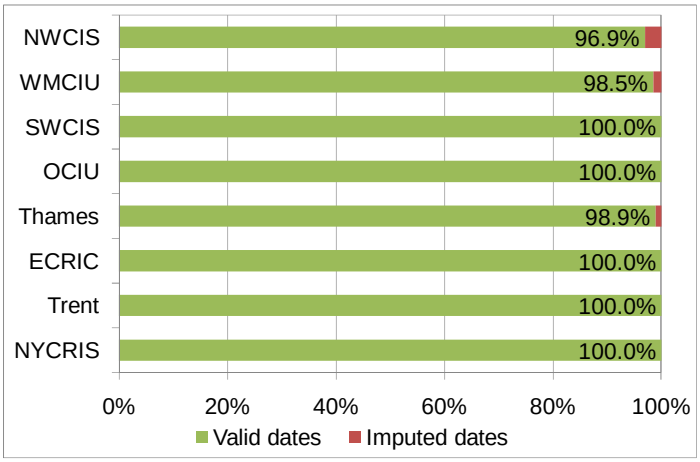
Figure 3.1b Basis of diagnosis by cancer registry



3.2 Diagnosis date

Diagnosis date is complete for all head and neck cancers diagnosed in the years 1990 to 2008, and none of the dates have been flagged as having an imputed year. Some dates have been partly imputed. In 2008, Thames has 1.1% of head and neck diagnosis dates imputed, WMCIU has 1.5% and NWCIS 3.1%.

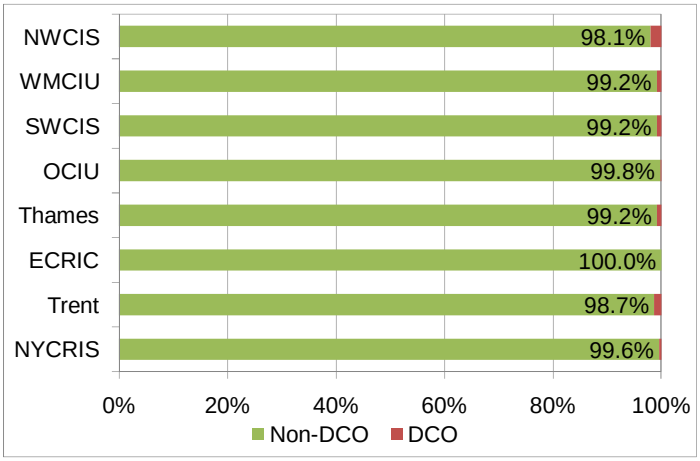
Figure 3.2 Accuracy of recording of diagnosis date



3.3 Death Certificate Only registrations

The proportion of cancers registered from a death certificate only (DCO), with no corroborating information found when followed-up, is often used as a measure of the quality of the data. A high proportion of DCO registrations indicates that data may be of poor quality, with low ascertainment. The UKACR Quality and Performance Indicators Report gives a target of less than 2% for DCO's. Figure 3.3 shows that all registries have achieved this.

Figure 3.3 Percentage of DCO's recorded



4. Treatment

NCDR records whether or not a tumour received treatment - curative surgery, radiotherapy, chemotherapy or hormone therapy - within six months of the date of diagnosis.

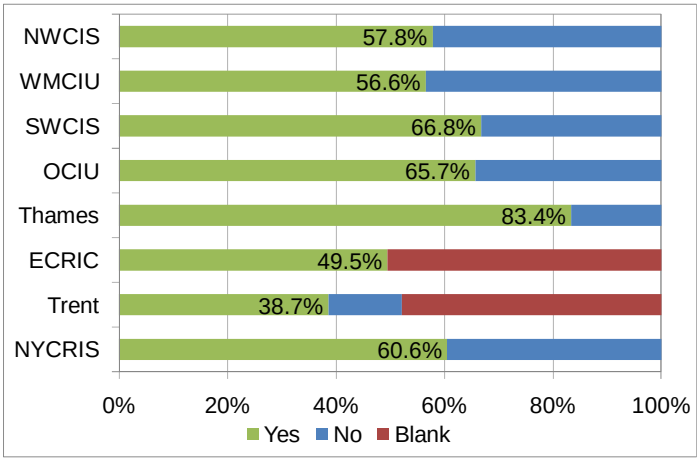
Clarification is required as to what each registry means by "no treatment". "No treatment" should be recorded when it is **known** that the patient definitely had no treatment in the six months following diagnosis. If it is **not known** whether or not a patient had any treatment, this field should be left blank. Only Trent and ECRIC have some treatment fields left blank.

Trent are currently addressing their under-recording of treatment for 2008.

4.1 Surgery therapy

An average of 62.4% of all head and neck cancers received curative surgery. This ranged from Trent with 38.7% to Thames with 83.4%. This difference is more likely to reflect variations in what is counted as curative surgery rather than real variations in treatment.

