NOGCA
National Oesophago-Gastric Cancer Audit

NATCAN
National Cancer Audit Collaborating Centre

National Oesophago-Gastric Cancer Audit State of the Nation Report September 2025: Methodology Supplement

An audit of care received by people diagnosed with oesophageal and gastric cancer between 1 January 2022 to 31 December 2023 in England and Wales.

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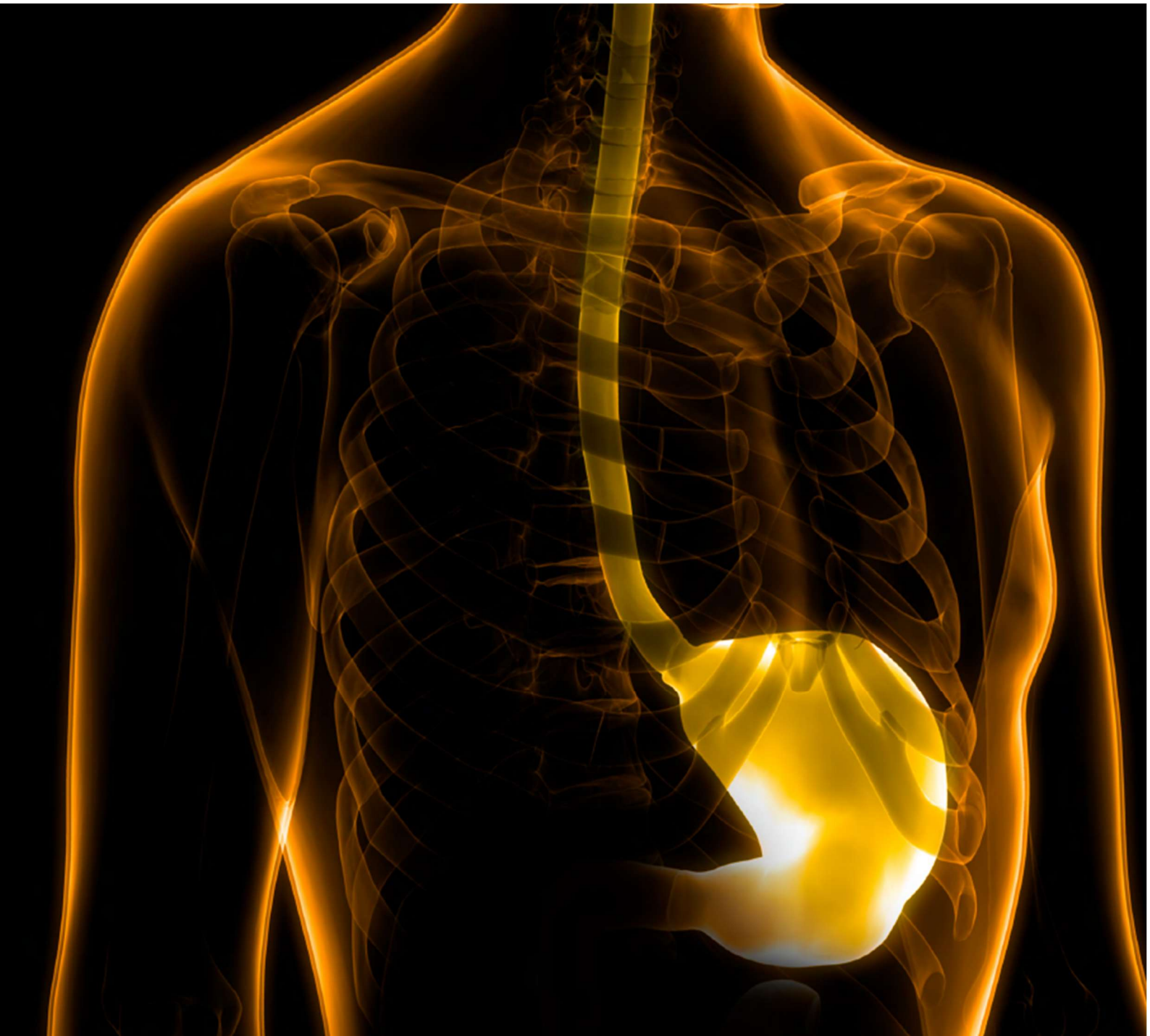

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This document was prepared by members of the NOGCA Project Team:
David Cromwell, Professor of Health Services Research
Tom Crosby, Consultant Clinical Oncologist
Karen Darley, Senior Project Manager
James Gossage, Consultant Surgeon
Amanda McDonell, Statistician / Data Scientist
Olivia O'Connor, Clinical Research Fellow
Min Hae Park, Assistant Professor
Betsan Thomas, Consultant Clinical Oncologist
Nigel Trudgill, Consultant Gastroenterologist

With review and input from:
NATCAN Executive Team

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The Association of Upper Gastrointestinal Surgery of Great Britain and Ireland is the speciality society that represents upper gastrointestinal surgeons. It is one of the key partners leading the Audit. Registered Charity no: 1093090

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Royal College of Radiologists is the professional body for clinical radiologists and clinical oncologists. It is one of the key partners leading the Audit. Registered Charity no: 211540

This work uses data that has been provided by patients and collected by the NHS as part of their care and support. For patients diagnosed in England, the data is collated, maintained and quality assured by the National Disease Registration Service (NDRS), which is part of NHS England. Access to the data was facilitated by the NHS England Data Access Request Service.

NHS Wales is implementing a new cancer informatics system. As a result, the quality and completeness of data from Wales is likely to have been impacted due to implementation of this new system across multiple NHS organisations (Health Boards), which has resulted in data being supplied by both old and new systems. Additionally, and reflecting the uncertainty of data quality, the data submitted to the audit may not have undergone routine clinical validation prior to submission to the Wales Cancer Network (WCN), Public Health Wales.

Contents

1. Introduction

This document provides supporting material to the September 2025 State of the Nation (SotN) Report for the National Audit of Oesophago-Gastric Cancer (NOGCA) and its data tables and data viewer. The document describes the data used in the report with details on sources of data, criteria for inclusion and how data completeness, patient characteristics and performance indicators are derived and reported.

2. Sources of Data

The audit uses information from routine national health care datasets in England and Wales. These datasets capture details on the diagnosis, management, treatment and outcome of every patient diagnosed with cancer in the NHS in England and Wales.

For England, the audit cohort is based on the Rapid Registration Cancer Data (RCRD) which is curated by the National Disease Registration Service (NDRS). The information held in the RCRD is compiled from a variety of sources including the Cancer Outcomes and Services Dataset (COSD), Hospital Episode Statistics admitted patient care (HES APC) records, the Systemic Anti-Cancer Therapy dataset (SACT), RTDS and data submitted by pathology laboratories.

RCRD contains proxy tumour registrations and some associated events on the cancer patient pathway (e.g. surgery, radiotherapy and chemotherapy) from January 2018 to the most recently available data on cancer diagnoses. This rapid data set provides a quicker, indicative source of cancer data compared to the "Gold standard" National Cancer Registration Data (NCRD), which relies on additional data sources, enhanced follow-up with trusts and expert processing by cancer registration officers. Due to these differences in processing, the rapid registration data will not exactly match the eventual Official Statistics published using the NCRD. Rapid cancer registration data are typically available within 4-5 months post-diagnosis. More information on the cancer registration process can be found here and the timelineness of the RCRD and NCRD here.

The audit also receives linked information from several other routine national health care datasets: see Appendix 1: Routine data sources for more detail on the data sources analysed as part of the audit.

The English data received by the National Cancer Audit Collaborating Centre (NATCAN) was the basis of the audit cohort of people with OG cancer diagnosed up to 31st December 2023.

