SOUTH EAST SCOTLAND CANCER NETWORK PROSPECTIVE CANCER AUDIT

Renal Cancer 2022 Comparative Audit Report

Patients diagnosed 1st January 2022 to 31st December 2022

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Report number: **SA U13/23W**

Contents

Document History

Version	Circulation	Date	Comments
1	Lead Clinicians sign off group	28/09/2023	Actions agreed, clinical comment added.
2	SCAN Renal Lead Clinician & SCAN Regional Leads Sign off group	28/09/2023	For approval and Lead Clinician's commentary
3	SCAN Urology Group	15/01/2024	For final SCAN Group approval
4	SCAN Group SCAN Governance Framework SCAN Action Plan Board Leads	02/02/2024	For SCAN Governance and SCAN Action Plan Board Leads
4W	Published to SCAN Website	June 2024	

Clinical Lead's Summary

The year of 2022 saw the easing of all restrictions introduced due to the Covid-19 pandemic yet, our hospitals across our region still faced significant operational challenges. Despite this, our surgical and oncology teams continue to work closely together to deliver high quality care for our renal cancer patients and this is demonstrated in the annual QPI report for 2022.

The percentage of patients with small renal cancers measuring less than 4cm undergoing nephron sparing surgery (partial nephrectomy) increased from 58% in 2021 to 68% in 2022 (QPI 7) and the measure of quality of the surgery in QPI 13 remains reassuringly high at 82%.

Prognostic scoring of patients with metastatic renal cancer (QPI 10) is an important component in decision making. We acknowledge that there is much improvement to be made and will look at changes in the MDT proforma to ensure timely capture of this information.

QPI 11 relates to the assignment of the prognostic Leibovich Score in patients with Clear Cell Renal Cell Carcinoma following radical nephrectomy. There is significant improvement in the performance of this QPI from colleagues in Fife from 29% in 2021 to 48% in 2022.

The importance of this score is underlined by the approval from the Scottish Medicine Consortium (SMC) in October 2022 for the use of Pembrolizumab (Immunotherapeutic agent) to reduce relapse of kidney cancer following surgery in those who have intermediate or high-risk disease. This approval was based on the positive results from the KEYNOTE-564 study in which Edinburgh was a significant contributor. This result is great news for our patients and highlights again the close teamwork we have between the surgical and oncology teams.

I wish to thank the audit teams around the region for the dedication and hard work in collating the datasets and to all our clinical colleagues who have contributed to this report.

Mr Steve Leung
SCAN Clinical Lead in Renal Cancer
January 2024

Clinical Recommendations 2022

QPI	Action required	Lead	Date for Action Plan returns
QPI 3	Extra care should be taken when recording potential renal cancer cases not to include indeterminate lesions. Clinical staff will endeavour to be more explicit in clinic letters and at MDM review to identify appropriate cases.	Mr S Leung / Mr E Mains / Mr A Laird / Mr A Chapman / MDM Radiologists	Ongoing
QPI 9	All SCAN health boards referring patients to Lothian health board for consideration of treatment need to ensure that more complete information is provided within referrals. Particularly performance status and complete TNM clinical staging. This in an effort to ensure better clinical practice and to ensure we are measuring the correct cohort of patients within this QPI.	BGH, DGRI, Fife and Lothian clinical teams	Ongoing
QPI 10	All SCAN health boards referring patients to Lothian health board for consideration of treatment need to ensure that more complete information is provided within referrals. Ideally IMDC score, or performance status, complete TNM clinical staging and results of relevant blood tests.	BGH, DGRI, Fife and Lothian clinical teams	Ongoing

Clinical Recommendations 2021

QPI	Action required	Lead	Progress
QPI 3	Consideration is given to include the TNM staging field in the outcomes of the regional Lothian MDM. Dr Taylor (radiology lead clinician in Lothian) reminded the radiology team responsible for MDM reviews to assign a valid TNM staging in their MDM review preparation notes for all patients with suspected renal cancer. The outcomes to be published on TRAK and SCI Store.	Dr J Taylor / Dr J Brush / Mr S Leung	Ongoing progress. Mr Leung will remind the Radiology department of the need for TNM staging and recording at the MDM review stage.
QPI 10	For patients with suspected metastatic renal cancer, amendments to the IMDM proforma, to capture the components of the IMDC score should be made, to assist with decision making and management of these patients.	Mr S Leung / Mr A Chapman + Dr T Elliott.	The Oncology and Surgical teams continue to improve the performance of this QPI. Dr Malik will remind the department of the QPI requirements and identified a new action in the 2022 report to take forward into 2023 and beyond.

Renal Cancer QPI Attainment Summary 2022		Target %	Borders		D&G		Fife		Lothian		SCAN	
QPI 1 Patients with RCC who undergo pre-treatment cross-sectional imaging of chest, abdomen +/- pelvis or MRI.		95	N 13 D 13	100%	N 8 D 8	100%	N 34 D 37	91.9%	N 82 D 84	97.6%	N 137 D 142	96.5%
QPI 2 Patients with RCC who have a histological diagnosis via biopsy before Non-surgical primary treatment.	Cryotherapy / RFA	90	N 0 D 0	N/A	N 1 D 1	100%	N 1 D 1	100%	N 5 D 5	100%	N 7 D 7	100%
	SACT	90	N 1 D 1	100%	N 2 D 2	100%	N 4 D 4	100%	N 12 D 12	100%	N 19 D 19	100%
QPI 3 Patients whose RCC is staged pre-treatment using the TNM staging system.		98	N 18 D 18	100%	N 16 D 23	69.6%	N 51 D 66	77.3%	N 162 D 171	94.7%	N 247 D 278	88.8%
QPI 4 Patients with RCC who are discussed at MDT meeting before definitive treatment.		95	N 18 D 18	100%	N 23 D 23	100%	N 60 D 63	95.2%	N 158 D 164	96.3%	N 259 D 268	96.6%
QPI 7 T1aN0M0 RCC who have nephron sparing treatment Cryotherapy, RFA, SABR or robotic/lap/open partial nephrectomy		50	N 3 D 5	60.0%	N 2 D 2	100%	N 1 D 4	25.0%	N 22 D 30	73.3%	N 28 D 41	68.3%
QPI 8 Proportion of patients who die within 30 days of treatment for RCC.	Surgery	<2	Presented by Health Board of surgery				N 0 D 32	0%	N 0 D 84	0%	N 0 D 116	0%
	Cryotherapy treatment	<2	N 0 D 0	N/A	N 0 D 1	0%	N 0 D 1	0%	N 0 D 5	0%	N 0 D 7	0%
	RFA treatment	<2	N 0 D 0	N/A	N 0 D 0	N/A	N 0 D 0	N/A	N 0 D 0	N/A	N 0 D 0	N/A
QPI 8 Proportion of patients who die within 90 days of treatment for RCC.	Surgery	<2	Presented by Health Board of surgery				N 0 D 32	0%	N 0 D 84	0%	N 0 D 116	0%
	Cryotherapy treatment	<2	N 0 D 0	N/A	N 0 D 1	0%	N 0 D 1	0%	N 0 D 5	0%	N 0 D 7	0%
	RFA treatment	<2	N 0 D 0	N/A	N 0 D 0	N/A	N 0 D 0	N/A	N 0 D 0	N/A	N 0 D 0	N/A
QPI 9 Advanced and/or metastatic RCC who have SACT in 12 months of diagnosis.		40	N 0 D 0	N/A	N 0 D 1	0%	N 5 D 7	71.4%	N 14 D 26	53.8%	N 19 D 34	55.9%
QPI 10 Patients with metastatic RCC who are assigned a valid prognostic score following diagnosis		90	N 3 D 4	75.0%	N 1 D 3	33.3%	N 6 D 14	42.9%	N 22 D 33	66.7%	N 32 D 54	59.3%
QPI 11 Patients with clear cell RCC who are assigned a Leibovich score following radical nephrectomy.		100	Presented by Health Board of surgery				N 12 D 25	48.0%	N 38 D 38	100%	N 50 D 63	79.4%

Renal Cancer QPI Attainment Summary 2022	Target %	Borders	D&G	Fife		Lothian		SCAN	
QPI 12 Number of renal surgical resections performed by a surgeon over a 1 year period.	≥15	4 Surgeons within SCAN performed 15 or more surgeries within the cohort year							
QPI 13 Partial nephrectomy (T1a RCC) who achieve trifecta (ischaemia time < 25min, -ve margins, no complications)	50	Presented by Health Board of surgery		N 1 D 1	100%	N 18 D 22	81.8%	N 19 D 23	82.6%

Introduction and Methods

Cohort

This report covers patients newly diagnosed with renal cancer in SCAN between 01/01/2022 and 31/12/2022. The results contained within this report have been presented by NHS board of diagnosis, where the QPI relates to surgical outcomes the results has also been presented by hospital of surgery.

