West of Scotland Cancer Network

Colorectal Cancer
Managed Clinical Network

Audit Report

Colorectal Cancer Quality Performance Indicators

Clinical Audit Data:
01 April 2017 to 31 March 2018

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Executive Summary

Introduction

This is the fifth year of reporting colorectal cancer QPI data therefore results for patients diagnosed in this cohort have been presented alongside the previous years' results, where measurability is unchanged and results are therefore comparable. Following reporting of year 1 data a process of baseline review was undertaken to ensure QPIs were fit for purpose and truly driving quality improvement in patient care. Year 1 data is only presented where comparable with subsequent year's data.

Formal review of the Colorectal Cancer QPIs commenced in 2016, with the revised QPIs published in April 2017. Some QPIs underwent major changes where data is not comparable with previous years. Other QPIs underwent minor changes where data is still comparable. Formal review QPI changes will be detailed in the performance section of each QPI where appropriate. Future reports will continue to compare clinical audit data in successive years to further illustrate trends.

Background

Colorectal cancer services are organised around MDTs serving 2.5 million people[2] in four NHS Boards across the West of Scotland. From this WoS population, each year around 1700 patients are newly diagnosed with colorectal cancer (five year average from Cancer Registry).

During 2017/18 services were configured as six MDTs and their constituent hospital units are as follows:

MDT	Constituent Hospital
Ayrshire (AA)	Crosshouse Hospital, Ayr Hospital
Clyde	Royal Alexandra Hospital, Inverclyde Royal Hospital, Vale of Leven
North Glasgow	Glasgow Royal Infirmary, Stobhill Hospital
South Glasgow	Queen Elizabeth University Hospital, New Victoria Hospital, Gartnavel General Hospital
Forth Valley (FV)	Forth Valley Royal Hospital
Lanarkshire (LAN)	Hairmyres Hospital, Wishaw General Hospital, Monklands Hospital

Colorectal cancer is the third most common cancer in both males and females in Scotland with around 3700 new diagnoses nationally each year[3]. The incidence of colorectal cancer decreased by 14.8% from 2006 to 2016. However, actual numbers are predicted to increase by a quarter over the coming decade due to the aging population[4].

Latest figures from ISD[3] show a considerable improvement in survival for colorectal cancer with 60.4% of patients diagnosed between 2007 and 2011 surviving at least five years after diagnosis, compared to a 38% five year survival for those diagnosed between 1983 and 1987.

Methodology

The clinical audit data presented in this report was collected by clinical audit staff in each NHS Board in accordance with an agreed dataset and definitions. The data was recorded manually and entered locally into the electronic Cancer Audit Support Environment (eCASE): a secure centralised web-based database. Data relating to patients diagnosed between 1st April 2017 and 31st March 2018 was downloaded from eCASE at 2200 hrs on 5th October 2018. Cancer audit is a dynamic process with patient data continually being revised and updated as more information becomes available. This means that apparently comparable reports for the same time period and cancer site may produce slightly different figures if extracted at different times.

Initial results of the analysis were provided to local Boards to check for inaccuracies, inconsistencies or obvious gaps and a subsequent download taken upon which final analysis was carried out. The final data analysis was disseminated for NHS Board verification in line with the regional audit governance process to ensure that the data was an accurate representation of service in each area.

Results

Results for each QPI are shown in detail in the main report and illustrate Board performance against each target and overall WoS performance for each performance indicator. Results are presented graphically and the accompanying table of results also highlights any missing data and the possible effect on any of the measured outcomes. Additional narrative and clinical commentary is also provided in the main report to explain some of the apparent variances in performance.

The summary of results shows the WoS percentage performance against each QPI target and the performance by each NHS Board. As patients within NHS Greater Glasgow and Clyde are managed by different MDTs, the NHSGGC figures are presented to reflect this: North Glasgow; South Glasgow and Clyde.

Colour Key		Symbol Key	
	Above QPI target	>	Indicates increase on previous year's figure
	Below QPI target	<	Indicates decrease from previous year's figure
		=	Indicates no change from previous year
			Indicates no comparable measure from previous year

Region/Centre	
%	
N	D

N: Numerator **D**: Denominator

Quality Performance Indicator (QPI)	Performance by NHS Board of diagnosis/† surgery																	
	QPI target	AA		FV		Lan		North Glasgow		South Glasgow		Clyde		WoS	
† QPIs 4, 5, 7, 8, 9 and 10 are analysed by Board/hospital of surgery.																		
QPI 1(i): Proportion of patients with colon cancer who undergo CT chest, abdomen and pelvis before definitive treatment.	**95%**	**99.0% >**		**98.7% =**		**98.4% <**		**100.0% >**		**97.7% <**		**95.5% <**		**98.2% >**	
		97	98	76	77	126	128	80	80	126	129	84	88	589	600
QPI 1(ii): Proportion of patients with rectal cancer who undergo CT chest, abdomen and pelvis plus MRI pelvis before definitive treatment.	**95%**	**100.0% <**		**88.2% <**		**98.2% <**		**97.2% <**		**95.0% <**		**96.2% <**		**96.0% <**	
		31	31	30	34	54	55	35	36	38	40	50	52	238	248
QPI 2: Proportion of patients with colorectal cancer who undergo surgical resection who have the whole colon visualised by colonoscopy or CT colonography pre-operatively, unless the non visualised segment of the colon is removed.	**95%**	**97.9% >**		**97.8% >**		**93.7% >**		**96.9% >**		**100.0% >**		**96.4% >**		**97.1% >**	
		94	96	87	89	133	142	95	98	143	143	107	111	659	679
QPI 3: Proportion of patients with colorectal cancer who are discussed at MDT meeting before definitive treatment.	**95%**	**98.9% >**		**95.4% <**		**96.2% =**		**97.5% >**		**97.8% >**		**93.2% >**		**96.5% >**	
		183	185	166	174	250	260	154	158	262	268	191	205	1206	1250

Quality Performance Indicator (QPI)	Performance by NHS Board of diagnosis/† surgery													
	QPI target	AA		FV		Lan		North Glasgow		South Glasgow		Clyde		WoS	
† **QPI 4:** Proportion of patients with colorectal cancer who undergo elective surgical resection which involves stoma creation who are seen and have their stoma site marked pre-operatively by a nurse with expertise in stoma care.	**95%**	**97.5% <**		**96.3% >**		**93.2% <**		**100.0% >**		**98.0% <**		**96.4% <**		**96.7% <**	
		39	40	26	27	55	59	46	46	48	49	53	55	267	276
† **QPI 5:** Proportion of patients with colorectal cancer who undergo surgical resection where ≥ 12 lymph nodes are pathologically examined.	**90%**	**96.0% >**		**96.9% >**		**87.6% >**		**91.5% >**		**88.5% <**		**89.3% <**		**91.2% >**	
		119	124	94	97	134	153	107	117	139	157	109	122	702	770
QPI 6: Proportion of patients with locally advanced rectal cancer with threatened or involved circumferential resection margin (CRM) on pre-operative MRI who receive neoadjuvant therapy designed to facilitate a margin-negative resection.	**90%**	**71.4% <**		**85.7% <**		**92.6% <**		**100.0% =**		**100.0% =**		**91.7% <**		**91.5% <**	
		10	14	6	7	25	27	15	15	19	19	22	24	97	106
† **QPI 7(i):** Proportion of patients with rectal cancer who undergo surgical resection in which the circumferential margin is clear of tumour (neoadjuvant short course radiotherapy).	**95%**	**88.9% <**		**85.7% <**		**93.8% >**		**100.0% =**		**100.0% >**		**100.0% >**		**94.4% <**	
		16	18	18	21	15	16	15	15	15	15	23	23	102	108
† **QPI 7(ii):** Proportion of patients with rectal cancer who undergo surgical resection in which the circumferential margin is clear of tumour (neoadjuvant chemotherapy, long course radiotherapy, long course chemoradiotherapy or short course radiotherapy with long course intent).	**85%**	**90.9% >**		**88.9% >**		**90.9% <**		**96.2% <**		**95.0% <**		**95.7% >**		**93.7% >**	
		10	11	8	9	20	22	25	26	19	20	22	23	104	111
† **QPI 8:** Proportion of patients who undergo surgical resection for colorectal cancer who return to theatre to deal with complications related to the index procedure (within 30 days of surgery).	**<10%**	**7.3%**		**6.7%**		**5.4%**		**6.4%**		**5.5%**		**10.1%**		**6.8%**	
		11	150	8	119	10	185	9	141	10	182	16	158	64	935

Quality Performance Indicator (QPI)	Performance by NHS Board of diagnosis/† surgery													
	QPI target	AA		FV		Lan		North Glasgow		South Glasgow		Clyde		WoS	
† **QPI 9(i):** Proportion of patients who undergo colonic anastomosis with anastomotic leak as a post-operative complication.	**< 5%**	**0.0% >**		**3.6% >**		**2.2% >**		**3.4% =**		**1.2% <**		**6.9% <**		**2.7% >**	
		0	62	2	56	2	90	2	58	1	81	4	58	11	405
† **QPI 9(ii):** Proportion of patients who undergo rectal anastamosis with anastomotic leak as a post-operative complication.	**< 10%**	**7.1% <**		**5.7% >**		**12.5% <**		**1.8% <**		**5.9% <**		**8.1% <**		**6.8% <**	
		4	56	2	35	6	48	1	55	4	68	5	62	22	324
† **QPI 10(i):** Proportion of patients with colorectal cancer who die within 30 days of elective surgical resection.	**< 3%**	**2.4% <**		**3.0% <**		**0.7% >**		**0.0% >**		**0.0% >**		**3.1% <**		**1.4% >**	
		3	123	3	100	1	147	0	113	0	147	4	130	11	760
† **QPI 10(i):** Proportion of patients with colorectal cancer who die within 90 days of elective surgical resection.	**< 4%**	**3.3% <**		**4.0% <**		**2.8% >**		**0.9% >**		**2.1% >**		**3.3% <**		**2.7% >**	
		4	120	4	100	4	144	1	107	3	142	4	123	20	736
† **QPI 10(ii):** Proportion of patients with colorectal cancer who die within 30 days of emergency surgical resection.	**< 15%**	**3.6% >**		**5.3% >**		**2.6% >**		**9.1% >**		**6.9% <**		**11.1% >**		**6.1% >**	
		1	28	1	19	1	38	2	22	2	29	3	27	10	163
† **QPI 10(ii):** Proportion of patients with colorectal cancer who die within 90 days of emergency surgical resection.	**< 20%**	**3.6% >**		**5.3% >**		**5.3% <**		**9.1% >**		**10.3% <**		**14.8% >**		**8.0% >**	
		1	28	1	19	2	38	2	22	3	29	4	27	13	163
QPI 11(i): Proportion of patients between 50 and 74 years of age at diagnosis with Dukes C colorectal cancer who receive adjuvant chemotherapy.	**70%**	**75.0% <**		**83.3% >**		**86.8% >**		**91.3% <**		**88.5% <**		**75.0% <**		**83.7% <**	
		21	28	10	12	33	38	21	23	23	26	15	20	123	147
***QPI 11(ii):** Proportion of patients between 50 and 74 years of age at diagnosis with high risk Dukes B colorectal cancer who receive adjuvant chemotherapy.	**50%**	**33.3% <**		**50.0% <**		**47.1% <**		**55.6% <**		**77.8% >**		**73.3% >**		**56.9% <**	
		3	9	3	6	8	17	5	9	7	9	11	15	37	65

Quality Performance Indicator (QPI)	Performance by NHS Board of diagnosis/† surgery													
	QPI target	AA		FV		Lan		North Glasgow		South Glasgow		Clyde		WoS	
QPI 12a: Proportion of patients with colorectal cancer who die within 30 days of neoadjuvant chemoradiotherapy treatment with curative intent.	**< 1%**	**0.0% >**		**0.0% =**		**0.0% >**		**0.0% >**		**0.0% =**		**0.0% =**		**0.0% >**	
		0	13	0	13	0	35	0	19	0	24	0	28	0	132
QPI 12a: Proportion of patients with colorectal cancer who die within 90 days of neoadjuvant chemoradiotherapy treatment with curative intent.	**< 1%**	**0.0% >**		**0.0% >**		**0.0% >**		**0.0% >**		**0.0% =**		**0.0% =**		**0.0% >**	
		0	11	0	13	0	35	0	18	0	24	0	28	0	129
QPI 12b: Proportion of patients with colorectal cancer who die within 30 days of adjuvant chemotherapy treatment with curative intent.	**< 1%**	**0.0% =**		**0.0% =**		**1.4% <**		**0.0% =**		**1.9% <**		**2.8% <**		**1.2% <**	
		0	33	0	19	1	69	0	36	1	53	1	36	3	246
QPI 12b: Proportion of patients with colorectal cancer who die within 90 days of adjuvant chemotherapy treatment with curative intent.	**< 1%**	**0.0% >**		**0.0% =**		**1.6% >**		**0.0% =**		**2.1% <**		**3.2% <**		**1.4% <**	
		0	30	0	17	1	61	0	31	1	47	1	31	3	217
***QPI 12c:** Proportion of patients with colorectal cancer who die within 30 days of radiotherapy treatment with curative intent.	**< 1%**	**-**		**-**		**-**		**0.0% =**		**-**		**0.0% =**		**0.0% =**	
		-	-	-	-	-	-	0	7	-	-	0	7	0	26
***QPI 12c:** Proportion of patients with colorectal cancer who die within 90 days of radiotherapy treatment with curative intent.	**< 1%**	**-**		**-**		**-**		**14.3% <**		**-**		**14.3% <**		**7.7% <**	
		-	-	-	-	-	-	1	7	-	-	1	7	2	26
***QPI 12d:** Proportion of patients with colorectal cancer who die within 30 days of palliative chemotherapy.	**<10%**	**0.0% <**		**30.8% <**		**10.7% >**		**8.3% >**		**11.5% >**		**0.0% >**		**8.6% >**	
		0	30	4	13	3	28	1	12	3	26	0	19	11	128

* Small numbers mean that comparison and conclusions should be made with caution.

(-) dash denotes a denominator of less than 5. (*) asterisk denotes a denominator of zero.

Figures have been removed to ensure confidentiality.

Conclusions:

The Colorectal Cancer MCN is encouraged by the results presented in this report which demonstrate that patients with colorectal cancer in the WoS continue to receive a consistently high standard of care.

The results illustrate that some of the QPI targets set have been challenging for NHS Boards to achieve and there remains room for further service improvement around a number of areas. It is however encouraging that targets relating to circumferential margins in rectal cancer, reoperation rates and MDT discussion were met by the Boards in Year 5.

For QPI 9, local longitudinal analysis in NHS Lanarkshire identified higher rates of anastomotic leakage when surgery was performed by a locum consultant. As a result, this has led to a change of practice within the Board. The findings in NHS Lanarkshire highlight the benefit of high quality data and a robust quality assurance process. The QPI process helps to identify these issues and support service improvement. Rates of anastomotic dehiscence within the Clyde sector will be closely monitored by the Board and the MCN over the next audit reporting period.

Where QPI targets were not met NHS Boards have provided detailed commentary. In the main these indicate valid clinical reasons or that, in some cases, patient fitness and co-morbidities have influenced patient management.

Action required as a consequence of this assessment of performance against the agreed criteria is noted below.

