

Head and Neck Cancers

Data Quality Report

Surgical Data

This report has been compiled by

- Sandra Edwards, Senior Analyst, Oxford Cancer Intelligence Unit

With acknowledgements

- Mr Richard Wight, Chair - Head and Neck Cancers Site Specific Clinical Reference Group
- Dr Monica Roche, Medical Director, OCIU
- Andrew Hughes, Principal Analyst, Solutions for Public Health

Comparison of surgical data on DAHNO with data from HES and from Cancer Registries.

1. Background and Methods

The purpose of this report is to describe the level of recording of head and neck cancer surgery in three different datasets and identify any differences between the datasets. It is known that the complexity of head and neck surgery is not well reflected using the current OPCS4 codes and therefore may be under-recorded in both the National Cancer Data Repository (NCDR) and Hospital Episode Statistics (HES). The National Head and Neck Cancer Audit (DAHNO) has a bespoke coding system that facilitates the recording of combinations of complex procedures and is thought to more accurately reflect the complexity of Head & Neck surgery.

The data used for these analyses are three separate data sources:

- 1) National Cancer Data Repository file (NCDR) – covers data from cancer registries for the years 2004 to 2006, England data.
- 2) Inpatient Hospital Episodes Statistics (HES) data – years 2004 to 2007 England data.
- 3) Information uploaded from Trusts to the DAHNO audit and supplied to OCIU in 17 files of cumulative data. These data cover cases diagnosed from 1st January 2004 to 31st October 2008. DAHNO sites include larynx and oral cavity for all years and oropharynx, hypopharynx and nasopharynx mainly from October 2007, but some in earlier years. England and Wales data.

The DAHNO (Data for Head and Neck Oncology) system, which supports the National Head and Neck Cancer Audit, began a phased roll out and started receiving cases in 2004 on larynx and oral cavity cancers. Initially restricted to English cancer networks and subsequently eligible to Wales, all cancer networks in England and Wales now submit data to the audit, but not all eligible networks and trusts participated in the timeframe studied. Some organisations submitted a broader range of tumour site groups (in addition to larynx and oral cavity) at inception whilst others have retrospectively populated the DAHNO database in these site group areas. Formal national collection on pharynx and major salivary gland cancer began in 2008.

2. Surgical data on the National Head and Neck Cancer Audit (DAHNO)

The first exercise undertaken was to look at the recording of surgery in the DAHNO audit dataset.

Table 1 shows the numbers of records and patients included in the audit between 2004 and 2008. Completeness of case ascertainment has markedly improved over time.

Table 1: Numbers of records and patients in DAHNO for 2004 to 2008

Cancer group	Number	2004	2005	2006	2007	2008	total
larynx	records	374	638	987	1129	1227	4355
	patients	358	582	944	1079	1120	4083
oral cavity	records	381	626	980	1009	1197	4193
	patients	356	587	937	978	1109	3967
oropharynx	records	166	227	247	208	986	1834
	patients	156	215	225	194	913	1703
hypopharynx	records	39	60	74	52	261	486
	patients	39	55	70	49	243	456
nasopharynx	records	14	26	22	33	100	195
	patients	14	26	21	28	96	185
major salivary glands	records	24	42	47	43	274	430
	patients	24	40	44	40	250	398
Total	records	998	1619	2357	2474	4045	11493
	patients	947	1505	2241	2368	3731	10792

Table 2 shows the numbers and percentages of patients included in the audit that have at least one surgery record with a date of surgery recorded.

Table 2: Numbers and %s¹ of patients in DAHNO with a date of surgery

Cancer group	Number/%	2004	2005	2006	2007	2008	total
larynx	number	81	142	251	273	302	1049
	%	22.6	24.4	26.6	25.3	27.0	25.7
oral cavity	number	213	326	549	484	538	2110
	%	59.8	55.5	58.6	49.5	48.5	53.2
oropharynx	number	59	70	63	47	267	506
	%	37.8	32.6	28.0	24.2	29.2	29.7
hypopharynx	number	6	10	14	15	56	101
	%	15.4	18.2	20.0	30.6	23.0	22.1
nasopharynx	number	3	6	1	7	13	30
	%	21.4	23.1	4.8	25.0	13.5	16.2
major salivary glands	number	12	23	17	13	115	180
	%	50.0	57.5	38.6	32.5	46.0	45.2
Total	number	374	577	895	839	1291	3976
	%	39.5	38.3	39.9	35.4	34.6	36.8

¹ of patient numbers in Table 1.

Comparison of surgical data between DAHNO and HES

The DAHNO support team supplied a coding matrix, which maps between the DAHNO surgical codes and the standard OPCS4 codes.

Records of patients in DAHNO were linked to an extract of HES to allow a comparison between DAHNO surgical coding and the surgical coding used in hospital patient administration systems using the national standard OPCS4.

