National Oesophago-Gastric Cancer Audit
Progress Report 2014

An Audit of the care received by people with Oesophago-Gastric Cancer in England and Wales

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bsg BRITISH SOCIETY OF GASTROENTEROLOGY	**The British Society of Gastroenterology (BSG)** is the speciality society of gastroenterologists. It is one of the key partners leading the Audit.
RCR The Royal College of Radiologists	**The Royal College of Radiologists (RCR)** is the speciality society of radiologists. It is one of the key partners leading the Audit.

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Executive Summary

- The aim of the National Oesophago-Gastric (O-G) Cancer Audit is to measure the quality of care received by patients with oesophago-gastric cancer and high grade dysplasia (HGD) of the oesophagus in England and Wales.

- The Audit is based on prospectively-collected data on patients diagnosed with HGD or with invasive epithelial cancer of the oesophagus, gastro-oesophageal junction (GOJ) or stomach (ICD-10 codes C15 and C16), and aged 18 years or over.

- In this progress report, we describe patient characteristics and referral patterns, staging investigations, treatment planning and outcomes of palliative therapy. We also report for the first time on the management, treatment and short term outcomes of patients diagnosed with high-grade oesophageal dysplasia.

- Outcomes of curative surgery will be published separately, alongside consultant level outcomes in autumn 2014. The main reason for this separate publication is a delay in receiving linked data from the Health and Social Care Information Centre (HSCIC) which impacted on the ability to produce 30 and 90 day mortality data.

- The data collection period for this report was 1 April 2011 to 31 March 2013, with data on follow up therapy (such as surgery) entered until 30 September 2013. Data on 22,239 patients with an O-G tumour were submitted. NHS trusts submitted 465 records for patients diagnosed with high-grade oesophageal dysplasia. The overall case-ascertainment rate for newly diagnosed O-G cancer patients for the two year rolling cohort is 85.5 per cent. For surgical resections, the overall case-ascertainment rate for the two year period is 94.0 per cent.

- The submissions represent the largest national cohort of patients with newly diagnosed HGD of the oesophagus. The majority of these patients were referred after detection of symptoms (52.9 per cent), followed by referral from Barrett's surveillance (39.4 per cent). The most common initial therapeutic interventions for HGD were endoscopic, with Endoscopic Mucosal Resection (EMR) used in 39.6 per cent of cases and Radiofrequency ablation (RFA) used in a further 14.4 per cent. Surgical resection was used in only 5.6 per cent of cases.

- For patients with newly diagnosed O-G cancer, the percentage of patients diagnosed as a result of an emergency admission decreased from 16.0 per cent in 2009/10 to 12.8 per cent in 2012/13. The rate is still higher among patients with gastric cancer than those with oesophageal cancer, and for older patients. The rates vary from eight per cent to 23.0 per cent across the Strategic Clinical Networks (SCN).

- The percentage of O-G cancer patients managed with curative intent has increased from 35.9 per cent in 2009 to 37.6 per cent in 2012/13. Between 2009/10 and 2012/14, the percentage of patients receiving definitive chemoradiotherapy for oesophageal small cell

cancer (SCC) increased (up from 31.0 per cent to 35.0 per cent) with a corresponding decline in the use of curative surgery (down from 17.0 per cent to 14.0 per cent).

- Among patients managed with palliative intent, around three quarters received some form active treatment, with palliative chemotherapy being the most common option. Only half of all patients were able to complete their palliative chemotherapy treatment and the likelihood of completion was particularly low in patients of old age and low performance status.

- There were 3,321 patients who had endoscopic/radiological palliative therapy. The most common therapy was stent insertion (2,964 patients). A greater proportion of stents are now being placed using a combined fluoroscopic and endoscopic approach or just endoscopic approach and the overall success rate remains high (98.0 per cent).

Recommendations

1. **Diagnosis of HGD:** Given the mucosa appears flat endoscopically in a third of patients with high grade oesophageal dysplasia (HGD), it is important that endoscopists follow a rigorous biopsy protocol when performing Barrett's surveillance. Nearly 80.0 per cent of cases of HGD had the diagnosis confirmed by a second pathologist, it is important that Trusts seek to improve this figure further.

2. **Management of HGD:** A third of cases of HGD are still managed by surveillance alone despite the recent changes to the BSG (British Society of Gastroenterology) guidelines recommending endoscopic treatment over surveillance or oesophagectomy. It is important that NHS trusts consider all patients for active treatment of their HGD, and where local expertise is not available, refer patients to a specialist centre.

3. **Route to Referral:** A significant proportion of cases of O-G cancer are still diagnosed as a result of an emergency admission, with variation in this proportion across Strategic Clinical Networks (SCN). It is important that Networks identified as having a high proportion of patients diagnosed in this way seek to identify possible reasons for this, and make changes aimed at reducing rates in future.

4. **Staging Investigations:** According to current guidelines, cases of O-G cancer considered for curative therapy should undergo an Endoscopic Ultrasound Scan (EUS) or staging laparoscopy (as appropriate). There was still significant variation in uptake.

5. **Palliative Chemotherapy**: Completion rates are low in patients undergoing palliative chemotherapy. Initiation of such treatment in patients of old age or low performance status should be assessed and monitored carefully.

1 Introduction

The National Oesophago-Gastric (O-G) Cancer Audit was established to investigate whether the care received by patients with O-G cancer is consistent with recommended practice, and to identify areas where improvements can be made. It was commissioned by the Healthcare Quality Improvement Partnership (HQIP) and is one of five national cancer Audits currently being undertaken in England and Wales.

The overall aim of the Audit is to measure the quality of care received by patients with O-G cancer and high grade dysplasia (HGD) of the oesophagus in England and Wales. It will answer Audit questions related to:

1. whether clinical (pre-treatment) staging is performed to the standards specified in national clinical guidelines
2. whether decisions about planned curative or palliative treatments are supported by the necessary clinical data (staging, patient fitness, etc.)
3. access to curative modalities for suitable patients, such as neoadjuvant chemotherapy prior to surgical resection
4. the use of oncological and endoscopic/radiological palliative services
5. outcomes of care for patients receiving curative and palliative therapies

In this progress report, we will describe patient characteristics and referral patterns, staging investigations, treatment planning and outcomes of palliative therapy for patients diagnosed between 1 April 2011 and 31 March 2013.

We also report for the first time on the management, treatment and short term outcomes of patients diagnosed with HGD.

Outcomes of curative surgery will be published alongside consultant level outcomes in autumn 2014.

Key indicators used for this report (Table 1.1) were derived from best evidence and standards on the management and treatment of O-G cancer (see page 12, 2013 Annual NOGCA Report).

Table 1.1 Key indicators

Domain	Indicator
High grade oesophageal dysplasia	% with second biopsy % with diagnosis performed by second pathologist % with treatment plan agreed at MDT
Referral and diagnosis	% referred urgently via GP % referred via emergency admission
Staging investigation	% with CT scan % of curative patients with EUS, staging laparoscopy
Treatment planning	% with curative/palliative/no active treatment intent
Palliative therapy	% completing palliative chemotherapy

Service Organisation and Policy in England and Wales

During the reporting period of data collection for this report, the organisation of cancer services changed. Until 2013, cancer services within England and Wales were organised into Cancer Networks (28 Cancer Networks in England and two in Wales). For O-G cancer services, each Cancer Network contained one or more specialist cancer centres that provided curative surgical treatment and specialist radiology, oncology and palliative services to all patients living in the area. Diagnostic services and most palliative services continue to be provided by individual NHS organisations (units) within the network areas.

While some of these structures are still being maintained, the Cancer Networks have been replaced by a new governing structure, the Strategic Clinical Networks (SCN) (NHS Commissioning Board, 2012 [1]). It is the responsibility of SCNs to provide clinical and managerial support to Clinical Commissioning Groups (CCGs), Health and Wellbeing Boards (HWBs) and NHS England in order to improve regional healthcare (Department of Health [DH] & Public Health England [PHE], 2013 [2]). Their geographical boundaries are matched to NHS England Clinical Senate areas (DH & PHE, 2013 [2]), as shown in Figure 1-1 overleaf.

We report here at SCN level in response to these national organisational changes.

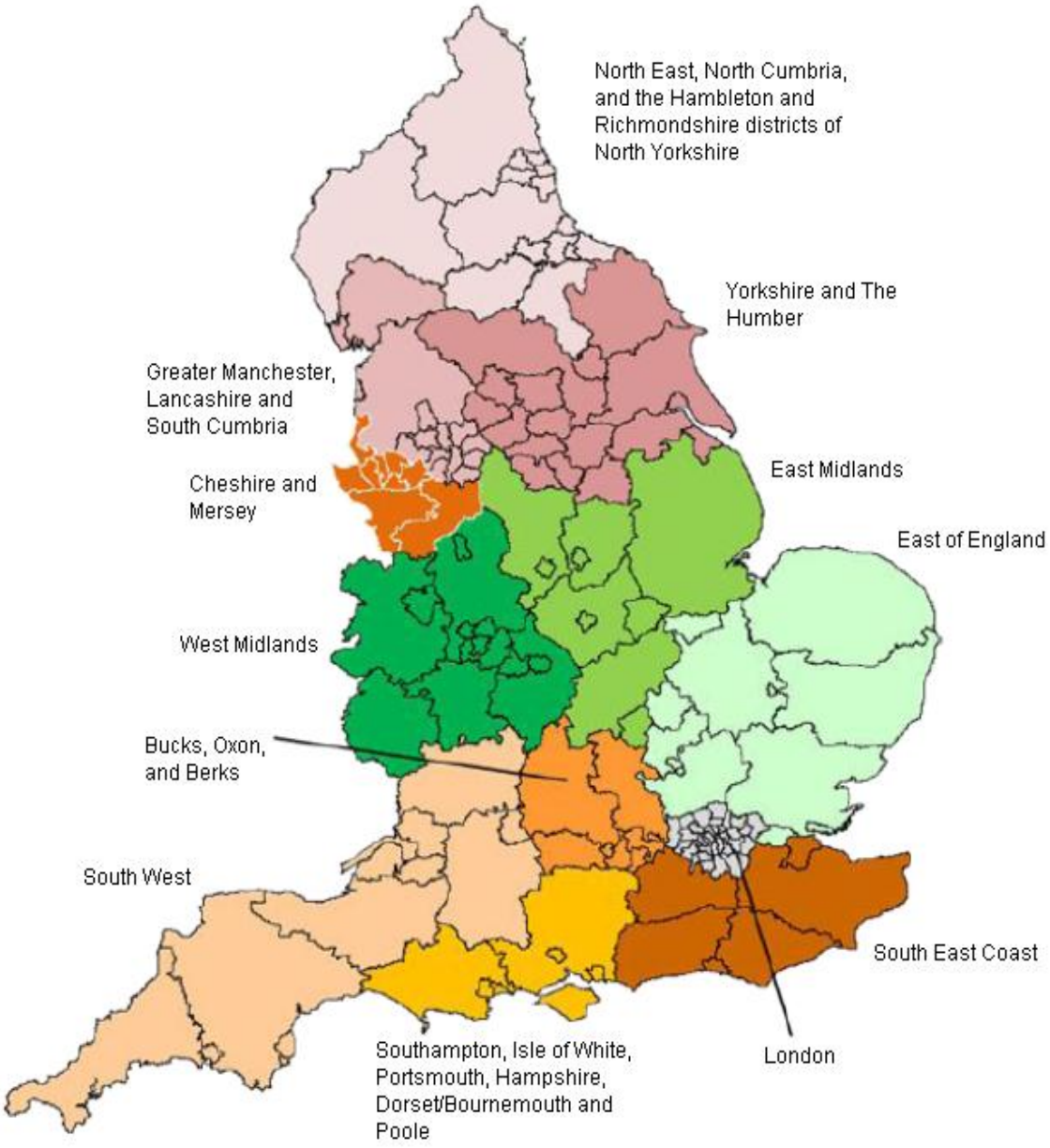


Figure 1-1 Strategic Clinical Networks 2014

2 Methods

Inclusion Criteria and Audit Method

The Audit is based on prospectively-collected data on patients diagnosed with high grade dysplasia (HGD) or with invasive epithelial cancer of the oesophagus, gastro-oesophageal junction (GOJ) or stomach (ICD-10 codes C15 and C16), and aged 18 years or over. The inclusion criteria are currently restricted to patients diagnosed in an NHS hospital in England or Wales.

For patients with oesophago-gastric (O-G) cancer, we are reporting on a two year patient cohort. This report describes the results of patients diagnosed between 1 April 2011 and 31 March 2013. For patients with HGD, we are reporting on a one year cohort. These patients were included in the data collection for the Audit since April 2012.

Changes to the Dataset

- As of 1 April 2012, the Audit moved to a slightly revised dataset.
- Changes to the dataset were made in response to comments from users and lessons learnt during the first Audit. These changes affect the analysis for some items (e.g. referral patterns) as slightly different items for the audit years 2011/12 and 2012/13 needed to be merged. Where this applies, it is highlighted in the corresponding text and tables.
- The dataset was revised by the Project Team and approved by the Clinical Reference Group, and other stakeholders. The Audit and the National Cancer Intelligence Network (NCIN) worked together to ensure that the revised dataset and the new Cancer Outcomes and Services Dataset were aligned as much as possible. A copy of the clinical datasheet and the data manual can be downloaded from the Audit website at: www.hscic.gov.uk/og.

Data Collection and Linkage to Other Datasets

The treatment planning of patients with O-G cancer takes place in the context of an NHS Multi-Disciplinary Team (MDT) meeting irrespective of whether they were diagnosed in the public or private sector, and the vast majority of patients in the Audit had received treatment in the NHS only.

Why this Progress Report does not make use of Linked Data Sources

The Audit routinely links to various sources of routine data prior to analysis, including the Hospital Episode Statistics (HES) in England, the Patient Episode Database Wales (PEDW) in Wales, and the Office for National Statistics (ONS) mortality data. The provider of these linked data sets, the Health and Social Care Information Centre, was unable to provide the data in time for the preparation of this report. Therefore, in this progress report, we only give results for indicators that can be derived from the audit data set. A full Annual Report using linked data sources will be made public once the linked data becomes available.

Statistical Analysis of Clinical Data

The results of the Audit are presented at national level and at the level of Strategic Clinical Networks. To show differences between the geographical regions, Network rates and 95 per cent confidence intervals (CI) are plotted against the overall rate, with Networks ordered according to the number of patients on whom data were submitted or estimated case ascertainment. English patients were allocated to the Clinical Network based on their NHS trust of diagnosis. Differences between the percentages of two or more groups were assessed using the chi-squared test. Where necessary, multiple logistic regression was used to adjust for potential confounders such as age, sex, and disease severity.

The variation in adjusted outcome rate of the NHS trusts was examined using a funnel plot (Spiegelhalter 2005 [3]). This plot tests whether the rate of any single NHS organisation differs significantly from the national rate. Two funnel limits were used that indicate the ranges within which 95.0 per cent (representing a difference of two standard deviations from the national rate) or 99.8 per cent (representing a difference of three standard deviations) would be expected to fall if variation was due only to sampling error.

Further details on the statistical approach are described in the 2013 Annual Report [4].

3 Participation

At the end of the data collection period, clinical data had been submitted by 153 (99.0 per cent) of the 154 individual English NHS trusts that provided O-G cancer care. This included all of the specialist cancer centres. Data on patients treated in Wales was provided by NHS Wales from the Welsh Cancer Information System (CaNISC) and covered all 13 Welsh NHS organisations. A final data extract was taken from the O-G cancer Audit IT system on 30 October 2013. The various data collection forms were linked to produce a single record for each patient. Duplicates and patients diagnosed prior to April 2011 were removed. This left 22,239 patients with O-G tumour data (Table 3.1).