Figure 4.1 Proportion of cancers receiving curative surgery



4.2 Radiotherapy

An average of 40.5% of all head and neck cancers received radiotherapy, ranging from 9.9% for Trent to 59.0% for NYCRIS. (Figure 4.2).

4.3 Chemotherapy

An average of 17.2% of all head and neck cancers diagnosed in England received chemotherapy. NWCIS had the lowest proportion of chemotherapy treatment at 9.1% and SWCIS the highest proportion at 20.3%. (Figure 4.3).

Figure 4.2 Proportion of cancers receiving radiotherapy

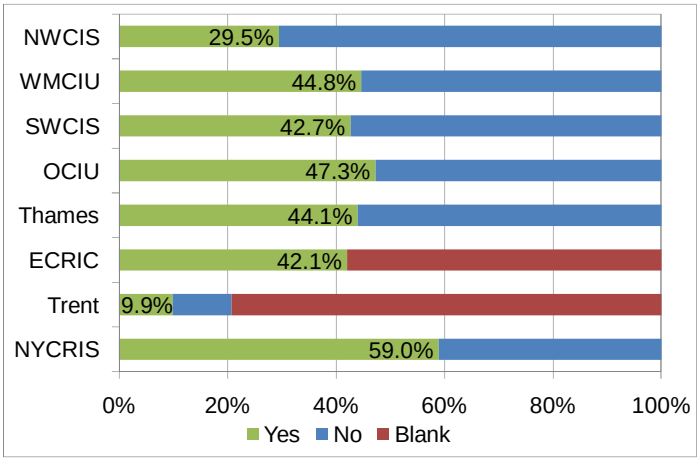
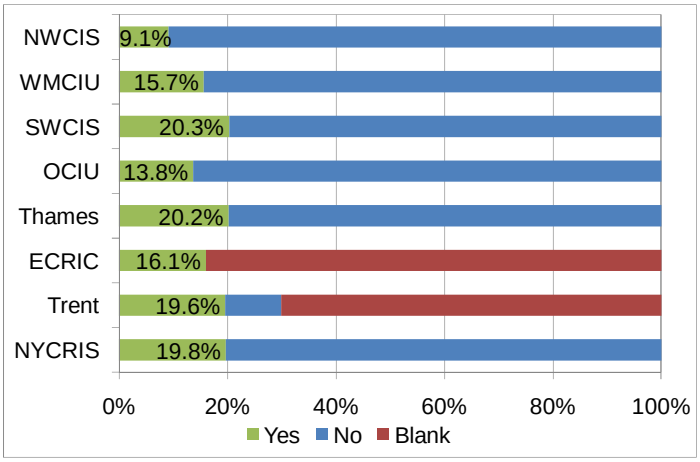


Figure 4.3 Proportion of cancers receiving chemotherapy



4.4 Hormone therapy

Only 0.3% of all head and neck cancers diagnosed in 2008 in England were recorded as receiving hormone therapy. Thames Cancer Registry had the highest proportion at 0.9%.

4.5 Neo-adjuvant therapy

Only WMCIU have any neo-adjuvant therapy recorded, and only for a few cases; 0.6% of head and neck cases diagnosed in 2008.

5. Death details

5.1 Date of death

Figure 5.1 assumes that if there is no date of death recorded the patient is still alive. There was one Thames record where a cause of death was recorded but no date of death. Twenty-one NWCIS records had potentially imputed death dates according to the date of death flag, and one Thames record had a death date in 2004, four years before diagnosis.

5.2 Cause of death

There are four cause of death fields in the NCDR data, corresponding to the four causes of death given on a death certificate. Cause of death should be recorded in ICD10 at the four digit level with no punctuation.

- 50 records had no cause of death recorded.
- 9 records had no cause recorded in the first cause of death field but did in the second cause of death field

- OCIU include a dummy code (8999) for some non-cancer deaths
- NWCIS have some records that record cause of death in descriptive text rather than ICD10 and some ICD10 codes with punctuation.
- NYCRIS and NWCIS only have one cause of death per cause of death field. The other registries allow more than one per field.
- Multiple causes of death in one cause of death field are separated by commas by all registries except OCIU which uses either commas or spaces. Trent include a semicolon at the end of the fourth cause of death field on most records.

Figure 5.2 shows the proportion of records that have a cause of death recorded where the patient is known to have died.

