SCAN
South East Scotland Cancer Network

NHS SCOTLAND

Working regionally to improve cancer services

SOUTH EAST SCOTLAND CANCER NETWORK
PROSPECTIVE CANCER AUDIT

COLORECTAL CANCER 2020 – 2021
Quality Performance Indicators (QPI)
Comparative Report

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Document History

Version	Circulation	Date	Comments
Version 1	Lead Clinicians' Sign off Group	24/11/2021	Circulated prior to Lead Sign off Meeting on 03/12/2021
Version 2	Lead Clinicians	06/12/2021	Lead Clinicians commentary added.
Version 3	SCAN Group for final comments	23/12/2021	For SCAN Group final comments and approval
Version 4	SCAN Group, SCAN Governance Framework, SCAN Board Executive Leads	17/01/2022	Further explanatory note added to QPI 2 comment for Lothian.
Version 4w	Published to SCAN Website	02/02/2022	Disclosure undertaken in readiness for publication.

Comment by Chair of the SCAN Colorectal Group

This report provides information on the management of colorectal cancers in the South-East of Scotland from 1st April 2020 – 31st March 2021. This has been an extremely challenging period for all of us in the midst of the on-going Covid-19 situation. The pandemic has put a huge strain on many aspects of the NHS, severely affecting delivery of services. During the year various challenges were experienced involving different aspects of cancer care. The clinical teams have risen to the challenges, ensuring that patient care was maintained at a high standard at all times, which is reflected in this year's report

The SCAN Audit Team and Sarah Buchan in particular, have worked extremely hard during the pandemic to compile the data which generated this report. Data collection, as in previous years, has been of a high standard and we are grateful to the local cancer audit facilitators. Case ascertainment is down on previous years, but this is expected given the 6 months pause in bowel screening and the difficulties accessing heath care during the pandemic.

A total of 851 colorectal cancers were recorded on the Audit for the year, with 629 (74%) being colonic cancers and 222 rectal cancers (26%). This in comparison to previous years was down by around 140 cancers.

Overall, 74% of cancer patients had a surgical intervention with 62% having definitive surgery. Amongst those who had definitive surgery- the curative resection rate was 89% for colonic cancers and 95% for rectal cancers. Compared to last year the curative resection rate was lower, representing the relatively more advanced and complicated presentations.

Emergency presentations rose by nearly 5% this year and it has been the highest in SCAN for some time, with nearly 1 in 4 cancers presenting as an emergency (24%). This year only 30% of the cancers belonged to stage 1or 2, which is much lower than previous years.

Compliance was achieved in 10/13 QPIs across the region. The non-compliance was noted in pre-operative imaging of the colon (93%- target 95%); positive surgical margins following short course radiotherapy for rectal cancers (92%- target 95%) and participation in clinical trials (11% - target 15%).

Despite all the challenges within radiology services during the pandemic, timely radiological staging for cancers were achieved in more than 98% of cases. Pathological and Surgical outcomes were excellent in terms lymph node harvest (92%); anastomotic leaks(2% for colonic and 6% for rectal resections); re-operation rates (5%) and 30-day elective (0.2%) and emergency (3.3%) mortality rates.

Delivery of oncological services were maintained to a high standard by our team of clinical and medical oncologists. Adjuvant chemotherapy was delivered to 80% of high-risk Stage 2 and 74% of Stage 3 cancer patients and both were above their respective targets of 50% and 70% respectively. 30- and 90-day mortality rates after chemotherapy and radiotherapy were 0%

In terms of surgical approach for the cancers, 63% of cancers were operated through minimally invasive means (laparoscopic 58% and robotic 5%). The conversion to open surgery with laparoscopic intervention was 11% and 12% with robotic surgery. During the initial period of the pandemic, there were concerns about the use of laparoscopic means for surgical interventions and this translated to a higher incidence of open surgery (34%). The robotic programme in Lothian was also paused later in the year due to pressures from Covid. There is a gradual increase in the number of rectal cancers managed by either TEMS/TAMIS - 16 (7%) patients.

Overall, despite the pressures and uncertainties from the pandemic, it has been a good year with high standards of care being delivered across the region. Our data compares very favourably with other regions across the UK, with lower 30 day and 90 day mortality rates for example. The focus for the foreseeable future will require the group to be responsive to the pressures placed by the pandemic and at the same time ensure that the quality of care we provide to our patients is not compromised.

As Chairs of the group, we would like to thank all members of the network for their continued support in delivering the standards of care expected for our cancer patients. The group will continue their aspirations to maintain this and make progressive improvements in certain areas.

Dr Stephen Glancy
Deputy Chair SCAN Colorectal Group

Mr S Yalamarthi
Chair SCAN Colorectal Group
December 2021

Action points 2020-2021

No action points were identified for 2020-2021

Action Points from 2019-2020

QPI	Action required	Progress
QPI 3	Patients should be referred to the MDM for registration purposes. Audit staff should feedback to MDT if patients identified by audit staff have not been registered with the MDT.	This action will continue to be undertaken by all Auditors throughout SCAN. However, this QPI has now been archived following Formal Review of the Colorectal QPIs.
QPI 5	Pathology outliers should be reviewed by a Pathologist prior to Regional Sign off. Sarah Buchan will liaise with Leanne Robinson if necessary for next year's report.	This action has been completed and is now embedded in our standard operating practice.

CRC QPI Attainment Summary 2020-2021			Target%	Borders		D&G		Fife		Lothian		SCAN	
1. Radiological Staging & Diagnosis		Colon	95	N 25 D 25	100%	N 30 D 30	100%	N 73 D 73	100%	N 189 D 194	97.4%	N 317 D 322	98.4%
		Rectum	95	N 16 D 16	100%	N 14 D 15	93.3%	N 29 D 29	100%	N 57 D 58	98.3%	N 116 D 118	98.3%
2. Pre-operative imaging of the Colon			95	N 37 D 38	97.4%	N 35 D 38	92.1%	N 85 D 89	95.5%	N 200 D 219	91.3%	N 357 D 384	93.0%
5. Lymph Node Yield: surgical resection where ≥12 lymph nodes			90	N 39 D 44	88.6%	N 50 D 51	98.0%	N 97 D 105	92.4%	N 239 D 264	90.5%	N 425 D 464	91.6%
7. Surgical Margins	Primary surgery or surgery after short course XRT		95	N 11 D 11	100%	N 13 D 13	100%	N 20 D 20	100%	N 45 D 53	84.9%	N 89 D 97	91.8%
	After NACT, or long course XRT ± chemo, or short course XRT with long course intent		85	N 1 D 1	100%	N 2 D 2	100%	N 7 D 8	87.5%	N 11 D 11	100%	N 21 D 22	95.5%
8. Re-operation Rates			<10	N 3 D 50	6.0%	N 4 D 56	7.1%	N 6 D 123	4.9%	N 15 D 309	4.9%	N 28 D 538	5.2%
9. Anastomotic Dehiscence	Colon		<5	N 1 D 24	4.2%	N 0 D 31	0.0%	N 1 D 52	1.9%	N 3 D 130	2.3%	N 5 D 237	2.1%
	Rectum incl. TME		<10	N 0 D 14	0.0%	N 0 D 12	0.0%	N 2 D 49	4.1%	N 9 D 104	8.7%	N 11 D 179	6.1%
10i). 30 day mortality following surgical resection		Elective	<3	N 0 D 36	0.0%	N 0 D 45	0.0%	N 0 D 98	0.0%	N 1 D 234	0.4%	N 1 D 413	0.2%
		Emergency	<15	N 1 D 13	7.7%	N 0 D 11	0.0%	N 0 D 25	0.0%	N 3 D 74	4.1%	N 4 D 123	3.3%
10ii) 90 day mortality following surgical resection		Elective	<4	N 0 D 35	0.0%	N 1 D 43	2.3%	N 0 D 98	0.0%	N 1 D 229	0.4%	N 2 D 405	0.5%
		Emergency	<20	N 2 D 13	15.4%	N 0 D 11	0.0%	N 0 D 25	0.0%	N 8 D 74	10.8%	N 10 D 123	8.1%
11. Adjuvant Chemotherapy		HR Dukes B	50	N 3 D 5	60.0%	N 4 D 5	80.0%	N 6 D 9	66.7%	N 15 D 16	93.8%	N 28 D 35	80.0%
		Dukes C	70	N 5 D 8	62.5%	N 0 D 0	N/A	N 19 D 26	73.1%	N 31 D 40	77.5%	N 55 D 74	74.3%

CRC QPI Attainment Summary 2020-2021		Target%	Borders		D&G		Fife		Lothian		SCAN	
12i) 30 day Mortality after Curative Oncological Treatment	Neo-adjuvant	<1	N 0 D 2	0.0%	N 0 D 3	0.0%	N 0 D 5	0.0%	N 0 D 9	0.0%	N 0 D 19	0.0%
	Radiotherapy	<1	N 0 D 6	0.0%	N 0 D 5	0.0%	N 0 D 13	0.0%	N 0 D 24	0.0%	N 0 D 48	0.0%
	Adjuvant Chemotherapy	<1	N 0 D 13	0.0%	N 0 D 14	0.0%	N 0 D 35	0.0%	N 0 D 77	0.0%	N 0 D 139	0.0%
12i) 90 day Mortality after Curative Oncological Treatment	Neo-adjuvant	<1	N 0 D 2	0.0%	N 0 D 3	0.0%	N 0 D 5	0.0%	N 0 D 9	0.0%	N 0 D 19	0.0%
	Radiotherapy	<1	N 0 D 6	0.0%	N 0 D 5	0.0%	N 0 D 13	0.0%	N 0 D 24	0.0%	N 0 D 48	0.0%
	Adjuvant Chemotherapy	<1	N 0 D 13	0.0%	N 0 D 12	0.0%	N 0 D 35	0.0%	N 1 D 63	1.6%	N 1 D 123	0.8%
12ii). 30 day Mortality after Palliative Chemotherapy		<10	N 1 D 7	14.3%	N 0 D 4	0.0%	N 2 D 16	12.5%	N 0 D 34	0.0%	N 3 D 61	4.9%
13. Clinical Trials		15	N 11 D 98	11.2%	N 7 D 119	5.9%	N 4 D 243	1.6%	N 90 D 523	17.2%	N 112 D 983	11.4%

KEY	*Numerator (N)*	*% Performance*
	Denominator (D)	

Introduction and Methods

Cohort and Personnel

This report is the fourteenth to present comparative data on patients newly diagnosed with colorectal cancer in South East Scotland Cancer Network (SCAN) at the following hospitals: Borders General Hospital (NHS Borders), Dumfries and Galloway Royal Infirmary (NHS Dumfries & Galloway), Victoria Hospital, Kirkcaldy (NHS Fife), and Western General Hospital, Edinburgh (NHS Lothian). The report covers data on patients newly-diagnosed in the twelve months from 1 April 2020 to 31 March 2021.

Lead Clinicians and staff involved in audit were as follows

SCAN Region	Hospital	Lead Clinician	Audit Support
NHS Borders	Borders General Hospital	Mr Karol Pal	Leanne Robinson
NHS Dumfries & Galloway	Dumfries & Galloway Royal Infirmary	Mr Stuart Whitelaw	Christy Bell/ Jennifer Bruce
NHS Fife	Victoria Hospital	Mr Natarajan Manimaran	Maureen Lamb
SCAN & NHS Lothian	Western General Hospital	Mr Doug Speake	Sarah Buchan

Audit Processes and data recording

All Data was collected using eCase (electronic Cancer audit support environment) throughout SCAN. Data was analysed by the audit facilitators in each NHS Board according to the measurability document provided by PHS. SCAN data was collated by Sarah Buchan, SCAN Audit Facilitator for Colorectal cancer.

Data capture is focused round the process for the weekly multidisciplinary meetings i.e. ensuring that data covering patient referral, investigation, and diagnosis is being picked up through the routine process.

Surgical and Oncology data is obtained either from the clinical records (electronic systems and case notes) or by download from the Department of Clinical Oncology database within the Edinburgh Cancer Centre (ECC).

Each of the 4 hospitals provides surgery and chemotherapy but radiotherapy is provided centrally in Edinburgh Cancer Centre. Patients living closer to either Carlisle or Dundee may opt to have treatment outwith the SCAN region. All QPIs will be analysed and presented by Hospital of Diagnosis for data verification/sign off purposes with additional reports by Hospital of Surgery as appropriate.

The process remains dependent on audit staff for capture and entry of data, and for data quality checking

Most patients are identified through weekly multidisciplinary meetings. The following sources are used to check for additional patients:

1. Pathology records
2. GRO Death lists
3. Dept of Clinical Oncology retrospective database
4. Clinical Nurse Specialist database
5. ACaDMe (Acute, Cancer, Deaths and Mental Health); a data mart part of NHS National Services Scotland.

Dataset and Definitions

The QPIs have been developed collaboratively with the three Regional Cancer Networks, Information Services Division (ISD), and Healthcare Improvement Scotland. QPIs will be kept under regular review and be responsive to changes in clinical practice and emerging evidence.

The overarching aim of the cancer quality work programme is to ensure that activity at NHS board level is focussed on areas most important in terms of improving survival and patient experience whilst reducing variance and ensuring safe, effective and person-centred cancer care.

Following a period of development, public engagement and finalisation, each set of QPIs is published by Healthcare Improvement Scotland[1]

Accompanying datasets and measurability criteria for QPIs are published on the ISD website[2]. NHS boards are required to report against QPIs as part of a mandatory, publicly reported, programme at a national level.