Recruitment for the first cohort of patients diagnosed with high-grade oesophageal dysplasia (HGD) resulted in 465 submissions. Welsh NHS Boards did not submit any data for the HGD dataset.

Table 3.1 Data forms submitted on patients with O-G cancer by type of form and England/Wales, after removal of duplicates

Form	England		Wales		Total
	2011/12	2012/13	2011/12	2012/13	
Tumour	10,741	10,259	772	447	**22,239***
Primary chemo/radiotherapy	5,155	5,383	149	258	**10,956***
Endo-Palliative therapy (including stenting)	1,557	1,581	123	62	**3,325***
Surgery	2,253	2,573	89	84	**5,008***
Pathology	2,295	2,228	99	59	**4,688***

*Country was unknown for 51 records.

Overall Case-Ascertainment

The Audit used Hospital Episode Statistics (HES) to estimate how many of the patients diagnosed between 1 April 2011 and 31 March 2012 had been submitted by English NHS trusts. We estimated the number of patients diagnosed in England with O-G cancer and derived the number of patients whose first recorded of O-G cancer (ICD code: C15/C16) in Hospital Episode Statistics (HES) fell within the Audit period. The estimated number of cases was 13,003 for the 2011/12 data collection period.

As HES data were not available in time to estimate case-ascertainment rates for the 2012/13 submissions we used the previous year's HES data as a proxy.

Extrapolating the HES estimates from 2011/12, we would have expected a total of 26,006 tumour records over the two year reporting period. Given the number of tumour records submitted for the Audit (n=22,239), the overall case-ascertainment rate for newly diagnosed O-G cancer patients for the two year rolling cohort is 85.5 per cent.

For surgical resections, a comparison could be made using HES, based on the 2011/12 estimates. These yielded 2,567 surgical resections recorded in the HES dataset. Comparing this with the 5,008 resections in the current dataset (2,253 resections from the data collection period 1 April 2011 to 31

March 2012 and 2,573 resections in the data collection period 1 April 2012 to 31 March 2013) gives an overall case-ascertainment rate for O-G resections for the two year period is 94.0 per cent.

The data submissions by English NHS trusts could not be judged for oncological or endoscopic/radiological palliative therapies due to the lack of a reliable denominator.

Completeness of Submitted Data

Data completeness is a key issue in ensuring fair comparisons across NHS trusts and is of particular importance for risk-adjustment when comparing outcomes.

Since April 2012, a number of key items were made mandatory in the O-G cancer dataset (such as performance status and ASA grade) and these items are now available with 100 per cent completeness. For example, in the 2011/12 reporting period, pre-treatment M-stage data item (important determinant of whether treatment intent will be curative or palliative) had a rather low level of completeness (72.2 per cent) and is now available on all patients.

For the HGD dataset, the majority of data items are mandatory. Data completeness for the five non-mandatory HGD data items was generally good, but was poor for the items ‘length of circumferential columnar lining’ and ‘maximum length of columnar lining’. For the majority of NHS trusts, both of these items were less than 60.0 per cent complete. Data completeness was variable across NHS trusts (Annex 3).

Many NHS trusts have achieved a high level of case-ascertainment in this Audit. We commend their staff for the effort and diligence in this on-going Audit. For a minority of others, participation was limited, either because few patients were registered or because clinical information within records was incomplete. It is unclear whether this was because the data were not available or there was a failure to input the data. Given their central role in the organisation of care, cancer centres should be taking the lead in the implementation of procedures for monitoring of treatment selection and outcomes of care within their care networks, including participation in the National O-G Cancer Audit.

4 Diagnosis, Treatment Plan and Short Term Outcomes of HGD Patients

English NHS trusts have submitted data on 465 patients newly diagnosed with high-grade glandular dysplasia (HGD) of the oesophagus to the audit since 1 April 2012. The collection of data on this cohort is an important achievement and will yield insight into disease progression and long-term treatment outcomes for this group of patients.

Current British Society of Gastroenterology Guidelines for Barrett's Oesophagus with High Grade Dysplasia

- Diagnostic biopsy protocol: Systematic, four-quadrant biopsies every 2cm according to the 'Seattle protocol'. In addition biopsies should be taken from any visible nodules.
- Confirmation of the diagnosis of HGD by at least one other pathologist with experience in Gastro Intestinal (GI) histopathology.
- All patients with HGD should be discussed at the specialist Multi-Disciplinary Team (MDT) meeting for O-G cancer.
- For HGD and Barrett's related adenocarcinoma confined to the mucosa, endoscopic therapy is preferred over oesophagectomy or endoscopic surveillance.

(Fitzgerald et al 2014 [5])

Patient Characteristics and Referral Pathway

Of the 465 patients, 333 (71.6 per cent) were male and 132 (28.4 per cent) were female. The median age was 71 years for males and 75 years for females.

The majority of patients were referred after detection following the investigation of symptoms (symptomatic referral, n=246, 52.9 per cent), while 183 (39.4 per cent) were referred from Barrett's surveillance. Source of referral was unknown for 36 (7.7 per cent) patients.
79.4 per cent of cases of HGD had the diagnosis confirmed by a second pathologist. Once diagnosed, the median time between diagnosis and treatment was 36 days (IQR 18-78). Information on diagnosis, treatment decision date or both was missing for 114 patients.

It is interesting to note that over a third of patients with HGD had mucosa that appeared flat (Table 4.1). The endoscopic appearances of dysplasia may be subtle and these findings highlight the importance of careful mucosal inspection and the need for multiple biopsies throughout the entire length of the Barrett's segment in line with the Seattle protocol.

Table 4.1 Morphology and lesion focality

Appearance of HGD	HGD Lesion (n=465)				
	Unifocal		Multi-focal		Not known
	n	%	n	%	
Flat mucosa	38	35.0	34	43.0	26
Nodular lesion	69	63.0	45	56.0	25
Depressed lesion	3	2.0	1	1.0	4
Not known	26		20		174
Total	**136**		**100**		**229**

Treatment Plan

There appeared to be excellent adherence to the recommendation that all cases of HGD are discussed at the specialist MDT to plan treatment, with 86 per cent of patients being discussed at these meetings.

Overall, 94.0 per cent of patients with HGD were managed non-surgically, with the majority of cases treated with either endoscopic mucosal resection (EMR) (39.6 per cent) or radiofrequency ablation (RFA) (14.4 per cent) used in (Figure 4-1). A further 29.7 per cent did not undergo therapeutic intervention, and were entered into regular surveillance programmes. Other treatment modalities such as argon plasma coagulation, photodynamic therapy, laser therapy, multipolar electrocautery were rarely used.

Figure 4-1: HGD treatment modalities

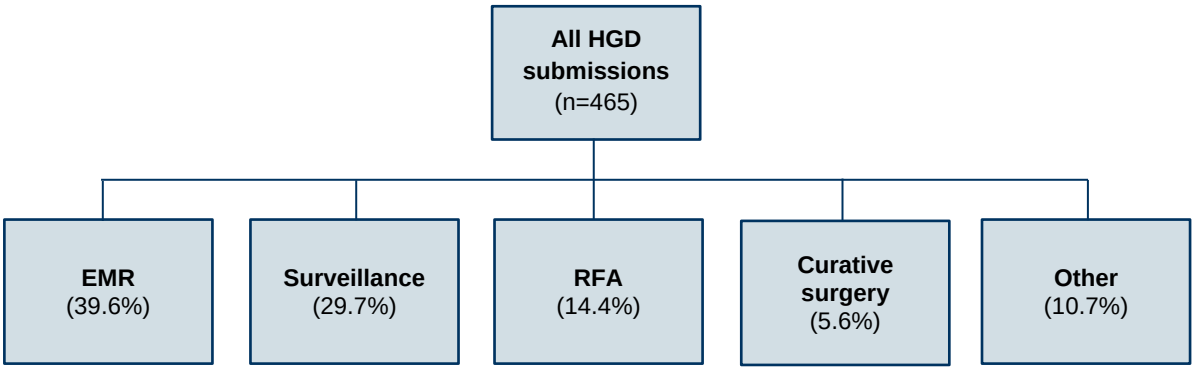


Table 4.2 provides an overview on treatment modality by age at diagnosis. As expected, the proportion of patients entering planned surveillance increased with age, with all patients aged 90 years or over undergoing surveillance rather than invasive treatment.

Table 4.2 Treatment modality for 465 patients with HGD, by age group

Treatment modality	Age of diagnosis (years)							
	Under 60		60 to 69		70 to 79		80 and over	
	n	%	n	%	n	%	n	%
Oesophagectomy	5	8.1	7	5.3	13	7.9	<5	
EMR/ESD	31	50.0	65	48.9	69	42.1	34	32.1
RFA	15	24.2	19	14.3	23	14.0	10	9.4
Other Ablative Approach	<5		6	4.5	11	6.7	5	4.7
Surveillance	9	14.5	30	22.6	46	28.1	53	37.7
No Treatment	0		6	4.5	<5		<5	

Use of Endoscopic Mucosal Resection /Endoscopic Submucosal Dissection

Data was submitted on the use of Endoscopic Mucosal Resection /Endoscopic Submucosal Dissection (EMR/ESD) for 226 patients. Procedures were most frequently performed for both diagnostic and therapeutic purposes (n=163, 72.1 per cent), while in 10.6 per cent (n=24) of cases, it was performed for diagnostic purposes alone, and in 17.3 per cent (n=39) the intent was solely therapeutic.

EMR/ESD resulted in complete excision of the lesion without the need for further intervention in 133 (58.9 per cent) patients (Table 4.3). In around one third of patients, EMR/ESD resulted in histological upgrading to cancer, while in a further one in 10 patients, no evidence of HGD was found in the resected specimen. These findings are in keeping with previous studies, which have suggested EMR can alter the histological diagnosis in up to 30.0 per cent of patients and highlight the importance of ensuring all visible nodules are resected prior to the application of ablative therapies.

(Chennat et al 2009 [6], Moss et al 2010 [7], Peters et al 2008 [8], Chung et al 2011 [9])

Table 4.3 Pathology and results of EMR/ESD for patients who had this treatment modality

Results of EMR/ESD	Pathology of EMR/ESD (n=226*)							
	No high grade dysplasia		High grade dysplasia		Intramucosal carcinoma		Submucosal carcinoma	
	n	%	n	%	n	%	n	%
Complete excision	14	10.5	77	57.9	34	25.6	8	6.0
Incomplete, follow up oesophagectomy	<5		<5		5	33.3	6	40.0
Incomplete, follow up surveillance	<5		27	65.9	8	19.5	<5	
Incomplete, follow up EMR/ESD	5	23.8	13	61.9	<5		<5	
Complete excision, follow up with endoscopic therapy	<5		9	56.3	5	31.3	<5	
Overall	**24**	**10.6**	**130**	**57.5**	**55**	**24.3**	**17**	**7.5**

Key Findings from the HGD Analysis

- The majority of patients newly diagnosed with HGD were referred after detection of symptoms (52.9 per cent), followed by referral from Barrett's surveillance (39.4 per cent).
- The most common initial therapeutic interventions for HGD were endoscopic, with EMR used in 39.6 per cent of cases and RFA used in a further 14.4 per cent, while surgical resection was only used in 5.6 per cent of cases.
- Obtaining a larger histological specimen through EMR/ESD resulted in up- or down-staging of the histological diagnosis in 42.5 per cent of cases.

5 Oesophago-Gastric (O-G) Cancer Patient Characteristics, Referral and Staging Investigations

This chapter provides a summary of the 22,239 patients enrolled in the Audit, who were diagnosed between 1 April 2011 and 31 March 2013. Follow up care could be entered until 30 September 2013.

Table 5.1 Distribution of O-G cancer tumours across the various sites

Site	%	Sub-site	Number of patients	%
Oesophagus	49.8	Upper third	879	7.9
		Middle third	3,009	27.2
		Lower third	7,181	64.9
G-O junction[1]	21.8	Siewert I	2,072	42.8
		Siewert II	1,352	28.0
		Siewert III	1,413	29.2
Stomach	28.5	Fundus	936	14.8
		Body	3,201	50.5
		Antrum	1,341	21.2
		Pylorus	855	13.5
Total			**22,239**	

[1] Tumours of the G-O junction are described using the 3 category Siewert classification [Siewert et al 1996 [10]]:

I. Adenocarcinoma of the distal oesophagus, the centre of which is within 2-5cm proximal to the anatomical cardia. It may infiltrate the gastro-oesophageal junction from above.
II. True junctional adenocarcinoma, the centre of which is within 2cm above or below of the anatomical cardia.
III. Subcardial gastric adenocarcinoma the centre of which is within the 5cm distal to the anatomical cardia. It may infiltrate the gastro-oesophageal junction from below.

The disease affected a broad range of patients. O-G cancer was twice as common in men as women. However, there was wide variation in this distribution across cancer sites and types. For instance, men were four times more commonly affected by GOJ tumours compared to women, while oesophageal SCC affected men and women equally. Patients were classified into five groups (squamous cell carcinomas (SCC) of the oesophagus, adenocarcinomas (ACA) of the upper and middle oesophagus, ACA of the lower third of the oesophagus and Siewert type I tumours, Siewert type II and type III tumours, and tumours of the stomach) according to the site and histology of their tumour (Table 5.2).

Table 5.2 Summary of patient characteristics by type of tumour, including percentage of patients with different tumour sites

	Oesophageal SCC		Oesophageal Upper ACA		Oesophageal Lower / SI		GOJ SII/ SIII		Stomach		Total
Number of Patients											
	n	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**	
Total	**4,578**	**20.6**	**1,392**	**6.3**	**7,171**	**32.3**	**2,765**	**12.4**	**6,333**	**28.5**	**22,239**
Women	2,281	32.5	378	5.4	1,443	20.6	601	8.6	2,312	33.0	****7,015**
Men	2,293	15.1	1,012	6.7	5,717	37.6	2,155	14.2	4,010	26.4	****15,187**
Median age (years)											
Women	75		78		74		74		76		**75**
Men	70		72		69		70		74		**71**
Performance Status[1] ≥3	574	15.4	176	16.3	696	11.8	240	10.4	1,018	20.2	**15.0**
Patient with ≥1 comorbidity	1,543	33.7	408	29.3	2,560	35.7	936	33.9	2,261	35.7	**34.7**

Key: SCC=squamous cell carcinoma/ACA=adenocarcinoma;/SI, SII, SIII= Siewert I, II, III;

[1] Performance status based on Eastern Cooperative Oncology Group (ECOG) Score for performance status in cancer patients. 0 denotes perfect health and 4 a patient who is bed-bound, completely disabled and unable to carry out any self-care. Patients scoring 3 or more are capable of only limited self-care, confined to bed or chair >50% of waking hours.

