National Oesophago-Gastric Cancer Audit

2021

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HQIP
Healthcare Quality Improvement Partnership

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Acknowledgements

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www.hqip.org.uk/national-programmes

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Executive Summary

The National Oesophago-Gastric Cancer Audit (NOGCA) was established to evaluate the quality of care received by patients diagnosed with oesophago-gastric (OG) cancer in England and Wales.

The Annual Report is written for those who deliver, receive, commission and regulate care. It provides information about OG cancer services for patients and commissioners, and enables NHS organisations to identify areas where care could be improved.

The 2021 Annual Report focuses on the care received by patients diagnosed with invasive epithelial cancer of the oesophagus, gastro-oesophageal junction (GOJ) or stomach, or high-grade dysplasia (HGD) of the oesophagus between April 2018 and March 2020. For outcomes of curative surgery among people with OG cancer, data are reported for a three year period (April 2017 to March 2020) to ensure that enough procedures are included in the analysis to produce robust statistics for individual organisations.

Supplementary material, including tables containing individual organisation results, and further information about the Audit can be found on its website: www.nogca.org.uk.

High grade dysplasia of the oesophagus: key findings

During the 2018-2020 period, the Audit received information on 605 patients diagnosed with oesophageal HGD in England. This number has decreased from 767 in 2016-18, and case ascertainment appears to be low in some regions.

Guidance on the management of patients with HGD sets out clinical standards for diagnosis, treatment planning and therapy [BSG/Fitzgerald et al 2014]. Based on these, the Audit assesses performance in four key areas:

1. ***All cases of suspected HGD should be confirmed by two gastrointestinal pathologists***

In the 2018-20 cohort, 88% of patients had their diagnosis of HGD confirmed by a second pathologist. This figure has increased from 85% reported for the 2014-16 period.

2. ***All patients with HGD should be discussed by a specialist multi-disciplinary team (MDT)***

Almost all patients (93%) diagnosed with HGD in 2018-20 had their treatment plan discussed at a specialist MDT meeting. This figure has increased from 87% in 2016-18, but there remains considerable regional variation in the proportion of patients discussed by a specialist MDT.

3. ***Endoscopic therapy for HGD is preferred over oesophagectomy or surveillance***

The majority of patients diagnosed in 2018-20 (79%) had a plan for active treatment for their HGD. 14% had a plan for surveillance with endoscopic follow-up, while 7% had no planned surveillance or active treatment. There was regional variation in the proportion of patients with a plan for active treatment for HGD, ranging from 45% to 100%. Among patients with a plan for active treatment, endoscopic therapy was the planned

treatment for 93% of patients and oesophagectomy for 4%.

4. ***Endoscopic treatment should be performed in specialist centres treating at least 15 cases each year.***

For the 2018-20 period, only 7 of the 36 specialist centres reporting to the Audit met the "15 patients" standard. This figure may be an underestimate because our assessment only included those endoscopic procedures performed for oesophageal HGD/early cancer submitted to the Audit, and did not include procedures undertaken for low grade dysplasia or gastric or duodenal HGD/early cancer.

Oesophago-gastric cancer: key findings

Records were submitted for 20,319 patients diagnosed with OG cancer in the 2018-20 Audit period, including 19,002 diagnosed at 128 NHS trusts in England and 1,317 at 6 local health boards in Wales.

1. ***Data completeness***

Data completeness for key data items collected by NOGCA was generally good, but a minority of organisations were not achieving the same standards as others. For example, 82% of records for the 2018-20 period had clinical stage information, but this proportion ranged from 68% to 94% across regional Cancer Alliances.

2. ***Patterns of care at diagnosis***

Among patients diagnosed in 2018-20, 13% were diagnosed after an emergency hospital admission. This rate has remained largely unchanged over the last five Audit years. In previous years, the proportion of patients diagnosed after an emergency admission in Wales was observed to be notably higher than in England but the rates in two of the three Welsh regions have declined since last year's annual report.

3. ***Staging and treatment planning***

For patients with oesophageal cancer, the use of PET-CT scans is recommended for those being considered for curative treatment. In the 2018-20 cohort, 67.6% of such patients were recorded to have had a PET-CT, although there was substantial variation across England and Wales. Among patients with stomach cancer, staging laparoscopy is recommended for all people with potentially curable disease, while PET-CT should only be considered if it will help guide ongoing management of suspected metastatic disease. Staging laparoscopy was reported for 41.4% of patients who had a curative treatment plan for stomach cancer, while 30.3% had a PET-CT.

Among patients in the 2018-20 cohort with clinical stage 0-3 disease, 60.8% had a curative treatment plan. There was substantial variation by age, with curative treatment being much less common among the oldest patients.

4. ***Waiting times along the care pathway***

The target waiting time from urgent referral for suspected cancer to the start of treatment is 62 days in England and Wales. In the 2018-20 cohort, waiting times were excessive for a significant proportion of patients in many regions. Overall, 20% of patients waited more than 104 days from referral to first curative treatment. Among patients receiving non-curative oncological treatment, 12% waited longer than 104 days. Waiting times have not improved over the last five Audit years for curative and non-curative treatments.

5. Nutritional support in OG cancer

National clinical guidelines [NICE 2018] recommend that all patients undergoing curative treatment should be offered nutritional assessment and specialist dietetic support before, during and after treatment, while specialist dietetic support should be considered for those receiving palliative care. For people undergoing curative surgery for oesophageal and GOJ cancers, immediate enteral or parenteral nutrition after surgery is recommended.

Information about dietetic involvement between diagnosis and treatment was submitted for 33.5% of patients. There were 27 of 134 NHS organisations which did not provide any data about nutritional management. Among patients with nutritional data, the majority (79.9%) received dietetic support, while 20.1% were not seen by a dietitian either because no dietitian was available (2.2%) or it was assessed that one was not required (17.9%). Patients with a plan for curative treatment were more likely to be seen by a dietitian than those with a non-curative plan.

Of the 1,781 people diagnosed with OG cancer in 2019/20 who underwent curative surgery, 46.1% had information about postoperative nutritional management during their surgical admission and 53.3% had information about postoperative dietetic involvement:

- 98.3% of patients undergoing curative oesophagectomy had enteral or parenteral nutrition after surgery.
- 95.7% of people undergoing gastrectomy had some form of nutritional management after surgery.
- 95.3% of all patients were assessed postoperatively and advised by a specialist OG dietitian.

6. Curative surgery

In the three year period between April 2017 and March 2020, data were submitted for 3,948 oesophagectomies and 2,035 gastrectomies. Rates of 30- and 90-day mortality after curative surgery were within the expected range from the national average for all NHS surgical centres. Overall 30-day mortality was 1.7% for oesophagectomies and 1.2% for gastrectomies, 90-day mortality was 3.6% for oesophagectomies and 2.4% for gastrectomies.

Overall, 82.7% of oesophageal cancer patients and 85.6% of stomach cancer patients survived at least one year after surgery. Most surgical centres had an adjusted 1-year survival rate that fell within the expected range, though one NHS trust had a survival rate above the 99.8% control limit, suggesting they performed better than average during the Audit period.

In the 2017-20 surgical cohort, use of enhanced recovery after surgery (ERAS) protocols were reported for over two-thirds of patients. This proportion has increased since the Audit began collecting data about the use of ERAS protocols in 2016, when only half of patients followed an ERAS pathway. The expected mean length of stay following surgery was shorter for patients on an ERAS pathway with daily documentation than those on a non-ERAS pathway.

All surgical centres achieved positive longitudinal margin rates within the expected ranges from the national average for gastrectomy. For oesophagectomy, one organisation had a positive longitudinal margin rate that was higher than expected. The overall positive longitudinal margin rate of 8.8% for gastrectomy exceeded the 5% target set out in the AUGIS recommendations. The rate for oesophagectomy (4.0%) was within the target range. Indicators summarising positive circumferential margins

and number of lymph nodes examined continued to show more variation than the longitudinal margin indicators, despite improvements in recent years.

Clinical guidelines [NICE 2018] recommend that patients undergoing curative surgery for stomach cancer should be offered perioperative chemotherapy, while those with localised oesophageal and GOJ adenocarcinomas (excluding T1N0 tumours) should be offered a choice of perioperative chemotherapy or preoperative chemoradiotherapy. In the 2017-20 surgical cohort, 41.4% of patients undergoing curative gastrectomy or oesophagectomy for adenocarcinoma received a regimen of FLOT (5-fluorouracil, oxaliplatin and docetaxel). The use of FLOT has increased from 15.2% of patients diagnosed in 2017/18 to 66.4% among those diagnosed in 2019/20. There was substantial regional variation in the use of FLOT, ranging from 18% to 78%.

7. Non-curative treatments

Among patients on a non-curative care pathway, palliative oncology was the most common treatment option, recorded for 34% of patients. Two-thirds of patients who had palliative oncological therapy had chemotherapy, while radiotherapy was used less frequently. The proportion of patients completing palliative chemotherapy was relatively low at 59.7%, but this proportion has increased over the last five years from 50.5% among those diagnosed in 2015/16 to 60.7% in 2019/20. In the 2018-20 cohort, 13.8% of patients died within 90 days of starting palliative chemotherapy.

Among patients receiving palliative radiotherapy, 80.9% had a prescription that corresponded to an evidence-based (EB) palliative radiotherapy regimen for OG cancer. Patients with stomach cancer were more likely to have an EB planned regimen than those with oesophageal cancer. The proportion of patients with an EB prescription for palliative radiotherapy increased from 78.8% among patients diagnosed in 2015/16 to 81.0% in 2019/20. There was substantial regional variation in the rates of planned EB palliative regimen use, ranging from 60.1% to 96.7%. Three prescriptions (27Gy/6F, 20Gy/4F, 36Gy/12F) accounted for almost half of all non-EB planned palliative regimens. The use of these most commonly prescribed non-EB regimens was concentrated within a few regions.

As reported in previous years, the use of doublet regimens for palliative chemotherapy has continued to increase, from 19.5% among patients diagnosed in 2015/16 to 33.0% among those diagnosed in 2019/20. Doublet regimes were more commonly used among older patients and those with squamous cell carcinomas. There was substantial regional variation in the use of doublet regimens.

Recommendations

	Where in report	Primary audience
Audit participation		
1. Review data collection practices for NOGCA and improve (a) case ascertainment in regions where it is currently low, and (b) the completeness of data items, particularly those related to cancer stage.	Pages 13, 18-19	Clinical leads, multi-disciplinary teams (MDTs), local audit teams
Diagnosis and treatment of oesophageal high grade dysplasia		
2. Ensure that older patients with suspected high grade dysplasia have their diagnosis confirmed by a second pathologist.	Page 13	Clinical leads, MDTs
3. Review whether patients with high grade dysplasia are considered for endoscopic treatment in line with current BSG recommendations, and explore why patients are not being offered endoscopic treatment if there are high rates of non-treatment.	Pages 15-16	Clinical leads, MDTs
Diagnosis and treatment of oesophago-gastric cancer		
4. Ensure all patients with oesophageal cancer considered for curative treatment have a PET-CT scan. Hospitals with low reported use of PET-CT scans should investigate the reasons. Use of PET-CT scans for gastric cancer patients should be reviewed in line with recent evidence [Bosch et al 2020].	Pages 24-25	MDTs, NHS trusts / local health boards
5. Review the oesophago-gastric cancer care pathway and identify ways to improve the time patients take from referral through to diagnosis and treatment, to support implementation of the OG cancer timed diagnostic pathway [NHS England 2019a].	Pages 29-31	MDTs, NHS trusts / local health boards commissioners
6. Ensure patients are receiving appropriate nutritional support. Hospitals with low levels of data completeness should investigate ways to improve data collection.	Pages 32-34	MDTs, NHS trusts / local health boards commissioners
7. Explore the reasons for the regional variation in the adoption of the FLOT chemotherapy regimen among patients undergoing curative surgery.	Pages 43-44	Upper GI surgeons, oncologists, MDTs
8. Explore variation in the use of triplet versus doublet regimens for palliative chemotherapy, and the reasons why patients receiving palliative chemotherapy were unable to complete their treatment. Where appropriate, develop plans to address the issues identified.	Pages 46, 51	Oncologists, MDTs, NHS trusts / local health boards
9. Investigate the reasons for low use of evidence-based regimens for palliative radiotherapy and the preference for alternative regimens in some regions	Pages 47-49	Oncologists, MDTs, NHS trusts / local health boards

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2021 Annual Report: High-grade dysplasia of the oesophagus

The Audit received information about

605

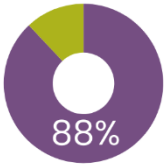
patients in England

diagnosed with high-grade dysplasia of the oesophagus between April 2018 and March 2020.

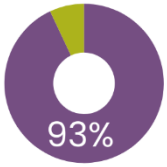
Patient characteristics

- Median age: 71 years
- 73% male
- 1 in 2 had at least one comorbidity at time of diagnosis
- 81% had a segment of Barrett's oesophagus
- 58% were diagnosed while on surveillance programmes and 42% via referral

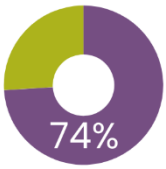
Recommended process of care



of patients had their diagnosis confirmed by a second pathologist



of patients were discussed at a multidisciplinary team meeting

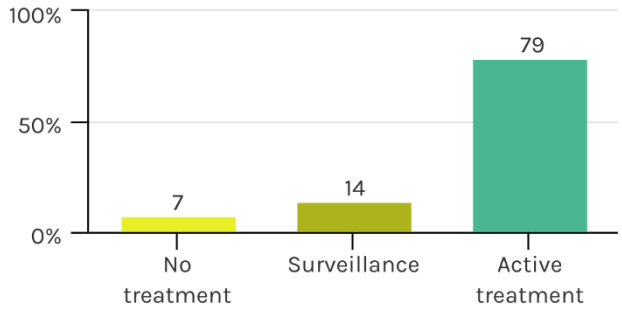


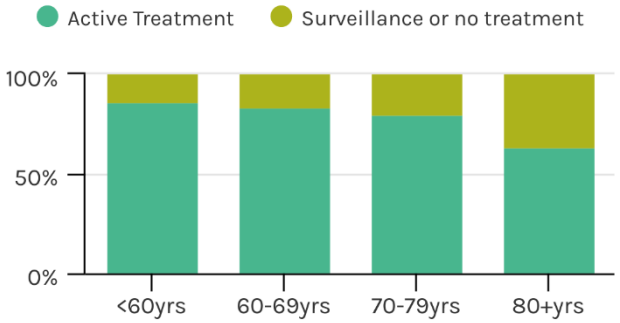
of patients had a plan for endoscopic therapy

56% of patients placed under surveillance were unfit for active treatment

Primary treatment plan

Primary treatment among patients diagnosed between 2018 and 2020





The choice of an active treatment compared to surveillance or no treatment varied by age at diagnosis.

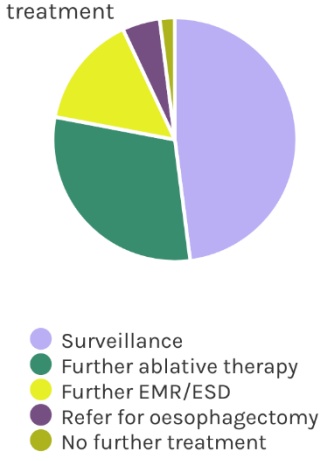
Outcomes of endoscopic treatment

Outcomes after endoscopic mucosal resection / endoscopic submucosal dissection in 2019/20

14% of endoscopic resections had positive deep margins (HGD cells present at the base of the removed specimen)

18% of endoscopic resections had positive lateral margins (HGD cells present at the side edges of the removed specimen)

Plan after primary endoscopic treatment



Glossary

Barrett's oesophagus - Changes in the cells on the inner lining of the lower part of the oesophagus.

EMR/ESD - endoscopic mucosal resection/ endoscopic submucosal dissection - Procedures to remove abnormal tissue from the digestive tract using a telescopic camera to guide instruments.

High-grade dysplasia of the oesophagus - The presence of severely abnormal cells (precancerous cells) in the lining of the oesophagus. It can turn into cancer if it is left untreated.

NOGCA | National Oesophago-Gastric Cancer Audit

2021 Annual Report: Oesophago-gastric cancer

The Audit received information about

20,319

patients in England and Wales

diagnosed with oesophago-gastric (OG) cancer between April 2018 and March 2020, including 14,708 patients with oesophageal cancer and 5,611 patients with gastric cancer.

Patient characteristics

Oesophageal cancer

- Median age: 72 years
- 71% male
- 41% stage 4 cancer

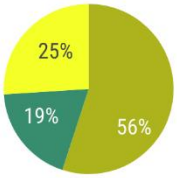
Stomach cancer

- Median age: 74 years
- 66% male
- 43% stage 4 cancer

Routes to diagnosis

Oesophageal cancer

Stomach cancer



Patients with stomach cancer are more likely to be diagnosed following an emergency admission than patients with oesophageal cancer.

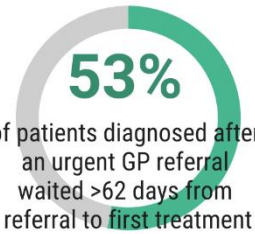
Adjusted rates of emergency diagnosis have remained largely unchanged over the last five audit years.

Waiting times

Median waiting times from referral to start of treatment have not improved over the last five Audit years, for both curative and non-curative treatments.

Waiting times were excessive for a significant proportion of patients in many regions.

Among patients diagnosed with OG cancer in 2018-2020:



Nutritional management

Among patients diagnosed with OG cancer in 2019-2020, 79.9% received dietetic support between diagnosis and treatment. The majority of these patients had advice from a specialist OG dietitian:

Outcomes of curative surgery

Oesophagectomy

Gastrectomy

Glossary

Stage 4 cancer - This describes advanced cancers which have spread beyond the site of the original tumour to other organs/parts of the body. Treatment options are limited to therapies that might extend life or control symptoms but are unlikely to result in remission.

Oesophagectomy - The surgical removal of all or part of the oesophagus.

Gastrectomy - A surgical procedure to remove either a section or all of the stomach.

Margins - The edge of the tissue that is removed during surgery. A positive margin means that there are cancer cells at the edge of the removed tissue and more surgery may be needed.

1. Introduction

The National Oesophago-Gastric Cancer Audit (NOGCA) was established to evaluate the quality of care received by patients diagnosed with oesophago-gastric cancer and to identify areas where NHS cancer services in England and Wales can improve. The Audit also examines the care received by patients diagnosed with oesophageal high grade dysplasia (HGD), due to the risk of progression to cancer if HGD is left untreated.

Oesophago-gastric (OG) cancer is the fifth most common type of cancer in the UK, with around 13,000 people diagnosed each year in England and Wales. Patients were eligible for inclusion in the Audit if they were diagnosed 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 neuro-endocrine tumours or gastro-intestinal stromal tumours (GISTs) were not included in the Audit due to the different management of these tumours.

The Audit is run by the Association of Upper Gastrointestinal Surgeons of Great Britain & Ireland (AUGIS), the Royal College of Radiologists (RCR), the British Society of Gastroenterology (BSG), NHS Digital and the Clinical Effectiveness Unit of the Royal College of Surgeons of England (RCS). The delivery of the Audit is overseen by a Project Board. Advice on the clinical direction of the Audit, the interpretation of its findings and their dissemination is provided by a Clinical Reference Group (see Annex 1).

1.1 The 2021 Annual Report

The aim of this report is to describe the care provided by NHS OG cancer services in England and Wales from the time of diagnosis to the end of a patient's primary treatment, and to highlight regional variation in care for local investigation. It is written for those who provide, receive, commission and regulate OG cancer care.

The 2021 Annual Report focuses primarily on the care of patients diagnosed with OG cancer or oesophageal HGD between April 2018 and March 2020, and outcomes of curative surgery among patients diagnosed between April 2017 and March 2020.

The majority of patients included in this report received or started their treatment before the COVID-19 pandemic began in early 2020. However, due to the length of the care pathway, the treatment of some patients diagnosed towards the end of 2019 or beginning of 2020 will have been affected by the pandemic.

To explore the impact of COVID-19 on OG cancer care, this report also describes patterns of OG cancer-related activities and events (diagnosis, staging and treatment) captured in the Rapid Cancer Registration Dataset (RCRD) for patients diagnosed during 2019-2020. These analyses complement data available via the National Cancer Registration and Analysis Service (NCRAS) Covid-19 dashboards: www.cancerdata.nhs.uk/covid-19

1.2 Regional organisation of OG cancer services

OG cancer services within England and Wales are organised on a regional basis to provide an integrated model of care (see Annex 3).

This report presents regional results for English NHS services using the 21 Cancer Alliances, which are responsible for coordinating cancer care and improving local outcomes (www.england.nhs.uk/cancer/cancer-alliances-improving-care-locally/).

For Wales, three NHS services providing specialist surgical and oncology services are used to define geographical regions: Swansea Bay, Betsi Cadwaladr (North Wales) and South Wales Cardiff region

1.3 Other information produced by the Audit

Supplementary material from the report, including tables containing individual trust results, and further information about the Audit can be found on its website: www.NOGCA.org.uk.

The NOGCA website also contains:

- Annual Reports from previous years
- Reports for the public and patients
- Information on the performance of each NHS organisation
- Resources to support local quality improvement initiatives
- Links to other sources of information about OG cancer such as Cancer Research UK

The results from the Audit are used by various other national health care organisations. In particular, the Audit has worked with HQIP and the Care Quality Commission (CQC) intelligence team to create a dashboard to support their inspections.

2. Patients with HGD

Among patients, for example, with Barrett's oesophagus (a condition due to acid reflux that occurs at the junction of the oesophagus and the stomach), the cells in the inner lining of the oesophagus can become abnormal, a condition referred to as dysplasia. High grade dysplasia (HGD) is the most severe form of dysplasia that occurs in around 1 in 20 patients with dysplasia [Christine et al 2016 and if untreated, about 5% of those diagnosed with HGD can develop oesophageal cancer during the year after diagnosis [Rastogi et al 2008].

To evaluate the care received by HGD patients, the audit uses performance indicators (Box 2.1) developed from the British Society of Gastroenterology (BSG) guidance on the management of Barrett's oesophagus [Fitzgerald et al 2013] and NICE clinical guidance on ablative therapy in the treatment of Barrett's oesophagus [NICE 2010].

Box 2.1: Recommendations from the BSG guidelines on the management of HGD

Recommendation	Indicator
All cases of suspected HGD should be confirmed by two gastrointestinal (GI) pathologists Grading dysplasia involves a degree of subjectivity. Studies have found that the rate of progression to cancer among patients with dysplasia is higher when the diagnosis is confirmed by two pathologists.	% of patients whose diagnosis was confirmed by a second pathologist
All patients with HGD for whom therapy is considered should be discussed by a specialist multi-disciplinary team (MDT) for OG cancer Discussion by the MDT ensures that the most appropriate treatment options are considered for patients.	% of patients considered for treatment who are discussed by specialist MDT for OG cancer
Endoscopic treatment of HGD (e.g. endoscopic mucosal resection and, radiofrequency ablation) is preferred over oesophagectomy or surveillance Compared to surgery, endoscopic treatment is associated with lower morbidity and mortality. There is no evidence to support the use of surveillance.	% of patients who received endoscopic treatment
Endoscopic treatment should be performed in high-volume tertiary referral centres (minimum 15 endoscopic procedures per year for HGD or early cancer) Complication rates after endoscopic treatments have been found to be higher among endoscopists with less experience.	% of patients with HGD receiving endoscopic treatment at each NHS trust per year

2.1 Submission of data on HGD patients

The Audit only received data on HGD patients from English NHS trusts. Data collection for Welsh patients diagnosed with HGD has not been possible via the Welsh CaNISC IT system. In this report, we focus on data submitted to the Audit for patients diagnosed with HGD from April 2018 to March 2020. Some indicators are reported for a longer period (2014 to 2020) to describe changes over time.

