

**SOUTH EAST SCOTLAND CANCER NETWORK  
PROSPECTIVE CANCER AUDIT**

**OESOPHAGOGASTRIC CANCER 2012  
COMPARATIVE AUDIT REPORT**

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Report Number: SA UGI08/14

# OEOSOPHAGOGASTRIC CANCER 2012 COMPARATIVE AUDIT REPORT

Patients diagnosed 1 January 2012 – 31 December 2012

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## DOCUMENT HISTORY

Version	Circulation	Date	Comments
Version 1	Graeme Couper & Lorna Bruce	05/03/2014	
Version 2	SCAN Upper GI Group	14/03/2014	Minor amendments/ additions following comments from SCAN Group
Version 3	Final report circulated to the Health Board Clinical Governance Groups	03/04/2014	Report number added
Version 4W	Added to SCAN website	July 2014	Checked for disclosure of sensitive/personal information.

## **OESOPHAGOGASTRIC CANCER 2012 COMPARATIVE AUDIT REPORT**

### **Comment by Chair of the SCAN Upper GI Group**

The aim of the 2012 Oesophagogastric cancer audit report was to focus on data which would be required for reporting of the Quality Performance Indicators (QPIs) which were implemented on the 1<sup>st</sup> of January 2013. This has proven to be an extremely worthwhile exercise and has highlighted several areas where either the recording process was unsatisfactory or practices needed to change in order to meet the agreed targets. A huge amount of work has gone into the report and most of this must be credited to the audit facilitators. In these times of austerity any attempt to reduce or remove resource from audit will undoubtedly have a detrimental effect on patient care.

The 2012 report was discussed at the annual Oesophagogastric meeting on the 15<sup>th</sup> of November in Perth and enabled discussion on variances in patient care which exist between regions. It is only with this type of information available that we can ensure that all patients diagnosed in Scotland with oesophageal and gastric cancers receive equal and best care. Within the QPI targets, revisions may be required as while these are idealistic they may not be realistic. In particular the target of 35% of patients to receive curative treatment does not take into account the advanced stage of disease at the time of presentation in the majority of patients. The introduction of the QPIs has undoubtedly focused effort on recording and reporting both treatment and outcomes for these patients and must ultimately lead to an overall improvement in care.

Graeme Couper  
Chair, SCAN Upper GI Group

## ACTION POINTS

### Action Plan from 2010 – Progress

Due to a lack of audit resource in Lothian there was no SCAN regional report produced for 2011, therefore the progress from the action points of the 2010 report will be reviewed below.

Report Table	Possible area for improvement	Proposed action	Progress on actions
E2	Improve case ascertainment	To investigate ways of identifying patients not referred to the MDM for treatment.	Case ascertainment over 90% in 2012 for all boards except D&G.
E5	Improve clinical recording of performance status	Ensure routine recording of performance status at MDT	This has not been reported in 2012 but will be required as part of the QPI dataset from Jan 2013
M2	Ensure equity of access to CNS for Borders patients	Highlight lack of Borders CNS to management	This is no longer being reported, as no national agreement has been reached on a QPI for CNS access
M3	Improve recording of dietetic input	Review process for efficient recording of dietetic input	Fife achieved 85% in 2012 but work is required to achieve the QPI across SCAN in 2013
M4	Ensure equality of access to surgery across SCAN	To review data on variations for surgery across SCAN	This has not been reported for 2012.
ET3.1	30 day mortality in patients having endoscopic treatment	Review details of patient pathways	This is no longer being reported. The QPI reporting will include mortality rates for curative treatment.
S8	Method of reporting on residual disease does not present full picture	Reach consensus on classification of residual disease	This will be addressed by the QPI which has been agreed at national level.

## Action Plan 2012

Listed below are some possible areas for improvement identified through the report with proposed actions outlined against each:

Report Table	Possible area for improvement	Proposed action	Which clinical standard will this meet?
E2	Case ascertainment	To investigate ways of identifying patients not referred to the MDM for treatment.	No standard, but contributes to Quality Assessment of audit data
D2a	Recording of clinical staging.	Ensure routine recording of clinical staging for all patients discussed by the MDT.	QPI 3 – Staging and treatment intent
M3	Recording of dietetic input	Review process for efficient recording of dietetic input	QPI 4 – Nutritional assessment
T1	Treatment with Curative Intent	Review of 35% target. This must be compared with % of patients with stage of disease that is curable.	QPI 10 – Curative treatment rates
S7	Residual disease rates	Discussion about inter-regional reporting to ensure accuracy. R1 rates must be compared to survival.	QPI 9 – Resection margins
P1a	Nodes examined	Target met for Lothian and SCAN overall. Figures for other Boards should be viewed with caution as small numbers are involved.	QPI 7 – Lymph node yield
O5	Neo-adjuvant chemotherapy patients having surgery	Slightly below target in one area, however small numbers are involved. Overall this target is being achieved.	QPI 5 – Appropriate selection of surgical patients

## SUMMARY OF ACHIEVEMENTS AGAINST QPI STANDARDS

	Target	Lothian	Fife	Borders	D&G	SCAN
	%	%	%	%	%	%
<b>M1: Patients discussed at MDT meeting</b>						
Proportion of patients with oesophageal cancer who are discussed at the MDT meeting	n/a	98.4	100.0	72.4	100.0	96.1
Proportion of patients with gastric cancer who are discussed at the MDT meeting	n/a	95.3	96.7	100.0	100.0	96.2
<b>M3: Nutritional assessment (QPI 4)<sup>1</sup></b>						
Patients with oesophageal cancer who are assessed by a dietician (within 4 weeks of diagnosis)	85	67.5	85.9	75.9	60.7	72.8
Patients with gastric cancer who are assessed by a dietician (within 4 weeks of diagnosis)	85	60.0	73.3	88.9	37.5	63.6
<b>D2a: Clinical staging (QPI 3)<sup>2</sup></b>						
Oesophageal cancer patients who have TNM staging and treatment intent recorded at an MDT meeting prior to treatment	95	69.8	94.9	82.8	39.9	74.8
Gastric cancer patients who have TNM staging and treatment intent recorded at an MDT meeting prior to treatment	95	47.1	83.3	77.8	12.5	55.3
<b>T1: Treatment with Curative Intent (QPI 10)</b>						
Patients with oesophageal cancer who undergo treatment with curative intent	35	27.0	31.9	28.0	14.3	27.0
Patients with gastric cancer who undergo treatment with curative intent	35	34.1	24.1	22.2	25.0	30.5
<b>Surgical volumes</b>						
Patients with oesophageal cancer who undergo curative surgical resection	n/a	24.6	26.7	17.2	10.7	22.8
Patients with gastric cancer who undergo curative surgical resection	n/a	34.1	23.3	22.2	25.0	30.3

<sup>1</sup> These results should be viewed with caution as the data used in the analysis does not measure whether a patient was seen within the 4 week target and therefore may not be an accurate representation of achievement against this QPI target.

<sup>2</sup> These results show whether patients had TNM staging recorded at an MDT but do not show whether treatment intent was also recorded and therefore this may not be an accurate representation of expected achievement against this QPI target.

<b>S7: Residual disease (QPI 9)</b>						
(i) Patients with oesophageal cancer who undergo curative resection where the circumferential and longitudinal surgical margins are clear of tumour	70	58.1	63.2	20.0	100.0	58.6
(ii) Patients with gastric cancer who undergo curative resection where the longitudinal surgical margin is clear of tumour	90	79.3	85.7	50.0	100.0	80.0
<b>P1a: Nodes examined (QPI 7)</b>						
Patients with gastric cancer who undergo curative resection where ≥15 lymph nodes are resected and pathologically examined	80	86.2	71.4	50.0	50.0	80.0
<b>O5: Neo-adjuvant chemotherapy patients having surgical resection (QPI 5)</b>						
Patients with oesophageal cancer who receive neo-adjuvant chemotherapy who then go on to have surgical resection	80	95.5	90.9	75.0	n/a	85.0
Patients with gastric cancer who receive neo-adjuvant chemotherapy who then go on to have surgical resection	80	85.7	100.0	100.0	n/a	83.3
<b>S6a: 30/90 day surgical mortality (QPI 6)</b>						
Patients who die within 30 days of surgical resection for oesophageal cancer	<10	0.0	0.0	0.0	0.0	0.0
Patients who die within 90 days of surgical resection for oesophageal cancer	<10	6.5	0.0	20.0	0.0	5.2
Patients who die within 30 days of surgical resection for gastric cancer	<10	0.0	14.3	0.0	0.0	2.5
Patients who die within 90 days of surgical resection for gastric cancer	<10	0.0	14.3	0.0	0.0	2.5
<b>O2: 30/90 day mortality following radiotherapy (curative and palliative)</b>						
Patients with oesophageal cancer who die within 30 days of radiotherapy treatment	n/a	18.2	0.0	0.0	0.0	9.5
Patients with oesophageal cancer who die within 90 days of radiotherapy treatment	n/a	27.3	8.3	0.0	0.0	16.7
Patients with gastric cancer who die within 30 days of radiotherapy treatment	n/a	n/a	n/a	0.0	n/a	0.0
Patients with gastric cancer who die within 90 days of radiotherapy treatment	n/a	n/a	n/a	100.0	n/a	100.0
<b>O4: 30/90 day mortality following chemotherapy (curative and palliative)</b>						
Patients with oesophageal cancer who die within 30 days of chemotherapy treatment	n/a	2.5	0.0	0.0	12.5	2.7
Patients with oesophageal cancer who die within 90 days of chemotherapy treatment	n/a	10.0	5.6	37.5	25.0	13.5
Patients with gastric cancer who die within 30 days of chemotherapy treatment	n/a	0.0	0.0	0.0	0.0	0.0
Patients with gastric cancer who die within 90 days of chemotherapy treatment	n/a	7.1	0.0	50.0	0.0	8.7