Figure 5.1 Proportion of cancers diagnosed in 2008 where the patient is alive

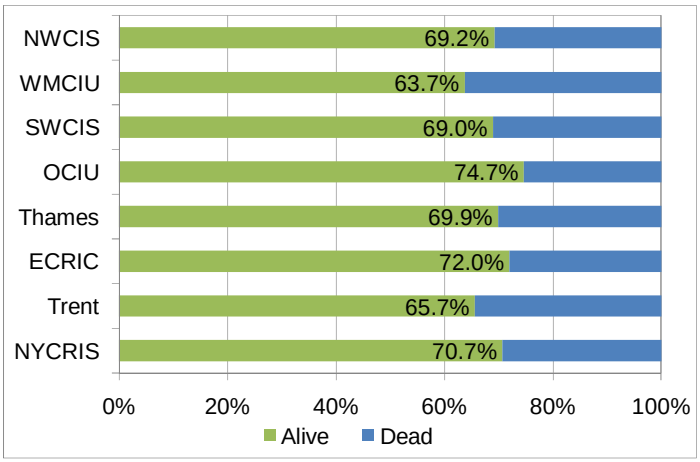
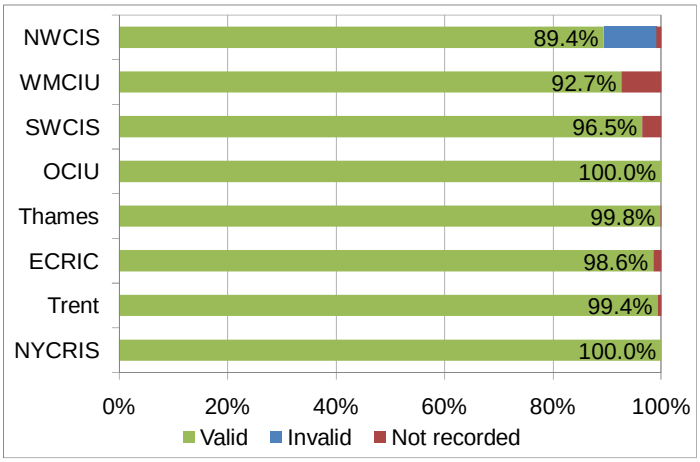


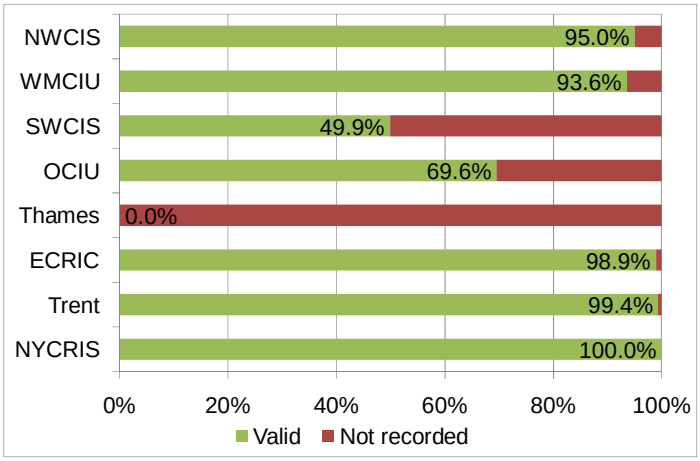
Figure 5.2 Completeness of cause of death coding for patients that have died



5.3 Place of death

Figure 5.3 shows the proportion of records that have a place of death recorded where the patient is known to have died. Five of the registries are over 93% complete for place of death coding. SWCIS and OCIU are lower, at 49.9% and 69.6% respectively. Thames Cancer Registry does not appear to record place of death.

Figure 5.3 Completeness of place of death coding for patients that have died

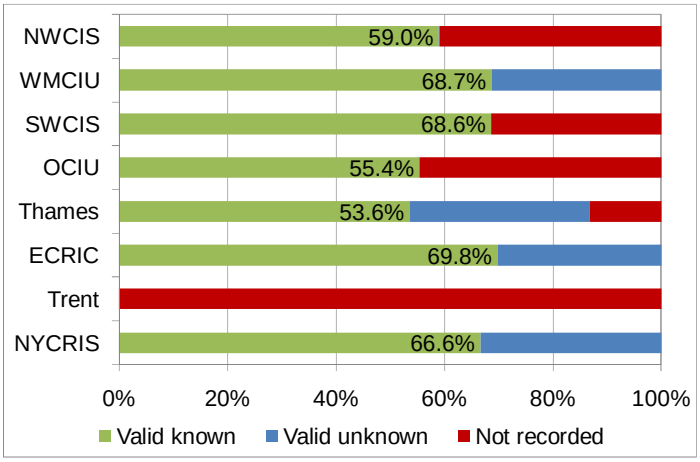


6. Stage data

6.1 Tumour grade

Tumour grade was reported on 56.3% of head and neck cases in 2008. This ranged from 0.0% for Trent to 69.8% for ECRIC.