For Wales, the audit was provided with a registration dataset at patient level that includes information captured through a national system, Cancer Information System for Wales (CaNISC) and the new Welsh Clinical Portal. The audit also received linked datasets of records from the Patient Episode Database for Wales (PEDW) containing information on inpatient and day case activity, LSOA data containing information on deprivation, mortality data from the Office for National Statistics (ONS).

Data from England and Wales were managed and analysed separately.

3. Inclusion and Exclusion Criteria

The data submitted by NDRS and WCN are checked and filtered for eligible participants, tables 3.1 and 3.2 explain the process in defining the final cohort of people with oesophageal or gastric (OG) cancer that were included in the audit.

People were included for analysis within the SotN Report if they met the following criteria:

Table 3.1: Audit Inclusion Criteria	
Inclusion Criteria	**Details**
Type of cancer	Malignant neoplasm of the oesophagus or stomach, identified via ICD-10 codes C15 or C16
First diagnosis of primary OG cancer	**For English data:** Earliest diagnosis date in the extract of data received (from 1 January 2018 – 31 October 2024) **For Welsh data:** Not applicable; dataset contained information on only one diagnosis per person
Adults	Age >=18
Valid Diagnosis Date	First diagnosis of primary OG cancer between 1 January 2021 and 31 December 2023
Histological diagnosis	**For English data:** tumour_morphology (RCRD) has a value between 8001 – 9989 (exclude morphology codes of 8000 as it is generic "neoplasm, malignant") and/or morphology_clean (SACT) has a value between 8001 – 9989 and primary_diagnosis is C15 or C16 and/or morphology_cosdpath (COSD Pathology) has a value between 8001 – 9989 and sampletakendate and/or samplereceiptdate and/or investigationresultdate is the same as diagnosis date or surgery date **For Welsh data:** Records with missing values for morphology_description (Cohort data) or values containing "insufficient" or "no microscopic" were excluded
Epithelial tumour	**For English data:** tumour_morphology or morphology_clean or morphology_cosdpath variables contain one of the epithelial morphology codes specified in Appendix 4: Morphology codes of epithelial tumours **For Welsh data:** morphology_description variable contains description of epithelial tumour type

Table 3.2: Audit Exclusion Criteria	
Exclusion Criteria	**Details**
Non-epithelial tumours	**For English data:** Majority already excluded via the requirement for an epithelial tumour based on morphology codes. Additional exclusion as follows: benchmark_group (SACT) contains treatment indicated for GIST tumours (non-epithelial): imatinib, sunitinib, or regorafenib with primary_diagnosis of C15 or C16 **For Welsh data:** see above inclusion criteria
Neuroendocrine tumours	**For English data:** tumour_morphology or morphology_clean or morphology_cosdpath variables contain one of the neuroendocrine morphology codes specified in Appendix 5: Morphology codes of neuroendocrine tumours and/or benchmark_group (SACT) contains treatment indicated for neuroendocrine tumours: "CARBOPLATIN + ETOPOSIDE", "CISPLATIN + ETOPOSIDE", "CARBOPLATIN + SUNITINIB", "CISPLATIN + SUNITINIB", "CARBOPLATIN + EVEROLIMUS", "CISPLATIN + EVEROLIMUS" with primary_diagnosis of C15 or C16 **For Welsh data:** morphology_description variable contains description of neuroendocrine tumour

Reported by death certificate only or date of diagnosis corresponds to date of death	**For English data:** Using RCRD: final_route = DCO (Death Certificate Only) and/or basisofdiagnosis = 0 (Death certificate) and/or diagnosisdatebest = deathdatebest (and vital status is death) **For Welsh data:** DIAGNOSIS_DATE (Cohort data) = date of death
Neither diagnosed nor treated within the constituent country of interest	**For English data:** Trust of diagnosis was a Welsh health board (code starting with 7) and No record of major resection in England *Trust code starting with "R" is in England

4. Key Data Items

Details of the variables and datasets used to compile the data completeness are shown below in Table 4.1

Table 4.1: Data Completeness Variables

Data Item	**Source**			
	England		**Wales**	
	Data field	**Dataset**	**Data field**	**Dataset**
Stage at diagnosis	Stage Derivations: Stage 0 recoded as stage 1; Missing stage recorded as stage 4 if tumour_morphology ended with behaviour code of 6 (metastatic) and/or if basisofdiagnosis was "histology of a metastasis"	RCRD	Derived using 3 variables: t_stage_final_pretreatment, n_stage_final_pretreatment m_stage_final_pretreatment to generate overall stage using the AJCC (American Joint Committee on Cancer staging) clinical stage coding for oesophageal and stomach cancer version 8 [1].	CaNISC
Performance status at diagnosis	tumour_performancestatus	RCRD	performance_status	CaNISC
Clinical Nurse Specialist (CNS) involved	Derived using clinicalnursespecialist, counting any "Yes" response option as CNS involved when associated with an	Derived by NDRS from COSD	Data not available	

[1] MB Amin, SB Edge, FL Greene, et al, eds. AJCC Cancer Staging Manual. 8th ed. New York: Springer; 2017.

	MDT meeting date (firstmdtmeetingdate) within 90 days of diagnosis date			
Surgical pathology outcomes	Excisionmargin Numberofnodesexamined numberofnodespositive	COSD pathology	proximal_margin_involved distal_margin_involved circumferential_margin_involved nodes_examined_number nodes_examined_positive	CaNISC

Details of the variables and datasets used to compile the patient and tumour characteristics are shown below in Table 4.2.

Table 4.2: Patient and Tumour Characteristics Variables

Data Item	**Source**			
	England		**Wales**	
	Data field	**Dataset**	**Data field**	**Dataset**
Age at diagnosis	Calculated as diagnosisdate minus date of birth, with date of birth derived from birthmonth and birthyear, with the day set to 1st of the month	RCRD	Derived using the age at the start of the hospital episode closest to the date of diagnosis (episodestartdate and patientepisodestartageyears)	PEDW
Ethnicity	ethniccategory Grouped as: White = 0, A, B, or C Mixed = D, E, F, or G Asian or Asian British = H, J, K, L, or R Black or Black British = M, N, or P Other ethnic group = S or 8 Missing = X or Z	RCRD	ethnicgroupcategory	PEDW
Index of multiple deprivation	quintile_2019	RCRD	Deprivationquintile	LSOA
Performance status at diagnosis	tumour_performancestatus	RCRD	performance_status	CaNISC
Sex	gender	RCRD	gender	CaNISC
Stage at diagnosis	Stage Derivations: Stage 0 recoded as stage 1; Missing stage recorded as stage 4 if tumour_morphology ended with behaviour code of 6 (metastatic) and/or if basisofdiagnosis was “histology of a metastasis”	RCRD	Derived using 3 variables: t_stage_final_pretreatment, n_stage_final_pretreatment m_stage_final_pretreatment to generate overall stage using the AJCC (American Joint Committee on Cancer staging) clinical stage coding for	CaNISC

			oesophageal and stomach cancer version 8 [2].	
Tumour site and sub-type	tumour_site See Appendix 3: Morphology codes for sub-types of oesophageal tumours for morphology codes for subtypes	RCRD	tumour_site morphology_description	CaNISC

Details of the variables and datasets used to construct performance indicators are show below in Table 4.3.

