National Oesophago-Gastric Cancer Audit 2009

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National Oesophago-Gastric Cancer Audit 2009

An audit of the care received by people with Oesophago-Gastric Cancer in England and Wales
Second Annual Report

Contents

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Foreword

We are pleased to see this Second Annual Report of the National Oesophago-Gastric Cancer (O-G) Audit. It provides us with some important information on the overall quality of cancer care in the NHS for patients with oesophago-gastric cancer and this reflects the considerable effort that hospital multi-disciplinary teams have made to participate in the Audit. We would like to thank everyone for their support and hope that this will continue for the remainder of the Audit.

The results in this annual report focus on the process of care after referral for O-G cancer. A key message is that the diagnosis and staging of patients was in general quick and consistent with published guidelines. However, a larger proportion of patients with stomach cancer were referred following an emergency admission. There was also variation between Cancer Networks in the proportion of patients referred urgently by general practitioners. These findings raise important issues about the level of awareness of O-G cancer among the population and clinicians. A high number of O-G cancer patients present with advanced disease and, if we can improve the timeliness of referral, this would lead to better outcomes for patients.

The report presents some interesting findings on the patterns of planned and actual treatments that Cancer Networks can act upon. In particular, there was variation between Cancer Networks both in the proportion of patients who had curative treatment plans and in the range of palliative treatments received.

A positive message from the report is that stents were deployed with an excellent rate of success among palliative patients. It is also pleasing to see that rates of postoperative mortality for curative operations were lower than in previous audits and that minimally-invasive procedures look to be as safe as those performed with an open approach.

The Third Annual Report will provide more detailed information about the outcomes of care, both nationally and among our individual units. For a representative picture, it is vital that all NHS trusts providing O-G cancer care continue to submit data on all of their patients. It is only with the support of all health professionals that the Audit will succeed and thereby help us to improve our patients' care.

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Executive Summary

This is the Second Annual Report of the National Oesophago-Gastric Cancer Audit. The principal activity of the Audit since the First Annual Report has been the prospective collection of data on patients diagnosed with O-G cancer in England and Wales. This process is still ongoing. In this report, we describe:

- the process of diagnosis, staging and treatment planning for patients diagnosed between 1 October 2007 and 31 March 2009
- the treatments received by patients diagnosed between 1 October 2007 and 30 September 2008, together with their short-term outcomes of care. Longer-term outcomes of care will be the focus of the Third Annual Report when the collection of data will have finished.

Participation by NHS acute trusts and case-ascertainment

Patient information was submitted to the Audit from:

- 143 (93 per cent) of the 154 NHS acute trusts in England that provide O-G cancer services
- all 13 Welsh NHS acute trusts.

English NHS trusts submitted clinical details for 11,541 patients (60 per cent of the 19,373 estimated total) and Welsh NHS trusts submitted clinical information on 758 patients (90 per cent of the 844 registered patients) via the NHS Wales central cancer information system (CANISC).

Among patients diagnosed between 1 October 2007 and 30 September 2008, information was submitted on 1,987 curative surgical procedures, 2,027 courses of palliative oncological therapy and 1,606 endoscopic / radiological palliative therapies. For curative surgical patients, this corresponds to an estimated case-ascertainment rate of 73 per cent. Case ascertainment for the palliative therapies could not be estimated due to the lack of a reliable denominator.

Among many English NHS trusts, case-ascertainment and data quality was high. For others, participation was limited either because case-ascertainment was low or because little clinical information was provided. Eight cancer centres provided little or poor quality data. This is a concern given their central role in the delivery of cancer care.

The patient characteristics, tumour morphology and tumour sites of both the overall and surgical patients were similar to those reported in other UK studies, suggesting the sample was representative[1,2]. The primary effect of the deficiencies in data quality was to limit the ability of the Audit to reach conclusions about compliance with the recommended use of endoscopic ultrasound and staging laparoscopy for staging curative patients. Improving the submission of data on the staging process should be a priority for NHS trusts.

Patient characteristics, referral and diagnosis

- the median age of patients at diagnosis was 72 years, though 10 per cent were aged under 55, and 1 per cent were under 40 years. The majority of patients were referred by general practitioners (GP). However, approximately 18 per cent of patients were referred by another hospital consultant. All clinicians need to be alert to the disease, in middle-aged as well as older patients
- patients with stomach cancer were more likely to be referred following an emergency admission than patients with tumours at other sites (23 per cent for stomach compared to 12 per cent for oesophageal or junctional tumours). The proportion of patients diagnosed following an emergency admission varied significantly across the Cancer Networks. Patients referred following an emergency admission were significantly less likely to have a curative treatment plan
- overall, 67 per cent of GP referrals were "urgent". However, the proportion of urgent GP referrals differed substantially between Cancer Networks, ranging from 34 per cent to 87 per cent. The proportion of stomach cancer patients referred urgently was also significantly less than patients with oesophageal or junction tumours
- the time between referral and diagnosis was longer on average for non-urgent GP referrals, with 45 per cent not being diagnosed within 28 days compared to 18 per cent for urgent GP referrals. 14 per cent of non-urgent GP referrals had not been diagnosed three months after the referral was made. This delay was observed consistently across the Cancer Networks.

Disease staging

- overall, 88 per cent of patients had a CT-scan to stage the disease indicating compliance with the recommendation that patients who are candidates for curative treatment have this investigation. Patients not having a CT-scan tended to be older and frailer, a pattern consistent with good clinical judgement
- the reported use of endoscopic ultrasound and staging laparoscopy was low with EUS being recorded for 58 per cent of appropriate patients and staging laparoscopy being recorded for only 48 per cent. There was significant variation between Cancer Networks. These figures on the use of EUS and staging laparoscopy are likely to reflect under-reporting but they may also hide regional differences in clinical practice.

Treatment planning

- overall, 35 per cent of patients had a curative treatment plan. Among regions with high case-ascertainment (and therefore a low risk of selection bias), the proportion of patients with curative intent varied from 25 per cent to 40 per cent. This variation persisted after the effects of confounding variables (age, sex, co-morbidity, performance status and disease stage) were taken into account

- for patients with stage II or III adenocarcinoma of the oesophagus or GOJ, 80 per cent were planned to undergo neoadjuvant chemotherapy before their operation. For stomach cancer patients, the proportion was 55 per cent. This difference may reflect the more recent publication of the evidence for stomach cancer patients (2005 compared to 2002[3,4]) but still represents a delay in implementing evidence-based practice

- the most common invasive palliative modality was chemotherapy, with approximately half of patients being considered appropriate. There was significant variation across the networks in the proportion of palliative patients intended to receive palliative chemo- or radiotherapy; the proportion exceeding 60 per cent for four Cancer Networks, whilst being less than 25 per cent for four other networks.

Curative treatment

- the median age of curative surgical patients was 67 years (inter-quartile range: 60 to 74 years). 206 patients (6 per cent) were aged 80 years or over. Concerns about curative surgery not being offered to physiologically fit, older patients are not supported by these figures

- data on 1,129 oesophagectomies and 766 gastrectomies was submitted to the Audit. Approximately 1 in 4 of the oesophagectomies and 1 in 8 of the gastrectomies were performed by a minimally invasive ("keyhole") approach. Nearly all of the oesophagectomies were performed by the transthoracic, rather than transhiatal, approach; this is in accordance with the latest evidence

- 2 per cent of oesophagectomies and 3.4 per cent of gastrectomies included a splenectomy. These figures are consistent with surgeons following the recommendation that splenectomy should be avoided unless indicated

- the 30-day mortality rate for oesophagectomy and gastrectomy was 3.2 per cent (95 per cent CI 2.3 to 4.5) and 4.2 per cent (95 per cent CI 2.9 to 6.0), respectively and the in-hospital mortality was 5.0 per cent (95 per cent CI 3.8 to 6.4) and 6.9 per cent (95 per cent CI 5.2 to 9.0). These are lower than rates found in previous UK audits. The higher in-hospital mortality rates reflect the longer lengths of stay that some seriously sick patients have before they die. Approximately 1 in 10 oesophagectomy patients and 1 in 12 gastrectomy patients needed a further operation during their hospital stay

- patients having a minimally invasive oesophagectomy had fewer respiratory complications than those having surgery by the open route. There were no other significant differences between the two approaches in terms of peri-operative mortality, complications, length of stay or lymph node yield

- 95 per cent of oesophagectomies and 72 per cent of gastrectomies yielded the minimum number of lymph nodes required for TNM histopathological staging (6 and 15, respectively)

- around 3 in 10 patients who underwent neoadjuvant chemotherapy and 2 in 10 who underwent adjuvant chemotherapy did not complete their chemotherapy course. Radiotherapy treatment appeared to be tolerated better with over 95 per cent of patients completing their treatment course. The proportion of neoadjuvant patients who did not proceed to surgery will be examined in the Third Annual Report.

Palliative treatment

- palliative radiotherapy was well tolerated by patients, with 93 per cent completing their prescribed treatment course. Palliative chemotherapy was poorly tolerated by patients with half of patients failing to complete their course. 11 per cent of patients suffered acute chemotherapy toxicity and a further 8 per cent stopped it due to choice

- over 80 per cent of the episodes of endoscopic / radiological palliative therapy submitted to the Audit were stent insertions, the majority in patients with oesophageal or junctional tumours. Other types of procedure (such as laser or argon beam coagulation) and episodes of brachytherapy were concentrated in particular networks. This may reflect incomplete data submission but it may also hide variation in the availability of endoscopic / radiological palliative therapies

- there were 138 procedures recorded where "dilatation alone" was performed, most of which took place in 6 networks. This is contrary to current clinical guidelines[5,6]

- the overall stent deployment success rate was 98 per cent. Most procedures were performed by consultants or registrars, consistent with current recommendations[5]

- 4 per cent of patients undergoing a stent insertion died within a week of the procedure and 8 per cent within a fortnight. It is not clear if this represents inappropriate patient selection or the complications of stent insertion

- a third of patients undergoing stent procedures had combined sedation and local anaesthetic spray, although the National Confidential Enquiry into Patient Outcomes and Death (NCEPOD) recently advised caution as combined sedation/spray might have contributed to aspiration pneumonia in some patients[5]. There was considerable variation between trusts in the degree to which combination anaesthesia was used, with 20 per cent of trusts using it in more than 80 per cent of cases

- the method of stent insertion was evenly split between endoscopy alone, fluoroscopy alone and a combination of the two with considerable regional variation evident. Stent deployment was equally effective irrespective of the method of stent insertion.

Recommendations

1. O-G cancer services should strive to improve awareness of the disease among their population, local GPs and hospital clinicians. National initiatives such as the recent O-G cancer awareness week should be supported by all trusts and networks.

2. Cancer Networks should examine their referral guidelines and pathways, in order to reduce the proportion of referrals after emergency admission and attempt to reduce the delays experienced by patients referred non-urgently.

3. O-G cancer services should ensure that all patients undergo a CT-scan plus an EUS (if oesophageal / upper junctional tumour) or a staging laparoscopy (if gastric / lower junctional tumour) before undergoing curative treatment and should improve the monitoring of their use.

4. All patients should be discussed with the specialist MDT to reduce the observed variation in the proportion of patients selected for curative treatment and palliative oncology.

5. All patients with stage II or III adenocarcinoma who are physiologically fit enough should be offered neoadjuvant chemotherapy or entered into appropriate national trials of such treatment, irrespective of tumour site.

6. Surgeons should monitor their pathology outcomes in order to ensure an adequate lymph node yield is obtained in every patient.

7. Minimally invasive surgery should continue to be introduced cautiously following the guidance published by the Association of Upper Gastro-Intestinal Surgeons[7]. Early indications are that this approach is safe and may reduce the incidence of postoperative respiratory complications.

8. Cancer Networks should improve access to brachytherapy, because it improves symptom control in patients with a prognosis longer than three months[8].

9. Dilatation alone should not be performed as it is ineffective in controlling symptoms and much better alternatives are available.

10. NHS trusts should concentrate on improving the data completeness of their submissions, in particular those data items essential for examining treatment processes (such as staging investigations) and outcomes (such as resection margin status).

1. Introduction

1.1 Aims of the Audit

This is the Second Annual Report of the National Oesophago-Gastric Cancer Audit that started in October 2006. It contains initial results on the process and outcomes of care received by patients diagnosed with oesophago-gastric (O-G) cancer. The results summarise data submitted by hospitals in England and Wales on patients diagnosed with invasive epithelial cancer of the oesophagus or stomach between 1 October 2007 and 31 March 2009.

The overall aim of the Audit is to measure the quality of care received by patients with oesophago-gastric cancer in England and Wales. It will answer audit questions related to:

1. the timescale of the process of care
2. the determinants of treatment and outcomes
3. the proportion of patients treated palliatively and its determinants
4. the short-term outcomes of surgical treatment
5. the survival and health status of patients at 1 year after diagnosis
6. patient quality of life and patient experience with care.

To answer these questions, hospitals have been prospectively submitting data on the process and outcomes of care among the patients with O-G cancer that they treat. Initially, the Audit was funded to include all patients in England and Wales diagnosed with invasive O-G cancer between 1 October 2007 and 31 December 2008. In the summer of 2008, the Audit was extended to include patients diagnosed up to 30 June 2009.

The prospective audit is collecting information on the diagnosis, staging, and planned treatment of all patients. Additional information is then collected on treatment subsequently received by patients and covers:

- curative and palliative surgery
- postoperative pathology for patients undergoing curative surgery
- curative and palliative oncological treatment (chemotherapy / radiotherapy)
- endoscopic / radiological palliative therapy.

In this report, we focus on audit questions related to disease staging and co-morbidity of patients, the timescales for diagnostic and therapeutic procedures, and how therapeutic and palliative management decisions are associated with patient characteristics. The longer-term outcomes of care will be the focus of the Third Annual Report and will focus on questions related to variation in outcomes after surgery, patient survival, and quality of life.

1.2 Treatment of oesophago-gastric cancer

Investigation and treatment

Oesophago-gastric cancer is the fifth most common malignancy (and fourth most common cause of cancer death) in the United Kingdom, affecting approximately 13,500 people each year [9–11]. In common with many Western countries, the incidence is increasing, particularly of adenocarcinomas of the lower oesophagus / upper gastro-oesophageal junction (GOJ) [12,13]. The prognosis for many patients diagnosed with O-G cancer remains poor, with overall 5-year survival rates in England and Wales being approximately 7 per cent for oesophageal and 13 per cent for gastric cancer.

As with other cancers, the treatment options and overall survival depend on both the stage of the disease (how far the disease has spread) and the patient's general health. Only people diagnosed with localised disease are suitable for treatment with curative intent. One of the main difficulties with O-G cancer is the fact that many of the symptoms are insidious, which results in a high proportion of patients presenting late with incurable disease.

Almost all patients are diagnosed by an endoscopy and biopsy. If they are fit for curative treatment, patients then have a number of staging investigations. The latest guidelines of the investigations patients should undergo before being selected for curative treatment are as follows [14,15]:

- all patients should have a CT-scan to determine if there is metastatic disease
- patients with oesophageal cancer or upper junctional cancer should have an endoscopic ultrasound (EUS) to determine local invasion and lymph node spread
- patients with stomach cancer or lower junctional cancer should undergo a staging laparosopy to examine for peritoneal metastases.

Other investigations such as PET / PET-CT or ultrasound may improve the staging accuracy, and are used if appropriate and the resources are available. PET / PET-CT is a relatively recent development and firm guidelines for its use have not so far been published.

The surgical removal (resection) of the tumour remains the mainstay of curative treatment. Recent clinical trials have shown that for patients with locally advanced adenocarcinoma of the oesophagus, GOJ and stomach, combining surgery with pre-operative (neoadjuvant) chemotherapy can improve rates of 5-year survival [3,4]. The regimen for stomach cancer also includes three postoperative cycles of chemotherapy.

The benefit of combining surgery with neoadjuvant chemo-radiotherapy, and of combining oesophageal surgery with postoperative (adjuvant) chemotherapy or radiotherapy, is less clear and these are recommended only when given within a clinical trial [15]. Patients with locally advanced disease may also receive chemotherapy or radiotherapy with the aim of downsizing the tumour to improve the chance of removing it completely.

For squamous cell carcinoma of the oesophagus, definitive chemo-radiotherapy has been shown to be an effective curative treatment option[16]. It is currently recommended for patients who are physiologically unfit for, or who decline, surgery[15]. Surgery for O-G cancer is a major undertaking. Previous studies have reported 30-day postoperative mortality rates of up to 12 per cent for resection of the oesophagus and stomach[2,17,18]. In addition, it takes between six and nine months before patients regain their quality of life[19]. Given the high risks of surgery, it is only suitable for patients who are relatively fit and are found to have localised disease on staging investigations. Analysis of a linked Hospital Episode Statistics (HES) / Cancer Registries dataset in the Audit's First Annual Report showed that overall, 20 per cent of patients receive curative surgery in England[20].

For those patients who cannot be cured, a range of palliative treatments exist. The principal aim of palliative care is to achieve the best quality of life for patients and their families by alleviating pain and other symptoms as well as providing psychological and social support. Some oncological treatments may also extend life by a short period but the primary aim is the relief of suffering. Palliative treatments essentially fall into two groups: oncological (chemotherapy, radiotherapy or a combination of the two) or endoscopic / radiological (including stenting, argon beam coagulation, laser therapy and brachytherapy). For patients with distal stomach cancers that are obstructing the passage of food down the bowel, palliative surgery may be required to remove or bypass the obstruction.