Note that targets have been marked as n/a where the data analysis is inconsistent with the QPIs or where there are currently no QPIs relating to that measure e.g. Surgical volumes.

Achieved Failed



## INTRODUCTION AND METHODS

This report presents analysis of data collected on patients newly-diagnosed with primary oesophageal or gastric cancer, between 1 January 2012 and 31 December 2012 in the four health board regions comprising the South East Scotland Cancer Network (SCAN) i.e. Borders, Dumfries and Galloway, Fife and Lothian. Numbers include both patients diagnosed in the NHS and those diagnosed in the private sector who received treatment in the NHS.

### Basis of Analysis

There are currently no nationally agreed standards for the care of Upper GI cancer patients, data collection and analysis is undertaken using the nationally agreed Minimum Core Dataset (published December 2007). It was hoped that the 2012 data could be analysed using the newly developed measures for the Quality Performance Indicators (QPIs)<sup>3</sup> to allow the NHS boards across Scotland to gain an understanding of their current performance in relation to the QPI targets prior to their implementation for all patients diagnosed with an Upper GI cancer from January 2013. However, it was found that this would not be possible due to differences in the datasets and therefore analysis was undertaken using an adapted version of the measurability criteria developed by the West of Scotland Cancer Network (WoSCAN), 14 measures were selected for analysis which matched the QPIs as closely as possible. Data was collected by audit staff in each health board and the collated results for the whole of Scotland were presented by Mr Graeme Couper at the Upper GI National Meeting which was held at Perth Royal Infirmary on 15<sup>th</sup> November 2013.

### Patients included in the Report

All patients diagnosed with primary oesophageal or gastric cancer 1 January – 31 December 2012

SCAN Region	Hospital	Lead Clinician	Audit Support
NHS Borders	Borders General Hospital	Mr Jonathan Fletcher	Alistair Meikle
NHS Dumfries & Galloway	Dumfries & Galloway Royal Infirmary	Mr Charles Auld	Martin Keith
NHS Fife	Queen Margaret Hospital Victoria Hospital	Mr Alasdair MacMillan	Maureen Lamb
SCAN & NHS Lothian	St Johns Hospital at Howden; Royal Infirmary Edinburgh; Western General Hospital,	Mr Graeme Couper	Joanne Douglas
	Edinburgh Cancer Centre	Oncologist: Dr Lucy Wall	

### Datasets and definitions

The dataset currently collected is the Scottish National Core Minimum Data Set, revised and published by ISD Scotland in December 2007 ([www.isdscotland.org](http://www.isdscotland.org)). This revised dataset was developed by ISD Scotland and the Regional Cancer Networks. Further information on the dataset and definitions can be obtained from Joanne Douglas, SCAN Cancer Audit Facilitator, SCAN Audit Office, c/o Dept of Clinical Oncology, Western General Hospital, Edinburgh, EH4 2XU. [Joanne.Douglas@nhslothian.scot.nhs.uk](mailto:Joanne.Douglas@nhslothian.scot.nhs.uk)

<sup>3</sup> The Upper GI Cancer Quality Performance Indicators (QPIs) developed by the Scottish Cancer Taskforce were implemented for all patients diagnosed with a new primary Upper GI Cancer from 1<sup>st</sup> January 2013 and are available at [www.healthcareimprovementscotland.org](http://www.healthcareimprovementscotland.org)

## **Audit Process**

Patients were mainly identified through registration at weekly multidisciplinary meetings, and through checks made against pathology listings and GRO death listings. Data capture was dependent on casenote audit and review of various hospitals electronic records systems. Individual board data was clinically signed off by each lead clinician prior to collation of regional results

## **Data Quality**

### **Estimated Case Ascertainment**

An estimate of case ascertainment (the percentage of the population with oesophageal or gastric cancer recorded in the audit) is made by comparison with the Scottish Cancer Registry five year average data from 2007 to 2011. High levels of case ascertainment provide confidence in the completeness of the audit recording and contribute to the reliability of results presented. Levels greater than 100% may be attributable to an increase in incidence. Allowance should be made when reviewing results where numbers are small and variation may be due to chance.

### **Quality assurance of data**

All hospitals in the region participate in any Quality Assurance programmes provided by the National Services Scotland Information Services Division (ISD). There has been no recent QA of the Upper GI dataset.

### **Process for reviewing and reporting the results**

To ensure the quality of the data and the results presented, the process was as follows:

- Individual health board results were reviewed and signed-off locally.
- Results were presented at the Upper GI National Meeting at Perth Royal Infirmary on 15<sup>th</sup> November 2013.
- The combined report was circulated to members of the SCAN Upper GI Group on 14<sup>th</sup> March 2014 for comments.
- The final report was circulated to the Health Board Clinical Governance Groups for consideration on 3<sup>rd</sup> April 2014.

### **Actions for Improvement**

After final sign off, the process is for the report to be sent to the Clinical Governance groups within the four health boards and to the Regional Cancer Planning Group. Action plans and progress with plans will be highlighted to the groups. The report will be placed on the SCAN website once it has been fully signed-off and checked for risk of disclosure of personal information.

Action points for 2012: as part of clinical sign-off, areas for improvement are highlighted in the [Action Plan 2012](#).

## EPIDEMIOLOGY

### E1: Number of cases recorded in audit based on site of origin of tumour

	Lothian		Fife		Borders		D&G		SCAN	
	n	%	n	%	n	%	n	%	n	%
Oesophageal Cancer	126	59.7	71	71.3	29	76.3	28	77.8	254	66.1
Gastric Cancer	85	40.3	30	28.7	9	23.7	8	22.2	132	33.9
<b>Total</b>	<b>211</b>	<b>100</b>	<b>101</b>	<b>100</b>	<b>38</b>	<b>100</b>	<b>36</b>	<b>100</b>	<b>386</b>	<b>100</b>

### E2: Estimate of case ascertainment

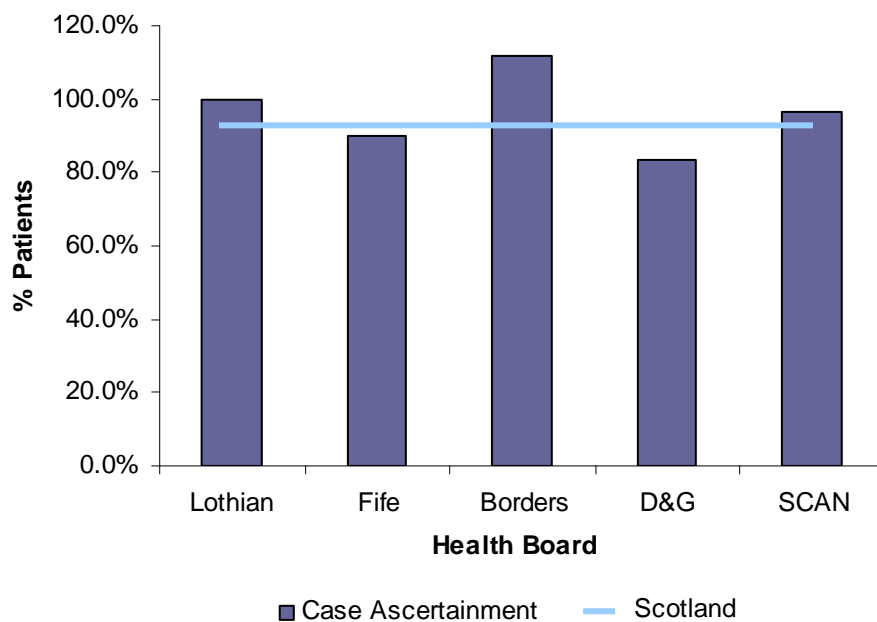
#### Case ascertainment based on health board of residence

	Lothian	Fife	Borders	D&G	SCAN	Scotland
Cases from Audit	211	101	38	36	386	1456
Cancer Registration Cases (2007-2011)	211	112	34	43	400	1563
<b>Case Ascertainment</b>	<b>100.0%</b>	<b>90.2%</b>	<b>111.8%</b>	<b>83.7%</b>	<b>96.5%</b>	<b>92.6%</b>

Note: Case ascertainment has been estimated using a denominator based on the latest (2007-2011) five-year annual average available from the Scottish Cancer Registry.