Dataset and Definitions

The QPIs have been developed collaboratively with the three Regional Cancer Networks, Public Health Scotland, and Healthcare Improvement Scotland. It is intended that 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 focused on areas most important in terms of improving survival and patient experience whilst reducing variance and ensuring safe, effective and person-centered cancer care.

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

Accompanying datasets and measurability criteria for QPIs are published on the Public Health Scotland website link. NHS boards are required to report against QPIs as part of a mandatory, publicly reported, programme at a national level.

The QPI dataset for renal cancer was implemented from 01/01/2012. Following year 9 results the Renal QPIs were subject to a third formal review and revised documents for data collection were published in June 2022. This is the 10th publication of QPI results for renal cancer within SCAN which encompasses most of the changes made at both formal reviews.

The following QPIs were updated:

QPI	Change	Year for reporting
1	Radiological Diagnosis - Added SABR as an active treatment to be included within the denominator.	2021
2	Histological Diagnosis – Add Stereotactic Ablative Radiotherapy (SABR) as a treatment option within specification (i).	2021
7	Nephron Sparing Treatment – Added SABR as a further nephron sparing treatment within the QPI.	2021
10	Prognostic Scoring in Metastatic Disease – QPI changed to specify scoring from one standardised tool across Scotland – the International Metastatic RCC Database Consortium Risk Score (IMDC) / (Heng) scoring tool.	2021
11	Leibovich Score – Add exclusion for neoadjuvant SACT. Retained the 100% target	2022
13	Trifecta Rate – QPI has been amended to account for cold and selective ischaemia time. Numbers are too small to split into 2 groups therefore remain as one specification but amend to account for all ischaemia conditions (warm <25 mins) or (cold or selective clamping – time documented but no optimal timing measured).	2022

- The archiving of QPIs 5 – Histological Grading and QPI 6 – Surgical Treatment, mean that the QPI numbering is no longer consecutive.
- QPIs 14 - Clinical Trial & Research Study Access and QPI 15 - 30 Day Mortality for Systemic Anti-Cancer Therapy (SACT) has been archived after the latest formal review.

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

Audit Processes

Data was analysed by the audit facilitators in each NHS board according to the measurability document provided by Public Health Scotland. SCAN data was collated by Adam Steenkamp, SCAN Audit Facilitator for Urological cancer.

Data capture focuses round the process for the weekly multidisciplinary meetings (MDM) ensuring that information is collected through routine process. Data is recorded in eCase for all health boards.

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

Only 2 hospitals provide surgery and chemotherapy but radiotherapy is provided centrally in Edinburgh Cancer Centre. Patients living closer to either Carlisle or Dundee may opt to have oncology treatment outwith the SCAN region. Collecting complete audit data for these patients remains a challenge.

Clinical Sign-Off: This report compares analysed data from individual Health Boards within SCAN and signed off as accurate following review by the lead clinicians from each board. The collated SCAN results were reviewed by the lead clinicians, including oncologists and pathologists, to assess variances and provide comments on results.

Lead Clinicians and Audit Personnel

SCAN Region	Hospital	Lead Clinician	Audit Support
NHS Borders	Borders General Hospital	Mr Edward Mains	Leanne Robinson
NHS Dumfries & Galloway	Dumfries & Galloway Royal Infirmary	Miss Maria Bews-Hair	Teresa Quintela
NHS Fife	Queen Margaret Hospital	Mr A Chapman	Michelle MacDonald
SCAN & NHS Lothian	St Johns Hospital and Western General Hospital	Mr S Leung Dr J Malik	Adam Steenkamp

Data Quality

Estimate of Case Ascertainment

An estimate of case ascertainment (the percentage of the population with renal cancer recorded in the audit) is made by comparison with the Scottish Cancer Registry five year average data from 2017 to 2021. 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	Borders	D&G	Fife	Lothian	SCAN
2022	18	23	66	171	278
2021	16	20	75	171	282
2020	20	23	67	156	266
2019	17	38	61	175	291
2018	9	37	66	167	279

Estimate of Case Ascertainment: Calculated using the average of the most recent five years of Cancer Registry Data 2017 to 2021

	Borders	D&G	Fife	Lothian	SCAN
Cases from Audit in 2022	18	23	66	171	278
Cancer Registry 5 Year Average	19	26	52	125	222
Case Ascertainment %	**94.7**	**88.5**	**126.9**	**136.8**	**125.2**

Extract taken from PHS Cancer Registry website (25/08/2023) http://www.isdscotland.org/Health-Topics/Cancer/Cancer-Audit/

Clinical Sign-Off

This report compares data from reports prepared for individual hospitals and signed off as accurate following review by the lead clinicians from each service. 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.
- Clinical Leads Sign off meeting took place on 28/09/2023.
- Final draft report was sent to SCAN group for sign off and comments on 15/01/2024.
- Final report circulated to SCAN Urology Group and Audit Reporting Governance Framework

Actions for Improvement

After final sign off, the process is for the report to be sent to the Clinical Governance groups with action plans for completion at Health Board level.

QPI 1: Radiological Diagnosis – Target = 95%

Title: Patients with renal cancer should have cross sectional imaging for staging of Renal Cell Carcinoma (RCC).

Numerator = Number of patients receiving active treatment with a diagnosis of RCC who undergo cross-sectional imaging (CT or MRI) of the chest, abdomen +/- pelvis (or CTU + chest with contrast) before first treatment.

Denominator = All RCC patients receiving active treatment (no exclusions).

Target 95%	Borders	D&G	Fife	Lothian	SCAN
2022 cohort	18	23	66	171	278
Ineligible for analysis	5	15	29	87	136
Exclusion from analysis	0	0	0	0	0
Numerator:	13	8	34	82	137
Not recorded for numerator	0	0	0	0	0
Denominator:	13	8	37	84	142
Not recorded for exclusion	0	0	0	0	0
Not recorded for denominator	0	0	0	0	0
% Performance	100	100	91.9	97.6	96.5

Comments:

Fife: The QPI target was not met showing a shortfall of 3.1% (3 cases) 2 had incomplete staging. 1 had no contrast when imaging was completed.

Actions: No action identified.
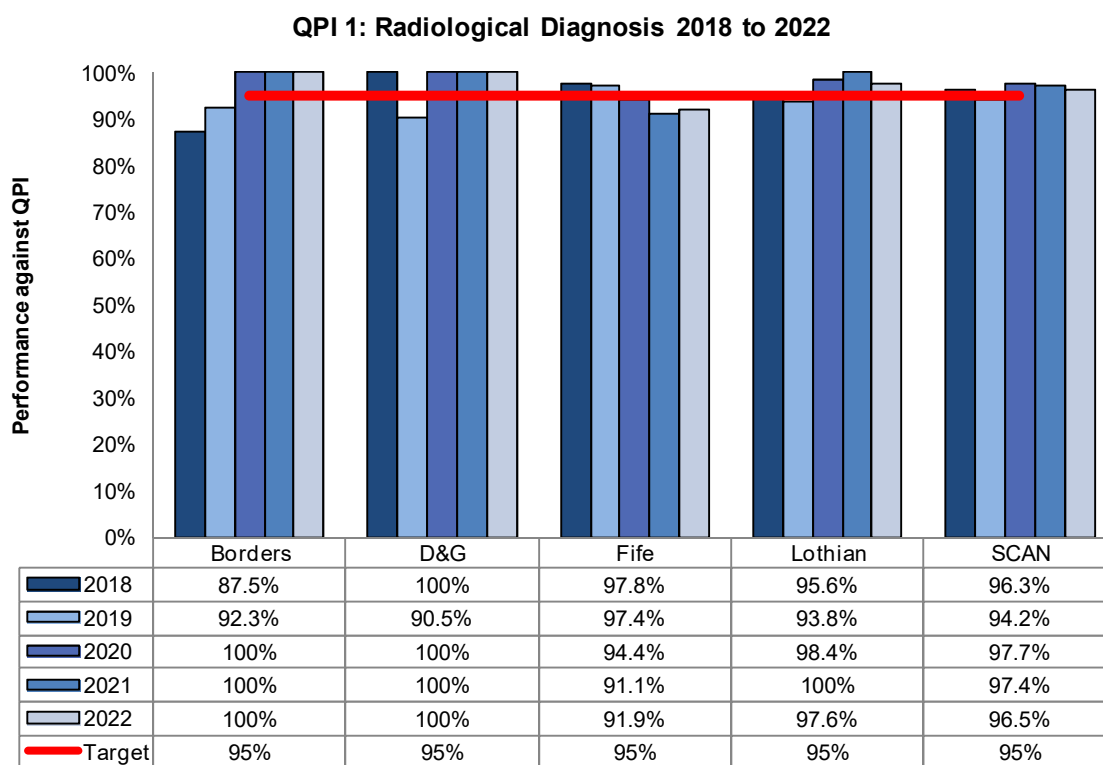
QPI 1: Radiological Diagnosis 2018 to 2022

	Borders	D&G	Fife	Lothian	SCAN
2018	87.5%	100%	97.8%	95.6%	96.3%
2019	92.3%	90.5%	97.4%	93.8%	94.2%
2020	100%	100%	94.4%	98.4%	97.7%
2021	100%	100%	91.1%	100%	97.4%
2022	100%	100%	91.9%	97.6%	96.5%
Target	95%	95%	95%	95%	95%

QPI 2i: Histological Diagnosis – Target = 90%

Title: Patients with renal cancer not undergoing surgery should have a histological diagnosis prior to commencing treatment.