Action Required:

QPI 4: Stoma Care

- NHS Lanarkshire to ensure that all patients with the potential to require a stoma are referred for pre-operative stoma care

QPI 9: Anastomotic Dehiscence

- MCN to work with NHS Greater Glasgow and Clyde to monitor performance in the Clyde sector over the coming audit period.

NHS Boards are asked to develop local Action/Improvement Plans in response to the findings presented in the report. A summary of actions for each NHS Board has been included within the Action Plan templates in Appendix 1.

1. Introduction

This report presents an assessment of performance of West of Scotland (WoS) Colorectal Cancer services relating to patients diagnosed in the twelve months between 1 April 2017 and 31 March 2018. Results are measured against the Colorectal Cancer Quality Performance Indicators (QPIs) which were implemented for patients diagnosed on or after 01 April 2013.

The National Cancer Quality Steering Group (NCQSG) completed a programme of work to develop national QPIs for all cancer types to enable national comparative reporting and drive continuous improvement for patients in 2014. In collaboration with the three Regional Cancer Networks and Information Services Division (ISD)the Colorectal Cancer QPIs were published by Healthcare Improvement Scotland (HIS) in December 2012[1]. Data definitions and measurability criteria to accompany the colorectal cancer QPIs are available from the ISD website[2].

This is the fifth year of reporting colorectal cancer QPI data therefore results for patients diagnosed in this cohort have been presented alongside the previous years' results, where measurability is unchanged and results are therefore comparable. Following reporting of year 1 data a process of baseline review was undertaken to ensure QPIs were fit for purpose and truly driving quality improvement in patient care. Year 1 data is only presented where comparable with subsequent year's data.

Formal review of the Colorectal Cancer QPIs commenced in 2016, with the revised QPIs published in April 2017. Some QPIs underwent major changes where data is not comparable with previous years. Other QPIs underwent minor changes where data is still comparable. Formal review QPI changes will be detailed in the performance section of each QPI where appropriate. Future reports will continue to compare clinical audit data in successive years to further illustrate trends.

2. Background

Colorectal cancer services are organised around MDTs serving 2.5 million people[2] in four NHS Boards across the West of Scotland. From this WoS population, each year around 1700 patients are newly diagnosed with colorectal cancer (five year average from Cancer Registry).

During 2017/18 services were configured as six MDTs and their constituent hospital units are as follows:

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2.1 National Context

Colorectal cancer is the third most common cancer in both males and females in Scotland with around 3700 new diagnoses nationally each year[4]. The incidence of colorectal cancer decreased by 14.8% from 2006 to 2016. However, actual numbers are predicted to increase by a quarter over the coming decade due to the aging population[5].

The lifetime risk of developing colorectal cancer is currently estimated at 1 in 16 for males and 1 in 20 for females. Modifiable risk factors include diet, physical exercise and smoking[6].

Overall cancer mortality rates have decreased by 12% in males and 7% in females in Scotland in the last 10 years. In men, the largest falls in mortality among the top 10 causes of death from cancer have been in stomach, lung and colorectal cancer (33%, 24% and 15% respectively)[6]. In women, the largest falls in mortality among the top 10 causes of death from cancer have been breast, ovarian and oesophageal cancer (17%, 16% and 15% respectively)[6].

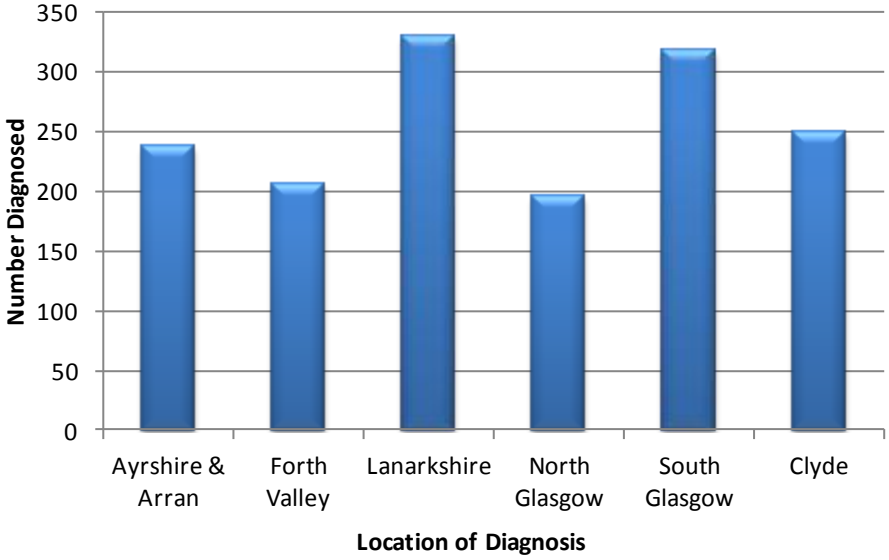
Latest figures from ISD[4] show a considerable improvement in survival for colorectal cancer with 60.4% of patients diagnosed between 2007 and 2011 surviving at least five years after diagnosis, compared to a 38% five year survival for those diagnosed between 1983 and 1987.

Early diagnosis of colorectal cancer is very important in maximising options for treatment and increasing the likelihood of cure[7].The Scottish Bowel Screening Programme was introduced to increase early detection of cancer and therefore lead to further improvements in survival[8].The programme is designed to facilitate the early detection and cure of asymptomatic cancers as well as reduce the overall incidence of colorectal cancer through the removal of precancerous polyps.

2.2 West of Scotland Context

A total of 1533 cases of colorectal cancer were diagnosed and identified by audit in the WoS between 01 April 2017 and 31 March 2018. The number of patients diagnosed within each location is presented in Figure 1. As the largest WoS Board, 49.7% of all new cases of colorectal cancer were diagnosed in NHS Greater Glasgow and Clyde (NHSGGC) which is in line with population estimates for this board.

Figure 1: Number of patients diagnosed with colorectal cancer by unit of diagnosis, April 2017 to March 2018



Location of diagnosis	Total Number Diagnosed
Ayrshire & Arran	237
Forth Valley	205
Lanarkshire	329
North Glasgow	196
South Glasgow	317
Clyde	249
WoS	**1533**

3. Methodology

The clinical audit data presented in this report was collected by clinical audit staff in each NHS Board in accordance with an agreed dataset and definitions. The data was recorded manually and entered locally into the electronic Cancer Audit Support Environment (eCASE): a secure centralised web-based database. Data relating to patients diagnosed between 1st April 2017 and 31st March 2018 was downloaded from eCASE at 2200 hrs on 5th October 2018. Cancer audit is a dynamic process with patient data continually being revised and updated as more information becomes available. This means that apparently comparable reports for the same time period and cancer site may produce slightly different figures if extracted at different times.

Initial results of the analysis were provided to local Boards to check for inaccuracies, inconsistencies or obvious gaps and a subsequent download taken upon which final analysis was carried out. The final data analysis was disseminated for NHS Board verification in line with the regional audit governance process to ensure that the data was an accurate representation of service in each area.

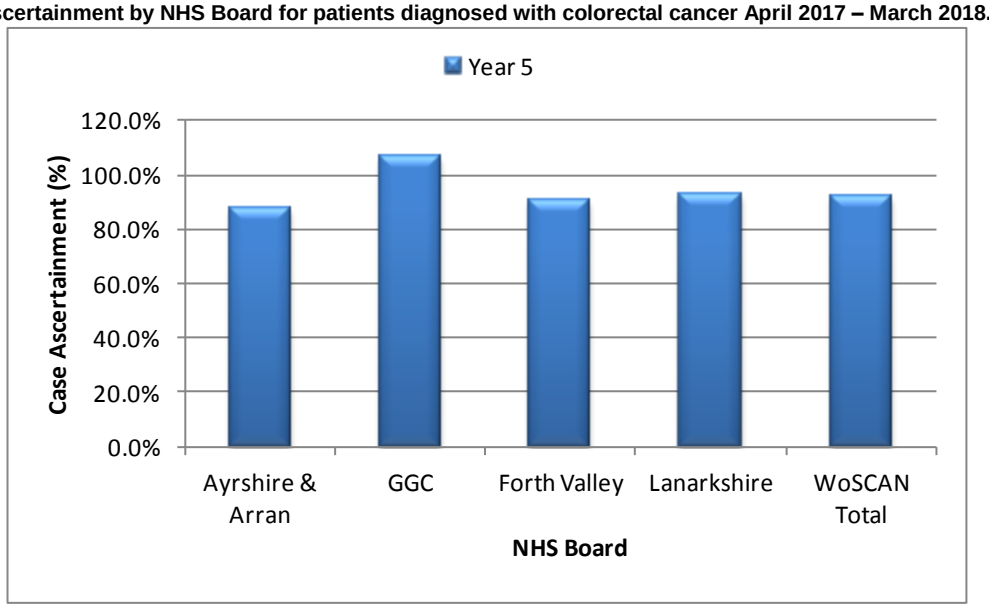
4. Results and Action Required

4.1 Data Quality

Case ascertainment is a measure of data quality and is calculated by comparing the number of new patients captured by the cancer audit with a five year average of the numbers recorded on the cancer registry. A five year average is used for registry data as the information is not available until sometime after the year under examination. This is due to data collection and verification processes. As the number of cases will vary each year, it is possible for case ascertainment to be over or under 100%. Therefore, the figures presented should be seen as an indication only.

Overall case ascertainment for WoS is high at 92.2% which indicates excellent data capture through audit. Case ascertainment figures however are provided for guidance and are not an exact measurement as it is not possible to compare directly with the same cohort. Case ascertainment for each Board across WoS is illustrated in Figure 2.

Figure 2: Case Ascertainment by NHS Board for patients diagnosed with colorectal cancer April 2017 – March 2018.



NHS Board of Audit	(01/04/2017-31/03/2018) Audit	Cancer Reg 2012-16*	Case Ascertainment
Ayrshire & Arran	237	272	87.1%
GGC	762	845	90.2%
Forth Valley	205	192	106.8%
Lanarkshire	329	354	92.9%
WoSCAN Total	**1533**	**1663**	**92.2%**

4.2 Performance against Quality Performance Indicators (QPIs)

The following section includes a detailed summary of each of the thirteen colorectal cancer QPIs outlining the variation at individual unit level. Graphs and charts have been provided where this aids interpretation and, where appropriate, numbers have also been included to provide context.

Where performance is shown to fall below the target, commentary from the relevant NHS Board is included to provide context to the variation. Specific NHS Board actions have been identified to address issues highlighted through the data analysis

QPI 1: Radiological Diagnosis and Staging

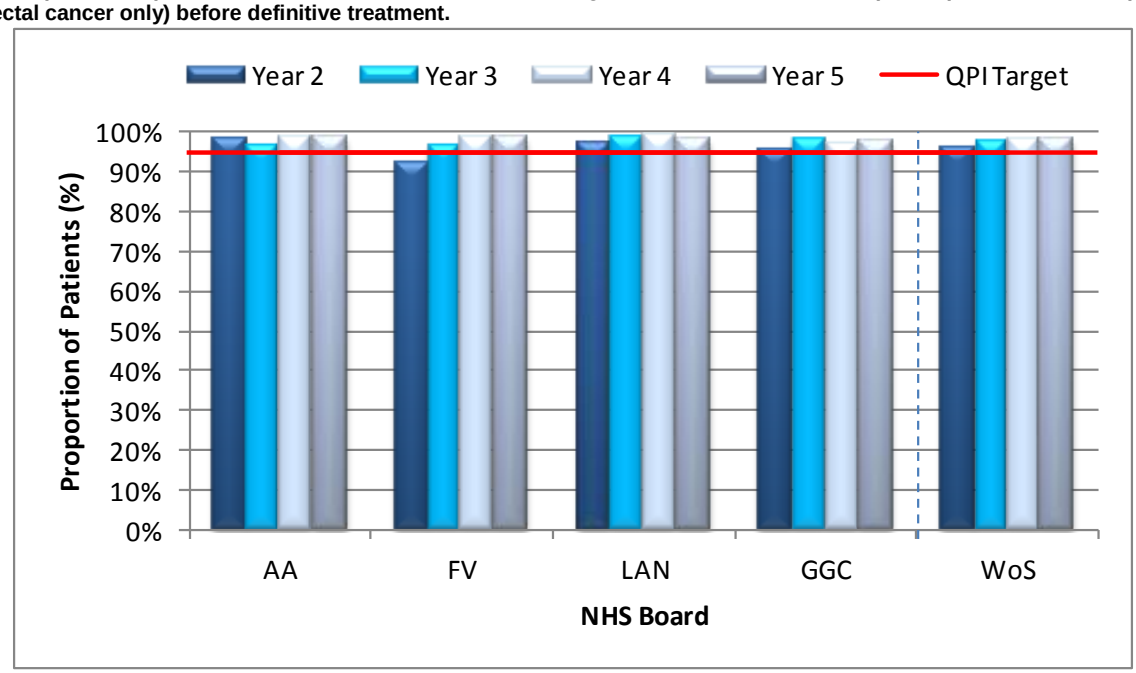
Accurate staging is necessary to detect metastatic disease, guide treatment and avoid inappropriate surgery. All patients with colorectal cancer should be staged by contrast enhanced CT of the chest, abdomen and pelvis, to estimate the stage of disease, unless the use of intravenous iodinated contrast is contraindicated. MRI of the rectum is recommended for local staging of patients with rectal cancer.

QPI 1 is split into 2 sub-groups the first looks at all patients with colon cancer who undergo CT chest abdomen and pelvis before definitive treatment.

The second part of the QPI looks at those patients diagnosed with rectal cancer undergoing definitive treatment (chemoradiotherapy or surgical resection) who undergo CT of the chest abdomen and pelvis and MRI pelvis prior to their definitive treatment.