Death certificate only cases have been excluded. Cases that have been diagnosed in the private sector but received any treatment in NHS hospitals have been included.

### Estimated Case Ascertainment Oesophagogastric Cancer 2012



## MANAGEMENT

### M1: Patients discussed at MDT meeting

#### Oesophageal cancer

	Lothian		Fife		Borders		D&G		SCAN	
	n	%	n	%	n	%	n	%	n	%
<b>Patients discussed at MDT meeting</b>	124	98.4	71	100.0	21	72.4	28	100.0	244	96.1
<b>Patients NOT discussed at MDT meeting</b>	2	1.6	0	0.0	7	24.1	0	0.0	9	3.5
<b>Patients planned to be discussed at MDT</b>	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
<b>Not recorded</b>	0	0.0	0	0.0	1	3.4	0	0.0	1	0.4
<b>Total no. Patients with oesophageal cancer</b>	126	100.0	71	100.0	29	100.0	28	100.0	254	100.0

Lothian: There are valid clinical reasons why 2 patients were not discussed at the MDT meeting.

Borders: There are valid clinical reasons why 8 patients were not discussed at the MDT meeting.

#### Gastric cancer

	Lothian		Fife		Borders		D&G		SCAN	
	n	%	n	%	n	%	n	%	n	%
<b>Patients discussed at MDT meeting</b>	81	95.3	29	96.7	9	100.0	8	100.0	127	96.2
<b>Patients NOT discussed at MDT meeting</b>	4	4.7	1	3.3	0	0.0	0	0.0	5	3.8
<b>Patients planned to be discussed at MDT</b>	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
<b>Not recorded</b>	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
<b>Total no. Patients with gastric cancer</b>	85	100.0	30	100.0	9	100.0	8	100.0	132	100.0

Lothian: There are valid clinical reasons why 4 patients were not discussed at the MDT meeting.

Fife: There are valid clinical reasons why 1 patient was not discussed at the MDT meeting.

### M3: Nutritional assessment

This measure has been included as an indication of performance against the Upper GI Quality Performance Indicators (QPIs). The data items used for this measure are not directly comparable to those used for the measurement of QPI 4<sup>4</sup>, therefore this data can only be used as an estimate of possible performance in relation to this target.

QPI 4 - Nutritional Assessment measures the proportion of patients who were assessed by a dietician within 4 weeks of their diagnosis, it was not possible to report on this exact measure using the current dataset and therefore the information shown below reports on whether a patient was assessed by a dietician but does not specify the time frame in which this assessment took place. The target for QPI 4 has been set at 85%. There is tolerance within this target to allow for situations where a referral to a dietician may not be appropriate for patients who are asymptomatic.

#### Oesophageal cancer

	Lothian		Fife		Borders		D&G		SCAN	
	n	%	n	%	n	%	n	%	n	%
Patients assessed by dietician	85	67.4	61	85.9	22	75.9	17	60.7	185	72.8
Patients not assessed by dietician	36	28.6	10	14.1	7	24.1	5	17.9	58	22.8
Patients planned to be assessed by dietician	2	1.6	0	0.0	0	0.0	0	0.0	2	0.8
Not known	3	2.4	0	0.0	0	0.0	6	21.4	9	3.5
<b>Total No. Patients with oesophageal cancer</b>	<b>126</b>	<b>100.0</b>	<b>71</b>	<b>100.0</b>	<b>29</b>	<b>100.0</b>	<b>28</b>	<b>100.0</b>	<b>254</b>	<b>100.0</b>

Lothian: In the case of 3 patients it was not possible to determine whether or not they were assessed by a dietician.

D&G: Due to the way in which dietician appointments were recorded in 2012 it was not always possible to determine if a patient had seen a dietician.

#### Gastric cancer

	Lothian		Fife		Borders		D&G		SCAN	
	n	%	n	%	n	%	n	%	n	%
Patients assessed by dietician	51	60.0	22	73.3	8	88.9	3	37.5	84	63.6
Patients not assessed by dietician	29	34.1	8	26.7	1	11.1	3	37.5	41	31.1
Patients planned to be assessed by dietician	1	1.2	0	0.0	0	0.0	0	0.0	1	0.8
Not known	4	4.7	0	0.0	0	0.0	2	25.0	6	4.5
<b>Total No. Patients with gastric cancer</b>	<b>85</b>	<b>100.0</b>	<b>30</b>	<b>100.0</b>	<b>9</b>	<b>100.0</b>	<b>8</b>	<b>100.0</b>	<b>132</b>	<b>100.0</b>

Lothian: In the case of 4 patients it was not possible to determine whether or not they were assessed by a dietician.

D&G: Due to the way in which dietician appointments were recorded in 2012 it was not always possible to determine if a patient had seen a dietician.

<sup>4</sup> QPI 4 – Nutritional Assessment: Proportion of patients with oesophageal or gastric cancer who are referred to a dietician within 4 weeks of diagnosis. Scottish Cancer Taskforce, *Upper GI Cancer Clinical Quality Performance Indicators*, Health Improvement Scotland and Scottish Government, Dec 2012, p10.

## DIAGNOSIS AND STAGING

### D2a: Clinical staging

The assessment of completeness of TNM clinical staging data will be assessed as part of QPI 3 – Staging and Treatment Intent. This QPI measures the proportion of patients who have both TNM staging and treatment intent (either radical or palliative) recorded at an MDT meeting prior to the commencement of treatment. The data which was collected for the 2012 audit allows us to assess the completeness of recording of clinical TNM staging but does not include whether treatment intent was also noted. The target for QPI 3 has been set at 95%. There is tolerance within this target to allow for situations where a patient may not be fit enough to undergo investigations.

#### Oesophageal cancer

Stage(s) Recorded	Lothian		Fife		Borders		D&G		SCAN	
	n	%	n	%	n	%	n	%	n	%
T only	1	0.8	0	0.0	0	0.0	0	0.0	1	0.4
N only	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
M only	1	0.8	0	0.0	0	0.0	8	28.6	9	3.5
T and N	10	7.9	1	1.4	0	0.0	0	0.0	11	4.3
T and M	2	1.6	0	0.0	0	0.0	1	3.6	3	1.2
N and M	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
TNM Complete	88	69.8	67	94.4	24	82.8	11	39.2	190	74.8
Not assessable/Not recorded	24	19.0	3	4.2	5	17.2	8	28.6	40	15.7
Total no. Patients with oesophageal cancer	126	100.0	71	100.0	29	100.0	28	100.0	254	100.0

Lothian: Of the 24 patients recorded as 'not assessable/not recorded', 5 did not have imaging completed, 6 did not have staging recorded at the MDT and 13 had staging recorded which was inconsistent with the criteria set out in the measurability document, e.g. Tx.

Fife: The 3 patients recorded as 'not assessable/not recorded' did not have imaging completed for valid clinical reasons.

Borders: The 5 patients who were 'not recorded' did not have staging recorded at the MDT.

D&G: Clinical staging is not always available in the patients' casenotes especially if the patient is for supportive care.

#### Gastric cancer

Stage(s) Recorded	Lothian		Fife		Borders		D&G		SCAN	
	n	%	n	%	n	%	n	%	n	%
T only	3	3.5	0	0.0	0	0.0	0	0.0	3	2.3
N only	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
M only	7	8.2	0	0.0	0	0.0	5	62.5	12	9.1
T and N	4	4.7	1	3.3	0	0.0	0	0.0	5	3.8
T and M	0	0.0	1	3.3	0	0.0	1	12.5	2	1.5
N and M	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
TNM Complete	40	47.1	25	83.3	7	77.8	1	12.5	73	55.3
Not assessable/Not recorded	31	36.5	3	10.0	2	22.2	1	12.5	37	28.0
Total no. Patients with gastric cancer	85	100.0	30	100.0	9	100.0	8	100.0	132	100.0

Lothian: Of the 31 patients recorded as 'not assessable/not recorded', 3 did not have any imaging completed, 11 did not have staging recorded at the MDT and 17 had staging recorded which was inconsistent with the criteria set out in the measurability document, e.g. Tx.