Table 4.3: Indicator Construction Variables

Data Item	**Source**			
	England		**Wales**	
	Data field	**Dataset**	**Data field**	**Dataset**
Organisation of diagnosis	diagnosis_trust	RCRD	organisation_code	CaNISC
Diagnosis date	diagnosisdate	RCRD	diagnosis_date	CaNISC
Route to diagnosis	final_route	RCRD	source_of_referral	CaNISC
Diagnostic endoscopy record	Derived by searching variables opertn_01 – opertn_24 for non-therapeutic endoscopy codes listed in Appendix 6: OPCS-4 codes used to flag diagnostic endoscopy; counted the first endoscopy record up to 30 days before diagnosis date	HES-APC HES-OP	Derived by searching variables operation01 to operation12 for non-therapeutic endoscopy codes listed in Appendix 6: OPCS-4 codes used to flag diagnostic endoscopy; counted the first endoscopy record up to 30 days before diagnosis date	PEDW
Diagnostic endoscopy date	Earliest of opdate_01 – opdate_24 (HES-APC) or apptdate (HES-OP) associated with diagnostic endoscopy record	HES-APC HES-OP	operation01datestyle to operation12datestyle associated with diagnostic endoscopy record	PEDW
Date of disease-targeted treatment	Derived as date of first record of disease-targeted treatment (EMR/ESD, surgery, chemotherapy, or radiotherapy)	Various – see below	Derived as date of first record of disease-targeted treatment (EMR/ESD, surgery, chemotherapy, or radiotherapy)	Various – see below
EMR/ESD record	Derived by searching variables opertn_01 – opertn_24 for EMR/ESD codes listed in Appendix 7: OPCS-4 codes for EMR/ESD; counted the first record up to 30 days before diagnosis date or up to 9 months after diagnosis date	HES-APC HES-OP	Derived by searching variables operation01 to operation12 for EMR/ESD codes listed in Appendix 7: OPCS-4 codes for EMR/ESD; counted the first record up to 30 days before diagnosis date or up to 9 months after diagnosis date	PEDW
EMR/ESD date	Earliest of opdate_01 – opdate_24 (HES-APC) or apptdate (HES-OP) associated with EMR/ESD record	HES-APC HES-OP	operation01datestyle to operation12datestyle associated with EMR/ESD record	PEDW

[2] MB Amin, SB Edge, FL Greene, et al, eds. AJCC Cancer Staging Manual. 8th ed. New York: Springer; 2017.

Surgery record	Derived by searching variables opertn_01 – opertn_24 for surgery codes listed in Table 5; counted the first surgery record up to 30 days before diagnosis date or up to 9 months after diagnosis date	HES-APC	Identified using procedures recorded in primary_procedure; included surgical resections that took place up to 9 months after diagnosis date	CaNISC
Surgery date	opdate_01 – opdate_24 associated with surgery record	HES-APC	date_of_surgery associated with valid primary_procedure	CaNISC
SACT (Systemic Anti-Cancer Treatment) record	Derived based on any record of anti-cancer treatment up to 9 months after diagnosis date, with primary_diagnosis of C15 or C16 (SACT); for time to treatment indicators, also included any instance of chemotherapy administration codes (see Appendix 9: OPCS-4 codes for SACT administration) in opertn_1-opertn_24 (HES)	SACT HES-APC HES-OP	Derived based on the presence of a value in the variable start_date_of_chemotherapy in CaNISC data or presence of OPCS-4 codes for chemotherapy in variables operation01 to operation12 in PEDW.	CaNISC / PEDW
SACT date	start_date_of_cycle (SACT) or opdate_01 – opdate_24 (HES-APC), or apptdate (HES-OP) associated with SACT treatment record associated with SACT record	SACT HES-APC HES-OP	start_date_of_chemotherapy; operation01datestyle to operation12datestyle associated with chemotherapy record	CaNISC / PEDW
Radiotherapy record	Derived based on any record of radiotherapy (RT) up to 9 months after diagnosis date, with radiotherapydiagnosisicd of C15 or C16.	RTDS	Derived based on the presence of a value in the variable start_date_of_radiotherapy	CaNISC
Radiotherapy date	Apptdate associated with first date of an RT prescription	RTDS	start_date_of_radiotherapy	CaNISC
First disease-targeted treatment date	Earliest of surgery date, SACT date, radiotherapy date, and EMR/ESD date	Derived	Earliest of surgery date, chemotherapy date, radiotherapy date, and EMR/ESD date	Derived
Curative treatment	Any of the following treatments: • EMR/ESD • Surgery, excluding people diagnosed with stage 4 disease undergoing partial gastrectomy (G28.1, G28.2, G28.3, G28.8, G28.9) • Radiotherapy, following dose in fractions: 50 in 25; 50.4 in 28; 60 in 30; 50 in 15/16; 50-55 in 20; 45-52.5 in 15/16			

Clinical Nurse Specialist (CNS) involved	Derived using clinicalnursespecialist, counting any "Yes" response option as CNS involved when associated with an MDT meeting date (firstmdtmeetingdate) within 90 days of diagnosis date	Derived by NDRS from COSD	Data not available	
Vital status	Pathway file variable event_type=19 (Patient vital status), which includes vital status and date of vital status	RCRD	Derived based on the presence of a value in the variable date_of_death (ONS). Length of survival from diagnosis calculated using time between diagnosis_date (CaNISC) and date_of_death (ONS)	CaNISC; ONS

5. Indicator Definitions

The audit reports key indicators to monitor progress against its healthcare improvement goals. Where appropriate, these indicators align with national guidelines and standards. Definitions of how the indicators included in the SotN report were derived from data for England and Wales are described below.

Some indicators are further focused on subgroups of patients as defined by sex and stage of the disease, as these factors are important determinants of whether particular treatments are suitable for patients.

5.1 Performance Indicator 1: Diagnosis after an emergency admission

Percentage of people with a diagnosis of OG cancer who are diagnosed after an emergency admission.

Table 5.1: Percentage of people with a diagnosis of OG cancer who are diagnosed after an emergency admission

	England	**Wales**
Dates of diagnosis:	1/1/2022 to 31/12/2023	1/1/2022 to 31/12/2023
Numerator: Number of people diagnosed following an emergency admission	Number of people with a route to diagnosis *(final_route)* of "emergency admission"	Number of people with a route to diagnosis *(source_of_referral)* of "emergency admission" or "A&E attendance"
Denominator: Number of people with a primary diagnosis of OG cancer with complete information related to route to diagnosis	Number of people with a primary diagnosis of OG cancer with complete information related to route to diagnosis	Number of people with a primary diagnosis of OG cancer with complete information related to route to diagnosis
Construction notes:		
Country reporting:	England & Wales separately	
Organisational Reporting level:	Trust of diagnosis Cancer Alliance of diagnosis	Health board of diagnosis
Subgroup Reporting:	None	None
Risk adjusted:	No	No
Outlier reporting:	No	No

5.2 Performance Indicator 2: Diagnosis at stage 4 or with unknown stage

Percentage of people with a diagnosis of OG cancer who are diagnosed at stage 4 or with unknown stage.

Table 5.2: Percentage of people with a diagnosis of OG cancer who are diagnosed at stage 4 or with unknown stage		
	England	**Wales**
Dates of diagnosis:	1/1/2022 to 31/12/2023	1/1/2022 to 31/12/2023
Numerator: Number of people who have stage 4 disease or unknown stage at first diagnosis	Number of people with stage at diagnosis of 4 or missing stage	Number of people with stage at diagnosis of 4 or missing stage
Denominator: Number of people with a primary diagnosis of OG cancer	Number of people with a primary diagnosis of OG cancer	Number of people with a primary diagnosis of OG cancer
Construction notes:		
Country reporting:	England & Wales separately	
Organisational Reporting level:	Trust of diagnosis Cancer Alliance of diagnosis	Health board of diagnosis
Subgroup Reporting:	None	None
Risk adjusted:	No	No
Outlier reporting:	No	No

5.3 Performance Indicator 3: Time to treatment

Median time (days) and IQR from diagnostic endoscopy to first disease-targeted treatment for OG cancer.