The standard QPI format is shown below:

QPI Title:	Short title of Quality Performance Indicator (for use in reports etc.)	
Description:	Full and clear description of the Quality Performance Indicator.	
Rationale and Evidence:	Description of the evidence base and rationale which underpins this indicator.	
Specifications:	Numerator:	Of all the patients included in the denominator those who meet the criteria set out in the indicator.
	Denominator:	All patients to be included in the measurement of this indicator.
	Exclusions:	Patients who should be excluded from measurement of this indicator.
	Not recorded for numerator:	Include in the denominator for measurement against the target. Present as not recorded only if the patient cannot otherwise be identified as having met/not met the target.
	Not recorded for exclusion:	Include in the denominator for measurement against the target unless there is other definitive evidence that the record should be excluded. Present as not recorded only where the record cannot otherwise be definitively identified as an inclusion/exclusion for this standard.
	Not recorded for denominator:	Exclude from the denominator for measurement against the target. Present as not recorded only where the patient cannot otherwise be definitively identified as an inclusion/exclusion for this standard.
Target:	Statement of the level of performance to be achieved.	

[1] QPI documents are available at www.healthcareimprovementscotland.org
[2] Datasets and measurability documents are available at www.isdscotland.org

The QPI dataset for Colorectal was implemented from 01/04/2013. The dataset has now undergone 2 formal reviews, the latest completed in August 2021. This review was due to be completed in 2020; however it was delayed because of pressures nationally due to the Covid-19 pandemic. Some changes will take place in this report (listed in the table below) with QPIs that have updated or new dataset values or new QPIs being reported in 2021/2022.

Update following 2nd Formal Review

QPI	Change	Year for Reporting
1 (i)	Palliative endoscopic treatment (stenting) has been added as an exclusion.	2021/22
1 (ii)	Palliative endoscopic treatment (stenting) and TAMIS have both been added as an exclusion.	2021/22
2	Pre-operative imaging now has to take place <180 days from final surgery.	2020/21
5	Palliative endoscopic treatment (stenting) has been added as an exclusion. New data fields -Two episodes of neo-adjuvant treatment can now recorded where applicable.	2021/22
7 (i)	Description of QPI amended:"short course radiotherapy with delay to surgery". "TAMIS" has been added as an exclusion. Denominator wording updated to reflect changes in dataset fields with two episodes of neo-adjuvant treatment now able to be recorded where applicable.	2021/22
7 (ii)	Description of QPI amended removing "long course intent". "TAMIS" added to exclusions. Denominator wording updated to reflect changes in dataset fields with two episodes of neo-adjuvant treatment now able to be recorded where applicable.	2021/22
8	No change following formal review.	2020/21
9 (i) & 9 (ii)	Numerator amended. Addition of anastomotic leak having any intervention including medical, endoscopic, radiological and surgical.	2021/22
10	No change following formal review.	2020/21
11	QPI Title amended: "Dukes C and high risk Dukes B" to "Stage III". Now presented as one result rather than two as previous. The lower age limit of 50 has been removed from this QPI.	2021/22
12	QPI Title amended "Radical Radiotherapy". Adjuvant chemotherapy has been removed from this QPI.	2021/22
13	No change following formal review.	2020/21
14	Addition of New QPI - 30 day Mortality following Systemtic Anti-Cancer Therapy SACT	tbc
15	Addition of New QPI - Colorectal Liver Metastases	2021/22
16	Addition of New QPI - Assessment of Mismatch Repair (MMR)/Microsatellite Instability (MSI Status)	2021/22

The following QPIs have been archived: 3, 4 and 6

Data Quality

Estimate of case ascertainment

An estimate of case ascertainment (the percentage of the population with colorectal cancer recorded in the audit) is made by comparison with the Scottish Cancer Registry five year average. 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.

Number of cases recorded in audit: patients diagnosed 01/04/2020 to 31/03/2021

	Borders	D&G	Fife	Lothian	SCAN
Colon cancer	58	68	142	362	**630**
Rectal cancer	27	29	53	112	**221**
Total	85	97	195	474	**851**

Estimate of case ascertainment: calculated using the average of the most recent available five years of Cancer Registry Data (2015-2019)

	Borders	D&G	Fife	Lothian	SCAN
Cases from Audit	85	97	195	474	851
Cancer Registry 5 Year Average	98	115	243	523	979
Case Ascertainment %	86.7%	84.3%	80.2%	90.6%	86.6%

Source: Scottish Cancer Registry, ISD. Data extracted from ACaDMe on 16/11/2020. Note: 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

Quality Assurance

External QA: SCAN Audit participates in external quality assurance (QA) of data by PHS, (i.e. when a sample of data is compared with the data definitions). A QA of the QPI colorectal dataset took place in February 2015 and overall accuracy percentage results are shown below. The next QA of the QPI colorectal dataset was due in to be undertaken in February 2021, however due to the Covid-19 pandemic, other cancer sites are taking priority at the moment, as there is no immediate concern regarding the Colorectal data recording accuracy.

	Borders	D&G	Fife	Lothian	Scotland
Accuracy of data recording (%)	99.4%	99.4%	98.3%	97.0%	99.0%

Clinical Sign-Off

This report compares data from reports prepared for individual Health Boards and signed off as accurate following review by the lead clinicians from each Board. The collated SCAN results are reviewed jointly by the lead clinicians, to assess variances and provide comments on results:

- Individual health board results were reviewed and signed-off locally.
- Collated results were presented and discussed at the SCAN Regional Leads Sign off Meeting on 03/12/2021.
- Final report circulated to SCAN Colorectal Group and Clinical Governance Framework on 17/01/2022

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 any disclosive material.

Sarah Buchan
SCAN Audit Facilitator

DIAGNOSIS AND STAGING

QPI 1 (i): Radiological Diagnosis and Staging – Colon Cancer

Target 95%

Numerator = Number of patients with **colon cancer** who undergo CT chest, abdomen and pelvis before definitive treatment.

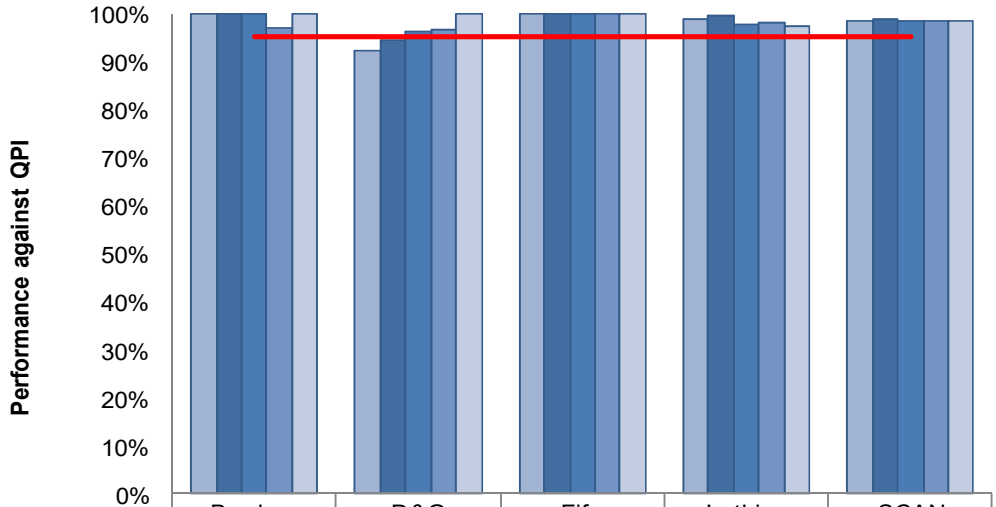
Denominator = All patients with **colon cancer.**

Exclusions = Patients who decline investigations. Patients who undergo emergency surgery. Patients undergoing supportive care only. Patients who undergo palliative treatment (chemotherapy, radiotherapy or surgery). Patients who die before first treatment.

Target 95%	Borders	D&G	Fife	Lothian	SCAN
2020-2021 Cohort	85	97	195	474	**851**
Ineligible for this QPI	60	67	122	280	**529**
Numerator	25	30	73	189	**317**
Not Recorded for the Numerator	0	0	0	0	**0**
Denominator	25	30	73	194	**322**
Not Recorded for Exclusion	0	0	0	0	**0**
Not Recorded for Denominator	0	0	0	0	**0**
% Performance	100%	100%	100%	97.4%	**98.4%**

All Boards met this QPI

QPI 1 (i) Radiological Diagnosis & Staging - Colon Cancer
2016/17 to 2020/21



	Borders	D&G	Fife	Lothian	SCAN
2016/17	100	92.3	100	99.0	98.6
2017/18	100	94.5	100	99.4	98.9
2018/19	100	96.4	100	97.6	98.3
2019/20	97.1	96.6	100	98.1	98.4
2020/21	100	100	100	97.4	98.4
QPI Target 95%	95	95	95	95	95

QPI 1 (ii): Radiological Diagnosis and Staging – Rectal Cancer

Target 95%

Numerator = All patients with **rectal cancer** undergoing definitive treatment (chemoradiotherapy or surgical resection) who undergo CT chest, abdomen and pelvis and MRI pelvis before definitive treatment.

Denominator = All patients with **rectal cancer** undergoing definitive treatment (chemoradiotherapy or surgical resection).

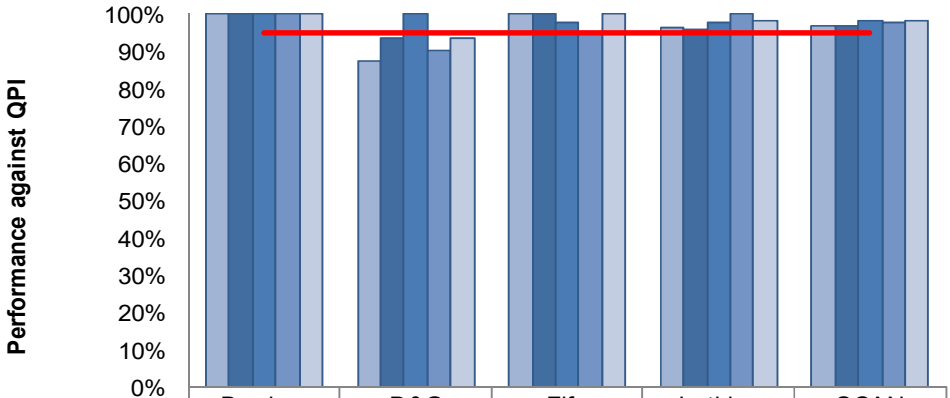
Exclusions = Patients who decline investigation. Patients who undergo emergency surgery[3] Patients with a contraindication to MRI. Patients who undergo Transanal Endoscopic Microsurgery (TEM). Patients who undergo Transanal Resection of Tumour (TART). Patients who undergo palliative treatment (chemotherapy, radiotherapy or surgery). Patients who died before first treatment

Target 95%	Borders	D&G	Fife	Lothian	SCAN
2020-21 Cohort	85	97	195	474	**851**
Ineligible for this QPI	69	82	166	416	**733**
Numerator	16	14	29	57	**116**
Not Recorded for Numerator	0	0	0	0	**0**
Denominator	16	15	29	58	**118**
Not Recorded for Exclusions	0	0	0	0	**0**
Not Recorded for Denominator	0	0	0	0	**0**
% Recorded	100%	93.3%	100%	98.3%	**98.3%**

Comments where this QPI was not met:

D&G: This QPI was not met with a shortfall of 1.7% (1 case) Imaging was incomplete, no MRI pelvis was performed.

QPI 1 (ii) Radiological Diagnosis & Staging - Rectal Cancer
2016/17 to 2020/21



	Borders	D&G	Fife	Lothian	SCAN
2016/17	100	87.5	100	96.1	96.5
2017/18	100	93.3	100	95.5	96.6
2018/19	100	100	97.8	97.5	98.1
2019/20	100	90.0	95.0	100	97.5
2020/21	100	93.3	100	98.3	98.3
QPI Target 95%	95	95	95	95	95

[3] Emergency surgical resection is defined by the Consultant in Charge of the patient's care

QPI 2: Pre-Operative Imaging of the Colon
Target 95%

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 colon has been removed. (Date of Final Definitive (or only) Surgery minus Date of Imaging Large Bowel is less than 180 days)

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.

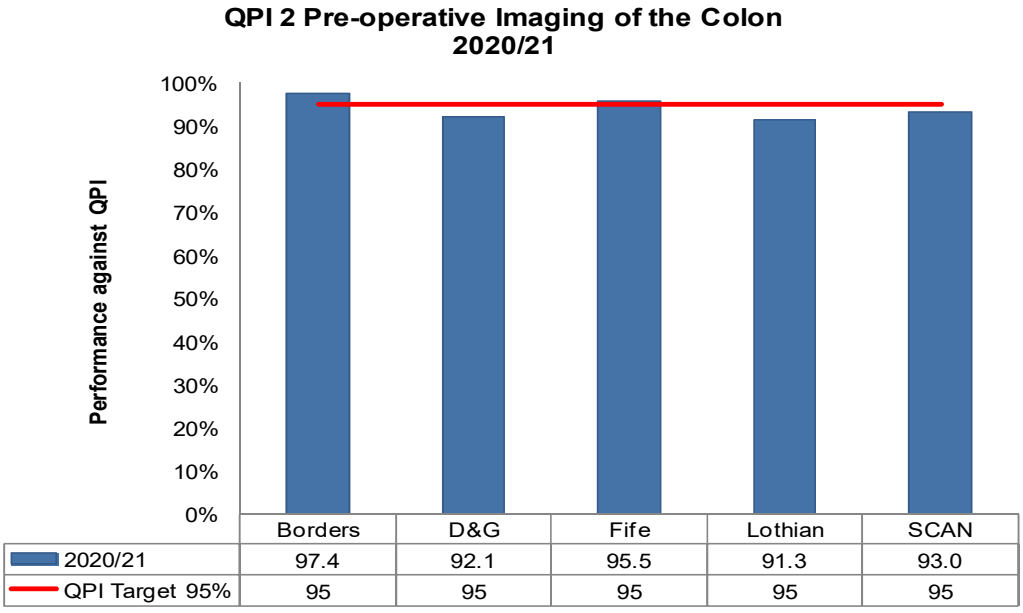
Target 95%	Borders	D&G	Fife	Lothian	SCAN
2020-21 Cohort	85	97	195	474	**851**
Ineligible for this QPI	47	59	106	255	**467**
Numerator	37	35	85	200	**357**
Not Recorded for the Numerator	0	0	0	0	**0**
Denominator	38	38	89	219	**384**
Not Recorded for Exclusions	0	0	0	0	**0**
Not Recorded for the Denominator	0	0	0	0	**0**
% Percentage	97.4%	92.1%	95.5%	91.3%	**93.0%**

Comments where this QPI was not met:

D&G: This QPI was not met with a shortfall of 2.9% (3 cases) 2 cases had imaging but were outside the timeframe of 180 days (both had neo-adjuvant treatment) and 1 case had no CT colon/colonoscopy organised.