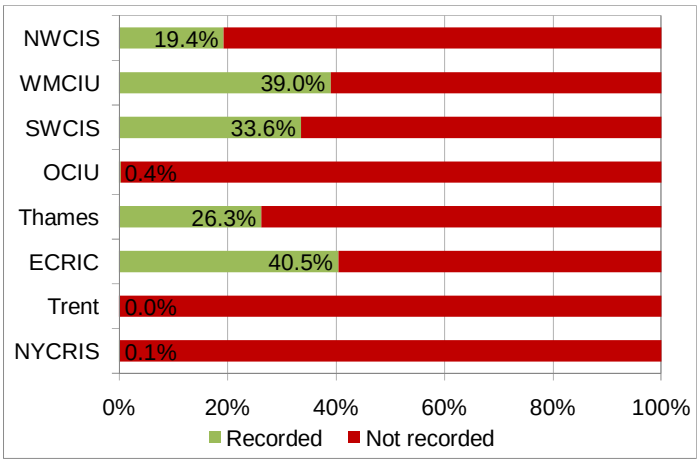
Figure 6.1 Completeness of coding of grade of tumour



6.2 Tumour size

Tumour size relates to the diameter of the tumour measured in millimetres. Recorded tumour

Figure 6.2 Completeness of coding of tumour size

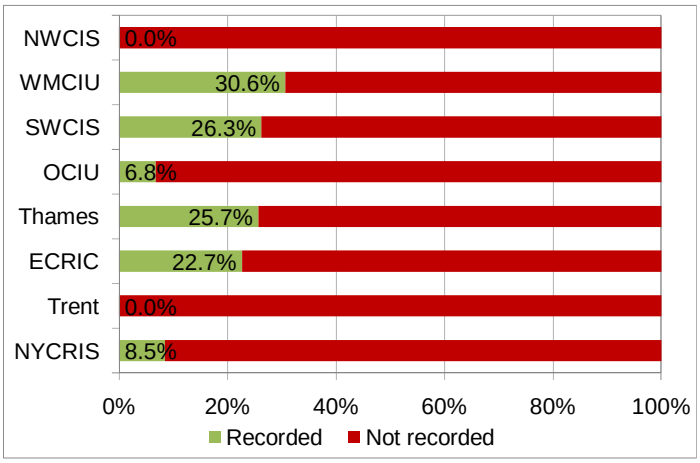


sizes for head and neck cancers diagnosed in 2008 range from 0mm to 195mm, plus one case measuring 888mm. Overall completeness of coding of tumour size is 21.1%, ranging from Trent with 0.0% to ECRIC with 40.5%.

6.3 Nodes examined

Overall, 16.0% of cases had the number of nodes examined recorded. This ranged from NWCIS and Trent with 0.0% to WMCIU with 30.6%.

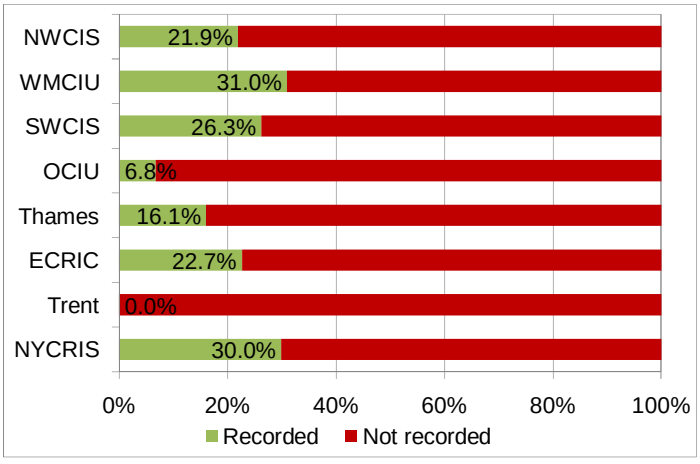
Figure 6.3 Completeness of coding of number of nodes examined



6.4 Nodes positive

On average 20.4% of head and neck cases diagnosed in 2008 had positive nodes recorded, ranging from Trent with 0.0% to WMCIU with 31.0%. A valid number of positive nodes, includes zero.

Figure 6.4 Completeness of coding of number of positive nodes found

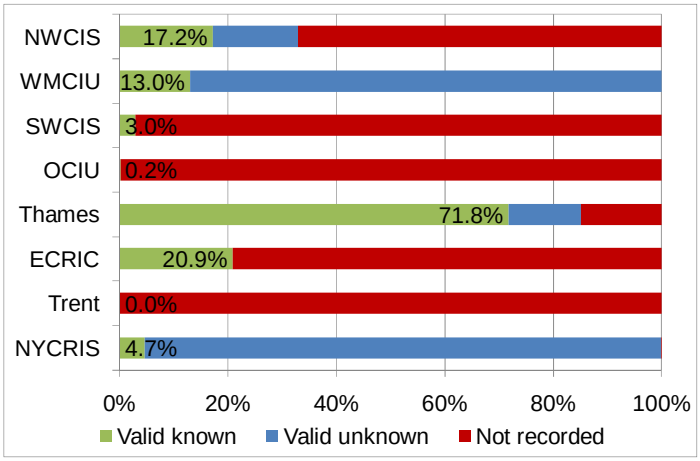


Comparing figures 6.3 and 6.4, SWCIS, OCIU and ECRIC, only record positive nodes where nodes were examined. WMCIU have 3 records with nodes not examined, with 0 positive nodes. NWCIS have recorded 21.9% of cases with positive nodes but no nodes examined. NYCRIS have more positive nodes recorded than examined nodes. The discrepancy here relates to records with no nodes examined and zero positive nodes. Thames has more nodes examined than positive nodes recorded.