Table 5.3: Median time (days) and IQR from diagnostic endoscopy to first disease-targeted treatment for OG cancer		
	England	**Wales**
Dates of diagnosis:	1/1/2022 to 31/12/2023	1/1/2022 to 31/12/2023
Numerator: Median time from diagnostic endoscopy to first disease-targeted treatment	Median time (days) from diagnostic endoscopy to first disease-targeted treatment	Median time (days) from diagnostic endoscopy to first disease-targeted treatment
Denominator:	N/A	N/A
Construction notes:	Calculate median and IQR	Calculate median and IQR
Country reporting:	England & Wales separately	
Organisational Reporting level:	Trust of diagnosis Cancer Alliance of diagnosis	Health board of diagnosis
Subgroup Reporting:	None	None
Risk adjusted:	No	No
Outlier reporting:	No	No

5.4 Performance Indicator 4: Clinical nurse specialist (CNS) involvement

Percentage of people with a diagnosis of OG cancer who were seen by a CNS.

Table 5.4: Percentage of people with a diagnosis of OG cancer who are seen by a CNS		
	England	**Wales**
Dates of diagnosis:	1/1/2022 to 31/12/2023	N/A
Numerator: Number of people with CNS involved	Number of people with CNS involved	N/A
Denominator: Number of people with a primary diagnosis of OG cancer with complete information related to CNS	Number of people with a primary diagnosis of OG cancer with complete information related to CNS	N/A
Construction notes:		N/A
Country reporting:	England only	
Organisational Reporting level:	Trust of diagnosis Cancer Alliance of diagnosis	N/A
Subgroup Reporting:	None	N/A
Risk adjusted:	No	N/A
Outlier reporting:	No	N/A

5.5 Performance Indicator 5: Lymph nodes examined after surgery

Percentage of people undergoing curative surgical resection for OG cancer who had adequate lymph nodes examined after surgery.

Table 5.5: Percentage of people undergoing curative surgical resection for OG cancer who had adequate lymph nodes examined after surgery		
	England	**Wales**
Dates of diagnosis:	N/A	1/1/2021 to 31/12/2023
Numerator: Number of people with at least 15 lymph nodes examined	N/A	Number of people with at least 15 lymph nodes examined
Denominator: Number of people with record of curative surgical resection for OG cancer with complete information on number of nodes examined	N/A	Number of people with record of curative surgical resection for OG cancer with complete information on number of nodes examined
Construction notes:	N/A	
Country reporting:	Only reported for Wales due to poor completeness of pathology data in England	
Organisational Reporting level:	N/A	Health board of surgery
Subgroup Reporting:	N/A	Surgery type (oesophagectomy vs. gastrectomy)
Risk adjusted:	N/A	No
Outlier reporting:	N/A	No

5.6 Performance Indicator 6: Positive surgical resection margin rates

Percentage of people undergoing curative surgical resection for OG cancer who had positive surgical resection margin rates.

Table 5.6: Percentage of people undergoing curative surgical resection for OG cancer who had positive surgical resection margin rates		
	England	**Wales**
Dates of diagnosis:	N/A	N/A
Numerator:	N/A	N/A
Denominator:	N/A	N/A
Construction notes:	N/A	N/A
Country reporting:	N/A (not reported due to very low completeness of pathology data in England and small volumes of procedures and events (positive margins) when analysed by procedure type (oesophagectomy vs. gastrectomy) in Wales)	
Organisational Reporting level:	N/A	N/A
Subgroup Reporting:	N/A	N/A
Risk adjusted:	N/A	N/A
Outlier reporting:	N/A	N/A

5.7 Performance Indicator 7: 90-day survival rate after curative surgery

Adjusted 90-day survival after curative surgery.

Table 5.7: 90-day survival rate after curative surgery		
	England	**Wales**
Dates of diagnosis:	1/1/2021 to 31/12/2023	1/1/2021 to 31/12/2023
Numerator: Number of people alive 90 days after surgery	Number of people alive more than 90 days after surgery with curative intent	Number of people alive more than 90 days after surgery with curative intent
Denominator: Number of people with a primary diagnosis of OG cancer undergoing surgery	Number of people with a primary diagnosis of OG cancer undergoing surgery with curative intent	Number of people with a primary diagnosis of OG cancer undergoing surgery with curative intent
Construction notes:	Surgery with curative intent defined as any surgery from Appendix 8: OPCS-4 codes for major oesophageal or gastric resections, excluding people diagnosed with stage 4 disease undergoing partial gastrectomy (G28.1, G28.2, G28.3, G28.8, G28.9)	
Country reporting:	England & Wales separately	
Organisational Reporting level:	Specialist OG cancer surgical trust (trust of surgery)	Health board of surgery
Subgroup Reporting:	Surgery type (oesophagectomy vs. gastrectomy)	Surgery type (oesophagectomy vs. gastrectomy)
Risk adjusted:	Yes: Age at diagnosis, sex, index of multiple deprivation, stage at diagnosis, performance status, tumour site, Charlson comorbidity index, diagnosis year	Yes: Age at diagnosis, sex, deprivation quintile, stage at diagnosis, performance status, tumour site, RCS Charlson comorbidity index, diagnosis year
Outlier reporting:	Yes	Yes

5.8 Performance Indicator 8: 1-year survival rate after curative surgery

Adjusted 1-year survival after curative surgery.

Table 5.8: 1-year survival rate after curative surgery		
	England	**Wales**
Dates of diagnosis:	1/1/2021 to 31/12/2022	1/1/2021 to 31/12/2023
Numerator: Number of people alive 1 year after surgery	Number of people alive more than 1 year after surgery with curative intent	Number of people alive more than 1 year after surgery with curative intent
Denominator: Number of people with a primary diagnosis of OG cancer undergoing surgery	Number of people with a primary diagnosis of OG cancer undergoing surgery with curative intent	Number of people with a primary diagnosis of OG cancer undergoing surgery with curative intent
Construction notes:	Surgery with curative intent defined as any surgery from Appendix 8: OPCS-4 codes for major oesophageal or gastric resections, excluding people diagnosed with stage 4 disease undergoing partial gastrectomy (G28.1, G28.2, G28.3, G28.8, G28.9)	
Country reporting:	England & Wales separately	
Organisational Reporting level:	Specialist OG cancer surgical trust (trust of surgery)	Health board of surgery
Subgroup Reporting:	Surgery type (oesophagectomy vs. gastrectomy)	Surgery type (oesophagectomy vs. gastrectomy)
Risk adjusted:	Yes: Age at diagnosis, sex, index of multiple deprivation, stage at diagnosis, performance status, tumour site, Charlson comorbidity index, diagnosis year	Yes: Age at diagnosis, sex, deprivation quintile, stage at diagnosis, performance status, tumour site, RCS Charlson comorbidity index, diagnosis year
Outlier reporting:	Yes	Yes

5.9 Performance Indicator 9: Palliative systemic anti-cancer therapy (SACT) completion

Percentage of people beginning palliative systemic anti-cancer therapy (SACT) for OG cancer who complete at least four cycles of treatment.

Table 5.9: Percentage of people beginning palliative systemic anti-cancer therapy (SACT) completing at least 4 treatment cycles		
	England	**Wales**
Dates of diagnosis:	1/1/2022 to 31/12/2023	N/A
Numerator: Number of people with a record of at least 4 cycles of palliative chemotherapy	Number of people with a record of at least 4 cycles of palliative chemotherapy	N/A
Denominator: Number of people with a primary diagnosis of OG cancer starting palliative chemotherapy as first treatment within 9 months of diagnosis	Number of people with a primary diagnosis of OG cancer starting palliative chemotherapy as first treatment within 9 months of diagnosis	N/A

Construction notes:	See approach to deriving palliative regimens in Appendix 10: Palliative SACT regimens	N/A
Country reporting:	England only	
Organisational Reporting level:	Trust of SACT administration	N/A
Subgroup Reporting:	None	N/A
Risk adjusted:	No	N/A
Outlier reporting:	No	N/A

5.10 Performance Indicator 10: Mortality after starting systemic anti-cancer therapy (SACT)

Percentage of people with stage 4 OG cancer who died within 90 days of starting SACT.