** Sex was unknown for 37 patients

Figure 5-1 Age at diagnosis (years) by type of tumour and sex

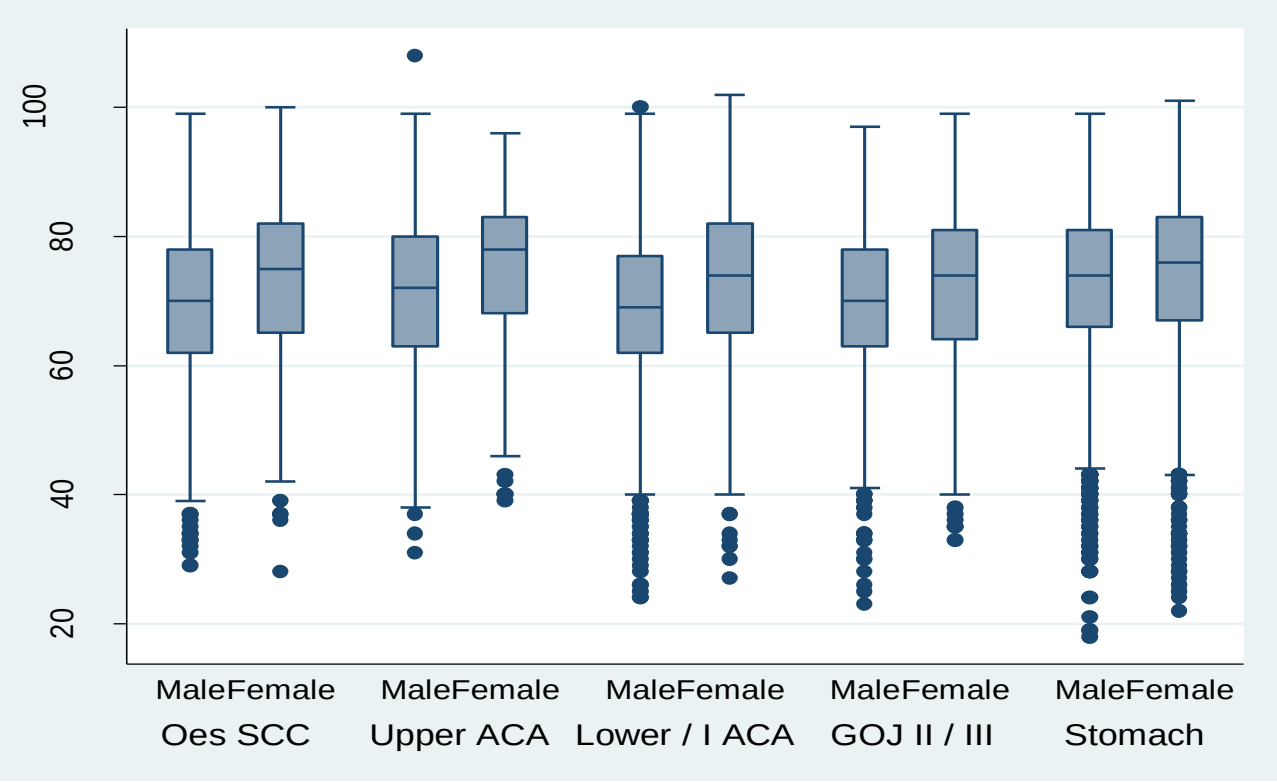


Figure 5-1 shows the age at diagnosis by type of tumour and sex. Box and whisker plots illustrate the distribution of cases for each subgroup. The boxes indicate the lower and upper quartile with the horizontal line in the box indicating the median. The whiskers indicate age ranges within the inter-quartile range. Dots outside the whiskers represent outlying values.

Referral Patterns

The Audit investigates three distinct routes to diagnosis:

- referrals from a general practitioner (GP) which were sub-classified as urgent (suspected cancer) or non-urgent,
- referral after an emergency admission (e.g. via accident and emergency department or medical admissions unit), and
- 'other hospital referral' for referrals by a hospital consultant from a non-emergency setting.

We previously highlighted that about 16.0 per cent of cases of O-G cancer were diagnosed following an emergency admission and that this group of patients were significantly less likely to be considered for curative therapy (Palser et al 2013 [11]).

Although most patients were diagnosed with O-G cancer as a result of referral from their GP (Table 5.3), a significant number are still diagnosed following an emergency admission; this proportion has decreased from 15.9 per cent in 2009/2010 to 13.2 per cent in 2012/13.

The proportion of gastric cancers diagnosed following a GP referral was lower than for oesophageal cancers, and gastric cancers were correspondingly more likely to be diagnosed as a result of an emergency admission (23.8 per cent in comparison to 10.4 per cent).

The proportion of patients diagnosed after an emergency admission increases with age at diagnosis, for both oesophageal or GOJ and stomach cancers and decreases in the very old (Table 5.4).

Table 5.3 Source of referral among O-G cancer patients, in England and Wales

Source of referral	Oesophageal or GOJ tumour		Stomach tumour		Overall	
	n	%	n	%	n	%
Emergency admission	1,536	10.4	1,381	23.8	2,917	14.2
GP referral	10,434	70.6	3,185	54.8	13,619	66.1
Other hospital referral	2,811	19.0	1,249	21.5	4,060	19.7
Total	**14,781**		**5,815**		**20,596**	
Missing	1,125		518		1,643	

1,643 observations are reported as missing since source of referral was previously not a mandatory item and the current option 'not known' is considered here as missing data

Table 5.4 Patients diagnosed as a result of an emergency admission, by age at diagnosis (years)

Tumour type	Under 60		60 to 69		70 to 79		80 to 89		90 and over		Missing
	n	%	n	%	n	%	n	%	n	%	n
Oesophageal or GOJ	194	12.7	336	22.0	418	27.3	464	30.3	119	7.8	5
Stomach	154	11.2	215	15.6	410	29.8	474	34.4	124	9.0	4

The total number reported here is lower than the total number who were referred by emergency admission since ´age at diagnosis´ was missing for 9 patients

In 2012, some changes were introduced to the data collection system to try to elicit the source of 'other hospital referrals', since these patients were more likely to be considered for curative therapy (Palser et al 2013 [7]).

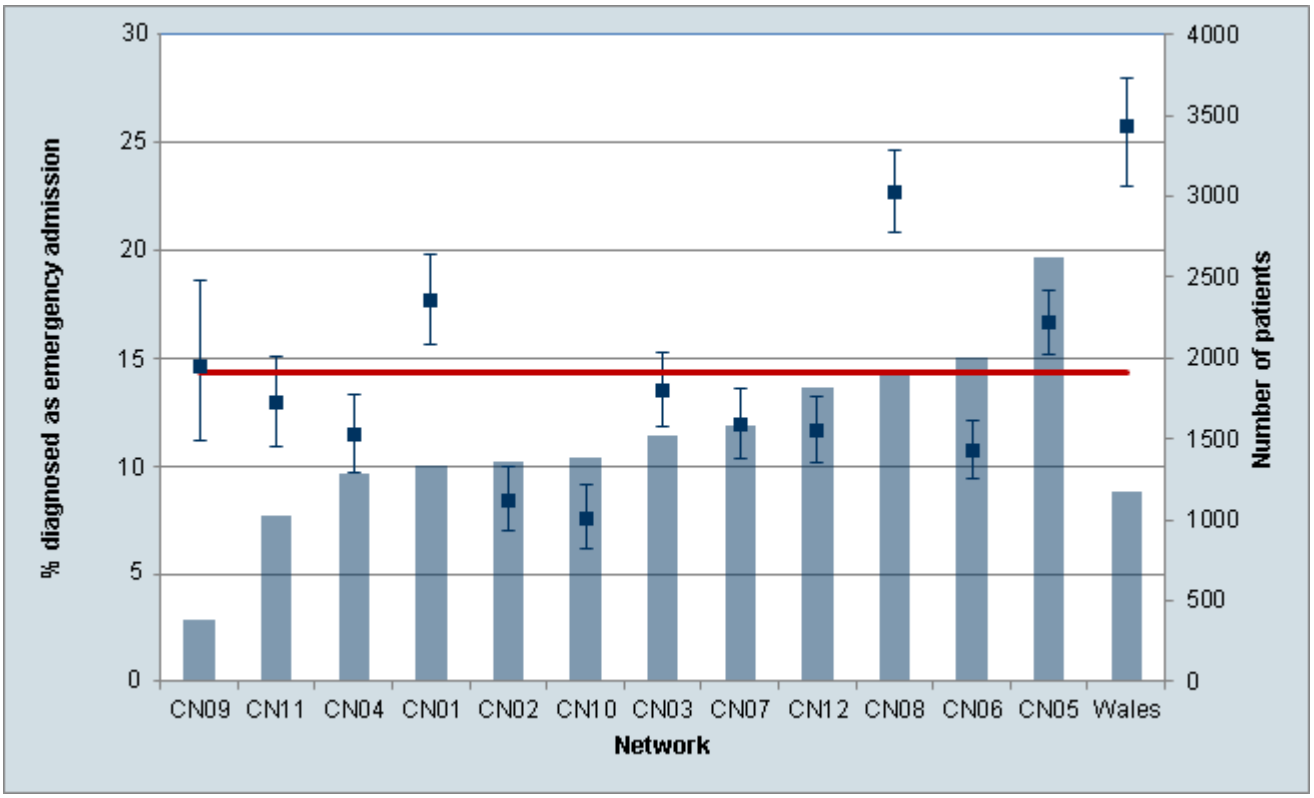
Table 5.5 summarises the results of the source of referral for 2014 data only, showing that a small proportion of patients were referred from Open Access Endoscopy, or from Barrett's surveillance.

Table 5.5 Source of referral among O-G cancer patients, in England and Wales, for 2014 audit data only (for patients diagnosed between 1 April 2012 and 31 March 2013)

Source of referral	Oesophageal or GOJ tumour		Stomach tumour		Overall	
	n	%	n	%	n	%
Following an emergency admission	733	9.6	602	21.6	1,355	12.8
Referral from a General Practitioner	5,176	67.7	1,433	51.5	6,609	63.4
Referral from a consultant	1,319	17.3	621	22.3	1,940	18.6
Open Access Endoscopy	106	1.4	43	1.5	149	1.4
From Barrett's surveillance	61	0.8	0	0.0	61	0.6
Not known	247	3.2	86	3.1	333	3.2
Total	**7,642**		**2,785**		**10,427**	
Missing	202		94		296	

Across SCNs, there was a substantial variation in the proportion of cases diagnosed as a result of an emergency admission (Figure 5-2). Three SCNs had particularly high proportions of patients diagnosed as an emergency. This is of concern as this group of patients is less likely to have a curative treatment plan, and therefore needs further investigation at a local level.

Figure 5-2 Variation in the proportion of patients diagnosed after an emergency admission, by SCNs



Among patients referred by their GP where cancer was not suspected, the proportion marked as urgent was higher for oesophageal or GOJ tumours (74.1 per cent) than for gastric cancer (65.2 per cent). For both sites, there was a significant trend towards a greater proportion of urgent referrals with increasing age. The trend was significant after adjusting for sex, comorbidities and performance status.

Key Findings on Referral Patterns

- The percentage of patients diagnosed as a result of an emergency admission appears to be decreasing slowly. This percentage is higher for gastric than oesophageal cancer, and for older patients. The difference in percentages for oesophageal and gastric cancer could be due to the fact that early symptoms of oesophageal cancer (e.g. dysphagia) are easier to recognise, while gastric cancer tends to present later with less specific symptoms and signs (e.g. early satiety, anaemia and weight loss).
- Variations across SCNs both in the percentage of patients diagnosed after emergency admission are substantial. These variations should be investigated further.

Staging Investigations and Treatment Planning

This chapter describes the use of Computer Tomography (CT), endoscopic ultrasound (EUS) and staging laparoscopy in staging.

With more than 30.0 per cent of patients being considered for curative therapy, it is crucial that appropriate staging investigations are used to select this group of patients. Initial staging is aimed at ruling out the presence of metastatic disease with a CT scan and, increasingly a PET-CT scan. If curative therapy is being considered, more precise local staging is recommended e.g. EUS or staging laparoscopy. In the last report, use of CT was consistent with recommended practice, but use of EUS and staging laparoscopy for patients with a curative treatment plan was lower than expected.

The Audit dataset questions that related to the use of staging investigations were not mandatory. As a result, the data quality in this field was variable for different NHS trusts. We therefore excluded from analysis in this chapter NHS trusts where less than 60.0 per cent of patients were reported to have had an initial staging CT, and NHS trusts where no patients were reported to have had an EUS or staging laparoscopy.

Among the 20,013 patients judged to have good staging data, 89.9 per cent had a CT scan as part of their initial staging. The percentage with a CT scan decreased significantly with increasing age, and to a lesser extent, with worsening of performance status (Table 5.6). Variation in reported use of CT, EUS and staging laparoscopies across SCNs are reported in Figure 5-3, Figure 5-4 and Figure 5-5.

Table 5.6 Percentage of patients who were reported to have had a CT scan, by age and performance status

Age Group (Years)	Performance status - %					
	0	1	2	3	4	Total
Under 60	92.1	93.6	93.5	93.0	87.9	**92.7**
60 – 69	92.7	91.4	91.3	91.6	91.7	**91.9**
70 – 79	91.0	92.2	90.3	88.3	77.8	**90.7**
80 - 89	89.5	90.0	88.3	83.1	73.5	**87.1**
90 and over	75.0	80.2	68.9	71.0	68.6	**71.8**
Total	**91.7**	**91.5**	**88.8**	**85.1**	**77.4**	**89.9**

NHS organisations with a percentage <60% CT were excluded from the analysis.

Figure 5-3 Proportion of patients who were reported to have had a CT scan, by SCN

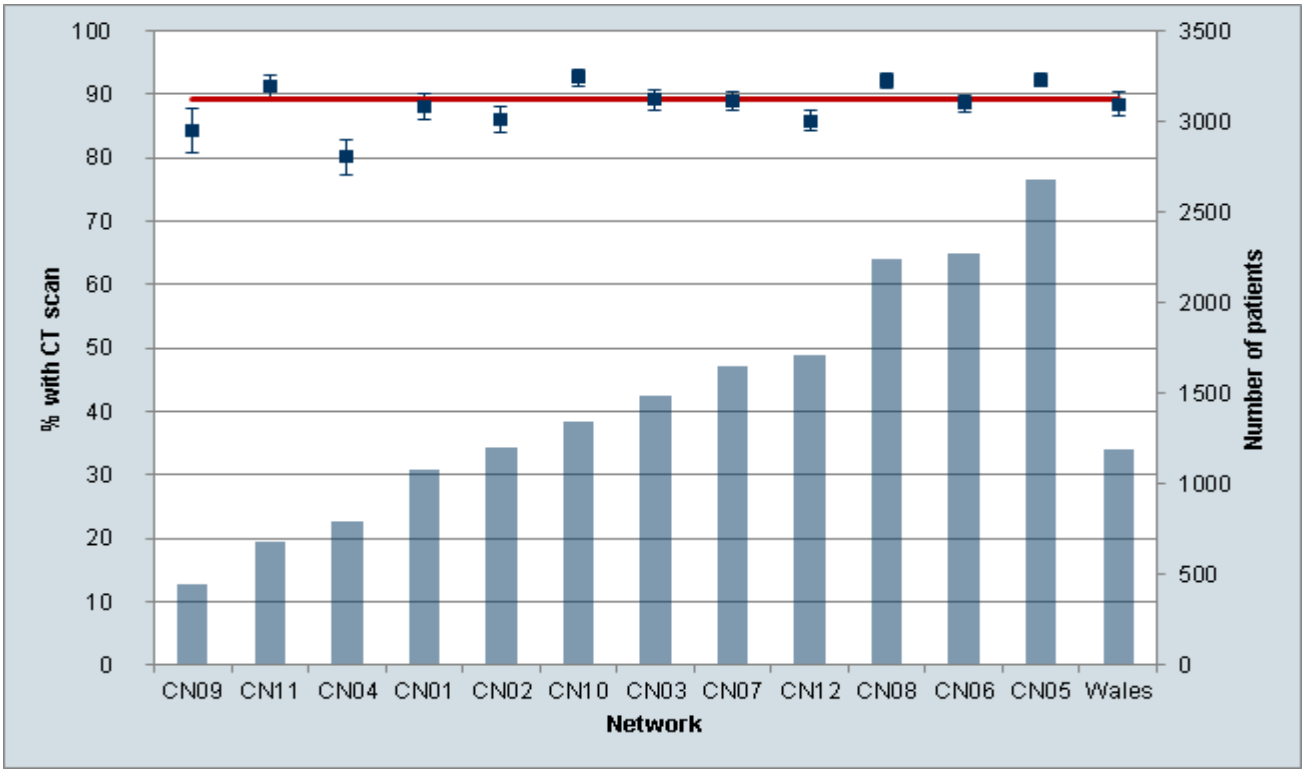


Figure 5-4 Proportion of patients with oesophageal or Siewert I tumours being managed with curative intent reported to have had a CT scan and EUS, by SCN