6.5 Metastases

This field records the presence of distant metastases at diagnosis. On average, 22.3% of cases have the presence or otherwise of distant metastases recorded. This ranges from Trent with 0.0% coded, to Thames with 71.8% coded.

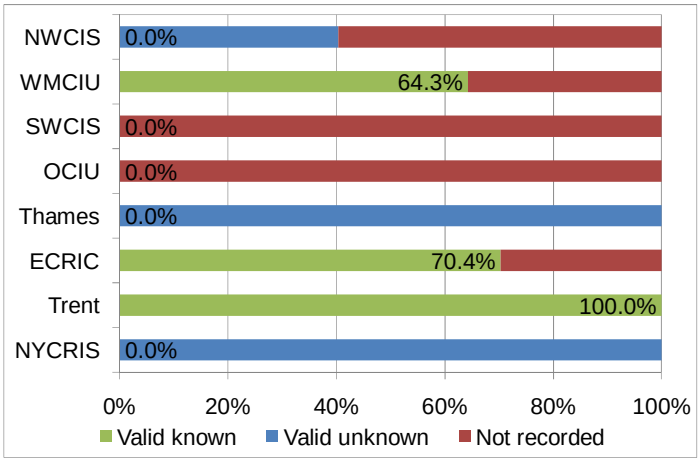
Figure 6.5 Completeness of metastases recording



6.6 UICC staging system

The staging system used for NCDR is the Union for International Cancer Control (UICC) TNM Classification of Malignant Tumours. Registries were asked to state which edition of TNM they have used in staging their head and neck cancers. Only three registries have recorded the edition. WMCIU have used both the 5th and 6th editions, Trent have used the 6th edition and ECRIC the 5th edition.

Figure 6.6 Completeness of UICC staging system flag



6.7 TNM clinical

All diagnoses of cancer should ideally be confirmed microscopically. A clinical classification is one based on evidence acquired before treatment eg. from physical examination, imaging, endoscopy, biopsy, surgical exploration etc. (4)

Only NWCIS, WMCIU, SWCIS and Thames record the separate components for the TNM clinical classification, and the level of completeness is low. Thames has the highest level of completeness, with 30.7% of cases having a T component recorded. WMCIU has 26.6% of cases with a T component recorded, but NWCIS and SWCIS have only 1.0% and 2.3% respectively.

Figure 6.7a Completeness of the T component (clinical TNM)

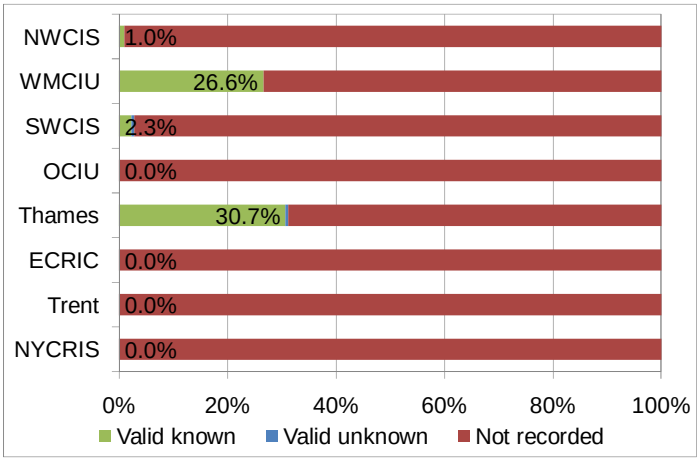


Figure 6.7b Completeness of the N component (clinical TNM)