There has been a decrease in the number of HGD records submitted to the audit from 767 records in 2016-18 to 605 records in 2018-20.

To explore case ascertainment, we estimated the incidence of HGD among patients aged 40+ years per 1,000,000 individuals for each Cancer Alliance (Table 2.1). There remains considerable variation between the Cancer Alliances, which will partly be due to different levels of case ascertainment within each region, and a general downward trend in incidence over time.

HGD is more prevalent among older individuals and men. For the period 2018-20, the median age at diagnosis was 71 (IQR: 63 to 77) and 73% of HGD patients were men.

Table 2.1: HGD cases submitted to the Audit per million population between April 2014 and March 2020, by English Cancer Alliance

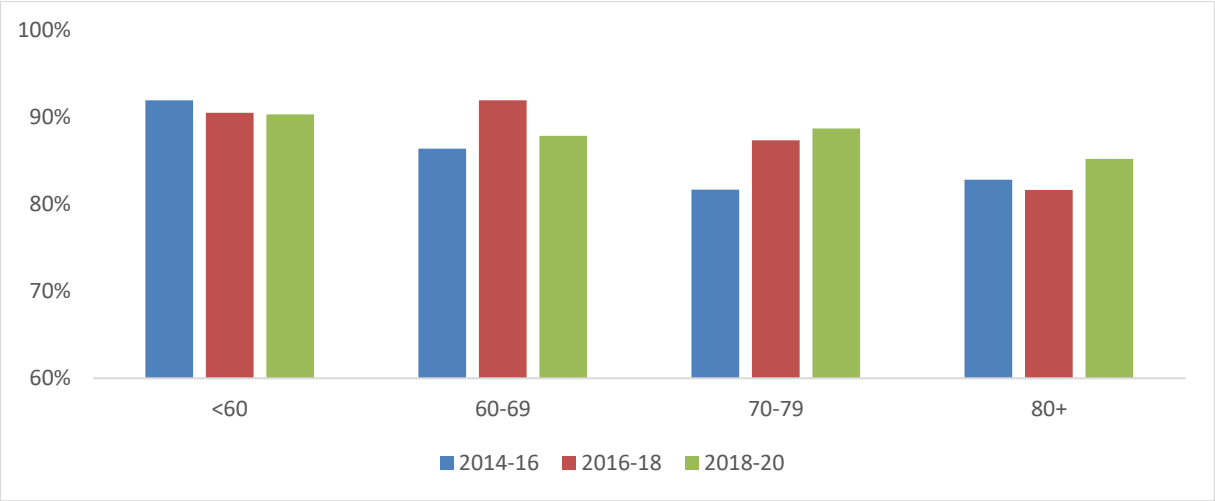
Cancer Alliance	Adults of 40+ years	HGD cases per million individuals, by year of diagnosis		
		2014 - 2016	2016 - 2018	2018 - 2020
Cheshire and Merseyside	1,306,576	34	38	8
East Midlands	2,399,417	25	58	38
East of England - North	1,565,584	34	60	49
East of England - South	1,828,393	18	31	38
Greater Manchester	1,326,035	36	14	5
Humber, Coast and Vale	933,312	20	8	8
Kent and Medway	963,913	41	31	18
Lancashire and South Cumbria	900,424	30	21	20
North Central London	633,983	11	1	15
North East London	773,376	6	7	6
Northern	1,574,758	46	80	67
Peninsula	1,008,586	33	18	11
RM Partners West London	1,614,277	17	18	19
Somerset, Wiltshire, Avon and Gloucestershire	1,610,384	19	47	58
South East London	771,084	27	19	8
South Yorkshire and Bassetlaw	754,788	28	27	15
Surrey and Sussex	1,865,518	9	11	8
Thames Valley	870,431	22	24	16
Wessex	1,406,441	43	37	18
West Midlands	2,934,042	19	32	29
West Yorkshire and Harrogate	1,132,450	24	5	8

2.2 Diagnosis

Among those with a recorded referral route for their HGD diagnosis in 2018-20 (575 out of 605), 58% had been on a Barrett's surveillance programme and the remaining 42% were diagnosed after referral from a general practitioner.

The proportion of patients who had their original diagnosis confirmed by a second pathologist has improved from 85% in 2014-16 to 88% in 2018-20. Although rates are lower in older patients, improvements in this standard have generally been larger among older age-groups (Figure 2.1 below).

Figure 2.1: Proportion of patients diagnosed with HGD between April 2014 and March 2020 whose original diagnosis was confirmed by a second pathologist, stratified by age group



The proportion of patients with a Barrett's Segment remained largely unchanged, at 80% for the period 2014-16 and 81% for 2018-20.

60% of 605 records submitted to the audit in 2018-20 had information describing the appearance of their high grade dysplasia. Among them:

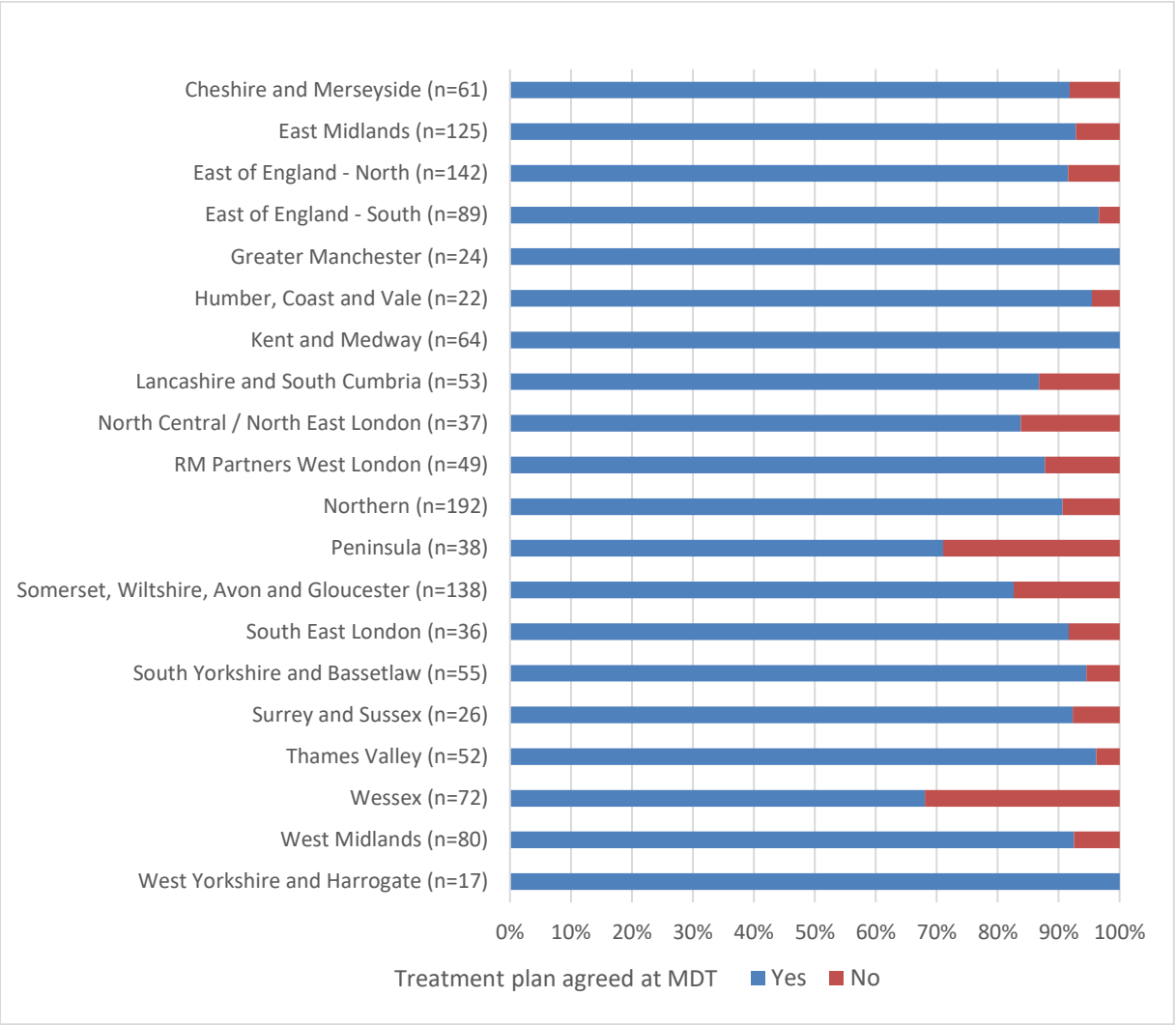
- 52% of patients had a flat mucosa;
- 43% had a nodular lesion; and
- 5% had a depressed lesion.

2.3 Treatment planning

There has been an improvement in the proportion of HGD patients with a treatment plan agreed at an upper gastrointestinal MDT meeting from 2016 to 2020. Between 2018 and 2020, 93% of newly diagnosed HGD patients had a treatment plan agreed with their MDT, compared to 87% for the period 2016 to 2018.

There was some variation across cancer alliances, as shown in Figure 2.2 below, with 14 out of 21 cancer alliances reporting that plans were agreed at the MDT meeting for over 90% of their HGD patients, while only one cancer alliance had less than 70% of patients with an agreed treatment plan at their MDT meeting.

Figure 2.2: Proportion of patients diagnosed with HGD between April 2016 and March 2020 whose treatment plan was agreed at an MDT meeting , by Cancer Alliance



2.4 Primary treatment modality

In the BSG guidelines on the management of HGD, endoscopic treatment is recommended as the preferred first line treatment, compared to surgery or surveillance alone [Fitzgerald et al 2013]. NHS Trusts submitting HGD records to this audit were generally complying with this BSG recommendation.

For the period 2018-20, 67% of records submitted to the Audit had information about planned treatment modality. Among them:

- 79% had a plan for active treatment (74% endoscopic treatment, 3% oesophagectomy, 2% other treatment);
- 14% had a plan for surveillance with endoscopic follow-up; and
- 7% had no planned surveillance or active treatment.

56% of patients placed under surveillance were considered unfit for active treatment. Younger patients were more likely to have a plan for active treatment than older patients (p-value<0.001): 86% for <60 years, 84% for 60-69, 80% for 70-79 and 64% among the ≥80 age group.

There was also some variation in the proportion of planned treatment modality

across Cancer Alliances (Figure 2.3) with the percentage of patients with a plan for active treatment ranging from 45% to 100%, while the proportion of patients with a plan for surveillance ranged between 0% and 45%.

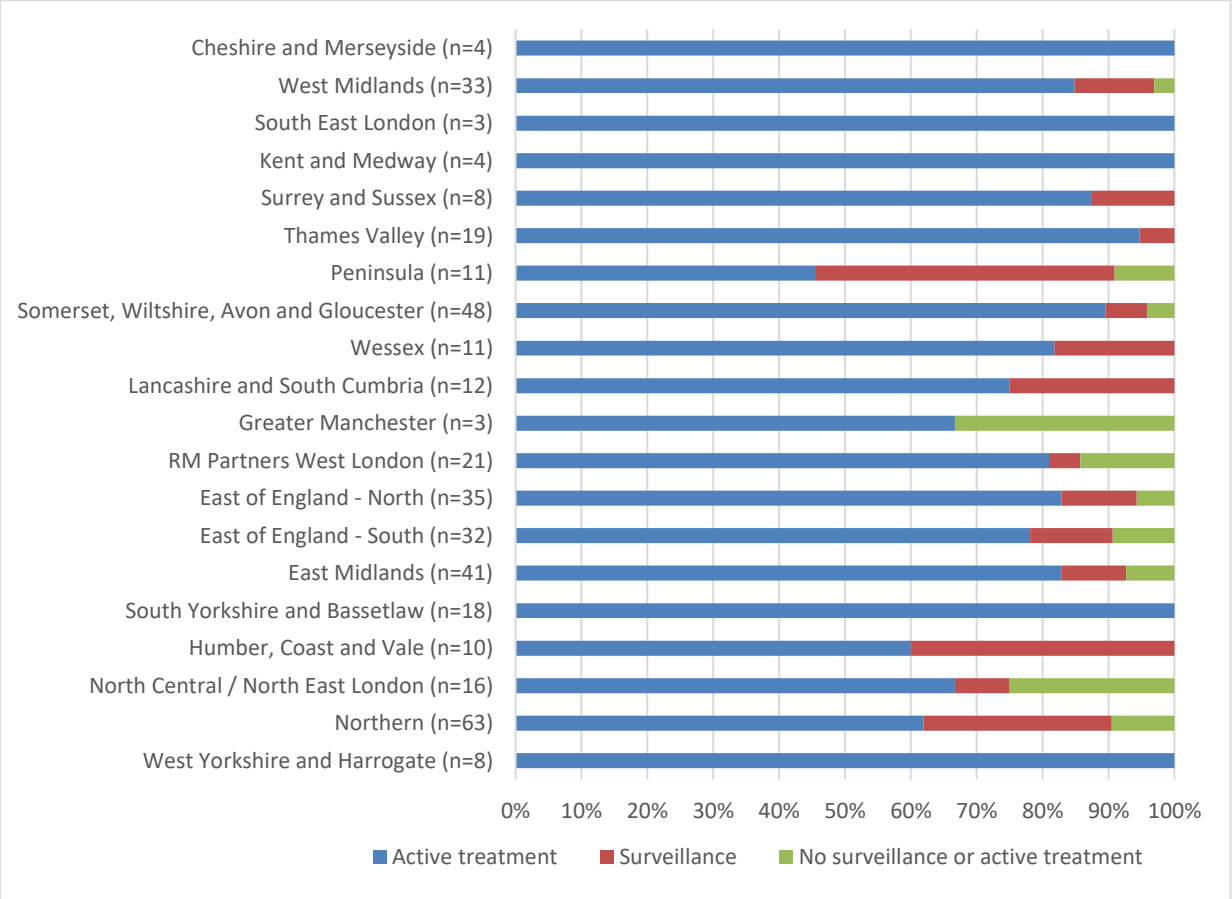
25 out of the 28 patients who had no planned surveillance or no active treatment for the period 2018-20 had a reported reason for this choice of treatment plan as follows: 14 patients were unfit for endoscopic or surgical treatment and 11 patients had chosen this management plan.

Among patients diagnosed with HGD between 2018 and 2020 who had a plan for surveillance, 73% had their next endoscopy planned within 0-3 months.

Out of 324 patients with an active treatment plan, 322 of them had a record of initial treatment modality submitted to the Audit. Among them:

- 93% had a planned endoscopic procedure (n=298). This includes endoscopic mucosal resection (n=251), endoscopic submucosal dissection (n=5), radiofrequency ablation (n=35) and photo dynamic therapy/argon plasma coagulation/ cryotherapy (n=7);
- 4% had an oesophagectomy (n=14);
- 3% had other treatment (n=10).

Figure 2.3: Planned treatment modality among patients diagnosed with HGD between April 2018 and March 2020, by Cancer Alliance



2.5 Outcomes after endoscopic procedures

Since 2018, the audit has collected information on endoscopic resection margins (the presence of dysplasia at the edges of removed tissue) following endoscopic

treatment. We describe the data on resection margins for the cohort of patients diagnosed between April 2019 and March 2020. Of the 152 endoscopic resection procedures recorded in the audit for this period, information on the involvement of margins was available for around half (Table 2.2). 14% of resections had a positive deep resection margin, while 18% of them had a positive lateral margin.

Among patients with deep margin involvement and known ongoing treatment plan (n=11), the majority (n=6) had a plan for further endoscopic treatment. Four patients had a plan for endoscopic surveillance, and one patient had a plan for oesophagectomy.

Table 2.2: Outcomes after endoscopic resection among patients diagnosed with HGD between April 2019 and March 2020

	Number of patient records submitted to the Audit in 2019/20 (%)
Number of endoscopic resections	**152**
Involvement of lateral margin*	73
Clear of HGD or cancer	60 (82%)
Positive margin	13 (18%)
Involvement of deep margin*	83
Clear of HGD or cancer	71 (86%)
Positive margin	12 (14%)

*Number of patients with a reported outcome

2.6 Endoscopic resection centres

The BSG guidelines recommend that endoscopic treatments are undertaken within NHS trusts treating 15 or more patients each year. For the 2018-20 period, 7 out of the 36 NHS trusts reporting to the Audit met this standard.

More NHS trusts might be meeting the recommended volume of endoscopic activity as our assessment only included figures of those endoscopic procedures performed for oesophageal HGD/early cancer and not procedures undertaken for low grade dysplasia or gastric or duodenal HGD/early cancer.

There were 16 NHS trusts, out of 36 that do not undertake surgical resections, which performed endoscopic procedures between 2018 and 2020. None of them had a volume of endoscopic activities that met the “15 patients” standard.

3. Participation in the OG cancer audit

The 2021 Audit Report focuses on patients with invasive epithelial cancer of the oesophagus, gastro-oesophageal junction (GOJ) or stomach, who were diagnosed in England and Wales over two years, between 1 April 2018 and 31 March 2020.

Records were submitted for 20,319 patients, including 19,002 diagnosed at 128 NHS trusts in England and 1,317 diagnosed at 6 local health boards in Wales.

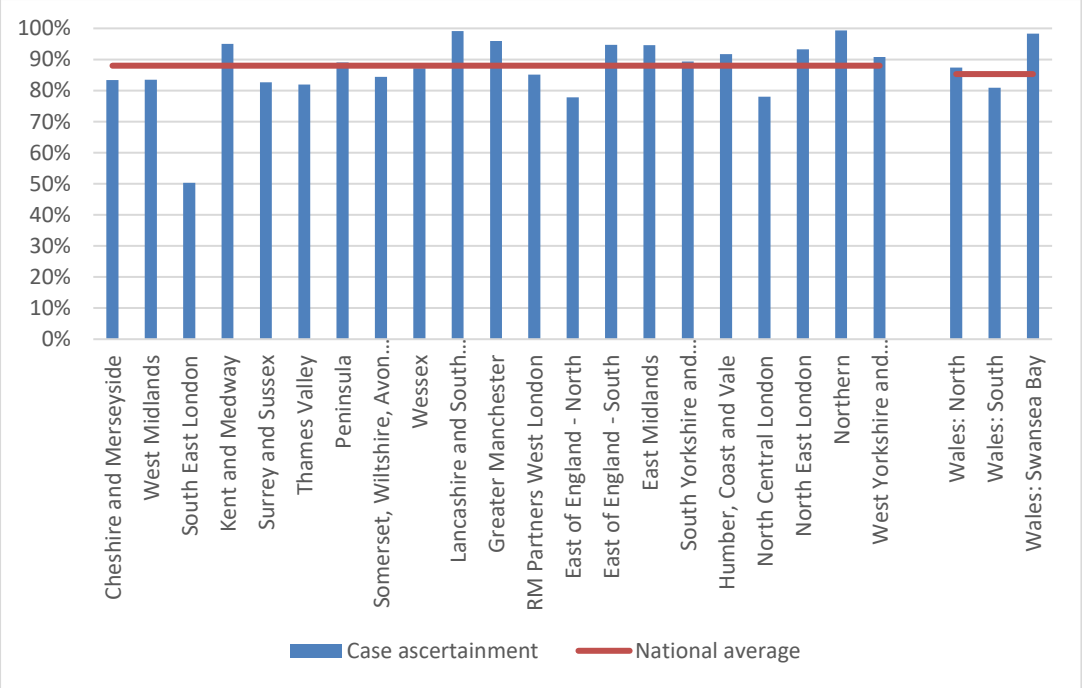
3.1 Case ascertainment

Case ascertainment for the period April 2018 to March 2020 was estimated to be 88.0% in England and 85.3% in Wales, with variation across geographical regions (Figure 3.1).

Estimates of case ascertainment in England were derived by comparing the number of tumour records submitted to the Audit with the estimated number of histologically confirmed epithelial OG cancer cases in the National Cancer Registration and Analysis Service (NCRAS) dataset. NCRAS data were only available for patients diagnosed to the end of 2019. The number of cases in the first quarter of 2020 was estimated as 80% of the average volume in the previous seven quarters, to account for the potential impact of the COVID-19 pandemic on case numbers.

For patients diagnosed in Wales, the expected number of patients was estimated using the Patient Episode Database for Wales (PEDW), identifying those patients with an ICD 10 code for OG cancer (C15 or C16) recorded in the first episode. Case ascertainment estimates for Wales will be slightly too low because it is not possible to identify and remove patients with non-epithelial cancers in PEDW.

Figure 3.1: Estimated case ascertainment by English and Welsh geographical regions, 2018/20



3.2 Completeness of submitted records

Table 3.1 shows data completeness for a selection of data items collected by NOGCA, for patients between April 2018 and March 2020. Data completeness was generally good, but a minority of organisations were not achieving the same standards as others.

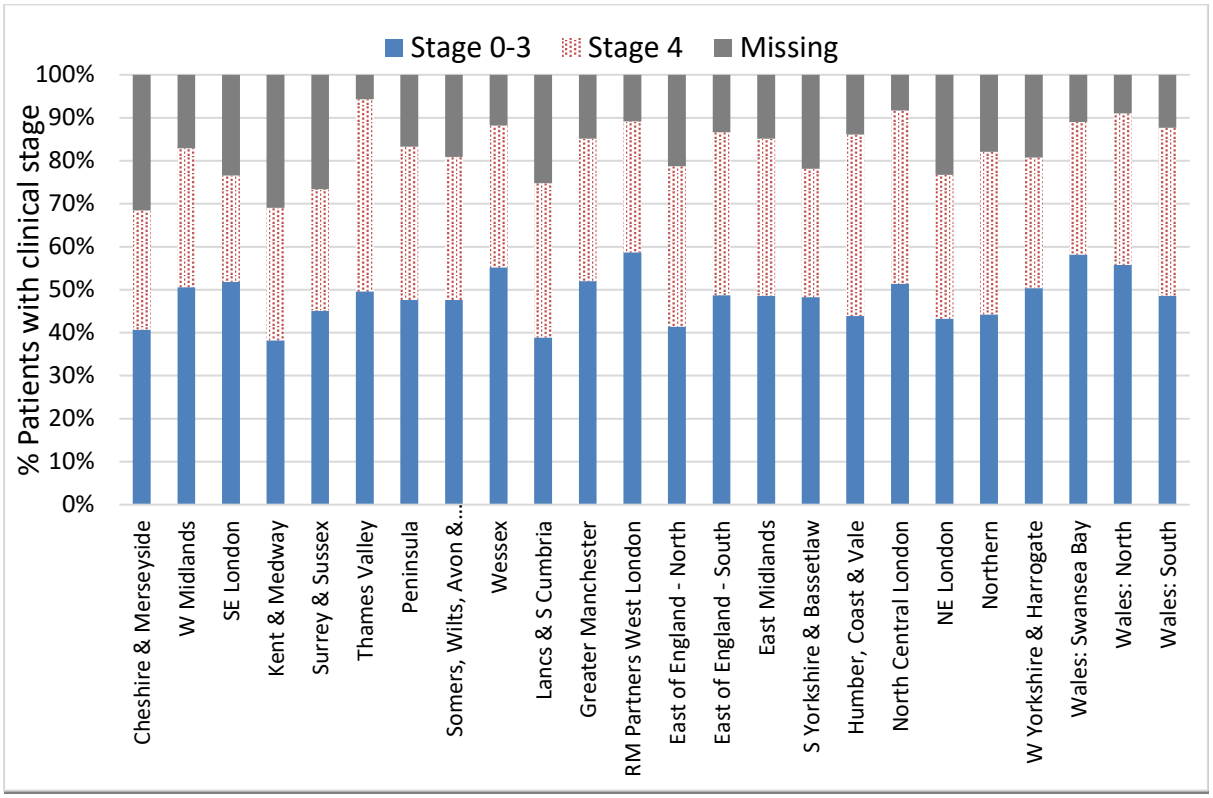
The completeness of data items related to surgical treatment and post-surgery pathology is important because this information is used to produce organisation-level outcome indicators for curative surgery. While pathology records were submitted for most patients who underwent surgery, completeness of information was variable across centres.