QPI Title:	Patients with colorectal cancer should be evaluated with appropriate imaging to detect extent of disease and guide treatment decision making.
Numerator:	(i) Number of patients with colon cancer who undergo CT chest, abdomen and pelvis before definitive treatment. (ii) All patients with rectal cancer undergoing definitive treatment who undergo CT chest, abdomen and pelvis and MRI pelvis before definitive treatment.
Denominator:	(i) All patients with colon cancer. (ii) All patients with rectal cancer undergoing definitive treatment (chemoradiotherapy or surgical resection).
Exclusions:	(i) Patients who refuse investigation, patients who undergo emergency surgery, patients undergoing supportive care only, patients who undergo palliative treatment (chemotherapy, radiotherapy or surgery) and patients who died before first treatment. (ii) Patients who refuse investigation, patients who undergo emergency surgery, patients with a contraindication to MRI, patients who undergo Transanal Endoscopic Microsurgery (TEM), patients who undergo Transanal Resection of Tumour (TART), patients who undergo palliative treatment (chemotherapy, radiotherapy or surgery) and patients who died before treatment.
Target:	95%

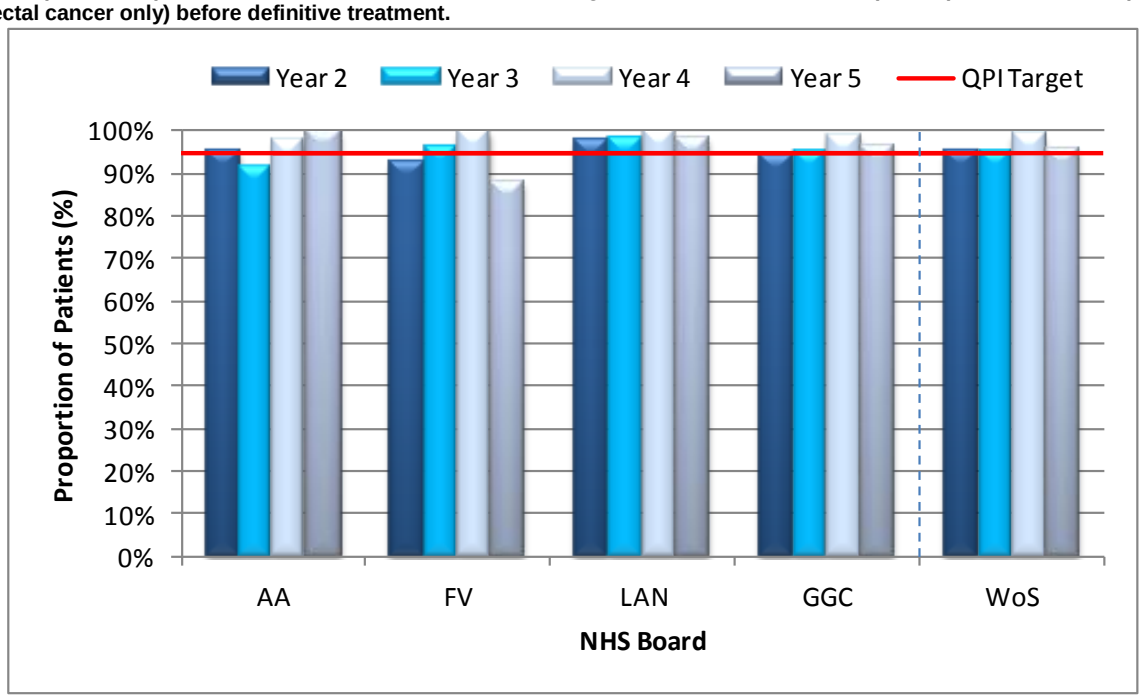
Figure 3: Proportion of patients with colorectal cancer who undergo CT chest, abdomen and pelvis (colorectal cancer) plus MRI pelvis (rectal cancer only) before definitive treatment.



QPI 1(i)	Performance (%)	Numerator	Denominator	NR numerator	NR exclusions	NR denominator
AA	99.0%	97	98	0	0	0
FV	98.7%	76	77	0	0	0
Lan	98.4%	126	128	0	2	0
NG	100.0%	80	80	0	0	0
SG	97.7%	126	129	0	0	0
Clyde	95.5%	84	88	0	2	0
GGC	97.6%	290	297	0	2	0
WoS	98.2%	589	600	0	4	0

All Boards achieved the 95% target. The overall performance for the WoS was 98.2%. The target has been met by the WoS as a region for all years shown. The performance has been consistent over that time.

Figure 4: Proportion of patients with colorectal cancer who undergo CT chest, abdomen and pelvis (colorectal cancer) plus MRI pelvis (rectal cancer only) before definitive treatment.



QPI 1(ii)	Performance (%)	Numerator	Denominator	NR numerator	NR exclusions	NR denominator
AA	100.0%	31	31	0	2	0
FV	88.2%	30	34	0	0	0
Lan	98.2%	54	55	0	4	2
NG	97.2%	35	36	0	0	0
SG	95.0%	38	40	0	0	0
Clyde	96.2%	50	52	0	0	0
GGC	96.1%	123	128	0	0	0
WoS	96.0%	238	248	0	6	2

NHS Forth Valley was short of the 95% target with 88.2%. All other Boards met the target. The performance for the WoS met the target with 96.0%.

NHS Forth Valley has reviewed cases not meeting the target. They stated that a small number of patients did not receive an MRI as initial investigations suggested the cancer was located in the colon and not the rectum. Two patients did not have an MRI.

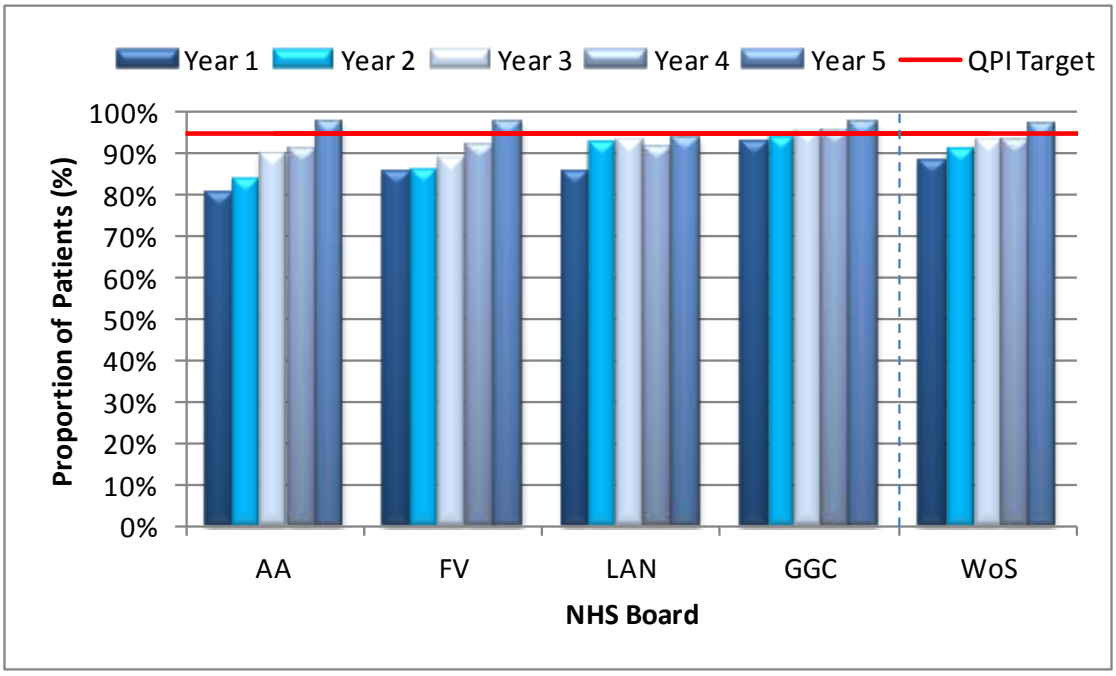
QPI 2: Pre-Operative Imaging of the Colon

Where colorectal cancer is suspected clinically, the whole of the large bowel should be examined to confirm a diagnosis of cancer. CT colonography can be used as a sensitive and safe alternative to colonoscopy.

QPI Title:	Patients with colorectal cancer undergoing elective surgical resection should have the whole colon visualised pre-operatively.
Numerator:	Number of patients who undergo elective surgical resection for colorectal cancer who have the whole colon visualised by colonoscopy or CT colonography before surgery, unless the non visualised segment of the colon is to be removed..
Denominator:	All patients who undergo elective surgical resection for colorectal cancer.
Exclusions:	Patients who undergo palliative surgery. Patients who have incomplete bowel imaging due to obstructing tumour (**added as exclusion at formal review; this will only take effect from 01/04//2017 for the next reporting period**).
Target:	95%

At formal review it was agreed to add exclusions for patients undergoing palliative surgery and those with an incomplete scope due to obstructing or structuring tumours.

Figure 5: Proportion of patients with colorectal cancer who undergo surgical resection who have the whole colon visualised by colonoscopy or CT colonography pre-operatively, unless the non-visualised segment of the colon is to be removed.



QPI 2	Performance (%)	Numerator	Denominator	NR numerator	NR exclusions	NR denominator
AA	97.9%	94	96	0	0	2
FV	97.8%	87	89	0	0	0
Lan	93.7%	133	142	0	0	6
NG	96.9%	95	98	0	0	0
SG	100.0%	143	143	0	0	0
Clyde	96.4%	107	111	0	0	0
GGC	98.0%	345	352	0	0	0
WoS	97.1%	659	679	0	0	8

NHS Ayrshire and Arran, NHS Forth Valley and NHS Greater Glasgow and Clyde met the 95% target; NHS Lanarkshire was marginally short of the target at 93.7%. The overall performance for the WoS was 97.1%.

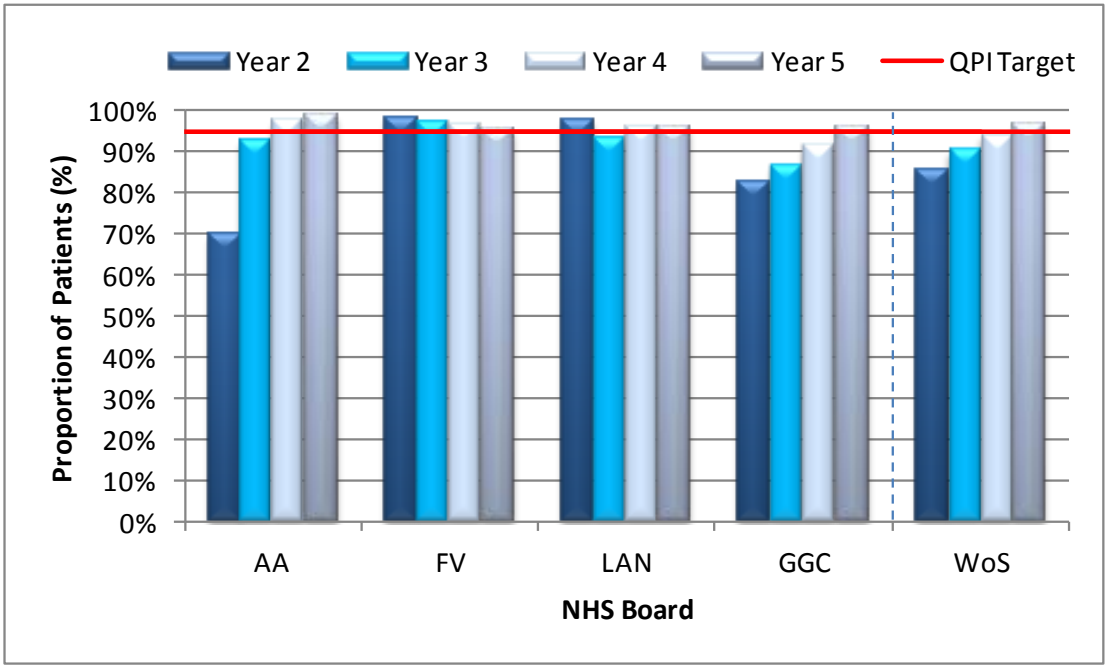
NHS Lanarkshire has reviewed the cases not meeting the target and provided feedback. Reasons for patients not having the whole colon visualised included discomfort, poor bowel preparation and incidental finding of tumour. A small number of patients had imaging performed prior to surgery with flexible sigmoidoscopy or CT only. On review two cases were found to have had incomplete scopes due to an obstructing tumour, however this was not detailed in the scope report. All cases were managed in a clinically appropriate manner. The QPI will continue to be monitored through local reporting.

QPI 3: Multi-Disciplinary Team (MDT) Meeting

Evidence suggests that patients with cancer managed by a multi-disciplinary team have a better outcome. There is also evidence that the multidisciplinary management of patients increases their overall satisfaction with their care. QPI 3 states that 95% of patients should be discussed at the MDT prior to definitive treatment. The tolerance accounts for situations where patients require treatment urgently

QPI Title:	Patients with newly diagnosed colorectal cancer should be discussed by a multi-disciplinary team prior to definitive treatment.
Numerator:	Number of patients with colorectal cancer discussed at the MDT before definitive treatment.
Denominator:	All patients with colorectal cancer.
Exclusions:	Patients who died before first treatment, patients undergoing emergency surgery and patients undergoing treatment with endoscopic polypectomy only.
Target:	95%

Figure 6: Proportion of patients with colorectal cancer who are discussed at MDT meeting before definitive treatment.



QPI 3	Performance (%)	Numerator	Denominator	NR numerator	NR exclusions	NR denominator
AA	98.9%	183	185	0	3	0
FV	95.4%	166	174	0	0	0
Lan	96.2%	250	260	0	6	0
NG	97.5%	154	158	0	0	0
SG	97.8%	262	268	0	0	0
Clyde	93.2%	191	205	3	3	0
GGC	96.2%	607	631	3	3	0
WoS	96.5%	1206	1250	3	12	0

All Boards met the 95% target, although the Clyde sector was slightly below target at 93.2%. The overall WoS performance met the target with 96.5%.

NHS Greater Glasgow and Clyde have reviewed cases not meeting the target for the Clyde sector. The timing of the MDT has been changed to allow for all patients to be discussed and there has been an improvement in performance over previous years.

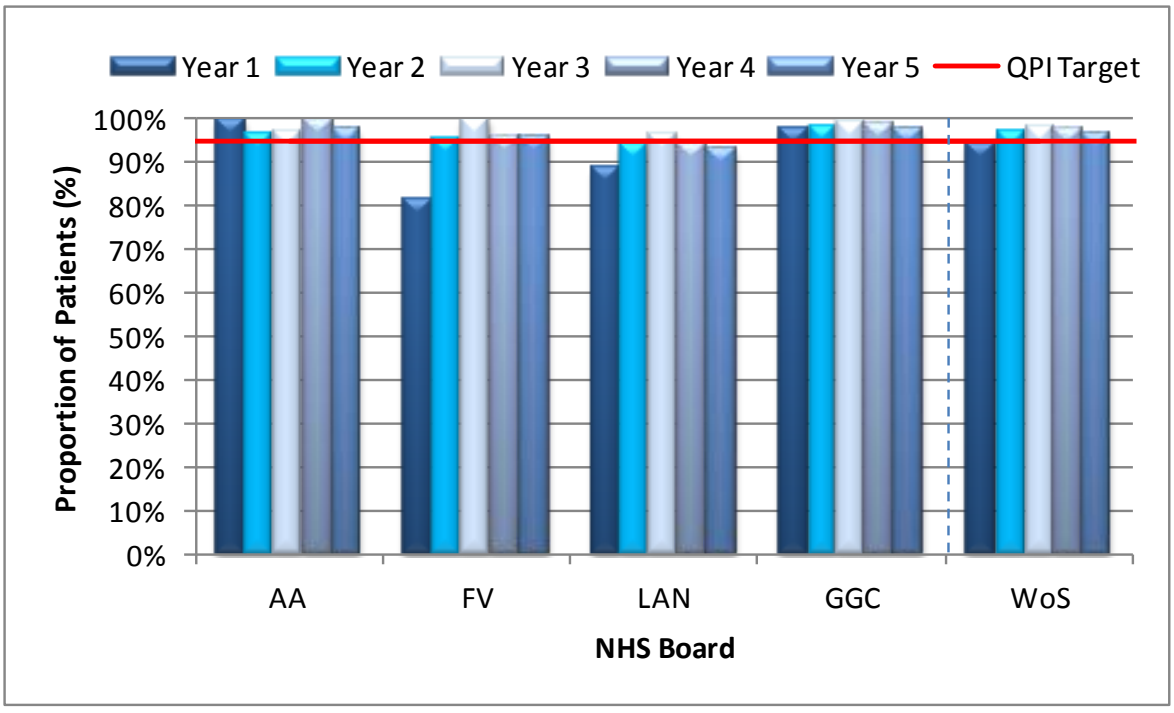
QPI 4: Stoma Care

Access to a nurse with expertise in stoma care increases patient satisfaction and optimal independent functioning. Furthermore, there is significant evidence to suggest that patients not marked preoperatively can have significant problems with their stoma post operatively and this can affect their recovery and rehabilitation.