Table 5.10: Percentage of people diagnosed with stage 4 disease dying within 90 days of starting systemic anti-cancer therapy (SACT)

	England	**Wales**
Dates of diagnosis:	1/1/2022 to 31/12/2023	N/A
Numerator: Number of people who died within 90 days of starting SACT	Number of people who died within 90 days of starting SACT	N/A
Denominator: Number of people with a primary diagnosis of stage 4 OG cancer who start any SACT regimen	Number of people with a primary diagnosis of stage 4 OG cancer who start any SACT regimen up to 9 months after diagnosis	N/A
Construction notes:	Exclude from analyses anyone who had a record of surgery or curative radiotherapy up to 9 months after diagnosis	N/A
Country reporting:	England only	
Organisational Reporting level:	Trust of SACT administration	N/A
Subgroup Reporting:	None	N/A
Risk adjusted:	No	N/A
Outlier reporting:	No	N/A

6. NHS organisations

The audit presents organisation-level findings by the NHS organisation of diagnosis or treatment, as appropriate for the specific indicator:

- OG specialist surgical centre: for indicators concerned with surgery
- Organisation of SACT administration: for indicators concerned with SACT
- Organisation of diagnosis: for all other indicators (in England this includes trust of diagnosis and Cancer Alliance of diagnosis, in Wales results are presented for the health board of diagnosis)

Details on allocation to NHS Trust in England:

- OG specialist surgical centres are identified via the organisation codes listed in Appendix 12: Organisational codes.
- Trust of SACT administration is identified via the SACT dataset.
- Trust of diagnosis is identified using the trust of diagnosis variable in the RCRD.
- In instances where the trust of diagnosis is a tertiary centre (The Christie, The Clatterbridge, or The Royal Marsden), the audit reassigns the diagnosis to the trust of diagnostic endoscopy. Note: The Royal Marsden does diagnose some cases based on trust of diagnostic endoscopy, whereas the other two tertiary centres do not. In cases where

there is no record of diagnostic endoscopy the diagnosis is not reassigned from the tertiary centre; these cases are not reported at the Trust-level for The Christie or The Clatterbridge but they are included in Cancer Alliance and National-level reporting.
- Cases where the organisation of diagnosis is not an NHS organisation are excluded from the Trust and Cancer Alliance-level analyses, but are included in national-level results.
- Cases in the English data where the organisation of diagnosis is an NHS Wales organisation are excluded from the England analyses, unless the case had surgery in England.

For Wales, the local health board of diagnosis and specialist surgical centres were identified using the organisation codes listed in Appendix 12: Organisational codes. The health board of diagnosis was identified using the organisation_code variable and the health board of surgery was identified using the place_of_surgery_code variable in CaNISC data.

A minimum of five diagnoses in the audit period are required for reporting at organisational level. This is to ensure only organisations providing cancer services are included and also to avoid very small numbers which can lead to unreliable estimates and increase the risk of potential data disclosure.

7. Statistical Analysis

All statistical analyses were conducted using STATA version 17.0.

Most results in the SotN Report are descriptive. Categorical data items are summarised as percentages (%). Results are typically provided as an overall figure with an indication of variation by organisational reporting level (see NHS organisations section). Note that within tables in the SotN Report, the total percentage may not equal 100%, due to rounding.

7.1 Small number suppression

- Data quality and completeness results have not been supressed.
- For results presented at organisational level, cell values are suppressed when there are fewer than 25 diagnoses at the organisation and/or the denominator was <10.

7.2 Risk-adjustment of indicators

The tables of performance indicators state whether risk adjustment has been performed.

Multivariable logistic regression models were used to estimate the likelihood of survival for each individual who had a record of curative surgical resection for OG cancer (based on their characteristics), and these probabilities have been summed to calculate the predicted number of people surviving for each organisation. The regression models include the following patient characteristics: age group, sex, deprivation (IMD quintile), stage, performance status, tumour site (C15 or C16), RCS Charlson Comorbidity Index (calculated using HES-APC or PEDW), and diagnosis year. Data for England and Wales were analysed separately.

Risk adjusted rates are presented only for organisations with at least 10 people with a record of curative surgery during the relevant period.

Table 7.1 below provides details on the datasets and variables used in the risk adjustment model. See section Key Data Items for further details on construction notes for any of the variables listed.

Table 7.1: Risk Adjustment Variables		
Data Item	**Additional detail**	
	England	**Wales**
Age at diagnosis	Categorised into the following groups: <60, 60-69, 70-79, ≥80 years	Categorised into the following groups: <60, 60-69, ≥70 years
Sex	No additional detail	No additional detail
Index of multiple deprivation	No additional detail	No additional detail
Stage at diagnosis	No additional detail	No additional detail
Performance status at diagnosis	Categorised into the following groups: 0, 1, 2, 3/4	Categorised into the following groups: 0 or ≥1
Tumour site	Split into oesophageal and gastric	Split into oesophageal and gastric
Charlson comorbidity index	The CCI is a commonly used scoring system for medical comorbidities, consisting of a grouped score calculated based on the absence (0) and presence (≥1) of 14 pre-specified medical conditions (Appendix 2). The CCI was calculated using information on secondary diagnoses (ICD-10 codes) recorded in HES APC (England) / PEDW (Wales) within the 24-month period prior to a patient's diagnosis. For the purpose of analysis, the CCI is grouped into three categories: • **0** none of the 14 pre-specified comorbidities. • **1** only 1 of the 14 pre-specified comorbidities. • **2+** 2 or more of the 14 pre-specified comorbidities	
Diagnosis year	Year extracted from diagnosis date	Year of diagnosis

7.3 Handling of missing data

For the risk-adjustment, missing values for stage, performance status, and IMD quintile (for Wales only) were imputed with multiple imputation using chained equations, creating ten data sets and pooling model estimates using Rubin's Rules. The imputation models included all the variables in the analysis models.

8. Outlier Process

The outlier process can be found in the separate audit outlier policy.

Appendix 1: Routine data sources

Overview of the data sources used for the SotN Report.

Country	Data source	Content
England	Rapid Cancer registry (RCRD)	Data on all aspects of the cancer registration, compiled by NDRS.
England	COSD	Cancer Outcomes and Services dataset (COSD) items are submitted routinely by service providers via multidisciplinary team (MDT) electronic data collection systems to the National Cancer Data Repository (NCDR) on a monthly basis.
England	COSD Pathology	Pathology-specific dataset submitted to the NCDR on a monthly basis, to accompany the COSD dataset
England	SACT	Systemic Anti-Cancer Therapy (SACT) data contains information on chemotherapy dates, regimen(s) and dose(s).
England	RTDS	Radiotherapy dataset (RTDS) contains information on radiotherapy treatment including dates, prescription region and dose.
England	CWT	Cancer Waiting Times (CWT) contains information on dates and sources of referrals, diagnoses, and treatments for cancer. This information is uploaded monthly by NHS providers and is used to monitor cancer waiting times
England	HES	Hospital Episode Statistics (HES) is the administrative database of all NHS hospital admissions in England. The audit receives records from both admitted patient care (HES-APC) and outpatient care (HES-OP).
Wales	CaNISC	Cancer Network Information System Cymru (Canisc) contains data on all aspects of the cancer registration including investigations.
Wales	PEDW	Patient Episode Database for Wales (PEDW) is the administrative database of all NHS hospital admissions in Wales.
Wales	RTH	Radiotherapy data (RTH) contains information on radiotherapy treatment (available only for patients diagnosed in 2023).
Wales	ONS	Office for National Statistics (ONS) death data including date of death and cause of death.
Wales	LSOA	Lower-layer Super Output Areas (LSOA) dataset contains information on deprivation in small areas (LSOAs) across Wales

Appendix 2: Charlson Comorbidity Index

Reference:

Armitage JN, van der Meulen JH. Identifying co-morbidity in surgical patients using administrative data with the Royal College of Surgeons Charlson Score. Br J Surg 2010;97:772-81. doi https://doi.org/10.1002/bjs.6930

Pre-specified conditions included in the assignment of Charlson Comorbidity Index (CCI).