Table 3.1: Summary of data completeness for selected OG cancer data items for the 2018-20 audit period

Tumour data items	**Completeness overall across 134 organisations**	**No. of diagnosing NHS organisations with at least 80% completeness**
Referral source	98%	130
Staging investigations	88%	109
Pre-treatment TNM stage	82%	97
Surgical data items	**Completeness overall across 37 surgical centres**	**No. of NHS surgical centres with at least 90% completeness**
Nodal dissection	90%	27
Status at discharge	88%	27
Discharge date	95%	32
Pathological record	91%	30
Pathological TNM stage	90%	29

Overall, 82.1% of records for the 2018-20 audit period had clinical stage information, but the proportion varied across the regions, ranging from 68% to 94% (Figure 3.2). Clinical stage information was more likely to be missing among older patients, and among patients with a record of non-curative treatment intent: 79.7% of patients with non-curative treatment plans had clinical stage information, compared to 85.7% of patients with curative plans.

Figure 3.2: Clinical stage information for patients diagnosed with OG cancer 2018-20, by geographical region



4. Patients with oesophago-gastric cancer

OG cancer predominantly affects older people and occurs more frequently in men than in women, though there is some variation by tumour type (Table 4.1).

As reported in previous years, there has been a change in the relative distributions of oesophageal and stomach cancer over the last three decades, with increasing incidence of oesophageal and junctional cancers, and decreasing incidence of gastric tumours. In the Audit, stomach cancers accounted for 26.7% of all OG cancers diagnosed in 2019/20, compared to 30.7% in 2015/16.

The proportion of patients being diagnosed with stage 4 (metastatic) disease remains high, accounting for 42% of cases (Table 4.1). This may be an underestimate because 18% of patients did not have complete clinical stage information.

Table 4.1: Patient characteristics by type of OG tumour among patients diagnosed between April 2018 and March 2020 in England and Wales

	Oes SCC	Oes ACA Upper/Mid	Oes ACA Lower (w SI,SII)	Stomach (w SIII)	Total
Male (%)	49%	72%	81%	66%	70%
Median age (yrs)	72	73	71	74	72
Age group					
<60	15%	13%	17%	16%	16%
60-69	26%	22%	26%	19%	24%
70-79	34%	36%	35%	33%	34%
≥80	25%	29%	22%	32%	26%
Clinical stage (pre-treatment)					
Stage 0/1	6%	8%	7%	12%	8%
Stage 2	23%	10%	10%	20%	15%
Stage 3	38%	35%	39%	25%	35%
Stage 4	33%	47%	44%	43%	42%
Missing	643	362	1,414	1,226	3,565
Total	3,878	1,599	9,231	5,611	20,319

KEY: Oes – oesophageal, SCC – squamous cell carcinoma, ACA – adenocarcinoma, SI, SII, SIII - Siewert classification of the gastro-oesophageal junction (GOJ) [Siewert et al 1996]. See glossary for details

5. Routes to diagnosis

Several routes can lead to a diagnosis of OG cancer. An individual may be referred after presenting to their general practitioner (GP) with symptoms [NICE 2018; Allum et al 2011], or referred by a hospital consultant following outpatient review. Diagnosis can also follow an emergency admission to hospital, with acute symptoms that are often the result of late stage disease. Late stage disease is associated with poorer outcomes, therefore services should aim to reduce the proportion of diagnoses made after an emergency admission.

Table 5.1 summarises the routes to diagnosis for the 2018-2020 Audit cohort. Two-thirds of patients were diagnosed following referral by their GP, typically on the "two-week wait" suspected cancer pathway.

The proportion of patients with stomach cancer diagnosed after an emergency admission was almost double the figure for patients with oesophageal cancer. The risk was also strongly associated with age, with 18% of those aged ≥80 years diagnosed after an emergency admission, compared to 11% of patients aged 70-79 and 10% of those aged 60-69. Patients from socially deprived areas and those with comorbid conditions were also more likely to be diagnosed after an emergency admission.

The risk of emergency diagnosis did not differ according to whether patients lived in rural or urban areas in England (based on the 2011 Census Output Area associated with the postcode), after adjusting for patient age, sex, tumour site, deprivation and comorbidities.

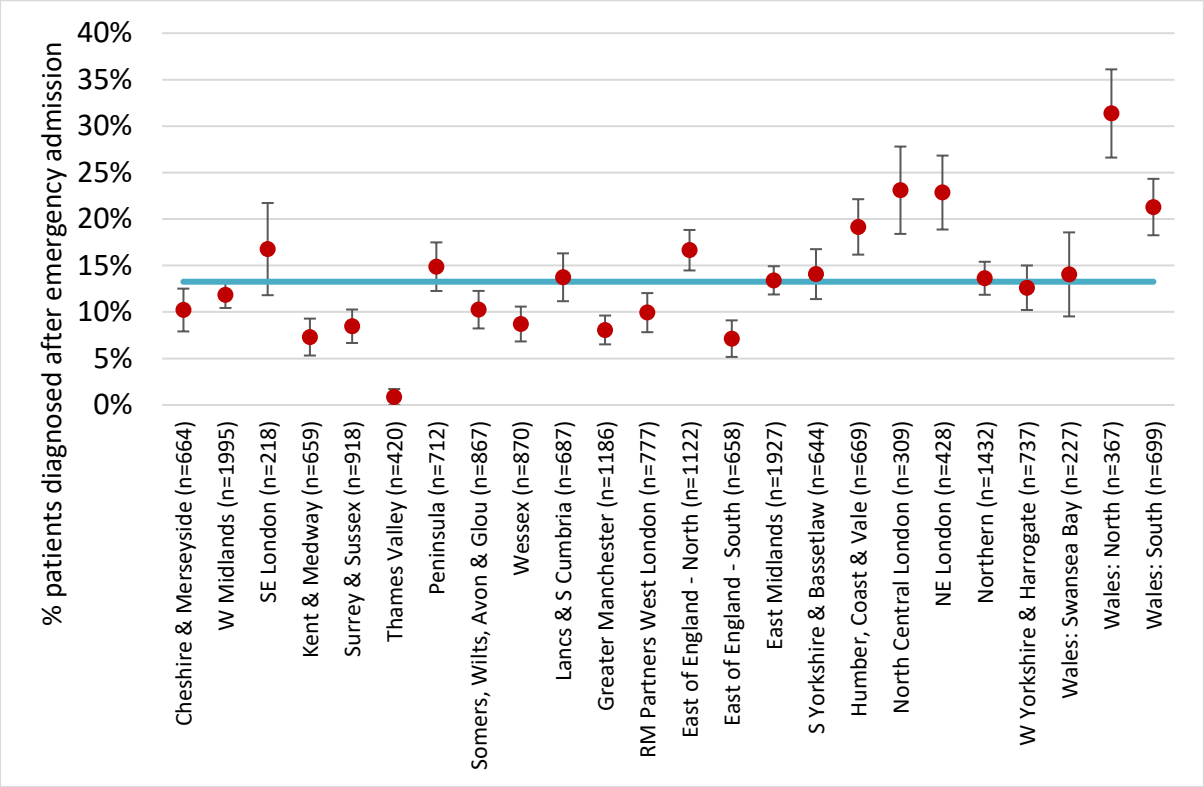
In previous years, the proportion of emergency diagnoses in Wales was observed to be notably higher than in England, even after adjusting for patient characteristics (site of cancer, presence of comorbidities and sociodemographic characteristics). However, while some regional variation remains (Figure 5.1), rates of emergency diagnosis in two of the three Welsh regions have declined since last year's audit report and only North Wales continues to have markedly high rates.

Table 5.1: Routes to diagnosis among patients with OG cancer diagnosed between April 2018 and March 2020 in England and Wales

Route to diagnosis	**Oes SCC**	**Oes ACA Upper/Mid**	**Oes ACA Lower (w SI,SII)**	**Stomach (w SIII)**	**Total**
GP referral	71%	64%	68%	56%	65%
Urgent / 2 week wait	*65%*	*60%*	*63%*	*50%*	*59%*
Routine	*6%*	*4%*	*5%*	*6%*	*6%*
Emergency admission	9%	13%	10%	19%	13%
Other	20%	23%	22%	25%	22%
Total cases	3,878	1,599	9,231	5,611	20,319
Missing values	55	27	168	125	375

KEY: Oes – oesophageal, SCC – squamous cell carcinoma, ACA – adenocarcinoma, SI, SII, SIII - Siewert classification of the gastro-oesophageal junction (GOJ).

Figure 5.1: Proportion of patients diagnosed with OG cancer after an emergency admission by Cancer Alliance / Welsh region. Graph shows adjusted rates with 95% confidence interval (CI)



KEY: Blue line - overall average for England and Wales

6. Staging investigations

Clinical guidelines recommend that all patients diagnosed with OG cancer should have an initial CT scan to assess the spread of disease and look for evidence of metastatic disease [NICE 2018].

In the 2018-20 Audit cohort, 85.9% of patients were reported to have had a CT scan. However, this figure is likely to underestimate the true proportion as the quality of the staging data submitted to the Audit varied across NHS organisations (Chapter 3.2). Using data from those organisations that reported staging investigations for at least 80% of patients, the estimated proportion was 93.4%.

If a CT scan indicates localised disease and a patient is considered sufficiently fit to be a candidate for curative treatment, they will undergo further investigations to determine the stage of cancer. The current NICE guidance recommends that PET-CT scans should be offered to people with oesophageal and GOJ tumours that are suitable for curative treatment, while endoscopic ultrasound should only be offered if it helps guide ongoing management (Box 6.1). Staging laparoscopy should be offered to all people with potentially curable stomach cancer.

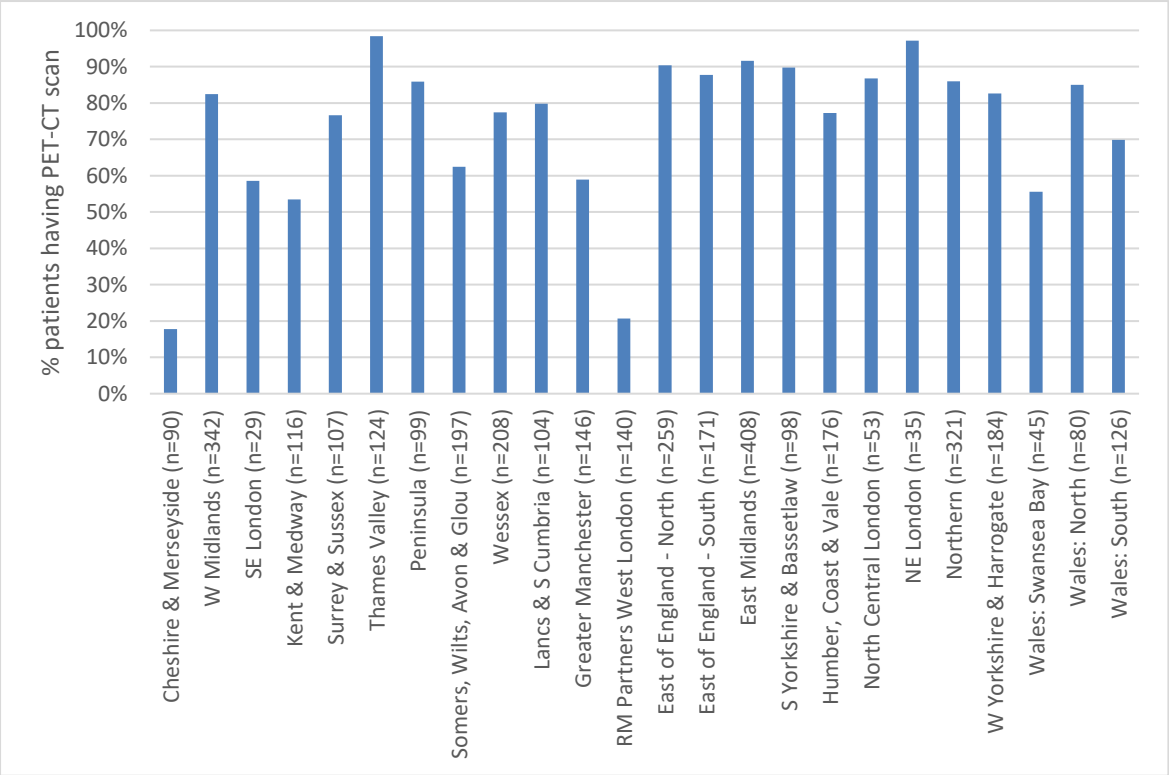
The 2018-20 Audit data show that practice is broadly consistent with NICE recommendations. Among patients with oesophageal and GOJ cancer who had a curative treatment plan, 61.1% were recorded to have PET-CT. This figure increased to 67.6% for organisations that reported staging investigations for at least 80% of patients, although there was substantial variation between regions (range 17.8% to 98.4%) (Figure 6.1). Use of endoscopic ultrasound was reported for 32.1% of these patients.

Among patients with stomach cancer, staging laparoscopy was reported for 41.4% of patients who had a curative treatment plan, while 30.3% had a PET-CT.

Box 6.1: Recommended staging investigations for oesophageal and gastric cancer [NICE 2018]

- CT scan of chest, abdomen and pelvis to provide an initial local assessment, and look for evidence of nodal and metastatic spread
- Offer a PET-CT scan to people with oesophageal and gastro-oesophageal junctional tumours that are suitable for curative treatment (except for T1a tumours).
- Do not offer endoscopic ultrasound only to distinguish between T2 and T3 tumours in people with oesophageal and gastro-oesophageal junctional tumours.
- Only offer endoscopic ultrasound (EUS) to people with oesophageal and gastro-oesophageal junctional cancer when it will help guide ongoing management.
- Offer staging laparoscopy to all people with potentially curable gastric cancer.
- Only consider a PET-CT scan in people with gastric cancer if metastatic disease is suspected and it will help guide ongoing management.

Figure 6.1: Use of PET-CT scans among patients with oesophageal and GOJ cancer who had curative treatment diagnosed between April 2018 and March 2020, by Cancer Alliance / Welsh region



7. Treatment planning

Treatment options for people diagnosed with OG cancer depend on several factors, including clinical stage, comorbidities, nutritional status and patient preferences.

For patients with localised disease who are relatively fit, the recommended treatment is generally surgery, with or without oncological therapy (see Box 7.1). For patients with squamous cell carcinoma of the oesophagus, definitive chemoradiotherapy is also an option. Endoscopic treatment may be suitable for patients whose tumours are limited to the mucosa, with little risk of spread to the lymph nodes.

For patients with metastatic disease or those who are not sufficiently fit for surgery, chemotherapy can improve survival and is suitable for patients with a reasonable level of fitness. Therapies for managing symptoms such as dysphagia include endoscopic or radiological interventions (e.g. stents) and radiotherapy.

Box 7.1: Recommended curative treatment options for OG cancer [NICE 2018]

Oesophageal squamous cell carcinomas:

- Definitive chemoradiation for proximal oesophageal tumours.
- For tumours of the middle or lower oesophagus, either chemoradiotherapy alone or combined with surgery.

Oesophageal adenocarcinoma and GOJ tumours:

- Preoperative chemotherapy or chemoradiation is recommended to improve long term survival after surgery, compared to surgery alone.
- Peri-operative chemotherapy (pre and post-operative) can also be recommended as it increases survival for junctional tumours.

Gastric cancer:

- Peri-operative chemotherapy is recommended to improve survival compared to surgery alone.
- In patients at high risk of recurrence who have not had neoadjuvant chemotherapy, adjuvant chemoradiotherapy may be considered as it has been shown to improve survival in non-Western populations.

7.1 Treatment plans

Overall, 39.4% of patients diagnosed in the 2018-20 audit period had a plan for treatment with curative intent, with some variation by tumour type (Table 7.1).

Among patients with early stage disease (stage 0-3), 60.8% had a curative treatment plan. However, there was substantial variation by age, with curative treatment being much less common among the oldest patients (Table 7.2).

Planned modes of curative treatment varied by tumour type (Figure 7.1). Consistent with recommendations for patients with squamous cell carcinomas (SCC), definitive chemoradiotherapy was the most common planned treatment, particularly among older patients. Treatment combining oncology (chemotherapy or chemoradiotherapy) with surgery was the dominant treatment among patients with cancer in the lower oesophagus or stomach, except among the oldest patients for whom surgery only was the most common treatment.

For patients with a non-curative treatment plan, oncological therapy (chemotherapy or radiotherapy) was the planned therapy for 71% of patients during the 2018-20 audit period. A further 24% of patients had either surgery or endoscopic / radiological palliative therapies, while only 5% had a plan for best supportive care. Active treatment plans were far less common for patients aged 80 years or over (Figure 7.2).

Table 7.1: Percentage of patients diagnosed with OG cancer between April 2018 and March 2020 with curative treatment plans

Treatment plan	Oes SCC	Oes ACA Upper/Mid	Oes ACA Lower (w SI,SII)	Stomach (w SIII)	Total
Total patients	3,878	1,599	9,231	5,611	20,319
Curative intent	41.3%	32.8%	42.7%	34.4%	39.4%
By clinical stage					
0/1	74.1%	71.6%	81.4%	64.5%	73.4%
2	62.5%	64.0%	67.9%	61.0%	63.8%
3	51.8%	47.1%	61.6%	52.4%	56.7%
4	14.2%	13.6%	18.3%	5.0%	13.6%
(missing data)	643	362	1,414	1,226	3,645

KEY: Oes – oesophageal, SCC – squamous cell carcinoma, ACA – adenocarcinoma, SI, SII, SIII - Siewert classification of the gastro-oesophageal junction (GOJ) [Siewert et al 1996]. See glossary for details.

Table 7.2: Percentage of patients with curative treatment plans for OG cancer, by tumour type, disease stage and age group

		Clinical Stage		
Tumour	Age (years)	0/1	2	3
Oes SCC				
	<60	93%	82%	67%
	60-69	86%	78%	60%
	70-79	76%	69%	58%
	≥80	50%	32%	21%
Oes ACA Upper/Mid				
	<60	71%	88%	66%
	60-69	81%	90%	69%
	70-79	76%	65%	53%
	≥80	54%	37%	18%
Oes ACA Lower (w SI,SII)	<60	96%	82%	86%
	60-69	90%	84%	79%
	70-79	85%	73%	61%
	≥80	53%	31%	22%
Stomach (w SIII)	<60	89%	87%	77%
	60-69	84%	79%	62%
	70-79	72%	70%	59%
	≥80	40%	27%	25%

KEY: Oes – oesophageal, SCC – squamous cell carcinoma, ACA – adenocarcinoma, SI, SII, SIII - Siewert classification of the gastro-oesophageal junction (GOJ) [Siewert et al 1996]. See glossary for details

Figure 7.1: Planned modality for patients with curative treatment intent for OG cancer diagnosed between April 2018 and March 2020, by age and tumour location

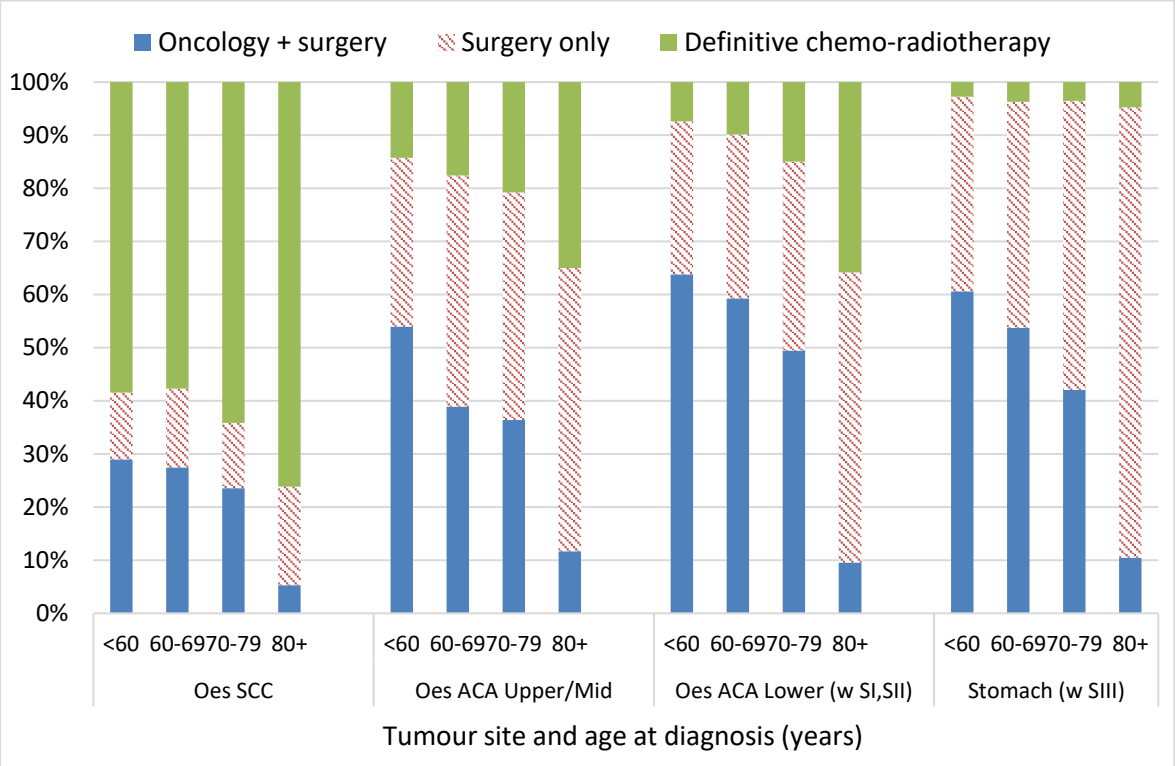
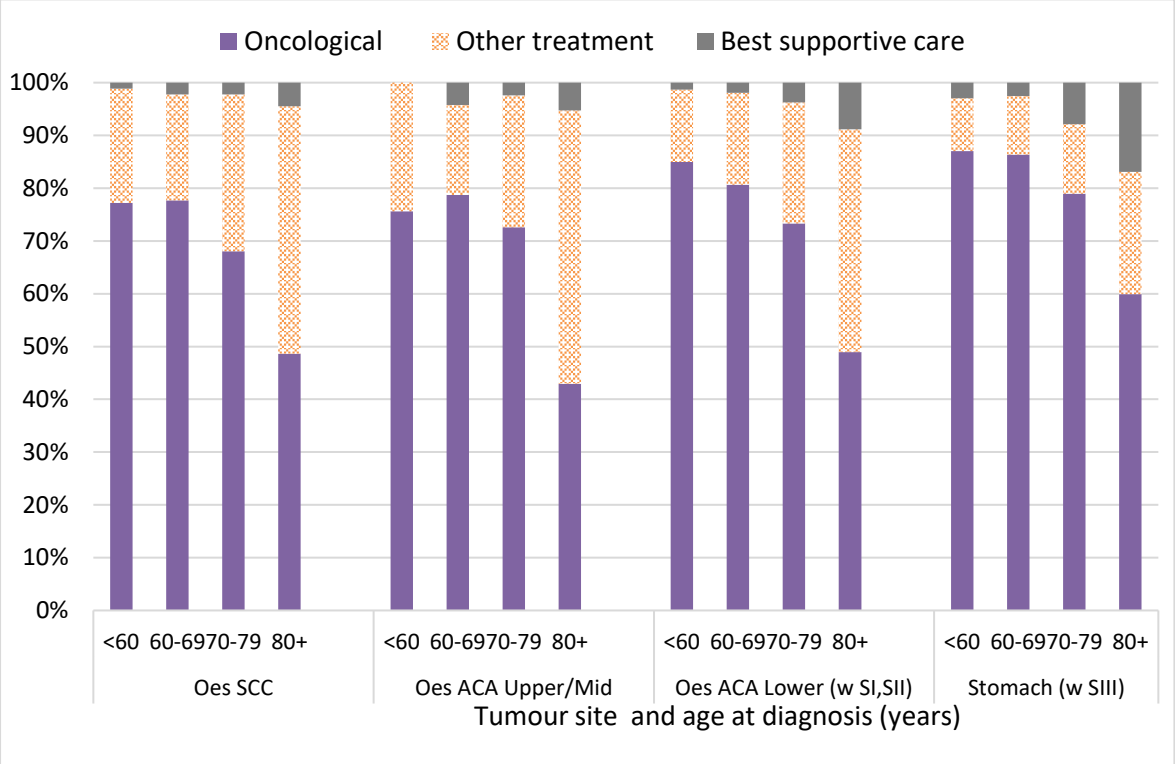


Figure 7.2: Planned modality for patients with non-curative treatment intent for OG cancer diagnosed between April 2018 and March 2020, by age and tumour location



KEY: Oes – oesophageal, SCC – squamous cell carcinoma, ACA – adenocarcinoma, SI, SII, SIII - Siewert classification of the gastro-oesophageal junction (GOJ) [Siewert et al 1996]. See glossary for details

7.2 Waiting times along the care pathway

Several waiting time targets have been established for cancer services in England and Wales. English services have the aim of ensuring at least 85% of patients diagnosed after an urgent "2-week" GP referral begin treatment within 62 days [NHS England 2019b]. In Wales, the target for the 2018-20 audit period was for 95% of urgent suspected cancer referrals to begin definitive treatment within 62 days [NHS Wales 2018].