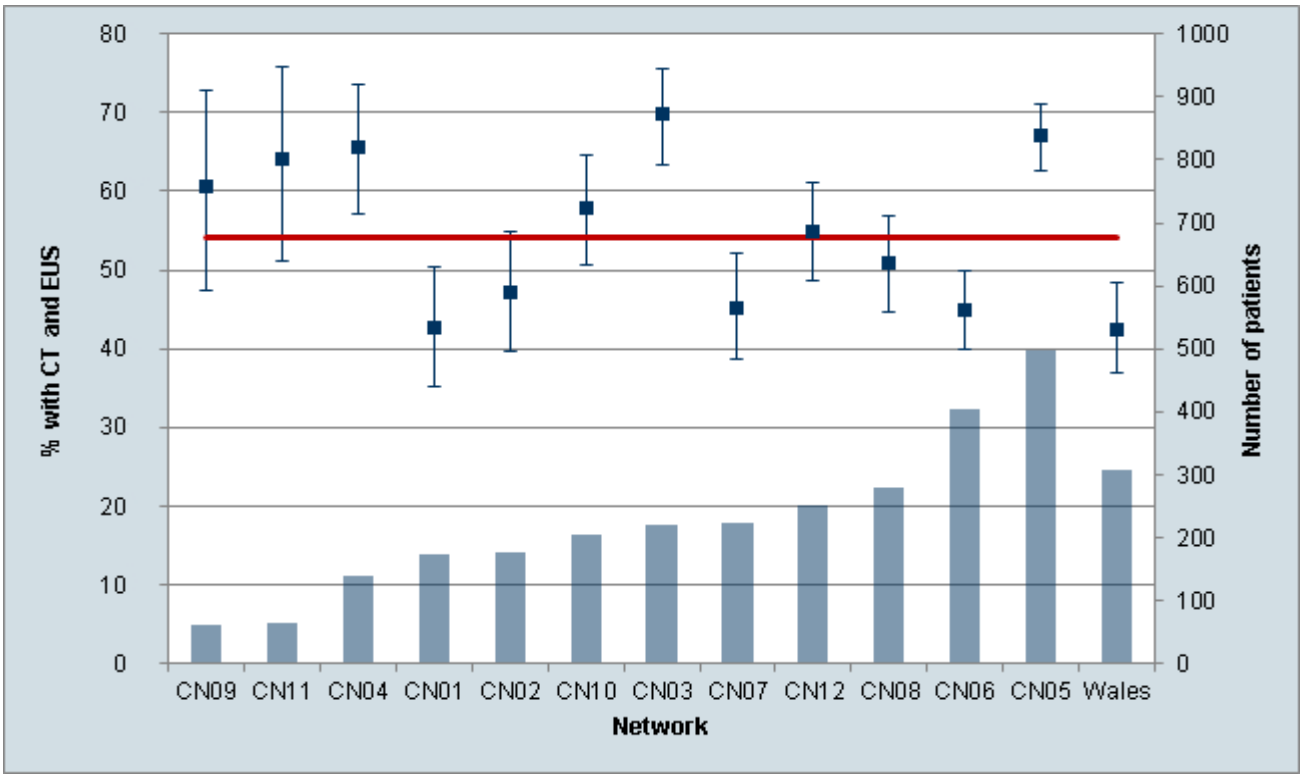
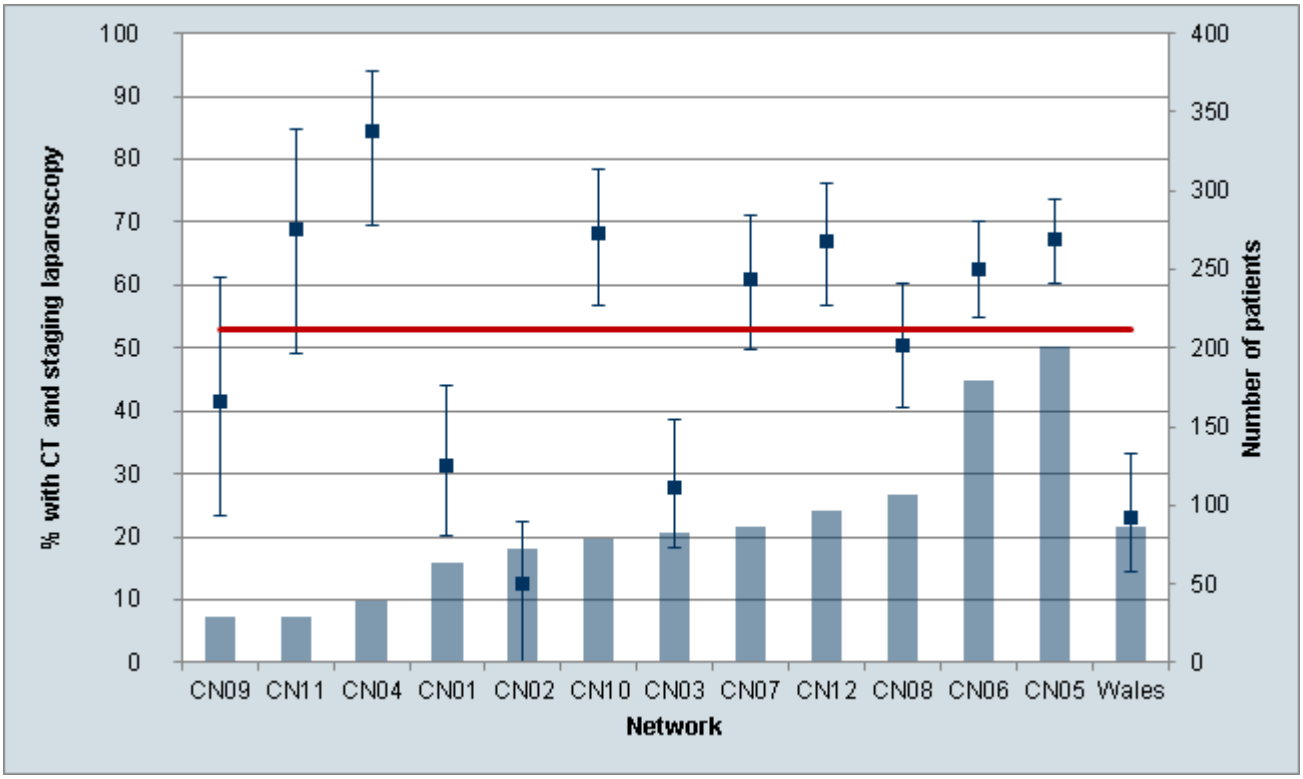


Figure 5-5 Proportion of patients with gastric or Siewert II/III tumours being managed with curative intent who were reported to have had a CT scan and staging laparoscopy, by SCN

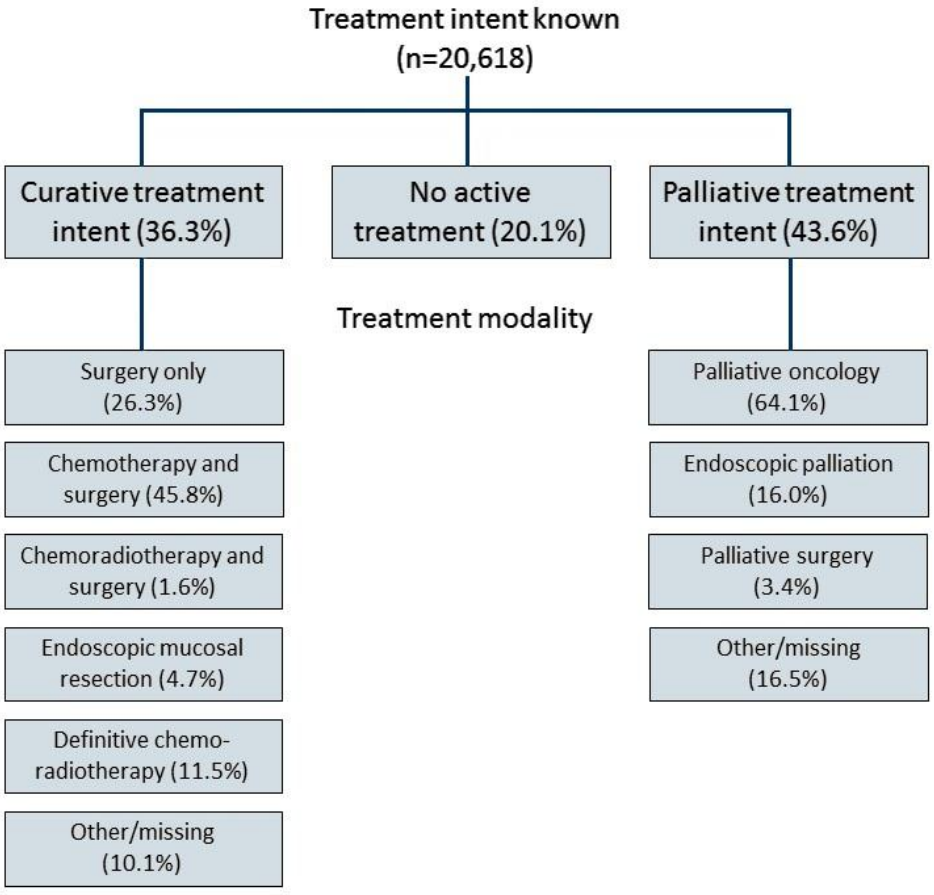


Treatment Planning

Once staging of O-G cancer has determined the extent of the disease, decisions regarding whether curative or palliative treatment is appropriate need to be taken at the Upper Gastro-Intestinal Team MDT meeting. Decisions need to take account of both patient factors (e.g. comorbidities, nutritional status, and patient preferences) and staging information.

The treatment plan intent was completed for 20,618 (92.0 per cent) patients in the Audit. For the remaining patients, treatment intent was unknown. Where treatment intent was documented 36.3 per cent had a curative treatment plan. Coding of treatment intent and modality was missing or inconsistent for a small proportion of patients, notably for patients with palliative treatment intent that were coded with the modality ´no active treatment (supportive care)', (Figure 5-6).

Figure 5-6 O-G cancer patients treatment intent and modality



Curative Intent

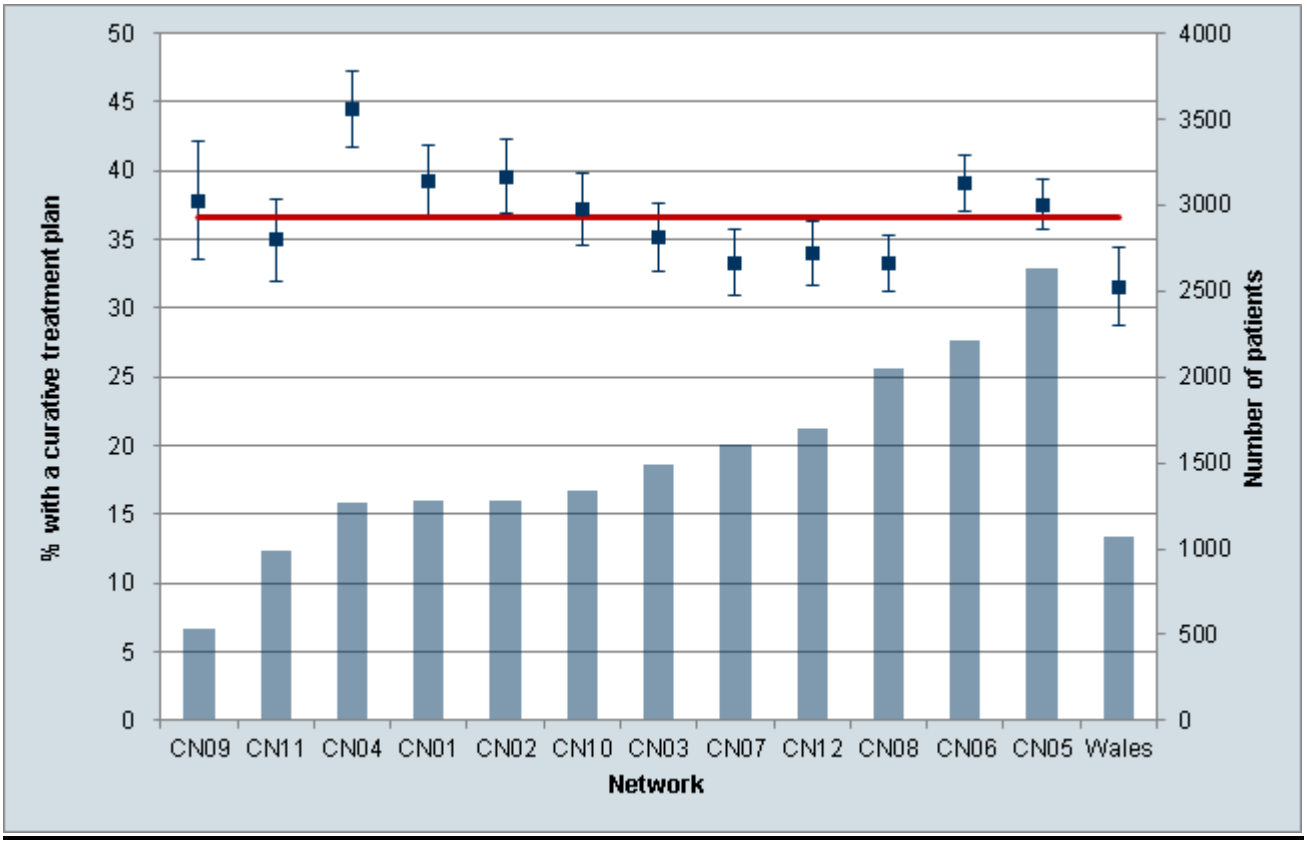
Curative treatment intent was highest among patients with a GOJ SII/III tumour (40.7 per cent) and lowest for patients with a tumour in the stomach (31.9 per cent) (Table 5.7). Figure 5-7 demonstrates the variation in the proportion managed with curative intent across SCNs. Items on treatment intent and modality have become mandatory since 2012.

Analysis of the 2012/13 data alone reveals that 37.6 per cent had a curative treatment plan, 47.7 per cent had a palliative care treatment plan and 14.8 per cent were referred for best-supportive care only.

Table 5.7 Treatment intent by type of tumour, 2011 to 2013 data

	Oesoph SCC		Oesoph Adenoca Upper/Mid		Oesoph Adenoca Lower/SI		GOJ SII/SIII		Stomach		Missing	TOTAL	
	n	%	n	%	n	%	n	%	n	%	n	n	%
Curative	1,448	34.3	415	32.7	2,705	40.3	1,043	40.7	1,871	31.9	29	**7,453**	**36.3**
Palliative	2,720	65.7	856	67.4	4,005	60.0	1,519	59.3	4,001	68.1	35	**13,101**	**63.7**
Total	**4,139**		**1,271**		**6,710**		**2,562**		**5,872**		**11**	**20,618**	
Missing	364		121		461		203		461		11	**1621**	

Figure 5-7 Proportion of O-G cancer patients managed with curative treatment plans, by SCN



The type of curative therapy planned according to tumour site is shown in Table 5.8. Curative surgery with or without additional oncological therapy was the main curative approach for all oesophageal adenocarcinomas and gastric cancers. But for oesophageal SCC both surgery (with or

without additional oncological therapy) and definitive oncological therapy were frequently used as the planned curative modality.

Since 2009/10, the proportion of patients with SCC undergoing surgery alone has fallen from 17.0 per cent to 13.7 per cent, while use of definitive chemoradiotherapy has increased from 31.0 per cent to 35.1 per cent. This suggests clinicians are increasingly choosing the least invasive modality where survival outcomes are comparable.