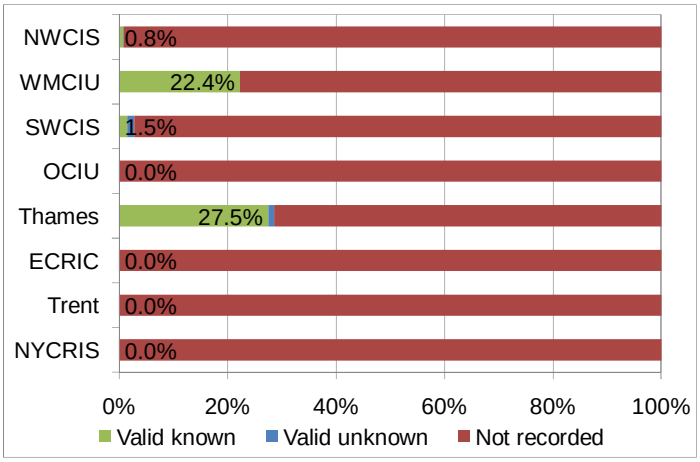
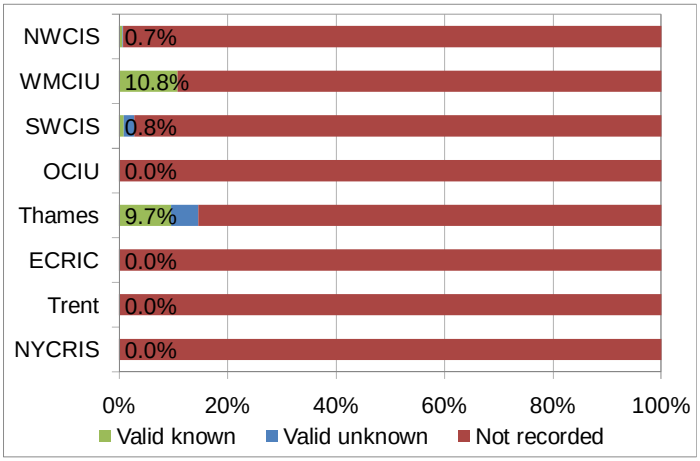
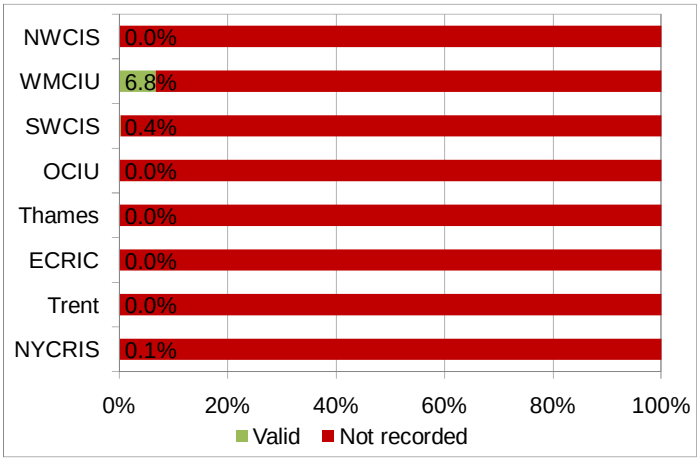


Figure 6.7c Completeness of the M component (clinical TNM)



The [tnm_clin] field records the TNM stage grouping as defined by the TNM handbook (4). The level of completeness is very low; WMCIU has 6.8% of cases with a stage group, and SWCIS and NYCRIS have 0.4% and 0.1% respectively. (See figure 6.7d).

Figure 6.7d Completeness of the TNM stage field (clinical TNM)



6.8 TNM pathological

The pathological classification is based on evidence acquired before treatment, supplemented or modified by additional evidence acquired from surgery and pathological examination (4).

Only NWCIS, WMCIU, SWCIS, Thames and OCIU record the TNM pathological classification, and the level of completeness is again low, but better than for clinical TNM. WMCIU has the highest level of completeness, with 39.9% of cases having a T component recorded. OCIU has only 1.1% of cases with a T component recorded, but has 9.2% of cases with an N component.

Figure 6.8a Completeness of the T component (pathological TNM)

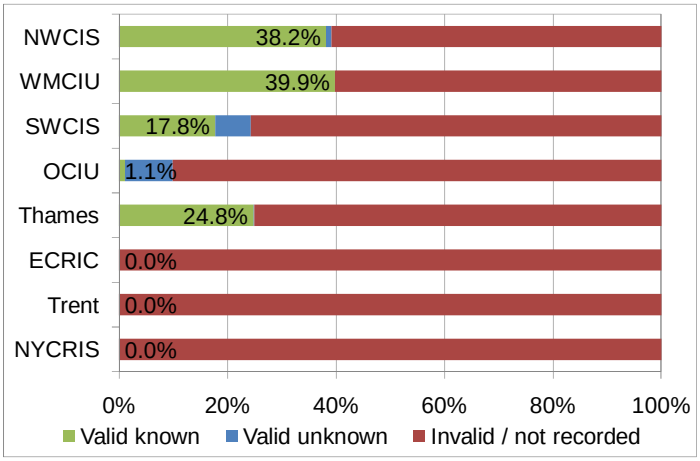


Figure 6.8b Completeness of the N component (pathological TNM)