CCI Conditions
Myocardial infarction
Dementia
Diabetes mellitus
Metastatic solid tumour
Congestive cardiac failure
Chronic pulmonary disease
Hemiplegia or paraplegia
AIDS/HIV infection
Peripheral vascular disease
Rheumatological disease
Renal disease
Cerebrovascular disease
Liver disease
Any malignancy

Note: AIDS/HIV diagnoses cannot be identified in HES APC data because of legal requirements for NHS trusts to remove patient identifiers from legally restricted records, including those containing diagnoses of HIV/AIDS. These diagnoses are also not found in linked PEDW data.

Appendix 3: Morphology codes for sub-types of oesophageal tumours

List restricted to the two most common sub-types of oesophageal cancer. List may not be exhaustive of all adenocarcinoma or squamous cell morphology as list is based on the morphologies present in the audit cohort.

Code	Description
Adenocarcinoma	
8005	Malignant tumour, clear cell type
8140	Adenocarcinoma
8141	Scirrhous adenocarcinoma
8143	Superficial spreading adenocarcinoma
8144	Adenocarcinoma, intestinal type
8190	Trabecular adenocarcinoma
8210	Adenocarcinoma in adenomatous polyp
8211	Tubular adenocarcinoma
8213	Serrated adenocarcinoma
8255	Adenocarcinoma with mixed subtypes
8260	Papillary adenocarcinoma, NOS
8261	Adenocarcinoma in villous adenoma
8262	Villous adenocarcinoma
8263	Adenocarcinoma in tubulovillous adenoma
8310	Clear cell adenocarcinoma
8323	Mixed cell adenocarcinoma
8440	Cystadenocarcinoma
8480	Mucinous adenocarcinoma
8481	Mucin-producing adenocarcinoma
8570	Adenocarcinoma with squamous metaplasia
8571	Adenocarcinoma w cartilag. & oss. metaplas.
8572	Adenocarcinoma with spindle cell mataplasia
8573	Adenocarcinoma with apocrine metaplasia
8574	Adenocarcinoma with neuroendocrine differen.
8576	Hepatoid adenocarcinoma
Squamous cell carcinoma	
8033	Pseudosarcomatous carcinoma
8051	Verrucous carcinoma, NOS
8052	Papillary squamous cell carcinoma
8070	Squamous cell carcinoma
8071	Sq. cell carcinoma, keratinizing
8072	Sq. cell carcinoma, lg. cell, non-ker.
8073	Sq. cell carcinoma, sm. cell, non-ker.
8074	Sq. cell carcinoma, spindle cell
8075	Squamous cell carcinoma, adenoid
8076	Sq. cell carcinoma, micro-invasive
8077	Squamous intraepithelial neoplasia
8078	Squamous cell carcinoma with horn formation
8083	Basaloid squamous cell carcinoma
8084	Squamous cell carcinoma, clear cell type

Source of morphology descriptions: https://biobank.ndph.ox.ac.uk/ukb/ukb/docs/ICDcancermorph.pdf

Appendix 4: Morphology codes of epithelial tumours

Code	Description
8005	Malignant tumour, clear cell type
8010	Carcinoma, NOS
8020	Carcinoma, undifferentiated type
8021	Carcinoma, anaplastic type
8032	Spindle cell carcinoma
8033	Pseudosarcomatous carcinoma
8050	Papillary carcinoma
8051	Verrucous carcinoma, NOS
8052	Papillary squamous cell carcinoma
8070	Squamous cell carcinoma
8071	Sq. cell carcinoma, keratinizing
8072	Sq. cell carcinoma, lg. cell, non-ker.
8073	Sq. cell carcinoma, sm. cell, non-ker.
8074	Sq. cell carcinoma, spindle cell
8075	Squamous cell carcinoma, adenoid
8076	Sq. cell carcinoma, micro-invasive
8077	Squamous intraepithelial neoplasia
8078	Squamous cell carcinoma with horn formation
8083	Basaloid squamous cell carcinoma
8084	Squamous cell carcinoma, clear cell type
8140	Adenocarcinoma
8141	Scirrhous adenocarcinoma
8142	Linitis plastica
8143	Superficial spreading adenocarcinoma
8144	Adenocarcinoma, intestinal type
8145	Carcinoma, diffuse type
8190	Trabecular adenocarcinoma
8210	Adenocarcinoma in adenomatous polyp
8211	Tubular adenocarcinoma
8213	Serrated adenocarcinoma
8214	Parietal cell carcinoma
8231	Carcinoma simplex
8255	Adenocarcinoma with mixed subtypes
8260	Papillary adenocarcinoma, NOS
8261	Adenocarcinoma in villous adenoma
8262	Villous adenocarcinoma
8263	Adenocarcinoma in tubulovillous adenoma
8310	Clear cell adenocarcinoma
8323	Mixed cell adenocarcinoma
8430	Mucoepidermoid carcinoma
8440	Cystadenocarcinoma
8480	Mucinous adenocarcinoma
8481	Mucin-producing adenocarcinoma
8490	Signet ring cell carcinoma
8510	Medullary carcinoma

Code	Description
8512	Medullary carcinoma with lymphoid stroma
8560	Adenosquamous carcinoma
8562	Epithelial-myoepithelial carcinoma
8570	Adenocarcinoma with squamous metaplasia
8571	Adenocarcinoma w cartilag. & oss. metaplas.
8572	Adenocarcinoma with spindle cell mataplasia
8573	Adenocarcinoma with apocrine metaplasia
8574	Adenocarcinoma with neuroendocrine differen.
8576	Hepatoid adenocarcinoma
8982	Malignant myoepithelioma

Source of morphology descriptions: https://biobank.ndph.ox.ac.uk/ukb/ukb/docs/ICDcancermorph.pdf

Appendix 5: Morphology codes of neuroendocrine tumours

Code	Description
8013	Large cell neuroendocrine carcinoma
8041	Small cell carcinoma, NOS
8042	Oat cell carcinoma
8043	Small cell carcinoma, fusiform cell
8044	Small cell carcinoma, intermediate cell
8045	Combined small cell carcinoma
8150	Islet cell carcinoma
8151	Insulinoma
8152	Glucagonoma
8153	Gastrinoma
8154	Mixed islet cell & exocrine adenocarcinoma
8155	Vipoma
8156	Somatostatinoma
8157	Enteroglucagonoma
8158	ACTH-producing tumour
8240	Carcinoid tumour
8241	Enterochromaffin cell carcinoid
8242	Enterochromaffin-like cell tumour
8243	Goblet cell carcinoid
8244	Composite carcinoid
8245	Adenocarcinoid tumour
8246	Neuroendocrine carcinoma
8247	Merkel cell carcinoma
8249	Atypical carcinoid tumour
9091	Strumal carcinoid

Source of morphology descriptions: https://biobank.ndph.ox.ac.uk/ukb/ukb/docs/ICDcancermorph.pdf