The NOGCA dataset captures four key dates that allow us to describe patterns of waiting times along the patient pathway:

- Referral date to OG cancer team
- Date of diagnosis
- Date of treatment plan (treatment MDT meeting)
- Date of first treatment

For the 2018-20 audit cohort, patterns of waiting times were similar to those reported in previous years (Table 7.3).

- The time from referral to diagnosis was longest for patients seen via a routine GP referral, with 25% of patients waiting longer than 56.5 days.
- The average waiting time from referral to diagnosis for urgent GP referrals was 17 days, with 75% of patients waiting less than 27 days. Median waiting time from referral to treatment was 65 days (IQR 55 to 86).
- 53.4% of patients diagnosed after an urgent GP referral waited longer than the target 62 days from referral to first treatment.
- Patients who had a curative treatment plan had a longer wait from diagnosis to a treatment plan than those with a non-curative plan. This is expected given the additional staging investigations required for patients undergoing curative treatment.
- The 'average' (median) time from diagnosis to the start of primary curative therapy typically took between 1 and 2 months for surgical and oncological treatments.

Table 7.3: Patterns of waiting times along the care pathway for patients diagnosed with OG cancer between April 2018 and March 2020

Time in days from	Referral to diagnosis		Referral to first treatment	
	Median	IQR	Median	IQR
GP referral: urgent	17	11 to 27	65	55 to 86
GP referral: routine	26.5	10 to 56.5	86.5	62 to 128
After emergency admission	7	3 to 14	47.5	25 to 70
Other consultant referral	7	1 to 21	64	45 to 95

Time in days from	Diagnosis to treatment plan		Diagnosis to first treatment		Referral to first treatment	
	Median	IQR	Median	IQR	Median	IQR
Curative: Surgery only	25	8 to 44	61	40 to 90	83	59 to 124
Curative: Definitive / Neoadjuvant oncology	26	14 to 38	53	42 to 69	71	58 to 91
Palliative: oncology	14	5 to 28	43	32 to 60	62	49 to 83
Palliative: ERPT	7	2 to 17	17	8 to 30	35	21 to 55

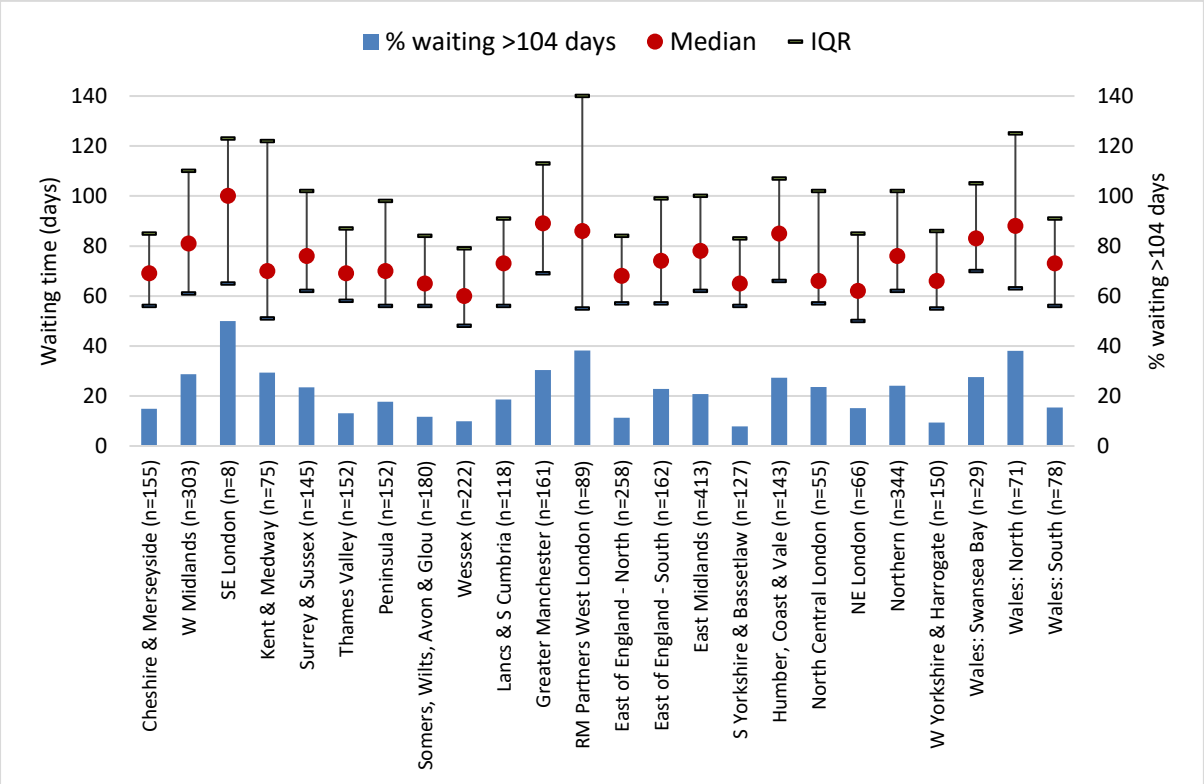
KEY: ERPT – Endoscopic / radiologic palliative therapy. IQR – Interquartile range

Distributions of waiting times from referral to curative treatment (Figure 7.3) were similar across Cancer Alliances / Welsh regions. However, there were excessive waiting times for a significant proportion of patients in some regions. Overall, 20.0% of patients waited more than 104 days from referral (all routes) to primary curative treatment, an increase from 17.5% in the 2015-17 audit period. In 8 of 24 regions, over a quarter of patients waited longer than 104 days.

Among patients having non-curative oncological treatment, 12.4% waited longer than 104 days from referral to the start of treatment.

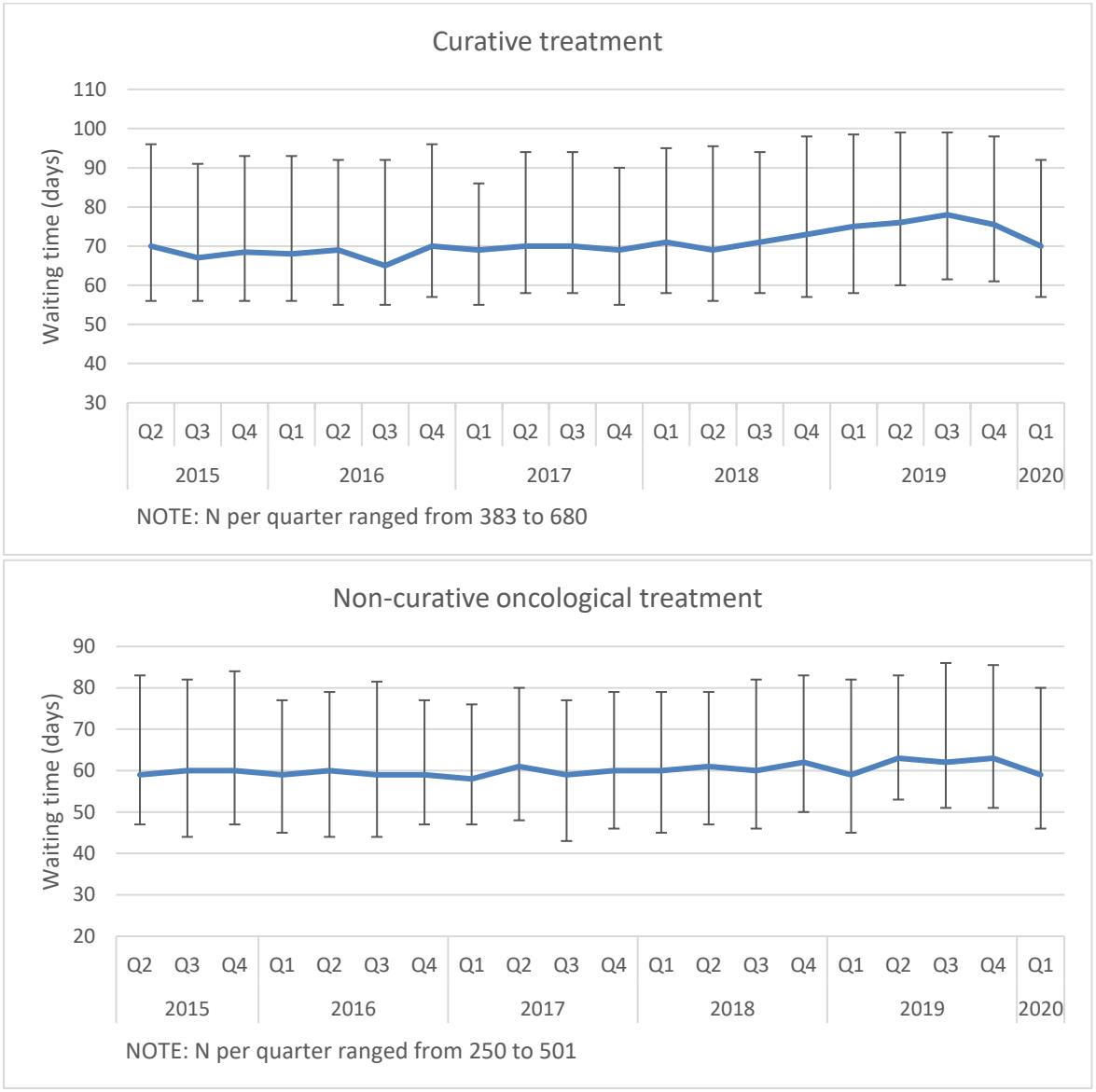
Median waiting times from referral to treatment have not improved over the five year period from 2015/16 to 2019/20, for curative and non-curative treatments (Figure 7.4).

Figure 7.3: Median (IQR) waiting times from referral to start of curative treatment for patients diagnosed with OG cancer between April 2018 and March 2020 and % patients waiting >104 days, by Cancer Alliance / Welsh region



KEY: IQR – Interquartile range

Figure 7.4: Median (IQR) waiting times from referral to start of treatment for patients diagnosed with OG cancer between April 2015 and March 2020, by quarter of diagnosis



KEY: IQR – Interquartile range

8. Nutritional support in OG cancer

National clinical guidelines for the assessment and management of OG cancer include several recommendations relating to nutritional support for patients (Box 8.1).

In 2019, the Audit introduced new items to its dataset to capture patterns of nutritional support for patients diagnosed from April 2019. Submission of nutritional support information is currently non-mandatory, but will be required in future.

8.1 Nutritional management between diagnosis and treatment

Information about dietetic involvement between diagnosis and treatment was submitted for 33.5% (n=3,347) of patients diagnosed with OG cancer between 1 April 2019 and 31 March 2020 (Table 8.1).

Of the patients who had information about nutritional management:

- 79.9% received dietetic support:
    - 58.9% of patients received advice from a specialist OG dietitian
    - 11.4% were advised by a general dietitian
    - 9.6% saw a dietitian (unspecified)
- 20.1% were not seen by a dietitian, either because there was no dietitian available (2.2%) or it was assessed that one was not required (17.9%).
- Among patients with a plan for curative treatment, 81.5% were seen by a dietitian compared to 78.8% of those with a non-curative plan.

Of the 134 NHS organisations participating in the Audit, 27 did not provide any data about nutritional management. Of the remaining 107 organisations, four provided information about all of their patients, while a further 22 had information about the majority (>80%) of patients.

Analysis of data from this subset of organisations with high levels of data completeness showed the same overall patterns of dietetic involvement, with the majority of patients (58.8%) being seen by a specialist dietitian and 21.4% not receiving any dietetic support.

Box 8.1: Recommended nutritional support for people being treated for OG cancer [NICE 2018]

- All patients undergoing curative treatment should be offered nutritional assessment and specialist dietetic support before, during and after treatment.
- People undergoing curative surgery for oesophageal and junctional cancers should be offered immediate enteral or parenteral nutrition after surgery.
- For people receiving palliative care, tailored specialist dietetic support should be considered.

Table 8.1: Nutritional management of patients diagnosed with OG cancer 2019/2020

Dietetic involvement between diagnosis and treatment	Curative treatment plan	Non-curative treatment plan	Total
N	3,875	6,122	9,997
Assessment and advice: general dietitian	131 (9.2%)	251 (13.1%)	382 (11.4%)
Assessment and advice: specialist OG dietitian	937 (65.6%)	1,036 (54.0%)	1,973 (58.9%)
Assessment and advice: dietitian (unspecified)	95 (6.7%)	225 (11.7%)	320 (9.6%)
None: no dietitian available	36 (2.5%)	38 (2.0%)	74 (2.2%)
None: not required	228 (16.0%)	370 (19.3%)	598 (17.9%)
Missing	2,448	4,202	6,650

Information about patient height and weight at diagnosis was available for 1,603 patients diagnosed in 2019/20. Of these, 441 (27.5%) were classified as underweight (body mass index BMI <18.5), 620 (38.7%) had a BMI within the healthy range (18.5 to <25), and 542 (33.8%) had a BMI in the overweight range (25 to <30).

The proportion of patients seen by a dietitian was similar across BMI categories: 86.4% among patients with a BMI in the overweight category, compared to 89.0% among those with lower BMI (p=0.177).

8.2 Postoperative nutritional management

Of the 1,781 patients diagnosed with OG cancer in 2019/20 who underwent curative surgery, 46.1% had information about postoperative nutritional management during their surgical admission and 53.3% had information about postoperative dietetic management on discharge (Table 8.2).

- Almost all patients undergoing curative oesophagectomy (98.3%) had enteral or parenteral nutrition immediately after surgery, with most via a jejunostomy.
- 95.7% of patients undergoing gastrectomy had some form of nutritional management during the surgical admission, most in the form of oral nutrition.
- 95.3% of all patients were assessed postoperatively and advised by a specialist OG dietitian. A further 4.3% were seen by a general or unspecified dietitian. Only 4 patients (0.4%) had no contact with a dietitian.
- Most patients undergoing surgery had ongoing nutritional management on discharge, mainly in the form of oral nutrition or jejunostomy feeding.

Table 8.2: Postoperative nutritional management of patients undergoing curative surgery for OG cancer, among patients diagnosed 2019/2020

	Oesophagectomy	Gastrectomy	Total
N	1,152	629	1,781
Postoperative nutritional management during surgical admission			
Nasojejunal tube	8 (1.5%)	39 (13.9%)	47 (5.7%)
Jejunostomy	352 (65.1%)	28 (10.0%)	380 (46.3%)
Oral nutrition	83 (15.3%)	166 (59.3%)	249 (30.3%)
Parenteral nutrition	81 (15.0%)	25 (8.9%)	106 (12.9%)
Other	8 (1.5%)	10 (3.6%)	18 (2.2%)
No management	9 (1.7%)	12 (4.3%)	21 (2.6%)
Missing	611	349	960
Dietetic involvement following surgery			
Assessment & advice: general dietitian	12 (2.0%)	9 (2.7%)	21 (2.2%)
Assessment & advice: specialist dietitian	588 (95.9%)	317 (94.0%)	905 (95.3%)
Assessment & advice: dietitian (unspecified)	11 (1.8%)	9 (2.7%)	20 (2.1%)
None	2 (0.3%)	2 (0.6%)	4 (0.4%)
Missing	539	292	831
Postoperative nutritional management on discharge			
Nasojejunal tube	10 (1.8%)	7 (2.4%)	17 (2.0%)
Jejunostomy	288 (51.5%)	31 (10.6%)	319 (37.4%)
Oral nutrition	239 (42.8%)	235 (80.2%)	474 (55.6%)
Parenteral nutrition	4 (0.7%)	0	4 (0.5%)
Other	6 (1.1%)	8 (2.7%)	14 (1.6%)
No management	12 (2.1%)	12 (4.1%)	24 (2.8%)
Missing	593	336	929

Of the 36 surgical centres which submitted surgery data for 2019/20, twelve did not provide any information about postoperative nutritional management (no information about nutritional management or dietetic involvement). Of the 24 surgical centres which submitted some data about nutritional management, 15 provided information about the majority (>80%) of their patients.

Analysis of data restricted to organisations with high levels of data completeness showed the same patterns of postoperative nutritional management and dietetic involvement as reported above.

9. Curative surgery

For patients diagnosed in the three year period between April 2017 and March 2020, 6,322 surgical records were submitted. Of these, 95.1% were recorded as oesophagectomy or gastrectomy with curative intent. The majority of oesophagectomies were performed using the 2-stage Ivor-Lewis transthoracic approach, while procedures for stomach tumours were typically total or distal gastrectomies (Table 9.1).

Minimally invasive (MI) operations are performed using laparoscopic instruments inserted through small (1-2cm) incisions rather than using a large incision characteristic of an open surgical approach.

In the 2017-2020 surgical cohort, 17.6% of all curative oesophagectomies were full MI procedures, while 31.0% were hybrid operations (using an MI technique for only either the abdominal or chest phase). A small proportion (2.6%) began as MI procedures and were converted to open surgery. For curative gastrectomies, 17.2% were full MI procedures and 1.5% were converted from MI to open surgery.

Table 9.1: Summary of surgical procedures and type of lymphadenectomy performed in patients diagnosed with OG cancer between April 2017 and March 2020, in England and Wales

Type or procedure	**No. of operations**	**2-field dissection**
Left thoracic abdominal	252 (6%)	98.3%
2-Stage Ivor-Lewis	3,425 (87%)	99.0%
3-Stage McKeown	204 (5%)	79.4%
Transhiatal	67 (2%)	n/a
All curative oesophagectomies	3,948	
Cancer unresectable at surgery	20	
	No. of operations	**D2-dissection**
Total gastrectomy	968 (48%)	91.8%
Distal gastrectomy	816 (40%)	85.1%
Extended gastrectomy	189 (9%)	94.0%
Other gastrectomy	62 (3%)	65.5%
All curative gastrectomies	2,035	
Bypass	97	
Cancer unresectable at surgery	189	

9.1 Enhanced recovery after surgery (ERAS)

Enhanced recovery after surgery (ERAS) protocols can reduce rates of complications and shorten length of hospital stay after surgery for OG cancer [Markar et al 2015]. ERAS protocols may include several components, such as pre-operative counselling, pre-operative carbohydrate loading, early mobilisation after surgery, and a standardised post-operative pathway.

In the 2017-2020 surgical cohort, use of an ERAS approach was reported for over two-thirds of patients following curative surgery (Table 9.2). This proportion has increased

since the audit began collecting data about the use of ERAS protocols in 2016, when only half of surgical patients followed an ERAS pathway (Figure 9.1). The majority of ERAS protocols involved daily documentation in medical notes, and completion rates were high.

The expected mean length of stay following surgery was shorter for patients on an ERAS pathway with daily documentation, for patients with and without surgical complications (Table 9.3). This difference was not apparent for ERAS pathways without daily documentation.

Table 9.2: Use of ERAS protocols following curative surgery in patients diagnosed with OG cancer between April 2017 and March 2020 in England

	Oesophagectomy		Gastrectomy	
Number of patients	3,948		2,035	
What best describes the surgical pathway that this patient followed?				
A protocolised enhanced recovery with daily documentation in medical notes	2,048	58.3%	868	50.7%
A protocolised enhanced recovery without daily documentation in medical notes	446	12.7%	276	16.1%
A standard (non-ERAS) surgical pathway	446	29.0%	568	33.2%
Missing	434		323	
Did the patient complete the ERAS pathway?				
Yes	1,967	86.9%	893	88.2%
No: but partial completion	240	10.6%	105	10.4%
No: non-completion	56	2.5%	15	1.4%
Missing	231		131	

Figure 9.1: Use of ERAS pathways following curative surgery in patients diagnosed with OG cancer between April 2016 and March 2020, by audit year

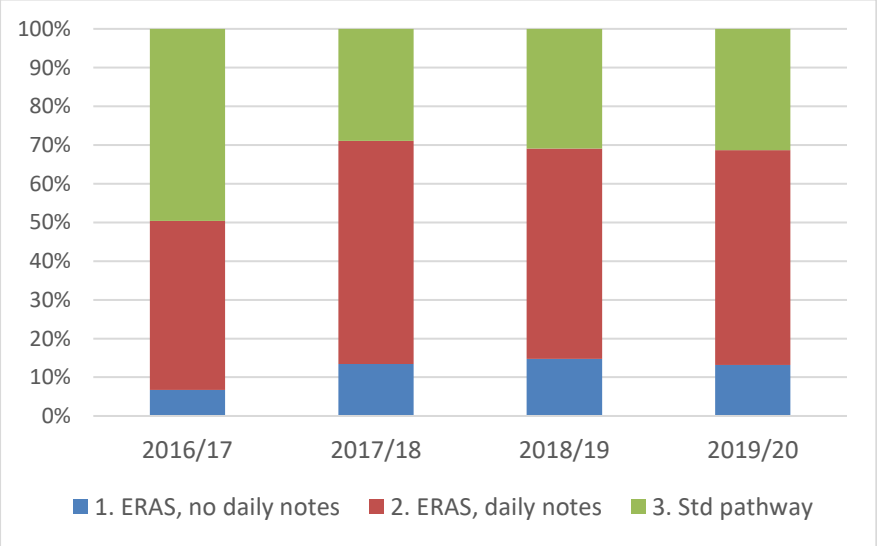


Table 9.3: Expected length of stay (days) following curative surgery for patients diagnosed with OG cancer April 2017 - March 2020, by type of surgical pathway. Estimates for a patient aged 65 years

	Oesophagectomy		Gastrectomy	
Surgical pathway	**No SC**	**With SC**	**No SC**	**With SC**
A protocolised enhanced recovery with daily documentation in medical notes	12.0	21.1	9.6	18.8
A protocolised enhanced recovery without daily documentation in medical notes	13.3	25.0	10.9	22.6
A standard (non-ERAS) surgical pathway	13.2	25.6	10.8	23.2

KEY: SC – surgical complication. Expected LOS predicted using linear regression model that incorporated age at diagnosis, type of procedure and type of postoperative pathway

9.2 Short-term outcomes of surgery

Figures 9.2 and 9.3 show the risk-adjusted 30- and 90-day postoperative mortality rates for OG cancer surgical centres in England and Wales. The mortality rate for each centre is plotted against the number of operations, as the precision of estimates improves with larger numbers. All centres had adjusted mortality rates that fell within the expected range (defined by the 99.8% control limits).