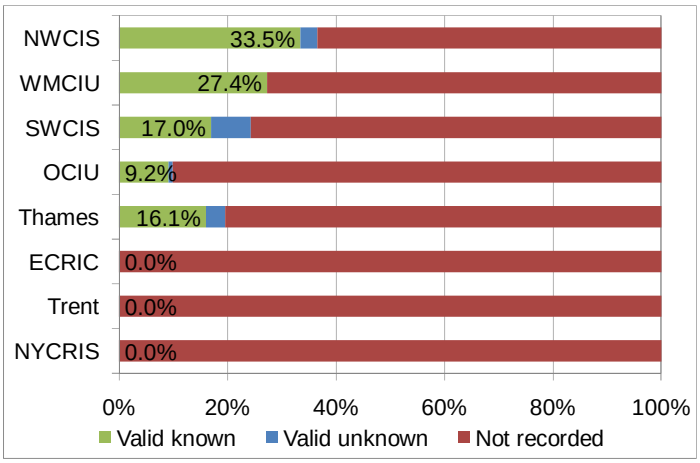
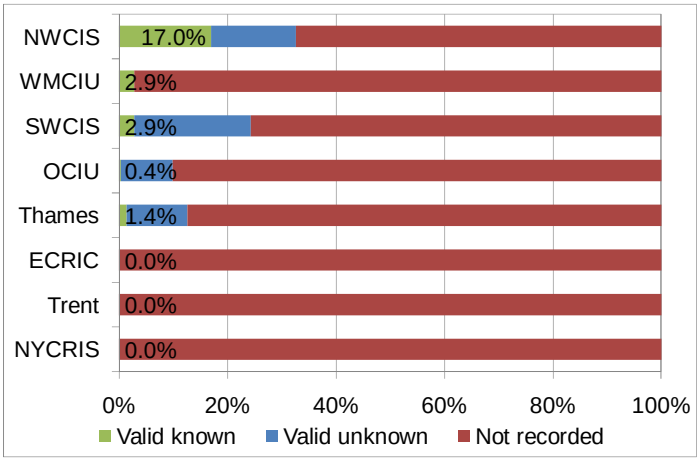
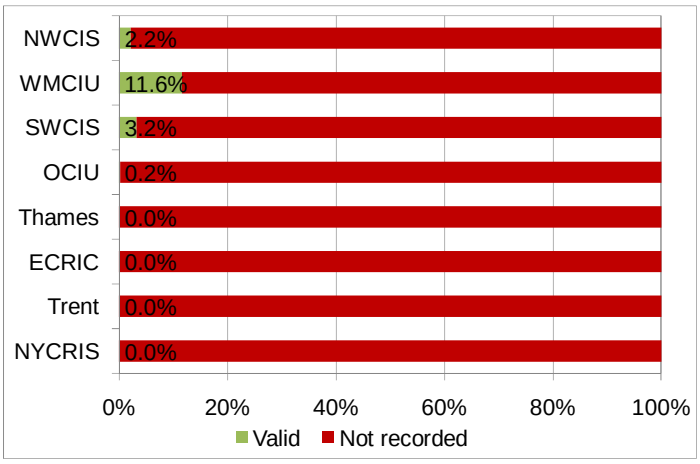


Figure 6.8c Completeness of the M component (pathological TNM)



The [tnm_path] field records the TNM stage grouping as defined by the TNM handbook (4). The level of completeness is very low; WMCIU again has the highest level of completeness with 11.6% of cases with a stage group.

Figure 6.8d Completeness of the TNM stage field (pathological TNM)



6.9 TNM integrated

A third classification, called TNM integrated, is used by ECRIC and WMCIU only. This is a hybrid of the clinical and pathological T, N and M values.

Figure 6.9a Completeness of the T component (integrated TNM)

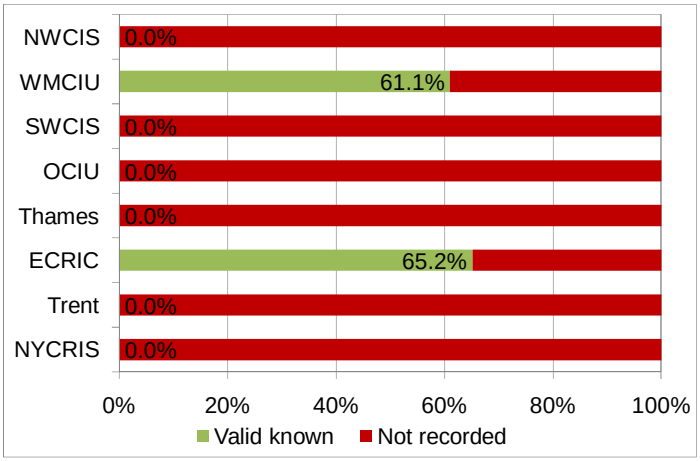


Figure 6.9b Completeness of the N component (integrated TNM)