Before surgery, all patients should be offered information about the likelihood of having a stoma, why it might be necessary, and how long it might be needed for. A trained stoma professional should give specific information on the care and management of stomas to all patients considering surgery that might result in a stoma.

QPI Title:	Patients with colorectal cancer who require a stoma are assessed and have their stoma site marked pre-operatively by a nurse with expertise in stoma care.
Numerator:	Number of patients with colorectal cancer who undergo elective surgical resection which involves stoma creation who are seen by and have their stoma site marked preoperatively by a nurse with expertise in stoma care.
Denominator:	All patients with colorectal cancer who undergo elective surgical resection which involves stoma creation.
Exclusions:	Patients who refuse to be seen by a nurse with expertise in stoma care.
Target:	95%

Figure 7: Proportion of patients with colorectal cancer who undergo elective surgical resection which involves stoma creation who are seen and have their stoma site marked pre-operatively by a nurse with expertise in stoma care.



QPI 4	Performance (%)	Numerator	Denominator	NR numerator	NR exclusions	NR denominator
AA	97.5%	39	40	0	0	3
FV	96.3%	26	27	1	0	0
Lan	93.2%	55	59	0	0	6
NG	100.0%	46	46	0	0	0
SG	98.0%	48	49	0	0	0
Clyde	96.4%	53	55	0	0	0
GGC	98.0%	147	150	0	0	0
WoS	96.7%	267	276	1	0	9

NHS Ayrshire and Arran, NHS Forth Valley and NHS Greater Glasgow and Clyde all met the 95% target. NHS Lanarkshire was slightly short of the target at 93.2%. The overall performance for the WoS was 96.7%.

A review by NHS Lanarkshire determined that of the four patients not assessed pre-operatively, two were seen by the stoma nurse after their surgery, one had an unplanned stoma formation and one already had a stoma following an initial emergency loop ileostomy.

Actions:

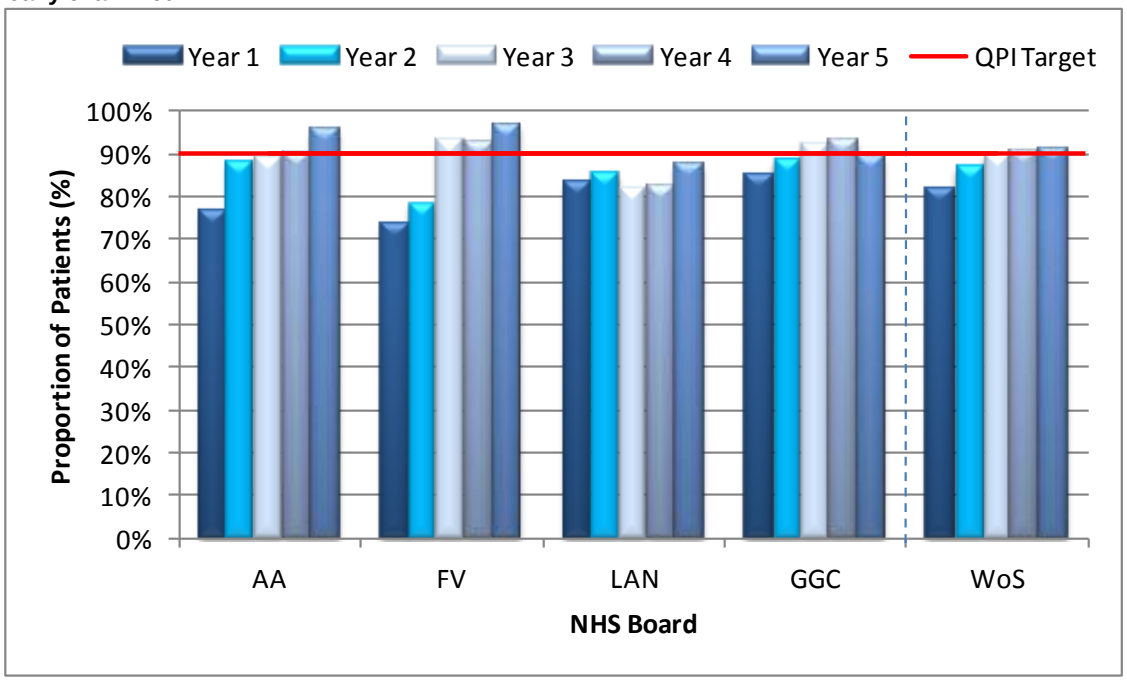
- NHS Lanarkshire to ensure that all patients with the potential to require a stoma are referred for pre-operative stoma care

QPI 5: Lymph Node Yield

Maximising the number of lymph nodes resected and analysed enables reliable staging which influences treatment decision making.

QPI Title:	For patients undergoing resection for colorectal cancer the number of lymph nodes examined should be maximised.
Numerator:	Number of patients with colorectal cancer who undergo curative surgical resection where ≥12 lymph nodes are pathologically examined.
Denominator:	All patients with colorectal cancer who undergo curative surgical resection (with or without neo-adjuvant short course radiotherapy).
Exclusions:	Patients with rectal cancer who undergo long course neo-adjuvant chemoradiotherapy or radiotherapy; patients who undergo transanal endoscopic microsurgery (TEM) or transanal resection of tumour (TART).
Target	90%

Figure 8: Proportion of patients with colorectal cancer who undergo surgical resection where ≥12 lymph nodes are pathologically examined.



QPI 5	Performance (%)	Numerator	Denominator	NR numerator	NR exclusions	NR denominator
AA	96.0%	119	124	0	0	3
FV	96.9%	94	97	0	0	0
Lan	87.6%	134	153	0	0	6
NG	91.5%	107	117	0	0	0
SG	88.5%	139	157	0	0	0
Clyde	89.3%	109	122	0	0	0
GGC	89.6%	355	396	0	0	0
WoS	91.2%	702	770	0	0	9

NHS Ayrshire and Arran and NHS Forth Valley met the 90% target. NHS Lanarkshire and NHS Greater Glasgow and Clyde were short of the target with 87.6% and 89.6% respectively. Within NHS

Greater Glasgow and Clyde, the South and Clyde sectors did not meet the target. The overall performance for the WoS met the target with 91.2%.

Boards have reviewed cases not meeting the target. NHS Greater Glasgow and Clyde commented that the majority of cases were just short of the standard with 11 nodes collected. All cases will be fed back to the local MDTs to increase awareness and ensure maintenance of best practice.

On review, NHS Lanarkshire noted that a small number of cases had been coded as curative when they were in fact palliative and so should not have been included in the QPI. This impacts negatively on the performance as lymph node yields are generally lower in palliative cases. Clinicians in NHS Lanarkshire have agreed that documentation of treatment intent in these cases was not clear and efforts will be made to ensure that this is clear for future cases. There are also local concerns over lipolysis treatment (which is used to increase yield) and so this is not currently used. Performance in this QPI has shown improvement over the last three years which is encouraging. The QPI will continue to be monitored through local reporting.

QPI 6: Neo-adjuvant Therapy

Patients with rectal tumours that involve or threaten the mesorectal fascia on preoperative imaging may benefit from preoperative radiotherapy.

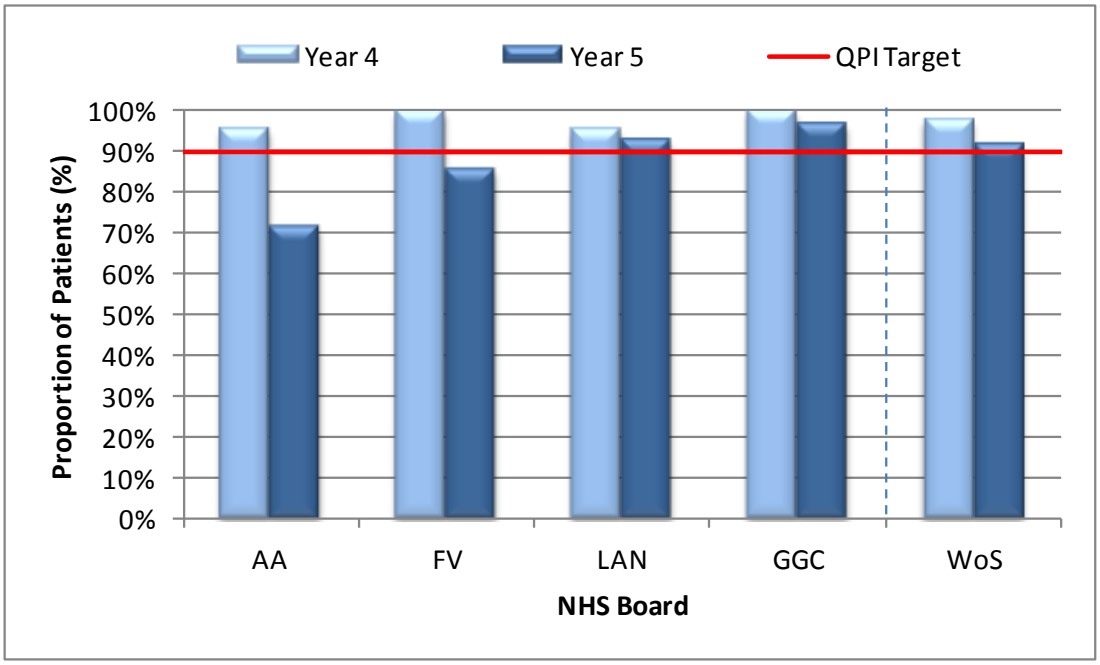
Patients with rectal cancer who require downstaging of the tumour because of encroachment on the mesorectal fascia should receive neo-adjuvant therapy, followed by surgery at an interval to allow cytoreduction.

For patients with rectal cancer, MRI is utilised to assess the extent of disease prior to treatment. A statement regarding margin status is required within the MRI report to guide treatment.

QPI Title:	Patients with locally advanced rectal cancer should receive neo-adjuvant therapy designed to facilitate a margin-negative resection.
Numerator:	Number of patients with rectal cancer with a threatened or involved CRM on preoperative MRI undergoing surgery who receive neo-adjuvant therapy.
Denominator:	All patients with rectal cancer with a threatened or involved CRM on preoperative MRI undergoing surgery.
Exclusions:	Patients who refused neo-adjuvant therapy, patients in whom neo-adjuvant therapy is contraindicated and patients who presented as an emergency for surgery.
Target:	90%

QPI 6 was amended at formal review (Year 4) to incorporate all forms of neo-adjuvant therapy. As a result, data is not comparable to previous years.

Figure 9: Proportion of patients with locally advanced rectal cancer with threatened or involved circumferential resection margin (CRM) on preoperative MRI who receive neo-adjuvant therapy designed to facilitate a margin-negative resection.



QPI 6	Performance (%)	Numerator	Denominator	NR numerator	NR exclusions	NR denominator
AA	71.4%	10	14	0	0	2
FV	85.7%	6	7	0	0	0
Lan	92.6%	25	27	0	0	4
NG	100.0%	15	15	0	0	0
SG	100.0%	19	19	0	0	0
Clyde	91.7%	22	24	0	0	0
GGC	96.6%	56	58	0	0	0
WoS	91.5%	97	106	0	0	6

NHS Greater Glasgow and Clyde and NHS Lanarkshire met the 90% target. NHS Ayrshire and Arran and NHS Forth Valley were short of the target with 71.4% and 85.7% respectively. The overall performance for the WoS met the target with 91.5%.

Boards have reviewed all cases not meeting the target with detailed feedback provided. All patients were managed appropriately. Small numbers are noted for NHS Forth Valley.

QPI 7: Surgical Margins

The circumferential margin is an independent risk factor for the development of distant metastases and mortality. It is recognised that local recurrence of rectal cancer can be accurately predicted by pathological assessment of circumferential margin involvement in these tumours.

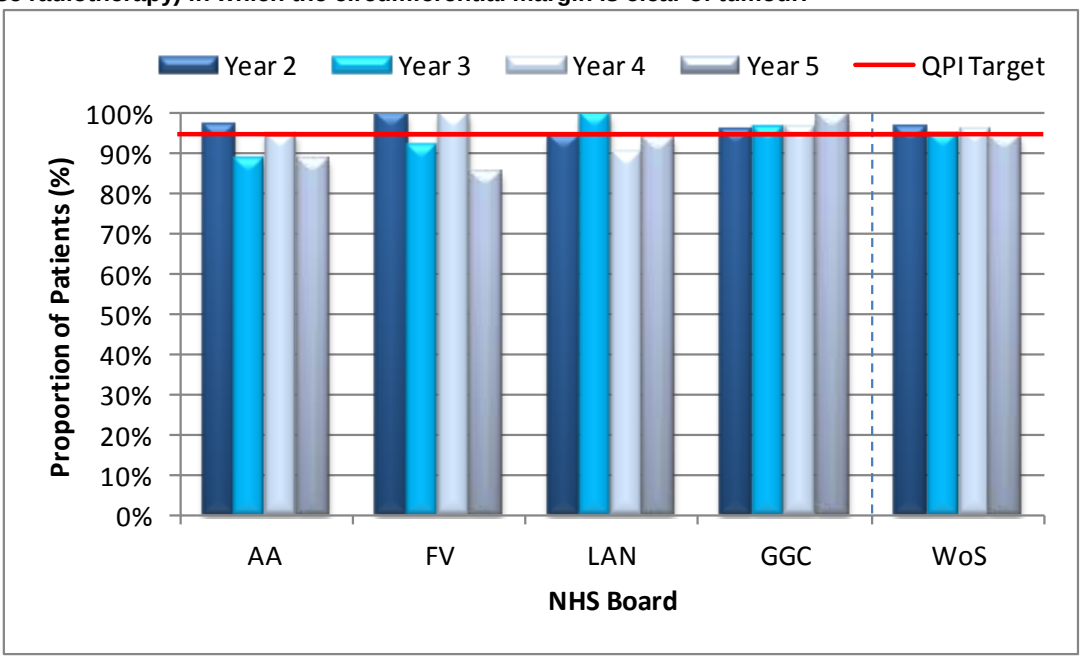
QPI 7 is split into 2 sub-groups the first looks at patients with rectal cancer who undergo elective primary surgical resection or surgical resection following short course neo-adjuvant radiotherapy.
The target for this QPI is set at 95% and the tolerance within the target is designed to account for the fact that patients who undergo neo-adjuvant long course radiotherapy are already acknowledged to have a tumour threatening the circumferential margin therefore are more likely to have positive surgical margins.

The second part of the QPI looks at all patients with rectal cancer who undergo elective surgical resection following neo-adjuvant therapy. The target for this is set at 85%.