The mortality rates for each procedure and overall are shown in Table 9.4.

Table 9.4: Postoperative outcomes after curative surgery for patients diagnosed with OG cancer between April 2017 and March 2020 in England and Wales

	Oesophagectomy	**Gastrectomy**	**Overall**
30-day mortality (95%CI)	1.7% (1.3 to 2.2)	1.2% (0.7 to 1.7)	1.6% (1.3 to 1.9)
90-day mortality (95% CI)	3.6% (3.0 to 4.2)	2.4% (1.7 to 3.0)	3.2% (2.7 to 3.6)
Median length of stay in days (IQR)	11 (9 to 17)	9 (7 to 13)	11 (8 to 15)
Pathology indicators			
Nodes examined ≥15	89.6% (88.5 to 90.5)	84.7% (83.0 to 86.2)	87.9% (87.0 to 88.7)
Longitudinal margins positive	4.0% (3.4 to 4.7)	8.8% (7.6 to 10.1)	5.6% (5.0 to 6.3)
Circumferential margins positive*	22.0% (20.6 to 23.4)	n/a	n/a

* excludes NHS organisations that reported 0% positive circumferential margins. IQR – interquartile range

Figure 9.2: Funnel plot of adjusted 30-day mortality after curative surgery for OG cancer for patients diagnosed April 2017-March 2020 for NHS organisations in England and Wales

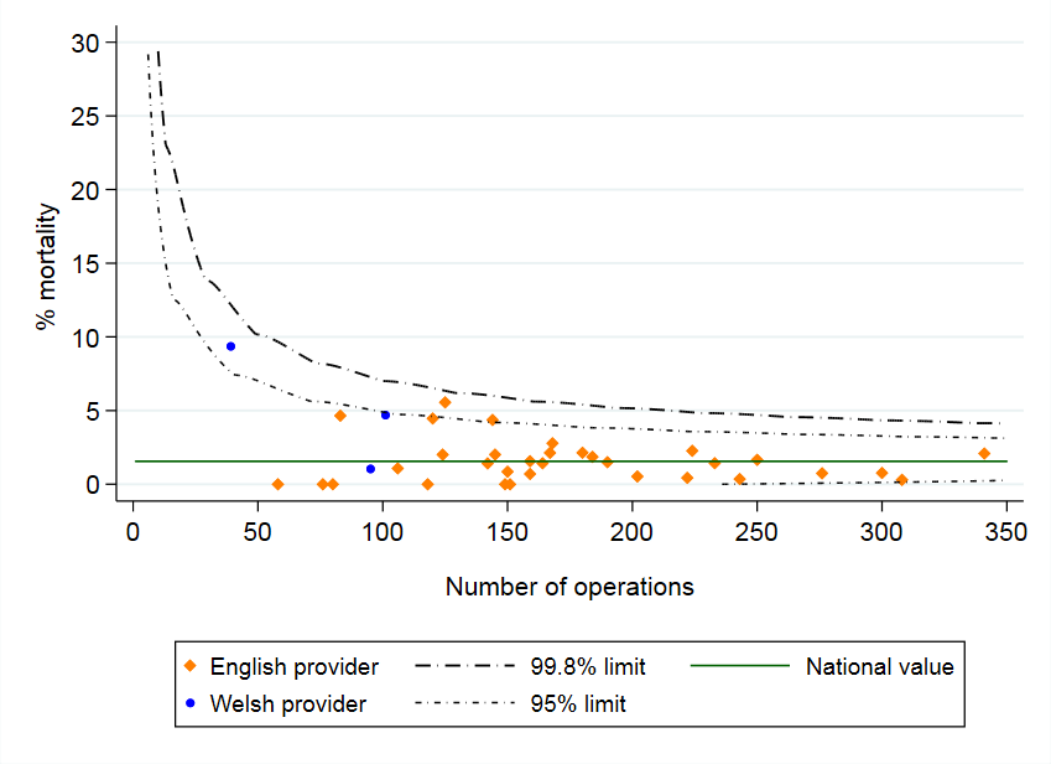
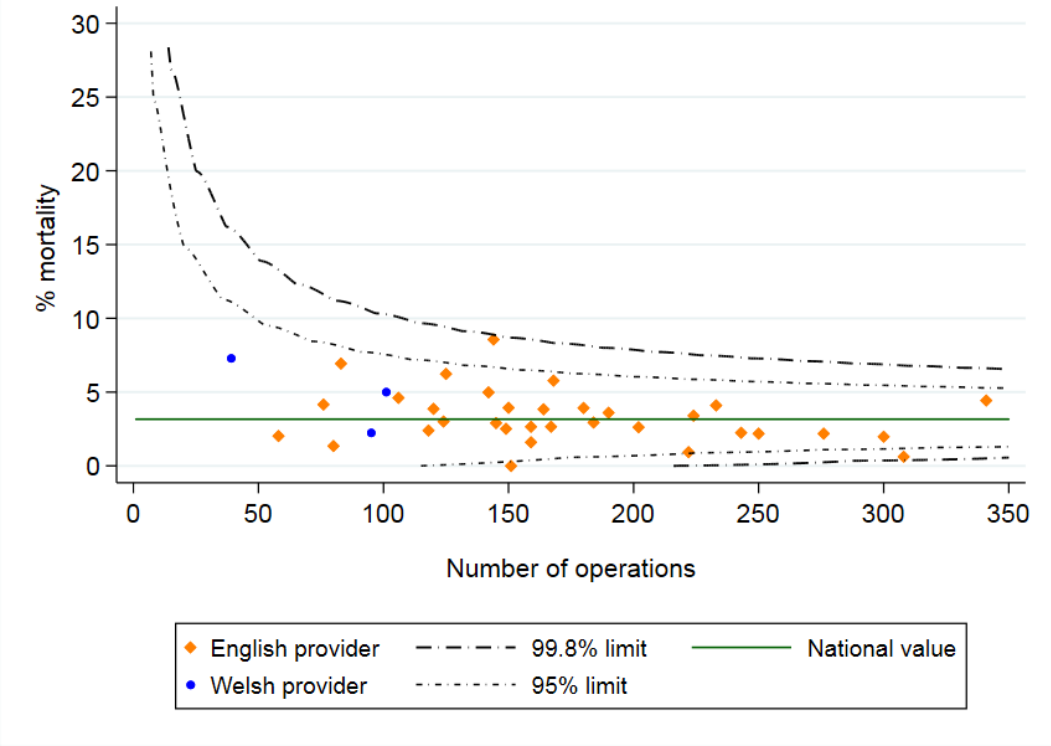


Figure 9.3: Funnel plot of adjusted 90-day mortality after curative surgery for OG cancer for patients diagnosed April 2017-March 2020 for NHS organisations in England and Wales



Since 2017, the Audit has published information on four surgical pathology indicators, to support the implementation of recommendations in the AUGIS Provision of Services document [AUGIS 2016]:

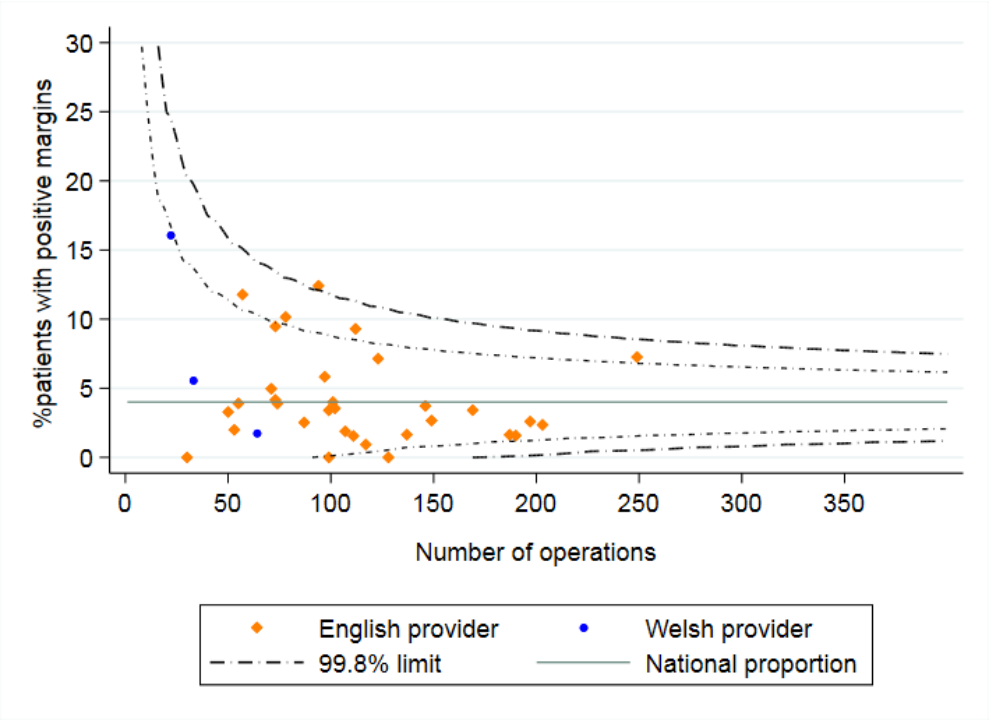
1. Proportion of patients with 15 or more lymph nodes removed and examined (oesophagectomies and gastrectomies)
2. Proportion of patients with positive longitudinal margins (oesophagectomies)
3. Proportion of patients with positive circumferential margins (oesophagectomies)
4. Proportion of patients with positive longitudinal margins (gastrectomies)

Risk-adjusted longitudinal margin indicators fell within the expected ranges (99.8% control limits) for gastrectomies in the 2017-2020 surgical cohort (see Figure 9.4). For oesophagectomies, one organisation had an adjusted rate of positive longitudinal margins that was higher than expected (Figure 9.4). As reported in previous years, the overall positive longitudinal margin rate of 8.8% for gastrectomy exceeded the 5% target set by AUGIS (Table 9.4). The overall rate of positive longitudinal margins for oesophagectomy was within the 5% target.

Compared with longitudinal margin indicators, circumferential margin and lymph node indicators continue to show large variation (Figure 9.5), but both have shown improvement over the last five years. The proportion of patients with 15 or more lymph nodes examined has increased from 81.9% among patients diagnosed in 2015/16 to 89.2% among those diagnosed in 2019/20. The proportion of patients with positive circumferential margins has decreased from 26.3% to 20.3%. These continued improvements are encouraging, but there remains a need for greater consistency and standardisation of the way surgical specimens are prepared for histological assessment to enable centres to benchmark themselves with confidence.

Figure 9.4: Funnel plots showing the organisational rates of positive longitudinal margins for patients diagnosed with OG cancer in England and Wales between April 2017 and March 2020

Adjusted rate of positive longitudinal margins after oesophagectomy



Adjusted rate of positive longitudinal margins after gastrectomy

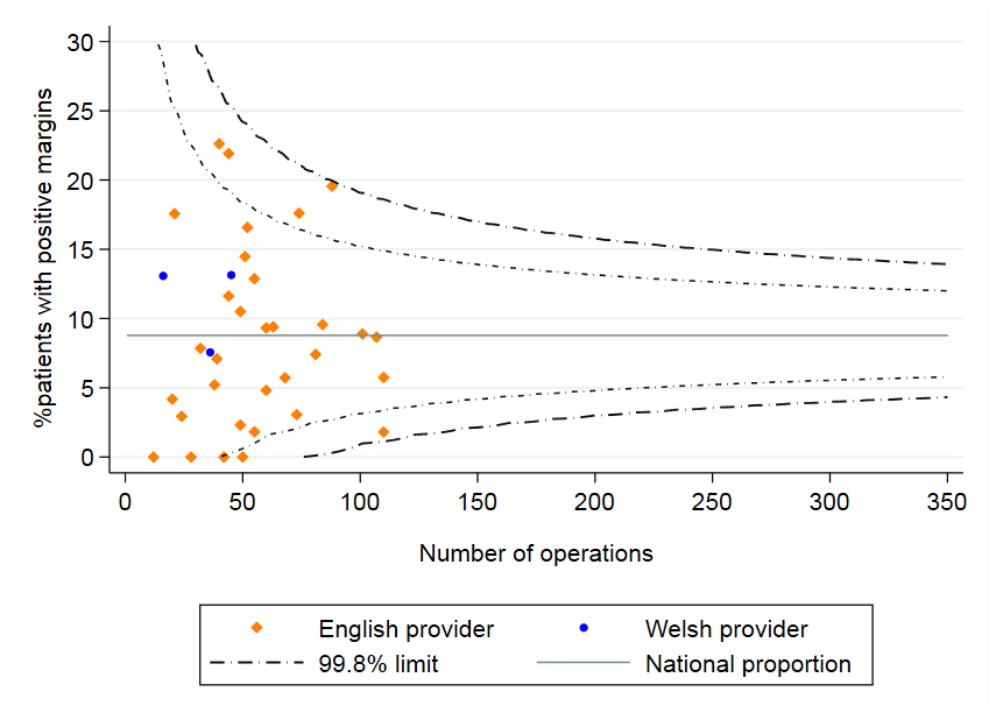
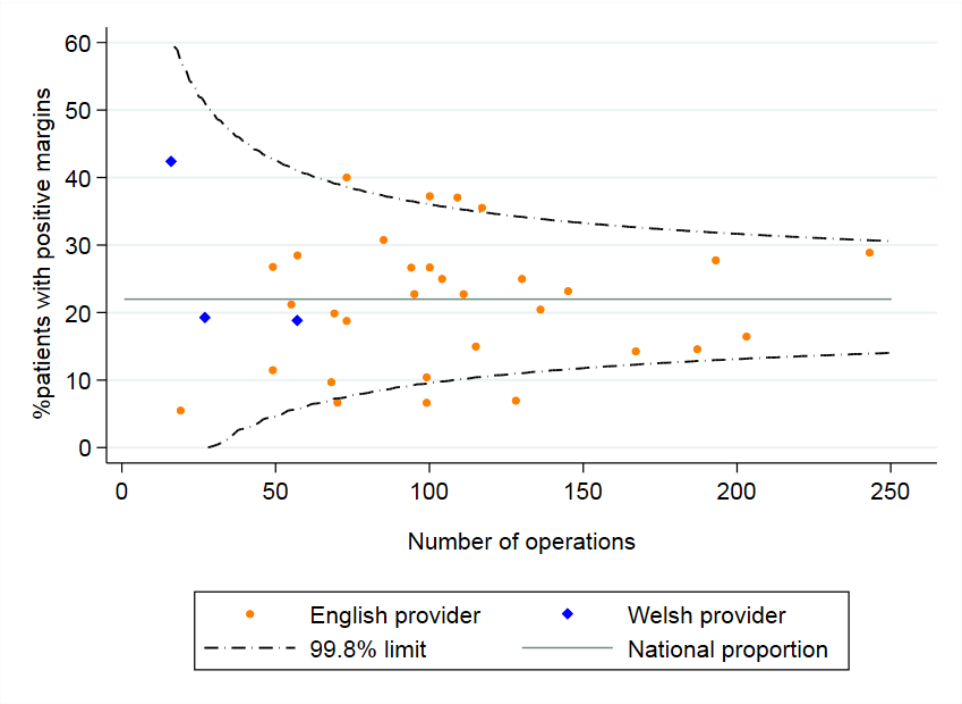
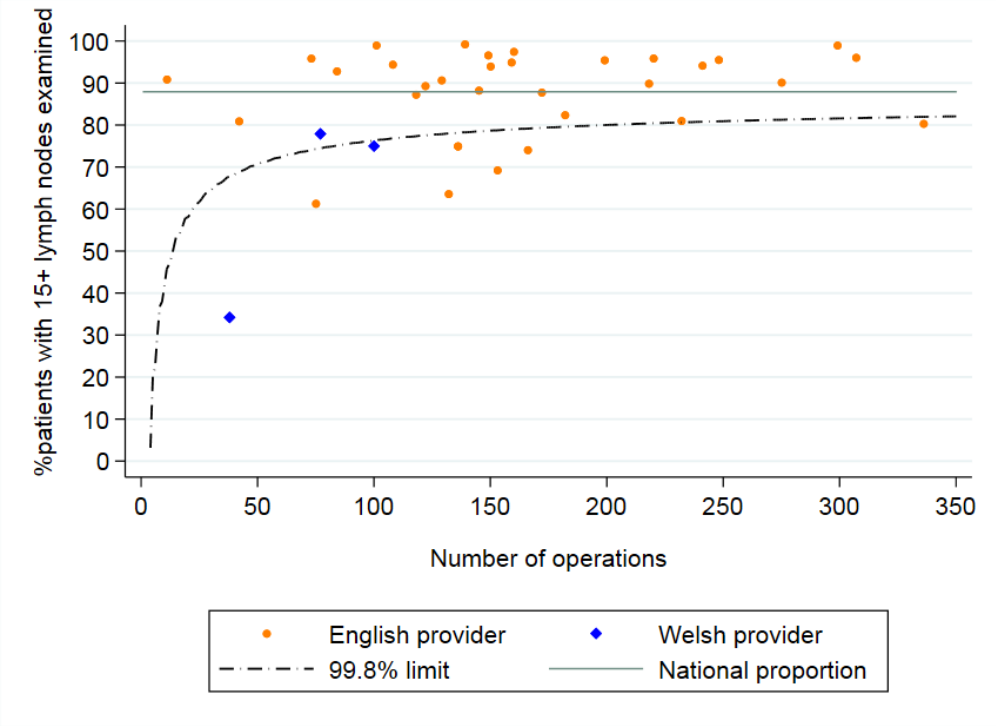


Figure 9.5: Organisational rates of positive circumferential margin and lymph nodes examined for patients diagnosed with OG cancer in England and Wales between April 2017 and March 2020

Adjusted rate of positive circumferential margin after oesophagectomy



Unadjusted rate of lymph nodes examined after oesophagectomy & gastrectomy



9.3 Longer term outcomes after surgery

When combined with information on short-term outcomes, longer-term survival after surgery can provide insight into the adequacy of cancer staging and appropriateness of curative surgery.

Survival figures were produced using the 2017-2020 surgical cohort described above, but 69 patients were excluded because their audit data could not be linked to a record in the ONS death register to determine longer-term survival.

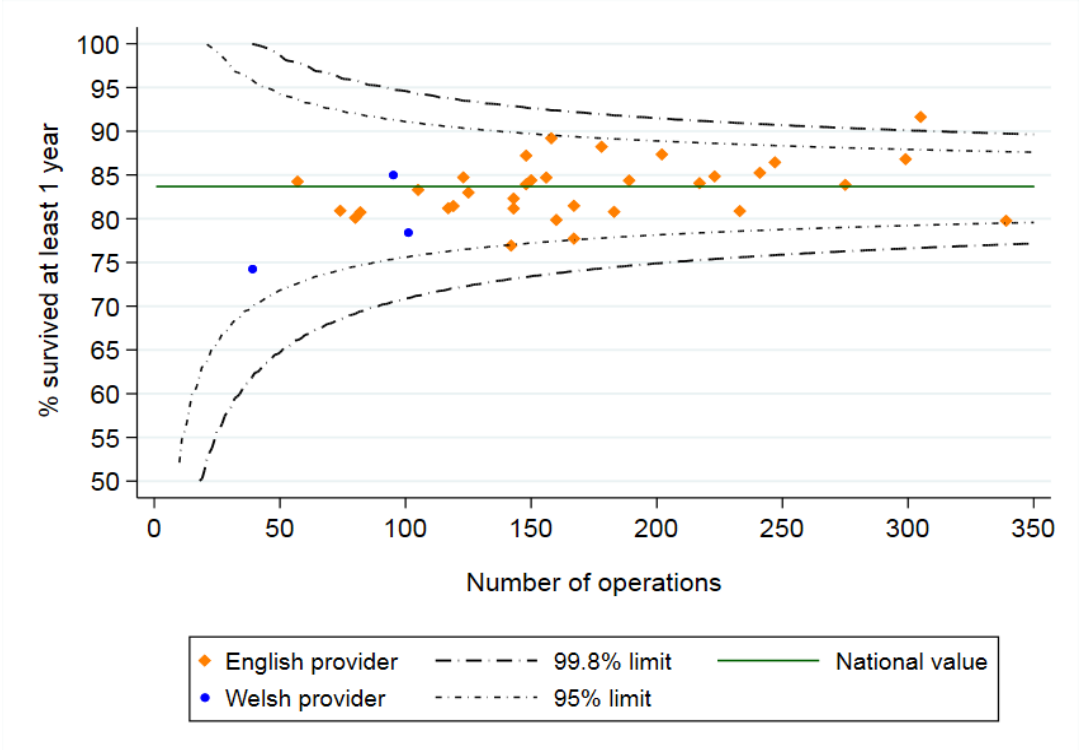
Estimated survival rates over three years are shown for each procedure in Table 9.5.

Figure 9.6 shows the risk-adjusted 1-year survival rates for surgical centres in England and Wales. Most centres had an adjusted rate that fell within the expected range (defined by 99.8% control limits). One NHS trust had survival rates above the 99.8% control limit, suggesting better than average performance during the 2017-20 period.

Table 9.5: Kaplan-Meier estimates of the percentage of patients diagnosed with OG cancer (April 2017-March 2020) who survived after curative surgery (with 95% confidence intervals)

Time after surgery	Oesophagectomy	Gastrectomy
1 year	82.7% (81.5 – 83.9)	85.6% (83.9 – 87.1)
2 years	68.3% (66.7 – 69.8)	69.3% (67.0 – 71.4)
3 years	59.5% (57.6 – 61.3)	60.3% (57.6 – 62.9)

Figure 9.6: Risk-adjusted 1-year survival after curative surgery among patients diagnosed with OG cancer between April 2017 and March 2020 in England and Wales, by surgical centre



9.4 Use of perioperative chemotherapy

Perioperative chemotherapy (chemotherapy that is given before and after surgery) has been shown to improve overall survival in patients with oesophageal and stomach cancers, compared to surgery alone [Petrillo 2019].