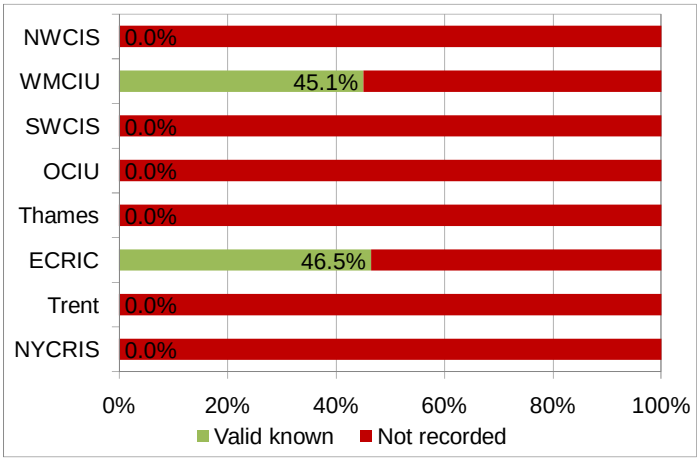
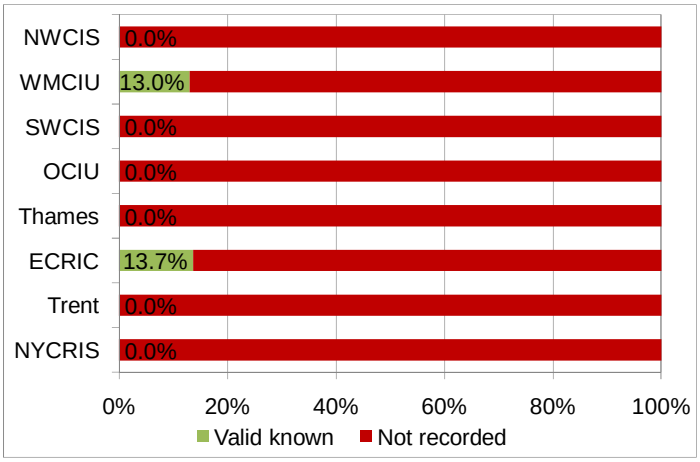
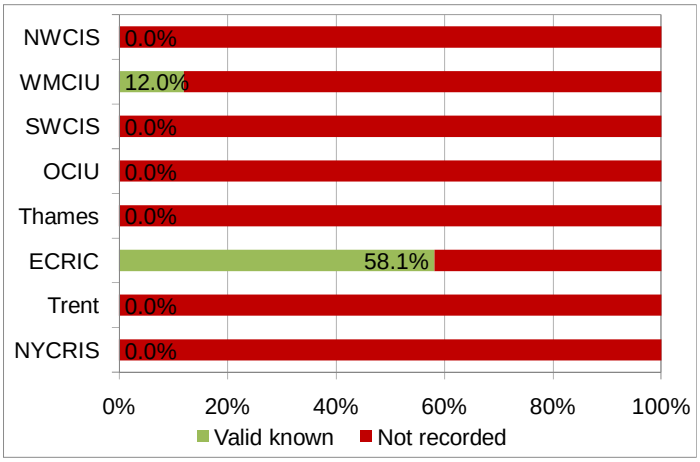


Figure 6.9c Completeness of the M component (integrated TNM)



The level of completeness is higher for the integrated TNM coding compared to the clinical and pathological TNM coding. ECRIC has 58.1% of cases with an integrated TNM stage recorded.

Figure 6.9d Completeness the TNM stage field (integrated TNM)



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2. The Completeness of Soft Tissue Sarcoma Data in the National Cancer Repository: Tumours diagnosed between 2006 and 2008. West Midlands Cancer Intelligence Unit. 2011

3. International Statistical Classification of Diseases and Related Health Problems, Tenth Revision. World Health Organisation. Geneva. 1992

4. International Union Against Cancer (UICC). TNM Classification of Malignant Tumours, 7th ed. Sobin LH, Gospodarowicz MK, Wittekind C, eds. Wiley-Blackwell. 2009

Appendix 1 - Head and neck cancer definition

ICD10 code	Description
C00	Lip
C01	Base of tongue
C02	Other and unspecified parts of tongue
C03	Gum
C04	Floor of mouth
C05	Palate
C06	Other and unspecified parts of mouth
C07	Parotid gland
C08	Other and unspecified major salivary glands
C09	Tonsil
C10	Oropharynx
C11	Nasopharynx
C12	Pyriform sinus
C13	Hypopharynx
C14	Other ill-defined sites lip/oral cavity/pharynx
C30	Nasal cavity and middle ear
C31	Accessory sinuses
C32	Larynx
C73	Thyroid gland

Appendix 2 - Paired head and neck cancer sites

ICD10 code	Description
C06.0	Cheek mucosa
C07	Parotid gland
C08.0	Submandibular gland
C08.1	Sublingual gland
C09.0	Tonsillar fossa
C09.1	Tonsillar pillar
C09.8	Overlapping lesion of tonsil
C09.9	Tonsil unspecified
C30.1	Middle ear
C31.0	Maxillary sinus
C31.1	Ethmoidal sinus
C31.2	Frontal sinus
C31.3	Sphenoidal sinus
C31.8	Overlapping lesion of accessory sinus