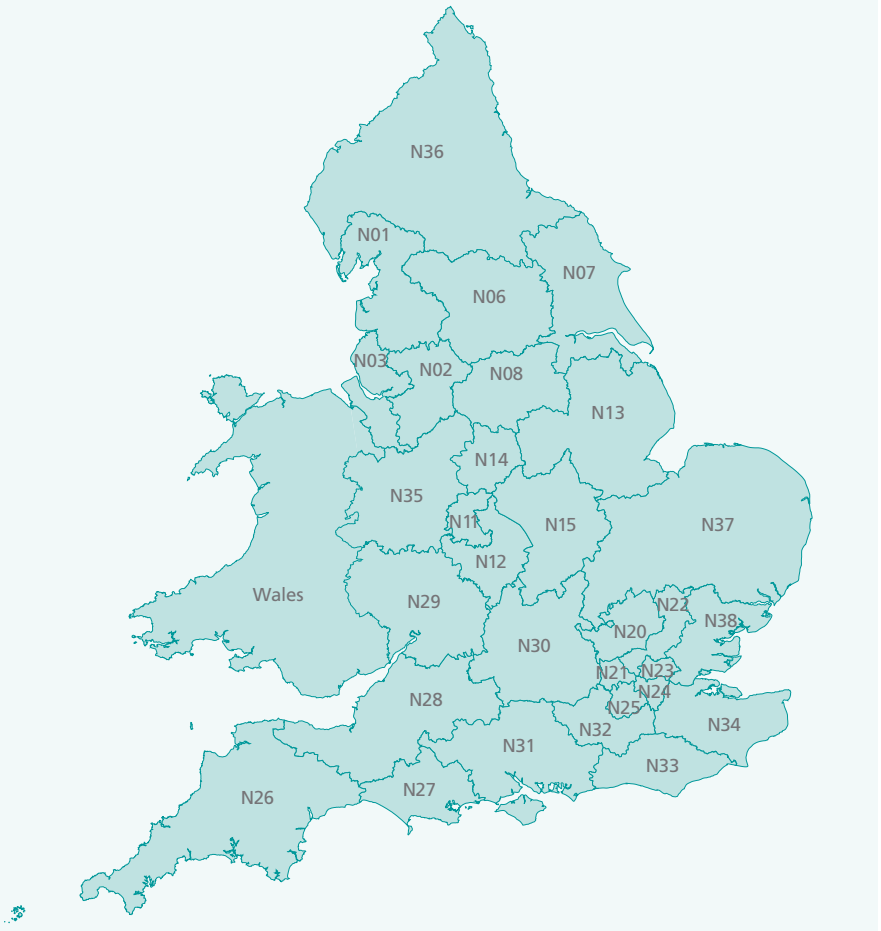
Service organisation and policy in England and Wales

There has been a major reorganisation of cancer services in England and Wales over the last decade. Curative services have been centralised into specialist cancer centres, built around a specialist multidisciplinary team (MDT) composed of experts who look after a high volume of O-G cancer patients. Guidelines, such as the 'Improving Outcomes Guidance', have been published to provide guidance on how services should run and be organised[14,15,21].

Cancer Networks have been established to provide this integrated model of care (see Figure 1.1). Each network contains one or more cancer centres to provide curative surgical treatment and specialist radiology, oncology and palliative services to all patients living in the area. Diagnostic services and most palliative services continued to be provided by individual NHS trusts (units) within the network areas. At the start of the Audit, there were 30 Cancer Networks in England and 3 in Wales. On 1 October 2008, three Cancer Networks (Leicestershire, Northamptonshire and Rutland, Derby / Burton and Mid Trent) were combined to create East Midlands Cancer Network.

Figure 1.1
The 30 Cancer Networks in England that existed at the start of the Audit

Code	Name
N01	Lancashire and South Cumbria
N02	Greater Manchester
N03	Merseyside and Cheshire
N06	Yorkshire
N07	Humber and Yorkshire Coastal
N08	North Trent
N11	Pan Birmingham
N12	Arden
N13	Mid Trent
N14	Derby / Burton
N15	Leics, Northants and Rutland
N20	Mount Vernon
N21	West London
N22	North London
N23	North East London
N24	South East London
N25	South West London
N26	Peninsula
N27	Dorset
N28	Avon, Somerset and Wiltshire
N29	3 Countries
N30	Thames Valley
N31	Central South Coast
N32	Surrey, West Sussex and Hampshire
N33	Sussex
N34	Kent and Medway
N35	Greater Midlands
N36	North of England
N37	Anglia
N38	Essex



2. Prospective audit method

2.1 Inclusion criteria and prospective audit period

Patients were eligible for inclusion in the prospective audit if they were diagnosed between 1 October 2007 and 30 June 2009 with invasive epithelial cancer of the oesophagus, gastro-oesophageal junction (GOJ) or stomach (ICD10 codes C15 and C16), and were aged 18 years or over. Patients with high-grade dysplasia, endocrine tumours or gastro-intestinal stromal tumours (GISTs) were not included in the Audit due to the different behaviour and management of these tumours.

Patients were included in the Audit if they were diagnosed or treated in an NHS hospital in England or Wales. A small number of treatments received by patients in independent hospitals were reported to the Audit but, since the management of patients with O-G cancer takes place in the context of an NHS MDT meeting irrespective of whether they were diagnosed in the public or private sector, the majority of patients in the Audit had received treatment in the NHS only.

2.2 Dataset

The Audit collected data on patient characteristics, pre-treatment tumour stage, the staging process and the management plan of all patients. Data on the process and outcomes of surgery, chemotherapy, radiotherapy and endoscopic palliative therapy were collected if appropriate. A copy of the dataset is included in Appendix 2.

The dataset was developed by the Project Team in conjunction with the Clinical Reference Group. Where possible, definitions were taken from existing datasets such as the National Cancer Dataset (version 4.5), the Scottish Upper GI Cancer dataset (July 2005), the All Wales Oesophago-Gastric Cancer Dataset (version 7.4), and the Royal College of Pathologists minimum datasets for reporting oesophageal and gastric cancers.

2.3 Data collection

Data could be submitted to the Audit in two ways. If data were already being collected on a local information system, the relevant data fields could be extracted and uploaded to the Audit's secure database via a "csv" file upload facility. Alternatively, data could be entered manually via a secure web-based data entry form. The Audit provided a helpdesk during working hours to assist with problems and answer questions about data submission.

The quality of the submitted data was monitored as the Audit progressed and regular newsletters highlighting individual problems with data quality were sent to data managers and lead clinicians. Information was also sent to lead clinicians of Cancer Networks. The Audit's data collection system provided online feedback to the hospitals about their data completeness.

2.5 Statistical analysis

Rates are presented as percentages for O-G cancer patients, being typically grouped by their tumour characteristics or network of treatment. Averages and rates are presented with 95 per cent confidence intervals (CI) where appropriate.

Regional differences in England are shown using the 30 Cancer Networks that existed on 1 October 2007. Wales was not subdivided into its Cancer Networks because its population was similar in size to the population covered by an English Cancer Network. To show differences between the geographical regions, their rates and 95 per cent CI are plotted against the overall rate for England and Wales, with networks ordered according to the number of patients on whom data was submitted. English patients were allocated to the Cancer Network based on their NHS trust of treatment and not by region of residence.

Differences between the percentages of patient groups are assessed using the chi-squared test. Where necessary, multiple logistic regression was used to adjust for potential confounders such as age and sex. All p-values are two-sided and those lower than 0.05 were considered to indicate a statistically significant result. STATA software (version 9.2) was used for all statistical calculations.

3. Audit participation and case-ascertainment

3.1 Participation

Oesophago-gastric services are provided at 154 NHS trusts in England, 44 of which are designated specialist cancer centres. By the deadline for the submission for this report, data had been submitted by 143 individual trusts (93 per cent), including 43 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 trusts.

3.2 Overall case-ascertainment

This report concentrates on the diagnostic and staging process undergone by patients diagnosed between 1 October 2007 and 31 March 2009. Based on the 2007/8 activity data from HES, it was estimated that 19,373 O-G cancer patients would be diagnosed in England over this 18 month period. In total, English NHS trusts notified the audit of 13,275 patients (69 per cent). However, information about the tumour and treatment planning process were only supplied for 11,541 patients (60 per cent). This was partly due to case-ascertainment falling in the early months on 2009 because a few NHS trusts only submitted information until the original end date (31 December 2008).

Another contributory factor was that the staging and treatment planning process was still ongoing for some patients diagnosed in the interval leading up to 31 March 2009.

Data on Welsh patients was available for patients diagnosed with an O-G tumour between 1 January 2008 and 31 December 2008. There were 844 patients registered on CANISC at the time of submission but 86 patients had a tumour site that did not map to one of the 10 NOGCA categories. Thus, the details of 758 (90 per cent) patients were submitted to the Audit.

For patients diagnosed between 1 October 2007 and 30 September 2008, information was submitted on 1,987 curative surgical procedures, 2,027 courses of palliative oncological therapy and 1,606 endoscopic / radiological palliative therapies. In the First Annual Report, data from the linked HES / Cancer Registry dataset suggested that the overall curative resection rate was 20 per cent, which gives an estimated case-ascertainment rate of 73 per cent for curative surgical patients[20]. Case ascertainment for the palliative therapies could not be estimated due to the lack of a reliable denominator.

Table 3.1
Estimated case-ascertainment for the 30 English Cancer Networks over the period 1 October 2007 and 31 March 2009. Estimate based on patients with tumour information

Code	Cancer Network	Expected cases	Patients with tumour records	% Expected cases	# Patients registered	% Registered patients with tumour record
N15	Leics, Northants and Rutland	500	483	97%	494	98%
N14	Derby/Burton	278	234	84%	235	100%
N31	Central South Coast	690	578	84%	604	96%
N37	Anglia	931	779	84%	820	95%
N23	North East London	471	385	82%	473	81%
N27	Dorset	291	235	81%	238	99%
N28	Avon, Somerset and Wiltshire	600	484	81%	494	98%
N29	3 Counties	503	405	81%	406	100%
N36	North of England	1,346	1,059	79%	1,129	94%
N26	Peninsula	670	507	76%	511	99%
N13	Mid Trent	812	594	73%	626	95%
N03	Merseyside and Cheshire	1,031	720	70%	819	88%
N02	Greater Manchester and Cheshire	1,365	940	69%	1,161	81%
N11	Pan Birmingham	744	508	68%	523	97%
N08	North Trent	755	502	66%	563	89%
N33	Sussex	406	242	60%	242	100%
N12	Arden	335	183	55%	230	80%
N25	South West London	488	270	55%	288	94%
N32	Surrey, W Sussex and Hampshire	381	166	44%	169	98%
N01	Lancashire and South Cumbria	679	293	43%	302	97%
N35	Greater Midlands	907	377	42%	450	84%
N24	South East London	595	242	41%	593	41%
N21	West London	458	180	39%	272	66%
N38	Essex	601	234	39%	276	85%
N34	Kent and Medway	589	226	38%	242	93%
N30	Thames Valley	732	264	36%	301	88%
N20	Mount Vernon	322	98	30%	105	93%
N06	Yorkshire	1,012	242	24%	474	51%
N22	North London	469	74	16%	171	43%
N07	Humber and Yorkshire Coast	504	37	7%	64	58%
	England	**19,373**	**11,541**	**60%**	**13,275**	**87%**

3.3 Case-ascertainment by English Cancer Networks

There was considerable variation in the estimated case-ascertainment among the 30 English Cancer Networks (Table 3.1). Over the full 18-month period, 12 networks submitted the clinical information on sufficient patients to achieve at least 70 per cent case-ascertainment. However, eight failed to achieve 40 per cent. This partly reflected the few records submitted by some cancer centres (Appendix 4).

The Audit is unable to provide meaningful information about patient care without clinical data, and so case-ascertainment for each network is determined using the number of patients with at least tumour information recorded. This contributed to some networks having low case-ascertainment. In particular, five networks submitted tumour information on less than two-thirds of their registered patients.

3.4 Data quality of submitted data

The completeness of the data supplied also varied between NHS trusts and networks. The level of completeness for several key data items are summarised in Table 3.2 for Cancer Networks and Appendix 4 for NHS trusts. The selected data items were:

1. the percentage of patients with a valid pretreatment M-stage (either M0 or M1) for patients who underwent a CT-scan
2. the percentage of patients with a known planned treatment intent
3. the percentage of patients with a planned treatment modality among patients who were expected to receive either curative or palliative anti-cancer treatment
4. the percentage of patients with treatment information among patients who were expected to receive either curative or palliative anti-cancer treatment and were diagnosed between 1 October 2007 and 30 September 2008.

Table 3.2
Overview of data completeness for selected data items in the tumour record. Values under 70 per cent are highlighted

Code	Cancer Network	Patients with a tumour record	% Patients with M-stage after CT-scan	% Patients with planned treatment intent	% Patients with planned modality	Treatment entered for patients with modality
N01	Lancashire and South Cumbria	293	68%	92%	69%	90%
N02	Greater Manchester and Cheshire	940	83%	96%	89%	71%
N03	Merseyside and Cheshire	720	65%	85%	76%	79%
N06	Yorkshire	242	62%	98%	93%	89%
N07	Humber and Yorkshire Coast	37	50%	97%	100%	91%
N08	North Trent	502	47%	98%	93%	81%
N11	Pan Birmingham	508	82%	99%	96%	89%
N12	Arden	183	35%	86%	82%	94%
N13	Mid Trent	594	86%	95%	95%	92%
N14	Derby/Burton	234	80%	97%	95%	90%
N15	Leics, Northants and Rutland	483	97%	96%	99%	87%
N20	Mount Vernon	98	96%	100%	100%	99%
N21	West London	180	84%	98%	91%	91%
N22	North London	74	64%	97%	95%	100%
N23	North East London	385	74%	94%	99%	80%
N24	South East London	242	7%	58%	68%	41%
N25	South West London	270	100%	98%	96%	92%
N26	Peninsula	507	67%	95%	85%	96%
N27	Dorset	235	91%	100%	97%	95%
N28	Avon, Somerset and Wiltshire	484	33%	65%	46%	82%
N29	3 Counties	405	84%	99%	99%	90%
N30	Thames Valley	264	80%	99%	93%	85%
N31	Central South Coast	578	80%	99%	96%	94%
N32	Surrey, W Sussex and Hampshire	166	44%	83%	85%	95%
N33	Sussex	242	56%	85%	22%	96%
N34	Kent and Medway	226	58%	100%	98%	97%
N35	Greater Midlands	377	48%	89%	79%	78%
N36	North of England	1,059	87%	97%	94%	89%
N37	Anglia	779	84%	100%	99%	96%
N38	Essex	234	48%	93%	94%	97%
WAL	Wales	754	62%	84%	84%	69%
	Total	**12,295**	**72%**	**93%**	**88%**	**86%**

The completeness of the M-stage data item was the lowest amongst these four items. This was partly due to NHS trusts entering MX as well as leaving the item blank. Pretreatment M-stage is an important determinant of whether treatment intent will be curative or palliative, and should be available after a patient has a CT-scan.

The completeness of the planned treatment intent and treatment modality among networks was high overall, with 23 and 20 networks respectively entering values for more than 90 per cent of patients. The majority of networks had also uploaded treatment information for 90 per cent of patients who were planned to receive either curative or anti-cancer palliative therapies. However, several networks had noticeably lower levels of completeness. In particular, the South East London network had low levels of completeness on all of these selected data items.

The level of completeness among NHS trusts was more variable (Appendix 4). Some NHS trusts provided a large number of records and complete records. Others provided fewer details. In particular, it is a concern that some cancer centres have so far submitted little information about their patients or about the treatments they have received.

3.5 Conclusion

The level of case-ascertainment achieved by many NHS trusts for this Audit has been high and we commend them on their staffs' effort and diligence. For others, participation was limited, either because few patients were registered or because clinical information was incomplete. Included in this latter group are a number of cancer centres. With their central role in the organisation of care, these centres should be setting an example for the networks in terms of their monitoring of treatment selection and outcomes of care.

The deficiencies in data quality had a limited influence in most situations. However, the limited submission of data on EUS and staging laparoscopy meant that the Audit was unable to reach conclusions about compliance with recommended staging practice (see Box 1). This issue is a priority area for NHS trusts to improve.

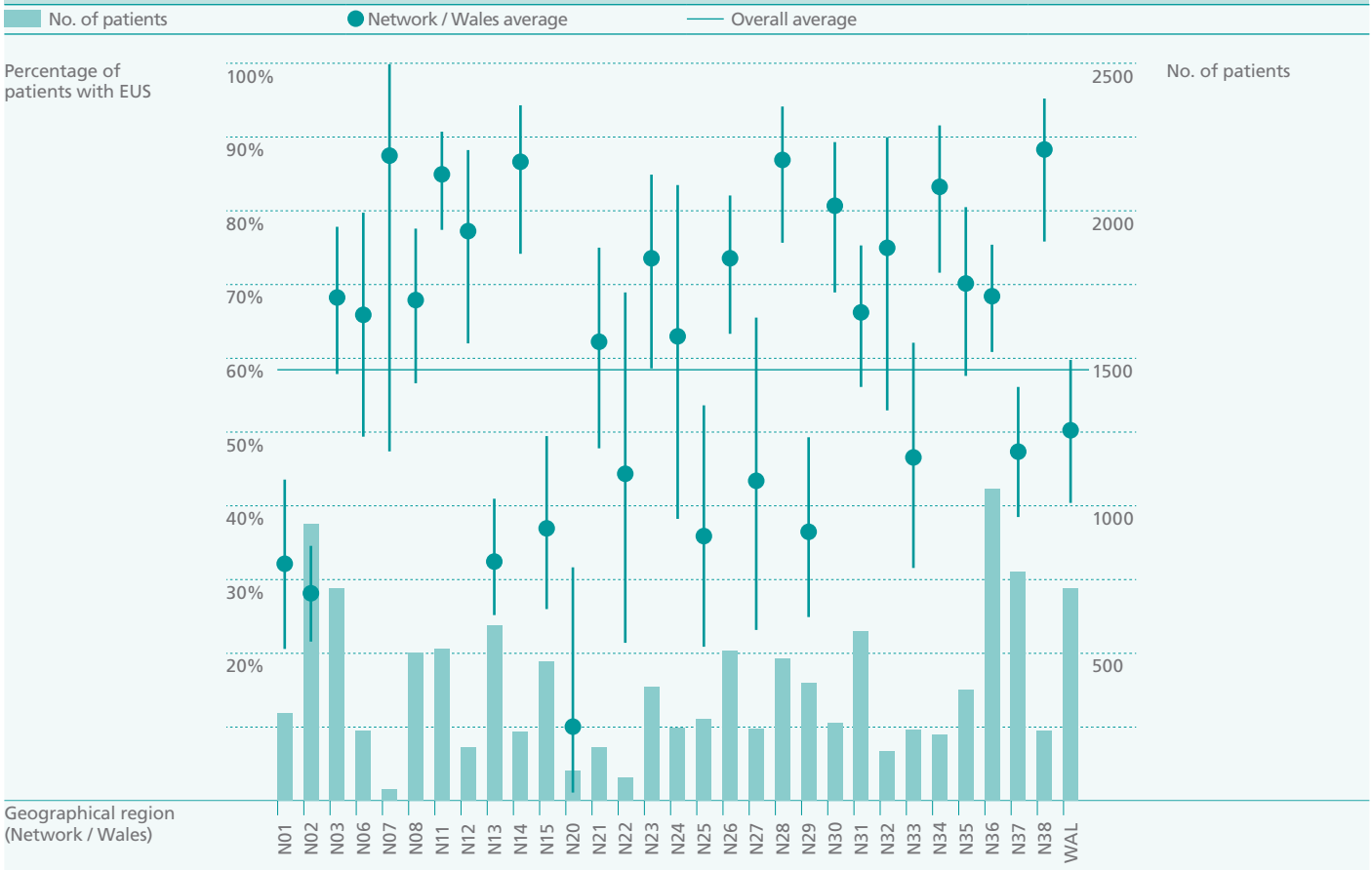
Box 1
Impact of variable data quality on the assessment of staging practice

The latest guidelines recommend that all patients with an oesophageal tumour or a junctional tumour with an oesophageal component, should have at least a CT-scan and an EUS before a decision about curative treatment is made[14,15,21]. In the Audit, only 58 per cent of patients with an oesophageal or Siewert type I or II tumour and with a curative treatment plan, were recorded as having an EUS investigation (see Figure below).