Lothian: This QPI was not met with a shortfall of 3.7% (19 cases) 9 cases underwent full imaging however it was more than 180 days pre surgery (of these 9 cases, 4 had neo-adjuvant treatment). 7 cases had no imaging organised by Clinicians. 2 cases did not have imaging due to Covid pressures. 1 patient declined full imaging. All outliers have been reviewed and were treated appropriately.

Comment: The change in this QPI with a timeline less than 6 months (180 days) from imaging to surgery has made this harder to achieve. This may be related to difficulty accessing colonoscopy/CT colon in a pandemic affected year.



SURGICAL OUTCOMES

QPI 5: Lymph Node Yield – Hospital of Surgery
Target 90%

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).

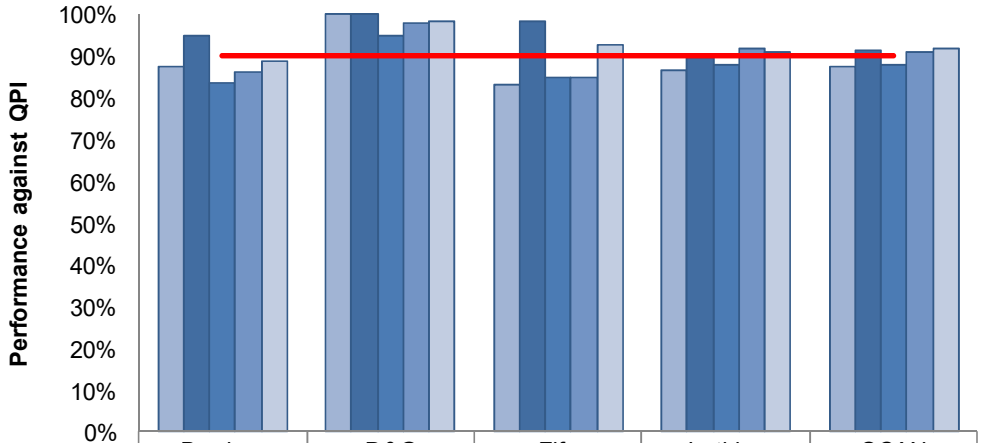
Exclusions = Patients with rectal cancer who undergo long course neo-adjuvant chemoradiotherapy or radiotherapy. Patients who undergo transanal endoscopic microsurgery (TEM) or transanal resection of tumour (TART).

Target 90%	Borders	D&G	Fife	Lothian	SCAN
Numerator	39	50	97	239	**425**
Not Recorded for the Numerator	0	0	0	0	**0**
Denominator	44	51	105	264	**464**
Not Recorded for Exclusions	0	0	0	0	0
Not Recorded for Denominator	0	0	0	0	0
% Percentage	88.6%	98.0%	92.4%	90.5%	91.6%

Comments where this QPI was not met:

Borders: This QPI was not met with a shortfall of 1.4% (5 cases) 1 had difficult to identify lymph nodes, 1 there was not enough tissue obtained, 1 only 7 nodes were identified and 2 had no comments provided.

QPI 5: Lymph Node Yield
2016/17 to 2020/21



	Borders	D&G	Fife	Lothian	SCAN
2016/17	87.2	100	83.1	86.5	87.3
2017/18	94.8	100	97.9	89.4	91.0
2018/19	83.3	94.5	84.7	87.6	87.5
2019/20	86.0	97.5	84.7	91.6	90.5
2020/21	88.6	98.0	92.4	90.5	91.6
QPI Target 90%	90	90	90	90	90

Comments:

Lothian: 8 of the 25 cases with <12 lymph nodes were node positive. One of these would have had 14 lymph nodes using the TNM 5 definitions, so is one of the cases that falls into the difference between TNM 5 and TNM8.

All outliers have been reviewed by Pathology and no further action is required.

Following discussion at the Colorectal QPI National Meeting in February 2015, it was agreed it would be useful to consider looking at lymph node yield from node negative patients.

This table shows the number of nodes examined for patients with Node negative (N0) disease.

Lymph Node Yield in Node Negative Patients

LN	BGH	D&G	Fife	Lothian	SCAN
<12	4	1	6	21	**32**
12 to 19	19	5	31	82	**137**
20 to 29	4	11	15	61	**91**
≥30	1	19	2	11	**33**
Total	28	36	54	175	**293**

It is noted that the QPI target has increased from 80% to 90% following the 3-year formal review. The target was continuously met in previous years by all Boards, but each Board is aware of the new target and will strive to meet this. It is noted in the HIS Colorectal QPI paper (http://www.healthcareimprovementscotland.org/his/idoc.ashx?docid=f399d719-8597-48f6-999a-1e248d5ab6aa&version=-1) that varying evidence exists regarding the most appropriate target level therefore this may need redefined in the future, to take account of new evidence or as further data becomes available.

QPI 7 (i): Surgical Margins – Hospital of Surgery

Target 95%

Numerator = Number of patients with **rectal cancer** who undergo elective primary surgical resection or immediate / early surgical resection following neoadjuvant short course radiotherapy in which the circumferential margin is clear of tumour.

Denominator = All patients with **rectal cancer** who undergo elective primary surgical resection or immediate / early surgical resection following neo-adjuvant short course radiotherapy.

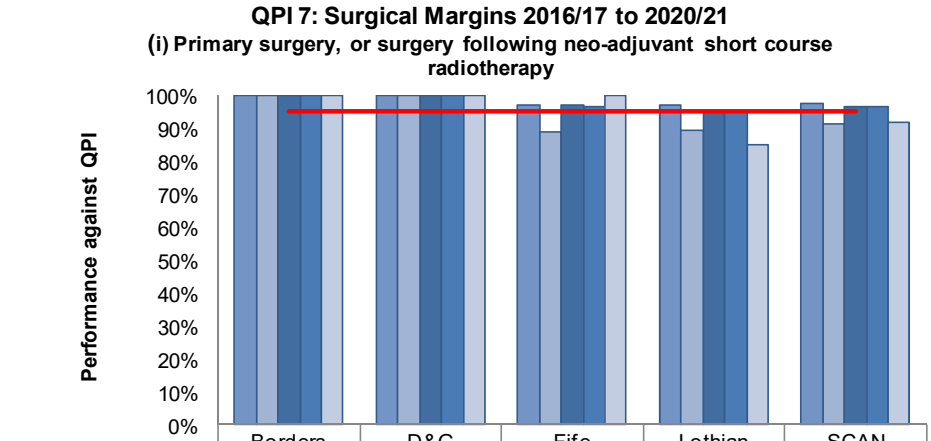
Exclusions = Patients who undergo transanal endoscopic microsurgery (TEM) or transanal resection of tumour (TART).

Target 95%	Borders	D&G	Fife	Lothian	SCAN
Numerator	11	13	20	45	89
Not Recorded for the Numerator	0	0	0	0	0
Denominator	11	13	20	53	97
Not Recorded for Exclusions	0	0	0	0	0
Not Recorded for Denominator	0	0	0	0	0
% Percentage	100%	100%	100%	84.9%	91.8%

Comments where this QPI was not met:

Lothian: This QPI was not met with a shortfall of 10.1% (8 cases) 3 cases were CRM positive by node/satellite nodule rather than primary tumour demonstrating again difficulty in staging of nodes. 2 cases were more advanced primaries than predicted by MRI scan. 1 case was palliative from the outset with disease spread. 1 case the MRI scan showed abnormality abutting CRM in a low tumour with some uncertainty whether this represented tumour or desmoplastic reaction, went on to have short course radiotherapy pre-operatively and R1 resection. In retrospect, downstaging treatment may have been considered. 1 case, MDM felt clinical assessment by a surgeon at the time of the oncology clinic would have been a useful addition to MRI scan given paucity of anterior mesorectal fat – that assessment suggested short course pre-operative radiotherapy and immediate surgery was an appropriate option. R1 resection and again in retrospect, downstaging treatment may have been considered.

Comment: All outliers have been reviewed and no action identified.



	Borders	D&G	Fife	Lothian	SCAN
2016/17	100	100	96.9	97.1	97.6
2017/18	100	100	88.9	89.6	91.4
2018/19	100	100	97.0	95.3	96.7
2019/20	100	100	96.6	95.0	96.6
2020/21	100	100	100	84.9	91.8
QPI Target 95%	95	95	95	95	95

QPI 7 (ii): Surgical Margins – Hospital of Surgery

Target 85%

Numerator = Number of patients with **rectal cancer** who undergo elective surgical resection following neoadjuvant chemotherapy, long course chemoradiotherapy, long course radiotherapy or short course radiotherapy with long course intent (delay to surgery) in which the circumferential margin is clear of tumour.

Denominator = All patients with **rectal cancer** who undergo elective surgical resection following neo-adjuvant chemotherapy, long course chemoradiotherapy, long course radiotherapy or short course radiotherapy with long course intent (delay to surgery).

Exclusions = Patients who undergo transanal endoscopic microsurgery (TEM) or transanal resection of tumour (TART).

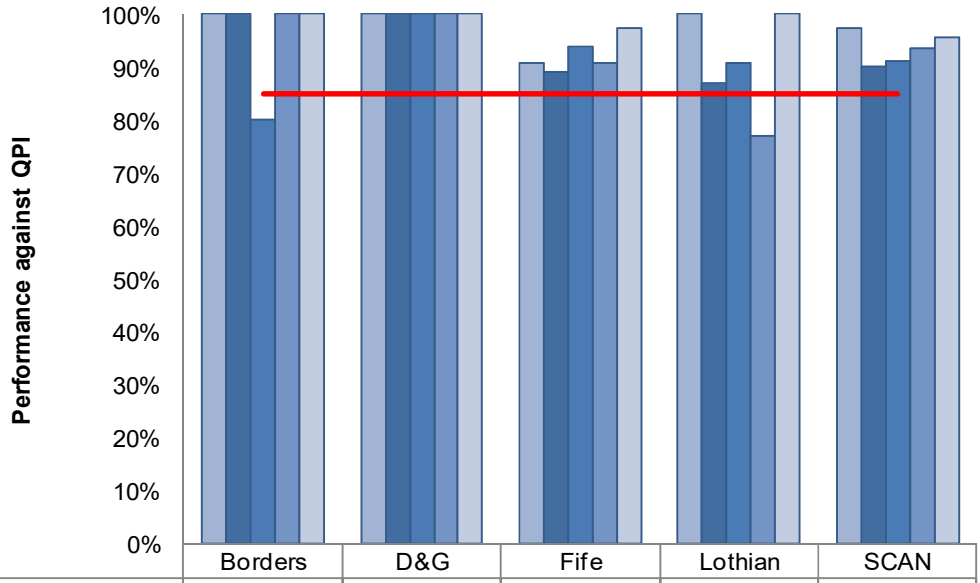
Target 85%	Borders	D&G	Fife	Lothian	SCAN
Numerator	1	2	7	11	**21**
Not Recorded for the Numerator	0	0	0	0	**0**
Denominator	1	2	8	11	**22**
Not Recorded for Exclusions	0	0	0	0	**0**
Not Recorded for Denominator	0	0	0	0	**0**
% Percentage	100%	100%	87.5%	100%	**95.5%**

All Boards met this QPI

Clinical comment on one outlier:

Pt had threatened margins and despite appropriate downstaging treatment had an R1 resection. This is likely to be due to the mucinous component of the disease. The patient got good cytoreduction with the solid components of the disease and there was only one focus of disease within 1mm.

QPI 7: Surgical Margins 2016/17 to 2020/21
(ii) Surgery following neo-adjuvant long course radiotherapy or chemoradiotherapy or short course radiotherapy with long course intent (delay to surgery)



	Borders	D&G	Fife	Lothian	SCAN
2016/17	100	100	90.9	100	97.5
2017/18	100	100	88.9	87	90.2
2018/19	80	100	93.8	90.9	91.3
2019/20	100	100	90.9	76.9	93.7
2020/21	100	100	97.5	100	95.5
QPI Target 85%	85	85	85	85	85

Comment:

Although QPI 7 was largely met by all Boards in SCAN, it also reflects the limitations of our treatments and the biology of the individual's cancer rather than any failing on the part of either the oncology team or surgical team involved. We know from large series and trials that after downstaging treatment only 70-80% of patients achieve an R0 resection (on an intention to treat basis). So to have a QPI target of 85% is over-optimistic. We suggest this QPI requires further revision at formal review.

QPI 8: Re-operation Rates - Hospital of Surgery

Target <10%

Numerator = Number of patients with colorectal cancer who undergo surgical resection who return to theatre following initial surgical procedure (within 30 days of surgery) to deal with complications related to the index procedure.