Numerator = Number of patients with RCC for whom surgery is not first treatment who have a histological diagnosis (confirmed by biopsy) before Cryotherapy, Radiofrequency ablation or stereotactic ablative radiotherapy (SABR) as first treatment.

Denominator = All patients with RCC undergoing cryotherapy, radiofrequency ablation or stereotactic ablative radiotherapy (SABR) as their first treatment.

Exclusion = Patients with inherited genetic renal cancer.

Target 90%	Borders	D&G	Fife	Lothian	SCAN
2022 cohort	18	23	66	171	278
Ineligible for analysis	18	22	65	166	271
Exclusion from analysis	0	0	0	0	0
Numerator:	0	1	1	5	7
Not recorded for numerator	0	0	0	0	0
Denominator:	0	1	1	5	7
Not recorded for exclusion	0	0	0	0	0
Not recorded for denominator	0	0	0	1	1
% Performance	N/A	100	100	100	100

SCAN Comment: QPI met across all health boards.

QPI 2i: Histological Diagnosis 2018 to 2022

	Borders	D&G	Fife	Lothian	SCAN
2018	0%	0%	100%	100%	100%
2019	100%	100%	0%	100%	100%
2020	0%	0%	0%	100%	100%
2021	100%	100%	50.0%	0%	80.0%
2022	0%	100%	100%	100%	100%
Target	90%	90%	90%	90%	90%

QPI 2ii: Histological Diagnosis – Target = 90%

Title: Patients with renal cancer not undergoing surgery should have a histological diagnosis prior to commencing treatment.
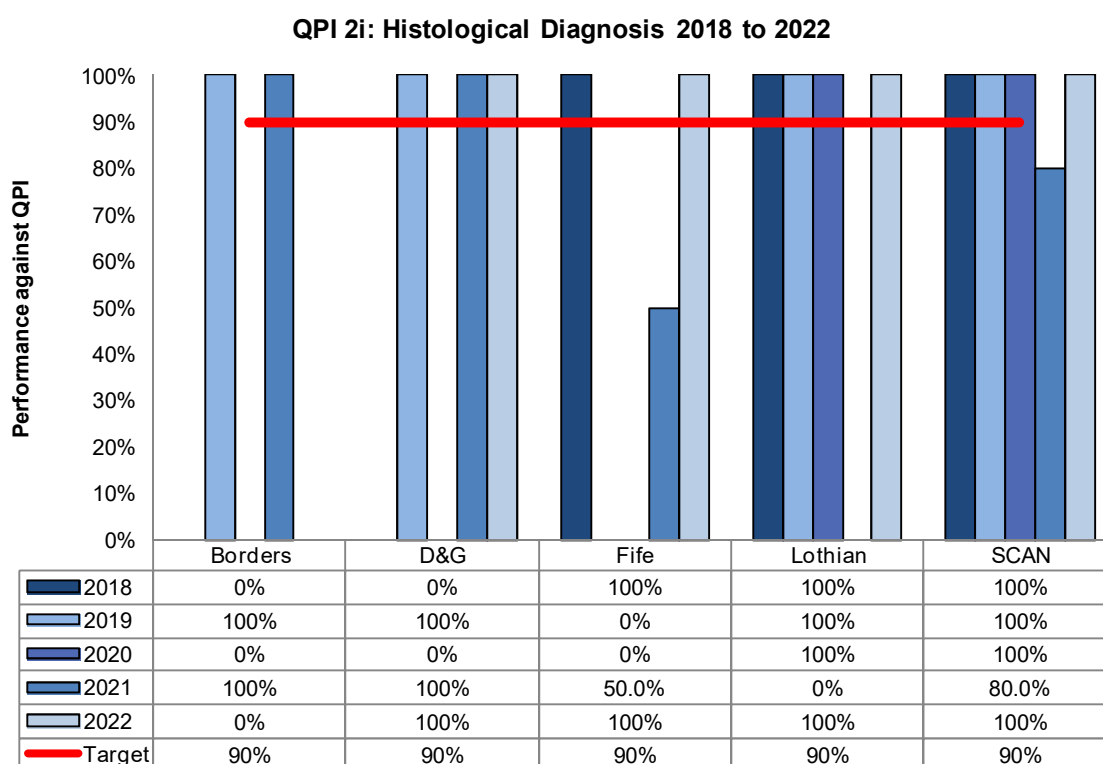
Numerator = Number of patients with RCC for whom surgery is not first treatment who have a histological diagnosis (confirmed by biopsy) before SACT as first treatment.

Denominator = All patients with RCC undergoing SACT as their first treatment (no exclusions)

Target 90%	Borders	D&G	Fife	Lothian	SCAN
2022 cohort	18	23	66	171	278
Ineligible for analysis	17	21	62	159	259
Exclusion from analysis	0	0	0	0	0
Numerator:	1	2	4	12	19
Not recorded for numerator	0	0	0	0	0
Denominator:	1	2	4	12	19
Not recorded for exclusion	0	0	0	0	0
Not recorded for denominator	0	0	0	1	1
% Performance	**100**	**100**	**100**	**100**	**100**

SCAN Comment: QPI met across all health boards.

QPI 2ii: Histological Diagnosis 2018 to 2022

	Borders	D&G	Fife	Lothian	SCAN
2018	100%	100%	66.7%	93.8%	91.7%
2019	100%	100%	100%	100%	100%
2020	100%	100%	100%	100%	100%
2021	0%	0%	100%	100%	100%
2022	100%	100%	100%	100%	100%
Target	90%	90%	90%	90%	90%
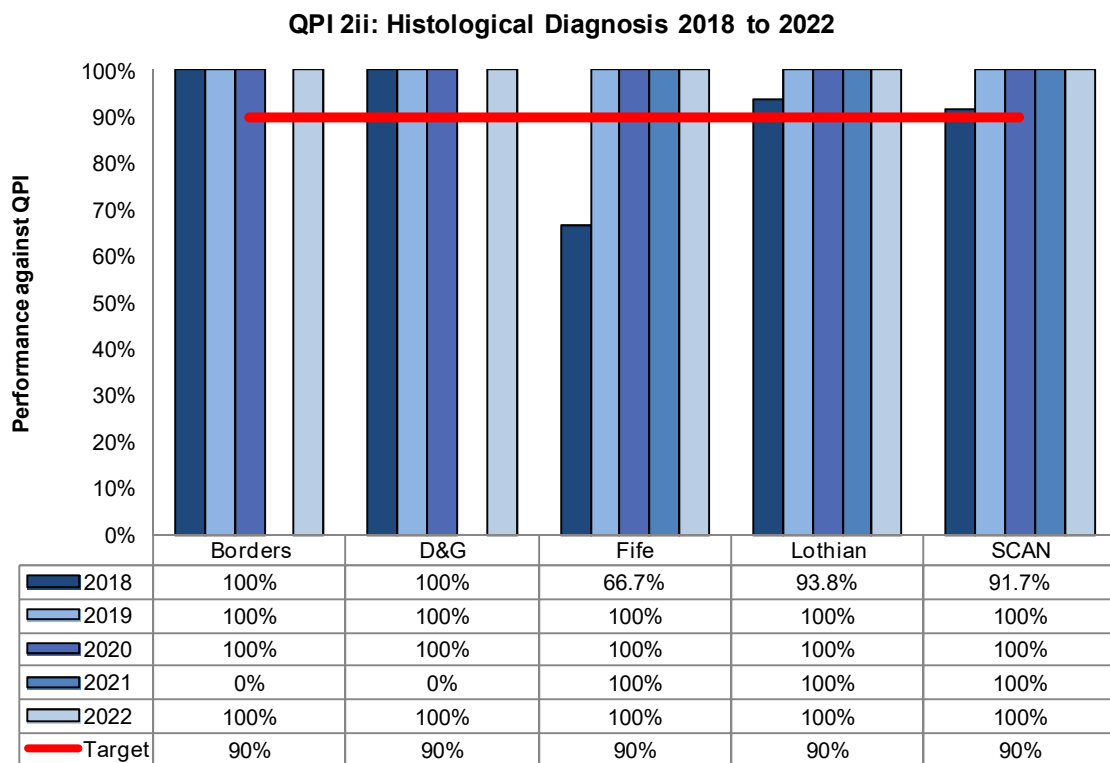
QPI 3: Clinical Staging - TNM – Target = 98%

Title: The TNM staging system should be used to stage patients with Renal Cell Carcinoma (RCC).