Clinical guidelines also recommend that all patients with a stomach tumour or a junctional tumour with an intra-abdominal component, should have at least a CT-scan and a staging laparoscopy. In the Audit, just 48 per cent of patients had a staging laparoscopy.

It is likely that the low proportion of patients undergoing these core staging investigations is a reflection of these data not being submitted to the Audit. However, previous studies have shown that the use of both EUS and staging laparoscopy varied between regions and it is possible that this poor data quality is masking differences in practice between networks.

Figure
Proportion of patients with an oesophageal or Siewert I or II tumour and with a curative treatment plan who had a CT-scan and EUS, by Cancer Network



4. Patient characteristics

After data cleaning, the Audit had information on 12,226 patients diagnosed between 1 October 2007 and 31 March 2009. Approximately half of the patients had a tumour of the oesophagus, roughly one in six patients had a tumour of the GOJ, while one in three patients had tumours located in the stomach (Table 4.1). The majority of the stomach tumours were located in the proximal stomach (body or fundus).

Approximately two thirds of the oesophageal tumours were adenocarcinomas, while most others were squamous cell carcinomas (31 per cent). Adenocarcinomas accounted for 96 per cent of stomach cancers.

In this report, patients were classified into five groups according to the site and histology of their tumour, and correspond to:

- squamous cell carcinoma of the oesophagus
- adenocarcinomas of the upper and middle oesophagus
- adenocarcinomas of the lower third of the oesophagus and Siewert type I tumours
- Siewert types II and type III tumours
- tumours of the stomach.

People diagnosed with O-G cancer were typically over 70 years old. But the disease was not limited to the elderly; 10 per cent of patients were aged under 55 years, and 1 per cent were under 40 years. The cancer was more common in men than women, with 2 men being diagnosed for every 1 women overall. There were some differences in the age and sex distributions of the five tumour groups (Table 4.2 and Figure 4.1).

Overall, a substantial proportion of patients were frail. Around 20 per cent of patients had a least one co-morbidity and 1 in 6 had a performance status of 3 or more, indicating that they were confined to bed for more than 50 per cent of the time. The prevalence of co-morbidities and degree of physical impairment increased with age, but tumour type was not associated with either co-morbidity or performance status.

Figure 4.1
Distribution of patient ages at diagnosis, grouped by type of tumour and patient sex

The limits of the box shows 25th, 50th (median) and 75th percentiles. The outer limits show the minimum or maximum age unless the patients ages are unusually high or low compared to the spread of the interquartile range. These unusual values are shown as circles (○)

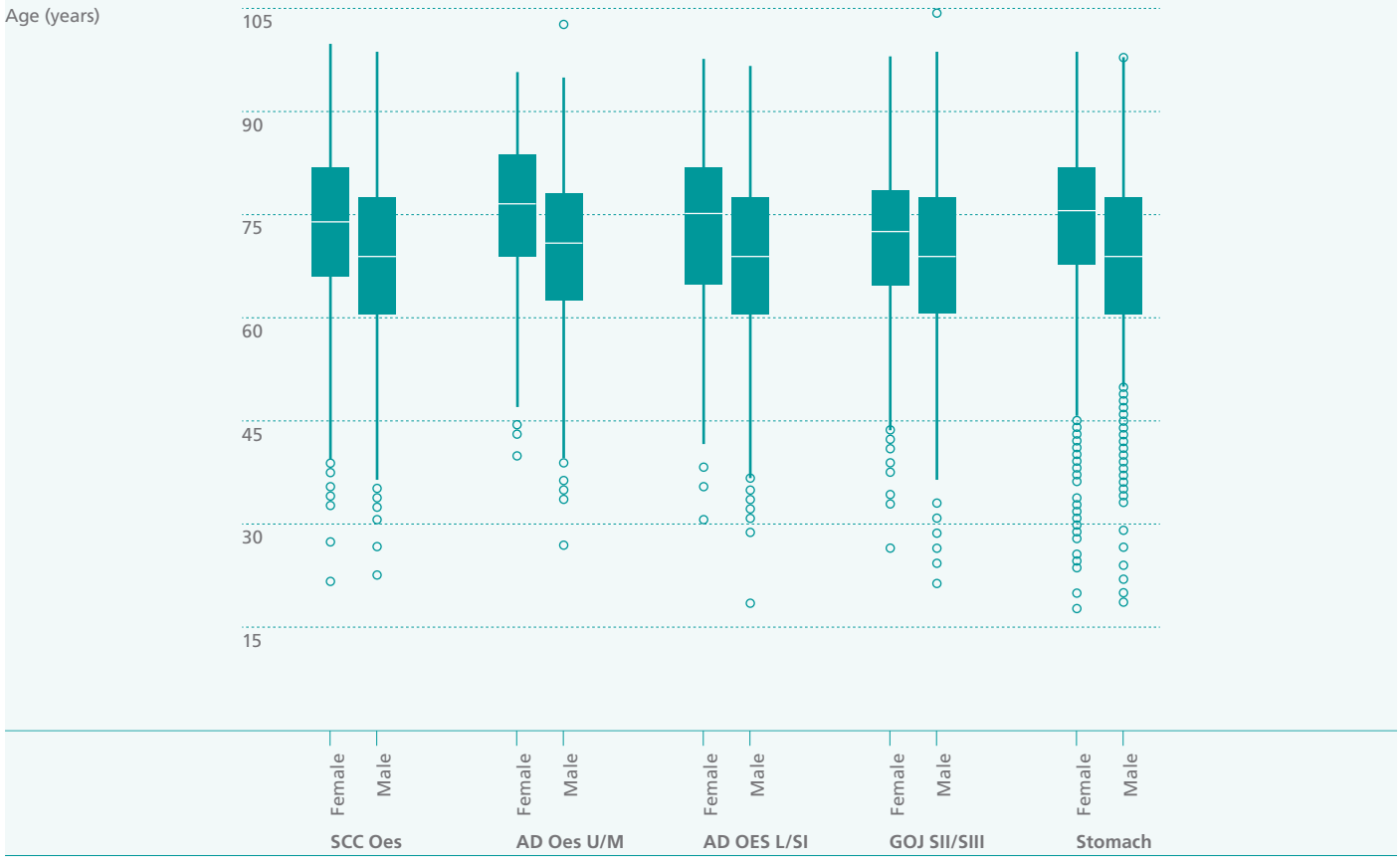


Table 4.1
Site of tumours among patients diagnosed with O-G cancer

Site	Patients	%Total	Sub-site	Patients	%Site
Oesophagus	6,279	51%	Upper third	448	7%
			Middle third	1,620	26%
			Lower third	4,211	67%
G-O junction	2,239	18%	Siewert I	939	42%
			Siewert II	600	27%
			Siewert III	700	31%
Stomach	3,708	31%	Fundus	514	14%
			Body	1,849	50%
			Antrum	919	25%
			Pylorus	426	11%
Total	**12,226**				

Table 4.2
Summary of patient characteristics, by type of tumour

Number of patients	Patients	Oesoph. SCC	Oeso ACA Upper / Mid	Oeso ACA Lower / SI	GOJ SII / SIII	Stomach
	Total	2,447	720	4,051	1,300	3,708
	Women	1,270	230	801	304	1,394
	Men	1,177	490	3,250	996	2,314
	Ratio women to men	1:0.9	1:2.1	1:4.1	1:3.3	1:1.7
Median age (years)	Women	74	77	75	73	76
	Men	69	71	69	75	75
Performance status[1] >3 (%)		20%	17%	13%	13%	24%
Patients with >1 co-morbidity (%)		36%	41%	41%	36%	41%
Patients with Barretts Oesoph. (%)		1%	6%	4%	1%	0%

NB: SCC = squamous cell carcinomas; ACA = adenocarcinoma; SI, SII, SIII = Siewert I, II, III
1. 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 cannot perform light / office work.

5. Referral for diagnosis

5.1 Referral route

The majority of patients were referred to O-G cancer teams for diagnostic assessment by general practitioners (GPs) (Table 5.1) but there was a noticeable difference between the referral patterns for oesophageal and stomach cancers. In particular, a larger proportion of patients with stomach cancer were referred following an emergency admission.

The proportion of emergency referrals also varied by age, typically increasing with age but with slightly higher proportions among patients under 55 years (Table 5.2). The reasons for this are not clear and may indicate differences in patterns of patient presentation or thresholds for referral by GPs. While the regional variation was typically between 10 to 20 per cent, the proportions in two Cancer Networks exceeded this considerably (N20 = 28 per cent, N15 = 32 per cent).

Higher than expected numbers of emergency admission are of concern because patients referred after an emergency admission were significantly less likely to have a curative treatment plan than patients referred by the other routes (17 per cent vs 39 per cent, p<0.001).

Among those patients referred by GPs, 67 per cent were marked as "urgent". The proportion of stomach cancer patients referred urgently was significantly less than patients with oesophageal or junction tumours. The proportion of urgent referrals increased slightly with age (64 per cent in people under 60 years compared to 68 per cent in people over 80 years) but was not related to sex, co-morbidity or performance status.

The proportion of urgent GP referrals differed substantially between Cancer Networks, ranging from 34 per cent to 87 per cent (Figure 5.1). Compared to those referred urgently, patients referred by their GPs on a non-urgent basis were slightly less likely to have a curative treatment plan (36 per cent vs 39 per cent, p=0.01).

5.2 Waiting time between referral and diagnosis

Government policy gives a target of 14 days between the date of referral and the date of diagnosis for urgent referrals from GPs. There are no targets for patients referred from other sources. Overall, 52 per cent of urgent referrals were diagnosed within the target wait, although nearly 20 per cent were not diagnosed within 28 days (Table 5.3). The time between referral and diagnosis was longer on average for non-urgent referrals, with 45 per cent not being diagnosed within 28 days. 14 per cent of non-urgent GP referrals had not been diagnosed three months after the referral was made.

Table 5.1
Source of referral among O-G cancer patients

Source of referral	Oesphageal or GOJ tumour	(%)	Stomach tumour	(%)
Emergency admission	901	12%	781	23%
GP referral	5,449	71%	1,893	56%
Other from another hospital consultant	1,295	17%	699	21%
Total	**7,645**		**3,373**	
Missing	**873**		**335**	

Table 5.2
Proportion of patients referred after emergency admission, by age at diagnosis

	Patient age at diagnosis (years)							
Site of tumour	Under 55	55 to 59	60 to 64	65 to 69	70 to 74	75 to 79	80 to 84	85 plus
Oesohageal or GOJ	10%	7%	8%	8%	11%	13%	17%	21%
Stomach	22%	15%	18%	17%	19%	22%	26%	41%

Table 5.3
Number (%) of patients who were diagnosed within a specific time after referral by their GP, by the urgency of referral

Time between referral and diagnosis	Urgent GP referrals	(%)	Non-urgent GP referrals	(%)
2 weeks	2,561	52.5	837	34.6
4 weeks	3,983	81.6	1,314	54.3
8 weeks	4,607	94.4	1,886	77.9
12 weeks	4,692	96.2	2,086	86.2

The longer times from referral to diagnosis among non-urgent GP referrals were observed consistently across the English Cancer Networks:

- 21 of the 30 networks diagnosed more than 80 per cent of urgent GP referrals within 30 days, but only 1 network managed this for non-urgent referrals
- 21 of the 30 networks diagnosed fewer than 60 per cent of non-urgent GP referrals within a 30 day period.

Whether a patient was diagnosed at a cancer centre or local unit made little difference in the time between referral and diagnosis.

5.3 Interpretation

There are two distinct issues raised by the patterns of referral revealed by the Audit data. The first concerns the number of patients referred to O-G cancer teams following an emergency admission. There are several possible explanations for this:

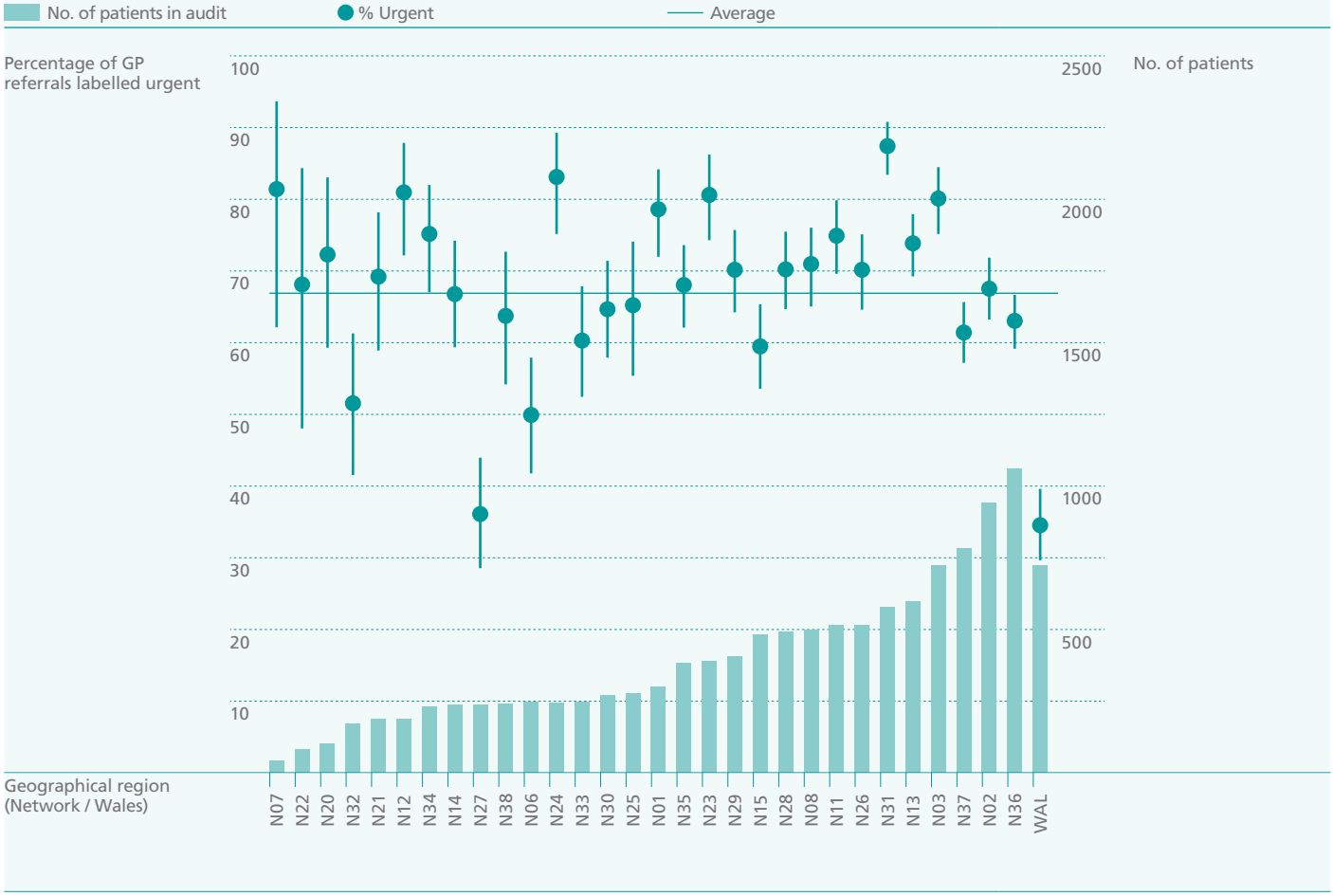
1. many of the symptoms of O-G cancer are insidious and non-specific, which may result in patients not presenting to their GP until they are extremely unwell and are referred in for emergency assessment and treatment
2. the non-specific nature of the symptoms may also cause GPs not to suspect cancer until their condition deteriorates to requiring emergency admission.

The second issue concerns the variation between Cancer Networks and Wales in the proportion of patients referred urgently. All GP referrals where cancer is suspected should be urgent, and the variation suggests that, in many patients, the GP considered the likelihood of cancer to be small. This appeared to happen more frequently for patients with stomach cancer.

It is important that Cancer Networks examine whether they need to improve awareness of the disease among their population and/or the referral pathway from primary to secondary care. The primary goal would be to reduce the proportion of referrals after emergency admission because patients who were referred via this route were much less likely to be candidates for curative treatment.

Cancer Networks should also examine whether the waits of patients referred by GPs non-urgently can be improved. Patients referred non-urgently waited significantly longer than urgent referrals before they were diagnosed, and a number waited over 3 months.

Figure 5.1
The number of GP referrals and the proportion of GP referrals marked as "urgent", by Cancer Network



6. Staging and treatment planning

6.1 Staging investigations

Patients have a number of staging investigations to determine if they are candidates for curative treatment. The latest guidelines recommend that:

- all patients should have a CT-scan to determine if there is metastatic disease
- patients with oesophageal cancer or upper junctional cancer should have an endoscopic ultrasound to determine local invasion and lymph node spread
- patients with stomach cancer or lower junctional cancer should undergo a staging laparosopy to examine for peritoneal metastases.

Overall, it appeared that patients who would be eligible for curative care underwent a CT-scan as part of their staging investigations. The proportion of patients who had a CT-scan was typically over 90 per cent except among those who might be increasingly too frail to have curative surgery (Table 6.1). The use of CT-scan did not differ statistically between the types of tumour or patient sex.