Table 3: DAHNO surgical interventions and matched records in the HES extract, 2004-2007

H&N group	Surgical intervention	Surgery on DAHNO with date 2004-2007	% HES match to OPCS4 code	% HES matched - other coding	% missing in HES extract
Larynx	Microlaryngoscopy - laser removal lesion	245	51%	32%	16%
Larynx	Total laryngectomy	220	71%	14%	15%
Larynx	Te puncture	39	28%	62%	10%
Larynx	Microlaryngoscopy - cold removal lesion	22	18%	50%	32%
Neck dissect	Neck dissection radical	996	53%	19%	28%
Oral Cavity	Partial glossectomy	307	74%	15%	10%
Oral Cavity	Excision lesion of tongue	228	49%	33%	18%
Oral Cavity	Floor of mouth excision	213	54%	33%	13%
Oral Cavity	Reconstruction mouth - with radial forearm	143	0%	94%	6%
Oral Cavity	Buccal mucosa excision	116	64%	23%	13%
Oral Cavity	Reconstruction mouth - with flap	101	50%	39%	12%
Oral Cavity	Marginal mandibulectomy	101	38%	40%	23%
Oral Cavity	Hemimandibulectomy	71	42%	30%	28%
Oral Cavity	Radial forearm fasciocutaneous	57	0%	95%	5%
Oral Cavity	Mandibulotomy/split/division of jaw	43	21%	67%	12%
Oral Cavity	Reconstruction mandible - with fibula	42	0%	88%	12%
Salivary glands	parotidectomy - superficial	27	33%	11%	56%
Other		275			35%

Table 3 shows the comparison between the DAHNO dataset and the HES dataset.

For most head and neck cancer subtypes more than 70% of all the DAHNO cases were found in the HES database, with a surgical procedure recorded. However, when attempting to match the exact procedures by patient recorded in HES to the DAHNO database the correlation was generally much less good. The best correlation was seen for partial glossectomy with 74% of cases and laryngectomy with 71% of cases with a matching surgical procedure code on DAHNO and HES.

3. Surgical data on the National Cancer Data Repository (NCDR)

The NCDR data were supplied by the 8 English cancer registries to the central repository. The data set included a surgery 'flag' for each tumour registered. This flag should be coded as 'Y' for Yes if the patient's treatment included a curative surgical procedure within 6 months of diagnosis and 'N' for No if it did not.

Tables 5a to 5f show the percentages of registrations for years 2004 to 2006 where the surgery flag is set to 'Y' by cancer type and cancer registry. There is wide variation in the setting of the surgery flag to 'Y'. Two registries had very little or no surgery recorded on the NCDR for this time period, and one registry had 80% or more.

Table 5a - Hypopharynx

Registry	cases	Cases having surgery	% having surgery
ECRIC	91	30	33.0
NWCIS	202	0	0.0
NYCRIS	185	54	29.2
OCIU	42	20	47.6
SWCIS	115	63	54.8
Thames	189	176	93.1
Trent	140	38	27.1
WMCIU	132	4	3.0

Table 5b - Larynx

Registry	cases	Cases having surgery	% having surgery
ECRIC	496	199	40.1
NWCIS	906	1	0.1
NYCRIS	916	336	36.7
OCIU	245	80	32.7
SWCIS	658	329	50.0
Thames	1005	850	84.6
Trent	559	155	27.7
WMCIU	549	6	1.1

Table 5c – Major salivary glands

Registry	cases	Cases having surgery	% having surgery
ECRIC	158	124	78.5
NWCIS	191	0	0.0
NYCRIS	162	110	67.9
OCIU	73	38	52.1
SWCIS	261	196	75.1
Thames	265	244	92.1
Trent	122	69	56.6
WMCIU	144	6	4.2

Table 5d - Nasopharynx

Registry	cases	Cases having surgery	% having surgery
ECRIC	71	18	25.4
NWCIS	91	0	0.0
NYCRIS	78	10	12.8
OCIU	37	4	10.8
SWCIS	86	33	38.4
Thames	182	145	79.7
Trent	591	332	56.2
WMCIU	57	1	1.8

Table 5e – Oral cavity

Registry	cases	Cases having surgery	% having surgery
ECRIC	573	429	74.9
NWCIS	838	4	0.5
NYCRIS	836	552	66.0
OCIU	319	226	70.8
SWCIS	836	613	73.3
Thames	1318	1182	89.7
Trent	591	332	56.2
WMCIU	681	19	2.8

Table 5f – Oropharynx

Registry	cases	Cases having surgery	% having surgery
ECRIC	375	208	55.5
NWCIS	672	1	0.1
NYCRIS	535	202	37.8
OCIU	169	115	68.0
SWCIS	537	357	66.5
Thames	817	728	89.1
Trent	390	149	38.2
WMCIU	423	9	2.1

4. Conclusions

- There is considerable variation in the recording of surgical treatments of head and neck cancer patients both in and between the three datasets.
- Variation is seen both in the proportion of patients recorded as having surgery and in the specificity of coding of the types of surgical procedures undertaken.
- The complexity of head and neck cancer surgery is not well reflected in the OPCS4 coding system.
- Further work is to be undertaken on identifying a way forward for changing the OPCS codes to more accurately reflect the complexity of head and neck cancer surgery.