Fife: Of the 3 patients recorded as 'not assessable/not recorded', 1 did not have imaging completed, 1 had incomplete imaging and 1 was not discussed at the MDT.

Borders: The 2 patients who were 'not recorded' did not have any staging recorded at the MDT.

D&G: Clinical staging is not always available in the patients' casenotes especially if the patient is for supportive care.

## TREATMENT

### T1: Treatment with Curative Intent

The proportion of patients receiving treatment with curative intent will be assessed as part of QPI 10. The data collected for 2012 can be directly matched to the QPI requirements with the exception of patients undergoing Endoscopic Mucosal Resection as endoscopic treatments are not included as a curative treatment in the measures used to calculate rates of treatment given with curative intent in the 2012 data.

#### Oesophageal cancer

	Lothian		Fife		Borders		D&G		SCAN		SCOTLAND <sup>5</sup>	
	n	%	n	%	n	%	n	%	n	%	n	%
Patients having treatment with curative intent	34	27.0	22	31.9	7	28.0	4	14.3	67	27.0	246	27.2
Patients NOT having treatment with curative intent	92	73.0	47	68.1	18	72.0	24	85.7	181	73.0	659	72.8
Not recorded	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
<b>Total No. Patients with oesophageal cancer</b>	<b>126</b>	<b>100.0</b>	<b>69</b>	<b>100.0</b>	<b>25</b>	<b>100.0</b>	<b>28</b>	<b>100.0</b>	<b>248</b>	<b>100.0</b>	<b>905</b>	<b>100.0</b>

#### Gastric cancer

	Lothian		Fife		Borders		D&G		SCAN		SCOTLAND <sup>6</sup>	
	n	%	n	%	n	%	n	%	n	%	n	%
Patients having treatment with curative intent	29	34.1	7	24.1	2	22.2	2	25.0	40	30.5	124	25.3
Patients NOT having treatment with curative intent	56	65.9	22	75.9	7	77.8	6	75.0	91	69.5	366	74.7
Not recorded	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
<b>Total No. Patients with gastric cancer</b>	<b>85</b>	<b>100.0</b>	<b>29</b>	<b>100.0</b>	<b>9</b>	<b>100.0</b>	<b>8</b>	<b>100.0</b>	<b>131</b>	<b>100.0</b>	<b>490</b>	<b>100.0</b>

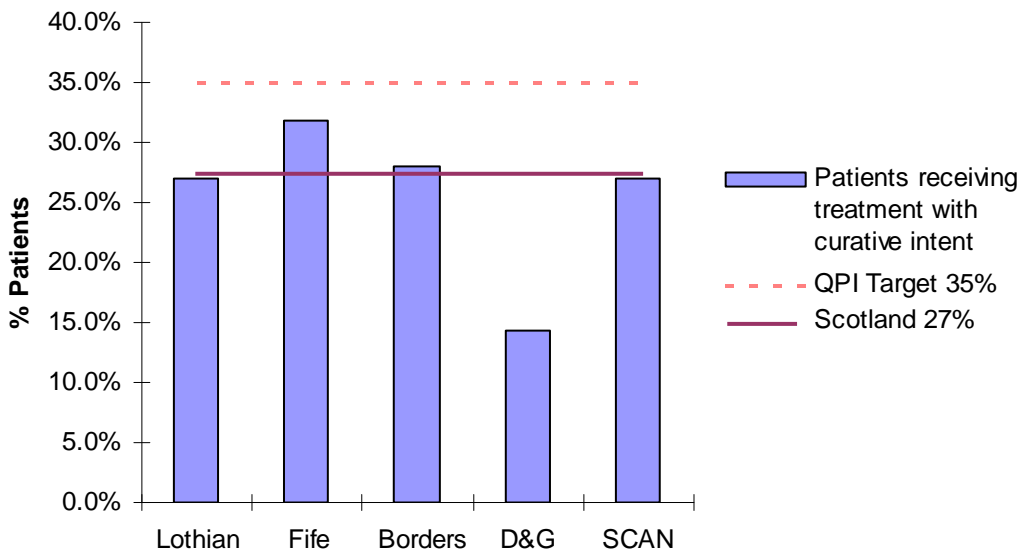
<sup>5</sup> ISD, *Upper Gastro-intestinal Cancer, Patients diagnosed with Oesophageal and Gastric (OG) cancers in 2012* [PowerPoint slides: 18], Upper GI National Meeting, Perth Royal Infirmary, 15 Nov 2013.

<sup>6</sup> Ibid., [PowerPoint slides: 19].

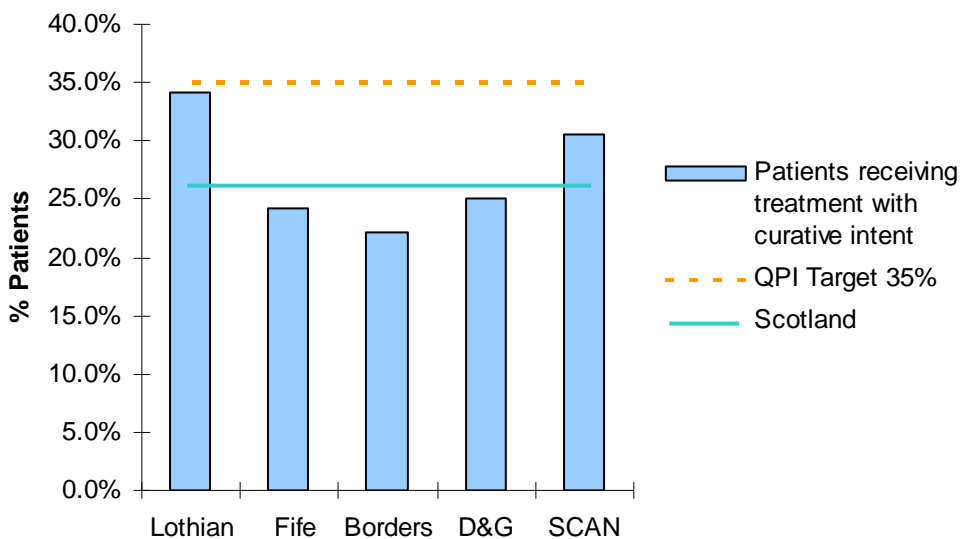
## Assessment of compliance with QPI target

The target for QPI 10 has been set at 35%. There is tolerance within this target to allow for patient choice, fitness and co-morbidities. The charts below show the current performance for each board and the combined SCAN region in relation to this target. The charts also display the % of patients having treatment with curative intent in Scotland as a whole; this has been included in order to highlight the difference between the % of patients in Scotland who are receiving treatment with curative intent for oesophageal and gastric cancer and the target which has been set for this QPI.

**Patients Receiving Treatment with Curative Intent**  
Oesophageal Cancer 2012



**Patients Receiving Treatment with Curative Intent**  
Gastric Cancer 2012





## SURGERY

### Surgical volumes

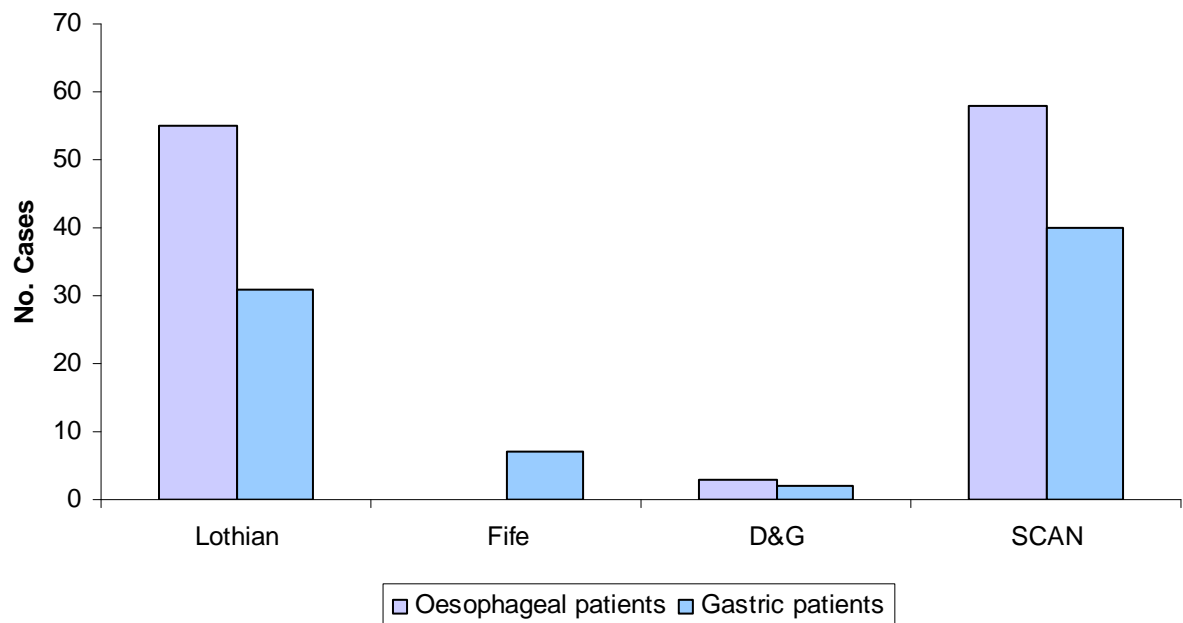
#### Curative surgery (health board of diagnosis)