Numerator = Number of patients diagnosed with RCC who were clinically staged using TNM staging system before first treatment.

Denominator = All patients diagnosed with RCC (no exclusions)

Target 98%	Borders	D&G	Fife	Lothian	SCAN
2022 cohort	18	23	66	171	278
Ineligible for analysis	0	0	0	0	0
Exclusion from analysis	0	0	0	0	0
Numerator:	18	16	51	162	247
Not recorded for numerator	0	7	15	9	31
Denominator:	18	23	66	171	278
Not recorded for exclusion	0	0	0	0	0
Not recorded for denominator	0	0	0	0	0
% Performance	**100**	**69.6**	**77.3**	**94.7**	**88.8**

Comments:

D&G: The QPI target was not met showing a shortfall of 28.4% (7 cases) 6 had no TNM recorded. 1 had incomplete TNM recorded.

Fife: The QPI target was not met showing a shortfall of 20.7% (15 cases) 3 had incomplete staging investigations. 2 had possible but not definite metastatic disease, thus not recorded. 9 had TNM not recorded at MDM despite full staging. 1 not discussed at MDM.

Lothian: The QPI target was not met showing a shortfall of 3.3% (9 cases) 9 have CT Chest scans missing to complete staging. Of these cases 4 was for active surveillance. 3 for best supportive care from MDM.

SCAN: TNM should be documented at the time of MDM where possible. If staging is incomplete, then TNM should be documented clearly in clinical notes prior to treatment.

Actions: Extra care should be taken when recording potential renal cancer cases not to include indeterminate lesions. Clinical staff will endeavour to be more explicit in clinic letters and at MDM review to identify appropriate cases.

QPI 3: Clinical Staging TNM 2018 to 2022

	Borders	D&G	Fife	Lothian	SCAN
2018	100%	73.0%	90.9%	100%	94.3%
2019	100%	71.1%	91.8%	96.0%	92.1%
2020	100%	65.2%	83.6%	97.4%	91.4%
2021	100%	65.0%	88.0%	83.2%	84.1%
2022	100%	69.6%	77.3%	94.7%	88.8%
Target	98%	98%	98%	98%	98%
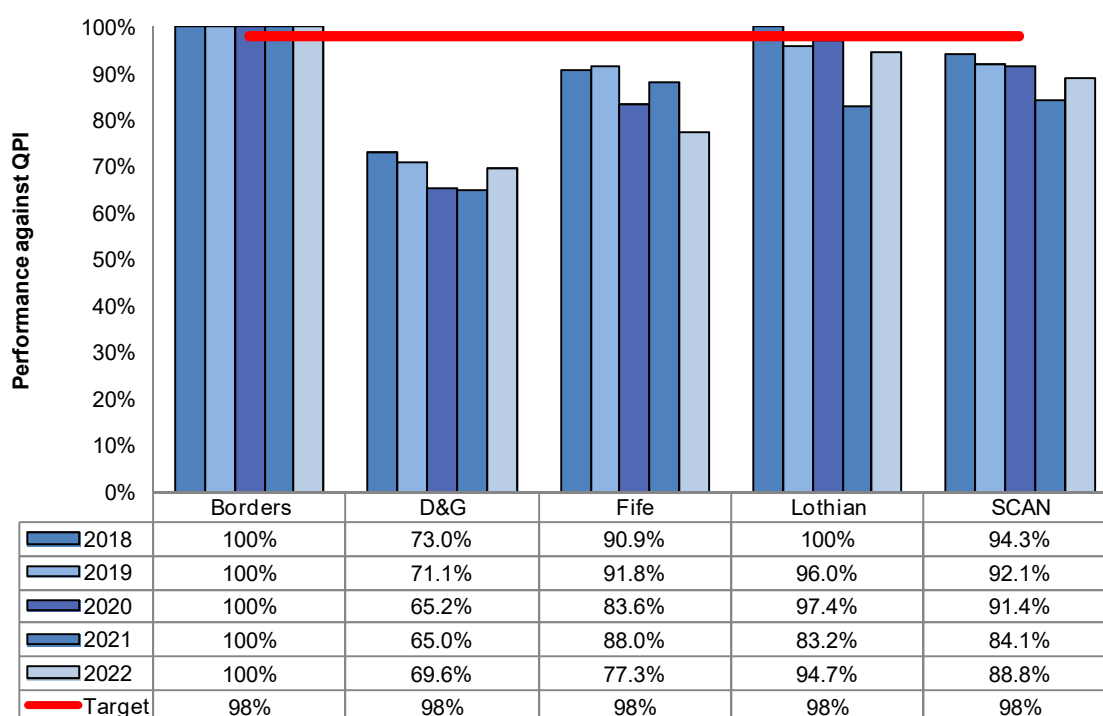
QPI 4: Multi-Disciplinary Team Meeting (MDT) – Target = 95%

Title: Patients with renal cell carcinoma should be discussed by a multidisciplinary team prior to definitive treatment.

Numerator = Number of patients with renal cancer discussed at the MDT before definitive treatment.

Denominator = All patients diagnosed with RCC.

Exclusion = Patients who died before first treatment.

Target 95%	Borders	D&G	Fife	Lothian	SCAN
2022 cohort	18	23	66	171	278
Ineligible for analysis	0	0	0	0	0
Exclusion from analysis	0	0	3	7	10
Numerator:	18	23	60	158	259
Not recorded for numerator	0	0	0	1	1
Denominator:	18	23	63	164	268
Not recorded for exclusion	0	0	0	0	0
Not recorded for denominator	0	0	0	0	0
% Performance	**100**	**100**	**95.2**	**96.3**	**96.6**

Actions: No actions identified.

QPI 4: MDT Meeting 2018 to 2022

	Borders	D&G	Fife	Lothian	SCAN
2018	100%	94.6%	95.5%	95.6%	95.6%
2019	100%	100%	95.1%	93.6%	95.1%
2020	100%	95.7%	97.0%	90.3%	93.2%
2021	100%	100%	97.3%	97.2%	97.6%
2022	100%	100%	95.2%	96.3%	96.6%
Target	95%	95%	95%	95%	95%
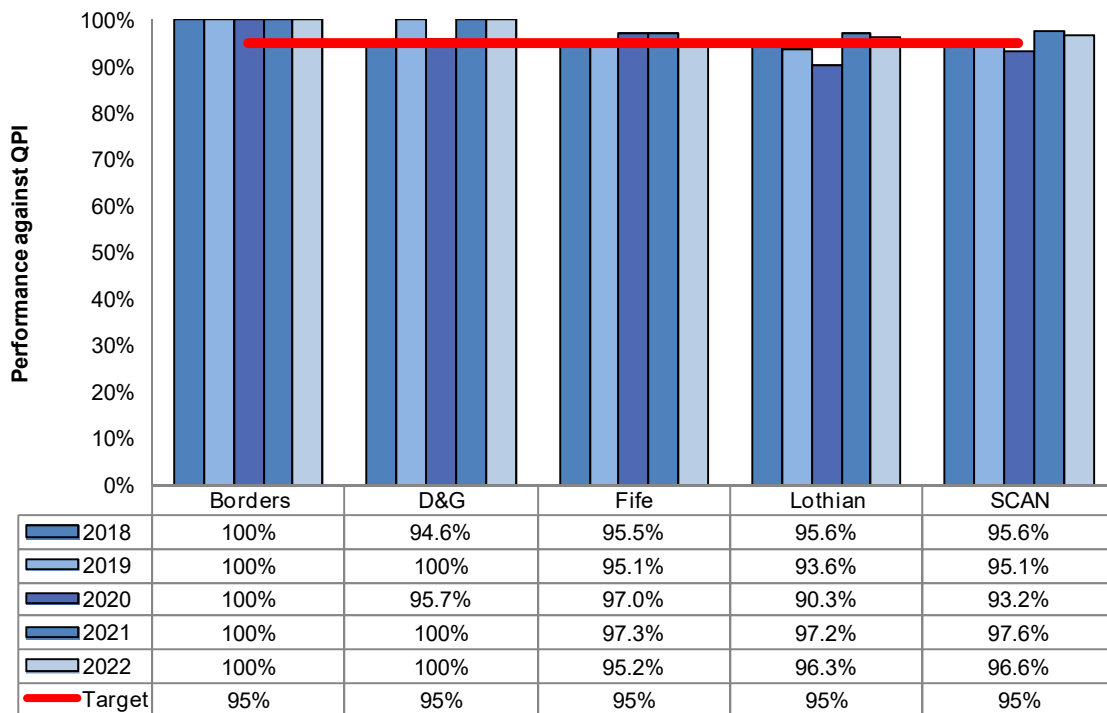
QPI 7: Nephron Sparing Treatment – Target = 50%

Title: Patients with T1a renal cancer should receive Nephron Sparing treatment (Cryotherapy, RFA, SABR or robotic / laparoscopic / open partial nephrectomy).