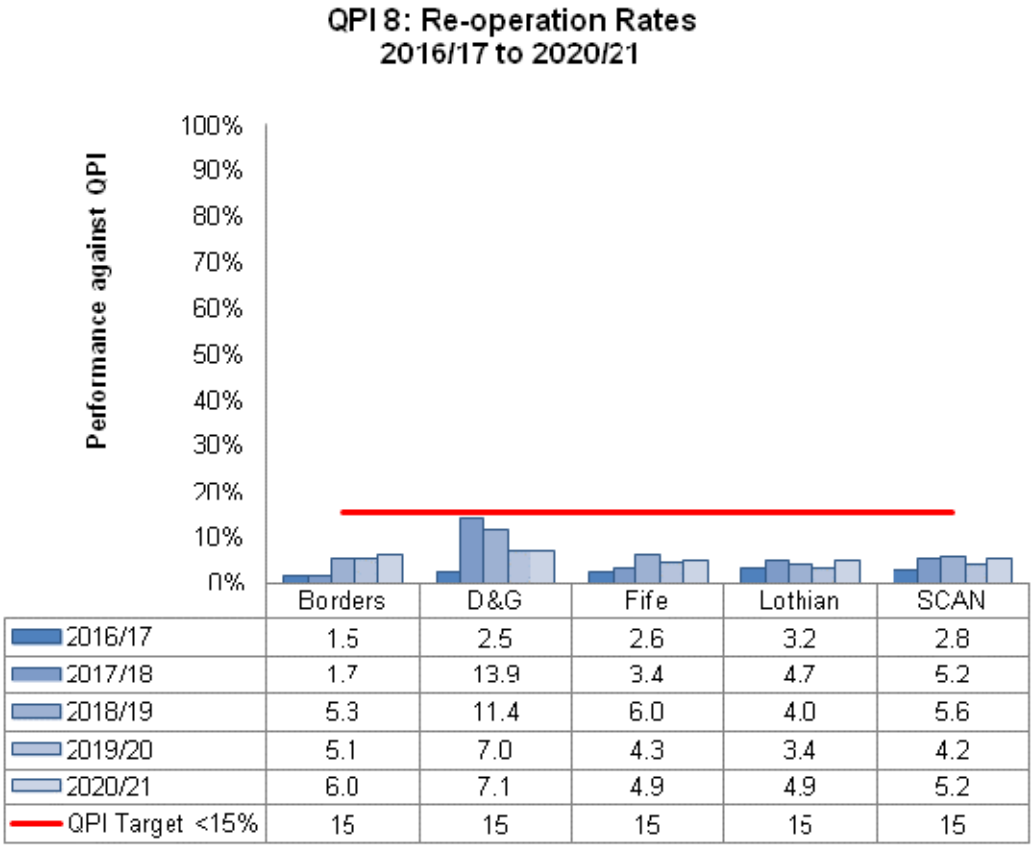
Denominator = All patients with colorectal cancer who undergo surgical resection.

Exclusions = No exclusions.

Target <10%	Borders	D&G	Fife	Lothian	SCAN
Numerator	3	4	6	15	**28**
Not Recorded for the Numerator	0	0	0	0	**0**
Denominator	50	56	123	309	**538**
Not Recorded for Exclusions	0	0	0	0	**0**
Not Recorded for Denominator	0	0	0	0	**0**
% Percentage	6.0%	7.1%	4.9%	4.9%	**5.2%**

All Boards met this QPI

This result is a reflection of good practice throughout SCAN



	Borders	D&G	Fife	Lothian	SCAN
2016/17	1.5	2.5	2.6	3.2	2.8
2017/18	1.7	13.9	3.4	4.7	5.2
2018/19	5.3	11.4	6.0	4.0	5.6
2019/20	5.1	7.0	4.3	3.4	4.2
2020/21	6.0	7.1	4.9	4.9	5.2
QPI Target <15%	15	15	15	15	15

Following formal review after year 3 (2015/2016) it was agreed not to use SMR01 returns for this QPI due to data inconsistencies. This information is therefore collected locally by audit staff in each Board from 2016/2017 onwards. It should be noted however, that in Borders, Fife and Lothian we have been collecting and reporting on this QPI from information collected locally since 2013.

QPI 9: Anastomotic Dehiscence (i) – Hospital of Surgery
Target <5%

Numerator = Number of patients with colorectal cancer who undergo a surgical procedure involving anastomosis of the colon having anastomotic leak requiring intervention (radiological or surgical).

Denominator = All patients with colorectal cancer who undergo a surgical procedure involving anastomosis of the colon.

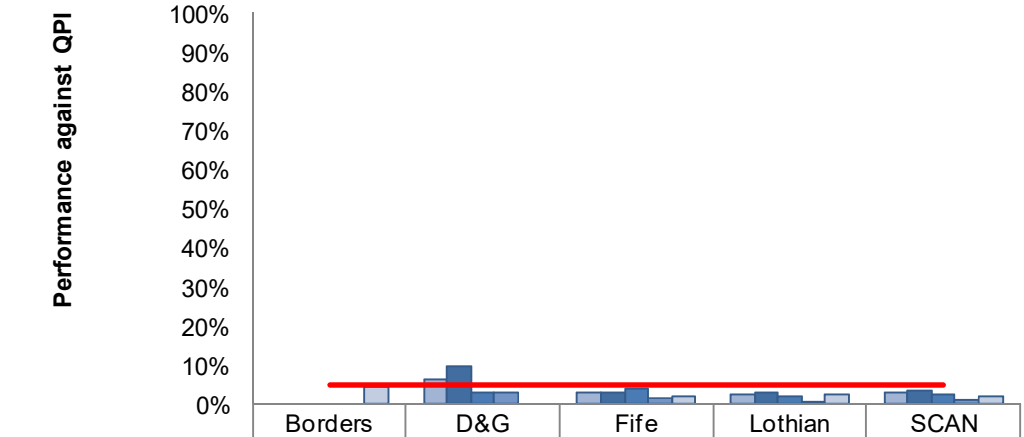
Exclusions = No exclusions.

Target <5%	Borders	D&G	Fife	Lothian	SCAN
Numerator	1	0	1	3	**5**
Not Recorded for the Numerator	0	0	0	0	**0**
Denominator	24	31	52	130	**237**
Not Recorded for Exclusions	0	0	0	0	**0**
Not Recorded for Denominator	0	0	0	0	**0**
% Percentage	4.2%	0.0%	1.9%	2.3%	**2.1%**

All Boards met this QPI

Comment: Dumfries & Galloway are commended on the improvement in their year on year results.

QPI 9: Anastomotic Dehiscence 2016/17 - 2020/21
(i) Colonic Anastomosis



	Borders	D&G	Fife	Lothian	SCAN
2016/17	0.0	6.1	3.0	2.3	2.7
2017/18	0.0	9.4	2.7	2.8	3.2
2018/19	0.0	2.7	3.9	2.1	2.5
2019/20	0.0	2.9	1.2	0.6	1.0
2020/21	4.2	0.0	1.9	2.3	2.1
QPI Target <5%	5	5	5	5	5

QPI 9: Anastomotic Dehiscence (ii) – Hospital of Surgery

Target <10%

Numerator = Number of 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).

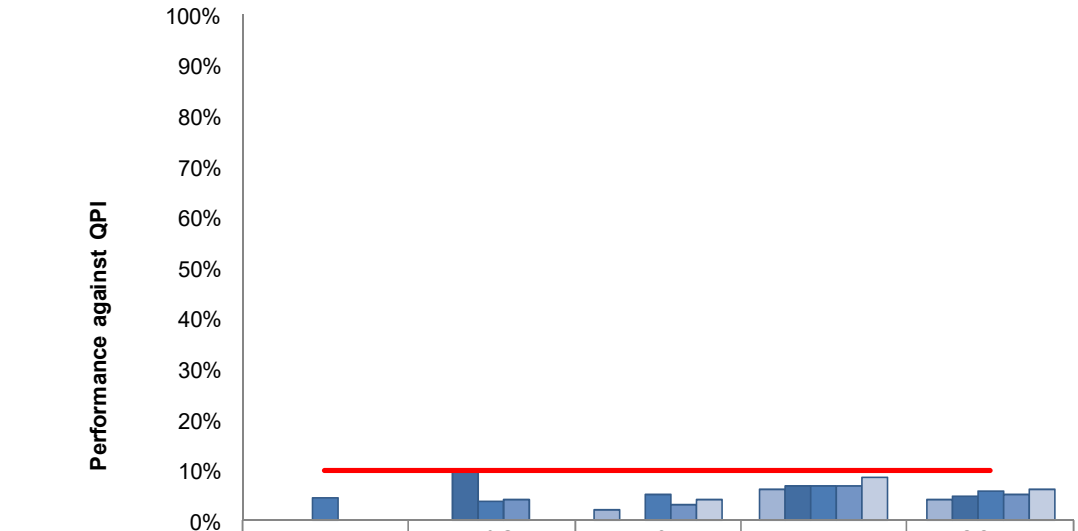
Denominator = All patients with colorectal cancer who undergo a surgical procedure involving anastomosis of the rectum (including anterior resection with TME)

Exclusions = None.

Target <10%	Borders	D&G	Fife	Lothian	SCAN
Numerator	0	0	2	9	**11**
Not Recorded for the Numerator	0	0	0	0	**0**
Denominator	14	12	49	104	**179**
Not Recorded for Exclusions	0	0	0	0	**0**
Not Recorded for Denominator	0	0	0	0	**0**
% Percentage	0.0%	0.0%	4.1%	8.7%	**6.1%**

All Boards met this QPI

QPI 9: Anastomotic Dehiscence 2016/17 - 20120/21
(ii) Rectal Anastomosis (including anterior resection with TME)



	Borders	D&G	Fife	Lothian	SCAN
2016/17	0.0	0.0	2.0	6.3	4.2
2017/18	0.0	10.0	0.0	6.9	5.0
2018/19	4.5	4.0	5.2	7.0	6.0
2019/20	0.0	4.2	3.2	6.9	5.2
2020/21	0.0	0.0	4.1	8.7	6.1
QPI Target <10%	10	10	10	10	10

ONCOLOGICAL TREATMENT OUTCOMES

QPI 10 (i): 30 Day Mortality Following Surgical Resection – Hospital of Surgery

Target: Elective surgical resection - 30 day mortality <3%
Emergency surgical resection - 30 day mortality<15%

Numerator = Number of patients with colorectal cancer who undergo emergency or elective surgical resection who die within 30 days of surgery.

Denominator = All patients with colorectal cancer who undergo emergency or elective surgical resection.

Exclusions = No exclusions

Elective Surgery - 30 day mortality

Target <3%	Borders	D&G	Fife	Lothian	SCAN
Numerator (elective surgery)	0	0	0	1	**1**
Not Recorded for the Numerator	0	0	0	0	**0**
Denominator	36	45	98	234	**413**
Not Recorded for Exclusions	0	0	0	0	**0**
Not Recorded for Denominator	0	0	0	0	**0**
% Percentage	0.0%	0.0%	0.0%	0.4%	**0.2%**

Emergency Surgery - 30 day mortality

Target <15%	Borders	D&G	Fife	Lothian	SCAN
Numerator (emergency surgery)	1	0	0	3	**4**
Not Recorded for the Numerator	0	0	0	0	**0**
Denominator	13	11	25	74	**123**
Not Recorded for Exclusions	0	0	0	0	**0**
Not Recorded for Denominator	0	0	0	0	**0**
% Percentage	7.7%	0.0%	0.0%	4.1%	**3.3%**

All Boards met this QPI

Comment: The results of this QPI reflect a good standard of care throughout the service and should be commended in a difficult year.

QPI 10 (ii): 90 Day Mortality Following Surgical Resection – Hospital of Surgery

Target: Elective surgical resection - 90 day mortality <4%
Emergency surgical resection - 90 day mortality <20%

Numerator = Number of patients with colorectal cancer who undergo emergency or elective surgical resection who die within 90 days of surgery.

Denominator = All patients with colorectal cancer who undergo emergency or elective surgical resection.

Exclusions = No exclusions

Elective Surgery - 90 day mortality

Target <4%	Borders	D&G	Fife	Lothian	SCAN
Numerator (elective surgery)	0	1	0	1	**2**
Not Recorded for the Numerator	0	0	0	0	**0**
Denominator	35	43	98	229	**405**
Not Recorded for Exclusions	0	0	0	0	**0**
Not Recorded for Denominator	0	0	0	0	**0**
% Percentage	0.0%	2.3%	0.0%	0.4%	**0.5%**

Emergency Surgery - 90 day mortality

Target <20%	Borders	D&G	Fife	Lothian	SCAN
Numerator (emergency surgery)	2	0	0	8	**10**
Not Recorded for the Numerator	0	0	0	0	**0**
Denominator	13	11	25	74	**123**
Not Recorded for Exclusions	0	0	0	0	**0**
Not Recorded for Denominator	0	0	0	0	**0**
% Percentage	15.4%	0.0%	0.0%	10.8%	**8.1%**

All Boards met this QPI

QPI 11 (i): Adjuvant chemotherapy in Patients with High Risk Dukes B

For Information Only

QPI 11 is measured using Dukes Staging. As this is not compatible with TNM 8 which was implemented from April 2018, the figures below are incomplete and for information only. QPI 11 has been updated following recent Formal Review and the revised definition will be used for patients diagnosed from 01/04/2021.

Numerator = 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 = 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 decline chemotherapy. Patients who undergo neo-adjuvant treatment.