	Lothian	Fife	Borders	D&G	SCAN
Oesophageal patients	31	19	5	3	58
Gastric patients	29	7	2	2	40
Total number of patients undergoing curative surgery	60	26	7	5	98

Patients from Fife and Borders who are undergoing surgery for oesophageal cancer and patients from Borders who are having surgery for gastric cancer will have their surgery performed in Lothian at the Royal Infirmary of Edinburgh.

The chart below shows the surgical volumes for each health board where curative surgery is performed along with the totals for the SCAN region. There is currently no QPI relating to surgical volumes for Upper GI cancer.

**Volume of Curative Surgery**  
Oesophageal and Gastric Cancer 2012



## S7: Residual disease for complete resections

Residual disease will be measured for QPI 9 – Resection Margins which assesses tumour involvement at the surgical margins. Although the data items collected for the 2012 audit differ from those which will be collected for the measurement of this QPI it is still possible to measure the 2012 data against the QPI target as in both cases the aim is to achieve and R0 resection<sup>7</sup>. The 2012 data analysis uses data items relating to the presence or absence of residual disease following surgical resection whereas the QPI data collection will include the recording of the presence or absence of tumour at individual resection margins.

### Oesophageal cancer

	Lothian		Fife		Borders		D&G		SCAN	
	n	%	n	%	n	%	n	%	n	%
<b>No residual disease</b>	18	58.1	12	63.2	1	20.0	3	100.0	34	58.6
<b>Residual Disease</b>	13	41.9	7	36.8	4	80.0	0	0.0	24	41.4
<b>Total No. Oesophageal patients having curative (complete) resections</b>	31	100.0	19	100.0	5	100.0	3	100.0	58	100.0

### Gastric cancer

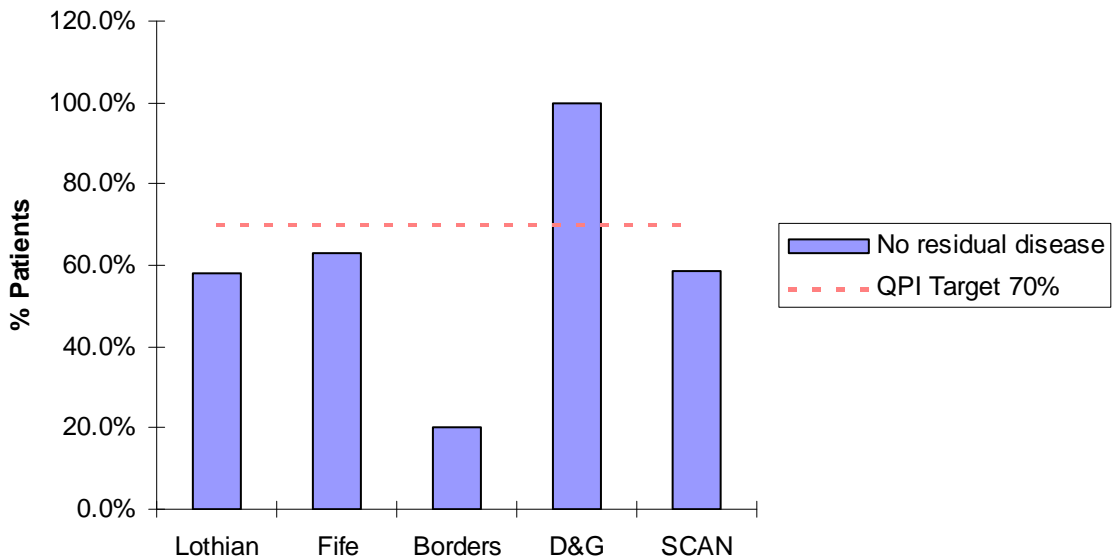
	Lothian		Fife		Borders		D&G		SCAN	
	n	%	n	%	n	%	n	%	n	%
<b>No residual disease</b>	23	79.3	6	85.7	1	50.0	2	100.0	32	80.0
<b>Residual Disease</b>	6	20.7	1	14.3	1	50.0	0	0.0	8	20.0
<b>Total No. Gastric patients having curative (complete) resections</b>	29	100.0	7	100.0	2	100.0	2	100.0	40	100.0

<sup>7</sup> R0 resection refers to the complete removal of all tumour with microscopic examination of resection margins showing no tumour cells

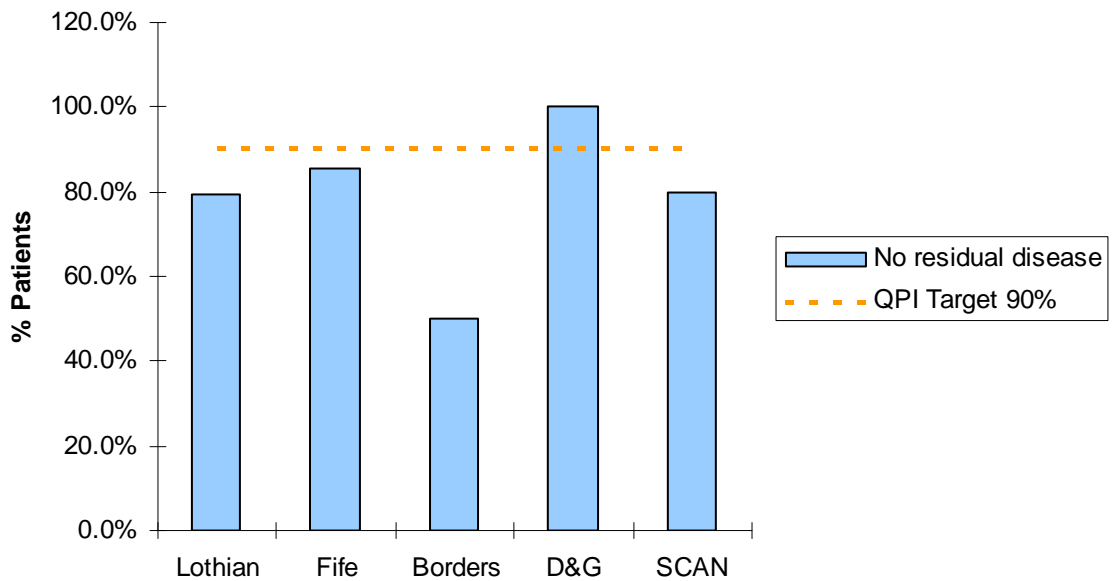
## Assessment of compliance with QPI target

The target for QPI 9 has been set at 70% for oesophageal cancer and 90% for gastric cancer. The difference in the targets reflects the inclusion of the circumferential resection margin for oesophageal cancer which is not clinically relevant for gastric cancer<sup>8</sup>. The charts below show the current performance against this target by health board of diagnosis.

**Residual Disease for Complete Resections**  
Oesophageal Cancer 2012



**Residual Disease for Complete Resections**  
Gastric Cancer 2012



<sup>8</sup> Scottish Cancer Taskforce, *Upper GI Cancer Clinical Quality Performance Indicators*, Health Improvement Scotland and Scottish Government, Dec 2012, p16.

## PATHOLOGY

### P1a: Nodes examined

The number of lymph nodes examined following surgery will be assessed for QPI 7 – Lymph node yield. This QPI looks at the number of lymph nodes which have been examined following a curative gastric resection, which should be  $\geq 15$ .