Numerator = Number of patients with T1a N0 M0 RCC undergoing Nephron Sparing treatment (Cryotherapy, RFA, SABR or robotic / laparoscopic / open partial nephrectomy)

Denominator = All patients with T1a N0 M0. RCC

Exclusion = Patients who refuse treatment, Patients receiving supportive care only (not for active treatment), Patients receiving active surveillance (no active treatment), Patients who died before treatment.

Data presented by Health board of Diagnosis to reflect treatment decisions by MDM.

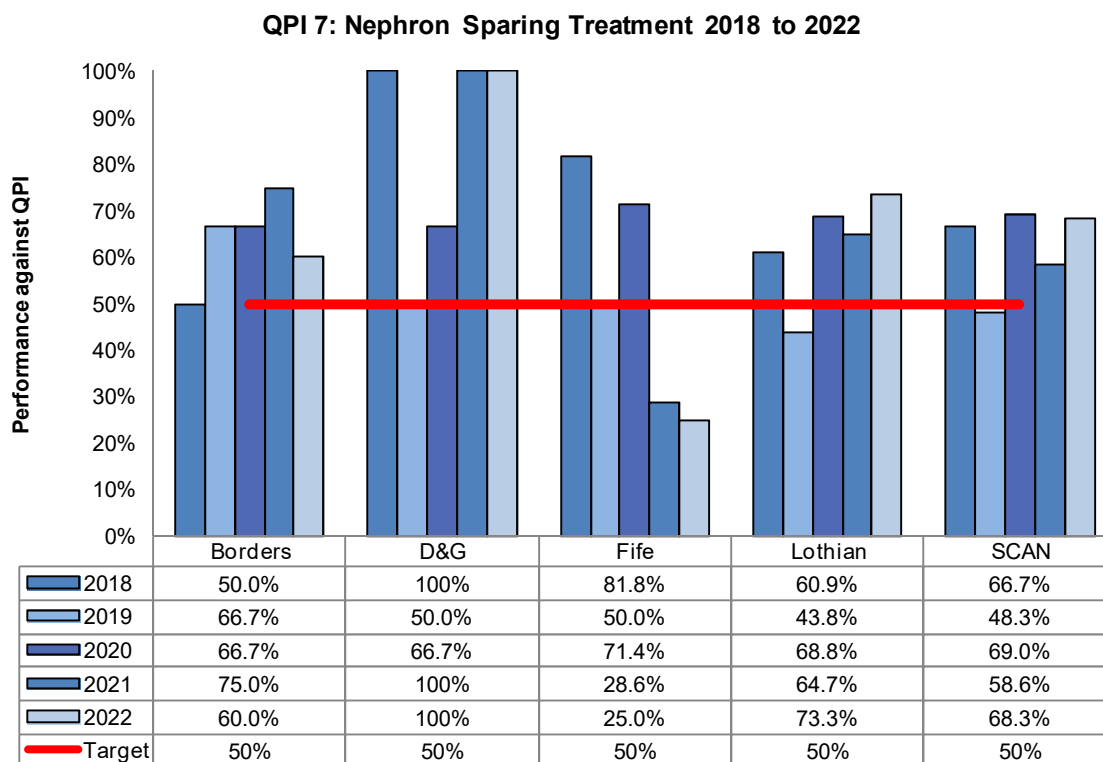| Target 50%	Borders	D&G	Fife	Lothian	SCAN
2022 cohort	18	23	66	171	278
Ineligible for analysis	8	18	30	99	155
Exclusion from analysis	5	3	25	42	75
Numerator:	3	2	1	22	28
Not recorded for numerator	0	0	0	0	0
Denominator:	5	2	4	30	41
Not recorded for exclusion	0	0	0	0	0
Not recorded for denominator	0	1	7	1	9
% Performance	**60.0**	**100**	**25.0**	**73.3**	**68.3**

All Surgical procedures for Borders and D&G patients are performed in Lothian

Comments:

Fife: The QPI target was not met showing a shortfall of 25% (3 cases) 3 with cT1a staging underwent radical nephrectomy.

SCAN Comment: Small numbers cause large percentage changes. Within this cohort of patients, we have patient choice, clinically deemed for radical surgery, tumour location and/or patient anatomy that will influence these numbers.

Actions: The Fife numbers are exceedingly small within the 2022 report. The clinical team investigated and found no identifiable actions to implement.

QPI 7: Nephron Sparing Treatment 2018 to 2022

	Borders	D&G	Fife	Lothian	SCAN
2018	50.0%	100%	81.8%	60.9%	66.7%
2019	66.7%	50.0%	50.0%	43.8%	48.3%
2020	66.7%	66.7%	71.4%	68.8%	69.0%
2021	75.0%	100%	28.6%	64.7%	58.6%
2022	60.0%	100%	25.0%	73.3%	68.3%
Target	50%	50%	50%	50%	50%

QPI 8: 30/90 Day Mortality – Target = Surgery, Cryotherapy and RFA <2%

Title: Proportion of patients who die within 30 or 90 days of first treatment (Surgery, Cryotherapy and RFA) for RCC.

Numerator = Number of patients who undergo minimally invasive RFA, Cryotherapy or operative treatment as first treatment for RCC who die within 30 / 90 days of first treatment.

Denominator = All patients who undergo minimally invasive RFA, Cryotherapy or operative treatment as first treatment for RCC.

Exclusion = Patients who undergo emergency surgery (radical nephrectomy).

QPI 8i 30 day Mortality

Presented by Board of Surgery

Target <2% Surgery	Borders	D&G	Fife	Lothian	SCAN
2022 cohort	18	23	66	171	278
Ineligible for analysis	6	18	34	104	162
Exclusion from analysis	0	0	0	0	0
Numerator – Surgery	-	-	0	0	0
Denominator – Surgery	-	-	32	84	116
% Performance	**N/A**	**N/A**	**0**	**0**	**0**

Presented by Board of Diagnosis

Target <2% Cryotherapy	Borders	D&G	Fife	Lothian	SCAN
2022 cohort	18	23	66	171	278
Ineligible for analysis	18	22	65	166	271
Exclusion from analysis	0	0	0	0	0
Numerator	0	0	0	0	0
Denominator	0	1	1	5	7
% Performance	N/A	0	0	0	0

Presented by Board of Diagnosis

Target <2% RFA	Borders	D&G	Fife	Lothian	SCAN
2022 cohort	18	23	66	171	278
Ineligible for analysis	18	23	66	171	278
Exclusion from analysis	0	0	0	0	0
Numerator	0	0	0	0	0
Denominator	0	0	0	0	0
% Performance	N/A	N/A	N/A	N/A	N/A

QPI 8ii: 90 Day Mortality

Presented by Board of Surgery

Target <2% Surgery	Borders	D&G	Fife	Lothian	SCAN
2022 cohort	18	23	66	171	278
Ineligible for analysis	6	18	34	105	163
Exclusion from analysis	0	0	0	0	0
Numerator – Surgery	-	-	0	0	0
Denominator – Surgery	-	-	32	84	116
% Performance	N/A	N/A	0	0	0

SCAN Comment: None.

Presented by Board of Diagnosis

Target <2% Cryotherapy	Borders	D&G	Fife	Lothian	SCAN
2022 cohort	18	23	66	171	278
Ineligible for analysis	18	22	65	166	271
Exclusion from analysis	0	0	0	0	0
Numerator	0	0	0	0	0
Denominator	0	1	1	5	7
% Performance	N/A	0	0	0	0

Presented by Board of Diagnosis

Target <2% RFA	Borders	D&G	Fife	Lothian	SCAN
2022 cohort	18	23	66	171	278
Ineligible for analysis	18	23	66	171	278
Exclusion from analysis	0	0	0	0	0
Numerator	0	0	0	0	0
Denominator	0	0	0	0	0
% Performance	N/A	N/A	N/A	N/A	N/A

QPI 9: Systemic Therapy – Target = 40%

Title: Patients with advanced and/or metastatic renal cell carcinoma (RCC) should receive systemic therapy between diagnosis and death.