	Borders	D&G	Fife	Lothian	SCAN
2020-21 Cohort	85	97	195	474	**851**
Ineligible for the QPI	80	92	186	458	**816**
Numerator - High Risk Dukes B	3	4	6	15	**28**
Not Recorded for the Numerator	0	0	0	0	**0**
Denominator	5	5	9	16	**35**
Not Recorded for Exclusions	0	0	0	0	**0**
Not Recorded for Denominator	0	1	0	1	**0**
% Percentage	60.0%	80.0%	66.7%	93.8%	**80.0%**

High risk Dukes B colorectal cancer is defined as patients with pT4a or pT4b disease with or without extramural venous invasion, or Patients with pT3 pN0 M0 with extramural venous invasion

QPI 11 (ii): Adjuvant chemotherapy in Patients with Dukes C colorectal cancer

For Information Only

Numerator = 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.

Denominator = All patients between 50 and 74 years of age at diagnosis with Dukes C, colorectal cancer who undergo surgical resection.

Exclusions = Patients who decline chemotherapy. Patients who undergo neo-adjuvant treatment.

	Borders	D&G	Fife	Lothian	SCAN
2020-21 Cohort	85	97	195	474	**851**
Ineligible for the QPI	77	97	169	434	**777**
Numerator - Dukes C	5	0	19	31	**55**
Not Recorded for the Numerator	0	0	0	0	**0**
Denominator	8	0	26	40	**74**
Not Recorded for Exclusions	0	0	0	0	**0**
Not Recorded for Denominator	0	25	0	1	**26**
% Percentage	62.5%	N/A	73.1%	77.5%	**74.3%**

QPI 12 (i): 30 Day Mortality Following Radical Chemotherapy or Radiotherapy

Target <1%

Numerator = Number of patients with colorectal cancer who undergo neo-adjuvant chemoradiotherapy, radiotherapy or adjuvant chemotherapy with curative intent who die within 30 days of treatment.

Denominator = All patients with colorectal cancer who undergo neo-adjuvant chemoradiotherapy, radiotherapy or adjuvant chemotherapy with curative intent.

Exclusions = No exclusions.

30 day mortality after neo-adjuvant chemoradiotherapy with curative intent

Target <1%	Borders	D&G	Fife	Lothian	SCAN
Numerator	0	0	0	0	**0**
Not Recorded for the Numerator	0	0	0	0	**0**
Denominator	2	3	5	9	**19**
Not Recorded for Exclusions	0	0	0	0	**0**
Not Recorded for Denominator	0	0	0	0	**0**
% Percentage	0.0%	0.0%	0.0%	0.0%	**0.0%**

30 day mortality after radiotherapy with curative intent

Target <1%	Borders	D&G	Fife	Lothian	SCAN
Numerator	0	0	0	0	**0**
Not Recorded for the Numerator	0	0	0	0	**0**
Denominator	6	5	13	24	**48**
Not Recorded for Exclusions	0	0	0	0	**0**
Not Recorded for Denominator	0	0	0	0	**0**
% Percentage	0.0%	0.0%	0.0%	0.0%	**0.0%**

30 day mortality after adjuvant chemotherapy with curative intent

Target <1%	Borders	D&G	Fife	Lothian	SCAN
Numerator	0	0	0	0	**0**
Not Recorded for the Numerator	0	0	0	0	**0**
Denominator	13	14	35	77	**139**
Not Recorded for Exclusions	0	0	0	0	**0**
Not Recorded for Denominator	0	0	0	0	**0**
% Percentage	0.0%	0.0%	0.0%	0.0%	**0.0%**

All Boards met this QPI

QPI 12 (i): 90 Day Mortality Following Radical Chemotherapy or Radiotherapy
Target <1%

Numerator = Number of patients with colorectal cancer who undergo neo-adjuvant chemoradiotherapy, radiotherapy or adjuvant chemotherapy with curative intent who die within 90 days of treatment.

Denominator = All patients with colorectal cancer who undergo neo-adjuvant chemoradiotherapy, radiotherapy or adjuvant chemotherapy with curative intent.

Exclusions = No exclusions.

90 day mortality after neo-adjuvant chemoradiotherapy with curative intent

Target <1%	Borders	D&G	Fife	Lothian	SCAN
Numerator	0	0	0	0	**0**
Not Recorded for the Numerator	0	0	0	0	**0**
Denominator	2	3	5	9	**19**
Not Recorded for Exclusions	0	0	0	0	**0**
Not Recorded for Denominator	0	0	0	0	**0**
% Percentage	0.0%	0.0%	0.0%	0.0%	**0.0%**

90 day mortality after radiotherapy with curative intent

Target <1%	Borders	D&G	Fife	Lothian	SCAN
Numerator	0	0	0	0	**0**
Not Recorded for the Numerator	0	0	0	0	**0**
Denominator	6	5	13	24	**48**
Not Recorded for Exclusions	0	0	0	0	**0**
Not Recorded for Denominator	0	0	0	0	**0**
% Percentage	0.0%	0.0%	0.0%	0.0%	**0.0%**

90 day mortality after adjuvant chemotherapy with curative intent

Target <1%	Borders	D&G	Fife	Lothian	SCAN
Numerator	0	0	0	1	**1**
Not Recorded for the Numerator	0	0	0	0	**0**
Denominator	13	12	35	63	**123**
Not Recorded for Exclusions	0	0	0	0	**0**
Not Recorded for Denominator	0	0	0	0	**0**
% Percentage	0.0%	0.0%	0.0%	1.6%	**0.8%**

Comments where the QPI was not met:

Lothian: The target was not met showing a shortfall of 0.6% (1 case). Chemotherapy toxicity was implicated despite normal DPD testing. This was discussed at the GI Oncology Team Morbidity and Mortality Meeting and this was a patient induced delay to acute oncology with no learning points.

QPI 12 (ii): 30 Day Mortality Following Palliative Chemotherapy

Target <10%

Numerator = Number of patients with colorectal cancer who undergo palliative chemotherapy who die within 30 days of treatment.

Denominator = All patients with colorectal cancer who undergo palliative chemotherapy.

Exclusions = No exclusions.

Target <10%	Borders	D&G	Fife	Lothian	SCAN
Numerator	1	0	2	0	**3**
Not Recorded for the Numerator	0	0	0	0	**0**
Denominator	7	4	16	34	**61**
Not Recorded for Exclusions	0	0	0	0	**0**
Not Recorded for Denominator	0	0	0	0	**0**
% Percentage	14.3%	0.0%	12.5%	0.0%	**4.9%**

Comments where this QPI was not met:

Borders: This QPI was not met with a shortfall of 4.3% (1 case). The patient was very frail with advancing disease.

Fife: This QPI was not met with a shortfall of 2.5% (2 cases). Both patients died from disease progression.

Comment:

QPI 12 (i) adjuvant chemotherapy and QPI 12 (ii) palliative chemotherapy are to be replaced with a standardised 30 day SACT Mortality QPI (QPI 14) which will be a generic QPI across all the tumour types covered by the QPI program.

Measurement is being revised to use data from Chemocare (electronic chemotherapy prescribing system) for reporting in order to utilise existing data and provide an accurate picture of all patients with colorectal cancer undergoing chemotherapy, rather than the subset of all diagnosed in the audit year cohort only.

The development of a National reporting tool is currently underway through a collaboration with Public Health Scotland and the 3 Cancer Networks; NCA, SCAN and WoSCAN. This is to ensure that reporting in consistent throughout Scotland.

Progress has been complicated by the differences in the 5 instances of Chemocare across Scotland and a date for initial reporting is yet to be confirmed at the time of writing this report.

QPI 13: Clinical Trial and Research Study Access

Target 15%

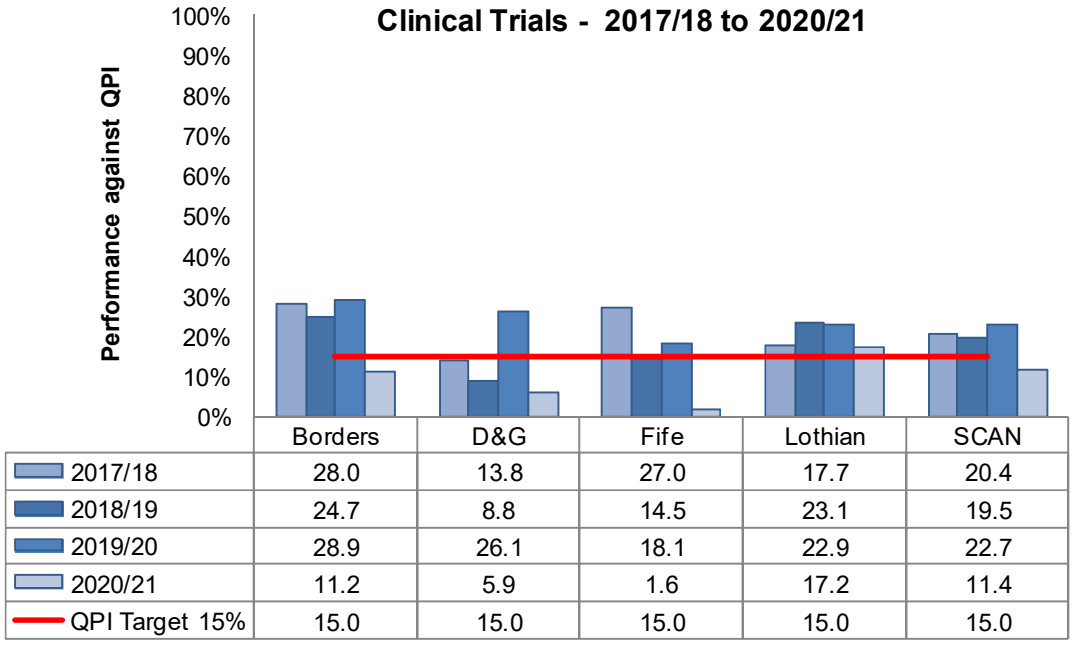
All patients should be considered for participation in available clinical trials/research studies, wherever eligible.

Numerator = Number of patients with colorectal cancer consented for a clinical trial/research study. Data provided by SCRN.

Denominator = Cancer Registry colorectal cancer 5 year average (2015-2019)

Target 15%	Borders	D&G	Fife	Lothian	SCAN
Numerator	11	7	4	90	112
Denominator	98	119	243	523	983
% Performance	**11.2%**	**5.9%**	**1.6%**	**17.2%**	**11.4%**

Open Trials 2020	Numbers consented
A Phase I trial of LY3143921 hydrate in solid tumours	1
A study of NUC-7738 for the treatment of solid cancers or lymphoma	2
Add-Aspirin Trial	10
ANICCA-Class II	8
Biobank SR1418	54
FOCUS-4: Molecular selection of therapy in colorectal cancer	4
IMAGINE	1
Mint5	3
PLATO - PersonaLising Anal cancer radioTherapy dOse	1
Scottish Colorectal Cancer Genetic Susceptibility study 3 (SOCCS3)	27
TOFFEE Trial	1
Total	**112**
Trials not currently registered with SCRN (supplied by Clinician)	
CReST2	1



	Borders	D&G	Fife	Lothian	SCAN
2017/18	28.0	13.8	27.0	17.7	20.4
2018/19	24.7	8.8	14.5	23.1	19.5
2019/20	28.9	26.1	18.1	22.9	22.7
2020/21	11.2	5.9	1.6	17.2	11.4
QPI Target 15%	15.0	15.0	15.0	15.0	15.0

Comment: Clinical Trials were not actively recruiting for most of the year due to the Covid-19 pandemic.

KEY CATEGORIES

Table 1: Rectal v Other Colorectal Patients, percentage of patients undergoing Surgery

	Number of Patients Diagnosed	All patients who had surgery		Number of patients diagnosed with rectal cancer		Number of patients diagnosed with rectal cancer who had surgery	
Borders	85	61	71.8%	27	31.8%	21	77.8%
D&G	97	66	68.0%	29	29.9%	20	69.0%
Fife	195	139	71.3%	53	27.2%	45	84.9%
Lothian	474	360	75.9%	112	23.6%	90	80.4%
SCAN	**851**	**626**	**73.6%**	221	**26.0%**	**176**	**79.6%**

Table 2: Rectal v Other Colorectal Patients, percentage of patients undergoing definitive Surgery

	Number of Patients Diagnosed	All patients who had definitive surgery		Number of patients diagnosed with rectal cancer		Number of patients diagnosed with rectal cancer who had definitive surgery	
Borders	85	47	55.3%	27	31.8%	11	40.7%
D&G	97	58	59.8%	29	29.9%	16	55.2%
Fife	195	122	62.6%	53	27.2%	38	71.7%
Lothian	474	297	62.7%	112	23.6%	65	58.0%
SCAN	**851**	**524**	**61.6%**	**221**	**26.0%**	**130**	**58.8%**

Table 3: Emergency v Elective Surgery
(Excluding non definitive surgery – Endoscopic Treatment/Stents/Defunctioning Stomas/Bypass Surgery)

	All patients who had definitive surgery	Elective		Emergency		Inapplicable		Missing Data	
Borders	47	34	72.3%	13	27.7%	0	0.0%	0	0.0%
D&G	58	47	81.0%	11	19.0%	0	0.0%	0	0.0%
Fife	122	98	80.3%	24	19.7%	0	0.0%	0	0.0%
Lothian	297	222	74.7%	75	25.3%	0	0.0%	0	0.0%
SCAN	**524**	**401**	**76.5%**	**123**	**23.5%**	**0**	**0.0%**	**0**	**0.0%**

Table 4: Rectal Cancer Patients Emergency V Elective Surgery
(Excluding non definitive surgery – Endoscopic Treatment/Stents/Defunctioning Stomas/Bypass Surgery)