QPI Title:	Rectal cancers undergoing surgical resection should be adequately excised.
Numerator:	(i) Number of patients with rectal cancer who undergo elective primary surgical resection or immediate/early surgical resection following neo-adjuvant short course radiotherapy in which the circumferential margin is clear of tumour. (ii)Number of patients with rectal cancer who undergo elective surgical resection following neoadjuvant chemotherapy, long course radiotherapy, long course chemoradiotherapy or short course radiotherapy with long course intent in which the circumferential margin is clear of tumour.
Denominator:	(i) All patients with rectal cancer who undergo elective primary surgical resection or immediate/early surgical resection following neo-adjuvant short course radiotherapy. (ii) All patients with rectal cancer who undergo elective surgical resection following neoadjuvant chemotherapy, long course radiotherapy, long course chemoradiotherapy or short course radiotherapy with long course intent (delay to surgery).
Exclusions:	(i) and (ii) Patients who undergo transanal endoscopic microsurgery (TEM) or transanal resection of tumour (TART).
Target:	(i) 95% (ii) 85%

At formal review, part (i) was updated to define immediate/early surgical resection as surgery performed less than 6 weeks after neo-adjuvant therapy. Part (ii) was updated to include other methods of neo-adjuvant therapy (as per QPI 6). As a result, data for part (ii) is not comparable with previous years.

Figure 10: Proportion of patients with rectal cancer who undergo primary surgical resection (or early surgery after short course radiotherapy) in which the circumferential margin is clear of tumour.

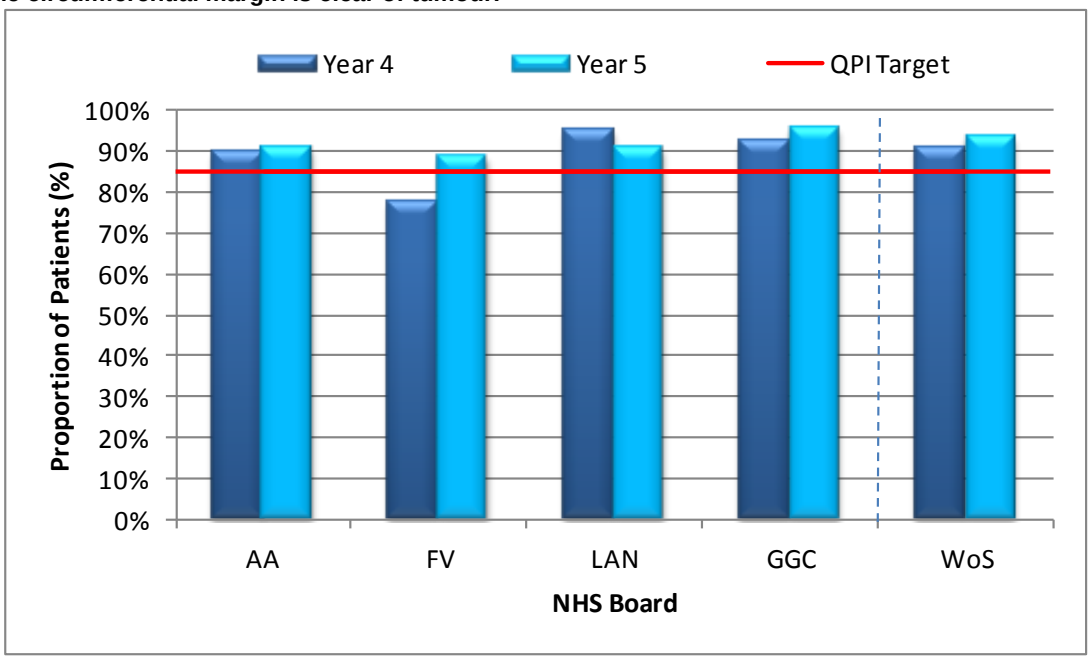


QPI 7(i)	Performance (%)	Numerator	Denominator	NR numerator	NR exclusions	NR denominator
AA	88.9%	16	18	0	0	0
FV	85.7%	18	21	0	0	0
Lan	93.8%	15	16	0	0	1
NG	100.0%	15	15	0	0	0
SG	100.0%	15	15	0	0	0
Clyde	100.0%	23	23	0	0	0
GGC	100.0%	53	53	0	0	0
WoS	94.4%	102	108	0	0	1

NHS Greater Glasgow and Clyde met the 95% target with 100%. NHS Ayrshire and Arran (88.9%), NHS Forth Valley (85.7%) and NHS Lanarkshire (93.8%) were all short of the target. However it should be noted that numbers are small which will have an impact on percentages. The WoS performance was marginally short of the target with 94.4%.

Boards have reviewed cases not meeting the target and provided detailed feedback. All cases were managed in a clinically appropriate manner. NHS Ayrshire and Arran noted that one patient had been miscoded and should have been excluded from this QPI.

Figure 11: Proportion of patients with rectal cancer who undergo surgical resection (following neoadjuvant therapy) in which the circumferential margin is clear of tumour.



QPI 7(ii)	Performance (%)	Numerator	Denominator	NR numerator	NR exclusions	NR denominator
AA	90.9%	10	11	0	0	2
FV	88.9%	8	9	0	0	0
Lan	90.9%	20	22	0	0	5
NG	96.2%	25	26	1	0	0
SG	95.0%	19	20	0	0	0
Clyde	95.7%	22	23	0	0	0
GGC	95.7%	66	69	1	0	0
WoS	93.7%	104	111	1	0	7

All Boards met the 85% target. NHS Ayrshire and Arran, NHS Forth Valley and NHS Greater Glasgow and Clyde showed improvement on the previous year's performance. The overall performance for the WoS was 93.7%.

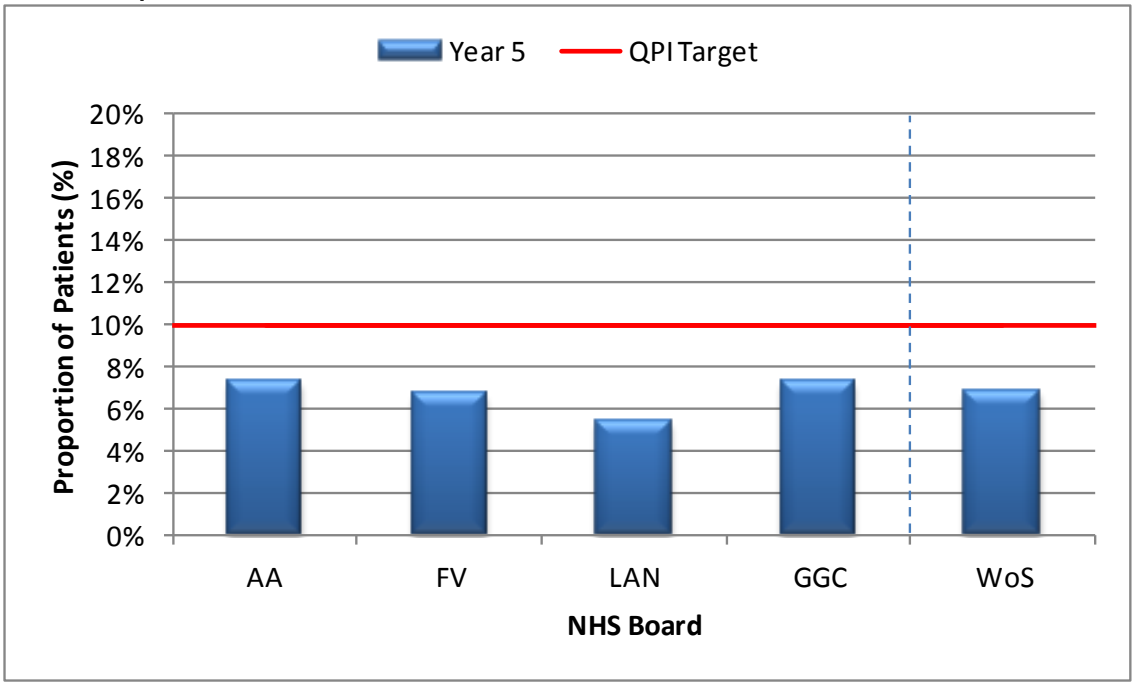
QPI 8: Re-operation Rates

It is important to minimise morbidity and mortality related to the treatment of colorectal cancer. Re-operation rates may offer a sensitive and relevant marker of surgical quality[1].

QPI Title:	For patients undergoing surgery for colorectal cancer re-operation rates should be minimised.
Numerator:	Number of patients with colorectal cancer who undergo surgical resection who return to theatre following initial procedure (within 30 days of surgery) to deal with complications related to the index procedure.
Denominator:	All patients with colorectal cancer who undergo surgical resection.
Exclusions:	No exclusions.
Target:	<10%

At formal review it was decided to measure this QPI using audit data rather than SMR01 data which had been used previously. Year 5 is the first year for which there is sufficient data to present findings.

Figure 12: Proportion of patients with colorectal cancer who undergo surgical resection and return to theatre within 30 days of the index procedure.



QPI 8	Performance (%)	Numerator	Denominator	NR numerator	NR exclusions	NR denominator
AA	7.3%	11	150	0	0	3
FV	6.7%	8	119	0	0	0
Lan	5.4%	10	185	0	0	6
NG	6.4%	9	141	5	0	0
SG	5.5%	10	182	3	0	0
Clyde	10.1%	16	158	1	0	0
GGC	7.3%	35	481	9	0	0
WoS	6.8%	64	935	9	0	9

All Boards were within the 10% target. The performance for the WoS region was 6.8%. The Clyde sector commented that the performance seems to have been driven by an uncharacteristically high anastomotic leak rate. The Clyde sector will monitor performance for these QPIs closely in the next reporting year.

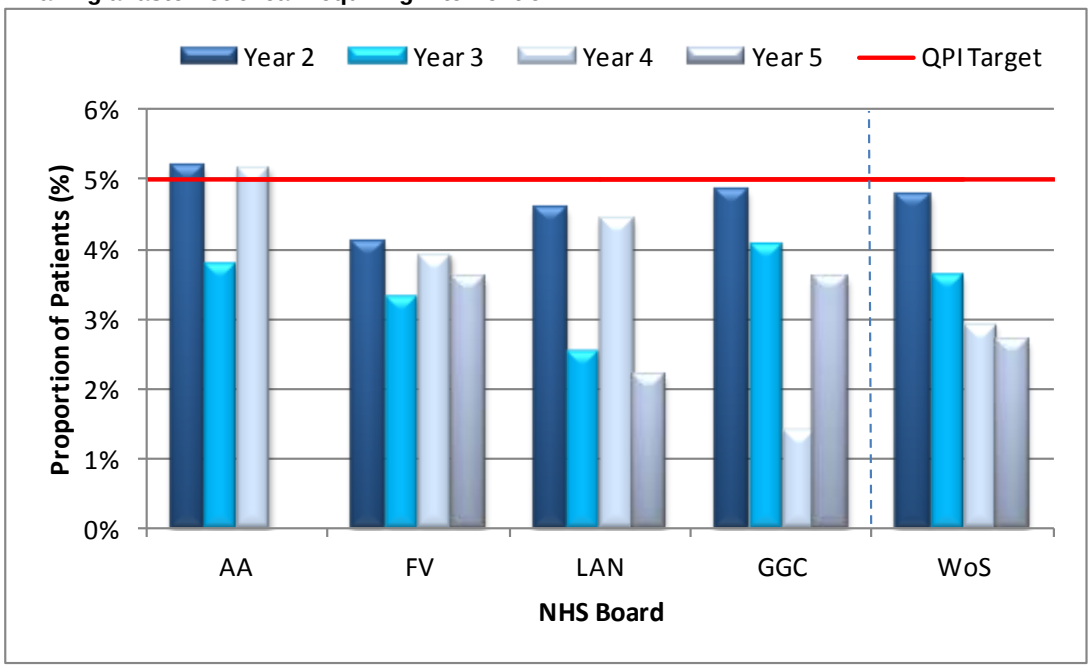
QPI 9: Anastomotic Dehiscence

Anastomotic dehiscence is a major cause of morbidity and a measure of the quality of surgical care. Anastomotic leakage is an important and potentially fatal complication of colorectal cancer surgery, and measures to minimise it should be taken.

QPI 9 is split into 2 sub-groups: the first looks at patients with colorectal cancer who undergo a surgical procedure involving anastomosis of the colon having anastomotic leak requiring intervention (radiological or surgical) while the second part of the QPI looks at patients with colorectal cancer who undergo a surgical procedure involving anastomosis of the rectum (including: anterior resection with TME) having anastomotic leak requiring intervention (radiological or surgical).

QPI Title:	For patients who undergo surgical resection for colorectal cancer anastomotic dehiscence should be minimised.
Numerator:	(i) Number of patients with colorectal cancer who undergo a surgical procedure involving anastomosis of the colon having anastomotic leak requiring intervention (radiological or surgical). (ii) Number of patients with colorectal cancer who undergo a surgical procedure involving anastomosis of the rectum (including anterior resection with total mesorectal excision (TME)) having anastomotic leak requiring intervention (radiological or surgical).
Denominator:	(i) All patients with colorectal cancer who undergo a surgical procedure involving anastomosis of the colon. (ii) All patients with rectal cancer who undergo a surgical procedure involving anastomosis of the rectum (including anterior resection with TME).
Exclusions:	No exclusions
Target:	(i) <5% (ii) <10%

Figure 13: Proportion of patients with colorectal cancer who undergo a surgical procedure involving anastomosis of the colon having anastomotic leak requiring intervention.

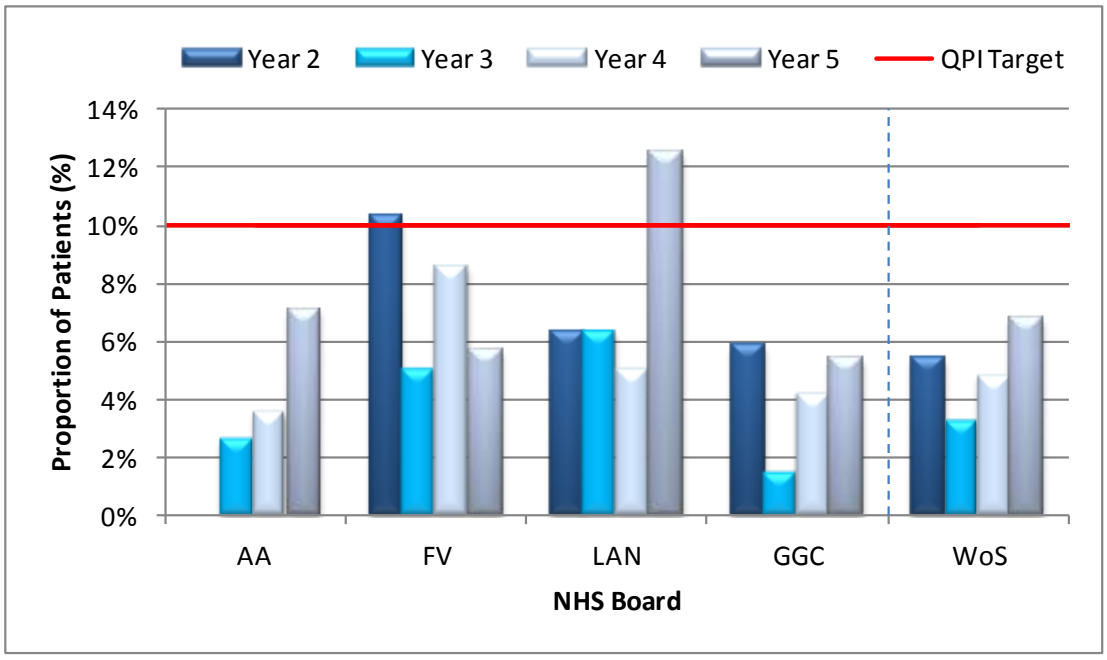


QPI 9(i)	Performance (%)	Numerator	Denominator	NR numerator	NR exclusions	NR denominator
AA	0.0%	0	62	0	0	3
FV	3.6%	2	56	0	0	0
Lan	2.2%	2	90	0	0	6
NG	3.4%	2	58	1	0	0
SG	1.2%	1	81	0	0	0
Clyde	6.9%	4	58	0	0	0
GGC	3.6%	7	197	1	0	0
WoS	2.7%	11	405	1	0	9

All Boards were within the <5% target; only the Clyde sector was out with the target at 6.9%. The overall performance for the WoS was 2.7% and shows continual year on year improvement.