Table 5.8 Curative treatment modalities used, by tumour type

	Oesoph SCC		Oesoph Adenca Upper/Mid		Oesoph Adenca Lower/SI		GOJ SII/SIII		Stomach		Missing		TOTAL	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Surgery Alone	206	13.7	147	33.6	606	21.8	228	21.9	925	46.8	4	5.3	**2,112**	**27.2**
Radiotherapy Alone	246	16.3	44	10.1	204	7.3	62	6.0	83	4.2	3	4.0	**639**	**8.3**
Chemotherapy and Surgery	410	27.2	164	37.5	1,526	54.9	639	61.4	825	41.7	22	29.3	**3,564**	**46.0**
Definitive Chemo - radiotherapy	530	35.1	36	8.2	215	7.7	53	5.1	42	2.1	8	10.7	**876**	**11.3**
Chemo - radiotherapy and surgery	50	3.3	5	1.1	33	1.2	11	1.1	16	0.8	0	0.0	**115**	**1.5**
Endoscopic mucosal resection	67	4.4	41	9.4	198	7.1	48	4.6	87	4.4	1	1.3	**441**	**5.7**
Total	**1,509**		**437**		**2,782**		**1,041**		**1,978**		**38**		**7,747**	

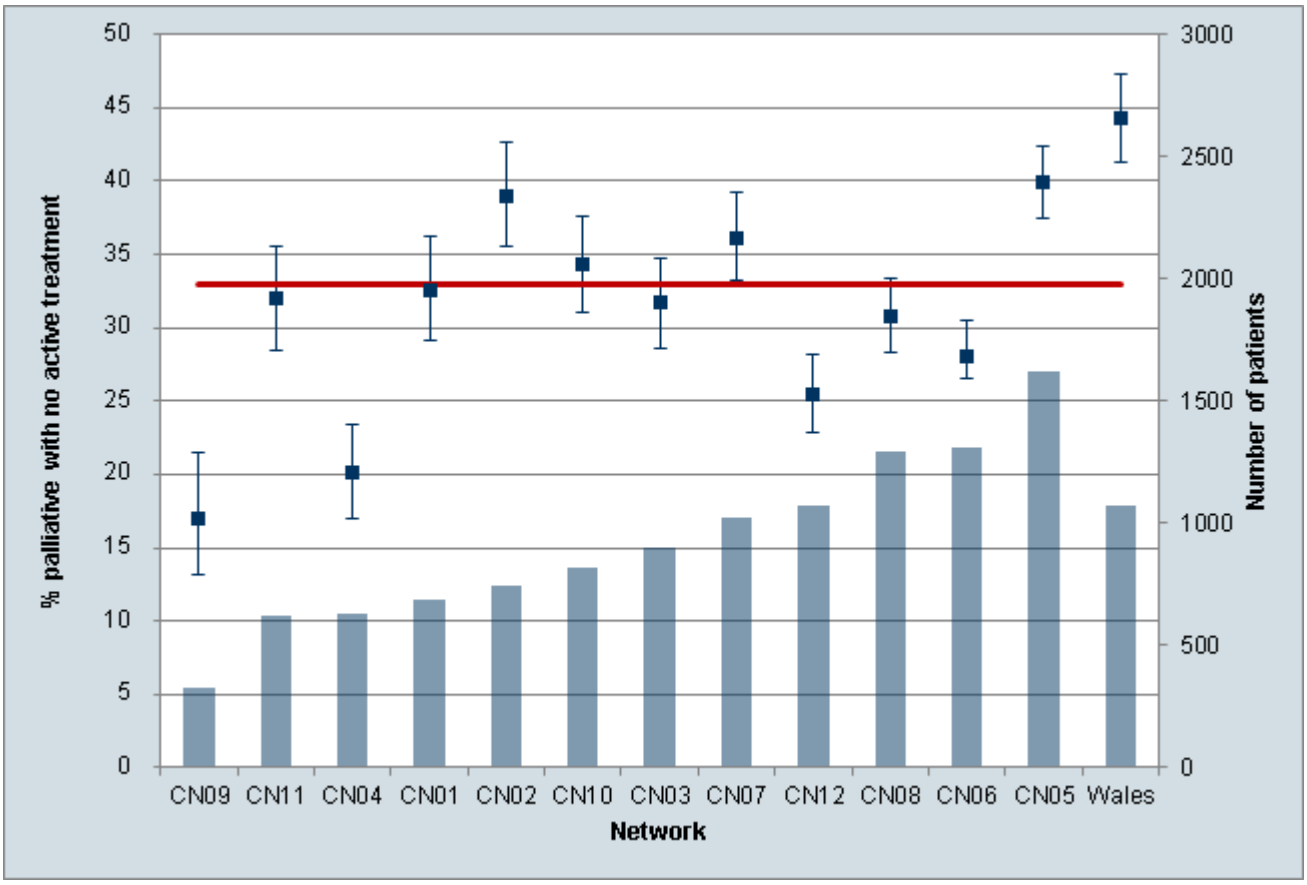
Palliative Intent

11,905 patients were managed with palliative intent. The choice of palliative treatment is shown in Table 5.9. Where treatment modality was known 39.0 per cent received 'no active treatment (supportive care)'. This figure was much higher for stomach cancers at 52.3 per cent as result of fewer being suitable for endoscopic therapy such as stenting (commonly used for dysphagia in oesophageal cancer) and fewer being suitable for palliative oncology (due to older age group and poorer performance status). Since 2009/10, the proportion of patients managed with no active treatment has been falling, although there was significant variation in its use across SCNs (Figure 5-8).

Table 5.9 Palliative treatment modalities used, by tumour type

	Oesophageal SCC	Oesophageal ACA Upper/Mid	Oesophageal ACA Lower/SI	GOJ SII/SIII	Stomach	TOTAL
	%	%	%	%	%	%
Palliative Surgery	2.3	2.1	2.0	1.7	3.5	**2.5**
Palliative Oncology	48.9	42.2	50.5	53.9	39.3	**46.5**
Endoscopic or radiological palliation	17.3	19.7	15.1	8.4	5.0	**11.9**
No active treatment (supportive care)	31.4	36.1	32.4	36.0	52.3	**39.0**
Total	**2,457**	**771**	**3,626**	**1,354**	**3,679**	**11,905**

Figure 5-8 Percentage of palliative O-G cancer patients who were planned to receive 'no active treatment (supportive care)', by SCN



Key Findings on Treatment Planning and Modality

- The proportion of patients managed with curative intent appears to be increasing slowly. This may reflect improved early detection of the disease.
- Use of staging CT is good, but there is still variable uptake in the use of EUS and staging laparoscopy across SCNs.
- There has been an increase in the proportion of patients receiving definitive chemoradiotherapy for oesophageal SCC (up from 31.0 per cent to 35.0 per cent), with a corresponding decline in use of curative surgery (down from 17.0 per cent to 14.0 per cent).

6 Palliative Oesophago-Gastric (O-G) Cancer Treatment Patterns and Outcomes

Palliative Oncology

Most patients diagnosed with O-G cancer are not amenable to potentially curative therapy. The characteristics of patients who are unable to have curative therapy are very diverse and so careful consideration needs to go into optimal choice for palliative treatment. The goals of palliative therapy are symptom control (e.g. relief of dysphagia), improving survival, and improving quality of life.

Among patients who received palliative oncology, palliative chemotherapy was the most common treatment, being received by two thirds of patients. Radiotherapy alone was received by 28.7 per cent of patients. The rest received combined therapy. The use of these various palliative modalities according to tumour site is shown in Table 6.1.

Table 6.1 Palliative treatment modality for patients undergoing palliative oncological therapy, according to tumour site

Palliative Modality	Oesophageal SCC		Oesophageal ACA Upper/Mid		Oesophgeal ACA Lower/SI		GOJ SII/SIII		Stomach		Total	
	n	%	n	%	n	%	n	%	n	%	n	%
Chemotherapy	543	48.4	171	61.5	1,084	65.9	521	78.6	946	81.9	**3,256**	**67.2**
Radiotherapy	498	44.4	95	34.2	483	29.4	130	19.6	191	16.6	**1,397**	**28.7**
Chemoradiotherapy	82	7.3	12	4.3	77	4.7	12	1.2	17	1.5	**200**	**4.1**
Total	**1,123**		**278**		**1,644**		**663**		**1,154**		**4,862**	

Patients receiving palliative chemotherapy or chemoradiotherapy were younger than those receiving just radiotherapy (mean age 65 vs 76 years). These differences were the same across all five tumour groups.

Palliative radiotherapy was generally very well tolerated with 94.4 per cent of patients completing their planned treatment course, but palliative chemotherapy was less well tolerated, with only half of patients completing their planned treatment course (Table 6.2).

Table 6.2 Outcomes of palliative oncology treatments

Treatment Outcome	Chemotherapy		Radiotherapy	
	n	%	n	%
Treatment completed as prescribed	1,086	52.9	934	94.4
Patient died during treatment	216	10.7	36	3.6
Progressive disease during treatment	356	17.6	6	0.6
Acute chemo/radiotherapy toxicity	251	12.4	2	0.2
Stopped due to patient choice	128	6.4	11	1.1
Total	**2,019**		**989**	

Figure 6-1 Completion of palliative chemotherapy

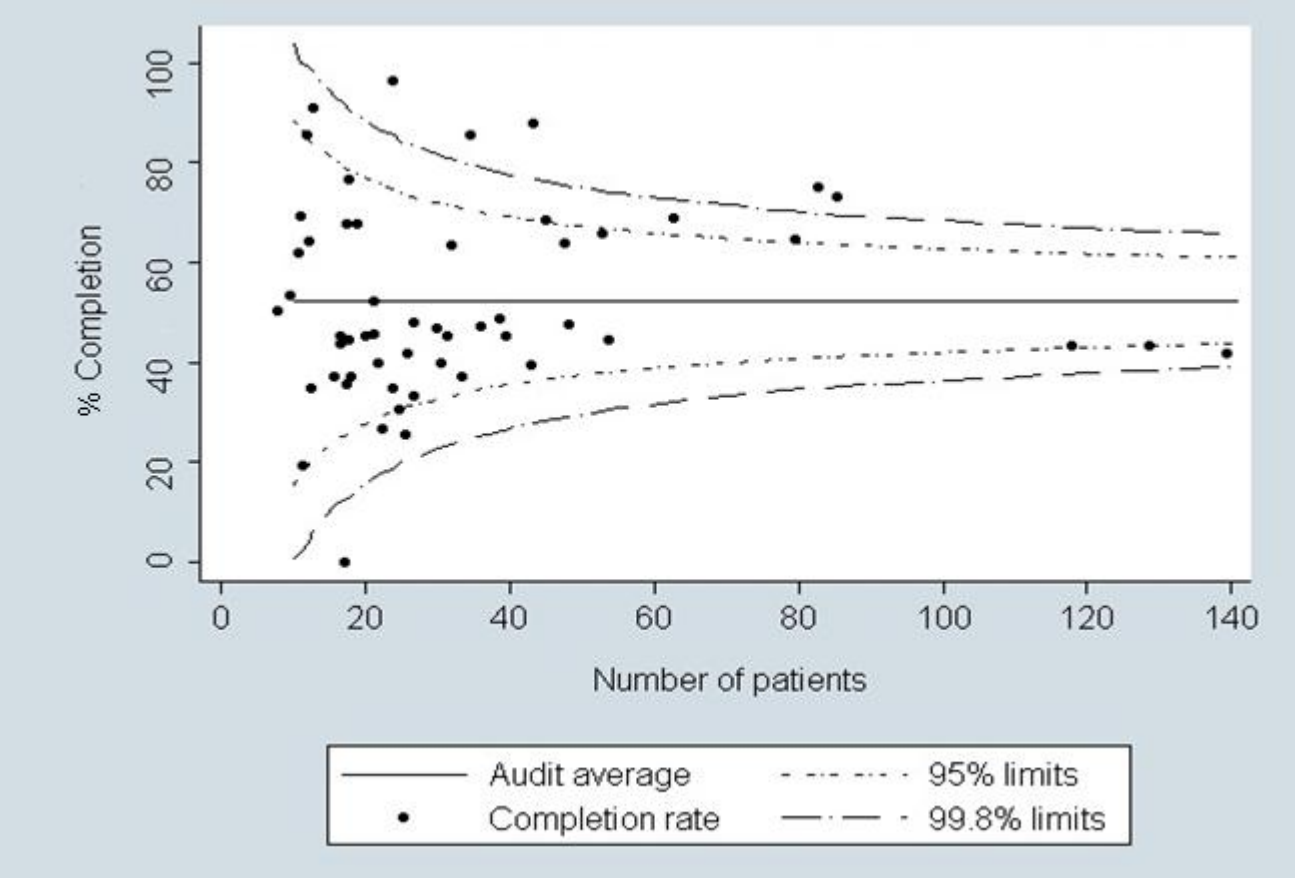


Figure 6.1 shows the variation between completion rates for palliative chemotherapy of NHS trusts.

These rates were not adjusted, as adjustment might mask whether patient selection for therapy was appropriate. All patients should initiate such therapy only if they are likely to benefit from the course of the treatment. However, it is known that patient factors are related to completion of treatment. In particular patients who were older and had a poorer performance status were consistently less likely to complete their planned course of chemotherapy (Table 6.3).

Table 6.3 Proportion of patients who completed palliative chemotherapy, by age and performance status

Age Group (years)	Performance status - %			
	0	1	2	3/4
Under 60	79.4	72.1	53.5	18.2
60 to 69	77.1	65.8	50.3	51.5
70 to 79	71.5	63.5	54.2	42.9
80 and over	65.6	64.4	52.3	25.0

Endoscopic and Radiological Palliative Therapy

Overall 3,321 patients were recorded as having endoscopic/radiological palliative therapy. The most common endoscopic palliative therapy was stent insertion, but choice of stent and placement procedure varied (Table 6.4).

Table 6.4 Number of endoscopic palliative therapeutic procedures, by tumour type

Procedure type (n=3,321)	Oesoph SCC		Oesoph ACA upper/mid		Oesoph ACA lower/SI		GOJ SII/SIII		Stomach		Total
	n	%	n	%	n	%	n	%	n	%	n
Stent Insertion	933	31.5	282	9.5	1,161	39.2	2,487	9.2	315	10.6	**2,964**
Laser Ablation	13	19.4	9	13.4	32	47.8	6	8.9	7	10.5	**67**
Brachytherapy	32	50.8	6	9.5	22	34.9	2	3.2	1	1.6	**63**
Dilatation	55	36.4	14	9.3	60	39.7	15	9.9	7	4.6	**151**
Gastrostomy	11	52.4	0		7	33.3	1	4.7	2	9.5	**21**
Other	14	15.7	2	2.25	38	42.7	9	10.1	26	29.2	**89**
Stent type (n=2,136)		**%**		**%**		**%**		**%**		**%**	**n**
Plastic		3.0		1.5		2.4		3.0		1.5	**52**
Metal: Covered		75.5		75.4		72.3		78.2		61.9	**1,568**
Metal: Uncovered		8.0		8.9		10.0		5.0		22.8	**213**
Metal: Anti-reflux		3.4		6.9		4.1		3.5		3.0	**85**
Other or not known		10.2		7.4		10.7		10.4		10.9	**218**
Method of Stent Placement (n=1,747)		**%**		**%**		**%**		**%**		**%**	**n**
Fluoroscopic control alone		22.2		20.7		21.8		15.5		16.6	**363**
Endoscopic control alone		38.2		40.2		33.3		39.1		30.6	**626**
Endoscopy and Fluoroscopy		39.6		39.1		44.9		45.3		52.9	**758**

The approach used to guide stent placement has changed since the first Audit with a greater proportion of stents now being placed using a combined fluoroscopic and endoscopic approach or just endoscopic approach, with a corresponding decline in placement under just fluoroscopy. Approach did not vary across tumour sites except for higher rates of combined approach for stomach cancer. The overall success rate of stent placement remained high (98.0 per cent).