	All patients diagnosed with rectal cancer who had definitive surgery	Elective		Emergency		Not Recorded		Missing Data	
Borders	11	11	100%	0	0.0%	0	0.0%	0	0.0%
D&G	16	16	100%	0	0.0%	0	0.0%	0	0.0%
Fife	38	35	92.1%	3	7.9%	0	0.0%	0	0.0%
Lothian	65	62	95.4%	3	4.6%	0	0.0%	0	0.0%
SCAN	**130**	**124**	**95.4%**	**6**	**4.6%**	**0**	**0.0%**	**0**	**0.0%**

Table 5: Intent of Surgery
(Excluding non definitive surgery – Endoscopic Treatment/Stents/Defunctioning Stomas/Bypass Surgery)

	All Patients who had Definitive Surgery	Curative		Palliative		Not Recorded		Missing Data	
Borders	47	39	83.0%	8	17.0%	0	0.0%	0	0.0%
D&G	58	53	91.4%	5	8.6%	0	0.0%	0	0.0%
Fife	122	114	93.4%	8	6.6%	0	0.0%	0	0.0%
Lothian	297	270	90.9%	27	9.1%	0	0.0%	0	0.0%
SCAN	**524**	**476**	**90.8%**	**48**	**9.2%**	**0**	**0.0%**	**0**	**0.0%**

Table 6: Intent of Surgery – Rectal Cancer
N=All patients diagnosed with rectal cancer who had definitive surgery
(Excluding non definitive surgery – Endoscopic Treatment/Stents/Defunctioning Stomas/Bypass Surgery)

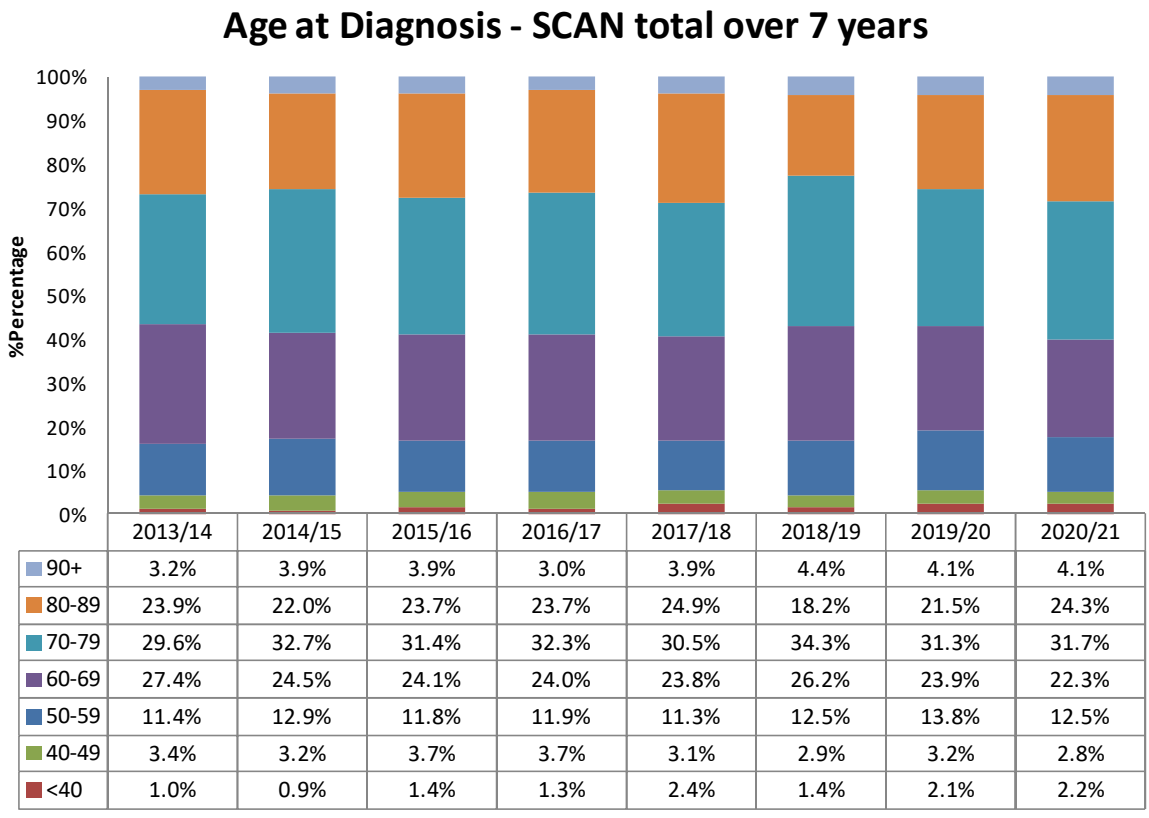
	All patients diagnosed with rectal cancer who had definitive surgery	Curative		Palliative		Not Recorded		Missing Data	
Borders	11	10	90.9%	1	9.1%	0	0.0%	0	0.0%
D&G	16	15	93.8%	1	6.3%	0	0.0%	0	0.0%
Fife	38	38	100%	0	0.0%	0	0.0%	0	0.0%
Lothian	65	61	93.8%	4	6.2%	0	0.0%	0	0.0%
SCAN	**130**	**124**	**95.4%**	**6**	**4.6%**	**0**	**0.0%**	**0**	**0.0%**

Table 7: Gender
N= All patients diagnosed

	Total Patients Diagnosed		Male		Female
Borders	85	45	52.9%	40	47.1%
D&G	97	55	56.7%	42	43.3%
Fife	195	113	57.9%	82	42.1%
Lothian	474	232	48.9%	242	51.1%
SCAN	**851**	**445**	**52.3%**	**406**	**47.7%**

Table 8: Age at Diagnosis
N=All patients diagnosed

Age		Borders		D&G		Fife		Lothian		SCAN
<40	2	2.4%	1	1.0%	4	2.1%	12	2.5%	19	2.2%
40-49	3	3.5%	3	3.1%	5	2.6%	13	2.7%	24	2.8%
50-59	12	14.1%	14	14.4%	28	14.4%	52	11.0%	106	12.5%
60-69	22	25.9%	20	20.6%	42	21.5%	106	22.4%	190	22.3%
70-79	26	30.6%	29	29.9%	74	37.9%	141	29.7%	270	31.7%
80-89	18	21.2%	27	27.8%	34	17.4%	128	27.0%	207	24.3%
90+	2	2.4%	3	3.1%	8	4.1%	22	4.6%	35	4.1%
Total	**85**	**100%**	**97**	**100%**	**195**	**100%**	**474**	**100%**	**851**	**100%**



	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21
90+	3.2%	3.9%	3.9%	3.0%	3.9%	4.4%	4.1%	4.1%
80-89	23.9%	22.0%	23.7%	23.7%	24.9%	18.2%	21.5%	24.3%
70-79	29.6%	32.7%	31.4%	32.3%	30.5%	34.3%	31.3%	31.7%
60-69	27.4%	24.5%	24.1%	24.0%	23.8%	26.2%	23.9%	22.3%
50-59	11.4%	12.9%	11.8%	11.9%	11.3%	12.5%	13.8%	12.5%
40-49	3.4%	3.2%	3.7%	3.7%	3.1%	2.9%	3.2%	2.8%
<40	1.0%	0.9%	1.4%	1.3%	2.4%	1.4%	2.1%	2.2%

Table 9: Tumour Site
N=All patients diagnosed

Site of Tumour	Borders		D&G		Fife		Lothian		SCAN	
Ascending Colon	9	10.6%	17	17.5%	16	8.2%	41	8.6%	**83**	**9.8%**
Caecum	8	9.4%	15	15.5%	28	14.4%	101	21.3%	**152**	**17.9%**
Colon, unspecified	2	2.4%	0	0.0%	1	0.5%	4	0.8%	**7**	**0.8%**
Descending Colon	2	2.4%	3	3.1%	8	4.1%	8	1.7%	**21**	**2.5%**
Hepatic Flexure	6	7.1%	6	6.2%	13	6.7%	21	4.4%	**46**	**5.4%**
Rectum	27	31.8%	29	29.9%	53	27.2%	112	23.6%	**221**	**26.0%**
Sigmoid Colon	16	18.8%	15	15.5%	54	27.7%	104	21.9%	**189**	**22.2%**
Splenic Flexure	4	4.7%	3	3.1%	15	7.7%	10	2.1%	**32**	**3.8%**
Transverse Colon	5	5.9%	9	9.3%	7	3.6%	46	9.7%	**67**	**7.9%**
Overlapping Lesion	6	7.1%	0	0.0%	0	0.0%	27	5.7%	**33**	**3.9%**
Not Recorded	0	0.0%	0	0.0%	0	0.0%	0	0.0%	**0**	**0.0%**
Missing Data	0	0.0%	0	0.0%	0	0.0%	0	0.0%	**0**	**0.0%**
Total	85	100%	97	100%	195	100%	474	100%	**851**	**100%**

TNM 8 has been implemented since April 2018 into the Colorectal QPI Cancer Dataset. Dukes Stage is no longer recorded as part of TNM 8. Therefore the information in the two tables below is incomplete and for information only. They will be either dropped or updated in future reports.

Table 10: Dukes Stage
N=All patients diagnosed

	Borders		D&G		Fife		Lothian		SCAN	
Dukes A	16	18.8%	2	2.1%	28	14.4%	50	10.5%	**96**	**11.3%**
Dukes B	19	22.4%	5	5.2%	33	16.9%	103	21.7%	**160**	**18.8%**
Dukes C1	7	8.2%	1	1.0%	41	21.0%	99	20.9%	**148**	**17.4%**
Dukes C2	12	14.1%	0	0.0%	3	1.5%	10	2.1%	**25**	**2.9%**
Dukes D (M1)	9	10.6%	0	0.0%	15	7.7%	29	6.1%	**53**	**6.2%**
Inapplicable*	13	15.3%	30	30.9%	75	38.5%	177	37.3%	**295**	**34.7%**
Not Recorded	9	10.6%	58	59.8%	0	0.0%	6	1.3%	**73**	**8.6%**
Missing Data	0	0.0%	1	1.0%	0	0.0%	0	0.0%	**1**	**0.1%**
Total	85	100%	97	100%	195	100%	474	100%	**851**	**100%**

***Numbers showing an inapplicable Dukes staging include patients who had no surgery or patients who had polypectomies, stents or defunctiong stomas for whom Duke's Stage would not be assessable.*

Table 11: Inapplicable Dukes Stage
N= Numbers showing inapplicable Dukes staging include patients who had no surgery or patients who had polypectomies, stents or defunctioning stomas for whom Dukes staging would not be assessable.

	Borders		D&G		Fife		Lothian		SCAN	
Endoscopic Mucosal Resections	0	0.0%	0	0.0%	10	13.3%	9	5.1%	**19**	**6.4%**
Non Definitive Surgery	0	0.0%	3	10.0%	8	10.7%	47	26.6%	**58**	**19.7%**
No Residual Tumour	0	0.0%	0	0.0%	1	1.3%	0	0.0%	**1**	**0.3%**
No Surgery Performed	0	0.0%	27	90.0%	56	74.7%	114	64.4%	**197**	**66.8%**
Trans Endoscopic Micro Surgery	0	0.0%	0	0.0%	0	0.0%	7	4.0%	**7**	**2.4%**
Other	13	100%	0	0.0%	0	0.0%	0	0.0%	**13**	**4.4%**
Total	13	100%	30	100%	75	100%	177	100%	**295**	**100%**

Table 12: Clinical Stage IV
N=All patients diagnosed, percentage presenting with Final M1 Stage of disease at presentation

Patients presenting with Clinical Stage IV disease	Borders		D&G		Fife		Lothian		SCAN	
Metastatic Disease	9	10.6%	25	25.8%	50	25.6%	110	23.2%	**194**	**22.8%**
No Metastatic Disease	54	63.5%	64	66.0%	145	74.4%	340	71.7%	**603**	**70.9%**
Cannot Determine	14	16.5%	0	0.0%	0	0.0%	24	5.1%	**38**	**4.5%**
Not Recorded	8	9.4%	7	7.2%	0	0.0%	0	0.0%	**15**	**1.8%**
Missing Data	0	0.0%	1	1.0%	0	0.0%	0	0.0%	**1**	**0.1%**
Total	85	100%	97	100%	195	100%	474	100%	**851**	**100%**

Table 13: Radiotherapy
N = All patients diagnosed with **rectal cancer** who received Radiotherapy or Chemoradiotherapy

	Borders		D&G		Fife		Lothian		SCAN	
Neoadjuvant single therapy	5	50.0%	4	36.4%	13	65.0%	20	46.5%	**42**	**50.0%**
Neoadjuvant combined therapy	2	20.0%	3	27.3%	5	25.0%	9	20.9%	**19**	**22.6%**
Neoadjuvant Long Course RT only	0	0.0%	1	9.1%	0	0.0%	0	0.0%	**1**	**1.2%**
Primary radical	1	10.0%	0	0.0%	0	0.0%	2	4.7%	**3**	**3.6%**
Adjuvant only	1	10.0%	1	9.1%	0	0.0%	0	0.0%	**2**	**2.4%**
Palliative	1	10.0%	2	18.2%	2	10.0%	10	23.3%	**15**	**17.9%**
Not Recorded	0	0.0%	0	0.0%	0	0.0%	2	4.7%	**2**	**4.7%**
Total	**10**	**100%**	**11**	**100%**	**20**	**100%**	**43**	**100%**	**84**	**100%**

Table 14: Chemotherapy
N=All patients who receive Chemotherapy or Chemoradiotherapy