Oesophageal cancer	Lothian		Fife		Borders		D&G		SCAN	
	n	%	n	%	n	%	n	%	n	%
≥ 15 Nodes examined	22	71.0	15	78.9	4	80.0	3	100.0	44	75.9
< 15 Nodes examined	9	29.0	4	21.1	1	20.0	0	0.0	14	24.1
Not recorded	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Total no. Oesophageal patients having surgery with curative intent	31	100.0	19	100.0	5	100.0	3	100.0	58	100.0

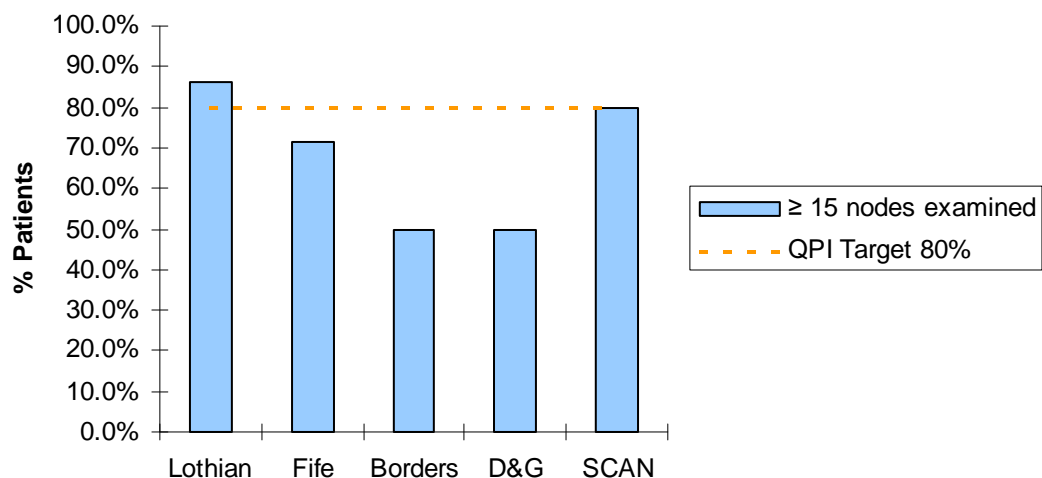
Gastric cancer	Lothian		Fife		Borders		D&G		SCAN	
	n	%	n	%	n	%	n	%	n	%
≥ 15 Nodes examined	25	86.2	5	71.4	1	50.0	1	50.0	32	80.0
< 15 Nodes examined	4	13.8	2	28.6	1	50.0	1	50.0	8	20.0
Not recorded	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Total no. Gastric patients having surgery with curative intent	29	100.0	7	100.0	2	100.0	2	100.0	40	100.0

### Assessment of compliance with QPI target

The target for QPI 7 has been set at 80%. The tolerance within this target is to allow for situations where patients are not considered to be fit enough to undergo extensive lymphadenectomy. The following charts show the results for gastric cancer as the target does not apply to oesophageal cancer resections.

#### Nodes Examined (Curative Resections)

Gastric Cancer 2012



## ONCOLOGY

### O5: Neo-adjuvant chemotherapy patients having surgical resection

The proportion of patients who receive neo-adjuvant chemotherapy followed by surgical resection will be measured in QPI 5 – Appropriate selection of surgical patients. The data collected for 2012 can be directly matched to the QPI requirements and therefore the data shown below is an accurate representation of expected performance against this QPI.

#### Oesophageal cancer

	Lothian		Fife		Borders		D&G		SCAN	
	n	%	n	%	n	%	n	%	n	%
Neo-adjuvant chemotherapy patients who proceed to surgical resection	21	95.5	10	90.9	3	75.0	0	0.0	34	85.0
Neo-adjuvant chemotherapy patients who did NOT proceed to surgical resection	1	4.5	1	9.1	1	25.0	0	0.0	6	15.0
Neo-adjuvant chemotherapy patients who refused surgery	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Not recorded	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
<b>Total No. Patients with oesophageal cancer receiving neo-adjuvant chemotherapy</b>	<b>22</b>	<b>100.0</b>	<b>11</b>	<b>100.0</b>	<b>4</b>	<b>100.0</b>	<b>0</b>	<b>N/A</b>	<b>40</b>	<b>100.0</b>

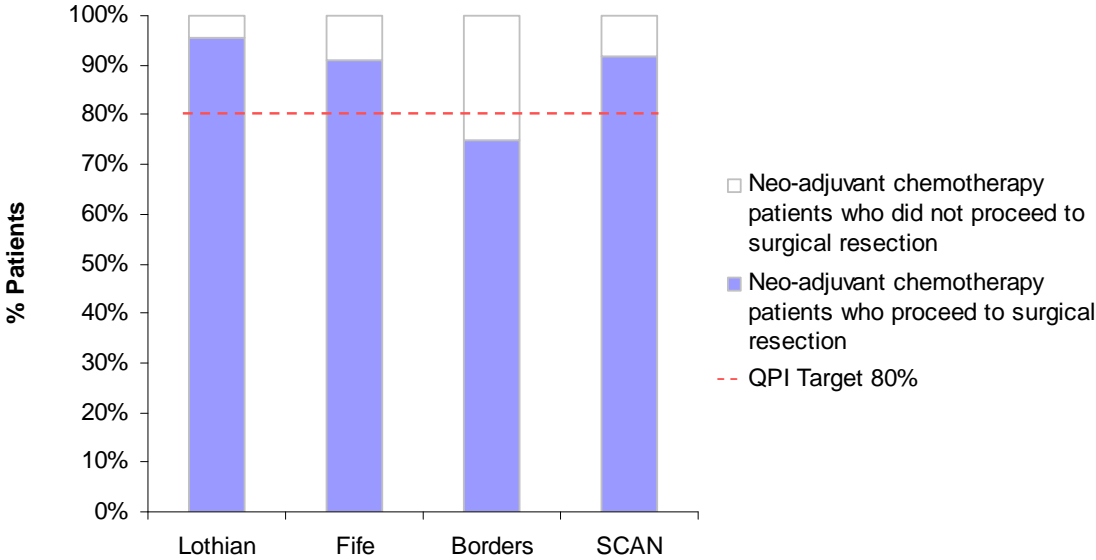
#### Gastric cancer

	Lothian		Fife		Borders		D&G		SCAN	
	n	%	n	%	n	%	n	%	n	%
Neo-adjuvant chemotherapy patients who proceed to surgical resection	6	85.7	3	100.0	1	100.0	0	0.0	10	83.3
Neo-adjuvant chemotherapy patients who did NOT proceed to surgical resection	1	14.3	0	0.0	0	0.0	0	0.0	2	16.7
Neo-adjuvant chemotherapy patients who refused surgery	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Not recorded	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
<b>Total No. Patients with gastric cancer receiving neo-adjuvant chemotherapy</b>	<b>7</b>	<b>100.0</b>	<b>3</b>	<b>100.0</b>	<b>1</b>	<b>100.0</b>	<b>0</b>	<b>N/A</b>	<b>12</b>	<b>100.0</b>

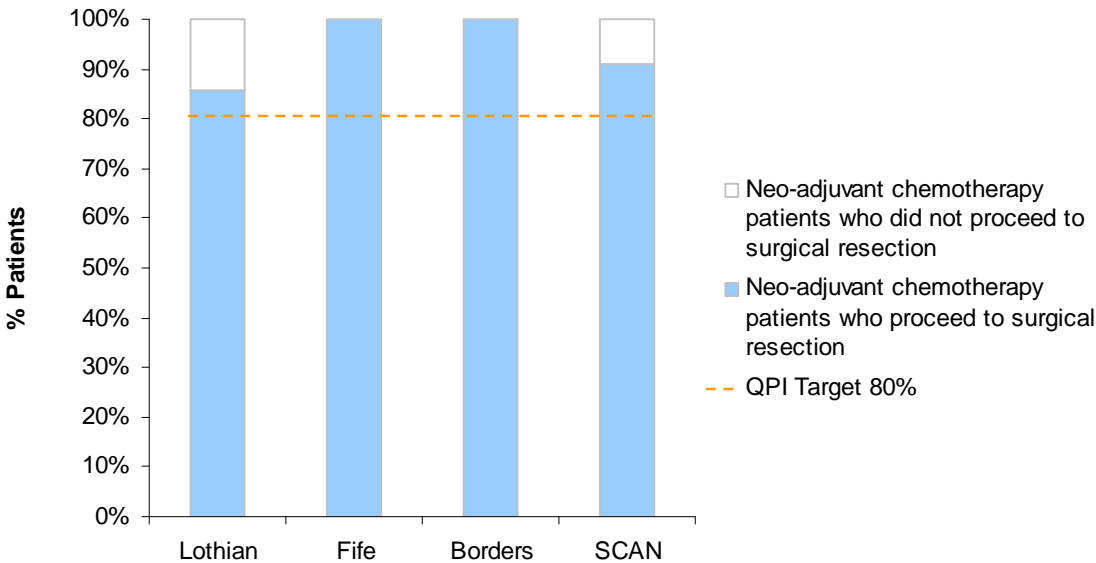
**Assessment of compliance with QPI target**

The target for QPI 10 has been set at 80%, there is tolerance within this target to account for the fact that some patients' disease may progress despite neo-adjuvant chemotherapy and to allow for patient choice. The charts below show the current performance for each board in relation to this target.