Key Findings on Palliative Therapy

- Palliative chemotherapy was the most common treatment among patients receiving palliative oncology (67.2 per cent).
- Palliative radiotherapy is generally very well tolerated with 94.4 per cent of patients completing their planned treatment course, but palliative chemotherapy was less well tolerated, with only half of patients completing their planned treatment course.
- Patients with factors such as age and poor performance status were consistently less likely to complete their planned course of chemotherapy. Initiation of palliative chemotherapy in these patients should be evaluated carefully.
- A greater proportion of stents are now being placed using a combined fluoroscopic and endoscopic approach or just endoscopic approach.

7 Conclusions and Recommendations

The NOGCA continues to represent the largest source of data on the patterns of care and outcomes of oesophago-gastric O-G cancer services in the world. This has only been possible to achieve due to the tremendous support from NHS trusts and networks, the professional bodies and patient groups involved in O-G cancer care, and because of the funding provided by the Healthcare Quality Improvement Partnership (HQIP).

The findings demonstrate the high quality of care that is provided to O-G cancer patients. The new dataset for patients diagnosed with high-grade oesophageal glandular dysplasia (HGD) represents a unique source of information on the management and short-term outcomes of this patient group. The findings also highlight a few areas where Strategic Clinical Networks and NHS trusts should investigate their results further. These include:

Diagnosis of HGD:

Given the mucosa appears flat endoscopically in a third of patients with HGD, it is important that endoscopists follow a rigorous biopsy protocol when performing Barrett's surveillance. 79.4 per cent of cases of HGD had the diagnosis confirmed by a second pathologist, it is important that trusts aim to improve this figure further.

Management of HGD:

A third of cases of HGD are still managed by surveillance alone despite the recent changes to the BSG guidelines recommending endoscopic treatment over surveillance or oesophagectomy. It is important that trusts consider all patients for active treatment of their HGD, and where local expertise is not available, refer patients to a specialist centre.

Route to Referral:

A significant proportion of cases of O-G cancer are still diagnosed as a result of an emergency admission, with variation in this proportion across SCNs. It is important that SCNs identified as having a high proportion diagnosed in this way seek to identify possible reasons for this, and make changes to try to reduce rates in future.

Staging Investigations:

All cases of O-G cancer considered for curative therapy should undergo an EUS or staging laparoscopy (as appropriate), but there is still significant variation in uptake.

Palliative Chemotherapy:

Completion rates are low in patients undergoing palliative chemotherapy. Initiation of such treatment in patients of old age or low performance status should be assessed carefully.

Annex 1: Organisation of the Audit

The project is assisted by a Clinical Reference Group (CRG), the membership of which is drawn from all of the clinical groups involved in the management of oesophago-gastric cancer and overseen by a Project Board, which has senior representatives from the four participating organisations and the funding body.

Members of Clinical Reference Group

Mike Hallisey	Consultant Surgeon Birmingham	Association of Cancer Surgeons
Paul Barham	Consultant Surgeon Bristol	Association of Upper Gastrointestinal Surgeons of Great Britain & Ireland
Martin Richardson	Consultant Surgeon	Cancer Networks
Jane Ingham	CEO	Healthcare Quality Improvement Partnership (HQIP)
Jan van der Meulen (chair)	Professor of Clinical Epidemiology	London School of Hygiene and Tropical Medicine
Bill Allum	National O-G Cancer Lead (joint)	National Cancer Action Team
Chris Carrigan	National Co-ordinator for Cancer Registration	National Cancer Action Team
Dr Anthony Ingold	Trustee and Branch Chair	Oesophageal Patients Association
Vicki Owen-Holt	Specialist Nurse	Royal College of Nursing
Nic Mapstone	Consultant Pathologist	Royal College of Pathologists
Hans-Ulrich Laasch	Consultant Radiologist	Royal College of Radiologists
Sam Ahmedzai	Professor of Supportive Care Medicine	Palliative Care Representative
Tom Crosby	Consultant Clinical Oncologist	Cancer Services Co-ordinating Group, Wales
Nick Carroll	Consultant Radiologist and Endoscopist	UK EUS Users Group
Fiona Macharg	Specialist Dietitian	British Dietetic Association Oncology Group
Greg Rubin	Professor General Practice and Primary Care	

Members of Project Board

Dr Stuart Riley	British Society of Gastroenterologist (BSG)
Professor Mike Griffin	Association of Upper Gastrointestinal Surgeons of Great Britain & Ireland
Ms Alyson Whitmarsh	Health and Social Care Information Centre
Ms Jane Ingham	Healthcare Quality Improvement Partnership (HQIP)
Professor Jan van der Meulen (chair)	London School of Hygiene and Tropical Medicine
Dr Diana Tait	Royal College Radiologists (RCR)
Mr Richard Hardwick	Association of Upper GI Surgeons (AUGIS)

Annex 2: List of Strategic Clinical Networks and NHS Trusts

SCN Code	SCN Name	Trusts in the SCN
CN01	Northern England	Northumbria Healthcare NHS Foundation Trust
		South Tees Hospitals NHS Trust
		The Newcastle Upon Tyne Hospitals NHS Trust
		Gateshead Health NHS Foundation Trust
		South Tyneside NHS Foundation Trust
		City Hospitals Sunderland NHS Foundation Trust
		The Newcastle Upon Tyne Hospitals NHS Trust
		North Tees And Hartlepool NHS Foundation Trust
		North Cumbria Acute Hospitals NHS Trust
CN02	Greater Manchester, Lancashire and South Cumbria	East Lancashire Hospitals NHS Trust
		Lancashire Teaching Hospitals NHS Foundation Trust
		Christie Hospital NHS Trust
		University Hospitals of Morecambe Bay NHS Trust
		Salford Royal Hospitals NHS Foundation Trust
		Central Manchester and Manchester Children's University Hospitals NHS Trust
		Pennine Acute Hospitals NHS Trust
		Stockport NHS Foundation Trust
		Tameside Hospital NHS Foundation Trust
		Trafford Healthcare NHS Trust
		University Hospital of South Manchester NHS Foundation Trust
CN03	Yorkshire and the Humber	Airedale NHS Trust
		Barnsley Hospital NHS Foundation Trust
		Calderdale and Huddersfield NHS Foundation Trust
		Hull and East Yorkshire Hospitals NHS Trust
		Mid Yorkshire Hospitals NHS Trust
		Northern Lincolnshire and Goole Hospitals NHS Foundation Trust
		Harrogate and District NHS Foundation Trust
		Leeds Teaching Hospitals NHS Trust
		Scarborough and North East Yorkshire Health Care NHS Trust
		Bradford Teaching Hospitals NHS Foundation Trust
		The Rotherham NHS Foundation Trust
		Sheffield Teaching Hospitals NHS Foundation Trust
		Chesterfield Royal Hospital NHS Foundation Trust

CN04	Cheshire and Merseyside	Wirral University Teaching Hospital NHS Foundation Trust
		Countess of Chester Hospital NHS Foundation Trust
		The Mid Cheshire Hospitals NHS Trust
		East Cheshire NHS Trust
		Wrightington, Wigan and Leigh NHS Trust
		Royal Liverpool and Broadgreen University Hospitals NHS Trust
		Southport and Ormskirk Hospital NHS Trust
		Aintree University Hospital NHS Foundation Trust
		Warrington and Halton Hospitals NHS Foundation Trust (WAS North Cheshire Hospitals NHS Trust)
		St Helens and Knowsley Hospitals NHS Trust
CN05	East Midlands	Bedford Hospital NHS Trust
		Derby Hospitals NHS Foundation Trust
		Kettering General Hospital NHS Trust
		Sherwood Forest Hospitals NHS Foundation Trust
		University Hospitals of Leicester NHS Trust
		United Lincolnshire Hospitals NHS Trust
		Milton Keynes General Hospital NHS Trust
		Northampton General Hospital NHS Trust
		Nottingham University Hospitals NHS Trust
CN06	West Midlands	Burton Hospitals NHS Trust
		Sandwell and West Birmingham Hospitals NHS Trust
		Wye Valley NHS Trust
		George Eliot Hospital NHS Trust
		Heart of England NHS Foundation Trust
		Walsall Hospitals NHS Trust
		The Royal Wolverhampton Hospitals NHS Trust
		University Hospital of North Staffordshire NHS Trust
		The Shrewsbury and Telford Hospital NHS Trust
		University Hospital Birmingham NHS Foundation Trust
		Dudley Group of Hospitals NHS Trust
		Mid Staffordshire General Hospitals NHS Trust
		University Hospitals Coventry and Warwickshire NHS Trust
		South Warwickshire General Hospitals NHS Trust
		Worcestershire Acute Hospitals NHS Trust

CN07	East of England	Luton and Dunstable Hospital NHS Trust
		East and North Hertfordshire NHS Trust
		West Hertfordshire Hospitals NHS Trust
		Cambridge University Hospitals NHS Foundation Trust
		Basildon and Thurrock University Hospitals NHS Foundation Trust
		Mid Essex Hospital Services NHS Trust
		Colchester Hospital University NHS Foundation Trust
		Hinchingbrooke Health Care NHS Trust
		Ipswich Hospital NHS Trust
		James Paget University Hospitals NHS Foundation Trust
		Norfolk and Norwich University Hospital NHS Trust
		Peterborough and Stamford Hospitals NHS Foundation Trust
		The Queen Elizabeth Hospital King's Lynn NHS Trust
		Southend Hospital NHS Trust
		West Suffolk Hospitals NHS Trust
CN08	London	Barnet and Chase Farm Hospitals NHS Trust
		North West London Hospitals NHS Trust
		Imperial College Healthcare NHS Trust
		Chelsea and Westminster Healthcare NHS Trust
		Ealing Hospital NHS Trust
		Epsom And St Helier University Hospitals NHS Trust
		Guy's and St Thomas' NHS Foundation Trust
		The Hillingdon Hospital NHS Trust
		Homerton University Hospital NHS Foundation Trust
		Barking, Havering and Redbridge Hospitals NHS Trust
		King's College Hospital NHS Foundation Trust
		Kingston Hospital NHS Trust
		Croydon Health Services NHS Trust
		North Middlesex University Hospital NHS Trust
		The Princess Alexandra Hospital NHS Trust
		South London Healthcare NHS Trust
		Royal Free Hampstead NHS Trust
		The Royal Marsden NHS Foundation Trust
		Barts and the London NHS Trust
		St George's Healthcare NHS Trust
		The Whittington Hospital NHS Trust
		University College London Hospitals NHS Foundation Trust
		The Lewisham Hospital NHS Trust
		West Middlesex University Hospital NHS Trust
		Whipps Cross University Hospital NHS Trust

CN09	Thames Valley	Oxford University Hospitals NHS Trust
		Heatherwood and Wexham Park Hospitals NHS Trust
		Royal Berkshire NHS Foundation Trust
		Buckinghamshire Healthcare NHS Trust
CN10	South East Coast	Ashford and St Peter's Hospitals NHS Trust
		East Kent Hospitals NHS Trust
		East Sussex Healthcare NHS Trust
		Surrey and Sussex Healthcare NHS Trust
		Dartford and Gravesham NHS Trust
		Frimley Park Hospital NHS Foundation Trust
		Maidstone and Tunbridge Wells NHS Trust
		Medway NHS Foundation Trust
		Royal Surrey County Hospital NHS Trust
		Brighton and Sussex University Hospitals NHS Trust
		Western Sussex Hospitals NHS Trust
CN11	Wessex	Dorset County Hospitals NHS Foundation Trust
		Hampshire Hospitals NHS Foundation Trust
		Poole Hospital NHS Foundation Trust
		Royal Bournemouth and Christchurch Hospitals NHS Foundation Trust
		Salisbury NHS Foundation Trust
		Southampton University Hospitals NHS Trust
		Isle of Wight NHS Trust
		Portsmouth Hospitals NHS Trust
CN12	South West Coast	University Hospitals Bristol NHS Foundation Trust
		Gloucestershire Hospitals NHS Foundation Trust
		Plymouth Hospitals NHS Trust
		North Bristol NHS Trust
		Great Western Hospitals NHS Foundation Trust
		Taunton and Somerset NHS Trust
		Northern Devon Healthcare NHS Trust
		Royal Cornwall Hospitals NHS Trust
		Royal Devon and Exeter NHS Foundation Trust
		Royal United Hospital Bath NHS Trust
		South Devon Healthcare NHS Foundation Trust
		Weston Area Health NHS Trust
		Yeovil District Hospital NHS Foundation Trust

Annex 3: Completeness of Data for Submissions to the HGD Dataset by NHS Trust

High Grade Dysplasia - Data completeness for items with 'not known' or 'not applicable' option and for items that are non-mandatory.

Diagnosing Trust NACS	Number of HGD cases reported	Mandatory items (% of responses that are *not* 'not known' or 'not applicable' for given data items)					Non mandatory (% of responses that are complete for non-mandatory variables)				
		Route of referral	Appearance of HGD e.g. flat, nodular	Presence of Barrett's segment	HGD lesion e.g. unifocal, multifocal	Diagnosis confirmed by second pathologist	Length of circumferential columnar lining	Maximum length of columnar lining	Date of agreed treatment plan	Treatment plan agreed at MDT meeting	Referral for treatment to specialist hospital
RHU	27	66.7	3.7	55.6	0.0	3.7	0.0	0.0	100.0	85.2	74.1
RQ6	18	100.0	27.8	55.6	66.7	27.8	11.1	22.2	100.0	100.0	94.4
RR8	18	88.9	88.9	100.0	88.9	100.0	0.0	0.0	100.0	100.0	100.0
RM1	17	100.0	100.0	100.0	100.0	88.2	82.4	82.4	100.0	100.0	100.0
RX1	16	100.0	12.5	87.5	0.0	93.8	0.0	0.0	100.0	81.3	81.3
RW6	15	100.0	33.3	26.7	20.0	93.3	26.7	26.7	100.0	100.0	100.0
RGT	14	100.0	92.9	92.9	92.9	100.0	57.1	85.7	100.0	100.0	100.0
RRV	14	92.9	85.7	85.7	71.4	78.6	64.3	64.3	100.0	100.0	92.9
RK9	13	100.0	0.0	15.4	0.0	30.8	0.0	0.0	100.0	46.2	38.5
RTE	11	90.9	100.0	100.0	100.0	100.0	0.0	0.0	100.0	100.0	72.7
RTD	10	100.0	20.0	100.0	0.0	100.0	0.0	0.0	100.0	100.0	100.0
RW3	10	100.0	20.0	100.0	90.0	10.0	0.0	0.0	100.0	100.0	100.0
RXF	9	77.8	77.8	77.8	11.1	66.7	33.3	44.4	100.0	88.9	88.9
RXR	9	100.0	22.2	88.9	88.9	100.0	0.0	0.0	100.0	100.0	100.0
RDZ	8	87.5	100.0	100.0	87.5	100.0	100.0	100.0	100.0	100.0	100.0
RR1	8	100.0	12.5	75.0	0.0	100.0	12.5	12.5	100.0	100.0	100.0
RWP	8	100.0	62.5	87.5	0.0	12.5	12.5	50.0	100.0	100.0	100.0
RPA	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	71.4	42.9
RAE	6	66.7	50.0	66.7	0.0	100.0	16.7	33.3	100.0	100.0	100.0
RCX	6	100.0	100.0	83.3	100.0	100.0	66.7	66.7	100.0	100.0	100.0
RHM	6	100.0	100.0	100.0	100.0	100.0	0.0	50.0	100.0	100.0	100.0
RRK	6	100.0	100.0	83.3	100.0	16.7	0.0	0.0	100.0	100.0	100.0
RM3	6	100.0	83.3	100.0	66.7	83.3	66.7	66.7	100.0	100.0	100.0
R1F	5	100.0	40.0	60.0	60.0	100.0	0.0	40.0	100.0	80.0	40.0
REF	5	100.0	0.0	0.0	20.0	100.0	0.0	0.0	100.0	100.0	100.0
RP5	5	100.0	40.0	80.0	20.0	80.0	20.0	40.0	100.0	100.0	100.0
RWE	5	100.0	40.0	100.0	100.0	100.0	60.0	0.0	100.0	100.0	100.0
RWW	5	100.0	0.0	20.0	0.0	0.0	20.0	20.0	100.0	100.0	80.0
RXC	5	100.0	60.0	80.0	0.0	40.0	40.0	60.0	100.0	60.0	100.0
RXK	5	100.0	40.0	40.0	20.0	40.0	0.0	0.0	100.0	80.0	60.0
RA3	4	100.0	100.0	100.0	100.0	100.0	25.0	50.0	100.0	100.0	100.0
RD7	4	100.0	25.0	100.0	100.0	100.0	100.0	75.0	100.0	100.0	100.0
RH8	4	100.0	50.0	100.0	50.0	100.0	100.0	100.0	100.0	100.0	100.0
RHQ	4	100.0	50.0	100.0	25.0	100.0	25.0	75.0	100.0	100.0	100.0
RJ1	4	100.0	0.0	100.0	25.0	75.0	25.0	25.0	100.0	50.0	75.0
RNL	4	100.0	0.0	100.0	0.0	100.0	0.0	0.0	100.0	100.0	100.0
RTH	4	100.0	50.0	75.0	75.0	100.0	25.0	25.0	100.0	75.0	75.0