The proportion of patients who underwent CT-scans varied between Cancer Networks with fewer than 75 per cent of patients in Cancer Networks N03 and N25 having this investigation (Figure 6.1). Inspection of the data suggested that these low overall network rates were influenced by a few hospitals that had not submitted any information about staging investigations. Thus, these outliers appear to be due to incomplete submission of data rather than differences in clinical practice.

The use of EUS and staging laparoscopy was unexpectedly low:

- among 2,199 patients with an oesophageal or Siewert type I or II tumour and who had a curative treatment plan, only 58 per cent were recorded as having EUS
- among 1,535 patients with a stomach or Siewert type III tumour and who had a curative treatment plan, only 48 per cent were recorded as having staging laparoscopy.

This low figure is most likely to be due to a combination of under-reporting, as well as variation in practice (see Chapter 3, Box 1).

Figure 6.1
Proportion of patients who had a CT-scan, by Cancer Network

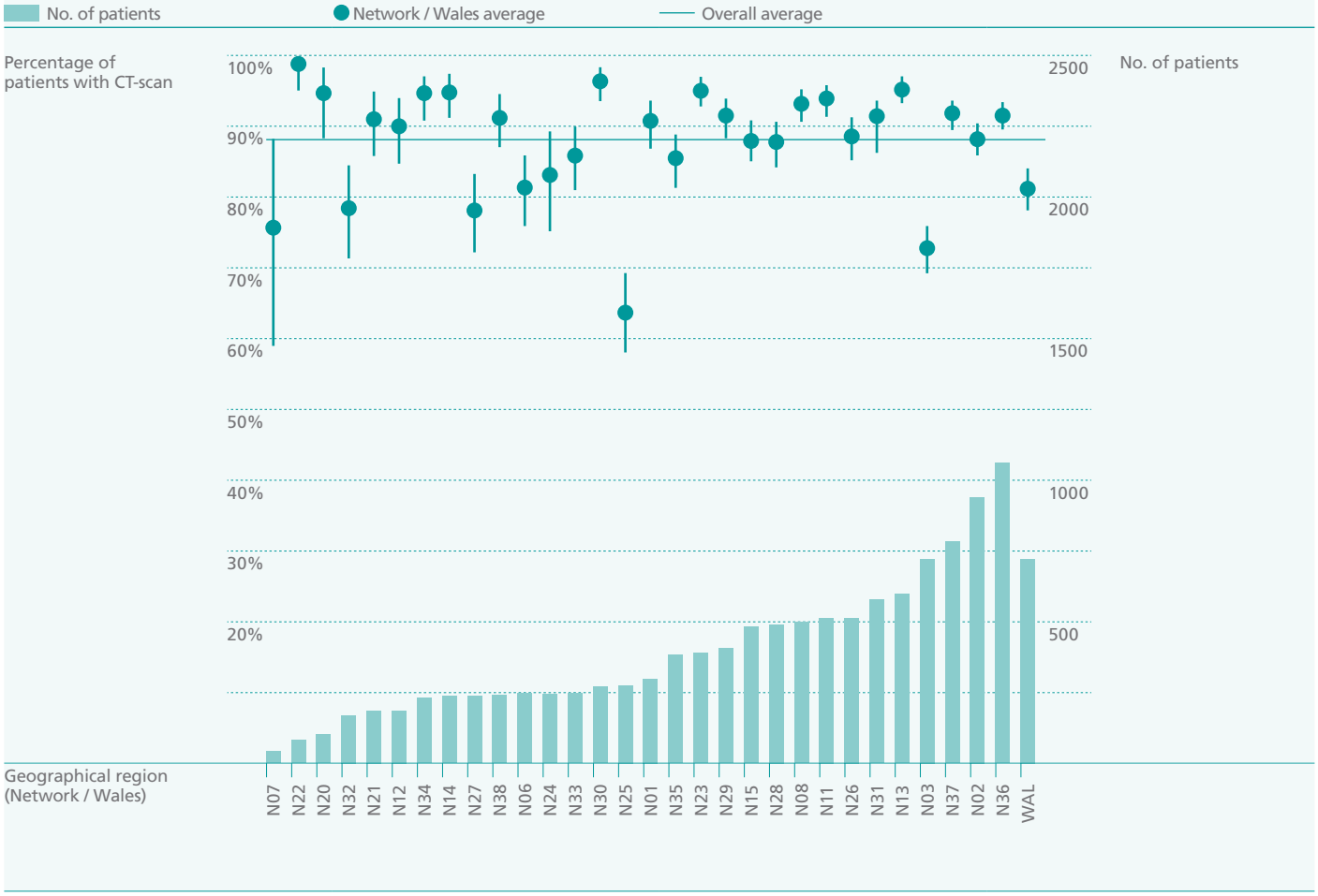


Table 6.1
Proportion of patients who had a CT-scan, by age and performance status[1]

Age group (years)	Performance status				
	0	1	2	3	4
Under 60	95%	98%	94%	96%	87%
60 to 70	96%	96%	96%	94%	84%
70 to 80	97%	97%	96%	90%	84%
80 plus	89%	92%	88%	71%	71%

[1] 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.

Table 6.2
Treatment intent among Audit patients, by type of tumour

	Oesoph. SCC	Oeso ACA Upper / Mid	Oeso ACA Lower / SI	GOJ SII / SIII	Stomach
Curative	30%	31%	40%	41%	34%
Palliative	70%	69%	60%	59%	66%
Total	**2,227**	**663**	**3,771**	**1,219**	**3,475**
Missing	**220**	**57**	**280**	**81**	**233**

6.2 Treatment decisions

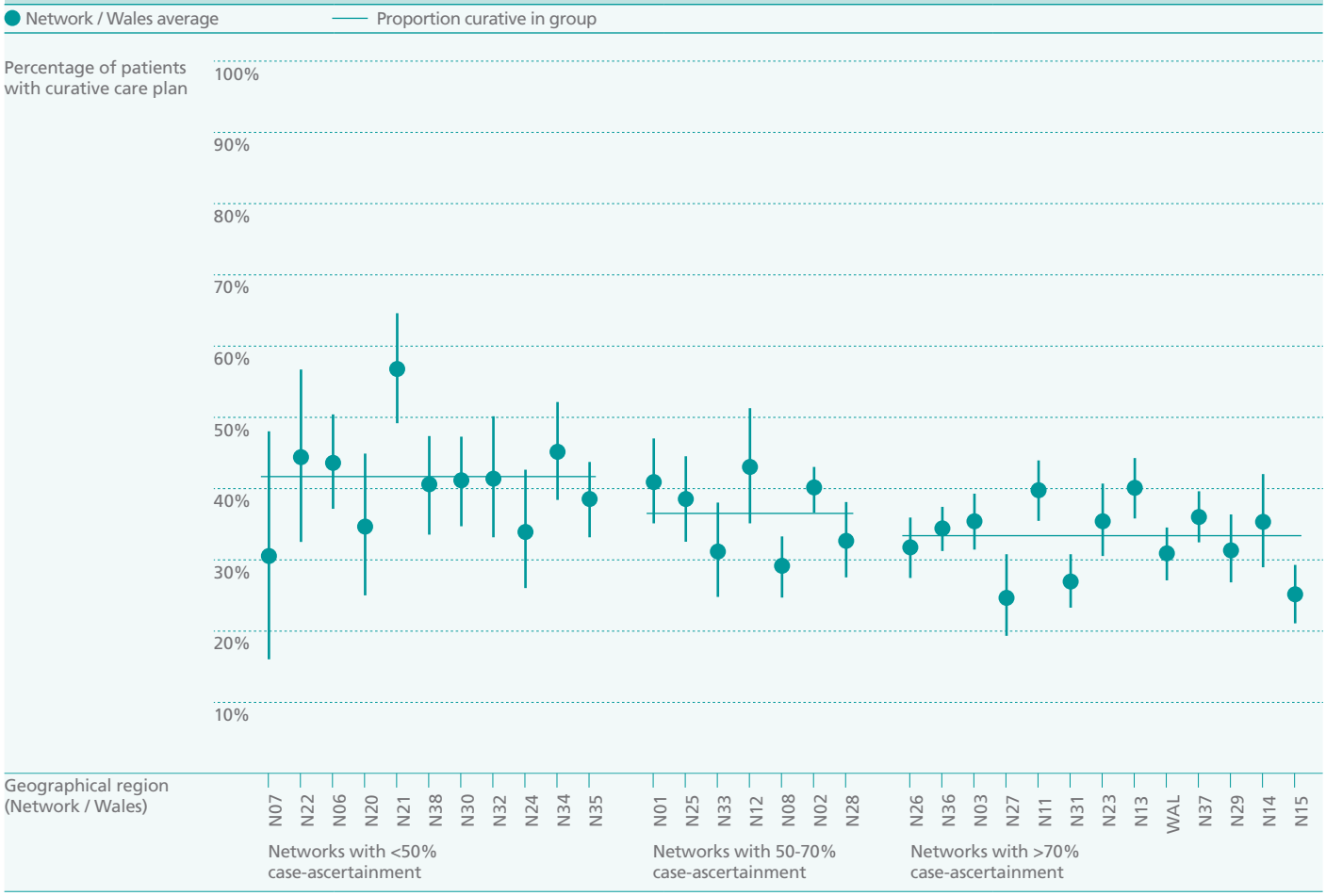
Among the patients submitted to the Audit, the treatment intent was curative for 35 per cent of patients although the rate varied slightly between patients with different types of tumour (Table 6.2). On average, a slightly larger proportion of patients had curative plans among those networks with low case-ascertainment compared to the proportion among networks with high ascertainment, indicating some selection bias within specific hospitals. However, even among those networks with high case-ascertainment, there was substantial variation among networks in the proportion of patients with curative intent (Figure 6.2). This variation persisted even when the network rates were adjusted for differences in the characteristics of patients within each network (age, sex, number of co-morbidities, performance status, tumour type and disease stage).

The distribution of planned treatments among patients undergoing curative or palliative treatment is summarised in Table 6.3. Approximately, a third of patients with squamous cell carcinoma of the oesophagus had definitive chemo-radiotherapy as their curative treatment plan with the remainder being planned to have surgery with or without chemotherapy.

Among palliative patients, 49 per cent of patients with stomach cancer were planned to have best supportive care only compared to between 19 per cent and 25 per cent for the other cancer sites. The most common invasive palliative modality was palliative oncology, with approximately half of patients being considered for either chemotherapy or radiotherapy. There was significant variation across the networks in the proportion of palliative patients intended to receive palliative chemo- or radiotherapy, exceeding 60 per cent of patients in the four networks with the highest values. In the four networks with the lowest use, the proportion of patients intended to receive palliative chemo- or radiotherapy was less than 25 per cent.

Clinical trials have demonstrated a survival advantage when peri-operative chemotherapy is given for locally advanced adenocarcinoma of the oesophagus, GOJ or stomach (stage 2 or 3 disease)[3,4]. Services seem to be responding to this evidence as a high proportion of patients had treatment plans that combine surgery and peri-operative chemotherapy (Table 6.4).

Figure 6.2
Proportion of patients with curative treatment plans, by Cancer Network. Cancer Networks are ordered by their estimated case-ascertainment



6.3 Interpretation

Clinical guidelines are consistent in their recommendations on which staging investigations are required to determine if patients are candidates for curative treatment. All patients should have a CT-scan to determine if there is metastatic disease, and it appeared that services within Cancer Networks are meeting this standard of care. The proportion of patients who had a CT-scan was typically over 90 per cent, and the reduction in the proportion having a CT-scan among older and frailer patients is consistent with good clinical judgement.

It is disappointing that the Audit is currently unable to reach a conclusion about the appropriate use of (a) EUS among patients with oesophageal cancer or upper junctional cancer, and (b) staging laparoscopy among patients with stomach cancer or lower junctional cancer. Monitoring their use against recommendations can be easily implemented locally. These core investigations are essential for informing treatment intent and the appropriate treatment options, and their results will usually be discussed at MDT meetings. It is unclear why NHS trusts have not been able to transfer this information routinely to the Audit.

The incomplete information on investigations and pre-treatment stage has limited our ability to interpret the observed variation in the proportion of patients with curative treatment plans. Adjusting for differences in age, co-morbidity, performance status and disease stage removed some differences between regions but the lack of data among some patients reduced the statistical power of the analysis. It is not clear whether the remaining variation, which exceeded more than would be expected from random causes, was due to residual differences between patients from unmeasured confounders or differences in how services plan the treatment of patients. This issue will be revisited in the Third Annual Report when the Audit has finished patient enrolment.

Table 6.3
Treatment modalities among curative and palliative patients, by type of tumour

Curative patients					
Planned treatment	**Oesoph. SCC**	**Oeso ACA Upper / Mid**	**Oeso ACA Lower / SI**	**GOJ SII / SIII**	**Stomach**
Surgery alone	16%	28%	23%	24%	56%
Radiotherapy alone	7%	4%	3%	2%	0%
Chemo. and surgery	41%	55%	66%	68%	40%
Definitive chemo-radio	32%	8%	5%	4%	1%
Chemo-radio & surgery	3%	2%	1%	1%	1%
Endo. muco. resection	1%	2%	2%	2%	2%
Total	**587**	**181**	**1,348**	**448**	**1,097**
Missing	**84**	**23**	**144**	**50**	**76**
Palliative patients					
Planned treatment	**Oesoph. SCC**	**Oeso ACA Upper / Mid**	**Oeso ACA Lower / SI**	**GOJ SII / SIII**	**Stomach**
Photodynamic therapy	0%	0%	0%	0%	0%
Palliative surgery	3%	3%	2%	2%	6%
Palliative oncology	52%	47%	52%	58%	36%
Endoscopic palliation	26%	29%	26%	15%	9%
Best supportive care	19%	21%	20%	25%	49%
Total	**1,398**	**416**	**2,086**	**627**	**2,136**
Missing	**158**	**43**	**193**	**94**	**166**

Table 6.4
Percentage of patients with stage 2 or 3 disease undergoing surgery alone or combined surgery and peri-operative chemotherapy

Tumour site	**Surgery alone**	**Surgery + peri-operative chemotherapy**
Upper ACA	22.2%	77.8%
Lower ACA / Siewert I	15.7%	84.3%
Siewert II / III	13.6%	86.4%
Stomach	45.4%	54.5%

7. Patterns and outcomes of curative treatment

Comprehensive information about the outcomes of curative treatment will be published in the Third Annual Report after the data collection period of the prospective audit has ended and further data verification has been possible. In this report, we provide interim results at a national level to provide a preliminary picture of the characteristics of patients undergoing curative treatment, the types of treatments received and rates of complications.

7.1 Curative surgery

Patient characteristics

Among the Audit patients diagnosed with O-G cancer between 1 October 2007 and 30 September 2008, data were submitted on 2,031 patients who had surgery with curative intent. On average, these patients were younger and fitter than the overall patient group (Table 7.1), which was expected as patients need to have sufficient strength to cope with major surgery. However, curative surgery was performed on a broad range of patients, with 6 per cent being aged 80 years or over.

A number of patients underwent neoadjuvant chemotherapy before their operation. This was more common for oesophageal / GOJ tumours compared to stomach tumours (72 per cent vs 39 per cent). Patients who had a combination of surgery and chemotherapy were on average younger and fitter than those having surgery only. This is consistent with good clinical practice as it indicates that patients are being selected based on their ability to cope with the physiological impact of both the chemotherapy and the surgery.

Procedures performed

In total, data on 1,129 oesophagectomies and 766 gastrectomies were submitted to the Audit (Table 7.2). 136 patients (6.7 per cent) with a curative initial intent ultimately had either an "open-and-shut" or palliative bypass operation.

Of the 1,129 oesophagectomies, nearly all were performed by the transthoracic approach. The few performed using the transhiatal approach were predominantly for tumours of the lower oesophagus / GOJ. Among the 766 gastrectomies, the most common operations were total gastrectomies (43 per cent) and distal gastrectomies (44 per cent). The proportion of patients that had a D1 or D2 gastrectomy were 21 per cent and 68 per cent, respectively (as reported by the operating surgeon).

Approximately 30 per cent of oesophagectomies and 10 per cent of gastrectomies were performed by a minimally invasive (MI) approach (Table 7.3). Of the minimally invasive oesophagectomies, the majority were laparoscopically assisted rather than fully minimally invasive procedures. That the proportion of minimally invasive operations is relatively low overall suggests that surgeons are being cautious in their introduction. The conversion rate was modest, being 6.8 per cent for MI oesophagectomies and 9.4 per cent for MI gastrectomies, suggesting that surgeons were not persevering with a minimally invasive approach when it is unsafe to do so. Further detail on the procedure outcomes and centres carrying out minimally invasive surgery will be published in the Third Annual Report.

Few patients had a splenectomy as well as their primary resection; 22 patients (2.0 per cent) who had an oesophagectomy and 26 patients (3.4 per cent) who had a gastrectomy also had their spleen removed. For oesophagectomy patients, these all occurred during open rather than minimally invasive procedures. There were 8 pancreas resections in association with a splenectomy. No other organ was resected during these operations.

There was considerable variation in the use of feeding adjuncts. Among patients who underwent an oesophagectomy, 69 per cent of patients had a feeding jejunostomy inserted at the time of surgery; no feeding adjunct was inserted in 20 per cent. Among patients who underwent a gastrectomy, 31 per cent of patients had a feeding jejunostomy inserted at the time of surgery; no feeding adjunct was inserted in 45 per cent. The relationship between the use of feeding adjuncts and postoperative outcomes will be examined in the Third Annual Report.