Review by the Clyde team identified that patient frailty and emergency presentation were factors for anastomotic leak. The Clyde sector has highlighted uncharacteristically high rates of anastomotic leakage this reporting year, given that last year's performance was 1.4%. The MCN will work with NHS Greater Glasgow and Clyde to monitor performance within the Clyde sector over the coming audit period.

Figure 14: Proportion of patients with rectal cancer who undergo a surgical procedure involving anastomosis of the rectum (including: anterior resection with TME) having anastomotic leak requiring intervention (radiological or surgical).



QPI 9(ii)	Performance (%)	Numerator	Denominator	NR numerator	NR exclusions	NR denominator
AA	7.1%	4	56	0	0	3
FV	5.7%	2	35	0	0	0
Lan	12.5%	6	48	0	0	6
NG	1.8%	1	55	1	0	0
SG	5.9%	4	68	3	0	0
Clyde	8.1%	5	62	1	0	0
GGC	5.4%	10	185	5	0	0
WoS	6.8%	22	324	5	0	9

NHS Ayrshire, NHS Forth Valley and NHS Greater Glasgow and Clyde were all within the <10% target. NHS Lanarkshire was out with the target at 12.5%. The overall performance for the WoS was 6.8%.

NHS Lanarkshire has reviewed cases not meeting the target. Local longitudinal analysis revealed higher rate of leakage when surgery was performed by a locum consultant. As a result, locum consultants will no longer perform left sided colonic resections within NHS Lanarkshire. The operating consultant for elective right sided colonic resections will be decided on a case by case basis.

Actions:

- MCN to work with NHS Greater Glasgow and Clyde to monitor performance in the Clyde sector over the coming audit period.

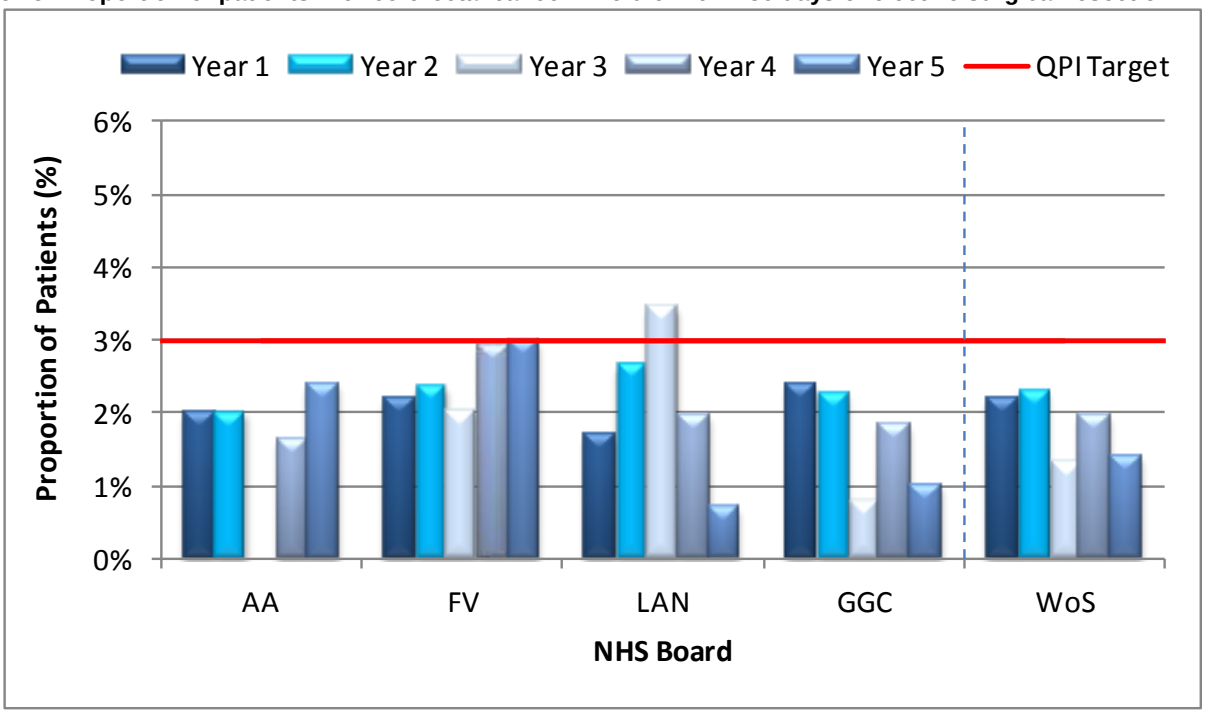
QPI 10: 30 and 90 Day Mortality Following Surgical Resection

Treatment related mortality is a marker of the quality and safety of the whole service provided by the Multi Disciplinary Team (MDT). Outcomes of treatment, including treatment-related morbidity and mortality should be regularly assessed.

QPI Title:	Mortality after surgical resection for colorectal cancer.
Numerator:	(i) Number of patients with colorectal cancer who undergo elective surgical resection who die within 30 or 90 days of surgery. (ii) Number of patients with colorectal cancer who undergo emergency surgical resection who die within 30 or 90 days of surgery.
Denominator:	(i) All patients with colorectal cancer who undergo elective surgical resection. (ii) All patients with colorectal cancer who undergo emergency surgical resection.
Exclusions:	No exclusions
Target:	(i) 30 day <3%; 90 day <4% (ii) 30 day <15%; 90 day <20%

Targets were changed at formal review. The 30 day elective target was changed from <5% to <3%, and a 90 day elective mortality target of <4% was added. 90 day mortality following emergency surgery had a target of <20% added.

Figure 15: Proportion of patients with colorectal cancer who die within 30 days of elective surgical resection

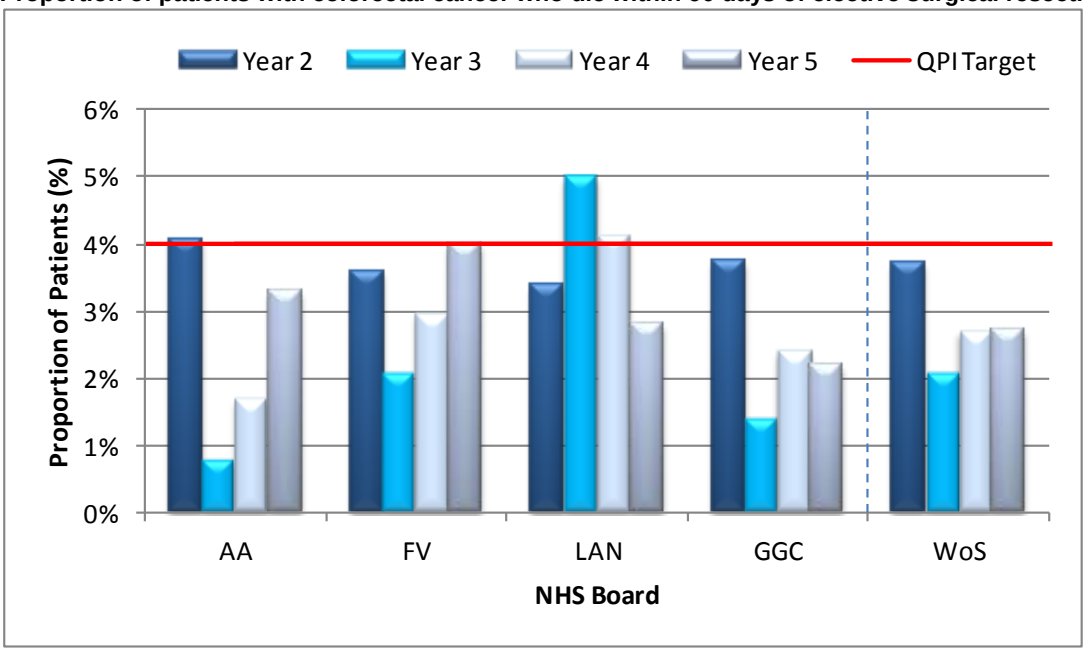


QPI 10(i) 30 days	Performance (%)	Numerator	Denominator	NR numerator	NR exclusions	NR denominator
AA	2.4%	3	123	0	0	0
FV	3.0%	3	100	0	0	0
Lan	0.7%	1	147	0	0	0
NG	0.0%	0	113	0	0	0
SG	0.0%	0	147	0	0	0
Clyde	3.1%	4	130	0	0	0
GGC	1.0%	4	390	0	0	0
WoS	1.4%	11	760	0	0	0

All Boards met the <3% target for mortality within 30 days of elective surgical resection. The Clyde sector was slightly over target with 3.1%. The performance for the WoS was 1.4%.

Boards have provided feedback on all cases of mortality. All cases were managed in a clinically appropriate manner. The main reason cited for patient death was the presence of comorbidities.

Figure 16: Proportion of patients with colorectal cancer who die within 90 days of elective surgical resection

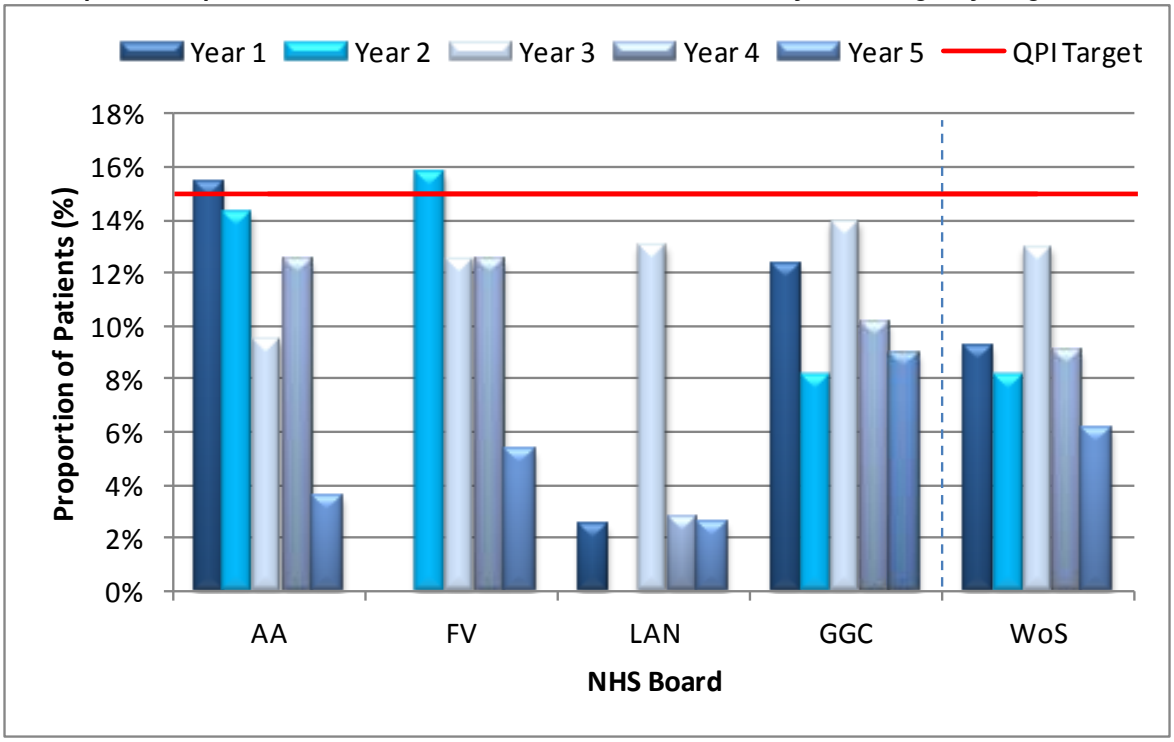


QPI 10(i) 90 days	Performance (%)	Numerator	Denominator	NR numerator	NR exclusions	NR denominator
AA	3.3%	4	120	0	0	0
FV	4.0%	4	100	0	0	0
Lan	2.8%	4	144	0	0	0
NG	0.9%	1	107	0	0	0
SG	2.1%	3	142	0	0	0
Clyde	3.3%	4	123	0	0	0
GGC	2.2%	8	372	0	0	0
WoS	2.7%	20	736	0	0	0

All Boards met the <4% target for 90 day mortality after elective surgery. The overall performance for the WoS was 2.7%.

NHS Ayrshire and Arran, NHS Forth Valley and NHS Lanarkshire have reviewed all cases and determined that all cases were managed appropriately. Patients died either due to comorbidities or other, non-surgical complications post operatively.

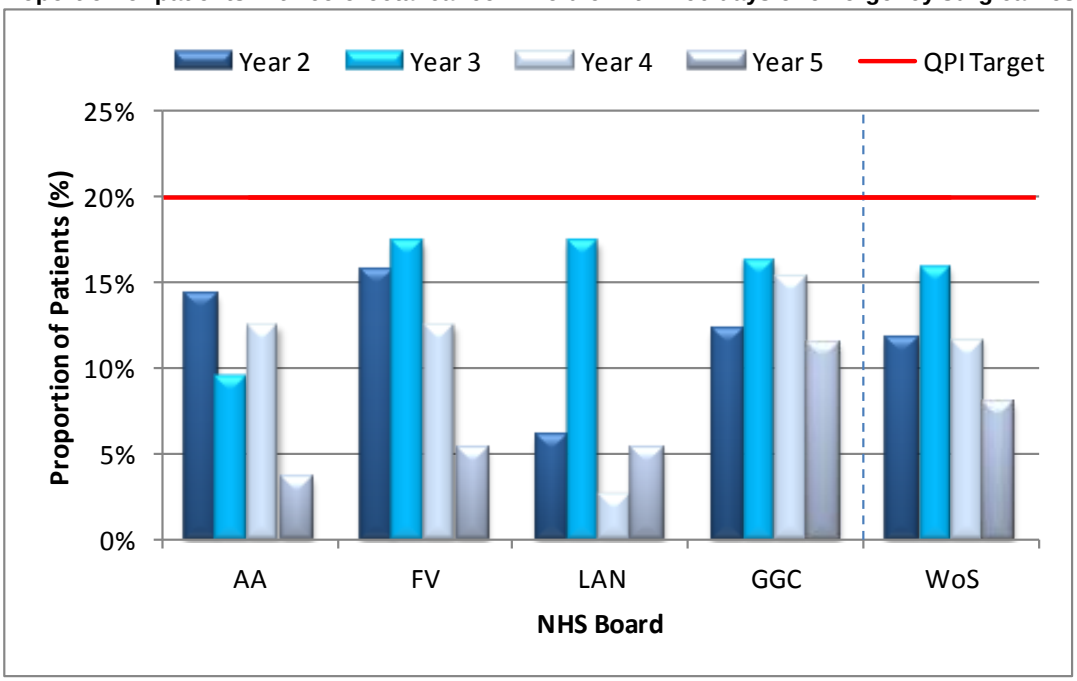
Figure 17: Proportion of patients with colorectal cancer who die within 30 days of emergency surgical resection



QPI 10(ii) 30 days	Performance (%)	Numerator	Denominator	NR numerator	NR exclusions	NR denominator
AA	3.6%	1	28	0	0	0
FV	5.3%	1	19	0	0	0
Lan	2.6%	1	38	0	0	0
NG	9.1%	2	22	0	0	0
SG	6.9%	2	29	0	0	0
Clyde	11.1%	3	27	0	0	0
GGC	9.0%	7	78	0	0	0
WoS	6.1%	10	163	0	0	0

All Boards met the <15% target for mortality within 30 days of emergency resection. The overall performance for the WoS was 6.1%.