RYJ	4	75.0	75.0	100.0	100.0	50.0	50.0	50.0	100.0	100.0	100.0
R1H	3	100.0	100.0	100.0	100.0	100.0	33.3	33.3	100.0	100.0	100.0
RBN	3	100.0	0.0	66.7	0.0	0.0	0.0	0.0	100.0	100.0	100.0
RD1	3	66.7	100.0	66.7	100.0	100.0	66.7	66.7	100.0	100.0	66.7
RF4	3	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
RGP	3	100.0	66.7	66.7	66.7	66.7	33.3	33.3	100.0	100.0	100.0
RGQ	3	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
RJ2	3	100.0	33.3	33.3	33.3	100.0	0.0	0.0	100.0	100.0	100.0
RKB	3	100.0	100.0	100.0	100.0	100.0	33.3	33.3	100.0	100.0	100.0
RL4	3	100.0	0.0	33.3	0.0	33.3	0.0	0.0	100.0	100.0	100.0
RN5	3	100.0	100.0	100.0	100.0	66.7	33.3	33.3	100.0	66.7	100.0
RQM	3	100.0	33.3	100.0	100.0	100.0	0.0	0.0	100.0	100.0	100.0
RQQ	3	100.0	100.0	100.0	100.0	100.0	0.0	33.3	100.0	100.0	100.0
RQW	3	100.0	100.0	100.0	100.0	100.0	66.7	33.3	100.0	100.0	100.0
RRF	3	100.0	33.3	33.3	0.0	0.0	0.0	0.0	100.0	100.0	100.0
RTG	3	100.0	66.7	66.7	66.7	100.0	0.0	0.0	100.0	100.0	100.0
RTP	3	100.0	100.0	100.0	33.3	100.0	33.3	66.7	100.0	100.0	100.0
RTR	3	100.0	100.0	100.0	33.3	100.0	66.7	66.7	100.0	100.0	100.0
RV8	3	33.3	66.7	66.7	66.7	33.3	33.3	33.3	100.0	100.0	100.0
RVR	3	100.0	33.3	100.0	0.0	66.7	0.0	66.7	100.0	100.0	66.7
RVV	3	100.0	66.7	66.7	33.3	100.0	66.7	66.7	100.0	100.0	100.0
RWG	3	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
RWY	3	100.0	33.3	100.0	0.0	100.0	33.3	0.0	100.0	66.7	66.7
RXL	3	66.7	0.0	0.0	0.0	100.0	0.0	0.0	100.0	66.7	66.7
RXP	3	100.0	33.3	100.0	0.0	100.0	0.0	0.0	100.0	100.0	66.7
RYQ	3	100.0	0.0	100.0	0.0	100.0	0.0	0.0	100.0	66.7	0.0
RA9	2	100.0	100.0	0.0	100.0	100.0	50.0	100.0	100.0	100.0	100.0
RAJ	2	100.0	50.0	100.0	50.0	100.0	0.0	0.0	100.0	50.0	100.0
RBA	2	0.0	0.0	0.0	0.0	100.0	0.0	0.0	100.0	100.0	100.0
RCD	2	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
RDE	2	100.0	0.0	0.0	0.0	50.0	50.0	50.0	100.0	100.0	50.0
RDU	2	100.0	100.0	100.0	100.0	100.0	50.0	50.0	100.0	100.0	100.0
RFW	2	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
RGR	2	50.0	50.0	100.0	100.0	100.0	50.0	50.0	100.0	100.0	100.0
RK5	2	100.0	100.0	100.0	100.0	100.0	0.0	50.0	100.0	100.0	100.0
RLN	2	100.0	0.0	50.0	50.0	100.0	0.0	0.0	100.0	100.0	100.0
RLT	2	100.0	100.0	100.0	0.0	0.0	50.0	50.0	100.0	100.0	50.0
RN7	2	100.0	0.0	50.0	0.0	100.0	50.0	50.0	100.0	100.0	100.0
RNZ	2	100.0	100.0	100.0	100.0	100.0	0.0	50.0	100.0	100.0	100.0
RPY	2	100.0	100.0	100.0	50.0	100.0	0.0	50.0	100.0	100.0	50.0
RTF	2	100.0	0.0	50.0	0.0	100.0	0.0	0.0	100.0	100.0	100.0
RVL	2	100.0	100.0	100.0	100.0	50.0	50.0	50.0	100.0	100.0	50.0
RVY	2	100.	0.0	50.0	0.0	50.0	0.0	0.0	100.0	100.0	100.0
RWH	2	100.0	50.0	100.0	100.0	100.0	50.0	50.0	100.0	100.0	50.0
RXH	2	100.0	0.0	50.0	50.0	0.0	0.0	0.0	100.0	100.0	100.0
RXW	2	100.0	100.0	100.0	100.0	100.0	0.0	0.0	100.0	100.0	100.0
RYR	2	100.0	50.0	100.0	100.0	100.0	0.0	0.0	100.0	100.0	100.0
RWH	1	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
RA2	1	100.0	100.0	100.0	100.0	100.0	0.0	100.0	100.0	100.0	100.0
RA7	1	0.0	100.0	100.0	0.0	100.0	0.0	0.0	100.0	100.0	100.0
RAX	1	100.0	100.0	100.0	100.0	100.0	0.0	100.0	100.0	100.0	100.0
RC3	1	100.0	100.0	100.0	100.0	100.0	0.0	0.0	100.0	100.0	100.0

RCF	1	100.0	0.0	100.0	0.0	100.0	0.0	0.0	100.0	100.0	100.0
RJ6	1	100.0	100.0	100.0	0.0	100.0	0.0	0.0	100.0	100.0	100.0
RJ7	1	100.0	100.0	100.0	100.0	100.0	0.0	0.0	100.0	100.0	100.0
RJC	1	100.0	100.0	100.0	100.0	100.0	0.0	0.0	100.0	0.0	0.0
RKE	1	0.0	0.0	100.0	100.0	0.0	0.0	0.0	100.0	100.0	0.0
RLQ	1	100.0	100.0	100.0	100.0	100.0	0.0	0.0	100.0	100.0	0.0
RNA	1	100.0	100.0	100.0	100.0	0.0	0.0	0.0	100.0	100.0	100.0
RNS	1	100.0	0.0	0.0	0.0	100.0	0.0	0.0	100.0	100.0	100.0
RR7	1	100.0	0.0	100.0	0.0	100.0	0.0	0.0	100.0	100.0	100.0
RWA	1	0.0	0.0	100.0	0.0	100.0	0.0	0.0	100.0	100.0	100.0
RWF	1	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
RWJ	1	100.0	100.0	100.0	0.0	0.0	0.0	0.0	100.0	100.0	100.0
RXN	1	100.0	100.0	100.0	0.0	100.0	0.0	0.0	100.0	100.0	100.0
RXQ	1	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

* Colouring of cells reflects the proportion of complete data or data not coded as unknown/not applicable. Colour coding corresponds to complete data as follows: **red: <60%**, **amber: >=60%** and **<80%**, **green: >=80%**

** Data based on extract from 14th March 2014 (data submitted 1st April 2012 - 31st March 2013)

Annex 4: Completeness of Data for Submissions to the O-G Cancer Dataset by NHS Trust

Trust NACS	% Based on tumour record submissions						% Based on surgical record submission	% Based on oncology record submission	
	Referral source	Staging investigations	Pretreatment T Stage	Pretreatment N Stage	Pretreatment M Stage	Comorbidities	Surgical complications	Completion of chemotherapy	Completion of radiotherapy
RE9	100.0	98.1	84.6	84.6	84.6	67.3		100.0	
RLN	100.0	100.0	86.9	86.9	86.9	97.6		100.0	
RNL	98.5	98.5	95.5	95.5	95.5	62.1	100.0	93.5	86.7
RR7	98.0	100.0	93.9	93.9	93.9	81.6			
RTD	98.9	100.0	100.0	100.0	100.0	90.2	95.4	98.2	100.0
RTR	100.0	99.3	95.7	95.7	95.7	97.9	100.0	96.2	100.0
RVW	100.0	97.5	98.8	98.8	98.8	51.9			
RBV	NA	NA	NA	NA	NA	NA	NA	56.4	69.5
RM2	100.0	92.1	100.0	100.0	100.0	92.1	34.8		100.0
RM3	100.0	100.0	98.2	98.2	98.2	100.0	100.0		
RM4	100.0	100.0	100.0	100.0	100.0	100.0			
RMP	100.0	100.0	100.0	100.0	100.0	100.0			
RTX	95.8	100.0	87.5	87.5	87.5	100.0		100.0	0.0
RW3	87.0	100.0	95.9	95.9	95.9	98.6	100.0		
RW6	97.7	100.0	92.0	92.0	92.0	100.0			
RWJ	100.0	100.0	100.0	100.0	100.0	100.0			
RXN	91.7	100.0	88.5	88.5	88.5	97.9	79.1	100.0	86.7
RXR	99.1	100.0	94.7	94.7	94.7	92.9		96.8	
RAE	82.4	0.9	100.0	100.0	100.0	25.9	0.0	100.0	
RCB	54.5	97.0	100.0	100.0	100.0	0.0		7.1	
RCC	95.1	92.7	97.6	97.6	97.6	90.2	100.0	100.0	0.0
RCD	100.0	100.0	94.6	94.6	94.6	100.0			
RCF	85.7	62.9	100.0	100.0	100.0	37.1		100.0	100.0
RFF	98.2	98.2	98.2	98.2	98.2	100.0	100.0		
RJL	97.3	100.0	99.1	99.1	99.1	100.0	100.0	100.0	0.0
RR8	91.0	3.2	100.0	100.0	100.0	2.6	0.0	98.7	99.2
RWA	94.7	99.1	99.1	99.1	99.1	88.6	45.6	91.7	77.8
RWY	93.9	0.0	100.0	100.0	100.0	0.0		100.0	
RXF	88.6	74.3	100.0	100.0	100.0	61.0			
RBL	99.0	100.0	46.9	46.9	46.9	100.0			
RBN	100.0	100.0	88.0	88.0	88.0	92.4			
RBT	98.1	100.0	94.4	94.4	94.4	100.0		100.0	0.0
REM	98.8	100.0	89.2	89.2	89.2	100.0	97.7		
RJN	98.3	100.0	100.0	100.0	100.0	100.0			
RJR	98.2	100.0	50.9	50.9	50.9	90.9			
RQ6	94.0	100.0	97.0	97.0	97.0	94.0	16.7		

RRF	96.9	100.0	98.4	98.4	98.4	100.0			
RVY	100.0	100.0	95.2	95.2	95.2	26.2			
RWW	100.0	100.0	93.3	93.3	93.3	36.7			
RC1	100.0	96.0	100.0	100.0	100.0	90.0		100.0	0.0
RC9	70.6	100.0	100.0	100.0	100.0	94.1	72.7		
RD8	82.6	87.0	78.3	78.3	78.3	82.6		100.0	100.0
RFS	100.0	100.0	85.5	85.5	85.5	92.8			
RHQ	100.0	100.0	96.7	96.7	96.7	100.0	100.0	92.4	96.1
RK5	100.0	97.4	97.4	97.4	97.4	93.6		0.0	
RNQ	100.0	97.0	95.5	95.5	95.5	100.0		100.0	
RNS	100.0	100.0	89.6	89.6	89.6	100.0		100.0	93.5
RP5	100.0	98.6	97.1	97.1	97.1	92.9	100.0	100.0	
RTG	100.0	100.0	100.0	100.0	100.0	44.8	87.9	63.5	86.7
RWD	100.0	82.2	100.0	100.0	100.0	66.7	100.0	35.5	0.0
RWE	100.0	100.0	97.3	97.3	97.3	98.4	100.0	100.0	97.5
RWG	96.8	100.0	87.1	87.1	87.1	87.1	78.9		
RWH	98.7	96.0	98.7	98.7	98.7	98.7	75.0	100.0	100.0
RX1	95.6	75.7	100.0	100.0	100.0	39.0	56.5	4.9	0.0
RBK	100.0	100.0	100.0	100.0	100.0	18.6		44.4	0.0
RJC	92.9	89.3	85.7	85.7	85.7	42.9		100.0	
RJD	100.0	91.8	100.0	100.0	100.0	54.1		100.0	
RJF	100.0	98.2	89.3	89.3	89.3	41.1		100.0	
RKB	96.9	96.9	99.0	99.0	99.0	51.5	100.0	93.8	90.5
RL4	100.0	100.0	86.3	86.3	86.3	98.6		89.5	71.4
RLQ	100.0	100.0	95.7	95.7	95.7	63.8			
RLT	100.0	68.0	100.0	100.0	100.0	68.0		100.0	
RNA	100.0	100.0	94.6	94.6	94.6	93.2	66.7	83.7	
RR1	38.3	100.0	99.4	99.4	99.4	98.9	96.0	96.3	0.0
RRK	96.1	97.1	100.0	100.0	100.0	0.0	36.0	14.7	31.6
RRK	96.1	97.1	100.0	100.0	100.0	0.0	36.0	14.7	31.6
RWP	91.1	100.0	81.3	81.3	81.3	95.5		100.0	100.0
RXK	98.8	100.0	92.9	92.9	92.9	83.3		62.5	
RXW	93.1	100.0	92.3	92.3	92.3	97.7		100.0	94.7
RAJ	98.4	98.4	98.4	98.4	98.4	77.0		74.1	64.3
RCX	100.0	98.6	100.0	100.0	100.0	95.7	0.0	91.2	100.0
RDD	98.4	100.0	98.4	98.4	98.4	82.5			
RDE	100.0	100.0	100.0	100.0	100.0	62.3		100.0	100.0
RGN	100.0	91.5	100.0	100.0	100.0	13.6			
RGP	100.0	100.0	98.0	98.0	98.0	98.0		100.0	100.0
RGQ	100.0	100.0	97.5	97.5	97.5	73.4		100.0	100.0
RGR	98.1	100.0	94.2	94.2	94.2	90.4		100.0	
RGT	93.5	79.6	100.0	100.0	100.0	24.7	100.0	4.6	6.3
RM1	99.2	99.2	96.2	96.2	96.2	50.8	100.0	95.6	89.7
RQ8	57.8	97.8	100.0	100.0	100.0	22.2	81.5	100.0	
RQQ	97.6	92.9	100.0	100.0	100.0	42.9		0.0	
RAL	100.0	97.3	100.0	100.0	100.0	100.0		100.0	87.5
RAP	78.6	100.0	100.0	100.0	100.0	71.4		46.2	100.0