Table 7.1
Summary characteristics of patients who had curative surgery and their procedures

		Type of operation	
		Oesophagectomy	Gastrectomy
No. of procedures		1,129	766
	Open approach	807	670
	Minimally invasive	322	96
Patient characteristics: surgery only			
Number of patients		335	433
Patient age (years)	Median	67	75
	IQR	60 to 74	69 to 80
Performance status:	0 or 1	88%	83%
ASA grade:	II or III	80%	72%
Patient characteristics: surgery and chemotherapy			
Number of patients		794	333
Patient age (years)	Median	63	67
	IQR	58 to 69	59 to 72
Performance status	0 or 1	95%	91%
ASA grade[1]	II or III	83%	82%

[1] American Society of Anaesthesiologists (ASA) five category physical status classification system for assessing patients before surgery. Grades I to V are defined by the presence and severity of systemic disease. Grade I represents a normal healthy patient; while Grade II is a patient with mild systemic disease

Table 7.2
Number of curative surgical procedures, by type and site of tumour

Type of operation		Oesoph. SCC	Oeso ACA Upper / Mid	Oeso ACA Lower / SI	GOJ SII / SIII	Stomach	Total
Oesophagectomy							
	Left thor-abdominal	26	11	93	23	*	157
	2-Phase	118	63	539	119	*	849
	3-Phase	18	14	45	6	*	84
	Transhiatal	*	*	30	*	*	39
Gastrectomy							
	Total	*	*	13	51	254	321
	Extended Total	*	*	7	30	10	47
	Proximal	*	*	*	0	26	30
	Distal	*	*	*	*	329	336
	Other	*	*	*	*	27	32
Other procedures							
("open and shut"/ "bypass")		14	5	46	20	51	136
Total		**179**	**100**	**780**	**259**	**713**	**2,031**

* omitted for being <5 procedures (to prevent identification)

Table 7.3
Surgical approach used for curative surgical resection, by type of procedure

Oesophagectomy				
	Procedure			
Approach	Left thor-abdominal	2 - Phase	3 - Phase	Transhiatal
Open	144	607	23	33
Minimally invasive (MI) / assisted (includes converted)	13	242	61	6
Total	**157**	**849**	**84**	**39**
Percentage MI	**8%**	**29%**	**73%**	**15%**

Gastrectomy		
	Procedure	
Approach	Total / extended total	Sub-total / partial
Open	326	344
Fully minimally invasive (includes converted)	42	54
Total	**368**	**398**
Percentage MI	**11%**	**14%**

Postoperative outcomes

Rates of inpatient complications after surgery are summarised in Tables 7.4 and 7.5. In calculating these results, the operations converted from a minimally invasive to open approach are included in the minimally invasive category. The "any complication" category excludes re-operation and mortality. Patients undergoing a minimally invasive rather than open oesophagectomy had significantly fewer respiratory complications ($p<0.001$). There were no other statistically significant differences in the rates of other specific complications between the two approaches for oesophagectomy. There were no statistically significant differences in complication rates between the two approaches for gastrectomy for any of the types of complication. These findings are consistent with published reports[22]. Note that with the exception of the 30-day mortality rates, these are self-reported data. In the Third Annual Report, these rates will be cross-referenced with data from other sources (such as Hospital Episode Statistics).

Overall, the 30-day mortality rate for oesophagectomy and gastrectomy was 3.2 per cent (95 per cent CI 2.3 to 4.5) and 4.2 per cent (95 per cent CI 2.9 to 6.0), respectively. The in-hospital mortality was 5.0 per cent (95 per cent CI 3.8 to 6.4) and 6.9 per cent (95 per cent CI 5.2 to 9.0), respectively. The higher in-hospital mortality rates reflect the longer lengths of stay that some seriously sick patients have before they die.

The reoperation rate was approximately 1 in 10 for oesophagectomy patients and 1 in 12 for gastrectomy patients. These rates are comparable with those found by the Scottish Audit (overall rate 8 per cent)[2]. It is also worth noting that patients who suffered an anastomotic leak had a significantly higher rate of in-hospital and 30-day mortality, re-operation, as well as respiratory complications and wound infections than those who did not (Table 7.6).

Finally, we compared the outcomes of D1 and D2 gastrectomies, adjusting for age, sex, ASA grade, performance status, number of co-morbidities and resection type. No short-term detrimental effect was observed when a D2 dissection was performed.

There was no relationship between the distribution of length of stay and the type of approach (Table 7.7). Anastomotic leaks, chyle leaks and respiratory complications were all independently associated with an increased length of stay after accounting for patient characteristics (Table 7.8).

Table 7.4
Rates of inpatient complications after oesophagectomy, by type of approach

Complication	Open (n = 783), %		Minimally invasive (n = 314), %	
	Rate	(95% CI)	Rate	(95% CI)
Any complication	34.9	31.7 – 38.3	25.8	21.1 – 30.9
Anastomotic leak	7.8	6.1 – 9.9	10.6	7.4 – 14.4
Chyle leak	3.7	2.5 – 5.3	1.9	0.7 – 4.1
Cardiac	6.8	5.2 – 8.8	4.3	2.4 – 7.2
Wound	6.3	4.7 – 8.2	2.8	1.3 – 5.2
Respiratory	19.7	17.0 – 22.6	10.2	7.2 – 14.1
Re-operation	10.7	8.6 –13.2	12.4	8.9 – 16.7
In-hospital mortality	4.3	3.0 – 6.0	6.5	4.1 – 9.8
30-day mortality	3.1	2.0 – 4.5	3.4	1.7 – 6.0

Table 7.5
Rates of inpatient complications after gastrectomy, by type of approach

Complication	Open (n = 641), %		Minimally invasive (n = 96), %	
	Rate	95% CI	Rate	95% CI
Any complication	21.9	18.9 – 25.3	21.9	13.5 – 30.3
Anastomotic leak	6.3	4.6 – 8.4	9.4	4.4 – 17.1
Cardiac	5.2	3.7 – 7.2	4.2	1.1 – 10.3
Wound	4.2	2.8 – 6.0	1.0	0.0 – 5.7
Respiratory	10.0	7.8 – 12.5	9.4	4.4 – 17.1
Re-operation	8.0	6.0 – 10.4	7.1	2.6 – 14.7
In-hospital mortality	7.1	5.3 – 9.4	5.2	0.2 – 11.7
30-day mortality	4.2	2.8 – 6.0	4.2	1.1 – 10.3

Table 7.6
Rates of complications in patients who suffered an anastomotic leak with those that did not. The increased risk is described as an adjusted odds ratio[1]

Complication	% patients without leak	% patients with leak	Adjusted odds ratio	95% CI	P value
In-hospital mortality	4.75	17.57	5.71	3.33 to 9.81	<0.001
30-day mortality	3.32	6.76	2.83	1.36 to 5.89	0.005
Re-operation	6.13	51.39	15.85	10.17 to 24.68	<0.001
Respiratory	12.82	29.73	2.68	1.76 to 4.09	<0.001
Cardiac	5.78	4.73	0.55	0.22 to 1.40	0.208
Wound infection	4.18	10.81	2.31	1.25 to 4.27	0.007

[1] Odds ratio adjusted for age, sex, ASA grade, performance status, number of co-morbidities

Table 7.7
Summary of length of stay distributions, by type of procedure and approach

Length of stay (days)	Open approach			Minimally invasive approach		
	Patients	Median	IQR	Patients	Median	IQR
Oesphagectomy	783	14	11 to 21	314	14	11 to 23
Gastrectomy	641	12	9 to 19	96	11	8 to 16

Table 7.8
Summary of length of stay distributions for patients with and without various inpatient postoperative complications

Complication	Length of stay (days)	
	Median	IQR
None	13	10 to 19
Anastomotic Leak	37	24 to 56
Chyle Leak	27	16 to 39
Respiratory infection	22	14 to 37.5
Wound infection	19	13 to 33
Cardiac complication	15	11.5 to 25.5

Postoperative pathology results

There was a broad spread of postoperative stage among resected tumours (Table 7.9). The majority of tumours were stage 2 or 3 among patients undergoing an oesophagectomy. In contrast, there was a much higher proportion of gastrectomy patients with a stage 1 tumour. However, approximately 1 in 10 patients who underwent a gastrectomy with curative intent had stage 4 disease.

The postoperative stage, divided by organ and whether or not the patient had surgery alone or combination therapy, is shown in Table 7.10. Of those patients with adenocarcinoma who had undergone neoadjuvant chemotherapy, 4.3 per cent had T0 as their postoperative stage indicating a complete pathological response.

The lymph node yield for oesophagectomies and gastrectomies is shown in Tables 7.11. 95 per cent of oesophagectomies yielded at least 6 lymph nodes, the minimum number required for staging the disease according to the UICC staging system. For gastric cancer, at least 15 nodes are required; the yield met or exceeded this threshold for 72 per cent of gastrectomies. Of those gastrectomies where the recorded intention was to perform a D2 dissection, 53 per cent of open procedures and 58 per cent of minimally invasive procedures achieved the recommended minimum lymph node yield of 25 nodes.

Guidelines recommend monitoring whether the resected tissue from curative operations has tumour free (R0) margins. This is particularly relevant for the longitudinal margins (proximal and distal) because these are, to a large extent, under the control of the surgeon and are less subject to differences in pathological interpretation.

Around 1 in 15 patients have a positive longitudinal resection margin overall (Table 7.12). There was no statistically significant difference in margin positivity among the various types of procedure (2-phase, 3-phase, etc). There were also no statistically significant differences between tumour types, sites or histology in the rates of circumferential margin positivity. As this is the first time national figures have been published on resection margins, these figures need to be treated as preliminary and interpreted cautiously.

Table 7.9
Postoperative stage for patients who underwent an oesophagectomy or a gastrectomy, by type of approach

	Oesophagectomy				Gastrectomy			
Stage	Open Number	%	MI Number	%	Open Number	%	MI Number	%
0	23	3	9	3	16	3	*	
1	111	15	64	22	232	41	37	50
2	279	39	96	33	127	22	13	18
3	271	38	118	40	144	25	14	19
4	35	5	8	3	51	9	*	
Total	**719**		**295**		**570**		**74**	
Missing	**64**		**19**		**71**		**22**	

* omitted for being a small value

Table 7.10
Distribution of post-operative stage, by organ and treatment regime

	Oesophageal or GOJ		Stomach	
Stage	Surgery only	Surgery and chemotherapy	Surgery only	Surgery and chemotherapy
0	4%	3%	2%	4%
1	37%	9%	47%	33%
2	32%	39%	20%	25%
3	26%	43%	24%	26%
4	2%	5%	7%	12%
Total	**295**	**743**	**361**	**305**

7.2 Non-surgical oncology treatment with a curative intent

Clinical trials have shown that neoadjuvant chemotherapy offers a small survival benefit in locally advanced oesophageal, gastric and junctional cancer [3,4]. There is also evidence that definitive chemo-radiotherapy may be curative in patients with squamous cell cancer of the oesophagus and recent guidelines have recommended it for patients who are too frail to undergo surgery or who decline surgery [16].

For patients having neoadjuvant oncological treatment with surgery, the majority received chemotherapy only, consistent with the treatment modality assessed in the clinical trials (Table 7.13). In contrast, among the 208 patients with oesophageal squamous cell carcinoma who had oncological therapy as their definitive treatment, there was a mix of modalities, with only 56 per cent of patients having chemo-radiotherapy. There is no evidence that chemotherapy alone is effective as curative treatment. It is likely therefore that the chemotherapy courses labelled as "definitive" either formed part of definitive chemoradiotherapy or were in fact neoadjuvant / peri-operative courses, although none of the patients who had "definitive" chemo- or radiotherapy also had a curative operation. Radiotherapy alone is inferior to chemoradiotherapy, but is a valid curative option in patients considered unsuitable for combination therapy.

Of the 590 patients with cancer of the lower GOJ or stomach who underwent chemotherapy with a curative intent, 413 had proceeded to surgery in the time-frame of this report (70 per cent). Of these, the surgery was abandoned ("open-and-shut") in 28 patients. In the time-frame covered by this report, a total of 54 of the original 590 patients (14 per cent) had been reported as beginning post-operative chemotherapy as per the MAGIC protocol.

Nearly 1 in 5 of patients undergoing neoadjuvant chemotherapy did not complete their treatment (Table 7.14). The main reasons were acute chemotherapy toxicity (8.2 per cent) and progressive disease (4.5 per cent). A further 24 patients (2 per cent) died during treatment although whether this was due to progressive disease or complications of the chemotherapy is unknown.

For patients with a prescribed course of neoadjuvant, adjuvant and definitive radiotherapy treatment, the proportions who completed the course were 96 per cent, 98 per cent and 97 per cent respectively.

Table 7.11
Proportion of procedures with a given nodal yield, by operative approach

Oesophagectomy					
	Number of nodes examined				
Approach	1 to 5	6 to 14	≥15	Total	Missing
Open	5%	27%	68%	735	72
Minimally invasive	4%	18%	78%	304	18
Gastrectomy					
	Number of nodes examined				
Approach	1 to 14	15 to 24	≥25	Total	Missing
Open	28%	31%	41%	587	83
Minimally invasive	25%	37%	38%	65	31

Table 7.12
Proportion of patients with positive resection margins after surgery

	Oesophagectomy (n = 1109)	95% CI	Gastrectomy (n = 747)	95% CI
Positive overall longitudinal resection margin (%)	6.8	5.4 to 8.3	7.8	5.9 to 10.1
Positive circumferential resection margin (%)	26.8	24.2 to 29.4	NA	NA

Table 7.13
Modality and intent of oncology treatment courses, by type of tumour

Intent	Oesoph. SCC	Oeso ACA Upper / Mid	Oeso ACA Lower / SI	GO SII / SIIIJ	Stomach
Neoadjuvant	191	80	671	221	300
% Chemotherapy	94%	93%	100%	100%	100%
Definitive	208	29	153	40	40
% Chemotherapy	23%	31%	48%	70%	>85%
% Radiotherapy	11%	24%	22%		
% Chemo-radio	56%	45%	31%		

7.3 Interpretation

Patients undergoing curative treatment were younger and fitter on average, a consequence of curative patients being selected on their ability to withstand major surgery, with or without oncological treatment. Nonetheless, the group of patients undergoing curative treatment were varied in their demographic and physiological characteristics, and compared to other studies, were relatively old and unfit [3,23,24]. This probably reflects the characteristics of the British population. Moreover, while concern has been expressed that older, more frail patients are becoming less likely to undergo curative surgery because of their increased operative mortality, these interim results do not support this proposition.

6 per cent of patients who underwent curative surgery were found to have stage 4 disease postoperatively and 6.6 per cent of patients had an "open-and-shut" procedure. These potentially flag areas for improvement but the interpretation of these figures is not straight forward. It is unclear by how much they might be lowered and these figures should be interpreted as a baseline against which future performance can be measured. The "open-and-shut" rate compares favourably to the rate of 10 per cent reported by the SAGOC Audit.

Overall, approximately 30 per cent of oesophagectomies and 10 per cent of gastrectomies were performed by a minimally invasive approach. Patients undergoing oesophagectomy by a minimally invasive approach had a significantly lower rate of respiratory complications but other outcomes including mortality, anastomotic leaks and lymph node yields were similar.

Other potential benefits such as a quicker return to normal activities after MI surgery will require a specific study and are outside of the remit of this Audit.

The 30-day mortality rate of 3.2 per cent for oesophagectomies and 4.2 per cent for gastrectomies compares favourably with the results of other national studies such as the previous AUGIS Audit in 2000 – 2002 (13.7 per cent and 10.3 per cent respectively [1,14]) and the Scottish Audit of Gastro-Oesophageal Cancer (SAGOC; overall mortality 12.9 per cent [2]). It is possible that analysis of HES data in the third report may change this conclusion as the current data is self-reported but at this stage the signs are encouraging for a lower than expected post-operative mortality. The reoperation rate of 10 per cent was comparable to the rate reported by SAGOC (overall 8 per cent [2]). However, the anastomotic leak rate and overall complication rate seem low. These data are more subjective than the previous two outcomes and it is possible that the rates of complication are under-reported.

Surgical resection margins, in particular longitudinal margins, are largely under the control of the surgeon or medical team. For this reason, and because positive resection margins are a significant predictor of poor survival, they have the potential to be an important indicator of surgical quality. Our preliminary figures may provide an initial indication of the potential for improving the outcomes of surgery. However, further work and more in-depth analysis is required before these figures can be used as a national benchmark. These issues will be explored more fully in the Third Annual Report.

Similarly, it is concerning that 28 per cent of gastrectomies do not obtain sufficient numbers of lymph nodes to accurately stage the disease and that nearly half of D2 dissections did not yield the recommended minimum of 25 lymph nodes.

The use of neoadjuvant chemotherapy with curative surgery is consistent with the latest guidelines and evidence. However, nearly 3 in 10 patients did not complete their course of neoadjuvant chemotharapy, which is slightly worse than in the OEO2 and MAGIC trials [3,4]. Radiotherapy treatment appeared to be tolerated better than chemotherapy, with over 95 per cent of patients completing their treatment course. 30 per cent of patients receiving neoadjuvant chemotherapy for stomach / lower junctional tumours did not proceed to surgery and only 14 per cent commenced their postoperative chemotherapy course. At this interim stage, the percentage of patients who completed all 6 cycles of peri-operative chemotherapy cannot be calculated.

Only 100 patients had courses of definitive chemo-radiotherapy with a further 27 having radiotherapy alone. Definitive chemo-radiotherapy should be considered in patients with squamous cell cancer of the oesophagus and is recommended for patients with either morphology who have non-metastatic disease who are too frail to undergo curative surgery, have disease precluding an R0 (or complete) resection or decline surgery [15,16].

Table 7.14
Outcomes of chemotherapy treatment, by treatment intent

	Neoadjuvant	Adjuvant	Definitive
Treatment completed as prescribed	70.5%	80.1%	80.1%
Patient died during treatment	1.6%	0.8%	5.8%
Progressive disease during chemotherapy	3.6%	2.3%	3.0%
Acute chemotherapy toxicity	7.0%	10.0%	8.6%
Technical or organisational problems	0.2%	0.4%	0.2%
Stopped due to patient choice	2.3%	8.0%	2.4%

8. Patterns and outcomes of palliative treatment

Detailed treatment outcomes for patients receiving palliative care will be published in the Third Annual Report after the data collection period has finished. The treatment outcomes described in this chapter focus on palliative oncological treatment, and patterns of endoscopic and radiological palliative therapies. This report does not cover palliative surgery as few patients underwent this mode of care.

8.1 Palliative non-surgical oncology

The modalities of palliative non-surgical oncology therapy are summarized in Table 8.1. The use of radiotherapy and chemo-radiotherapy as a palliative modality decreased as the tumour site descended the gastro-intestinal tract. Patients undergoing palliative chemo- or radiotherapy were younger on average than patients undergoing palliative surgery or stenting.

Palliative radiotherapy was well tolerated by patients, with 93 per cent of them completing their prescribed treatment course (Table 8.2). Chemotherapy was tolerated less well. 11 per cent of patients suffered acute chemotherapy toxicity and a further 8 per cent stopped it due to patients' choice. Half of the palliative patients failed to complete their chemotherapy.