Numerator = Number of patients with RCC which is advanced and / or metastatic at time of diagnosis where at least 12 months have elapsed since diagnosis irrespective of whether or not they have died who receive first treatment with SACT, within 12 months of diagnosis. (Advanced/ metastatic disease is defined as T4 N (any) M (any); T (any) N (any) M1)

Denominator = All patients with RCC which is advanced and / or metastatic at time of diagnosis where at least 12 months have elapsed since diagnosis irrespective of whether or not they have died
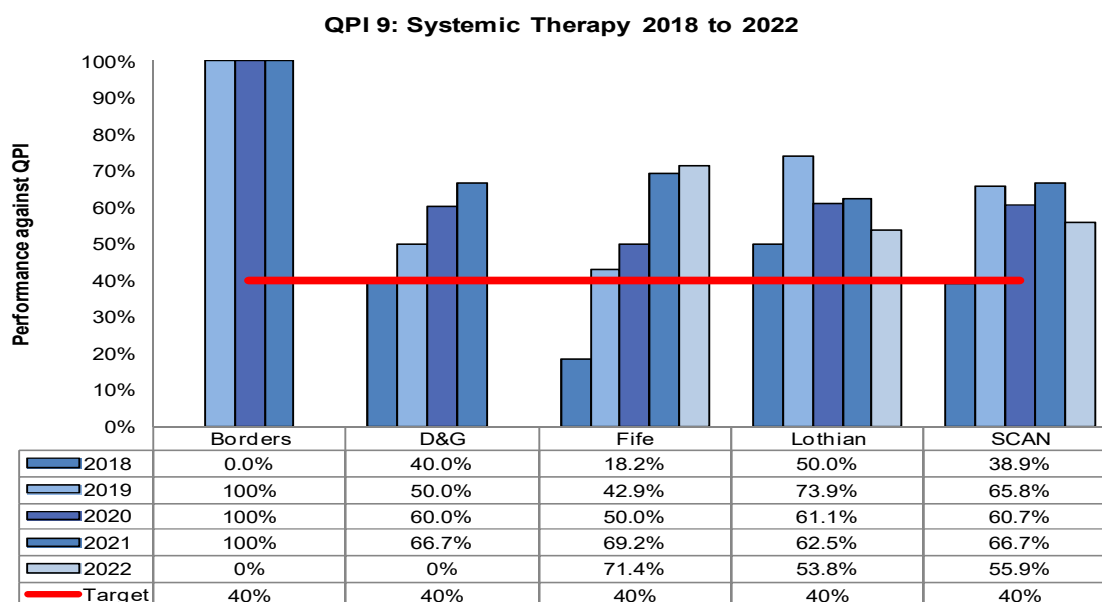
Exclusions = Patients documented to have performance status 2, 3 or 4 at time of diagnosis, Patients documented to have declined systemic treatment, Patients enrolled in clinical trials.

Target 40%	Borders	D&G	Fife	Lothian	SCAN
2021 cohort	17	20	79	185	301
Ineligible for analysis	16	19	60	153	248
Exclusion from analysis	1	0	4	6	11
Numerator:	0	0	5	14	19
Not recorded for numerator	0	0	0	0	0
Denominator:	0	1	7	26	34
Not recorded for exclusion	0	0	2	13	15
Not recorded for denominator	0	4	8	0	12
% Performance	N/A	0	71.4	53.8	55.9

*Reported 12 months retrospectively i.e., patients diagnosed in 2021

DGRI: The QPI target was not met showing a shortfall of 1 case not candidate for SACT due to co-morbidities as per MDM notes.

Actions: All SCAN health boards referring patients to Lothian health board for consideration of treatment need to ensure that more complete information is provided within referrals. Particularly performance status and complete TNM clinical staging. This to ensure better clinical practice and to ensure we are measuring the correct cohort of patients within this QPI.

QPI 9: Systemic Therapy 2018 to 2022

	Borders	D&G	Fife	Lothian	SCAN
2018	0.0%	40.0%	18.2%	50.0%	38.9%
2019	100%	50.0%	42.9%	73.9%	65.8%
2020	100%	60.0%	50.0%	61.1%	60.7%
2021	100%	66.7%	69.2%	62.5%	66.7%
2022	0%	0%	71.4%	53.8%	55.9%
Target	40%	40%	40%	40%	40%

QPI 10: Prognostic Scoring for Metastatic Disease – Target = 90%

Title: Patients with metastatic Renal Cell Carcinoma (RCC) should be assigned a valid prognostic score following diagnosis.

Numerator = Number of patients with metastatic RCC who are assigned a valid prognostic score following diagnosis.

Denominator = All patients diagnosed with metastatic RCC (no exclusions)

Target 90%	Borders	D&G	Fife	Lothian	SCAN
2022 cohort	18	23	66	171	278
Ineligible for analysis	14	19	37	138	208
Exclusion from analysis	0	0	0	0	0
Numerator:	3	1	6	22	32
Not recorded for numerator	1	2	8	11	22
Denominator:	4	3	14	33	54
Not recorded for exclusion	0	0	0	0	0
Not recorded for denominator	0	7	15	10	32
% Performance	**75.0**	**33.3**	**42.9**	**66.7**	**59.3**

Comments:

BGH: The QPI target was not met showing a shortfall of 15% (1 case) Prognostic score not recorded.

D&G: The QPI target was not met showing a shortfall of 56.7% (2 cases) Prognostic scores not recorded.

Fife: The QPI target was not met showing a shortfall of 47.1% (8 cases) IMDC scores not recorded.

Lothian: The QPI target was not met showing a shortfall of 23.3% (11 cases) 5 died before treatment. 3 were for best supportive care from MDM. 1 still awaiting treatment. 2 didn't have IMDC score recorded.

Actions: All SCAN health boards referring patients to Lothian health board for consideration of treatment need to ensure that more complete information is provided within referrals. Ideally IMDC score, or performance status, complete TNM clinical staging and results of relevant blood tests.

QPI 10: Prognostic Scoring in Metastatic Disease 2018 to 2022

	Borders	D&G	Fife	Lothian	SCAN
2018	33.3%	0%	9.1%	45.2%	30.2%
2019	100%	87.5%	28.6%	50.0%	56.5%
2020	100%	60.0%	46.7%	68.0%	64.7%
2021	66.7%	0%	63.6%	71.4%	67.4%
2022	75.0%	33.3%	42.9%	66.7%	59.3%
Target	90%	90%	90%	90%	90%
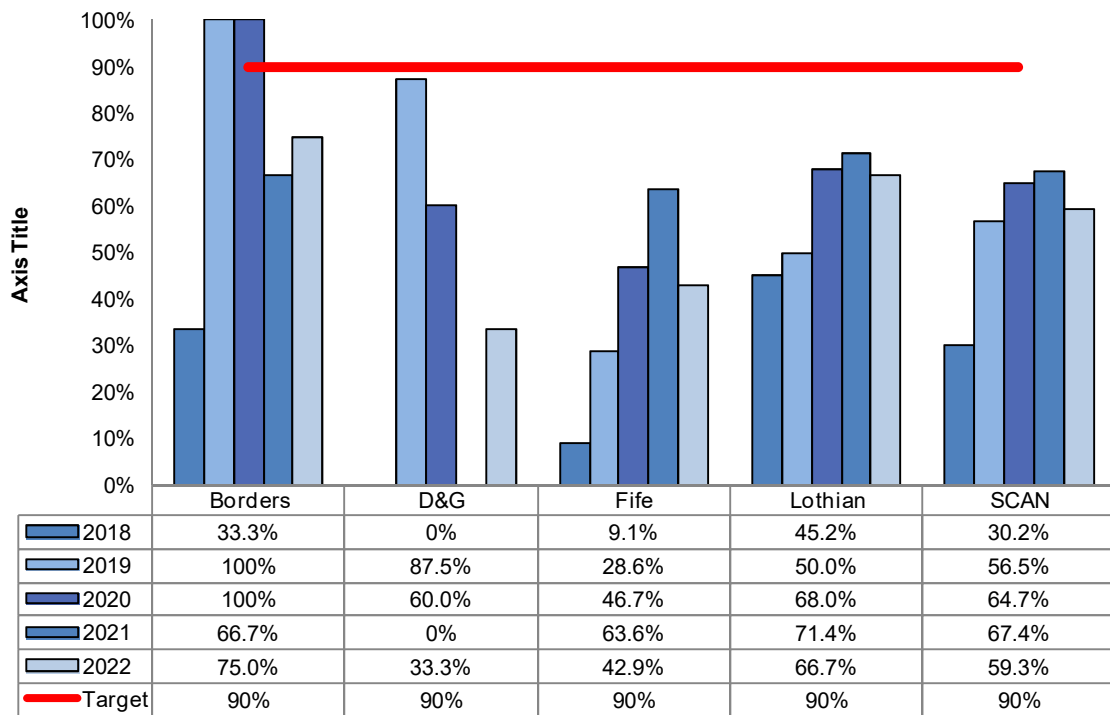
QPI 11: Leibovich Score – Target = 100%

Title: Patients with Clear Cell Renal Cell Carcinoma (RCC) should be assigned a Leibovich score following radical nephrectomy.