Appendix 6: OPCS-4 codes used to flag diagnostic endoscopy

OPCS-4 code	Description
G14.2	Fibreoptic endoscopic laser destruction of lesion of oesophagus
G14.3	Fibreoptic endoscopic cauterisation of lesion of oesophagus
G14.5	Fibreoptic endoscopic destruction of lesion of oesophagus NEC
G14.7	Fibreoptic endoscopic photodynamic therapy of lesion of oesophagus
G15.2	Fibreoptic endoscopic balloon dilation of oesophagus
G15.3	Fibreoptic endoscopic dilation of oesophagus NEC
G15.4	Fibreoptic endoscopic insertion of tubal prosthesis into oesophagus
G15.6	Fibreoptic endoscopic insertion of expanding metal stent into oesophagus NEC
G15.7	Fibreoptic endoscopic insertion of expanding covered metal stent into oesophagus
G15.8	Other therapeutic fibreoptic endoscopic operations on oesophagus, other specified
G15.9	Other therapeutic fibreoptic endoscopic operations on oesophagus, unspecified
G16.1	Diagnostic fibreoptic endoscopic examination of oesophagus and biopsy of lesion of oesophagus
G16.2	Diagnostic fibreoptic endoscopic ultrasound examination of oesophagus
G16.8	Diagnostic fibreoptic endoscopic examination of oesophagus, other specified
G16.9	Diagnostic fibreoptic endoscopic examination of oesophagus, unspecified
G17.2	Endoscopic laser destruction of lesion of oesophagus using rigid oesophagoscope
G17.3	Endoscopic cauterisation of lesion of oesophagus using rigid oesophagoscope
G18.8	Other therapeutic endoscopic operations on oesophagus using rigid oesophagoscope, other specified
G18.9	Other therapeutic endoscopic operations on oesophagus using rigid oesophagoscope, unspecified
G19.1	Diagnostic endoscopic examination of oesophagus and biopsy of lesion of oesophagus using rigid oesophagoscope
G19.8	Diagnostic endoscopic examination of oesophagus using rigid oesophagoscope, other specified
G19.9	Diagnostic endoscopic examination of oesophagus using rigid oesophagoscope, unspecified
G20.1	Fibreoptic endoscopic coagulation of bleeding lesion of oesophagus NEC
G20.2	Fibreoptic endoscopic coagulation of bleeding lesion of oesophagus using haemostatic spray
G20.8	Therapeutic fibreoptic endoscopic operations on oesophagus, other specified
G20.9	Therapeutic fibreoptic endoscopic operations on oesophagus, unspecified
G21.4	Intubation of oesophagus NEC
G21.5	Insertion of stent into oesophagus NEC
G21.8	Other operations on oesophagus, other specified
G21.9	Other operations on oesophagus, unspecified
G42.2	Fibreoptic endoscopic photodynamic therapy of lesion of upper gastrointestinal tract
G43.2	Fibreoptic endoscopic laser destruction of lesion of upper gastrointestinal tract
G43.3	Fibreoptic endoscopic cauterisation of lesion of upper gastrointestinal tract
G43.5	Fibreoptic endoscopic destruction of lesion of upper gastrointestinal tract NEC
G44.1	Fibreoptic endoscopic insertion of prosthesis into upper gastrointestinal tract
G44.3	Fibreoptic endoscopic dilation of upper gastrointestinal tract NEC
G44.5	Fibreoptic endoscopic percutaneous insertion of gastrostomy
G44.6	Fibreoptic endoscopic pressure controlled balloon dilation of lower oesophageal sphincter
G44.8	Other therapeutic fibreoptic endoscopic operations on upper gastrointestinal tract, other specified
G44.9	Other therapeutic fibreoptic endoscopic operations on upper gastrointestinal tract, unspecified

OPCS-4 code	Description
G45.1	Fibreoptic endoscopic examination of upper gastrointestinal tract and biopsy of lesion of upper gastrointestinal tract
G45.2	Fibreoptic endoscopic ultrasound examination of upper gastrointestinal tract
G45.4	Fibreoptic endoscopic examination of upper gastrointestinal tract and staining of gastric mucosa
G45.8	Diagnostic fibreoptic endoscopic examination of upper gastrointestinal tract, other specified
G45.9	Diagnostic fibreoptic endoscopic examination of upper gastrointestinal tract, unspecified
G46.2	Fibreoptic endoscopic coagulation of bleeding lesion of upper gastrointestinal tract NEC
G46.3	Fibreoptic endoscopic coagulation of bleeding lesion of upper gastrointestinal tract using haemostatic spray
G46.8	Therapeutic fibreoptic endoscopic operations on upper gastrointestinal tract, other specified
G46.9	Therapeutic fibreoptic endoscopic operations on upper gastrointestinal tract, unspecified

Appendix 7: OPCS-4 codes for EMR/ESD

OPCS-4 code	Description
G12.1	Fibreoptic endoscopic mucosal resection of lesion of oesophagus
G12.8	Other fibreoptic endoscopic extirpation of lesion of oesophagus, other specified
G12.9	Other fibreoptic endoscopic extirpation of lesion of oesophagus, unspecified
G14.1	Fibreoptic endoscopic snare resection of lesion of oesophagus
G14.6	Fibreoptic endoscopic submucosal resection of lesion of oesophagus
G14.8	Fibreoptic endoscopic extirpation of lesion of oesophagus, other specified
G14.9	Fibreoptic endoscopic extirpation of lesion of oesophagus, unspecified
G17.1	Endoscopic snare resection of lesion of oesophagus using rigid oesophagoscope
G17.8	Endoscopic extirpation of lesion of oesophagus using rigid oesophagoscope, other specified
G17.9	Endoscopic extirpation of lesion of oesophagus using rigid oesophagoscope, unspecified
G42.1	Fibreoptic endoscopic submucosal resection of lesion of upper gastrointestinal tract
G42.3	Fibreoptic endoscopic mucosal resection of lesion of upper gastrointestinal tract
G42.8	Other fibreoptic endoscopic extirpation of lesion of upper gastrointestinal tract, other specified
G42.9	Other fibreoptic endoscopic extirpation of lesion of upper gastrointestinal tract, unspecified
G43.1	Fibreoptic endoscopic snare resection of lesion of upper gastrointestinal tract
G43.8	Fibreoptic endoscopic extirpation of lesion of upper gastrointestinal tract, other specified
G43.9	Fibreoptic endoscopic extirpation of lesion of upper gastrointestinal tract, unspecified
Codes used only for High Grade Dysplasia (HGD) in addition to the codes above	
G14.3	Fibreoptic endoscopic cauterisation of lesion of oesophagus
G14.5	Fibreoptic endoscopic destruction of lesion of oesophagus NEC
G43.3	Fibreoptic endoscopic cauterisation of lesion of upper gastrointestinal tract
G43.5	Fibreoptic endoscopic destruction of lesion of upper gastrointestinal tract NEC

Appendix 8: OPCS-4 codes for major oesophageal or gastric resections

OPCS-4 code	Description
Oesophageal cancer	
G01.1	Oesophagogastrectomy and anastomosis of oesophagus to stomach
G01.8	Excision of oesophagus and stomach: Other specified
G01.9	Excision of oesophagus and stomach: Unspecified
G02.1	Total oesophagectomy and anastomosis of pharynx to stomach
G02.2	Total oesophagectomy and interposition of microvascularly attached jejunum
G02.3	Total oesophagectomy and interposition of jejunum NEC
G02.4	Total oesophagectomy and interposition of microvascularly attached colon
G02.5	Total oesophagectomy and interposition of colon NEC
G02.8	Total excision of oesophagus: Other specified
G02.9	Total excision of oesophagus: Unspecified
G03.1	Partial oesophagectomy and end to end anastomosis of oesophagus
G03.2	Partial oesophagectomy and interposition of microvascularly attached jejunum
G03.3	Partial oesophagectomy and anastomosis of oesophagus to transposed jejunum
G03.4	Partial oesophagectomy and anastomosis of oesophagus to jejunum NEC
G03.5	Partial oesophagectomy and interposition of microvascularly attached colon
G03.6	Partial oesophagectomy and interposition of colon NEC
G03.8	Partial excision of oesophagus: Other specified
G03.9	Partial excision of oesophagus: Unspecified
Gastric cancer	
G01.2	Oesophagogastrectomy and anastomosis of oesophagus to transposed jejunum
G01.3	Oesophagogastrectomy and anastomosis of oesophagus to jejunum NEC
G27.1	Total gastrectomy and excision of surrounding tissue
G27.2	Total gastrectomy and anastomosis of oesophagus to duodenum
G27.3	Total gastrectomy and interposition of jejunum
G27.4	Total gastrectomy and anastomosis of oesophagus to transposed jejunum
G27.5	Total gastrectomy and anastomosis of oesophagus to jejunum NEC
G27.8	Total excision of stomach: Other specified
G27.9	Total excision of stomach: Unspecified
G28.1	Partial gastrectomy and anastomosis of stomach to duodenum
G28.2	Partial gastrectomy and anastomosis of stomach to transposed jejunum
G28.3	Partial gastrectomy and anastomosis of stomach to jejunum NEC
G28.8	Partial excision of stomach: Other specified
G28.9	Partial excision of stomach: Unspecified