RAS	100.0	100.0	96.2	96.2	96.2	100.0		88.2	95.2
RAX	100.0	100.0	100.0	100.0	100.0	94.1			
RC3	100.0	100.0	100.0	100.0	100.0	100.0			
RF4	98.2	87.7	99.1	99.1	99.1	81.6	100.0	97.5	100.0
RFW	100.0	100.0	97.1	97.1	97.1	100.0			
RJ1	94.6	89.2	100.0	100.0	100.0	81.1	44.7	66.4	86.0
RJ2	81.8	75.8	100.0	100.0	100.0	69.7	100.0	100.0	
RJ6	100.0	100.0	100.0	100.0	100.0	100.0			
RJ7	100.0	89.7	100.0	100.0	100.0	100.0			
RJZ	95.3	93.0	100.0	100.0	100.0	86.0	0.0	0.0	0.0
RKE	96.6	96.6	100.0	100.0	100.0	89.7		31.3	0.0
RPY	75.0	100.0	100.0	100.0	100.0	100.0	100.0	95.1	100.0
RQM	100.0	100.0	100.0	100.0	100.0	97.2		50.0	
RQW	85.7	96.4	98.2	98.2	98.2	60.7		25.9	0.0
RQX	94.6	97.3	100.0	100.0	100.0	100.0	100.0		
RRV	84.2	100.0	100.0	100.0	100.0	86.8	100.0	0.0	0.0
RV8	100.0	100.0	89.7	89.7	89.7	92.3			
RVL	75.5	94.3	100.0	100.0	100.0	64.2		0.0	0.0
RVR	100.0	100.0	100.0	100.0	100.0	81.2			
RYJ	92.9	100.0	100.0	100.0	100.0	100.0	97.4	97.1	81.8
RYQ	85.6	81.1	100.0	100.0	100.0	53.0		25.0	0.0
RD7	77.8	100.0	88.9	88.9	88.9	100.0		100.0	100.0
RHW	94.6	100.0	98.2	98.2	98.2	57.1	100.0	100.0	
RTH	49.1	65.2	100.0	100.0	100.0	46.4	98.8	45.1	70.5
RXQ	80.0	77.8	84.4	84.4	84.4	51.1		100.0	100.0
RA2	89.5	100.0	100.0	100.0	100.0	100.0	100.0	97.7	87.0
RDU	83.9	100.0	48.4	48.4	48.4	100.0			
RN7	100.0	100.0	94.4	94.4	94.4	90.7		100.0	100.0
RPA	96.4	28.6	100.0	100.0	100.0	1.8			
RTK	100.0	100.0	100.0	100.0	100.0	59.5			
RTP	100.0	100.0	95.8	95.8	95.8	87.5			
RVV	62.1	15.3	100.0	100.0	100.0	1.6		0.0	
RWF	63.9	82.5	100.0	100.0	100.0	2.1	38.6	4.4	18.9
RXC	100.0	100.0	74.2	74.2	74.2	100.0		100.0	
RXH	92.5	100.0	55.0	55.0	55.0	100.0	66.7	93.9	90.5
RYR	100.0	97.1	82.4	82.4	82.4	99.0		100.0	100.0
R1F	100.0	100.0	97.6	97.6	97.6	100.0		100.0	
RBD	91.2	79.4	97.1	97.1	97.1	55.9			
RD3	96.2	100.0	94.2	94.2	94.2	100.0		100.0	75.0
RDZ	100.0	100.0	100.0	100.0	100.0	25.3	100.0	100.0	
RHM	100.0	100.0	97.4	97.4	97.4	36.4	96.9	45.2	21.4
RHU	100.0	100.0	100.0	100.0	100.0	39.6	98.2	97.9	88.1
RN5	98.5	100.0	40.3	40.3	40.3	94.0		100.0	0.0
RNZ	100.0	97.7	84.1	84.1	84.1	95.5		100.0	
RA3	100.0	100.0	100.0	100.0	100.0	100.0		100.0	100.0
RA4	100.0	100.0	50.0	50.0	50.0	100.0		100.0	100.0
RA7	100.0	100.0	85.1	85.1	85.1	100.0	98.8	100.0	100.0

RA9	100.0	100.0	91.4	91.4	91.4	95.7		80.0	62.5
RBA	100.0	100.0	23.1	23.1	23.1	100.0		100.0	90.9
RBZ	100.0	100.0	84.8	84.8	84.8	100.0		100.0	
RD1	100.0	100.0	100.0	100.0	100.0	94.9		100.0	
REF	97.2	100.0	89.8	89.8	89.8	98.1		97.8	78.6
RH8	97.8	100.0	98.9	98.9	98.9	98.9		97.7	100.0
RK9	99.1	99.1	91.7	91.7	91.7	61.1	81.3	100.0	94.1
RN3	95.8	100.0	100.0	100.0	100.0	95.8		95.2	
RTE	99.2	100.0	96.7	96.7	96.7	99.2	100.0	97.3	97.8
RVJ	98.7	100.0	94.9	94.9	94.9	94.9			
RXL	100.0	100.0	94.3	94.3	94.3	71.4		100.0	100.0
RXP	100.0	98.3	99.1	99.1	99.1	91.3	100.0	100.0	
R1H	98.8	90.1	98.8	98.8	98.8	97.5	100.0	95.9	92.6
RMC	100.0	100.0	100.0	100.0	100.0	88.7			
RXP	100.0	98.3	99.1	99.1	99.1	91.3	100.0	100.0	
R1H	98.8	90.1	98.8	98.8	98.8	97.5	100.0	95.9	92.6
7A1	100.0	100.0	100.0	100.0	100.0	5.6	0.0	8.2	16.0
7A2	98.8	100.0	100.0	100.0	100.0	16.9	0.0	14.3	50.0
7A3	99.1	100.0	100.0	100.0	100.0	36.4	0.0	33.3	4.2
7A4	100.0	100.0	100.0	100.0	100.0	0.0	0.0		
7A5	100.0	100.0	100.0	100.0	100.0	0.0	0.0		
7A6	87.8	100.0	100.0	100.0	100.0	0.0			

Key: values represent the percentage of patient records that were complete for different items. These were analysed by diagnosing trust (items 1-6), trust where surgical treatment took place (item 7) and trust where oncology treatment took place (items 8 and 9).

Colour coding corresponds to complete data as follows: **red: <60%**, **amber: >=60%** and **<80%**, **green: >=80%.**

Note that data completeness is here reported only for non-mandatory items. A trust with a red flag would still have submitted the mandatory records completely.

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Glossary of Terms

Adjuvant treatment - An additional therapy (e.g. chemotherapy or radiotherapy) provided to improve the effectiveness of the primary treatment (e.g. surgery). This may aim to reduce the chance of local recurrence of the cancer or to improve the patient's overall chance of survival.

Ablation – a palliative technique (performed by laser or argon beam coagulation) that aims to reduce symptoms by destroying the surface of the tumour, thereby shrinking it in size.

AUGIS – Association of Upper Gastrointestinal Surgeons

BSG – British Society of Gastroenterologists

BASO – British Association of Surgical Oncology

No active treatment (supportive care) – It is important that patients with incurable disease have a holistic approach to their treatment, taking consideration of their physical, emotional, and social needs.

Brachytherapy – Brachytherapy is a palliative treatment that involves inserting radioactive beads into the tumour. The radiation from these beads then slowly shrinks the tumour over time.

Cancer Registry - The Cancer Registries (eight in England, and one each for Wales, Scotland and Northern Ireland) collect, analyse and report data on cancers in their area, and submit a standard dataset on these registrations to the Office for National Statistics.

CASU - The Clinical Audit Support Unit of the Health and Social Care Information Centre (HSCIC) manages a number of national clinical Audits in the areas of cancer, diabetes, dementia and pulmonary hypertension. It is one of the key stakeholders leading the Audit.

Chemotherapy - Drug therapy used to treat cancer. It may be used alone, or in conjunction with other types of treatment (e.g. surgery or radiotherapy).

Clinical Reference Group - The Audit's Clinical Reference Group (CRG) is comprised of representatives of the key stakeholders in oesophago-gastric cancer care. They advise the Project Team on particular aspects of the project and provide input from the wider clinical and patient community.

Clinical Effectiveness Unit - The Clinical Effectiveness Unit (CEU) is an academic collaboration between The Royal College of Surgeons of England and the London School of Hygiene and Tropical Medicine, and undertakes national surgical Audit and research. It is one of the key stakeholders leading the Audit.

Clinical Nurse Specialists (CNS) – These are experienced, senior nurses who have undergone specialist training. They play an essential role in improving communication with a cancer patient, being a first point of contact for the patient and coordinating the patient's treatment.

CT-scan – (Computed Tomography) an imaging modality that uses x-ray radiation to build up a 3 dimensional image of the body. Its main use in O-G cancer is to identify distant metastases, lymph node enlargement and involvement of organs adjacent to the tumour. It is not able to detect microscopic changes such as early seeding to lymph nodes.

Curative care – This is where the aim of the treatment is to cure the patient of the disease. It is not possible to do this in many patients with O-G cancer and is dependent on how far the disease has spread and the patient's general health and physical condition.

Dysphagia – A symptom where the patient experiences difficulty swallowing. They often complain that the food sticks in their throat. It is the commonest presenting symptom of oesophageal cancer.

Endoscopy – An investigation whereby a telescopic camera is used to examine the inside of the digestive tract. It can be used to guide treatments such as stents (see below).

Endoscopic Ultrasound (EUS) – An investigation which uses an ultrasound probe on the end of a telescope. It is used to determine how deep into the surrounding tissues a cancer has invaded and to what extent it has spread to local lymph nodes. It also allows biopsy of lymph nodes around the oesophagus and stomach.

Endoscopic Mucosal Resection/ Endoscopic Submucosal Dissection - a procedure to remove cancerous or other abnormal tissues (lesions) using a long narrow tube equipped with a light, camera and other instruments, which is passed down the oesophagus.

Endoscopic palliative therapies – These are treatments that aim to relieve symptoms, such as vomiting or swallowing difficulties, by using a telescopic camera to guide instruments that can relieve the blockage. Examples include stents, laser therapy and brachytherapy.

Fluoroscopy – A real-time x-ray modality that allows 'filming' of movement in the body, such as contrast swallow studies, or radiological insertion of stents.

Gastric – an adjective used to describe something that is related to or involves the stomach, e.g. gastric cancer is another way of saying stomach cancer.

Gastrectomy - a surgical procedure to remove either a section (a partial gastrectomy) or all (a total gastrectomy) of the stomach. In a total gastrectomy, the oesophagus is connected to the small intestine.

The Health and Social Care Information Centre - The Health and Social Care Information Centre (HSCIC) isthe trusted source of authoritative data and information relating to health and social care. HSCIC's information, data and systems plays a fundamental role in driving better care, better services and better outcomes for patients. The Clinical Audit Support Unit (CASU) is one of its key components.

HES - Hospital Episode Statistics is a database which contains data on all in-patients treated within NHS Trusts in England. This includes details of admissions, diagnoses and those treatments undergone.

ICD10 - International Statistical Classification of Diseases and Related Health Problems 10th Revision

Laparoscopy – This is often called "keyhole surgery" and involves inserting a small camera into the abdomen through a small cut, so as to either guide the operation or to look at the surface of the abdominal organs and so accurately stage the disease.

Laser therapy – This is a technique that uses a laser to destroy the surface of the tumour and thereby relieve any blockage. It is a palliative technique only.

Lymph nodes – Lymph nodes are small bean shaped organs, often also referred to as lymph 'glands', which form part of the immune system. They are distributed throughout the body and are usually the first place to which cancers spread.

MDT - The multi-disciplinary team is a group of professionals from diverse specialties that works to optimise diagnosis and treatment throughout the patient pathway.

Metastases – Metastases are deposits of cancer that occur when the cancer has spread from the place in which it started to other parts of the body. These are commonly called secondary cancers. Disease in which this has occurred is known as metastatic disease.

Neo-adjuvant chemotherapy – Chemotherapy given before another treatment, usually surgery. This is usually given to reduce the size, grade or stage of the cancer and therefore improve the effectiveness of the surgery performed.

NCEPOD – National Confidential Enquiry into Patient Outcome and Death. NCEPOD is an independent, government-funded body whose remit is to examine medical and surgical care, often by undertaking confidential surveys and research.

Neoplasm – A neoplasm or tumour is an abnormal mass of tissue that results when cells divide more than they should or do not die when they should. Neoplasms may be benign (not cancerous), or malignant (cancerous).

NICE – The National Institute of Health and Clinical Excellence is an independent organisation responsible for providing national guidance on the promotion of good health and the prevention and treatment of ill health.

Oesophagus – The portion of the digestive tract that carries food from the bottom of the throat to the top of the stomach. It is also known as the gullet or the food pipe.

Oesophagectomy – The surgical removal of all or part of the oesophagus. The procedure can be performed by opening the thorax (a trans-thoracic oesophagectomy) or through openings in the neck and abdomen (a trans-hiatal oesophagectomy)

Oncology – The branch of medicine which deals with the non-surgical treatment of cancer, such as chemotherapy and radiotherapy.

ONS – The Office for National Statistics (ONS) is the government department responsible for collecting and publishing official statistics about the UK's society and economy. This includes cancer registration data.

Pathology – The branch of medicine that deals with tissue specimens under a microscope to determine the type of disease and how far a cancer has spread within the specimen (i.e. whether a tumour has spread to the edges of the specimen or lymph nodes).

Palliative care – Palliative care is the care given to patients whose disease cannot be cured. It aims to improve quality of life rather than extend survival and concentrates on relieving physical and psychological distress.

Positron Emission Tomography (PET) – A new imaging technique that detects cancer spread or metastases by looking at how fast radioactive sugar molecules are used by different parts of the body. Cancer cells use sugar at a very high rate so show up brightly on this test.

Radiology – The branch of medicine that involves the use of imaging techniques (such as X-rays, CT Scans and PET scans) to diagnose and stage clinical problems. Interventional radiology is the subspecialty that performs minimally invasive procedures under imaging guidance.

Radiological Palliative Therapies – These are minimally invasive treatments aimed at relieving swallowing difficulties or vomiting. They use real time x-ray control (fluoroscopy) to guide procedures like balloon dilation or stent insertion.

Radiotherapy – A treatment that uses radiation to kill tumour cells and so shrink the tumour. In most cases, it is a palliative treatment but it can be used together with surgery or chemotherapy in a small number of patients as part of an attempt at cure.

RCR – The Royal College of Radiologists is an independent professional body governing training and clinical practice of specialist doctors. The RCR has two faculties:

- **Clinical Oncology, which consist of doctors specialising in administration of radiotherapy.**
- **Clinical Radiology, which consists of doctors specialising in the performance and interpretation of x-rays, CT, PET and other scans as well as undertaking minimally invasive procedures under image guidance ('Interventional Radiology').**

RCS – The Royal College of Surgeons of England is an independent professional body committed to enabling surgeons to achieve and maintain the highest standards of surgical practice and patient care. As part of this it supports Audit and the evaluation of clinical effectiveness for surgery.

Stage – The extent to which the primary tumour has spread; the higher the stage, the more extensive the disease.

Staging – The process by which the stage (or extent of spread) of the tumour is determined through the use of various investigations.

Stent – A device used to alleviate swallowing difficulties or vomiting in patients with incurable O-G cancer. It is a collapsible tube that is inserted into the area of narrowing (under either endoscopic or radiological control) that then expands and relieves the blockage.

Surgical resection – An operation whose aim is to completely remove the tumour

Urgent (fast-track) referral – This is a referral mechanism used by General Practitioners (GPs) when they suspect the patient may have cancer. It ensures that the patient will be seen faster than would otherwise be the case.

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