Clinical guidelines [NICE 2018] recommend that patients who are undergoing curative surgery for stomach cancer should be offered perioperative chemotherapy, while those with localised oesophageal and GOJ adenocarcinomas (excluding T1N0 tumours) should be offered a choice of perioperative chemotherapy or preoperative chemoradiotherapy.

Regimens of ECF (epirubicin, cisplatin and 5-fluorouracil) [Cunningham 2006] and CF (cisplatin plus 5-fluorouracile) [Ychou 2011] have been used in the perioperative setting for several years. However, more recent evidence has shown a regimen of FLOT (5-fluorouracil, oxaliplatin and docetaxel) to improve survival compared to ECF, with no increase in surgical complications [Al-Batran 2019].

We analysed data from the Systemic Anti-Cancer Therapy database (SACT) to describe the use of FLOT for 3,626 audit patients diagnosed between April 2017 and March 2020 in England, who had a record of curative gastrectomy (n=1,132) or oesophagectomy for oesophageal adenocarcinoma (n=2,494) and a record of chemotherapy within one year of diagnosis:

- Overall, 41.4% of all patients undergoing curative resection and chemotherapy received FLOT. Patients undergoing gastrectomy were more likely to have FLOT than those undergoing oesophagectomy (45.1% versus 39.7%, p=0.002).
- The use of FLOT was associated with patient age and comorbidities, with lower rates of use among older patients and those with multiple comorbidities (Table 9.6).
- There were no records of FLOT among patients diagnosed before 2017/18. The use of FLOT has increased from 15.2% among patients diagnosed in 2017/18 to 66.4% among those diagnosed in 2019/20 (Figure 9.7).
- There was substantial regional variation in the use of FLOT, ranging from 18% to 78% (Figure 9.8).

Table 9.6: Percentage of patients with record of FLOT chemotherapy regimen among cohort undergoing curative surgery for OG cancer diagnosed between April 2017 and March 2020, by patient characteristics

	Patients with record of receiving FLOT regimen (%)		
	Oesophagectomy*	**Gastrectomy**	**All patients**
N	2,494	1,132	3,626
	39.7%	45.1%	41.4%
Age group (years)			
<60	46.1%	56.8%	49.9%
60-69	42.7%	46.5%	43.6%
70-79	32.0%	37.5%	33.8%
≥80	12.1%	11.9%	12.0%
No. of comorbidities			
None	42.7%	50.0%	45.0%
1	38.1%	45.2%	40.4%
2 or more	35.0%	32.6%	34.2%

* Oesophageal adenocarcinoma

Figure 9.7: Use of FLOT chemotherapy regimen among patients undergoing curative surgery for OG cancer, by audit year

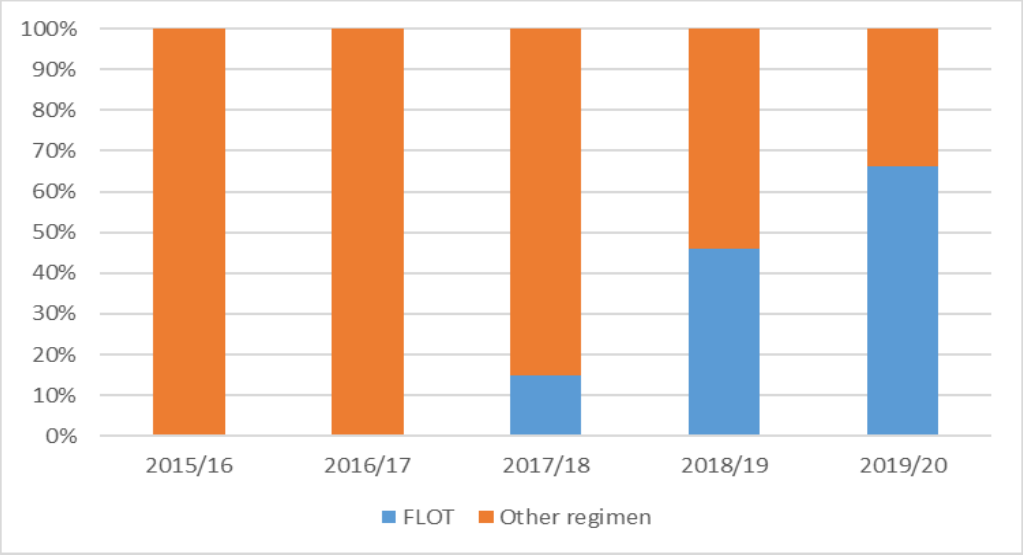
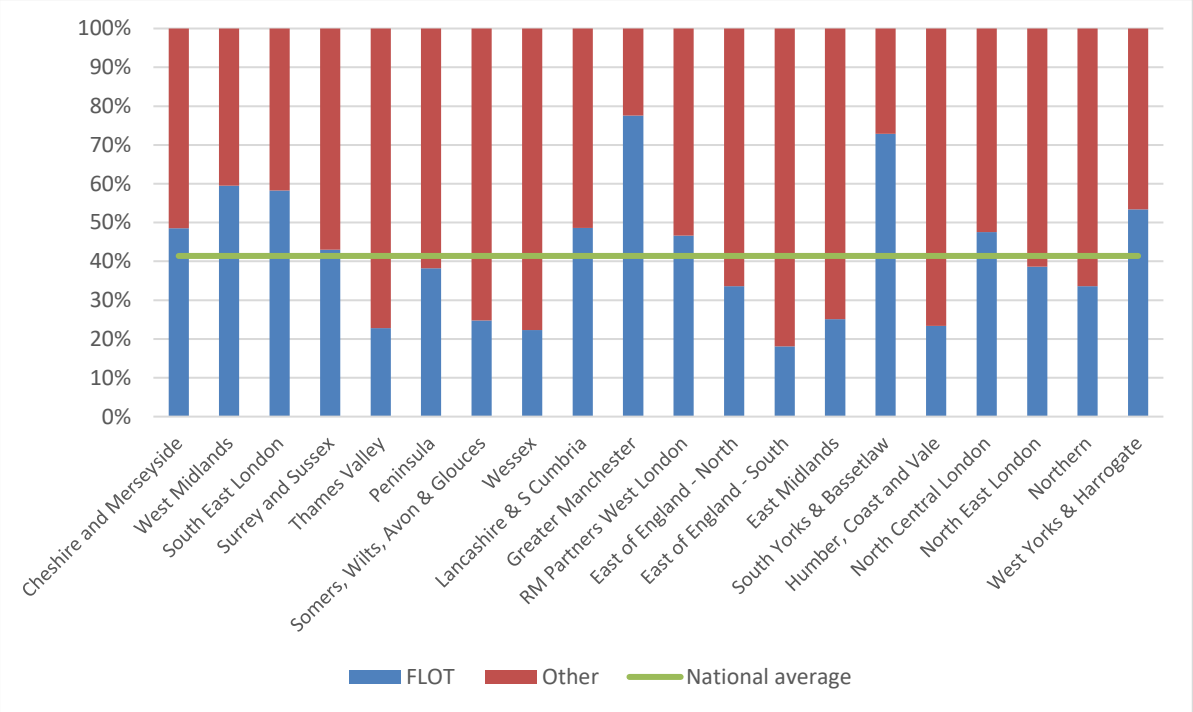


Figure 9.8: Use of FLOT chemotherapy regimen among patients undergoing curative surgery for OG cancer diagnosed between April 2017 and March 2020, by Cancer Alliance



NOTE: Data for Kent & Medway Cancer Alliance omitted due to small numbers

10. Non-curative treatment

The majority of patients diagnosed with OG cancer have advanced disease or are too frail for curative treatment, and are therefore managed with non-curative treatment intent.

Several non-curative therapies aimed at controlling symptoms, improving quality of life, or lengthening the duration of survival are available (see Box 10.1). The choice of therapy will depend on a patient's condition and preferences [Allum et al 2011].

In the 2018-20 cohort, palliative oncological therapy (chemotherapy or radiotherapy) was the most common treatment option, recorded for 34% of patients on a non-curative pathway. However, the majority of older patients had a plan for best supportive care (no active treatment beyond the immediate relief of symptoms). Endoscopic or radiologic palliative therapies (ERPT) were predominantly used for patients with oesophageal cancer (Figure 10.1).

Box 10.1: Non-curative treatment options for people with OG cancer

Palliative chemotherapy can improve survival in locally advanced gastric cancer by 3-6 months, compared to Best Supportive Care alone. Similar results are seen in oesophageal cancer.

External beam radiotherapy can be used to relieve dysphagia, but its effect is slower to act than the insertion of an oesophageal stent.

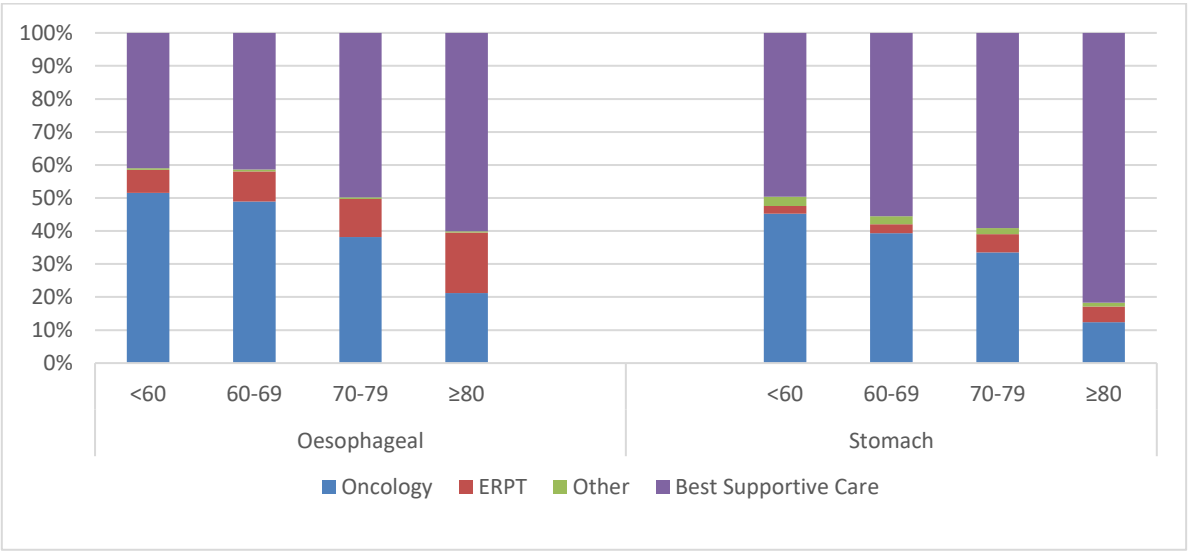
Brachytherapy can be used to treat dysphagia symptoms and improve quality of life in people expected to live more than 3 months.

Endoscopic / radiological palliative therapy

Stents provide immediate relief of dysphagia and are recommended for people with a short life expectancy.

Laser therapy and *argon plasma coagulation* (APC) can both be used to relieve dysphagia particularly when it is due to tumour overgrowth after a stent has been inserted.

Figure 10.1: Pattern of recorded palliative therapies (including best supportive care) among patients diagnosed with oesophageal and stomach tumours 2018-20, by age



NOTE: Oesophageal includes patients with Siewert I and II junctional tumours; Stomach includes patients with Siewert III junctional tumours

10.1 Endoscopic / Radiologic Palliative therapies (ERPT)

Among patients in the 2018-20 cohort with a record of endoscopic or radiological (ER) treatment and non-curative treatment intent, 97% had a stent insertion (Table 10.1). While stent insertion can provide rapid symptom relief, brachytherapy is equally effective with potentially longer lasting benefits [Sinha et al 2019]. However, it is rarely used, accounting for less than 1% of ER procedures in the Audit.

Table 10.1: Palliative endoscopic and radiological treatments received by patients diagnosed with OG cancer April 2018-March 2020 and with non-curative treatment plan, by tumour type

	Oes SCC	Oes ACA Upper/Mid	Oes ACA Lower (w SI,SII)	Stomach (w SIII)
Total patients with non-curative treatment plan	2,276	1,075	5,286	3,681
ERPT records	467	173	887	230
% patients w ERPT record	20.5%	16.1%	16.8%	6.3%
Stent insertions	443	170	862	223
% stent of all ERPT	94.9%	98.3%	97.2%	97.0%

KEY: Oes – oesophageal, SCC – squamous cell carcinoma, ACA – adenocarcinoma, SI, SII, SIII - Siewert classification of the gastro-oesophageal junction (GOJ).

10.2 Palliative oncology

Two-thirds of patients who received palliative oncology had chemotherapy (Table 10.2). Radiotherapy was used less frequently, particularly among patients with gastric cancer. Use of immunotherapy was rare.

Completion rates for palliative radiotherapy were high across all tumour types (97.3% overall). (Table 10.2) The proportion of patients completing palliative chemotherapy was comparatively low, at 59.7% over the same period. However, the proportion has increased over the last five years, from 50.5% among patients diagnosed in 2015/16 to 60.7% in 2019/20.

In the 2018-20 cohort, 13.8% of patients receiving palliative chemotherapy (95% CI 12.5 to 15.2) died within 90 days of starting treatment. This figure was 6.7% (5.4 to 8.3) among those who completed treatment as planned, compared to 24.2% (21.3 to 27.3) among those who did not complete their treatment. Among patients receiving palliative radiotherapy, 25.3% (22.9 to 27.9) died within 90 days of starting treatment.

Table 10.2: Palliative oncological treatment received by OG cancer patients diagnosed between April 2018 and March 2020, by tumour type

	Oes SCC	Oes ACA Upper/Mid	Oes ACA Lower (w SI,SII)	Stomach (w SIII)	All
Chemotherapy	406 (49%)	225 (70%)	1,276 (67%)	773 (78%)	2,680 (66%)
Radiotherapy	363 (44%)	87 (27%)	565 (30%)	201 (20%)	1,216 (30%)
Chemo-radiotherapy	52 (6%)	8 (2%)	49 (3%)	15 (2%)	124 (3%)
Immunotherapy	1 (0.1%)	1 (0.3%)	1 (0.1%)	1 (0.1%)	4 (0.1%)
Chemotherapy + immunotherapy	0	1 (0.3%)	5 (0.3%)	1 (0.1%)	7 (0.2%)
Outcome of chemotherapy					
% Completed	58.5%	61.6%	62.7%	55.3%	59.7%
Outcome of radiotherapy					
% Completed	97.8%	92.2%	97.8%	97.0%	97.3%

KEY: Oes – oesophageal, SCC – squamous cell carcinoma, ACA – adenocarcinoma, SI, SII, SIII - Siewert classification of the gastro-oesophageal junction (GOJ) [Siewert et al 1996]. See glossary for details

10.3 Evidence-based palliative radiotherapy regimens

The Royal College of Radiologists (RCR) guidelines on radiotherapy dose fractionation include a list of evidence-based (EB) regimens for palliative treatment of OG cancer (Table 10.3) [RCR 2019].

NOGCA has recently published a Short Report which describes the pattern of planned palliative radiotherapy treatments for OG cancer patients diagnosed between April 2012 and March 2019. The Short Report identified regional variation in the use of evidence-based regimens and alternative regimens: www.nogca.org.uk/reports/nogca-short-report-2021 [NOGCA 2021].

To update the analysis and further describe patterns of non-EB regimens, planned radiotherapy regimens recorded in the Radiotherapy Dataset (RTDS) were analysed for 4,937 audit patients diagnosed over five years between April 2015 and March 2020, who were treated with non-curative intent in England.

Table 10.3: List of evidence-based palliative radiotherapy regimens for OG cancer patients [RCR 2019]

Oesophageal		Stomach	
Dose (Grays) / Fractions	**Duration of regimen**	**Dose (Grays) / Fractions**	**Duration of regimen**
12Gy / 1F	N/A	6-8Gy / 1F	N/A
12-16Gy / 2F	No recommendation	20Gy / 5F	1 Week
20Gy / 5F	1 Week		
30Gy / 10F	2 Weeks		
35Gy / 15F	3 Weeks		
40Gy / 15F	3 Weeks		

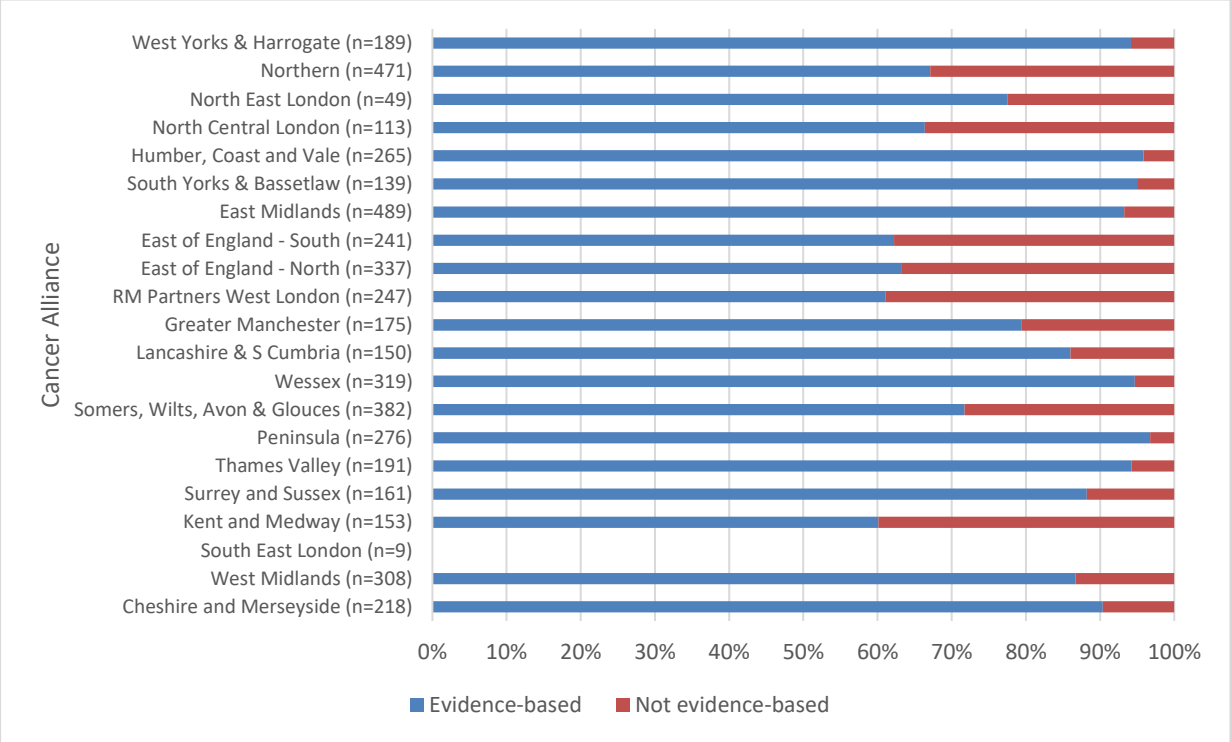
N/A – not applicable, single dose recommended

Among these patients, 80.9% had a prescription recorded in the RTDS that corresponded to an EB palliative regimen for OG cancer:

- Patients with stomach cancer (including lower junctional SIII tumours) were more likely to have an EB planned regimen than those with oesophageal cancer (including upper junctional SI and SII tumours) (p<0.001).
- Among 4,119 patients with oesophageal cancer, 79.6% had an EB planned regimen. The most frequently prescribed regimen was 20 Grays over 5 Fractions (20Gy/5F) (42.5%), followed by 30Gy/10F (38.7%). Some patients with oesophageal cancer and an EB prescription (16.8%) had a planned regimen recommended for the palliative treatment of stomach tumours (6- 8Gy/1F).
- Among 818 patients with stomach cancer, 87.8% had an EB planned regimen. The most frequently prescribed regimens were 20Gy/5F (44.0%) and 8Gy/1F (36.1%). Almost a fifth of patients with stomach cancer and an EB regimen (19.6%) were prescribed the 30Gy/10F regimen recommended for oesophageal tumours. This percentage was higher among just those with SIII junctional tumours (32.3%).
- 72.9% of EB regimens were completed as prescribed, compared to 52.8% of non-EB regimens (p<0.001).

The percentage of patients with an EB prescription increased from 78.8% among patients diagnosed in 2015/16 to 81.0% in 2019/20. There was substantial regional variation in the rates of planned EB palliative regimen use, ranging from 60.1% to 96.7% (Figure 10.2).

Figure 10.2: Planned evidence-based palliative radiotherapy regimens among patients diagnosed with OG cancer 2015-2020, by Cancer Alliance



NOTE: Data for South East London Cancer Alliance omitted due to small numbers

Among patients with a non-EB planned radiotherapy regimen, the most common prescriptions were:

- 27Gy/6F (20.3%)
- 36Gy/12F (15.4%)
- 20Gy/4F (13.2%)

The use of the 27Gy/6F and 20Gy/4F non-EB palliative regimens has increased over the last five years, while use of 36Gy/12F has decreased over time (Figure 10.3).

The use of the most commonly prescribed non-EB regimens was concentrated within a few regions, with Cancer Alliances tending to use one of the three regimens (Figure 10.4):

- 27Gy/6F was most frequently prescribed in the East of England Cancer Alliances (North and South)
- 20Gy/4F was prescribed only in the Northern Cancer Alliance
- 36Gy/12F was prescribed largely in RM Partners (NW & SW London) and Kent & Medway Cancer Alliances.