Source of OPCS-4 codes: https://classbrowser.nhs.uk/#/book/OPCS-4.10/

Appendix 9: OPCS-4 codes for SACT administration

OPCS-4 code	Description
X701	Procurement of drugs for chemotherapy for neoplasm for regimens in Band 1
X702	Procurement of drugs for chemotherapy for neoplasm for regimens in Band 2
X703	Procurement of drugs for chemotherapy for neoplasm for regimens in Band 3
X704	Procurement of drugs for chemotherapy for neoplasm for regimens in Band 4
X705	Procurement of drugs for chemotherapy for neoplasm for regimens in Band 5
X708	Procurement of drugs for chemotherapy for neoplasm in Bands 1-5: Other specified
X709	Procurement of drugs for chemotherapy for neoplasm in Bands 1-5: Unspecified
X711	Procurement of drugs for chemotherapy for neoplasm for regimens in Band 6
X712	Procurement of drugs for chemotherapy for neoplasm for regimens in Band 7
X713	Procurement of drugs for chemotherapy for neoplasm for regimens in Band 8
X714	Procurement of drugs for chemotherapy for neoplasm for regimens in Band 9
X715	Procurement of drugs for chemotherapy for neoplasm for regimens in Band 10
X718	Procurement of drugs for chemotherapy for neoplasm in Bands 6-10: Other specified
X719	Procurement of drugs for chemotherapy for neoplasm in Bands 6-10: Unspecified
X721	Delivery of complex chemotherapy for neoplasm including prolonged infusional treatment at first attendance
X722	Delivery of complex parenteral chemotherapy for neoplasm at first attendance
X723	Delivery of simple parenteral chemotherapy for neoplasm at first attendance
X724	Delivery of subsequent element of cycle of chemotherapy for neoplasm
X728	Delivery of chemotherapy for neoplasm: Other specified
X729	Delivery of chemotherapy for neoplasm: Unspecified
X731	Delivery of exclusively oral chemotherapy for neoplasm
X738	Delivery of oral chemotherapy for neoplasm: Other specified
X739	Delivery of oral chemotherapy for neoplasm: Unspecified
X748	Other chemotherapy drugs: Other specified
X749	Other chemotherapy drugs: Unspecified
X352	Intravenous chemotherapy
X353	Intravenous immunotherapy
X373	Intramuscular chemotherapy
X374	Intramuscular immunotherapy
X384	Subcutaneous chemotherapy
X385	Subcutaneous immunotherapy

Appendix 10: Palliative SACT regimens

Cycles of SACT are flagged as palliative if within the SACT database the variable *benchmark_group* is any of the following AND there is no record of curative surgery or curative/indeterminant radiotherapy within 9 months after diagnosis:

1. **Immunotherapy:** any of "PEMBROLIZUMAB" or “NIVOLUMAB”, alone or in combination with other drugs
2. **Trastuzumab-containing regimens:** any regimen containing “TRASTUZUMAB”
3. **Triplet regimens:** any of "CISPLATIN + CAPECITABINE + EPIRUBICIN" or "CAPECITABINE + CISPLATIN + EPIRUBICIN" or "CAPECITABINE + EPIRUBICIN + OXALIPLATIN" or "CISPLATIN + EPIRUBICIN + FLUOROURACIL" or "EPIRUBICIN + FLUOROURACIL + OXALIPLATIN"
4. **Double regimens:** any platinum+5FU combination below: "FLUOROURACIL + OXALIPLATIN" or "CISPLATIN + FLUOROURACIL" or "CAPECITABINE + OXALIPLATIN" or "CAPECITABINE + CISPLATIN" or "CAPECITABINE + CARBOPLATIN" or "CARBOPLATIN + FLUOROURACIL" or "CISPLATIN + TEGAFUR" or "OXALIPLATIN + TEGAFUR" or "CARBOPLATIN + TEGAFUR" or "NEDAPLATIN + FLUOROURACIL" or "NEDAPLATIN + CAPECITABINE" or "NEDAPLATIN + TEGAFUR"
5. **Doublet regimens:** "CARBOPLATIN + PACLITAXEL"

Appendix 11: World Health Organisation Performance Status

Performance status	Definition
0	Able to carry out all normal activity without restriction
1	Restricted in strenuous activity but ambulatory and able to carry out light work
2	Ambulatory and capable of all self-care but unable to carry out any work activities; up and about more than 50% of waking hours
3	Symptomatic and in a chair or in bed for greater than 50% of the day but not bedridden
4	Completely disabled; cannot carry out any self-care; totally confined to bed or chair

Source: Definition in COSD Core (Performance Status (Adult)), COSD v10.0 downloads - NDRS.

Appendix 12: Organisational codes

Trust codes and names for OG surgical specialist centres in England:

Trust code	Trust name
R0D	University Hospitals Dorset NHS Foundation Trust
RA2	Royal Surrey County Hospital NHS Foundation Trust
RA7	University Hospitals Bristol and Weston NHS Foundation Trust
RAE	Bradford Teaching Hospitals NHS Foundation Trust
RAJ	Mid and South Essex NHS Foundation Trust
REM	Liverpool University Hospitals NHS Foundation
RF4	Barking, Havering and Redbridge University Hospitals NHS Trust
RGT	Cambridge University Hospitals NHS Foundation Trust
RHM	University Hospital Southampton NHS Foundation Trust
RHQ	Sheffield Teaching Hospitals NHS Foundation Trust
RHU	Portsmouth Hospitals University NHS Trust
RJ1	Guy's and St Thomas' NHS Foundation Trust
RJE	University Hospitals of North Midlands NHS Trust
RK9	University Hospitals Plymouth NHS Trust
RKB	University Hospitals Coventry and Warwickshire NHS Trust
RM1	Norfolk and Norwich University Hospitals NHS Foundation Trust
RM3	Northern Care Alliance NHS Foundation Trust
RPY	The Royal Marsden NHS Foundation Trust
RR8	Leeds Teaching Hospitals NHS Trust
RRK	University Hospitals Birmingham NHS Foundation Trust
RRV	University College London Hospitals NHS Foundation Trust
RTD	The Newcastle Upon Tyne Hospitals NHS Foundation Trust
RTE	Gloucestershire Hospitals NHS Foundation Trust
RTG	University Hospitals of Derby And Burton NHS Foundation Trust
RTH	Oxford University Hospitals NHS Foundation Trust
RTR	South Tees Hospitals NHS Foundation Trust
RWA	Hull University teaching Hospitals NHS Trust
RWE	University Hospitals of Leicester NHS Trust
RX1	Nottingham University Hospitals NHS Trust
RXN	Lancashire Teaching Hospitals NHS Foundation Trust
RYJ	Imperial College Healthcare NHS Trust
RYR	University Hospitals Sussex NHS Foundation Trust

Organisation codes for Local Health Boards in Wales:

Organisation code	Local Health Board	Specialist surgical centre
7A1	Betsi Cadwaladr University Health Board	YES
7A2	Hywel Dda University Health Board	NO
7A3	Swansea Bay University Health Board	NO
7A4	Cardiff and Vale University Health Board	YES
7A5	Cwm Taf Morgannwg University Health Board	NO
7A6	Aneurin Bevan University Health Board	NO