	Borders		D&G		Fife		Lothian		SCAN	
Neoadjuvant Combined therapy	2	8.7%	4	14.3%	5	8.2%	9	6.8%	**20**	**8.2%**
Palliative Combined therapy	0	0.0%	0	0.0%	0	0.0%	0	0.0%	**0**	**0.0%**
Neo-adjuvant Chemotherapy	0	0.0%	0	0.0%	1	1.6%	0	0.0%	**1**	**0.4%**
Primary Chemotherapy	0	0.0%	2	7.1%	1	1.6%	1	0.8%	**4**	**1.6%**
Palliative Chemotherapy	7	30.4%	6	21.4%	17	27.9%	37	28.0%	**67**	**27.5%**
Adjuvant Chemotherapy	14	60.9%	16	57.1%	38	62.3%	82	62.1%	**150**	**61.5%**
Not Recorded	0	0.0%	0	0.0%	0	0.0%	3	2.3%	**3**	**2.3%**
Total	**23**	**100%**	**28**	**100%**	**61**	**100%**	**132**	**100%**	**244**	**100%**

Table 15: Surgical Approach
N=All colorectal cancer patients undergoing definitive surgery

	Borders		D&G		Fife		Lothian		SCAN	
Laparoscopic	35	74.5%	26	44.8%	69	56.6%	141	47.5%	**271**	**51.7%**
Lap converted to Open	3	6.4%	5	8.6%	10	8.2%	17	5.7%	**35**	**6.7%**
Open	9	19.1%	27	46.6%	36	29.5%	105	35.4%	**177**	**33.8%**
Robotic	0	0.0%	0	0.0%	0	0.0%	22	7.4%	**22**	**4.2%**
Robotic converted to Open	0	0.0%	0	0.0%	0	0.0%	3	1.0%	**3**	**0.6%**
Transanal Endoscopic Microsurgery	0	0.0%	0	0.0%	0	0.0%	9	3.0%	**9**	**1.7%**
Transanal Resection of Tumour	0	0.0%	0	0.0%	7	5.7%	0	0.0%	**7**	**1.3%**
Inapplicable	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%**
Missing Data	0	0.0%	0	0.0%	0	0.0%	0	0.0%	**0**	**0.0%**
Total	47	100%	58	100%	122	100%	297	100%	**524**	**100%**

TNM 8 has been implemented since April 2018 into the Colorectal QPI Cancer Dataset. Dukes Stage is no longer recorded as part of TNM 8. Therefore the information in the table below is incomplete and for information only. This will be either dropped or updated in future reports.

Screening was suspended due to the Covid-19 pandemic between 30/03/2020 and 11/10/2020

Table 16: Dukes Staging - Screened Patients v Non-Screened Patients
N=All colorectal patients

	Borders		D&G		Fife		Lothian		SCAN	
SCREENED PATIENTS										
Dukes A	8	9.4%	1	1.0%	9	4.6%	24	5.7%	**42**	**4.9%**
Dukes B	4	4.7%	1	1.0%	10	5.1%	13	3.1%	**28**	**3.3%**
Dukes C1	0	0.0%	0	0.0%	2	1.0%	10	2.4%	**12**	**1.4%**
Dukes C2	0	0.0%	0	0.0%	1	0.5%	1	0.2%	**2**	**0.2%**
Dukes D (M1)	1	1.2%	0	0.0%	1	0.5%	5	1.2%	**7**	**0.8%**
Inapplicable	1	1.2%	0	0.0%	8	4.1%	0	0.0%	**9**	**1.1%**
Not Recorded	0	0.0%	11	11.3%	0	0.0%	1	0.2%	**12**	**1.4%**
Missing	0	0.0%	0	0.0%	0	0.0%	1	0.2%	**1**	**0.1%**
Total - Screened	14		13		31		55		**113**	
NON-SCREENED PATIENTS										
Dukes A	8	9.4%	1	1.0%	19	9.7%	54	12.9%	**82**	**9.6%**
Dukes B	15	17.6%	4	4.1%	23	11.8%	95	22.7%	**137**	**16.1%**
Dukes C1	7	8.2%	1	1.0%	39	20.0%	89	21.2%	**136**	**16.0%**
Dukes C2	12	14.1%	0	0.0%	2	1.0%	9	2.1%	**23**	**2.7%**
Dukes D (M1)	8	9.4%	0	0.0%	14	7.2%	119	28.4%	**141**	**16.6%**
Inapplicable	12	14.1%	30	30.9%	67	34.4%	40	9.5%	**149**	**17.5%**
Not Recorded	9	10.6%	47	48.5%	0	0.0%	13	3.1%	**69**	**8.1%**
Missing	0	0.0%	1	1.0%	0	0.0%	0	0.0%	**1**	**0.1%**
Total - Non-screened	71		84		164		419		**738**	
TOTAL PATIENTS	**85**	**100%**	**97**	**100%**	**195**	**100%**	**474**	**100%**	**851**	**100%**

Table 17: EMR and TEMS Resection

n= all patients having endoscopic mode of first treatment (excluding colonic stents)

	Borders		D&G		Fife		Lothian		SCAN	
Endoscopic Mucosal Resections	6		3		9		15		**33**	
EMR followed by definitive Surgery	1	16.7%	1	33.3%	5	55.6%	7	46.7%	**14**	**42.4%**
TEMS resection	1		0		0		9		**10**	
TEMS followed by definitive surgery	0	0.0%	0	0.0%	0	0.0%	5	55.6%	**5**	**50.0%**
TAMIS resection	0		0		6		0		**6**	
TAMIS followed by definitive surgery	0	0.0%	0	0.0%	0	0.0%	0	0.0%	**0**	**0.0%**

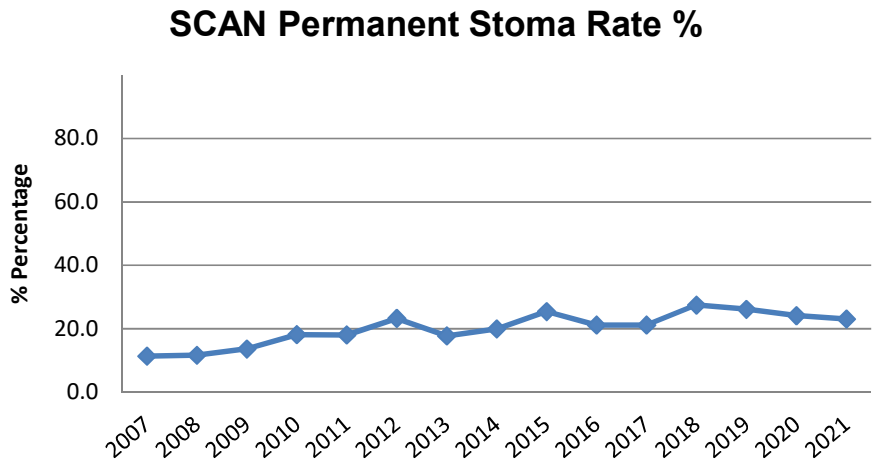
Table 18: Permanent Stoma rate is not more than 40% in patients with rectal tumours (QIS Standard 8b1)

In many cases it is not possible to tell if a stoma is permanent until a number of years have passed. For the purposes of this report, a stoma is defined as permanent only for those procedures (abdominoperineal resection and colostomy and panproctocolectomy and ileostomy) which the stoma was fashioned with the intention of being permanent.

N= All Rectal Cancer patients undergoing elective surgery excluding non-definitive surgery

	Borders		D&G		Fife		Lothian		SCAN	
All Rectal Cancer patients undergoing elective Surgery	11		16		38		65		**130**	
Patients undergoing APER with Colostomy OR Panproctocolectomy with ileostomy left with a permanent stoma	5	45.5%	1	6.3%	8	21.1%	16	24.6%	**30**	**23.1%**

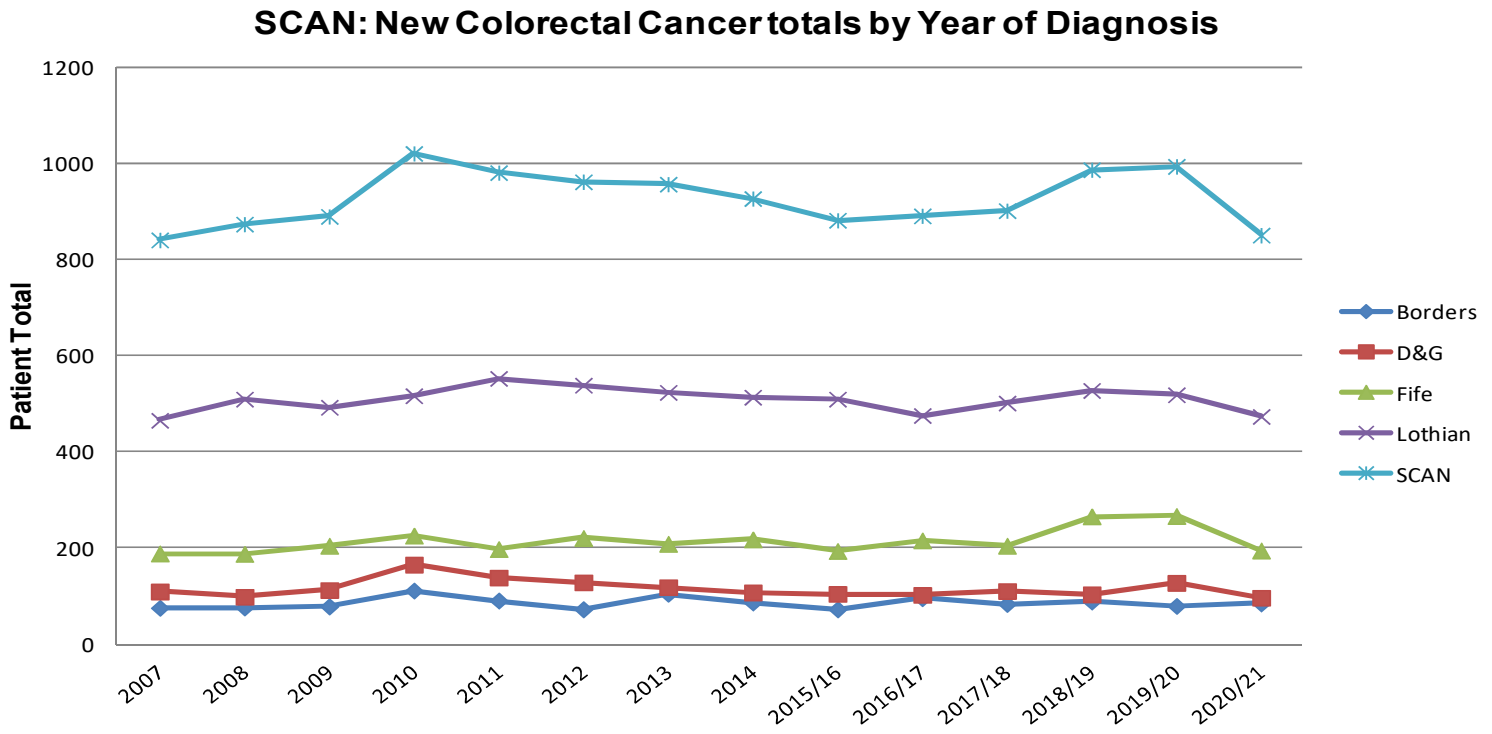
	2007	2008	2009	2010	2011	212	2013	2014	2015	2016	2017	2018	2019	2020	2021
SCAN	11.4	11.7	13.7	18.2	18.1	23.3	17.8	20	25.5	21.2	21.2	27.5	26.2	24.2	23.1



SCAN: New Colorectal Cancer totals by Year of Diagnosis

Note: Totals reflect collection of data by calendar year until 2015 when period of audit changed to financial year

	2007	2008	2009	2010	2011	2012	2013	2014	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21
Borders	76	77	79	112	91	73	105	87	73	96	84	89	80	85
D&G	110	99	113	166	139	129	119	108	105	103	111	104	128	97
Fife	189	188	205	226	198	221	209	218	194	216	205	266	267	195
Lothian	466	510	493	517	553	539	524	514	510	476	502	528	519	474
SCAN	**841**	**874**	**890**	**1021**	**981**	**962**	**957**	**927**	**882**	**891**	**902**	**987**	**994**	**851**