Figure 10.3: Most commonly prescribed non-evidence-based palliative radiotherapy regimens among patients diagnosed with OG cancer 2015-2020, by audit year

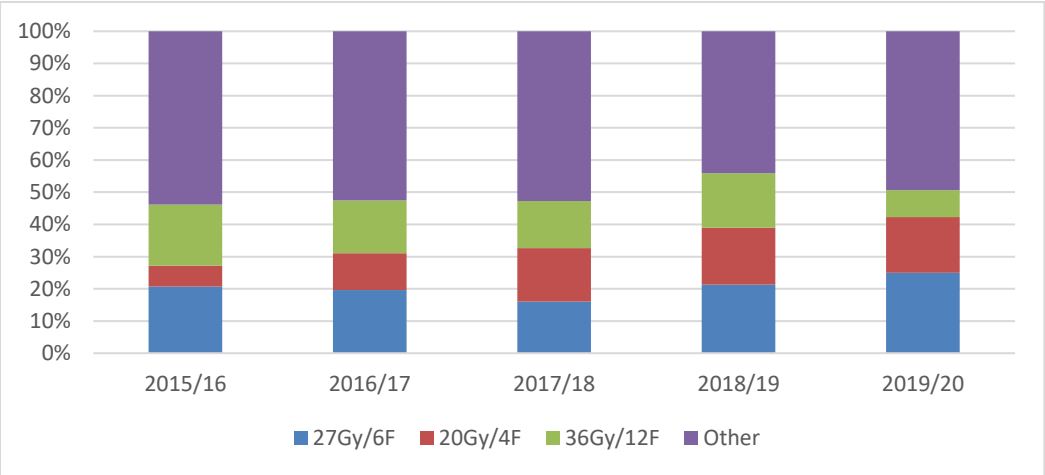
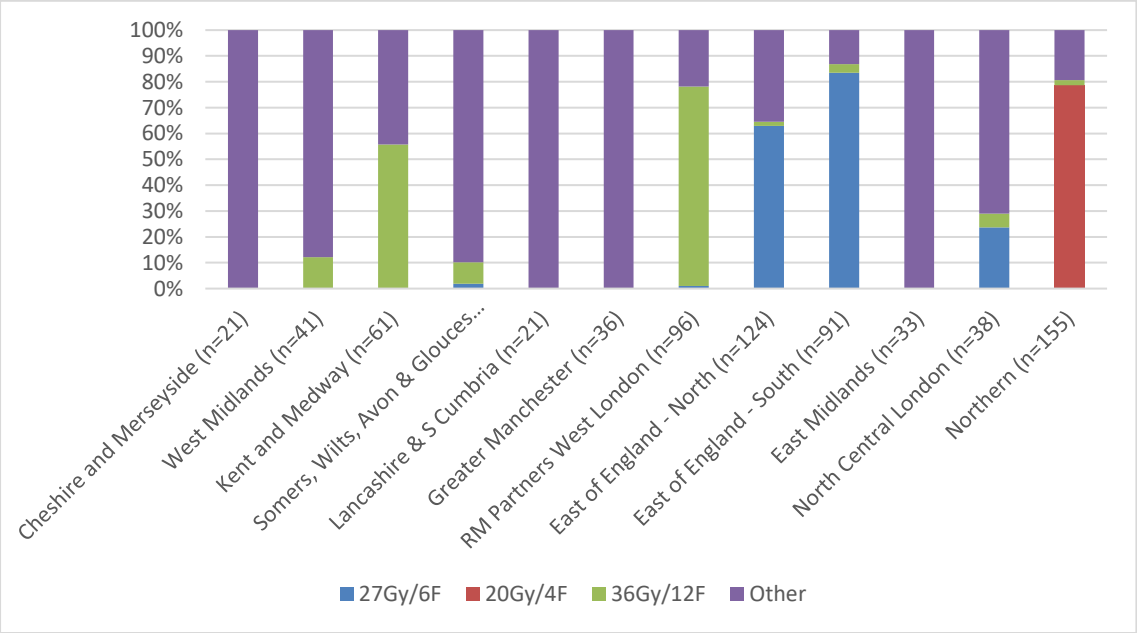


Figure 10.4: Most commonly prescribed non- evidence-based palliative radiotherapy regimens among patients diagnosed with OG cancer 2015-2020, by Cancer Alliance



NOTE: Data omitted for Cancer Alliances with <20 patients receiving non-EB prescriptions

10.4 Palliative chemotherapy regimens

Palliative chemotherapy regimens recorded in the Systemic Anti-Cancer Therapy (SACT) dataset were examined for 9,345 patients in England, diagnosed over a five year period from April 2015 to March 2020.

The majority (56.8%) of patients had records indicating use of a triplet palliative regimen (consisting of a platinum-based agent, a fluoropyrimidine and an anthracycline), while 24.0% received doublet regimens (a platinum-based agent and a fluoropyrimidine). Trastuzumab was used for 8.0% of patients, taxane-based regimens for 3.6%, and other regimens for the remaining 7.6%.

As reported in previous years, the use of doublet regimens has continued to increase, from 19.5% among patients diagnosed in 2015/16 to 33.0% among those diagnosed in 2019/20, while the use of triplet regimens has decreased from 65.2% to 41.6% (Figure 10.5).

Doublet regimens were more commonly used among older patients and those with squamous cell carcinomas (Table 10.4).

As reported last year, there was substantial regional variation in the use of doublet regimens for adenocarcinomas, ranging from 1% to 45% among patients aged under 75 years, and from 3 to 76% among patients aged 75 and over (Figure 10.6).

Figure 10.5: Palliative chemotherapy regimens recorded in the Systemic Anti-Cancer Therapy database for patients diagnosed with OG cancer, by audit year

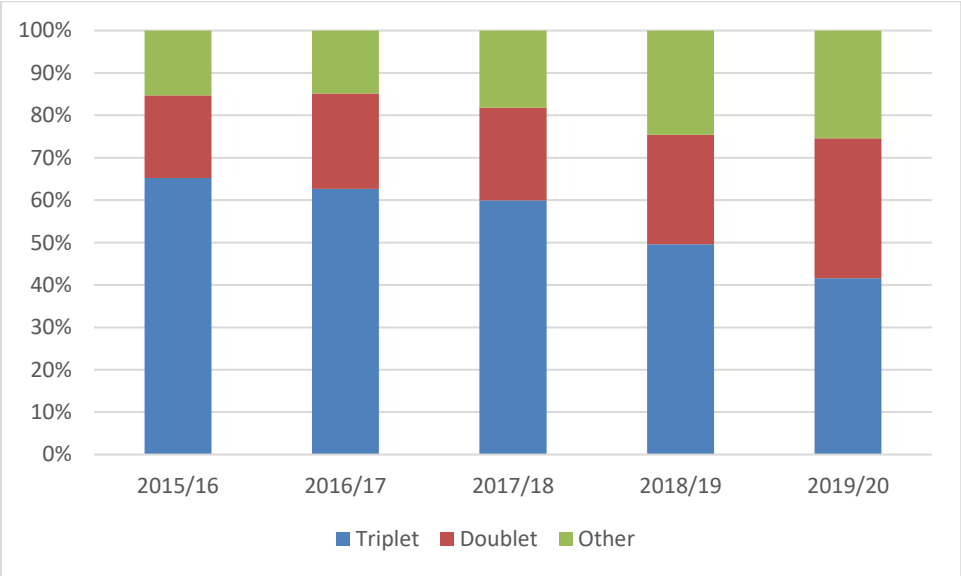
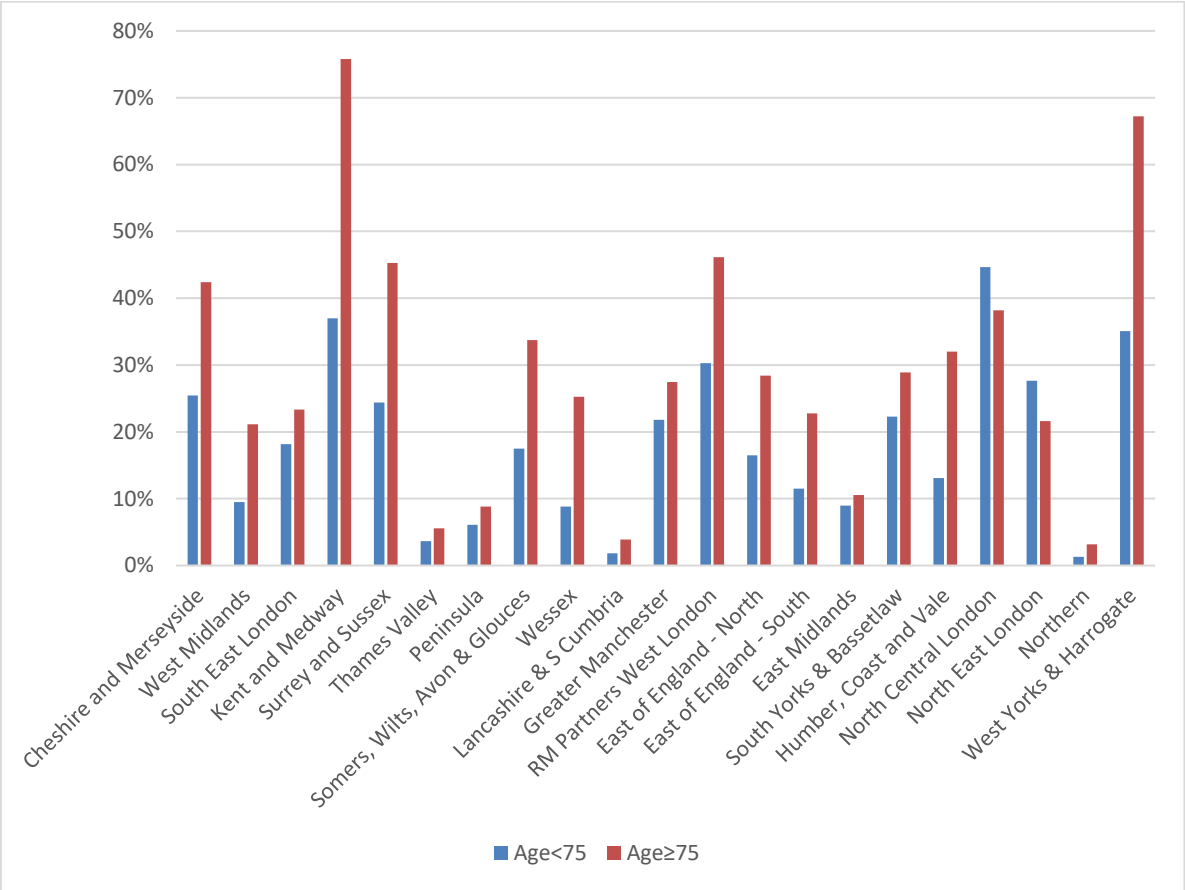


Table 10.4: Proportion of patients diagnosed with OG cancer between April 2015 and March 2020 receiving doublet palliative chemotherapy regimens, by tumour type and age

Age	Oes SCC	Oes ACA Upper/Mid	Oes ACA Lower (w SI,SII)	Stomach (w SIII)	Overall
<60	44.3%	24.3%	13.4%	17.7%	20.4%
60-69	49.9%	19.2%	16.4%	14.6%	21.8%
70-79	52.7%	22.5%	21.9%	20.0%	26.1%
≥80	51.1%	28.3%	34.1%	35.7%	36.4%
Overall	49.4%	22.1%	18.7%	19.5%	

KEY: Oes – oesophageal, SCC – squamous cell carcinoma, ACA – adenocarcinoma, SI, SII, SIII - Siewert classification of the gastro-oesophageal junction (GOJ) [Siewert et al 1996]. See glossary for details

Figure 10.6: Use of doublet palliative chemotherapy regimens by age group and Cancer Alliance of diagnosis, for patients with OG adenocarcinoma diagnosed between April 2015 and March 2020



11. Impact of COVID-19

This 2021 Annual Report focuses on the care received by people diagnosed with OG cancer or oesophageal HGD between April 2018 and March 2020, the majority of whom received or started their treatment before the COVID-19 pandemic began in early 2020.

However, it is known that the first wave of the pandemic and introduction of a UK-wide lockdown on 23 March 2020 led to the reorganisation of hospital services, both to increase capacity to treat patients with COVID-19 and to reduce the risks to other patient groups and staff.

In cancer care, routine diagnostic work was suspended and only urgent cases prioritised [BSG 2020, Rutter et al 2021], while many elective surgeries were cancelled or postponed due to reduced theatre and critical care capacity and changes in the risk to benefit balance of treatments with the added risk of COVID-19 infection [COVIDSurg 2020]. Furthermore, changes in health-seeking behaviours due to the pandemic led to reduced numbers of patients seeking care for symptoms of cancer [Philpotts 2020].

To support the NHS and public health response to the pandemic, the National Cancer Registration and Analysis Service (NCRAS) COVID-19 rapid cancer registration and treatment data have been made available for the period from 1 January 2018, and can be viewed on the CancerData website: https://www.cancerdata.nhs.uk/covid-19/rcrd The NCRAS Covid-19 dashboard enables users to view changes in OG cancer incidence, and treatment activity (including time to treatment) for chemotherapy, radiotherapy and surgical tumour resections. This information can be viewed by patient demographic characteristics and for specific Cancer Alliances.

To supplement the information available on the NCRAS Covid-19 dashboard, data on OG cancer diagnoses and treatment from the rapid cancer registration dataset were used to:

- Describe regional differences in the impact of COVID-19 on OG cancer diagnoses and recovery after the first wave.
- Summarise endoscopic treatment activity recorded in HES.

11.1 New diagnoses: impact of COVID-19 and recovery

During April 2020, the number of new OG cancer diagnoses fell to 49.1% of the 2019 monthly average, from an estimated 993 to 487 cases per month. By the third quarter of 2020 (July to September) the number of monthly diagnoses had recovered to 98.0% of 2019 levels.

There was regional variation in the impact of COVID-19 on diagnoses and the extent of recovery (Figure 11.1). In the most affected regions, the number of new OG cancer diagnoses during April 2020 fell to around one third of 2019 levels, while in three Cancer Alliances the number of diagnoses remained at >70% of pre-pandemic levels. However, all Cancer Alliances showed recovery of OG cancer diagnoses to pre-pandemic levels or greater during July-September 2020.

OG cancer diagnoses via GP and two week wait referrals were affected more during April 2020 than diagnoses via emergency routes (Figure 11.2). While the number of cases diagnosed following emergency presentation and two week wait referrals had recovered by July-September, diagnoses resulting from GP

referrals and other routes remained lower than pre-pandemic levels.

Reflecting the increased relative contribution of emergency diagnoses, the proportion of patients diagnosed with stage 4 (metastatic) OG cancer was higher during the COVID period (Figure 11.3). For oesophageal cancers, 51.9% of new diagnoses during May 2020 were stage 4, compared to 36.2% of all diagnoses during 2019. For stomach cancers, 69.2% of diagnoses in May 2020 were stage 4 cancers, compared to 51.7% in 2019. The completeness of staging information in the rapid cancer registration dataset is lower for more recent months, therefore these figures are estimates only.

Figure 11.1: Monthly OG cancer diagnoses during April 2020 and July-September 2020 as percentage of 2019 monthly average, by Cancer Alliance

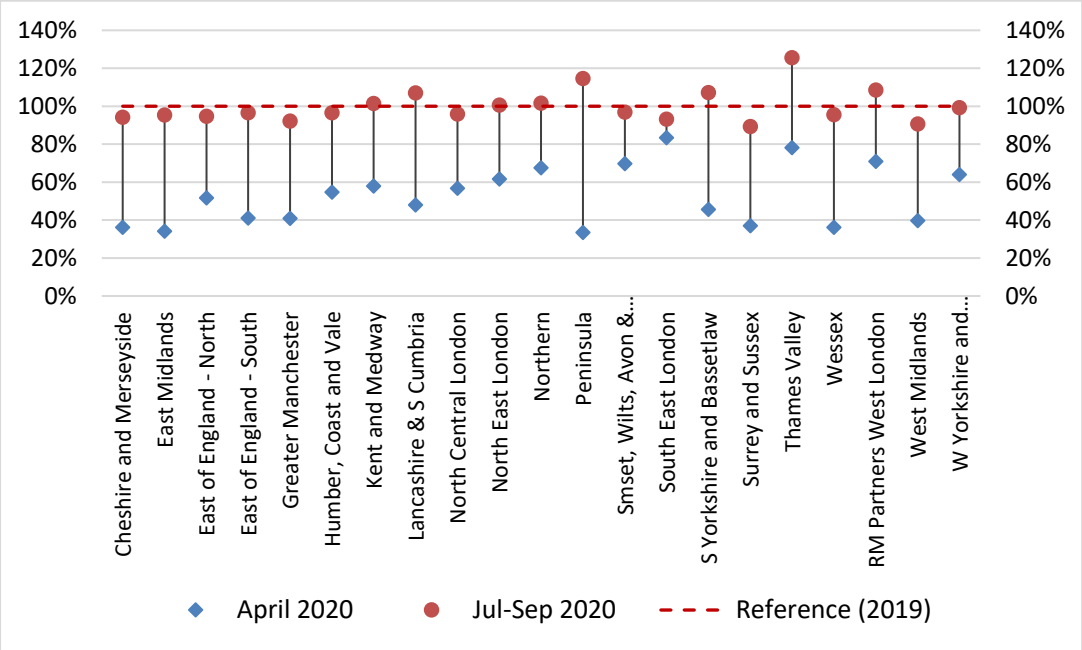
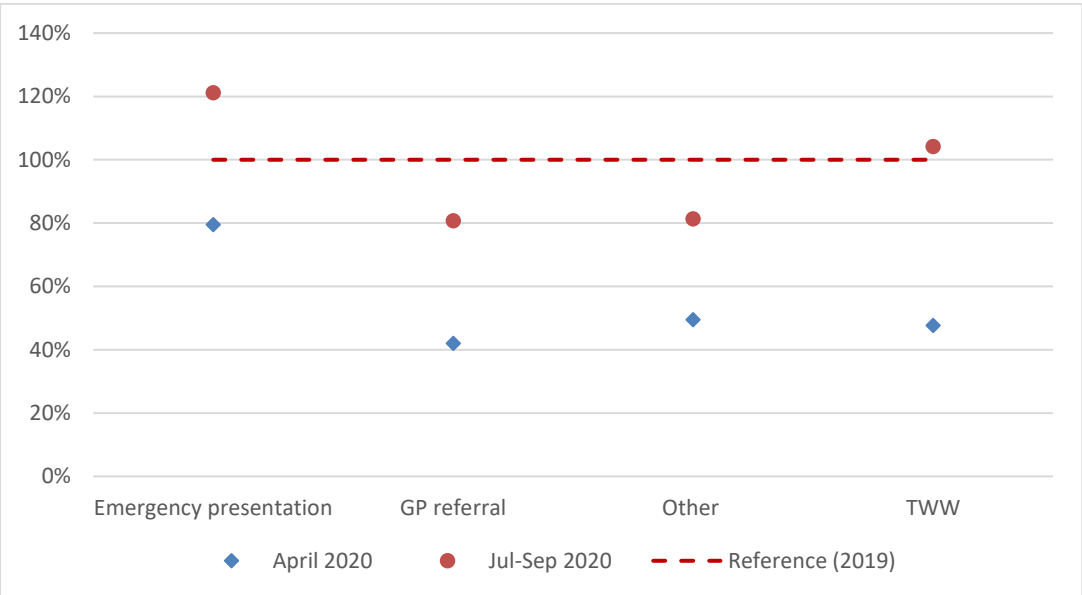
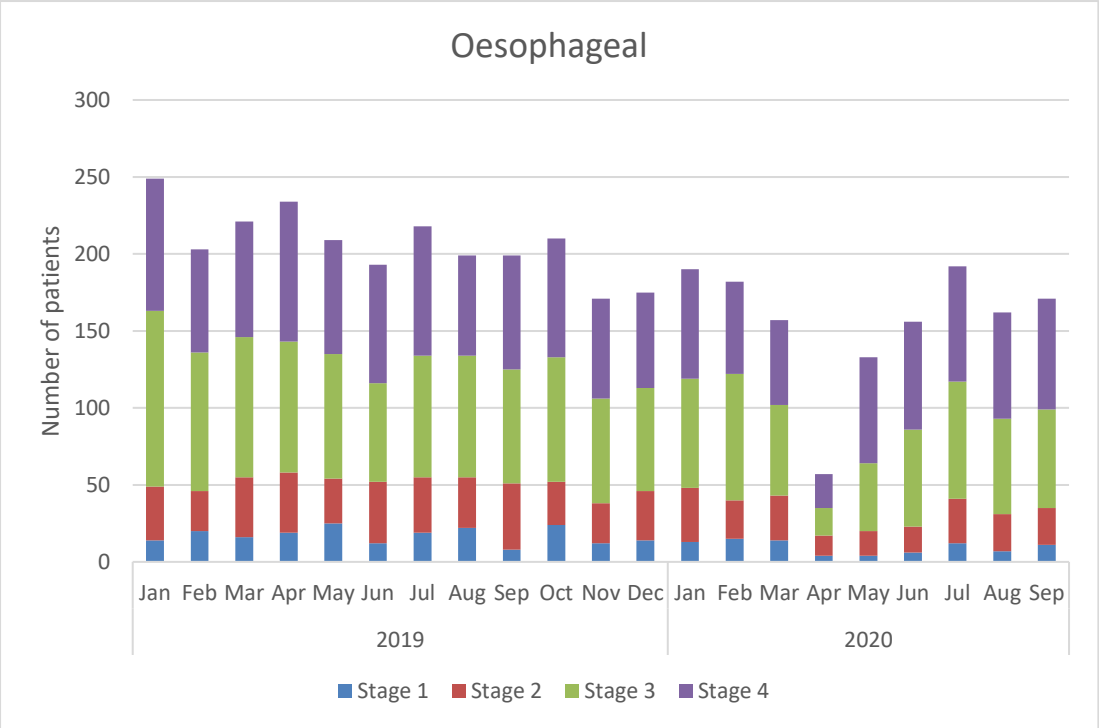


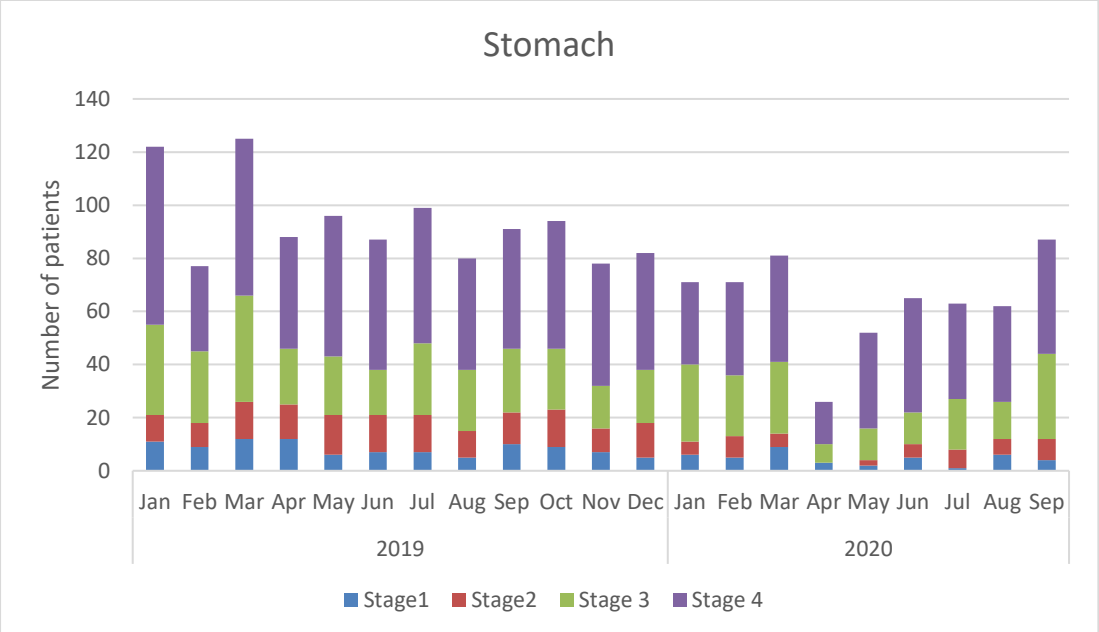
Figure 11.2: Monthly OG cancer diagnoses during April 2020 and July-September 2020 as percentage of 2019 monthly average, by route to diagnosis



TWW – two week wait

Figure 11.3: Distribution of cancer stage at diagnosis January 2019-September 2020, by tumour site





NOTE: Cancer stage information is based on rapid cancer registration data, and data quality and completeness are lower for more recent months; patients with unknown stage are not included.

11.2: Endoscopic treatment: stent insertions

Information about chemotherapy, radiotherapy and surgical tumour resections for OG cancer during the COVID-19 period is available from the NCRAS dashboard.