Figure 18: Proportion of patients with colorectal cancer who die within 90 days of emergency surgical resection



QPI 10(ii) 90 days	Performance (%)	Numerator	Denominator	NR numerator	NR exclusions	NR denominator
AA	3.6%	1	28	0	0	0
FV	5.3%	1	19	0	0	0
Lan	5.3%	2	38	0	0	0
NG	9.1%	2	22	0	0	0
SG	10.3%	3	29	0	0	0
Clyde	14.8%	4	27	0	0	0
GGC	11.5%	9	78	0	0	0
WoS	8.0%	13	163	0	0	0

All Boards met the <20% target for mortality within 90 days of emergency surgical resection. The overall performance for the WoS was 8.0%.

NHS Ayrshire and Arran, NHS Forth Valley and NHS Lanarkshire have provided feedback on all cases of mortality after emergency surgical resection (30 & 90 day). All patients were managed in a clinically appropriate manner.

QPI 11: Adjuvant Chemotherapy

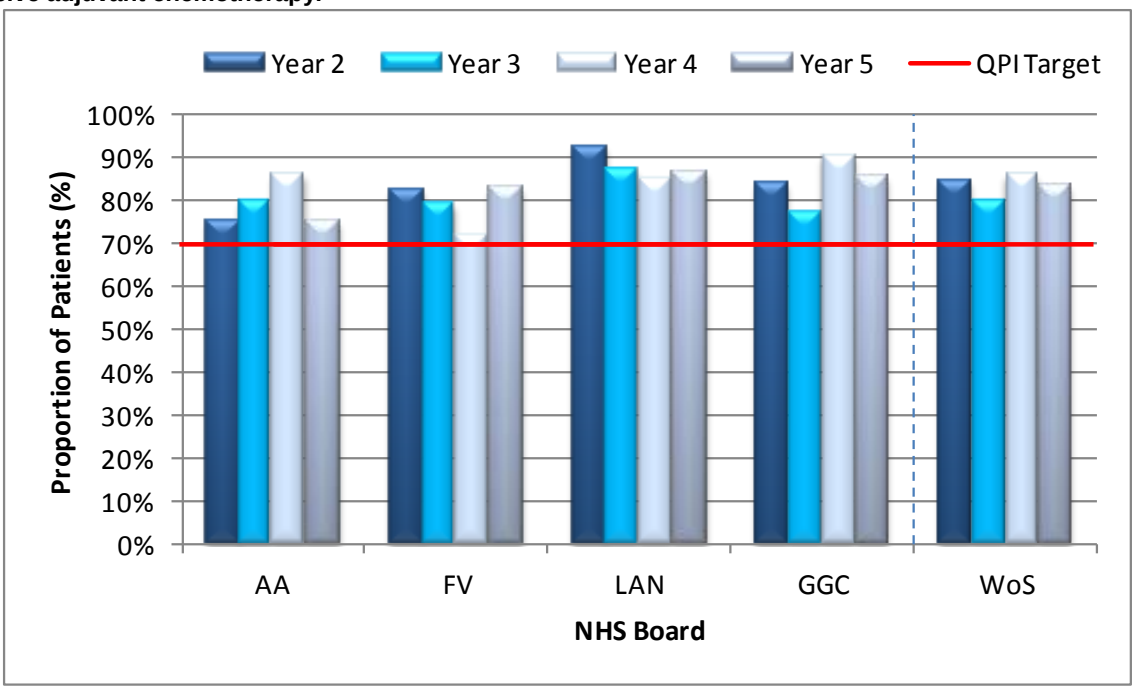
All patients with Dukes C and high risk Dukes B colorectal cancer should be considered for adjuvant chemotherapy to reduce the risk of local and systemic recurrence.

Due to the difficulties associated with accurate measurement of co-morbidities and patient fitness these cannot be utilised as exclusions within this QPI. To ensure focussed measurement and a QPI examining expected outcomes the age range of 50-74 years has been selected. This represents the majority of patients and therefore provides a good proxy for access to adjuvant chemotherapy in the whole patient population.

QPI Title:	Patients with Dukes C and high risk Dukes B colorectal cancer should be considered for adjuvant chemotherapy.
Numerator:	(i) Number of patients between 50 and 74 years of age at diagnosis with Dukes C colorectal cancer who undergo surgical resection who receive adjuvant chemotherapy. (ii) Number of patients between 50 and 74 years of age at diagnosis with high risk Dukes B colorectal cancer who undergo surgical resection who receive adjuvant chemotherapy.
Denominator:	(i) All patients between 50 and 74 years of age at diagnosis with Dukes C colorectal cancer who undergo surgical resection. (ii) All patients between 50 and 74 years of age at diagnosis with high risk Dukes B colorectal cancer who undergo surgical resection.
Exclusions:	Patients who refuse chemotherapy; patients who undergo neo-adjuvant treatment.
Target:	(i) 70% (ii) 50%

At formal review it was decided to change the definition of high risk Dukes B to include T3 tumours with extramural venous invasion. Additionally an exclusion was added for patients undergoing neo-adjuvant therapy.

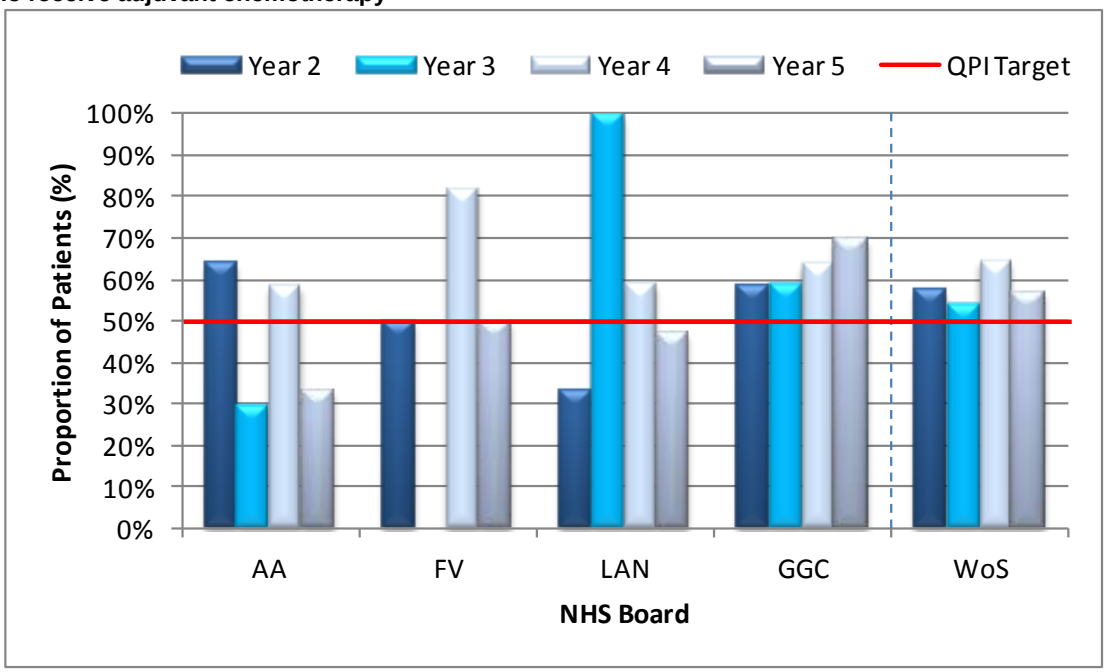
Figure 19: Proportion of patients with between 50 and 74 years of age at diagnosis with Dukes C colorectal cancer who receive adjuvant chemotherapy.



QPI 11(i)	Performance (%)	Numerator	Denominator	NR numerator	NR exclusions	NR denominator
AA	75.0%	21	28	0	0	1
FV	83.3%	10	12	0	0	0
Lan	86.8%	33	38	0	1	0
NG	91.3%	21	23	0	0	0
SG	88.5%	23	26	0	0	0
Clyde	75.0%	15	20	0	0	0
GGC	85.5%	59	69	0	0	0
WoS	83.7%	123	147	0	1	1

All Boards met the 70% target. The overall performance for the WoS was 83.7%.

Figure 20: Proportion of patients with between 50 and 74 years of age at diagnosis with high risk Dukes B colorectal cancer who receive adjuvant chemotherapy



QPI 11(ii)	Performance (%)	Numerator	Denominator	NR numerator	NR exclusions	NR denominator
AA	33.3%	3	9	0	0	3
FV	50.0%	3	6	0	0	0
Lan	47.1%	8	17	0	2	6
NG	55.6%	5	9	0	0	0
SG	77.8%	7	9	0	0	0
Clyde	73.3%	11	15	0	0	0
GGC	69.7%	23	33	0	0	0
WoS	56.9%	37	65	0	2	9

NHS Ayrshire and Arran and NHS Lanarkshire were both short of the 50% target, with 33.3% and 47.1% respectively. The overall performance for the WoS was 56.9%.

NHS Ayrshire and Arran and NHS Lanarkshire have reviewed cases not meeting the target and provided feedback. All patients were not suitable for adjuvant chemotherapy due to fitness, comorbidities or advanced disease.

It should be noted that Dukes stage is no longer relevant to TNM8 staging. The denominator for this QPI will therefore be revised for the next round of reporting.

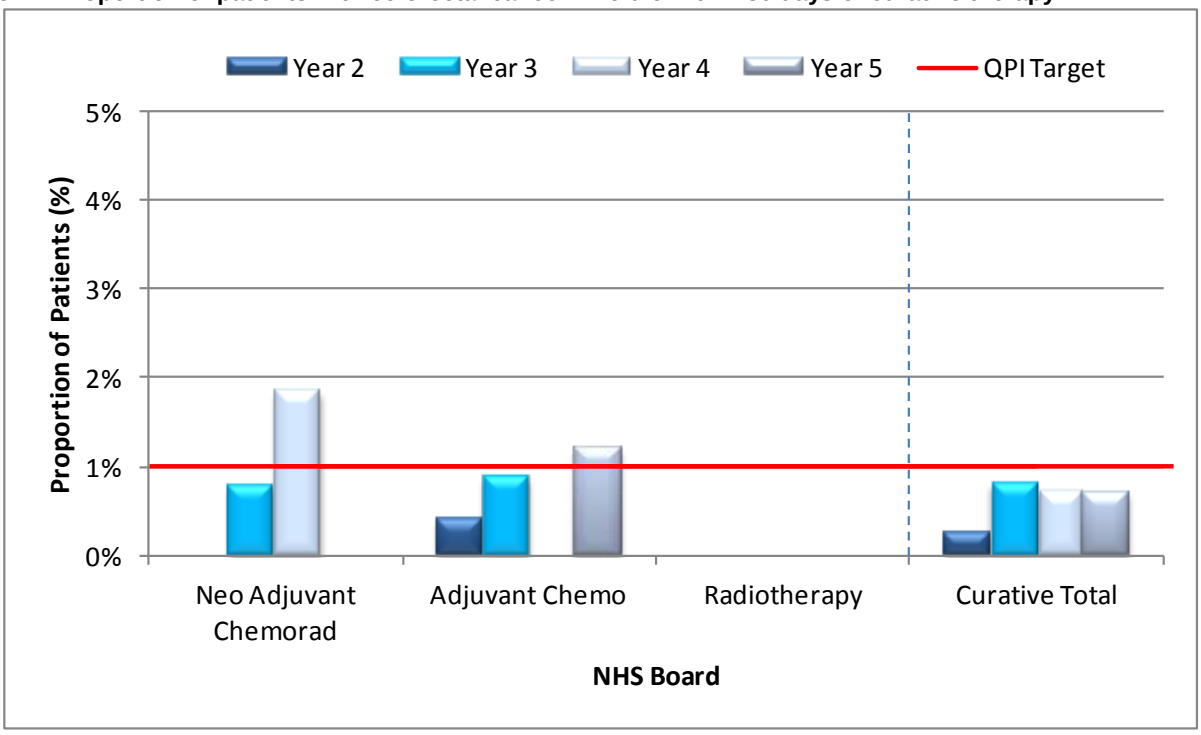
QPI 12: 30 and 90 Day Mortality Following Chemotherapy or Radiotherapy

Treatment related mortality is a marker of the quality and safety of the whole service provided by the Multi Disciplinary Team (MDT).

QPI Title:	Mortality after chemotherapy or radiotherapy for colorectal cancer.	
Numerator:	(i)	(a) Number of patients with colorectal cancer who undergo neoadjuvant chemoradiotherapy with curative intent who die within 30 or 90 days of treatment. (b) Number of patients with colorectal cancer who undergo adjuvant chemotherapy with curative intent who die within 30 or 90 days of treatment. (c) Number of patients with colorectal cancer who undergo radiotherapy with curative intent who die within 30 or 90 days of treatment.
	(ii)	(d) Number of patients with colorectal cancer who undergo palliative chemotherapy who die within 30 days of treatment.
Denominator:	(i)	(a) All patients with colorectal cancer who undergo neoadjuvant chemoradiotherapy with curative intent. (b) All patients with colorectal cancer who undergo adjuvant chemotherapy with curative intent. (c) All patients with colorectal cancer who undergo radiotherapy with curative intent.
	(ii)	(d)All patients with colorectal cancer who undergo palliative chemotherapy.
Exclusions:	No exclusions	
Target:	(i)	(a), (b) & (c) <1%
	(ii)	(d) <10%

At formal review, the target for curative therapies was changed from <2% to <1%. Part (ii) for palliative chemotherapy was added with a target of <10%.