CRC QPI Attainment Summary 2019-20			Target%	Borders		D&G		Fife		Lothian		SCAN	
1. Radiological Staging & Diagnosis		Colon	95	N 33 D 34	97.1%	N 57 D 59	96.6%	N 117 D 117	100%	N 211 D 215	98.1%	N 418 D 425	98.4%
		Rectum	95	N 14 D 14	100%	N 18 D 20	90.0%	N 38 D 40	95.0%	N 83 D 83	100%	N 153 D 157	97.5%
2. Pre-operative imaging of the Colon			95	N 46 D 48	95.8%	N 67 D 71	94.4%	N 142 D 148	95.9%	N 254 D 263	96.6%	N 509 D 530	96.0%
3. MDT before definitive treatment			95	N 63 D 66	95.5%	N 107 D 112	95.5%	N 217 D 226	96.0%	N 377 D 398	94.7%	N 764 D 802	95.3%
4. Stoma Care: stoma site marked pre-operatively			95	N 14 D 14	100%	N 26 D 26	100%	N 32 D 33	97.0%	N 77 D 77	100%	N 149 D 150	99.3%
5. Lymph Node Yield: surgical resection where ≥12 lymph nodes			90	N 49 D 57	86.0%	N 78 D 80	97.5%	N 141 D 163	86.5%	N 282 D 308	91.6%	N 550 D 608	90.5%
6. Neo-adjuvant Radiotherapy (rectal)			90	N 0 D 0	n/a	N 1 D 2	50.0%	N 11 D 13	84.6%	N 24 D 33	72.7%	N 36 D 48	75.0%
7. Surgical Margins	Primary surgery or surgery after short course XRT		95	N 13 D 13	100%	N 15 D 15	100%	N 28 D 29	96.6%	N 57 D 60	95.0%	N 113 D 117	96.6%
	After NACT, or long course XRT ± chemo, or short course XRT with long course intent		85	N 2 D 2	100%	N 4 D 4	100%	N 10 D 11	90.9%	N 20 D 26	76.9%	N 36 D 43	83.7%
8. Re-operation Rates			<10	N 3 D 59	5.1%	N 6 D 86	7.0%	N 8 D 184	4.3%	N 12 D 357	3.4%	N 29 D 689	4.2%
9. Anastomotic Dehiscence	Colon		<5	N 0 D 32	0.0%	N 1 D 34	2.9%	N 1 D 86	1.2%	N 1 D 160	0.6%	N 3 D 312	1.0%
	Rectum incl. TME		<10	N 0 D 16	0.0%	N 1 D 24	4.2%	N 2 D 62	3.2%	N 9 D 130	6.9%	N 12 D 232	5.2%
	TME		<20	N D	-	N D	-	N D	-	N D	-	N D	-
10i). 30 day mortality following surgical resection		Elective	<3	N 0 D 48	0.0%	N 2 D 77	2.6%	N 0 D 160	0.0%	N 1 D 275	0.4%	N 3 D 563	0.5%
		Emergency	<15	N 0 D 11	0.0%	N 2 D 9	22.2%	N 0 D 24	0.0%	N 1 D 79	1.3%	N 3 D 123	2.4%

CRC QPI Attainment Summary 2019-20		Target%	Borders		D&G		Fife		Lothian		SCAN	
10ii) 90 day mortality following surgical resection	Elective	<4	N 0 D 48	0.0%	N 2 D 77	2.6%	N 0 D 160	0.7%	N 1 D 272	0.4%	N 3 D 557	0.5%
	Emergency	<20	N 1 D 11	9.1%	N 3 D 9	33.3%	N 0 D 24	0.0%	N 3 D 79	3.8%	N 7 D 123	5.7%
11. Adjuvant Chemotherapy	HR Dukes B	50	N 2 D 6	33.3%	N 2 D 4	50.0%	N 10 D 20	50.0%	N 17 D 22	77.3%	N 31 D 52	59.6%
	Dukes C	70	N 6 D 10	60.0%	N 6 D 8	75.0%	N 26 D 30	86.7%	N 55 D 64	85.9%	N 93 D 112	83.0%
12i) 30 day Mortality after Curative Oncological Treatment	Neo-adjuvant	<1	N 0 D 1	0.0%	N 0 D 1	0.0%	N 0 D 9	0.0%	N 0 D 22	0.0%	N 0 D 33	0.0%
	Radiotherapy	<1	N 0 D 5	0.0%	N 0 D 2	0.0%	N 0 D 12	0.0%	N 0 D 21	0.0%	N 0 D 40	0.0%
	Adjuvant Chemotherapy	<1	N 0 D 17	0.0%	N 0 D 15	0.0%	N 0 D 45	0.0%	N 1 D 108	0.9%	N 1 D 185	0.5%
12i) 90 day Mortality after Curative Oncological Treatment	Neo-adjuvant	<1	N 0 D 1	0.0%	N 0 D 1	0.0%	N 0 D 9	0.0%	N 0 D 22	0.0%	N 0 D 33	0.0%
	Radiotherapy	<1	N 0 D 5	0.0%	N 0 D 2	0.0%	N 0 D 12	0.0%	N 0 D 21	0.0%	N 0 D 40	0.0%
	Adjuvant Chemotherapy	<1	N 0 D 13	0.0%	N 0 D 13	0.0%	N 1 D 40	2.5%	N 1 D 101	1.0%	N 2 D 167	1.2%
12ii). 30 day Mortality after Palliative Chemotherapy		<10	N 0 D 4	0.0%	N 0 D 4	0.0%	N 0 D 20	0.0%	N 3 D 29	10.3%	N 3 D 57	5.3%
13. Clinical Trials		15	N 28 D 97	28.9%	N 31 D 119	26.1%	N 42 D 232	18.1%	N 119 D 520	22.9%	N 220 D 968	22.7%

GLOSSARY

Active treatment: Treatment which is intended to improve the cancer and/or alleviate symptoms, as opposed to supportive care.

Adenocarcinoma: A malignant growth of glandular tissue.

Adenoma: A benign (non malignant) tumour that develops from epithelial tissue.

Adjuvant therapy /treatment: Additional cancer treatment given after the primary treatment to lower the risk that the cancer will come back. Adjuvant therapy may include chemotherapy, radiation therapy, hormone therapy, targeted therapy, or biological therapy.

Anastomosis: An artificial connection, created by surgery, between two tubular organs or parts, especially between two parts of the intestine. For example, a junction created by a surgeon between two pieces of bowel which have been cut to remove the intervening section.

Anastomotic dehiscence/ leak: Bursting open or splitting of the surgical connection between two sections of intestine.

Anterior resection: The procedure to remove a diseased section of rectum, and rejoining of the healthy tissue at either end of the diseased area.

Anti-cancer therapy: Any treatment which is designed to kill cancer cells.

Asymptomatic: Having no symptoms. You are considered asymptomatic if you:

· Have recovered from an illness or condition and no longer have symptoms

· Have an illness or condition (such as early stage high blood pressure or glaucoma) but do not have symptoms

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

Biopsy: Removal of a sample of tissue from the body to assist in diagnosis of a disease.

Bowel: The long, tube-shaped organ in the abdomen that completes the process of digestion. The bowel has two parts, the small bowel and the large bowel.

Cancer: The name given to a group of diseases that can occur in any organ of the body, and in blood, and which involve abnormal uncontrolled growth of cells.

Cancer Centre: Cancer services are based in cancer centres. Such centres provide the entire spectrum of cancer care - both on-site and to associated cancer units.

Cause-specific survival: A method of estimating net survival. Only deaths attributable to the cancer of diagnosis are counted as deaths, giving the probability of survival in the absence of other causes of death.

Chemoradiotherapy: Treatment that combines chemotherapy with radiotherapy.

Chemotherapy: The use of drugs that kill cancer cells, or prevent or slow their growth.

Circumferential margins (CRM): Margins of tissue surrounding a rectal cancer after it has been removed.

Clinical effectiveness: Measure of the extent to which a particular intervention works.

Clinical Governance: Ensures that patients receive the highest quality of care possible, putting each patient at the centre of his or her care. This is achieved by making certain that those providing services work in an environment that supports them and places the safety and quality of care at the top of the organisation's agenda.

Clinical Nurse Specialist (CNS): A nurse with specialist training in a particular type of cancer.

Clinical trials: A type of research study that tests how well new medical approaches or medicines work. These studies test new methods of screening, prevention, diagnosis, or treatment of a disease.

Colon: Part of the bowel. Also called the large intestine or large bowel. This structure has five major divisions: caecum, ascending colon, transverse colon, descending colon and sigmoid colon. The colon is responsible for forming, storing and expelling waste matter into the rectum.

Colonoscopy: Examination of the interior of the large bowel using a long, flexible, instrument (a colonoscope) inserted through the anus. A colonoscope is capable of reaching to the upper end of the large bowel (colon) and can be used to diagnose diseases of the large bowel.

Colorectal Cancer: Cancer that develops in the colon (the longest part of the large intestine) and/or the rectum (the last several centimetres of the large intestine before the anus).

Co-morbidity: The condition of having two or more diseases at the same time.

Computed Tomography (CT): 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 and/or three-dimensional cross-sectional image.

CT Colonography: Computed tomography of the abdomen and pelvis that focuses on the colon. Computed tomography is an x-ray

Contraindicated: A symptom or medical condition that makes a particular treatment or procedure inadvisable because a person is likely to have a bad reaction.

Curative: Having properties which cure. Something which overcomes disease and promotes recovery.

Dataset: A list of required and specific information relating to a single disease.

Elective: Subject to the choice or decision of the patient or physician, applied to procedures that are advantageous to the patient, but not urgent.

Emergency Surgery: Unscheduled surgery performed promptly and often for lifesaving purposes.

Extramural vascular invasion: The direct invasion of a blood vessel (usually a vein) by tumour. In rectal cancer, this can occur on a macroscopic level and be detected on staging MRI. It is a significant prognostic factor, being a predictor of haematogenous spread.

Fatal: Results in death.

HIS Healthcare Improvement Scotland: Healthcare Improvement Scotland (HIS) brings together the roles of the former Clinical Standards Board of Scotland (CSBS) and NHS Quality Improvement Scotland (NHS QIS). This is a statutory body whose purpose is to support healthcare providers in Scotland to deliver high quality, evidence-based, safe, effective and person-centred care; and to scrutinise those services to provide public assurance about the quality and safety of that care. www.healthcareimprovementscotland.org

High risk: High risk colorectal cancer is defined as patients with pT4 (see TNM) disease and extramural vascular invasion.

Independent risk factor: A substance or condition that increases an individual's chances of getting a particular type of cancer.

Index procedure: Initial or first surgical procedure performed.

Interventional radiology: Refers to a range of techniques which rely on the use of radiological image guidance (X-ray fluoroscopy, ultrasound, computed tomography (CT) or magnetic resonance imaging (MRI) to precisely target therapy.

Intravenous iodinated contrast: A substance administered intravenously (directly into bloodstream) to enhance the visibility of structures on imaging.

KRAS: A gene which is found in the human body. If this gene mutates cancer can form.

KRAS testing: A test to establish the type of KRAS gene mutation present in a colorectal cancer.

Large bowel: Another name for the large intestine.

Long course radiotherapy: A course of radiotherapy lasting up to 6 weeks.

Lymph nodes: Small bean shaped structures located along the lymphatic system. Nodes filter bacteria or cancer cells that might travel through the lymphatic system.

Metastatic disease: Spread of cancer away from the primary site to somewhere else via the bloodstream or the lymphatic system. Metastatic disease can be local (close to the area where the cancer is) or distant (in another area of the body).

Morbidity: How much ill health a particular condition causes.

Mortality: Either (1) the condition of being subject to death; or (2) the death rate, which reflects the number of deaths per unit of population in any specific region, age group, disease or other classification, usually expressed as deaths per 1000, 10,000 or 100,000.

Magnetic Resonance Imaging (MRI): A procedure in which radio waves and a powerful magnet linked to a computer are used to create detailed pictures of areas inside the body. These pictures can show the difference between normal and diseased tissue.

Multi Disciplinary Team: The collective name for a group of clinicians from various medical and non-medical disciplines appropriate to the disease area.

Multi Disciplinary Meeting (MDM): A regular meeting where participants from various clinical disciplines appropriate to the disease meet to discuss and agree diagnosis and subsequent clinical management of patients.

Neo-adjuvant Therapy: The use of chemotherapy and/or radiotherapy prior to surgery. The aim of neo-adjuvant therapy is to reduce the size of any cancerous tumour.

NCA: North Cancer Alliance.

Oncologist: A doctor who specialises in the treatment of cancer patients. A clinical oncologist, or radiotherapist, specialises in treating cancer with radiation or drugs, and a medical oncologist specialises in treating cancer with drugs.

Outcome: A measure of effects, beneficial or adverse, which a person experiences as a result of the care, treatments or services they have received.

Palliative: Treatment which serves to alleviate symptoms due to the underlying cancer but is not expected to cure it.

Pathological: The study of disease processes with the aim of understanding their nature and causes. This is achieved by observing samples of fluid and tissues obtained from the living patient by various methods, or at post mortem.

Performance status: A measure of how well a patient is able to perform ordinary tasks and carry out daily activities. (PS WHO score of 0=asymptomatic, 4=bedridden).

PHS: Public Health Scotland is Scotland's lead national agency for improving and protecting the health and wellbeing of all Scotland's people. www.publichealthscotland.scot

Polyp: A small finger-like growth arising from the skin or a mucus surface, usually attached by a stem.

Post operative complication: A complication or problem experienced following a surgical procedure.

Prognosis: An assessment of the expected future course and outcome of a person's disease.

Quality assurance (QA): When a sample of data is compared with the data definitions.

Radical treatment: Treatment that aims to get to completely get rid of a cancer.

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

Rectal anastomosis: A surgical procedure where part of the colon or ano-rectum is removed and the remaining ends joined together.

Rectal Cancer: Cancer that forms in the tissues of the rectum (the last several centimetres of the large intestine closest to the anus).

Rectum: The distal or lowest portion of the large intestine.

Recurrence: When new cancer cells are detected, at the site of original tumour or elsewhere in the body, following treatment.

SCAN: South East Scotland Cancer Network.

Short course radiotherapy: 5 treatments of radiotherapy given (as a course of therapy) over 1 week prior to surgery being performed.

Staging: Process of describing to what degree cancer has spread from its original site to another part of the body. Staging involves clinical, radiological, surgical and pathological assessments.

Stoma: An artificial opening of the bowel that has been brought to the abdominal surface.

Surgery/Surgical Resection: Surgical removal of the tumour/lesion.

Synchronous tumours: Two or more colorectal tumours presenting at the same time in the colon or rectum.

Total mesorectal excision (TME): A procedure in which any tissue surrounding the rectum which may contain tumour cells is removed at the same time as the rectum.

Transanal endoscopic microsurgery (TEM): An alternative to open or laparoscopic excision whereby small rectal lesions are surgically excised using a minimally invasive approach.

Transanal resection of tumour (TART): Surgical procedure performed to remove a tumour in the rectum through the anus.

WoSCAN: West of Scotland Cancer Network.