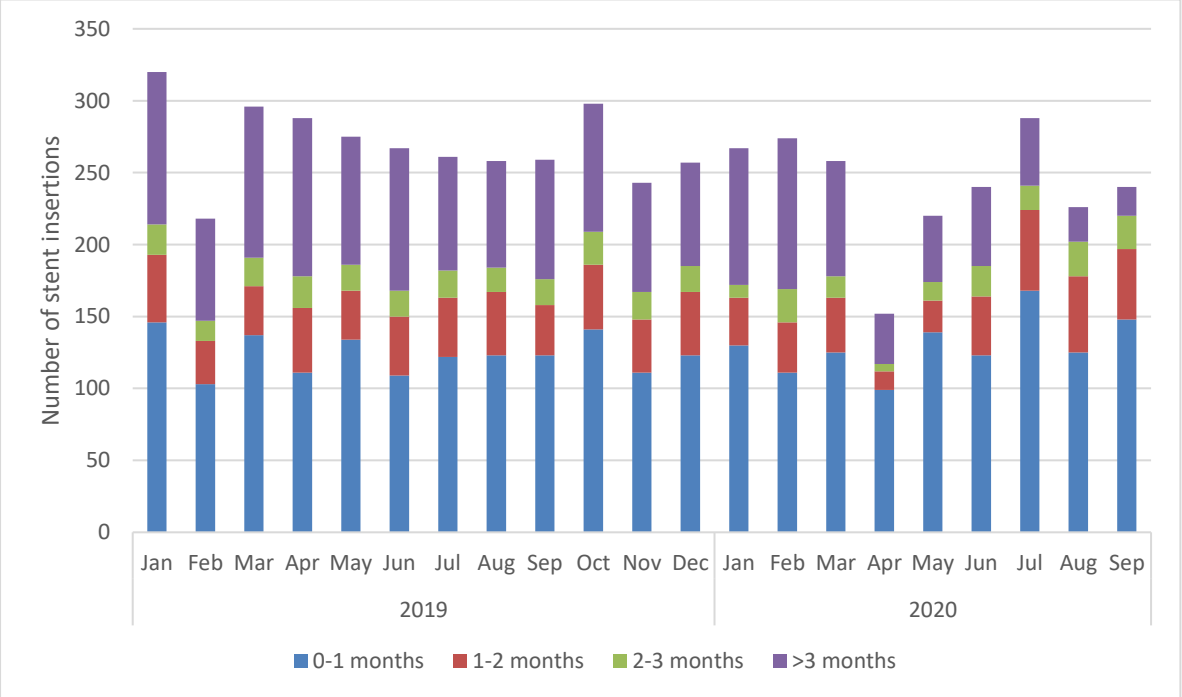
Using rapid registration HES data, we looked at activity and waiting times for endoscopic treatments, in particular stent insertions. The number of patients with a record of stent insertion fell during April 2020, to 56.3% of the 2019 average volume, but stent insertions as a percentage of all people diagnosed with OG cancer increased from 27.4% during 2019 to 33.7% in April 2020.

Among those patients who received an endoscopic stent following diagnosis in April 2020, most were treated within one month and the proportion of patients waiting more than three months was lower than during other periods (Figure 11.4).

Median time from diagnosis to stent insertion during April 2020 was 13 days, (IQR 0.5 to 77.5), compared to 37 days (IQR 11 to 133) during 2019.

The number of stent insertions among people diagnosed in July-September 2020 recovered to 93.1% of 2019 levels, and median time to treatment increased to 24 days (IQR 8 to 52).

Figure 11.4: Stent insertion procedures among people diagnosed with OG cancer January 2019-September 2020, by time to treatment



Annex 1: Organisation of the Audit

The National OG Cancer Audit is one workstream of the National GastroIntestinal Cancer Audit Programme, alongside the National Bowel Cancer Audit. The Programme is overseen by a single Project Board to ensure it fulfils the scope of the work commissioned by HQIP.

In addition, the NOGCA is assisted by a Clinical Reference Group (CRG), the membership of which is drawn from clinical groups involved in the management of oesophago-gastric cancer and patient organisations, and a patient panel.

Members of Clinical Reference Group for OG cancer workstream

Jan van der Meulen	London School of Hygiene & Tropical Medicine, Chair
William Allum	National Cancer Action Team
Matt Carter	Oxfordshire Oesophageal and Stomach Organisation
Adam Christian	Royal College of Pathologists
Bernadette Fairley	CNS Representative
Jamie Franklin	Radiologist
James Gossage	AUGIS
Fiona Huddy	British Dietetic Association Oncology Group
Barry Laird	Palliative Medicine
Mimi McCord	Heartburn Cancer UK
Gareth Popham	Wales Cancer Network
Caroline Rogers	HQIP - Associate Director
Richard Roope	RCGP/CRUK Clinical Lead for Cancer
Sarah Walker	HQIP - Project Manager

with members of the project team.

Members of NOGCA Patient Panel

Matt Carter	Oxfordshire Oesophageal and Stomach Organisation
Jill Clark	Action Against Heartburn
Fiona Labrooy	Heartburn Cancer UK
Mimi McCord	Heartburn Cancer UK

Members of Project Board for the National GI Audit Programme

Neil Mortensen	Senior Council Member of RCS, Chair
Robert Arnott	Patient Representative (ACP)
Chris Dew	Programme head, NHS Digital
Martyn Evans	Welsh Representative
Richard Hardwick	AUGIS Representative
Hywel Morgan	Deputy Director - Wales Cancer Network
Alison Roe	Ops Manager - NHS Digital
Caroline Rogers	HQIP - Associate Director
Diana Tait	RCR Representative
Sarah Walker	HQIP - Project Manager
Graham Branagan	ACPGBI Executive Lead for COP

with members of the OG cancer project team and Bowel Cancer project team.

Annex 2: Audit methods

Inclusion criteria

The Audit prospectively collects both clinical and demographic details for patients diagnosed with invasive epithelial oesophago-gastric (OG) cancer (ICD-10 codes C15 and C16), or high grade dysplasia (HGD) of the oesophagus. Patients are eligible for inclusion if they were diagnosed in an NHS hospital in England or Wales, and were aged 18 or over at diagnosis.

Data collection

All NHS acute trusts in England involved in the care of both curative and palliative OG cancer patients are required to upload patient information into the Clinical Audit Platform (CAP) managed by NHS Digital. Information on the care pathway and outcomes are entered prospectively either manually or via a 'csv' file generated from other information systems. As many hospitals can be involved in the care of one patient, the hospital responsible for diagnosis or treatment uploads the relevant data, which is then anonymised by NHS Digital. Data for each patient is then collated and analysed by the Clinical Effectiveness Unit (CEU), Royal College of Surgeons. Information on the pro-forma for data collection, and the data dictionary are available from www.nogca.org.uk/.

Welsh data were provided by the Cancer Network Information System Cymru (CaNISC). This dataset did not provide access to information on surgical complication rates, details of chemotherapy or radiotherapy regimens or on patients diagnosed with oesophageal HGD. Consequently, results requiring these data are not reported for Welsh patients.

Linkage to other data sets

The Audit dataset is linked to various other national datasets. This process reduces the burden of data collection, enables the quality of the data submitted by hospitals to be checked by comparing data items shared by the different datasets, and allows the Audit to derive a richer set of results.

The Audit dataset was linked to extracts from the:

- Registration and Death Register to provide accurate statistics on cancer survival
- Hospital Episode Statistics (HES) to provide additional information on hospital care both before and after the date of diagnosis, and to validate activity data provided by hospitals (eg, dates of procedures)
- Welsh hospital administrative database (Patient Episode Database for Wales PEDW)
- The national radiotherapy dataset (RTDS) that provides information on the episodes of radiotherapy received by patients
- The national systemic cancer dataset (SACT) that provides information on the regimens of chemotherapy delivered to patients
- The National Cancer Registration and Analysis Service dataset (NCRAS) to provide information on all cancer registrations in England and determine case ascertainment in the Audit

Data were linked using a hierarchical deterministic approach, which involved matching patient records using various patient identifiers (NHS number, sex, date of birth, and postcode).

Use of Hospital Episode Statistics

Hospitals Episode Statistics (HES) is the national hospital administrative database for all acute NHS trusts in England. Each HES record describes the period during which an admitted patient is under the care of a hospital consultant (an episode). Clinical information is captured using the International Classification of Disease (ICD-10) diagnostic codes and the Classification of Surgical Operations and Procedures (OPCS-4). The records of an individual patient are allocated the same anonymised identifier which enables the care given to patients to be followed over time.

Patients with oesophago-gastric (OG) cancer were identified in HES by searching records for the ICD diagnosis codes C15 and C16 in the first diagnostic field. As it is possible for a patient to have multiple HES episodes during a single admission to hospital, in order to determine the number of OG cancer patients in HES over the relevant timeframe, the date of diagnosis was taken as the admission date of the episode in HES where OG cancer was first recorded in the first diagnostic field.

Statistical analysis of data

The results of the Audit are presented at different levels:

1. by Cancer Alliance for England, with Wales considered as three separate areas (Swansea Bay, North Wales and South Wales), and
2. by English NHS trust / Welsh local health board.

The values of the various process and outcome indicators are typically expressed as rates and are presented as percentages. Averages and rates are typically presented with 95% confidence intervals (CI) to describe their level of precision. When shown graphically, regional rates are plotted against the overall national rate, with regions ordered according to the number of patients for whom data were submitted. English patients were allocated to the Cancer Alliance based on their NHS trust of diagnosis and not by region of residence. Welsh patients were similarly allocated to the region based on the local health board of diagnosis.

In descriptive analyses of continuous variables, the distribution of values is described using appropriate statistics (eg, mean and standard deviation or median and interquartile range). We follow the Office for National Statistics policy on the publication of small numbers to minimise the risk of patient identification from these aggregate results.

The statistical significance of differences between patient groups or geographical regions were tested using appropriate tests (such as a t-test for the difference between two continuous variables and a chi-squared test for the differences between proportions).

We derived risk-adjusted figures for each NHS surgical centre for the 30-day, 90-day and 1-year mortality indicators and the longitudinal and circumferential margin indicators. The rates were adjusted to take into account differences in the case mix of patients treated at each centre using multivariable logistic models. The models were used to estimate the likelihood of the outcome (eg, death, a positive margin) for each individual having surgery, and these probabilities were then summed to calculate the predicted number of events for each NHS trust. The regression models were developed from the following patient characteristics: age at diagnosis, sex, co-morbidities, performance status, T stage, number of positive nodes, site of tumour and ASA grade.

The risk-adjusted outcomes after curative surgery are presented using funnel plots. Two funnel limits were used that indicate the ranges within which 95.0% (representing a difference of two standard deviations from the national rate) or 99.8% (representing a difference of three standard deviations) would be expected to fall if variation was due only to sampling error. The control limits were calculated using the "exact" Binomial method. Following convention, we use the 99.8% limits to identify 'outliers' as it is unlikely for an NHS organisation to fall beyond these limits solely by chance.

If the Audit identifies an NHS organisation as an outlier, we follow the process outlined in the NOGCA outlier policy (available on www.nogca.org.uk website). This is based on the HQIP "Detection and Management of Outliers" policy (www.hqip.org.uk/resource/detection-and-management-of-outliers-for-national-clinical-audits) and involves giving the organisation an opportunity to review their data and ensure the submitted records are complete and free of errors. If the organisation remains an outlier after this review, the Audit will contact the organisation's clinical governance lead, Medical Director and Chief Executive. The CQC will also be informed.

The results of NHS trusts with a case volume of less than 10 were not included in the funnel plots because such small samples lead to unreliable statistical estimates due to the play of chance.

Annex 3: List of regional areas and NHS organisations

Cancer Alliance or Welsh Region	NHS Trust/ Health Board code	NHS Trust/Health Board name
Cheshire and Merseyside	RBT	Mid Cheshire Hospitals NHS Foundation Trust
	RJN	East Cheshire NHS Trust
	RBL	Wirral University Teaching Hospital NHS Foundation Trust
	RBN	St Helens and Knowsley Hospitals NHS Trust
	REM	Liverpool University Hospitals NHS Foundation Trust
	RJR	Countess of Chester Hospital NHS Foundation Trust
	RVY	Southport and Ormskirk Hospital NHS Trust
	RWW	Warrington and Halton Hospitals NHS Foundation Trust
	REN	The Clatterbridge Cancer Centre NHS Foundation Trust **
East Midlands	RK5	Sherwood Forest Hospitals NHS Foundation Trust
	RFS	Chesterfield Royal Hospital NHS Foundation Trust
	RNQ	Kettering General Hospital NHS Foundation Trust
	RNS	Northampton General Hospital NHS Trust
	RTG	University Hospitals of Derby and Burton NHS Foundation Trust
	RWD	United Lincolnshire Hospitals NHS Trust
	RWE	University Hospitals of Leicester NHS Trust
	RX1	Nottingham University Hospitals NHS Trust
East of England - North	RCX	The Queen Elizabeth Hospital, King's Lynn, NHS Foundation Trust
	RDE	East Suffolk and North Essex NHS Foundation Trust
	RGN	North West Anglia NHS Foundation Trust
	RGP	James Paget University Hospitals NHS Foundation Trust
	RGR	West Suffolk NHS Foundation Trust
	RGT	Cambridge University Hospitals NHS Foundation Trust
	RM1	Norfolk and Norwich University Hospitals NHS Foundation Trust
East of England - South	RC9	Bedfordshire Hospitals NHS Foundation Trust
	RWG	West Hertfordshire Hospitals NHS Trust
	RWH	East and North Hertfordshire NHS Trust
	RQW	The Princess Alexandra Hospital NHS Trust
	RD8	Milton Keynes Hospital NHS Foundation Trust
	RAJ	Mid and South Essex NHS Foundation Trust
Greater Manchester	R0A	Manchester University NHS Foundation Trust
	RM3	Salford Royal NHS Foundation Trust
	RMC	Bolton NHS Foundation Trust
	RMP	Tameside and Glossop Integrated Care NHS Foundation Trust
	RRF	Wrightington, Wigan and Leigh NHS Foundation Trust
	RW6	Pennine Acute Hospitals NHS Trust
	RWJ	Stockport NHS Foundation Trust
Humber, Coast and Vale	RCB	York Teaching Hospital NHS Foundation Trust
	RCD	Harrogate and District NHS Foundation Trust
	RJL	Northern Lincolnshire and Goole NHS Foundation Trust
	RWA	Hull and East Yorkshire Hospitals NHS Trust

Cancer Alliance or Welsh Region	NHS Trust/ Health Board code	NHS Trust/Health Board name
Kent and Medway	RN7	Dartford and Gravesham NHS Trust
	RPA	Medway NHS Foundation Trust
	RVV	East Kent Hospitals University NHS Foundation Trust
	RWF	Maidstone and Tunbridge Wells NHS Trust
Lancashire and South Cumbria	RXL	Blackpool Teaching Hospitals NHS Foundation Trust
	RXN	Lancashire Teaching Hospitals NHS Foundation Trust
	RXR	East Lancashire Hospitals NHS Trust
	RTX	University Hospitals of Morecambe Bay NHS Foundation Trust
North Central London	RAL	Royal Free London NHS Foundation Trust
	RAP	North Middlesex University Hospital NHS Trust
	RKE	Whittington Health NHS Trust
	RRV	University College London Hospitals NHS Foundation Trust
North East London	R1H	Barts Health NHS Trust
	RF4	Barking, Havering and Redbridge University Hospitals NHS Trust
	RQX	Homerton University Hospital NHS Foundation Trust
Northern	R0B	South Tyneside and Sunderland NHS Foundation Trust
	RNN	North Cumbria Integrated Care NHS Foundation Trust
	RR7	Gateshead Health NHS Foundation Trust
	RTD	The Newcastle Upon Tyne Hospitals NHS Foundation Trust
	RTF	Northumbria Healthcare NHS Foundation Trust
	RTR	South Tees Hospitals NHS Foundation Trust
	RVW	North Tees and Hartlepool NHS Foundation Trust
	RXP	County Durham and Darlington NHS Foundation Trust
Peninsula	RA9	Torbay and South Devon NHS Foundation Trust
	RBZ	Northern Devon Healthcare NHS Trust
	REF	Royal Cornwall Hospitals NHS Trust
	RH8	Royal Devon and Exeter NHS Foundation Trust
	RK9	University Hospitals Plymouth NHS Trust
RM Partners West London	R1K	London North West Healthcare NHS Trust
	RAS	The Hillingdon Hospitals NHS Foundation Trust
	RQM	Chelsea and Westminster Hospital NHS Foundation Trust
	RYJ	Imperial College Healthcare NHS Trust
	RAX	Kingston Hospital NHS Foundation Trust
	RJ6	Croydon Health Services NHS Trust
	RJ7	St George's Healthcare NHS Trust
	RVR	Epsom and St Helier University Hospitals NHS Trust
Somerset, Wiltshire, Avon & Gloucestershire	RA7	University Hospitals Bristol and Weston NHS Foundation Trust
	RA4	Yeovil District Hospital NHS Foundation Trust
	RH5	Taunton and Somerset NHS Foundation Trust
	RD1	Royal United Hospitals Bath NHS Foundation Trust
	RN3	Great Western Hospitals NHS Foundation Trust
	RVJ	North Bristol NHS Trust
	RTE	Gloucestershire Hospitals NHS Foundation Trust
	RNZ	Salisbury NHS Foundation Trust
South East London	RJ1	Guy's and St Thomas' NHS Foundation Trust
	RJ2	Lewisham and Greenwich NHS Trust
	RJZ	King's College Hospital NHS Foundation Trust

Cancer Alliance or Welsh Region	NHS Trust/ Health Board code	NHS Trust/Health Board name
South Yorkshire and Bassetlaw	RFF	Barnsley Hospital NHS Foundation Trust
	RFR	The Rotherham NHS Foundation Trust
	RHQ	Sheffield Teaching Hospitals NHS Foundation Trust
	RP5	Doncaster and Bassetlaw Hospitals NHS Foundation Trust
Surrey and Sussex	RA2	Royal Surrey County Hospital NHS Foundation Trust
	RDU	Frimley Park Hospital NHS Foundation Trust
	RTK	Ashford and St Peter's Hospitals NHS Foundation Trust
	RTP	Surrey and Sussex Healthcare NHS Trust
	RXC	East Sussex Healthcare NHS Trust
	RXH	Brighton and Sussex University Hospitals NHS Trust **
	RYR	University Hospitals Sussex
Thames Valley	RHW	Royal Berkshire NHS Foundation Trust
	RTH	Oxford University Hospitals NHS Trust
	RXQ	Buckinghamshire Healthcare NHS Trust
Wessex	RBD	Dorset County Hospital NHS Foundation Trust
	R0D	University Hospitals Dorset NHS Foundation Trust
	R1F	Isle of Wight NHS Trust
	RHM	University Hospital Southampton NHS Foundation Trust
	RHU	Portsmouth Hospitals NHS Trust
	RN5	Hampshire Hospitals NHS Foundation Trust
West Midlands	RBK	Walsall Healthcare NHS Trust
	RRK	University Hospitals Birmingham NHS Foundation Trust
	RXK	Sandwell and West Birmingham NHS Trust
	RJC	South Warwickshire NHS Foundation Trust
	RKB	University Hospitals Coventry and Warwickshire NHS Trust
	RLT	George Eliot Hospital NHS Trust
	RLQ	Wye Valley NHS Trust
	RWP	Worcestershire Acute Hospitals NHS Trust
	RJE	University Hospitals of North Midlands NHS Trust
	RL4	The Royal Wolverhampton NHS Trust
	RNA	The Dudley Group NHS Foundation Trust
	RXW	Shrewsbury and Telford Hospital NHS Trust
West Yorkshire and Harrogate	RAE	Bradford Teaching Hospitals NHS Foundation Trust
	RCF	Airedale NHS Foundation Trust
	RR8	Leeds Teaching Hospitals NHS Trust
	RWY	Calderdale and Huddersfield NHS Foundation Trust
	RXF	Mid Yorkshire Hospitals NHS Trust
North Wales	7A1	Betsi Cadwaladr University Health Board
South Wales	7A2	Hywel Dda University Health Board
	7A4	Cardiff and Vale University Health Board
	7A5	Cwm Taf Morgannwg University Health Board
	7A6	Aneurin Bevan University Health Board
Swansea Bay	7A3	Swansea Bay University Health Board

** Now University Hospitals Sussex (RYR)

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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.

Adenocarcinoma – Tend to occur in the lower third of the oesophagus or stomach in glandular cells that make and release fluids.

AUGIS – Association of Upper GI Surgeons

Brachytherapy – This is a type of radiotherapy in which a radiation source is placed inside a person's oesophagus, next to the area requiring treatment.

BSG – British Society of Gastroenterology

CARMS – The Clinical Audit and Registries Management Service Support Unit of NHS Digital 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.

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).

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.

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 OG cancer and is dependent on how far the disease has spread and the patient's general health and physical condition.

Dilatation – a procedure that involves inflating balloon or passing a bougie or dilator after inserting an endoscope into the oesophagus to increase the size of the opening through which food or liquids can pass.

Doublet regimen – a combination chemotherapy regimen for palliative treatment that uses two drugs: a platinum-based agent and a fluoropyrimidine.

Dysphagia – A symptom where the patient experiences difficulty swallowing. They often complain that the food sticks in their throat or chest. 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 mucosal resection – A procedure to remove abnormal tissue from the digestive tract using a telescopic camera to guide instruments. This procedure can be used to treat high grade dysplasia or early cancers of the oesophagus, stomach or duodenum.

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, dilatation, laser therapy and brachytherapy.

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.

FLOT – A chemotherapy regimen consisting of 5-fluorouracil, oxaliplatin and docetaxel, which may be given before and after curative surgery in the treatment of stomach cancer or localised oesophageal and junctional adenocarcinomas (excluding T1n0 tumours).

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

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

Gy/F or Grays/Fractions – External beam radiotherapy treatment is usually delivered over several treatment sessions. A course of radiotherapy is described as the full planned dose of radiation in Grays (Gy), and the number of treatment sessions (fractions, F) over which the dose is delivered.

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.

High-grade dysplasia of the oesophagus – Precancerous changes in the cells of the oesophagus, which are often associated with Barrett's oesophagus.

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

Laparoscopy – This is often called "keyhole surgery" and involves inserting a small camera into the 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.

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.

Margins – Margins are the edges of the tissue removed in resection procedures (endoscopic or surgical resections). When cancer cells are found at the edge of the removed tissue, the margin is described as positive or involved. Positive or involved margins suggest that not all of the cancer has been removed. Margins are described as negative or clear when no cancer cells are found at the edge of the tissue.

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, and 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.

Minimally invasive surgery – A procedure performed through the skin or anatomical opening using a laparoscopic instrument rather than through an opening. Full minimally invasive oesophagectomies involve thoracoscopy for the chest-phase of the operation and laparoscopy for the abdominal phase.

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.

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

NHS Digital – A special health authority that provides facts and figures to help the NHS and social services run effectively. The Clinical Audit and Registries Management Service (CARMS) is one of its key components.

NICE – The National Institute for Health and Care 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.

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

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

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 (also called non-curative care) is the care given to patients whose disease cannot be cured. It aims to improve quality of life rather than just extend survival and concentrates on relieving physical and psychological distress.

PEDW – Patient Episode Database for Wales (PEDW) is an administrative database that contains data on all in-patients treated within NHS hospitals in Wales.

PET – An 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.

Siewert classification – Anatomical classification used for adenocarcinomas of the gastro-oesophageal junction. Type I (SI) – adenocarcinoma of the distal part of the oesophagus (tumour centre 1-5 cm above the gastric cardia). Type II (SII) – adenocarcinoma of the real cardia (tumour centre within 1 cm above or 2 cm below the gastric cardia). Type III (SIII) – adenocarcinoma of the subcardial stomach (tumour centre located 2-5 cm below the gastric cardia).

Squamous cell carcinoma – A tumour that is located in the cells lining the oesophagus and tends to occur in the upper or middle of the oesophagus.

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 OG cancer. It is a collapsible tube that expands and relieves the blockage when inserted into the affected area.

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

Two-week wait referral – This is a referral mechanism used by General Practitioners (GPs) when they suspect the patient may have cancer.

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