8.2 Endoscopic and radiological palliative therapy

Overall patterns of endoscopic / radiological palliative treatment

NHS trusts submitted information on 1,606 palliative endoscopic and radiological treatments that were performed on 1,560 patients in the Audit period. The various types of therapies performed are shown in Table 8.3. Over 80 per cent of the procedures entered into the database were stent insertions, the majority of which were for patients with oesophageal or junctional tumours. Very few ablative procedures such as laser or argon beam coagulation were recorded, and these were concentrated in particular networks (laser therapy was performed in 4 networks, while argon beam coagulation was performed in 13 networks). This level of activity may reflect incomplete data submission but it may also hide variation in the availability of endoscopic palliative therapies.

The lack of brachytherapy is of interest because it has been shown to be superior to stenting in patients who survive more than 3 months [25]. In the organisational Audit, 16 networks stated that brachytherapy was available but so far in the prospective study, it was only recorded as being used in three networks (N13, N26 and N36). It is not clear whether this discrepancy represents underreporting or a failure to implement network policy.

Table 8.1
Treatment modalities for patients undergoing palliative oncological therapy, by type of tumour

Modality	Oesoph. SCC	Oeso ACA Upper / Mid	Oeso ACA Lower / SI	GOJ SII / SIII	Stomach
Chemotherapy	43%	54%	60%	74%	85%
Chemo-radiotherapy	44%	37%	35%	22%	13%
Radiotherapy	13%	9%	5%	4%	2%
Total	**488**	**140**	**705**	**239**	**455**

Table 8.2
Proportion of patients with specific outcomes of palliative oncological treatment

	Chemotherapy	Radiotherapy
Treatment completed as prescribed	51.6	93.2
Patient died during treatment	14.4	3.8
Progressive disease during treatment	15.4	1.0
Acute chemo-/radio-therapy toxicity	10.8	0.4
Technical or organisational problems	0.1	0.0
Stopped due to patient choice	7.8	1.5

Table 8.3
Number of endoscopic palliative therapeutic procedures, by type of tumour

Procedure Type	Oesoph. SCC	Oeso ACA Upper / Mid	Oeso ACA Lower / SI	GOJ SII / SIII	Stomach	Total
Stent insertion	391	115	545	119	123	1,293
Laser ablation	6	*	14	*	*	26
Argon beam coagulation	*	*	10	*	10	27
Photodynamic Therapy	0	0	0	0	0	0
Brachytherapy	*	*	19	*	*	31
Dilation alone	53	11	51	8	15	138
Gastrostomy	10	*	*	*	*	17
Other	22	*	15	*	27	74

* omitted for being < 5 procedures (to prevent potential patient identification)

There were 138 "dilation alone" procedures (8.6 per cent of the total). Recent guidelines recommend that dilation should not be used in isolation because it provides only transient symptom improvement [6,15]. Although "dilation only" procedures were performed in 20 of the 30 Cancer Networks and in Wales, six networks accounted for 105 (76 per cent) of the procedures.

Stent procedure details

The details of the stent procedures are shown below in Table 8.4. The median age of patients undergoing stent insertion was 77 years and 45 per cent of patients were able to carry out most normal activities (performance status: 0 or 1). However, the degree of dysphagia among patients having a stent was fairly severe; 95 per cent of patients who had tumours of the oesophagus or GOJ could only manage a semi-solid diet.

Most procedures were performed by consultants or registrars, which is consistent with a recommendation in the National Confidential Enquiry into Patient Outcomes and Death (NCEPOD) report "Scoping Our Practice"[5]. Covered metal stents were used in the majority of insertion procedures, although uncovered stents were used comparatively more in the case of a stomach tumour. Anti-reflux stents were used infrequently.

The success rate of stent deployment was uniformly high overall (98 per cent) and did not differ significantly across the various tumour sites. The technical success of stent deployment was unrelated to insertion method, anaesthetic technique used or grade of endoscopist. However, the very high deployment success rate means that, if these factors do influence success, their effects are small.

The report "Scoping Our Practice"[5] also noted that "combined sedation with oropharyngeal local anasethetic might have contributed to aspiration pneumonia in some patients", and advised caution. Overall, a third of patients undergoing stent procedures in this Audit had combined sedation and local anaesthetic (LA) spray. However, there was considerable variation between NHS trusts in the degree to which combination anaesthesia was used. Among the 58 NHS trusts who submitted information on their stent procedures, 29 NHS trusts (50 per cent) complied with the recommendation and used the combination in less than 20 per cent of patients, whereas 12 NHS trusts (21 per cent) used combined sedation / LA spray in more than 80 per cent of cases.

Table 8.4
Characteristics of stent procedures and rate of successful placement, by type of tumour

	Oesoph. SCC	Oeso ACA Upper / Mid	Oeso ACA Lower / SI	GOJ SII / SIII	Stomach
Anaesthetic used: (%)					
Sedation alone	58.0	58.7	61.3	62.5	62.4
Local anaesthetic (LA) spray	3.8	3.3	5.5	4.2	0.8
Sedation and LA combined	34.9	36.4	30.0	31.7	31.2
General Anaesthetic	3.3	1.7	3.2	1.7	5.6
Endoscopist grade: (%)					
Consultant	81.6	82.3	85.9	78.1	90.7
Registrar	9.2	9.9	8.0	7.5	5.3
Other	9.1	7.8	6.2	14.4	4.0
Stent type: (%)					
Plastic	4.2	2.4	4.4	2.5	6.3
Metal: covered	81.5	83.7	80.1	78.2	57.8
Metal: uncovered	8.8	7.1	9.0	14.3	25.0
Metal: anti-reflux	5.6	7.9	6.6	5.0	10.9
Method of stent placement: (%)					
Endoscopic control alone	30.0	26.9	32.1	39.5	26.6
X-ray control alone	34.3	39.4	32.9	37.6	34.1
Endoscopic and x-ray control	35.7	33.7	35.0	30.3	35.8
Successful stent deployment: (%)	**98.4**	**98.4**	**97.8**	**97.6**	**97.9**

Multiple logistic regression was used to assess whether the use of combined anaesthesia was greater among patients with particular characteristics. The analysis found no association with age, sex, or dysphagia score, and became only slightly less likely to be used among patients with worse performance status. This suggests that the observed variation is due to differences in practice rather than differences in the case-mix of the patients treated.

Overall, the method used to insert a stent was evenly split between endoscopy alone, fluoroscopy alone and a combination of the two (Table 8.4). This might reflect the lack of firm standards on the method of stent placement. Nonetheless, the BSG guidelines recommend that radiographic screening is helpful when the stricture is tortuous or complex, or associated with a large hiatus hernia or diverticula, and when difficulty is encountered passing the guidewire[6]. In addition, the NCEPOD "Scoping Our Practice" report[5] concluded that "X-ray control was thought to be highly desirable for placement of a tubal prosthesis, and that not to use it is unwise". There was significant variation between NHS trusts in the method of stent insertion. Among the 46 NHS trusts that had submitted data on at least 15 procedures:

- 12 trusts used both endoscopic and radiologic control in more than 80 per cent of cases
- 7 trusts used radiologic control in more than 80 per cent of cases
- 8 trusts used only endoscopic control in over 80 per cent of cases.

The remaining 19 trusts did not exhibit a strong preference for one type of approach.

The early mortality rates following stent insertion are shown in Table 8.5 below. In-hospital mortality data following ERPT procedures was not collected. 1 in 25 patients died within a week and nearly 1 in 12 died within a fortnight of the procedure. It is possible that this may be due to either inappropriate patient selection or due to complications of the procedure.

Table 8.5
Rates of mortality following stent insertion among palliative patients

Time period	% patients who died
3 days	1.5
7 days	4.2
14 days	8.4
30 days	18.8

9. Conclusion

This is the largest national audit of oesophago-gastric cancer care performed anywhere in the world with data on over 12,000 patients, 2,000 curative operations, 1,600 endoscopic palliative treatments and 5,000 courses of chemo- or radiotherapy. Overall case ascertainment and data completeness were good. Together with the fact that the demographics and tumour characteristics of our patients were similar to previous UK and Western studies, this suggests that our results are representative of practice in England and Wales. Our data thus gives a snapshot of current practice, highlights variations and so should allow national benchmarks to be set, and ultimately drive improvements in the overall standard of care.

With respect to clinical presentation, we found that, although more common in the elderly, O-G cancer can occur in all adult age-groups with one in ten patients being aged under 55 years. Approximately one in three patients were referred by other hospital consultants or after an emergency admission. This highlights the need for all clinicians to be alert to the disease, irrespective of the patient's age or the clinician's particular specialty.

Allied to this issue, we found wide regional variation in both the proportion of patients diagnosed following emergency admissions and the proportion of patients referred urgently by their GPs. Higher rates of emergency admissions are concerning because these patients are significantly less likely to have a curative treatment plan. We also found that in 1 in 7 patients referred "non-urgently", it was over 3 months before the diagnosis was made. If significant improvements in the prognosis of this disease are to be made, patients need to be diagnosed at an earlier stage of their disease. Improving public and professional awareness of the disease and improving referral pathways should therefore be a priority.

The considerable variation in the proportion of patients with curative treatment plans and in the proportion who were planned to have palliative chemo- or radiotherapy was also concerning. This variation persisted despite correcting for potential confounding factors such as age, sex, disease stage and co-morbidity. Too high a curative plan rate suggests that some patients may be undergoing surgery which is likely to be futile. Too low a rate suggests that some potentially curable patients are not being given the option of surgery. Likewise, the wide variations in the planned use of palliative oncology suggest that some patients who would potentially benefit from chemo- or radiotherapy are not being offered it. To reduce these variations, it is essential that all patients are discussed with the specialist MDT, not just those that local teams think are appropriate. In this way all patients can obtain the benefit of expert experience.

Compared to previous national audits, the results of curative surgery were good with the overall in-hospital mortality being 3 per cent lower than the 2002 AUGIS audit (5.9 per cent vs 8.9 per cent)[18]. The surgical patients were on average older and less physiologically fit than in many published studies, particularly those from South-East Asian countries. Despite this however, we have shown that curative surgery can be offered to this group with a moderate level of complications. We found that the minimally invasive procedures had a lower rate of respiratory complications than open operations and both had similar outcomes in terms of both peri-operative mortality rates and lymph node clearance. AUGIS has produced guidelines on the introduction of minimally invasive O-G cancer surgery[7]. It is essential that these are followed in order to ensure that the introduction of this new technique continues to be carried out safely. An essential part of this is the continued monitoring of treatment outcomes (both in terms of peri-operative complications and pathology outcomes such as margin status).

Self-expanding metal stents were the most widely reported method of endoscopic or radiological palliation. Stents were placed almost exclusively by senior clinicians and technical success rates were high. The method of stent insertion differed between NHS trusts but endoscopic and radiological placement appeared equally successful. However, a small number of NHS trusts performed palliative dilatation alone despite evidence of limited symptomatic benefit. In addition, NCEPOD caution against the combination of sedation and local anaesthesia, yet a number of Trusts continue with this practice.

In summary, at this interim stage of the Audit, we have found that many aspects of the treatment of O-G cancer in England and Wales were good, but that some aspects of practice varied and we have highlighted areas for review and improvement. In the Third Annual Report, we will be able to provide more detailed information on the care process and outcomes including comparative trust-level figures. To ensure that these figures are accurate, trusts should concentrate on improving their data completeness.

Quality improvement is first and foremost a local process, helped and facilitated by national initiatives such as the Audit, but put into action by local clinicians who can change the necessary practices that lead to better patient care. We hope that local clinicians will take the findings of this audit and use them to improve the services at their local level.

Recommendations

1. O-G cancer services should strive to improve awareness of the disease among their population, local GPs and hospital clinicians. National initiatives such as the recent O-G cancer awareness week should be supported by all trusts and networks.

2. Cancer Networks should examine their referral guidelines and pathways, in order to reduce the proportion of referrals after emergency admission and attempt to reduce the delays experienced by patients referred non-urgently.

3. O-G cancer services should ensure that all patients undergo a CT-scan plus an EUS (if oesophageal / upper junctional tumour) or a staging laparoscopy (if gastric / lower junctional tumour) before undergoing curative treatment and should improve the monitoring of their use.

4. All patients should be discussed with the specialist MDT to reduce the observed variation in the proportion of patients selected for curative treatment and palliative oncology.

5. All patients with stage II or III adenocarcinoma who are physiologically fit enough should be offered neoadjuvant chemotherapy or entered into appropriate national trials of such treatment, irrespective of tumour site.

6. Surgeons should monitor their pathology outcomes in order to ensure an adequate lymph node yield is obtained in every patient.

7. Minimally invasive surgery should continue to be introduced cautiously following the guidance published by the Association of Upper Gastro-Intestinal Surgeons. Early indications are that this approach is safe and may reduce the incidence of postoperative respiratory complications.

8. Cancer Networks should improve access to brachytherapy, because it improves symptom control in patients with a prognosis longer than three months.

9. Dilatation alone should not be performed as it is ineffective in controlling symptoms and much better alternatives are available.

10. NHS trusts should concentrate on improving the data completeness of their submissions, in particular those data items essential for examining treatment processes (such as staging investigations) and outcomes (such as resection margin status).

Appendices

Appendix 1: Summary of findings from the First Annual Report

The National O-G Cancer Audit undertook a number of studies into O-G cancer services in England and Wales during its first year. The results of these studies were described in the Audit's First Annual Report, published in June 2008. Its findings are summarised below to provide a background to this report.

The Audit began after O-G cancer services had been substantially re-organised in England and Wales. Based on improved clinical evidence, Department of Health policies and clinical practice guidelines had made the following key recommendations:

- Cancer Networks should be established as new regional models for providing integrated cancer care
- within each Network, specialist surgical teams should be established at regional cancer centres
- all O-G cancer patients should be managed by multi-disciplinary teams
- patients should have access to computed tomography (CT) scan, endoscopic ultrasound (EUS) and laparoscopy for rapid staging
- palliative care should be an integral part of patient management and patients should have access to specialist palliative interventions when required.

Three studies were undertaken in the Audit's first year to examine the changes in O-G cancer care following these recommendations, namely:

1. An analysis of patterns of treatment and outcomes between 1998 and 2005 using routinely collected data
2. An audit of the organisation of O-G cancer care in England and Wales to investigate issues of service provision and access to care
3. A qualitative study to identify important issues affecting the diagnosis and treatment of patients, based on interviews with patients and clinicians.

The results of these studies suggested that O-G cancer services were increasingly providing care in line with the recommendations. Thirty English and three Welsh Cancer Networks had been established, and patients were being managed by MDTs. Also, surgical services were being centralised into 44 English and 3 Welsh O-G cancer centres. Nonetheless, the Audit has found variation in the delivery of services to patients (Box 2).

Box 2
Summary of findings from the initial year of the National O-G Cancer Audit, published in the First Annual Report

Patterns of treatment and outcomes in English NHS trusts between 1998 and 2005

- the overall proportion of patients undergoing curative surgery (resection) fell from 28 per cent in 1998 to 20 per cent in 2005
- the proportion of oesophageal cancer patients undergoing chemotherapy or radiotherapy prior to a resection rose from 8 per cent in 1998 to 51 per cent in 2005
- the proportion of patients surviving for one year after diagnosis increased from 30 per cent in 1998 to 37 per cent in 2005.

Organisational Audit

- the process of centralisation of surgery was complete in only 19 of the 31 responding Cancer Networks. The networks identified 17 trusts that were not O-G cancer centres that were still performing surgical resections
- all 31 Cancer Networks reported good access to the recommended staging investigations (CT-scans, endoscopic ultrasound and laparoscopy)
- all 31 Cancer Networks provided access to stent insertion and argon beam coagulation, but only 17 networks provided access to laser ablation therapy and brachytherapy
- only 16 of the 31 Cancer Networks discussed all patients at specialist multi-disciplinary team (MDT) meetings
- within NHS trusts, palliative care team involvement in care was variable and attendance at MDT meetings was poor. Access to Clinical Nurse Specialists and nutritional support was also variable.

Qualitative study

- diagnostic and staging investigations had improved treatment planning. Better patient selection for curative care had probably caused the fall in surgical resection rates
- clinical nurse specialists play a fundamental role in providing patient-centred care, particularly in coordination, but this was not widely recognised outside the MDT
- there was too little integration of palliative care clinicians and nutritional support in MDTs.

Appendix 2: The dataset of the prospective audit

The dataset for the prospective audit consists for four components:

- Part 1 (patient details, tumour and planned treatment) concerns newly diagnosed patients and contains data items related to their diagnosis, stage and treatment intent
- Part 2 (surgery) concerns patients who undergo either curative or palliative surgery and contains data items on the surgical treatment and pathology results (resections only)
- Part 3 (oncology) concerns patients who undergo oncological treatment and contains data items on neoadjuvant, adjuvant, definitive and palliative treatments
- Part 4 (endoscopic / radiological palliative therapy) concerns patients who undergo endoscopic therapeutic procedures.

Patients will only have one treatment record for surgery and endoscopic therapeutic procedures. Patients will generally only have one oncology record. However, two oncology records will be created if the patient undergoes both neoadjuvant and adjuvant therapy (oncology before and after surgery). Not all items will be relevant to each patient.

The data items in the Audit dataset have been presented as they might look on data collection forms. A technical description of the dataset can be obtained from the Audit website.