Numerator = Number of patients with Clear Cell RCC who undergo radical nephrectomy and are assigned a Leibovich score following surgery.

Denominator = All patients with Clear Cell RCC who undergo radical nephrectomy.

Exclusion = Patients with metastatic disease (TanyNanyM1.) Patients undergoing neoadjuvant systemic anti-cancer therapy (SACT).

Data presented by Health board of Surgery

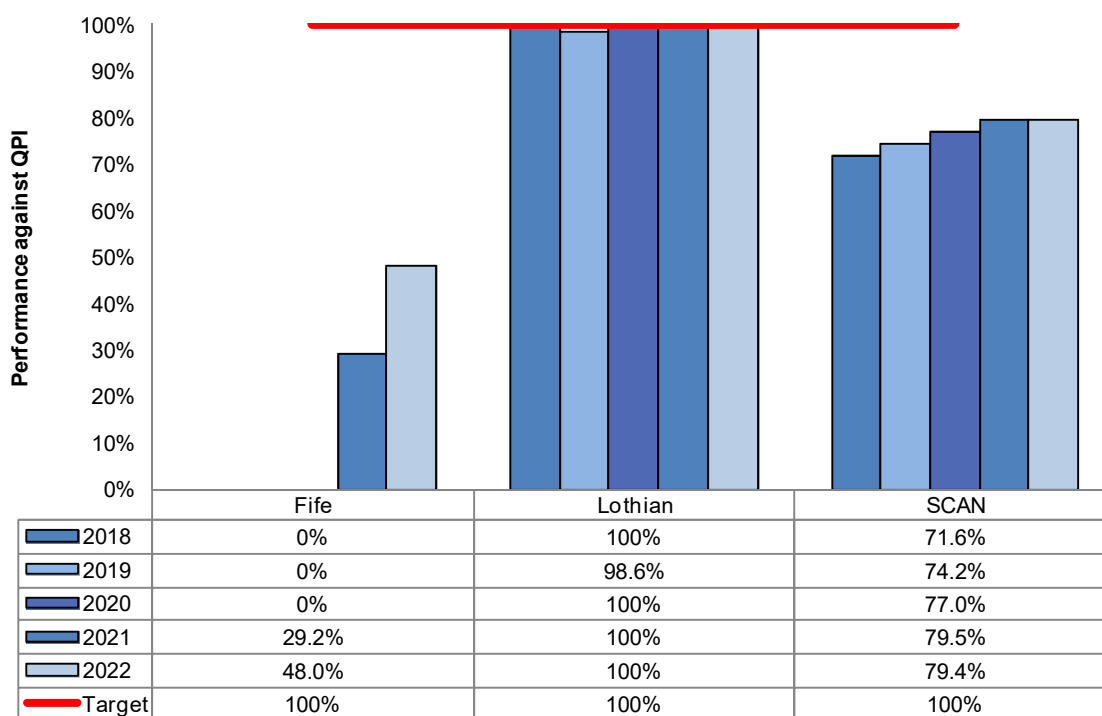| Target 100%	Borders	D&G	Fife	Lothian	SCAN
2022 cohort	18	23	66	171	278
Ineligible for analysis	9	21	40	139	209
Exclusion from analysis	4	0	1	1	6
Numerator:	-	-	12	38	50
Not recorded for numerator	-	-	13	0	13
Denominator:	-	-	25	38	63
Not recorded for exclusion	-	-	4	1	5
Not recorded for denominator	-	-	0	0	0
% Performance	**N/A**	**N/A**	**48.0**	**100**	**79.4**

Comments:

Fife: The QPI target was not met showing a shortfall of 52.0% (13 cases) Showing a considerable improvement from 2021. The hope is for a further improvement in 2023 data.

SCAN Comment: Leibovich score is not routinely used as a risk stratification tool in NHS Fife pathology department. The lead renal surgeon in Fife adds the Leibovich score to all relevant diagnosis clinic letters. A continued improvement is observed and expected to continue in future.

Actions: None identified

QPI 11: Leibovich Score 2018 to 2022

	Fife	Lothian	SCAN
2018	0%	100%	71.6%
2019	0%	98.6%	74.2%
2020	0%	100%	77.0%
2021	29.2%	100%	79.5%
2022	48.0%	100%	79.4%
Target	100%	100%	100%

QPI 12: Volume of cases per Surgeon – Target = ≥ 15

Title: Renal surgical resection should be performed by surgeons who perform the procedures routinely.

SMR01 data is used to support reporting and monitoring of this QPI rather than clinical audit. This will maximise the use of data which are already collected and remove the need for any duplication of data collection. Standard reports have been specified and each Board has direct access to run these reports to ensure nationally consistent analysis and reporting."

Exclusion = No Exclusions

Number of Renal surgical procedures by GMC number in 2021				
	A	B	C	D
SMR01 Figures 2022	44	49	52	33
SMR01 Figures 2021	33	45	61	24
SMR01 Figures 2020	55	35	43	11
SMR01 Figures 2019	51	63	72	7

Target: Minimum 15 procedures per surgeon in a 1 year period.

This is a minimum target level and is designed to ensure that all surgeons performing renal surgery perform a minimum of 15 procedures per year. Varying evidence exists regarding the most appropriate target level for surgical case volume. In order to ensure that the target level takes account of level 1 evidence and will drive continuous quality improvement as intended this performance indicator must be kept under regular review.

It is recommended that where two consultants operate together on the same patient the case should be counted under the Lead Surgeon.

QPI 13: Trifecta Rate – Ischaemia Time – Target = 50%

Title: Trifecta Rate in Partial Nephrectomy T1a Renal Cell Carcinoma (RCC) patients.

Numerator = Number of patients with T1a RCC undergoing partial nephrectomy under cold ischaemic conditions who have cold ischaemia time less than 25 minutes, negative surgical margins and no complications (length of stay ≤7days).

Denominator = All patients with T1a RCC undergoing partial nephrectomy (no exclusions)

Data presented by Health board of Surgery

Target 50%	Borders	D&G	Fife	Lothian	SCAN
2021 cohort	18	23	66	171	278
Ineligible for analysis	15	21	64	154	254
Exclusion from analysis	0	0	0	0	0
Numerator:	-	-	1	18	19
Not recorded for numerator	-	-	0	0	0
Denominator:	-	-	1	22	23
Not recorded for exclusion	-	-	0	0	0
Not recorded for denominator	-	-	1	0	1
% Performance	N/A	N/A	100	81.8	82.6

* Ischaemia conditions are as follows: warm ischaemia time of less than 25 minutes, or cold ischaemia (time documented), or selective clamping (time documented).