**Appropriate Selection of Surgical Patients**  
Oesophageal Cancer 2012



**Appropriate Selection of Surgical Patients**  
Gastric Cancer 2012



## TREATMENT RELATED MORTALITY

### S6a: 30/90 Day surgical mortality

In previous years the Upper GI audit report has assessed only 30 day surgical mortality, as part of the 2012 audit it has been possible to assess both 30 and 90 day mortality which allows for direct comparison with QPI 6 - 30/90 Day Mortality Following Surgery.

#### Assessment of compliance with QPI target

The target for QPI 6 has been set at <10%. The tables below show the current performance for each board relation to this target. The tables also display the surgical mortality figures for Scotland as a whole. The data has been displayed by health board of diagnosis (rather than by hospital of surgery) as the QPIs will be reported by each individual health board.

#### Oesophageal cancer

##### 30 Day Mortality

	Lothian		Fife		Borders		D&G		SCAN		SCOTLAND <sup>9</sup>	
	n	%	n	%	n	%	n	%	n	%	n	%
Patients who died within 30 days of definitive surgery	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.7
Patients alive after 30 days from definitive surgery	31	100.0	19	100.0	5	100.0	3	100.0	58	100.0	143	99.3
Not recorded	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Not applicable	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
<b>Total No. Patients with oesophageal cancer having surgery with curative intent</b>	<b>31</b>	<b>100.0</b>	<b>19</b>	<b>100.0</b>	<b>5</b>	<b>100.0</b>	<b>3</b>	<b>100.0</b>	<b>58</b>	<b>100.0</b>	<b>144</b>	<b>100.0</b>

##### 90 Day Mortality

	Lothian		Fife		Borders		D&G		SCAN		SCOTLAND <sup>10</sup>	
	n	%	n	%	n	%	n	%	n	%	n	%
Patients who died within 90 days of definitive surgery	2	6.5	0	0.0	1	20.0	0	0.0	3	5.2	6	4.2
Patients alive after 90 days from definitive surgery	29	93.5	19	100.0	4	80.0	3	100.0	55	94.8	138	95.8
Not recorded	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Not applicable	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
<b>Total No. Patients with oesophageal cancer having surgery with curative intent</b>	<b>31</b>	<b>100.0</b>	<b>19</b>	<b>100.0</b>	<b>5</b>	<b>100.0</b>	<b>3</b>	<b>100.0</b>	<b>58</b>	<b>100.0</b>	<b>144</b>	<b>100.0</b>

<sup>9</sup> ISD, *Upper Gastro-intestinal Cancer, Patients diagnosed with Oesophageal and Gastric (OG) cancers in 2012* [PowerPoint slides: 21], Upper GI National Meeting, Perth Royal Infirmary, 15 Nov 2013.

<sup>10</sup> Ibid., [PowerPoint slides: 22].

## Gastric cancer

### 30 Day Mortality

	Lothian		Fife		Borders		D&G		SCAN		SCOTLAND <sup>11</sup>	
	n	%	n	%	n	%	n	%	n	%	n	%
Patients who died within 30 days of definitive surgery	0	0.0	1	14.3	0	0.0	0	0.0	1	2.5	5	4.2
Patients alive after 30 days from definitive surgery	29	100.0	6	85.7	2	100.0	2	100.0	39	97.5	114	95.8
Not recorded	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Not applicable	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Total No. Patients with gastric cancer having surgery with curative intent	29	100.0	7	100.0	2	100.0	2	100.0	40	100.0	119	100.0

### 90 Day Mortality

	Lothian		Fife		Borders		D&G		SCAN		SCOTLAND <sup>12</sup>	
	n	%	n	%	n	%	n	%	n	%	n	%
Patients who died within 90 days of definitive surgery	0	0.0	1	14.3	0	0.0	0	0.0	1	2.5	5	5.9
Patients alive after 90 days from definitive surgery	29	100.0	6	85.7	2	100.0	2	100.0	39	97.5	114	94.1
Not recorded	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Not applicable	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Total No. Patients with gastric cancer having surgery with curative intent	29	100.0	7	100.0	2	100.0	2	100.0	40	100.0	119	100.0

<sup>11</sup> Ibid., [PowerPoint slides: 23].

<sup>12</sup> Ibid., [PowerPoint slides: 24].



## O2: 30/90 Day mortality following radiotherapy

In previous years only 30 day mortality figures for patients undergoing Oncological treatments have been reported. As part of the QPIs both 30 and 90 day mortality will be reported. The 2012 data has been collated to show both 30 and 90 day mortality, it has not, however, been divided by treatment modality and treatment intent as it would be for QPI reporting and instead displays 30 and 90 day mortality rates regardless of treatment intent.

### Assessment of compliance with QPI target

As the data has not been collated to show the different treatment modalities or treatment intent the tables below cannot reliably show the outcome in relation to the QPI target.

The target for QPI 11 is <10% for curative treatments and <20% for palliative treatments.

## Oesophageal cancer

### 30 Day Mortality

	Lothian		Fife		Borders		D&G		SCAN		SCOTLAND <sup>13</sup>	
	n	%	n	%	n	%	n	%	n	%	n	%
Patients who died within 30 days of completing radiotherapy treatment	4	18.2	0	0.0	0	0.0	0	0.0	4	9.5	18	7.1
Patients alive after 30 days from completing radiotherapy treatment	18	81.8	12	100.0	5	100.0	3	100.0	38	90.5	236	92.9
Not recorded	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Not Applicable	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Total No. Patients with oesophageal cancer having radiotherapy treatment	22	100.0	12	100.0	5	100.0	3	100.0	42	100.0	254	100.0

### 90 Day Mortality

	Lothian		Fife		Borders		D&G		SCAN		SCOTLAND <sup>14</sup>	
	n	%	n	%	n	%	n	%	n	%	n	%
Patients who died within 90 days of completing radiotherapy treatment	6	27.3	1	8.3	0	0.0	0	0.0	7	16.7	48	18.9
Patients alive after 90 days from completing radiotherapy treatment	16	72.7	11	91.7	5	100.0	3	100.0	35	83.3	206	81.1
Not recorded	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Not Applicable	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Total No. Patients with oesophageal cancer having radiotherapy treatment	22	100.0	12	100.0	5	100.0	3	100.0	42	100.0	254	100.0

<sup>13</sup> Ibid., [PowerPoint slides: 31].

<sup>14</sup> Ibid., [PowerPoint slides: 32].

## Gastric cancer

### 30 Day Mortality

	Lothian		Fife		Borders		D&G		SCAN		SCOTLAND <sup>15</sup>	
	n	%	n	%	n	%	n	%	n	%	n	%
Patients who died within 30 days of completing radiotherapy treatment	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	4.2
Patients alive after 30 days from completing radiotherapy treatment	0	0.0	0	0.0	1	100.0	0	0.0	1	100.0	23	95.8
Not recorded	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Not Applicable	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Total No. Patients with gastric cancer having radiotherapy treatment	0	N/A	0	N/A	1	100.0	0	N/A	1	100.0	24	100.0

### 90 Day Mortality

	Lothian		Fife		Borders		D&G		SCAN		SCOTLAND <sup>16</sup>	
	n	%	n	%	n	%	n	%	n	%	n	%
Patients who died within 90 days of completing radiotherapy treatment	0	0.0	0	0.0	1	100.0	0	0.0	1	100.0	8	33.3
Patients alive after 90 days from completing radiotherapy treatment	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	16	66.7
Not recorded	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Not Applicable	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Total No. Patients with gastric cancer having radiotherapy treatment	0	N/A	0	N/A	1	100.0	0	N/A	1	100.0	24	100.0

<sup>15</sup> Ibid., [PowerPoint slides: 33].

<sup>16</sup> Ibid., [PowerPoint slides: 34].