Appendix 2: The dataset of the prospective audit

National Oesophago-Gastric Cancer Audit
New Patient Registration datasheet – Page 1

Patient Registration data

Surname _____ **Forename** _____

NHS number _____ **Postcode** _____

Sex ☐ Male ☐ Female ☐ Not specified **Date of birth** _____

Initial Referral and Diagnosis Data

Source of referral: ☐ GP ☐ Hospital consultant ☐ Emergency admission ☐ Not known

Priority of referral (GP referral only): ☐ Urgent ☐ Non-urgent / other referral source

Date of first referral to local oesophago-gastric team for investigation: _____

Date of diagnosis: _____

Local cancer unit where cancer was diagnosed: _____

Diagnosis – Site

Oesophagus: ☐ Upper 1/3 ☐ Middle 1/3 ☐ Lower 1/3

NB: cervical oesophageal tumours are NOT included in this audit

Gastro-Oesophageal Junction (adenocarcinomas only) Siewert classification:

☐ 1 ☐ 2 ☐ 3

Stomach: ☐ Fundus ☐ Body ☐ Antrum ☐ Pylorus

Initial Referral and Diagnosis Data

☐ Adenocarcinoma
☐ Adenosquamous carcinoma
☐ Undifferentiated carcinoma
☐ Unspecified malignant neoplasm (histology not done)
☐ Squamous cell carcinoma
☐ Small-cell carcinoma
☐ Other epithelial carcinoma

NB: Non-epithelial tumours (GIST, sarcomas or melanomas) are NOT included in this audit

Staging Investigations (please tick all that apply)

☐ CT scan
☐ Endoscopic ultrasound (EUS)
☐ Staging laparoscopy
☐ PET / PET – CT scan
☐ EUS Fine needle aspiration
☐ Other investigation

Pre - Treatment Stage

T:	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4	☐ x
N:	☐ 0	☐ 1	☐ 2	☐ 3		☐ x
M:	☐ 0	☐ 1	☐ M1a	☐ M1b		☐ x

Appendix 2: Sample clinical datasheets

National Oesophago-Gastric Cancer Audit
New Patient Registration datasheet – Page 2

ECOG (WHO) Performance Status

- ☐ 0 - Carries out all normal activity without restriction
- ☐ 1 - Restricted but walks/does light work
- ☐ 2 - Walks, full self care but no work. Up and about >50% of the time
- ☐ 3 - Limited self care, confined to bed / chair > 50% waking hours
- ☐ 4 - Fully disabled, confined to bed/chair
- ☐ 5 - Not recorded

Comorbidities (please tick all that are appropriate)

- ☐ Cardiovascular disease
- ☐ Chronic renal impairment
- ☐ Cerebro/periph vascular
- ☐ Other significant condition
- ☐ Chronic respiratory disease (including COPD / asthma)
- ☐ Liver failure or cirrhosis
- ☐ Barrett's oesophagus
- ☐ Diabetes
- ☐ Mental illness

Treatment Plan

Date final care plan agreed: _____

Treatment intent:

- ☐ Curative:
- ☐ Palliative anti-cancer treatment (ie. surgery, oncological treatment, endoscopic palliation)
- ☐ Palliative supportive care (ie. non-specific symptomatic treatments, inpatient or outpatient)

Details of treatment

Curative modality

- ☐ Surgery only
- ☐ Chemotherapy and surgery (any combination)
- ☐ Chemo-radiotherapy and surgery (any combination)
- ☐ (Definitive) Radiotherapy only
- ☐ Definitive chemo-radiotherapy
- ☐ Endoscopic mucosal resection

Palliative modality

- ☐ Palliative surgery
- ☐ Palliative oncology (unspecified)
- ☐ Photodynamic therapy
- ☐ Endoscopic palliation therapy (unspecified)

Reason for palliative treatment (please tick all that are appropriate):

- ☐ Patient declined treatment
- ☐ Unfit: significant co-morbidity
- ☐ Not known
- ☐ Unfit: poor performance status
- ☐ Unfit: advanced stage cancer

Appendix 2: Sample clinical datasheets

National Oesophago-Gastric Cancer Audit
Postoperative Datasheet – Page 1

Patient Registration data

Surname: **Forename**

NHS number **Date of birth**

Admission and Surgical Details (Main procedure only)

Hospital name: **Patient's lead surgeon (GMC no.):**

Date of admission: **Date of operation:**

Pre-operative intent of surgery: ☐ Palliative ☐ Curative ☐ Not known

Priority of surgery (NCEPOD): ☐ Immediate (1) ☐ Urgent (2) ☐ Expedited (3)

Fitness for Surgery: ASA grade ☐ 1 ☐ 2 ☐ 2 ☐ 4 ☐ 5

Lung function: FEV1% predicted ____ % FVC% predicted ____ %

Procedure (please tick all that apply)

Oesophageal

- Oesophagectomy:

☐ Left thoraco-abdominal approach
☐ 2 – Phase (Ivor-Lewis)
☐ 3 – Phase (McKeown)
☐ Transhiatal

☐ Thoracotomy (Open & Shut)

Gastric

- Gastrectomy:

☐ Total ☐ Extended total
☐ Proximal ☐ Distal
☐ Completion ☐ Merendino

☐ Wedge/localised gastric resection
☐ Bypass procedure / Jejunostomy only
☐ Laparotomy (Open and Shut)

Surgical Access (thoracic) – the approach used for the thoracic phase of the operation (if applicable)

☐ Open operation ☐ Thoracoscopic converted to open ☐ Thoracoscopic completed ☐ Not applicable

Surgical Access (abdominal) -the approach used for the abdominal phase of the operation

☐ Open operation ☐ Laparoscopic converted to open ☐ Laparoscopic completed

Feeding adjunct:

☐ Feeding jejunostomy ☐ Parenteral feeding ☐ Other ☐ None

Other Organ removed (please tick all that apply):

☐ Liver ☐ Pancreas ☐ Colon
☐ Spleen ☐ Other

Nodal Dissection

Oesophagectomy: ☐ None ☐ 1 – field ☐ 2 – field ☐ 3 – field

Gastrectomy: ☐ D0 (peri-gut resection) ☐ D1 ☐ D2

Appendix 2: Sample clinical datasheets

National Oesophago-Gastric Cancer Audit
Postoperative Datasheet – Page 2

Postoperative complications and course (please tick all that apply)

- ☐ Anastomotic leak
- ☐ Chyle leak
- ☐ Haemorrhage
- ☐ Cardiac complication
- ☐ Acute renal failure

Respiratory:

- ☐ Pneumonia
- ☐ ARDS
- ☐ Pulmonary embolism
- ☐ Pleural effusion
- ☐ Wound infection

Unplanned return to theatre? ☐ Yes ☐ No

Death in hospital? ☐ Yes ☐ No

Date of discharge or death: _____

Postoperative Pathology and Staging

Site

Oesophagus: ☐ Upper 1/3 ☐ Middle 1/3 ☐ Lower 1/3

NB: cervical oesophageal tumours are NOT included in this audit

Gastro-Oesophageal Junction (adenocarcinomas only) Siewert classification:

☐ 1 ☐ 2 ☐ 3

Stomach: ☐ Fundus ☐ Body ☐ Antrum ☐ Pylorus

Histology

- ☐ Adenocarcinoma
- ☐ Squamous cell carcinoma
- ☐ Adenosquamous carcinoma
- ☐ Small-cell carcinoma
- ☐ Undifferentiated carcinoma
- ☐ Other epithelial carcinoma
- ☐ Unspecified malignant neoplasm (histology not done)

NB: Non-epithelial tumours (GIST, sarcomas or melanomas) are NOT included in this audit

Proximal resection margin involved?	☐ Yes	☐ No	☐ Unknown	
Distal resection margin involved?	☐ Yes	☐ No	☐ Unknown	
Circumferential resection margin involved? (<1mm)	☐ Yes	☐ No	☐ Unknown	☐ N/A

Number of lymph nodes examined: _____

Number of lymph nodes positive: _____

Postoperative staging:

T:	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4	☐ x
N:	☐ 0	☐ 1	☐ 2	☐ 3		☐ x
M:	☐ 0	☐ 1	☐ M1a	☐ M1b		☐ x

History of neo-adjuvant therapy ☐ Yes ☐ No

Appendix 2: Sample clinical datasheets

National Oesophago-Gastric Cancer Audit
Chemotherapy / Radiotherapy Datasheet

Please fill in this datasheet for every course of oncological treatment received by a patient with oesophago-gastric cancer.
Most patients will only require one datasheet to be completed.
For patients who have both neoadjuvant and adjuvant therapy, complete two separate datasheets.

Patient Registration data

Surname _____ **Forename** _____

NHS number _____ **Date of birth** _____

Hospital of treatment

Hospital where oncology treatment took place _____

Traetment Details

Treatment intent:

☐ Neoadjuvant ☐ Adjuvant ☐ Curative ☐ Palliative

Intended treatment modality:

☐ Chemotherapy ☐ Radiotherapy ☐ Chemo-radiotherapy

Co-morbility data

Date first cycle started: _____

No. cycles prescribed: _____

Actual no. cycles given: _____

Chemotherapy treatment protocol:

☐ OEO2
☐ MAGIC / STO 2
☐ MacDonald
☐ Other

Outcome of treatment:

☐ Treatment completed as prescribed

Reason if incomplete

☐ Patient died
☐ Progressive disease during treatment
☐ Acute chemotherapy toxicity
☐ Technical or organisational problems
☐ Patient choice (stopped / interrupted treatment)
☐ Not known

Radiotherapy details (if applicable)

Date first fraction started: _____

Total dose prescribed _____

No. fractions prescribed: _____

Total actual dose given _____

Actual no. fractions given: _____

Outcome of treatment:

☐ Treatment completed as prescribed

Reason if incomplete

☐ Patient died
☐ Progressive disease during treatment
☐ Acute chemotherapy toxicity
☐ Technical or organisational problems
☐ Patient choice (stopped / interrupted treatment)
☐ Not known

Appendix 2: Sample clinical datasheets

National Oesophago-Gastric Cancer Audit
Endoscopic / Radiological Palliative Therapy Datasheet - Procedure Details

Please fill in this datasheet for every patient with oesophago-gastric cancer on the occasion of their FIRST PALLIATIVE endoscopic / radiological therapeutic intervention.

Patient Details (for identification purposes only)

Surname _____ **Forename** _____

NHS number _____ **Date of birth** _____

Treatment details

Hospital name: _____

GMC code of responsible consultant: _____

Date of endoscopic / radiological procedure: _____

Dysphagia Rating Scale

- ☐ 0 No dysphagia
- ☐ 1 Able to eat solids
- ☐ 2 Able to eat semi-solids only
- ☐ 3 Able to consume liquids only
- ☐ 4 Complete dysphagia
- ☐ 9 Not known

Type of procedure (please tick all that apply)

- ☐ Insertion of stent
- ☐ Laser therapy
- ☐ Argon beam coagulation
- ☐ Photodynamic therapy
- ☐ Gastrostomy
- ☐ Brachytherapy
- ☐ Dilatation *Tick dilatation if it was the only procedure or if required to facilitate treatment)*
- ☐ Other

Is this procedure part of a planned course of multiple interventions? ☐ Yes ☐ No ☐ Not known

Anaesthesia:

- ☐ Sedation
- ☐ Local anaesthetic spray
- ☐ General anaesthesia
- ☐ Sedation and local anaesthetic spray combined
- ☐ Not known

Grade of endoscopist:

- ☐ Consultant
- ☐ Assoc. specialist / Staff grade
- ☐ Other clinician
- ☐ Senior House Officer
- ☐ Nurse specialist

Details of stent procedure, if inserted:

Type of stent:

- ☐ Plastic
- ☐ Metal: covered
- ☐ Metal: Anti-reflux
- ☐ Not known

Method of stent placement:

- ☐ Fluoroscopic control
- ☐ Endoscopic control
- ☐ Fluoroscopic & Endoscopic
- ☐ Not known

Stent crosses gastro-oesophageal junction? ☐ Yes ☐ No ☐ Not known

Did the stent deploy successfully? ☐ Yes ☐ No ☐ Not known

Appendix 2: Sample clinical datasheets

National Oesophago-Gastric Cancer Audit
Endoscopic / Radiological Palliative Therapy Datasheet - Outcomes at 3 months

Use this datasheet to collect the details of complications and any subsequent palliative endoscopic/ radiological therapeutic procedures that occur 3 months after the initial palliative intervention.

Patient Details (for identification purposes only)

Surname _____ Forename _____

NHS number _____ Date of birth _____

Hospital name: _____

Date of INITIAL PALLIATIVE endoscopic/radiological therapeutic procedure: _____

Additional planned endoscopic/radiological palliation that occurred within 3 months of the initial procedure

Number of additional planned treatments _____

Type of additional planned treatments (please tick all that apply)

- ☐ Insertion of stent
- ☐ Laser therapy
- ☐ Argon beam coagulation
- ☐ Photodynamic therapy
- ☐ Gastrostomy
- ☐ Brachytherapy
- ☐ Dilatation *Tick dilatation if it was the only procedure or if required to facilitate treatment)*

Complications of palliative endoscopic/radiological interventions and failure to control local disease (Please tick all that apply)

- ☐ Aspiration
- ☐ Perforation
- ☐ Haemorrhage
- ☐ Stent migration
- ☐ Bolus obstruction
- ☐ Tumour overgrowth
- ☐ Other
- ☐ Death in hospital (ie patient did not leave hospital between first procedure and death

Additional unplanned endoscopic/radiological palliation procedures (due to complications of endoscopic/radiological palliation and/or tumour progression)

Number of additional unplanned interventions _____

Type of additional unplanned intervention(s) (please tick all that apply)

- ☐ Insertion of stent
- ☐ Laser therapy
- ☐ Argon beam coagulation
- ☐ Photodynamic therapy
- ☐ Gastrostomy
- ☐ Brachytherapy
- ☐ Dilatation *Tick dilatation if it was the only procedure or if required to facilitate treatment)*
- ☐ Other

Appendix 3: Organisation of the Audit

The Audit is funded by the Healthcare Quality Improvement Partnership (HQIP) and is a collaboration between four organisations:

- The Association of Upper Gastro-Intestinal Surgeons (AUGIS)
- The British Society of Gastroenterology (BSG)
- The National Clinical Audit Support Program (NCASP) of the NHS Information Centre for health and social care (IC)
- The Clinical Effectiveness Unit of The Royal College of Surgeons of England.

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
Geoff Clark	Consultant Surgeon	Association of Upper Gastrointestinal Surgeons of Great Britain & Ireland
Stuart Cairns	Consultant Gastroenterologist	British Society of Gastroenterologists
Martin Richardson	Consultant Surgeon	Cancer Networks
Phil Hill	Information Strategy Lead	Department of Health, Cancer Policy Unit
Helen Laing	Clinical Audit Commissioning Manager	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
David Kirby OBE	Chairman	Oesophageal Patients Association
Andrea Burgess	Specialist Nurse	Royal College of Nursing
Suzanne Ball	Nurse Specialist for Surgery	Royal College of Nursing
Geraint Williams	Professor of Histopathology	Royal College of Pathologists
Hans-Ulrich Laasch	Consultant Radiologist	Royal College of Radiologists
Sam Ahmedzai	Professor of Supportive Care Medicine	Palliative Care Representative
Jane Blazeby	Professor of Surgery	University of Bristol
Tom Crosby	Consultant Clinical Oncologist	Cancer Services Co-ordinating Group, Wales

Members of Project Board		
Martin Old	Board Executive	National Clinical Audit Support Programme, The Information Centre for health and social care
Helen Laing	Commissioner	Healthcare Quality Improvement Partnership (HQIP)
Mike Griffin	President	Association of Upper Gastrointestinal Surgeons of Great Britain & Ireland
Mark Denyer	Chair of the BSG Audit and Clinical Services Committees	British Society of Gastroenterologist
* excludes project team members		

Appendix 4: Levels of case-ascertainment and data completeness by NHS trust

Case-ascertainment was based on the expected number of patients diagnosed at each NHS trust. Consequently, figures for case-ascertainment and data completeness were derived by the NHS trust of diagnosis rather than the trust that uploaded the data.

The Christie Hospital NHS Foundation Trust and Clatterbridge Centre for Oncology NHS Foundation Trust are tertiary cancer centres that mainly provide oncological treatment for O-G cancer patients and were excluded from the calculations. There were 129 and 330 patients in the dataset that had information on chemotherapy or radiotherapy given at these NHS trusts, respectively.

KEY: * = (Surgical) Cancer Centre; FD Trust = foundation trust.