 Actions: None identified

QPI 13: Trifecta Rate 2018 to 2022

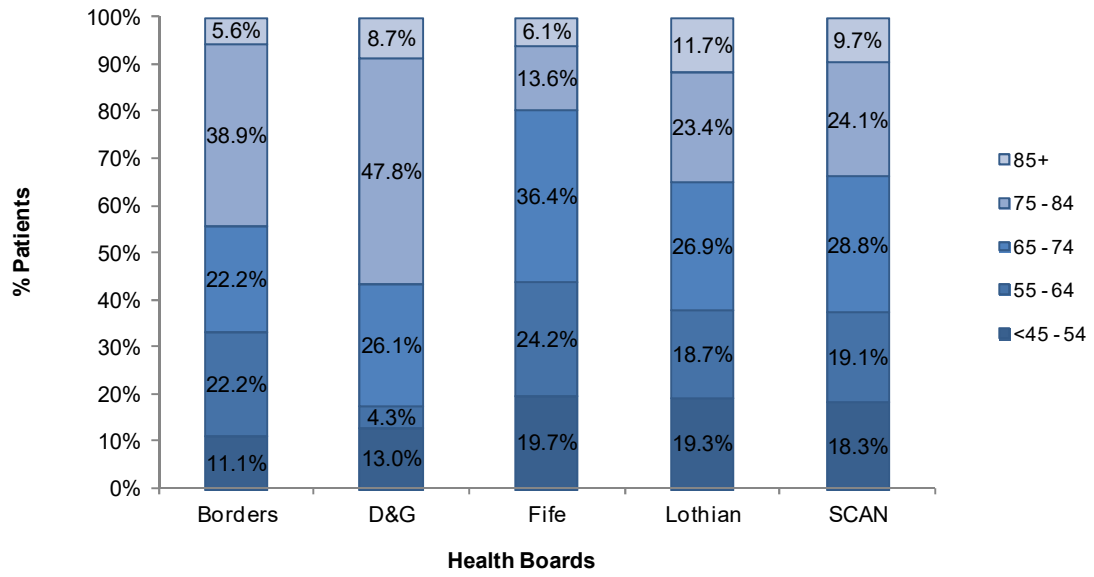|	Fife	Lothian	SCAN
2018	50.0%	63.6%	57.9%
2019	75.0%	75.0%	75.0%
2020	66.7%	40.0%	47.6%
2021	100%	92.3%	93.3%
2022	100%	81.8%	82.6%
Target	50%	50%	50%
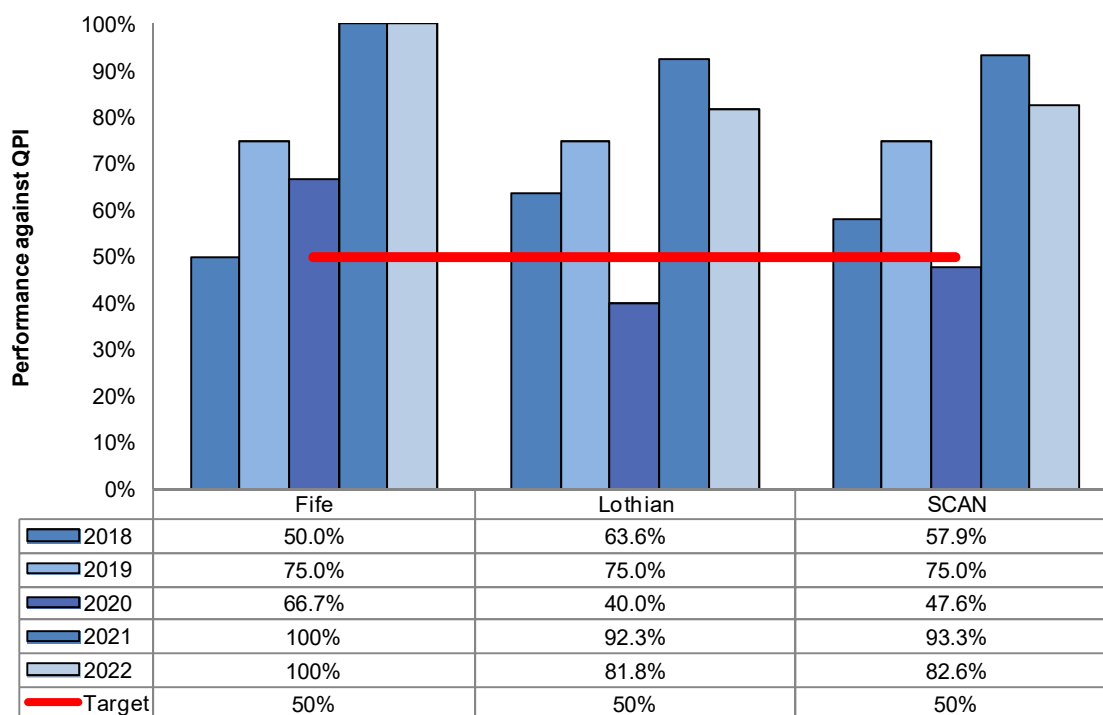
Age and Gender Analysis

Age and Gender Analysis		Borders	D&G	Fife	Lothian	SCAN
Under 45	M	1	1	4	6	12
	F	0	0	1	2	3
45 - 49	M	0	1	2	6	9
	F	0	0	1	4	5
50 - 54	M	0	1	3	10	14
	F	1	0	2	5	8
55 - 59	M	2	0	3	6	11
	F	0	0	1	4	5
60 - 64	M	1	0	11	17	29
	F	1	1	1	5	8
65 - 69	M	0	0	10	13	23
	F	0	2	4	4	10
70 - 74	M	3	2	5	15	26
	F	1	2	5	14	22
75 - 79	M	4	5	4	16	29
	F	1	2	0	6	9
80 - 84	M	1	3	2	11	17
	F	1	1	3	7	12
85+	M	1	1	1	11	14
	F	0	1	3	9	13
Total	M	13	14	45	111	183
	F	5	9	21	60	95

Age at Diagnosis 2022

Chart: Stacked bar chart showing % Patients by Health Boards (Borders, D&G, Fife, Lothian, SCAN) with age groups.

Legend:
- 85+
- 75 - 84
- 65 - 74
- 55 - 64
- <45 - 54

Borders: 11.1%, 22.2%, 22.2%, 38.9%, 5.6%

D&G: 13.0%, 4.3%, 26.1%, 47.8%, 8.7%

Fife: 19.7%, 24.2%, 36.4%, 13.6%, 6.1%

Lothian: 19.3%, 18.7%, 26.9%, 23.4%, 11.7%

SCAN: 18.3%, 19.1%, 28.8%, 24.1%, 9.7%

Renal Cancer QPI Attainment Summary 2021		Target %	Borders		D&G		Fife		Lothian		SCAN	
QPI 1 Patients with RCC who undergo pre-treatment cross-sectional imaging of chest, abdomen +/- pelvis or MRI.		95	N 13 D 13	100%	N 10 D 10	100%	N 41 D 45	91.1%	N 84 D 84	100%	N 148 D 152	97.4%
QPI 2 Patients with RCC who have a histological diagnosis via biopsy before Non-surgical primary treatment.	Cryotherapy / RFA	90	N 2 D 2	100%	N 1 D 1	100%	N 1 D 2	50.0%	N 0 D 0	N/A	N 4 D 5	80.0%
	SACT	90	N 0 D 0	N/A	N 0 D 0	N/A	N 5 D 5	100%	N 10 D 10	100%	N 15 D 15	100%
QPI 3 Patients whose RCC is staged pre-treatment using the TNM staging system.		98	N 16 D 16	100%	N 13 D 20	65.0%	N 66 D 75	88.0%	N 158 D 171	92.4%	N 253 D 282	89.7%
QPI 4 Patients with RCC who are discussed at MDT meeting before definitive treatment.		95	N 16 D 16	100%	N 20 D 20	100%	N 72 D 74	97.3%	N 162 D 167	97.0%	N 270 D 277	97.5%
QPI 7 T1aN0M0 RCC who have nephron sparing treatment Cryotherapy, RFA, SABR or robotic/lap/open partial nephrectomy		50	N 3 D 4	75.0%	N 1 D 1	100%	N 2 D 7	28.6%	N 11 D 17	64.7%	N 17 D 29	58.6%
QPI 8 Proportion of patients who die within 30 days of treatment for RCC.	Surgery	<2	Presented by Health Board of surgery				N 0 D 38	0%	N 0 D 95	0%	N 0 D 133	0%
	Cryotherapy treatment	<2	N 0 D 2	0%	N 0 D 1	0%	N 0 D 1	0%	N 0 D 0	N/A	N 0 D 4	0%
	RFA treatment	<2	N 0 D 0	N/A	N 0 D 0	N/A	N 0 D 1	0%	N 0 D 0	N/A	N 0 D 1	0%
QPI 8 Proportion of patients who die within 90 days of treatment for RCC.	Surgery	<2	Presented by Health Board of surgery				N 0 D 38	0%	N 1 D 94	1.1%	N 1 D 132	0.8%
	Cryotherapy treatment	<2	N 0 D 2	0%	N 0 D 1	0%	N 0 D 1	0%	N 0 D 0	N/A	N 0 D 4	0%
	RFA treatment	<2	N 0 D 0	N/A	N 0 D 0	N/A	N 0 D 1	0%	N 0 D 0	N/A	N 0 D 1	0%
QPI 9 Advanced and/or metastatic RCC who have SACT in 12 months of diagnosis.		40	N 1 D 1	100%	N 4 D 6	66.7%	N 9 D 13	69.2%	N 10 D 16	62.5%	N 24 D 36	66.7%
QPI 10 Patients with metastatic RCC who are assigned a valid prognostic score following diagnosis		90	N 2 D 3	66.7%	N 0 D 1	0%	N 7 D 11	63.6%	N 21 D 29	72.4%	N 30 D 44	68.2%
QPI 11 Patients with clear cell RCC who are assigned a Leibovich score following radical nephrectomy.		100	Presented by Health Board of surgery				N 7 D 24	29.2%	N 59 D 59	100%	N 66 D 83	79.5%

Renal Cancer QPI Attainment Summary 2021	Target %	Borders	D&G	Fife			Lothian			SCAN		
QPI 12 Number of renal surgical resections performed by a surgeon over a 1 year period.	≥15	4 Surgeons within SCAN performed 15 or more surgeries within the cohort year										
QPI 13 Partial nephrectomy (T1a RCC) who achieve trifecta (ischaemia time < 25min, -ve margins, no complications)	50	Presented by Health Board of surgery		N	2	100%	N	12	92.3%	N	14	93.3%
				D	2		D	13		D	15	