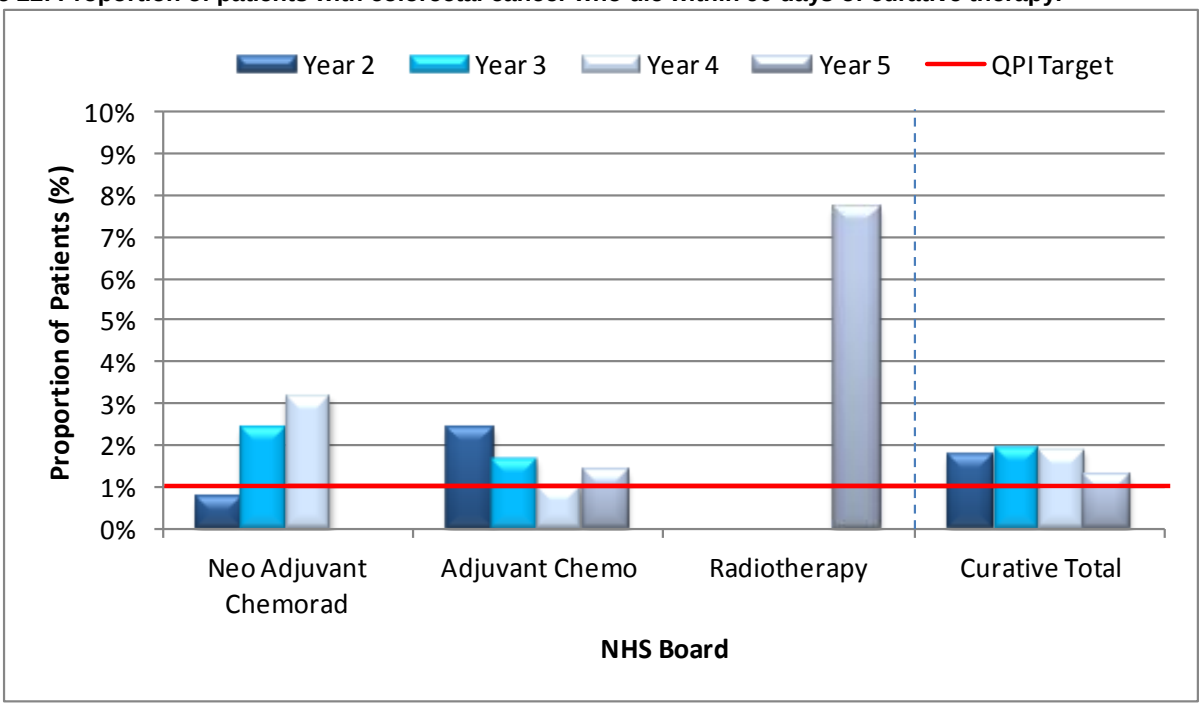
Figure 21: Proportion of patients with colorectal cancer who die within 30 days of curative therapy.



QPI 12: 30 days curative	Performance (%)	Numerator	Denominator	NR numerator	NR exclusions	NR denominator
(a) Neo Adjuvant Chemoradiotherapy	0.0%	0	132	0	0	0
(b) Adjuvant Chemo	1.2%	3	246	25	0	10
(c) Radiotherapy	0.0%	0	26	0	0	9
Curative Total	0.7%	3	404	25	0	19

There were no patients in the WoS who died within 30 days of neo-adjuvant chemoradiotherapy or radiotherapy given with curative intent. 30 day mortality for adjuvant chemotherapy with curative intent was slightly over the 1% target with 1.2%. The overall 30 day mortality for curative therapies was 0.7%.

Figure 22: Proportion of patients with colorectal cancer who die within 90 days of curative therapy.

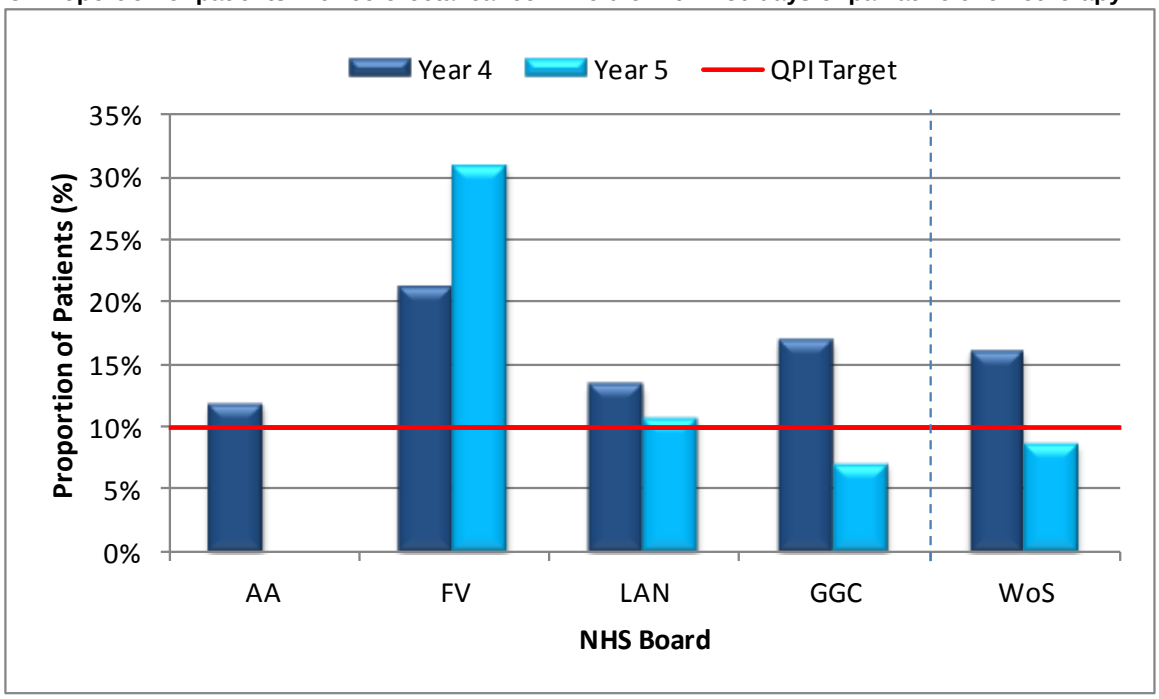


QPI 12: 90 days curative	Performance (%)	Numerator	Denominator	NR numerator	NR exclusions	NR denominator
(a) Neo Adjuvant Chemoradiotherapy	0.0%	0	129	0	0	0
(b) Adjuvant Chemotherapy	1.4%	3	217	25	0	10
(c) Radiotherapy	7.7%	2	26	0	0	9
Curative Total	1.3%	5	372	25	0	19

There were no cases of mortality within 90 days of neo-adjuvant chemoradiotherapy with curative intent. 90 day mortality for adjuvant chemotherapy and radiotherapy with curative intent was outwith the 1% target with 1.4% and 7.7% respectively. The smaller number of patients treated with radiotherapy means that this result should be viewed and compared with caution. The overall 90 day mortality for curative therapies was 1.3%. Both 30 and 90 day overall curative mortality rates are shown to be fairly consistent over the years shown.

Boards have provided feedback on all cases of mortality for 30 and 90 day mortality after curative therapies. Reasons cited include patient fitness and comorbidities. All cases have been reviewed locally.

Figure 23: Proportion of patients with colorectal cancer who die within 30 days of palliative chemotherapy.



QPI 12(d)	Performance (%)	Numerator	Denominator	NR numerator	NR exclusions	NR denominator
AA	0.0%	0	30	8	0	2
FV	30.8%	4	13	0	0	0
Lan	10.7%	3	28	3	0	8
NG	8.3%	1	12	1	0	0
SG	11.5%	3	26	2	0	0
Clyde	0.0%	0	19	1	0	0
GGC	7.0%	4	57	4	0	0
WoS	8.6%	11	128	15	0	10

NHS Ayrshire and Arran and NHS Greater Glasgow and Clyde met the <10% target. NHS Forth Valley and NHS Lanarkshire did not meet the target with 30.8% and 10.7% respectively. The South and West Glasgow sector was also out with the target with 11.5%. The overall performance for the WoS was 8.6%.

NHS Forth Valley and NHS Lanarkshire have provided feedback on all cases of mortality. NHS Greater Glasgow and Clyde has provided feedback on cases of mortality for the South and West Glasgow sector and confirmed that the deaths were not related to chemotherapy toxicity. Advancing disease and infection were highlighted as the main causes of patient death.

QPI 13: Clinical Trials Access

Clinical trials are necessary to demonstrate the efficacy of new therapies and other interventions. Evidence suggests improved patient outcomes from participation in clinical trials[1].Clinicians are therefore encouraged to enter patients into well-designed trials and to collect longer-term follow-up data. High accrual activity into clinical trials is used as a goal of an exemplary clinical research site[1].

The clinical trials QPI is measured utilising Scottish Cancer Research Network (SCRN) data and ISD incidence data, as is the methodology currently utilised by the Chief Scientist Office (CSO) and the National Cancer Research Institute (NCRI). The principal benefit of this approach is that this data is already collected utilising a robust mechanism[1].

QPI 13:	All patients should be considered for participation in available clinical trials/research studies, wherever eligible.
Description:	Proportion of patients with colorectal cancer who are consented for a clinical trial/research study.
Numerator:	Number of patients with colorectal cancer consented for a clinical trial/research study.
Denominator:	All patients diagnosed with colorectal cancer.
Exclusions:	• No exclusions
Target:	15%

Following review the Clinical Trials Access QPI was updated to measure the number of patients consented for participation in a clinical trial rather than only those who are enrolled. There are a number of patients who undergo screening but do not proceed to enrolment for various reasons, e.g. they do not have the mutation required for entry on to the trial.

The denominator for this QPI is identified by using a 5 year average of Scottish Cancer Registry data.

Table 1: Proportion of patients consented for clinical trials for colorectal cancer by NHS Board of residence, in 2017.

Colorectal	Consented – QPI Target 15%			Recruited		
	N	D	%	N	D	%
AA	25	272	9.2%	25	272	9.2%
FV	18	192	9.4%	18	192	9.4%
GGC	22	845	2.6%	20	845	2.4%
Lan	67	354	18.9%	67	354	18.9%
Not Recorded	7	-	-	7	-	-
WoS Total	139	1663	8.4%	137	1663	8.2%

In the WoS there were 139 patients consented for clinical trials. NHS Lanarkshire met the 15% target with a performance of 18.9%. All other Boards were short of the target. The performance for the WoS was 8.4%. Seven patients did not have a Board of residence recorded.

A full list of open trials in 2017 is shown in Table 2 below, alongside the number of recruits to each trial.

Table 2: Number of patients consented for clinical trials by project title, in 2017.

Project Title	Consented 2017
Add-Aspirin Trial	4
Aristotle	2
CANC 4919	1
ECMC EXPLOR BIOMARKER	1
FAK-PD1 v1	3
FOCUS 4	8
NCRN – 3131: EPOCH TheraSphere in Metastatic Colorectal Carcinoma of the Liver (TS102)	4
NUC—3373 in Advanced Solid Tumours (NuTide: 301)	1
PREPARE-ABC	7
Scottish Colorectal Cancer Genetic Susceptibility study 3 (SOCCS3)	108
Total	**139**

Lack of support for research nurses and time pressure on clinics are noted as current obstacles to consenting patients for clinical trials.

5. Conclusions

Cancer audit data underpins much of the regional development and service improvement work of the MCN and regular reporting of activity and performance is a fundamental requirement of an MCN to assure the quality of care delivered across the region. Improvements in data quality and completeness have been observed in recent years facilitating more meaningful data analysis and national comparison to help inform MCN activity.

The Colorectal Cancer MCN is encouraged by the results presented in this report which demonstrate that patients with colorectal cancer in the WoS continue to receive a consistently high standard of care.

The results illustrate that some of the QPI targets set have been challenging for NHS Boards to achieve and there remains room for further service improvement around a number of areas. It is however encouraging that targets relating to circumferential margins in rectal cancer, reoperation rates and MDT discussion were met by all Boards in Year 5.

For QPI 9, local longitudinal analysis in NHS Lanarkshire identified higher rates of anastomotic leakage when surgery was performed by a locum consultant. As a result, this has led to a change of practice within the Board. The findings in NHS Lanarkshire highlight the benefit of high quality data and a robust quality assurance process. The QPI process helps to identify these issues and support service improvement. Rates of anastomotic dehiscence within the Clyde sector will be closely monitored by the Board and the MCN over the next audit reporting period.

NHS Lanarkshire has reviewed cases not meeting the target. Local longitudinal analysis revealed higher rate of leakage when surgery was performed by a locum consultant. As a result, locum consultants will no longer perform left sided colonic resections within NHS Lanarkshire. The operating consultant for elective right sided colonic resections will be decided on a case by case basis.

Where QPI targets were not met NHS Boards have provided detailed commentary. In the main these indicate valid clinical reasons or that, in some cases, patient fitness and co-morbidities have influenced patient management.

Action required as a consequence of this assessment of performance against the agreed criteria has been noted below.

Action Required:

QPI 4: Stoma Care

- NHS Lanarkshire to ensure that all patients with the potential to require a stoma are referred for pre-operative stoma care

QPI 9: Anastomotic Dehiscence

- MCN to work with NHS Greater Glasgow and Clyde to monitor performance in the Clyde sector over the coming audit period.

NHS Boards are asked to develop local Action/Improvement Plans in response to the findings presented in the report. A summary of actions for each NHS Board has been included within the Action Plan templates in Appendix 1.

Completed Action Plans should be returned to WoSCAN within two months of publication of this report.

Progress against these plans will be monitored by the MCN Advisory Board and reported to RCAG annually by Board Lead Cancer Clinicians and MCN Clinical Leads, as part of the regional governance process to enable RCAG to review and monitor regional improvement.

Abbreviations

AA	Ayrshire & Arran
ACaDMe	Acute Cancer Deaths and Mental Health
CNS	Clinical Nurse Specialist
CRM	Circumferential margin
DVT	Deep Venous Thrombosis
eCASE	Electronic Cancer Audit Support Environment
FV	Forth Valley
GGH	Gartnavel General Hospital
GRI	Glasgow Royal Infirmary
ISD	Information Services Division
LAN	Lanarkshire
MCN	Managed Clinical Network
MDT	Multidisciplinary Team
NICE	National Institute for Health and Clinical Excellence
QEUH	Queen Elizabeth University Hospital
QPI	Quality Performance Indicator
RCAG	Regional Cancer Advisory Group
STOB	Stobhill Hospital
TNM	Tumour Node Metastases
VIC	Victoria Infirmary
WIG	Western Infirmary Glasgow
WoS	West of Scotland

WoSCAN	West of Scotland Cancer Network

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Date accessed 05/12/2018.

Appendix 1: NHS Board Action Plans

A summary of actions for each NHS Board has been included within the Action Plan templates in Appendix 1. Completed Action Plans should be returned to WoSCAN within two months of publication of this report.

Action / Improvement Plan

NHS Board:	NHS Lanarkshire
Action Plan Lead:	
Date:	

KEY (Status)	
1	Action fully implemented
2	Action agreed but not yet implemented
3	No action taken (please state reason)

No	Action Required	NHS Board Action Taken	Timescales		Lead	Progress/Action Status	Status (see key)
			Start	End			
	Ensure actions mirror those detailed in Audit Report.	*Detail specific actions that will be taken by the NHS Board.*	*Insert date*	*Insert date*	*Insert name of responsible lead for each action.*	*Provide detail of action in progress, change in practices, problems encountered or reasons why no action taken.*	*Insert No. from key above*
4	Ensure that all patients with the potential to require a stoma are referred for pre-operative stoma care.						

Action / Improvement Plan

NHS Board:	Colorectal Cancer MCN
Action Plan Lead:	
Date:	

KEY (Status)	
1	Action fully implemented
2	Action agreed but not yet implemented
3	No action taken (please state reason)

No	**Action Required**	**NHS Board Action Taken**	**Timescales**		**Lead**	**Progress/Action Status**	**Status (see key)**
			Start	**End**			
	Ensure actions mirror those detailed in Audit Report.	*Detail specific actions that will be taken by the NHS Board.*	*Insert date*	*Insert date*	*Insert name of responsible lead for each action.*	*Provide detail of action in progress, change in practices, problems encountered or reasons why no action taken.*	*Insert No. from key above*
9	MCN to work with NHS Greater Glasgow and Clyde to monitor performance in the Clyde sector over the coming audit period.						

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