Estimated case-ascertainment above 70%
Low case-ascertainment

Welsh NHS trusts							
Code		NHS trust name	Patients with a tumour record	%Patients w M-stage after CT	%Patients w planned Intent	%Patients w planned modality	Treatment entered for patients with modality
RVD		Bro Morgannwg NHS Trust	33	47%	70%	65%	56%
RWM	*	Cardiff and Vale NHS Trust	91	71%	77%	87%	82%
RVA		Carmarthenshire NHS Trust	59	51%	100%	93%	76%
RKU		Ceredigion and Mid Wales NHS Trust	21	5%	90%	73%	73%
RT8		Conwy and Denbighshire NHS Trust	51	100%	86%	63%	67%
RVF		Gwent Healthcare NHS Trust	143	81%	86%	90%	83%
RT9		North East Wales NHS Trust	81	75%	93%	86%	47%
RRS	*	North Glamorgan NHS Trust	35	71%	71%	78%	55%
RT7		North West Wales NHS Trust	79	47%	85%	79%	61%
RR6		Pembrokeshire and Derwen NHS trust	21	38%	95%	84%	77%
RVE		Pontypridd and Rhondda NHS Trust	58	72%	81%	86%	55%
RVC		Swansea NHS Trust	80	22%	76%	93%	64%
RQF		Velindre NHS Trust	2	-	50%	100%	-

English NHS trusts

Code		Network / NHS trust name	Expected cases over 18 month period	Patients with a tumour record	%Patients w M-stage after CT	%Patients w planned Intent	%Patients w planned modality	Treatment entered for patients with modality
N01		**Lancashire and Couth Cumbria Cancer Network**						
RXN	*	Lancashire Teaching Hospitals NHS FD Trust	> 200	41	86%	80%	24%	0%
RXL		Blackpool, Fylde and Wyre Hospitals NHS FD Trust	100 to 200	102	54%	97%	99%	100%
RXR		East Lancashire Hospitals NHS Trust	100 to 200	38	45%	95%	24%	75%
RTX		University Hospitals of Morecambe Bay NHS Trust	100 to 200	112	82%	92%	77%	96%
N02		**Greater Manchester and Cheshire Cancer Network**						
RW6	*	Pennine Acute Hospitals NHS Trust	> 200	240	92%	96%	98%	88%
RM3	*	Salford Royal NHS FD Trust	100 to 200	128	90%	100%	99%	59%
RM2	*	University Hospitals of South Manchester NHS FD Trust	100 to 200	118	100%	100%	99%	86%
RMC		Bolton Hospitals NHS Trust	< 100	49	100%	100%	100%	50%
RW3		Central Manchester University Hospitals NHS FD Trust	< 100	63	-	92%	0%	-
RBV		Christie Hospital NHS FD Trust	n/a	n/a	-	-	-	-
RJN		East Cheshire NHS Trust	< 100	59	95%	98%	100%	27%
RWJ		Stockport NHS FD Trust	100 to 200	104	39%	99%	91%	71%
RMP		Tameside and Glossop Acute Services NHS Trust	< 100	77	90%	95%	98%	94%
RBT		The Mid Cheshire Hospitals NHS Trust	100 to 200	15	100%	100%	73%	100%
RM4		Trafford Healthcare NHS Trust	< 100	35	77%	100%	95%	36%
RRF		Wrightington, Wigan and Leigh NHS Trust	100 to 200	48	15%	75%	67%	45%
N03		**Merseyside and Cheshire Cancer Network**						
REM	*	Aintree University Hospitals NHS FD Trust	> 200	136	76%	99%	95%	93%
RBQ	*	The Cardiothoracic Centre - Liverpool NHS Trust	< 100	13	100%	62%	50%	75%
REN		Clatterbridge Centre for Oncology NHS FD Trust	n/a	n/a	-	-	-	-
RJR		Countess of Chester Hospital NHS FD Trust	100 to 200	82	0%	88%	80%	87%
RWW		Warrington and Halton Hospitals NHS FD Trust	100 to 200	43	0%	63%	81%	100%
RQ6		Royal Liverpool and Broadgreen University Hospitals NHS Trust	100 to 200	150	90%	92%	90%	66%
RVY		Southport and Ormskirk Hospital NHS Trust	< 100	43	100%	56%	65%	91%
RBN		St Helens and Knowsley Hospitals NHS Trust	100 to 200	93	63%	74%	42%	62%
RBL		Wirral University Teaching Hospital NHS FD Trust	100 to 200	132	62%	87%	79%	75%
N06		**Yorkshire Cancer Network**						
RAE	*	Bradford Teaching Hospitals NHS FD Trust	100 to 200	31	100%	100%	100%	84%
RR8	*	Leeds Teaching Hospitals NHS Trust	> 200	32	88%	100%	90%	100%
RCF		Airedale NHS Trust	< 100	24	29%	100%	85%	65%
RWY		Calderdale and Huddersfield NHS FD Trust	100 to 200	0	-	-	-	-
RCD		Harrogate and District NHS FD Trust	< 100	51	34%	92%	97%	93%
RXF		Mid Yorkshire Hospitals NHS Trust	100 to 200	0	-	-	-	-
RCB		York Hospitals NHS FD Trust	100 to 200	104	66%	100%	93%	93%
N07		**Humber and Yorkshire Coast Cancer Network**						
RWA	*	Hull and East Yorkshire Hospitals NHS Trust	> 200	0	-	-	-	-
RJL		Northern Lincolnshire and Goole Hospitals NHS FD Trust	100 to 200	20	47%	100%	100%	100%
RCC		Scarborough and North East Yorkshire Health Care NHS Trust	< 100	17	54%	94%	100%	60%
N08		**North Trent Cancer Network**						
RP5	*	Doncaster and Bassetlaw Hospitals NHS FD Trust	100 to 200	122	19%	99%	96%	76%
RHQ	*	Sheffield Teaching Hospitals NHS FD Trust	> 200	225	72%	100%	94%	91%
RFF		Barnsley Hospital NHS FD Trust	< 100	64	7%	88%	93%	60%
RFS		Chesterfield Royal Hospital NHS FD Trust	100 to 200	54	72%	98%	88%	60%
RFR		The Rotherham NHS FD Trust	< 100	37	21%	100%	78%	40%
N11		**Pan Birmingham Cancer Network**						
RR1	*	Heart of England NHS FD Trust	> 200	192	93%	98%	99%	97%
RRK	*	University Hospital Birmingham NHS FD Trust	> 200	224	98%	100%	95%	85%
RXK		Sandwell and West Birmingham Hospitals NHS Trust	100 to 200	84	4%	99%	93%	80%
RBK		Walsall Hospitals NHS Trust	< 100	8	100%	100%	86%	100%
N12		**Arden Cancer Network**						
RKB	*	University Hospitals Coventry and Warwickshire NHS Trust	> 200	98	35%	97%	90%	99%
RLT		George Eliot Hospital NHS Trust	< 100	56	12%	70%	65%	43%
RJC		South Warwickshire General Hospitals NHS Trust	< 100	29	90%	79%	56%	100%
N13		**Mid Trent Cancer Network**						
RX1	*	Nottingham University Hospitals NHS Trust	> 200	252	89%	90%	95%	95%
RK5		Sherwood Forest Hospitals NHS FD Trust	100 to 200	97	100%	100%	96%	67%
RWD		United Lincolnshire Hospitals NHS Trust	> 200	245	78%	99%	95%	98%
N14		**Derby/Burton Cancer Network**						
RTG	*	Derby Hospitals NHS FD Trust	100 to 200	174	90%	97%	96%	90%

English NHS trusts continued

Code		Network / NHS trust name	Expected cases over 18 month period	Patients with a tumour record	%Patients w M-stage after CT	%Patients w planned Intent	%Patients w planned modality	Treatment entered for patients with modality
RJF		Burton Hospitals NHS Trust	< 100	60	54%	97%	91%	88%
N15		**Leicestershire, Northamptonshire and Rutland Cancer Network**						
RNS	*	Northampton General Hospital NHS Trust	100 to 200	110	100%	86%	100%	95%
RWE	*	University Hospitals of Leicester NHS Trust	> 200	288	97%	99%	98%	99%
RNQ		Kettering General Hospital NHS Trust	< 100	85	79%	100%	98%	31%
N20		**Mount Vernon Cancer Network**						
RWH	*	East and North Hertfordshire NHS Trust	100 to 200	89	100%	100%	100%	100%
RWG	*	West Hertfordshire Hospitals NHS Trust	100 to 200	7	29%	100%	100%	100%
RC9		Luton and Dunstable Hospital NHS FD Trust	< 100	2	100%	100%	100%	0%
N21		**West London Cancer Network**						
RYJ	*	Imperial College Healthcare NHS Trust	100 to 200	68	79%	100%	99%	98%
RQM		Chelsea and Westminster Hospital NHS FD Trust	< 100	33	100%	97%	100%	100%
RC3		Ealing Hospital NHS Trust	< 100	0				
RV8		North West London Hospitals NHS Trust	< 100	35	52%	91%	57%	50%
RAS		The Hillingdon Hospital NHS Trust	< 100	16	100%	100%	100%	17%
RFW		West Middlesex University Hospital NHS Trust	< 100	28	93%	100%	91%	100%
N22		**North London Cancer Network**						
RRV	*	University College London Hospitals NHS FD Trust	100 to 200	28	64%	100%	93%	100%
RVL		Barnet and Chase Farm Hospitals NHS Trust	< 100	13	31%	100%	92%	100%
RAP		North Middlesex University Hospital NHS Trust	< 100	0	-	-	-	-
RAL		Royal Free Hampstead NHS Trust	< 100	26	96%	92%	100%	100%
RQW		The Princess Alexandra Hospital NHS Trust	< 100	0	-	-	-	-
RKE		The Whittington Hospital NHS Trust	< 100	7	0%	100%	-	-
N23		**North East London Cancer Network**						
RF4	*	Barking, Havering & Redbridge Hospitals NHS Trust	> 200	141	52%	89%	98%	71%
RNJ	*	Barts and The London NHS Trust	100 to 200	114	96%	96%	100%	100%
RQX		Homerton University Hospital NHS FD Trust	< 100	27	77%	100%	100%	70%
RNH		Newham University Hospital NHS Trust	< 100	31	26%	94%	89%	92%
RGC		Whipps Cross University Hospital NHS Trust	< 100	72	100%	99%	100%	60%
N24		**South East London Cancer Network**						
RJ1	*	Guy's and St Thomas' NHS FD Trust	> 200	62	0%	39%	83%	13%
RG3		Bromley Hospitals NHS Trust	< 100	21	0%	100%	100%	75%
RJZ		King's College Hospital NHS FD Trust	< 100	8	13%	38%	0%	-
RG2		Queen Elizabeth Hospital NHS Trust	< 100	73	21%	89%	71%	70%
RGZ		Queen Mary's Sidcup NHS Trust	< 100	42	3%	60%	47%	25%
RJ2		The Lewisham Hospital NHS Trust	< 100	36	0%	8%	0%	-
N25		**South West London Cancer Network**						
RPY	*	The Royal Marsden NHS FD Trust	> 200	87	100%	100%	97%	93%
RVR		Epsom and St Helier University Hospitals NHS Trust	< 100	39	89%	90%	88%	100%
RAX		Kingston Hospital NHS Trust	< 100	34	100%	100%	100%	96%
RJ6		Mayday Healthcare NHS Trust	< 100	63	79%	98%	97%	75%
RJ7		St George's Healthcare NHS Trust	< 100	47	94%	100%	95%	100%
N26		**Peninsula Cancer Network**						
RK9	*	Plymouth Hospitals NHS Trust	100 to 200	113	15%	89%	51%	89%
RBZ		Northern Devon Healthcare NHS Trust	< 100	34	9%	82%	70%	82%
REF		Royal Cornwall Hospitals NHS Trust	100 to 200	126	59%	100%	100%	97%
RH8		Royal Devon and Exeter NHS FD Trust	100 to 200	144	99%	98%	97%	100%
RA9		South Devon Health Care NHS FD Trust	100 to 200	90	100%	98%	99%	100%
N27		**Dorset Cancer Network**						
RDZ	*	Royal Bournemouth and Christchurch Hospitals NHS FD Trust	100 to 200	88	100%	100%	97%	95%
RBD		Dorset County Hospitals NHS FD Trust	< 100	71	52%	100%	95%	96%
RD3		Poole Hospital NHS FD Trust	< 100	76	89%	100%	100%	93%
N28		**Avon, Somerset and Wiltshire Cancer Network**						
RA7	*	University Hospitals Bristol NHS FD Trust	> 200	130	22%	53%	43%	93%
RVJ		North Bristol NHS Trust	100 to 200	112	8%	57%	35%	71%
RD1		Royal United Hospital Bath NHS Trust	100 to 200	55	6%	62%	42%	54%
RBA		Taunton and Somerset NHS FD Trust	< 100	83	69%	77%	33%	94%
RA3		Weston Area Health NHS Trust	< 100	49	65%	84%	88%	82%
RA4		Yeovil District Hospital NHS FD Trust	< 100	55	53%	78%	53%	89%
N29		**3 Counties Cancer Network**						
RTE	*	Gloucestershire Hospitals NHS FD Trust	> 200	173	78%	100%	100%	88%
RLQ		Hereford Hospitals NHS Trust	< 100	61	60%	97%	100%	100%
RWP		Worcestershire Acute Hospitals NHS Trust	100 to 200	171	100%	98%	97%	89%

English NHS trusts continued

Code		Network / NHS trust name	Expected cases over 18 month period	Patients with a tumour record	%Patients w M-stage after CT	%Patients w planned Intent	%Patients w planned modality	Treatment entered for patients with modality
N30		**Thames Valley Cancer Network**						
RTH	*	Oxford Radcliffe Hospitals NHS Trust	> 200	199	94%	99%	95%	84%
RHW	*	Royal Berkshire NHS FD Trust	100 to 200	3	100%	100%	100%	100%
RXQ		Buckinghamshire Hospitals NHS Trust	100 to 200	0	-	-	-	-
RD7		Heatherwood and Wexham Park Hospitals NHS FD Trust	< 100	43	44%	100%	100%	100%
RD8		Milton Keynes Hospital NHS FD Trust	< 100	16	7%	100%	25%	0%
RN3		Great Western Hospitals NHS FD Trust	100 to 200	3	0%	67%	100%	0%
N31		**Central South Coast Cancer Network**						
RHU	*	Portsmouth Hospitals NHS Trust	> 200	206	68%	100%	99%	99%
RHM	*	Southampton University Hospitals NHS Trust	100 to 200	145	83%	100%	98%	89%
RN5		Basingstoke and North Hampshire NHS FD Trust	< 100	30	100%	100%	100%	87%
RR2		Isle of Wight Healthcare NHS Trust	< 100	49	96%	96%	100%	95%
RPR		Royal West Sussex NHS Trust	< 100	71	100%	100%	92%	100%
RNZ		Salisbury NHS FD Trust	< 100	52	68%	98%	85%	76%
RN1		Winchester and Eastleigh Healthcare NHS Trust	100 to 200	25	64%	100%	57%	100%
N32		**Surrey, West Sussex and Hampshire Cancer Network**						
RA2	*	Royal Surrey County Hospital NHS Trust	100 to 200	102	41%	87%	97%	93%
RTK		Ashford and St Peter's Hospitals NHS Trust	< 100	11	17%	82%	60%	100%
RDU		Frimley Park Hospital NHS FD Trust	100 to 200	18	33%	72%	75%	100%
RTP		Surrey and Sussex Healthcare NHS Trust	< 100	35	86%	74%	57%	100%
N33		**Sussex Cancer Network**						
RXH	*	Brighton and Sussex University Hospitals NHS Trust	100 to 200	68	2%	56%	8%	100%
RXC		East Sussex Hospitals NHS Trust	100 to 200	98	59%	97%	35%	96%
RPL		Worthing and Southlands Hospitals NHS Trust	100 to 200	76	91%	95%	10%	100%
N34		**Kent and Medway Cancer Network**						
RWF	*	Maidstone and Tunbridge Wells NHS Trust	> 200	176	63%	100%	98%	99%
RN7		Dartford and Gravesham NHS Trust	< 100	50	41%	100%	97%	86%
RVV		East Kent Hospitals NHS Trust	100 to 200	0	-	-	-	-
RPA		Medway NHS FD Trust	< 100	0	-	-	-	-
N35		**Greater Midlands Cancer Network**						
RJE	*	University Hospital of North Staffordshire NHS Trust	> 200	38	72%	97%	97%	100%
RNA	*	Dudley Group of Hospitals NHS Trust	100 to 200	39	32%	90%	83%	50%
RJD		Mid Staffordshire General Hospitals NHS Trust	< 100	96	91%	100%	100%	91%
RXW		Shrewsbury and Telford Hospital NHS Trust	100 to 200	87	41%	99%	97%	76%
RL4		The Royal Wolverhampton Hospitals NHS Trust	100 to 200	117	2%	68%	35%	50%
N36		**North of England Cancer Network**						
RTD	*	The Newcastle Upon Tyne Hospitals NHS FD Trust	> 200	314	95%	100%	99%	93%
RTR	*	South Tees Hospitals NHS Trust	100 to 200	121	73%	99%	83%	84%
RLN		City Hospitals Sunderland NHS FD Trust	100 to 200	70	25%	74%	78%	44%
RXP		County Durham and Darlington NHS FD Trust	100 to 200	147	100%	99%	92%	98%
RR7		Gateshead Health NHS FD Trust	< 100	57	71%	100%	100%	88%
RNL		North Cumbria Acute Hospitals NHS Trust	100 to 200	142	91%	96%	100%	89%
RVW		North Tees and Hartlepool NHS Trust	100 to 200	99	77%	99%	85%	90%
RTF		Northumbria Health Care NHS FD Trust	100 to 200	86	100%	97%	87%	89%
RE9		South Tyneside NHS FD Trust	< 100	23	91%	100%	100%	56%
N37		**Anglia Cancer Network**						
RGT	*	Cambridge University Hospitals NHS FD Trust	> 200	215	96%	100%	98%	98%
RM1	*	Norfolk and Norwich University Hospital NHS Trust	> 200	185	90%	99%	98%	98%
RC1		Bedford Hospital NHS Trust	< 100	55	84%	98%	100%	91%
RQQ		Hinchingbrooke Healthcare NHS Trust	< 100	32	80%	100%	100%	100%
RGP		James Paget Healthcare NHS FD Trust	100 to 200	95	86%	100%	100%	100%
RGN		Peterborough & Stamford Hospitals NHS FD Trust	100 to 200	82	94%	100%	100%	97%
RCX		The Queen Elizabeth Hosp. King's Lynn NHS Trust	100 to 200	64	10%	100%	100%	72%
RGR		West Suffolk Hospitals NHS Trust	< 100	51	91%	100%	100%	100%
RGQ		Ipswich Hospital NHS Trust	100 to 200	0	-	-	-	-
N38		**Essex Cancer Network**						
RQ8	*	Mid Essex Hospital Services NHS Trust	100 to 200	49	100%	86%	90%	100%
RDD		Basildon & Thurrock Univ. Hospitals NHS FD Trust	100 to 200	82	35%	95%	96%	92%
RDE		Essex Rivers Healthcare NHS Trust	100 to 200	2	0%	50%	-	-
RAJ		Southend Hospital NHS Trust	100 to 200	101	32%	95%	95%	98%

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Glossary

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 GI Surgeons

BSG
British Society of Gastroenterologists

BASO
British Association of Surgical Oncology

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.

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).

CRG
The audit's Clinical Reference Group 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.

CEU
The Clinical Effectiveness Unit 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
(Computer Tomography) an imaging modality that uses X-ray radiation to build up a 3-dimensional image of the body. It is used to detect distant abnormalities (such as metastases) but has a limited resolution, so is less useful for detecting smaller abnormalities (such as in 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 that 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.

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.

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.

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 Classification of Diseases and Related Health Problems 10th Revision

The Information Centre
The NHS Information Centre is a special health authority that provides facts and figures to help the NHS and social services run effectively. The National Clinical Audit Support Programme (NCASP) is one of its key components.

Laparoscopy
This is often called "keyhole surgery" and involves inserting a small camera into the belly 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 oval bits of tissue that form part of the immune system. They are distributed throughout the body and are usually the first place to which cancers spread.

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.

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

NCASP
The National Clinical Audit Support Programme is part of the NHS Information Centre for Health and Social Care, and manages a number of national clinical audits in the areas of cancer, diabetes and heart disease. It is one of the key stakeholders leading the Audit.

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 foodpipe.

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.

PET
An 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.

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.

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

Ultrasound
An imaging modality that uses high frequency sound waves to create an image of tissues or organs in the body.

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.

Notes

The NHS Information Centre for health and social care (The NHS IC) is working to make information more relevant and accessible to the public, regulators, health and social care professionals and policy makers, leading to improvements in knowledge and efficiency. The NHS IC is a special NHS health authority that collects analyses and distributes data to reduce the burden on frontline staff, releasing more time for direct care.

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