## O4: 30/90 day mortality following chemotherapy

As with the radiotherapy mortality data, the chemotherapy data has been collated to show both 30 and 90 day mortality, it has not, however, been divided by treatment modality and treatment intent as it would be for QPI reporting and instead displays 30 and 90 day mortality rates regardless of treatment intent.

### Assessment of compliance with QPI target

As the data has not been collated to show the different treatment modalities or treatment intent the tables below cannot reliably show the outcome in relation to the QPI target.

The target for QPI 11 is <10% for curative treatments and <20% for palliative treatments.

## Oesophageal cancer

### 30 Day Mortality

	Lothian		Fife		Borders		D&G		SCAN		SCOTLAND <sup>17</sup>	
	n	%	n	%	n	%	n	%	n	%	n	%
Patients who died within 30 days of completing chemotherapy treatment	1	2.5	0	0.0	0	0.0	1	12.5	2	2.7	20	5.1
Patients alive after 30 days from completing chemotherapy treatment	39	97.5	18	100.0	6	75.0	7	87.5	70	94.6	370	94.9
Not recorded	0	0.0	0	0.0	2	25.0	0	0.0	2	2.7	0	0.0
Not Applicable	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Total No. Patients with oesophageal cancer having chemotherapy treatment	40	100.0	18	100.0	8	100.0	8	100.0	74	100.0	390	100.0

### 90 Day Mortality

	Lothian		Fife		Borders		D&G		SCAN		SCOTLAND <sup>18</sup>	
	n	%	n	%	n	%	n	%	n	%	n	%
Patients who died within 90 days of completing chemotherapy treatment	4	10.0	1	5.6	3	37.5	2	25.0	10	13.5	55	14.1
Patients alive after 90 days from completing chemotherapy treatment	36	90.0	17	94.4	5	62.5	6	75.0	64	86.5	335	85.9
Not recorded	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Not Applicable	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Total No. Patients with oesophageal cancer having chemotherapy treatment	40	100.0	18	100.0	8	100.0	8	100.0	74	100.0	390	100.0

<sup>17</sup> Ibid., [PowerPoint slides: 35].

<sup>18</sup> Ibid., [PowerPoint slides: 36].

## Gastric cancer

### 30 Day Mortality

	Lothian		Fife		Borders		D&G		SCAN		SCOTLAND <sup>19</sup>	
	n	%	n	%	n	%	n	%	n	%	n	%
Patients who died within 30 days of completing chemotherapy treatment	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	13	7.5
Patients alive after 30 days from completing chemotherapy treatment	14	100.0	6	100.0	2	100.0	1	100.0	23	100.0	158	90.8
Not recorded	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	3	1.7
Not Applicable	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
<b>Total No. Patients with gastric cancer having chemotherapy treatment</b>	<b>14</b>	<b>100.0</b>	<b>6</b>	<b>100.0</b>	<b>2</b>	<b>100.0</b>	<b>1</b>	<b>100.0</b>	<b>23</b>	<b>100.0</b>	<b>174</b>	<b>100.0</b>

### 90 Day Mortality

	Lothian		Fife		Borders		D&G		SCAN		SCOTLAND <sup>20</sup>	
	n	%	n	%	n	%	n	%	n	%	n	%
Patients who died within 90 days of completing chemotherapy treatment	1	7.1	0	0.0	1	50.0	0	0.0	2	8.7	39	22.4
Patients alive after 90 days from completing chemotherapy treatment	13	92.9	6	100.0	1	50.0	1	100.0	21	91.3	132	75.9
Not recorded	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	3	1.7
Not Applicable	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
<b>Total No. Patients with gastric cancer having chemotherapy treatment</b>	<b>14</b>	<b>100.0</b>	<b>6</b>	<b>100.0</b>	<b>2</b>	<b>100.0</b>	<b>1</b>	<b>100.0</b>	<b>23</b>	<b>100.0</b>	<b>174</b>	<b>100.0</b>

<sup>19</sup> Ibid., [PowerPoint slides: 37].

<sup>20</sup> Ibid., [PowerPoint slides: 38].

## **Appendix I: Glossary**

### **Audit**

The measuring and evaluation of care against best practice with a view to improving current practice and care delivery.

### **Case ascertainment**

Number of cases recorded as a proportion of those expected using the average of the most recent available five years reported in the Scottish Cancer Registry.

### **Case-mix**

Population of patients with different prognostic factors.

### **Chemotherapy**

The use of drugs that destroy cancer cells, or prevent or slow their growth.

### **Chemoradiotherapy**

Term used to describe chemotherapy and radiotherapy used in combination. This can be adjuvant, neo-adjuvant or concurrent.

### **Circumferential resection margins**

Margins of tissue surrounding a cancer after it has been removed.

### **Co-morbidity**

The condition of having two or more diseases at the same time

### **Computed Tomography (CT) scan**

An X-ray imaging technique used in diagnosis that can reveal many soft tissue structures not shown by conventional radiography. A computer is used to assimilate multiple X-ray images into a two-dimensional cross-sectional image.

### **Cytology/Cytological**

The study of the structure and function of cells under the microscope, and of their abnormalities.

### **Diagnosis**

The process of identifying disease from its signs and symptoms.

### **Dietetic**

The application of principles of nutrition to the selection of food and feeding

### **Gastric**

Having to do with the stomach

### **GRO Records**

General Register Office Records provide official government information on births, marriages and deaths.

### **Histology/Histological**

The study of cells and tissue on the microscopic level.

### **Lymph nodes**

Small bean shaped organs located along the lymphatic system. Nodes filter bacteria or cancer cells that might travel through the lymphatic system.

### **Lymphadenectomy**

A surgical procedure in which the lymph nodes are removed and a sample of tissue is checked under a microscope for signs of cancer

### **Malignant**

Cancerous. Malignant cells can invade and destroy nearby tissue and spread to other parts of the body.

### **MDM**

The Multi-Disciplinary Meeting of the MDT. See **MDT**.

### **MDT: Multi-Disciplinary Team**

A multi-professional group of people from different disciplines (both healthcare and non-healthcare) who work together to provide care for patients with a particular condition. The composition of multi-disciplinary teams will vary according to many factors. These include: the specific condition, the scale of the service being provided; and geographical/ socio-economic factors in the local area.

### **Metastatic disease**

Spread of cancer away from the primary site to somewhere else, e.g. via the bloodstream or the lymphatic system.

**Mortality**

Either (i) the condition of being subject to death; or (ii) the death rate, which reflects the number of deaths per unit of population in any specific region, age group, disease or other classification.

**Neo-adjuvant Therapy**

Treatment given as first step to shrink the tumour prior to the main treatment with the 'main' treatment usually being surgery.

**Oesophagogastric**

Pertaining to the oesophagus and the stomach.

**Oesophagus/Oesophageal**

The muscular membranous tube for the passage of food from the throat to the stomach; the gullet.

**Outcome**

The end result of care and treatment and/or rehabilitation. In other words, the change in health, functional ability, symptoms or situation of a person which can be used to measure the effectiveness of care and treatment, and/or rehabilitation.

**Palliative care**

Palliative care is the active total care of patients and their families by a multi-professional team when the patient's disease is no longer responsive to curative treatment.

**Palliative Radiotherapy**

When it is not possible to cure a cancer, radiotherapy can be given to alleviate symptoms and improve quality of life. Lower doses are given than for curative or radical radiotherapy and generally over a shorter period of time.

**Pathological diagnosis**

The microscopic examination (histological or cytological) of the specimen by a pathologist to determine the presence of malignancy and the classification of the malignant tumour.

**Primary Tumour**

Original site of the cancer. The mass of tumour cells at the original site of abnormal tissue growth.

**Radical Radiotherapy**

Radiotherapy is given with the aim of destroying cancer cells to attain cure.

**Radiotherapy**

The use of radiation, usually X-rays or gamma rays, to kill tumour cells.

**Resection**

Surgical removal of a portion of any part of the body.

**R0 Resection**

Complete removal of all tumour with microscopic examination of resection margins showing no tumour cells

**Staging**

The process of determining whether cancer has spread. Staging involves clinical, surgical, radiological and pathological assessment

**TNM Classification**

TNM classification provides a system for staging the extent of cancer. T refers to the size and position of the primary tumour. N refers to the involvement of the lymph nodes. M refers to the presence or absence of distant metastases.

**Treatment intent**

The reason for which treatment is given, that is, whether the treatment is intended to cure the disease or to alleviate symptoms.

**Tumour**

An abnormal mass of tissue. A tumour may be either benign (not cancerous) or malignant. Also known as a neoplasm.