West of Scotland Cancer Network
Lung Cancer
Managed Clinical Network

Audit Report

Lung Quality Performance Indicators

Clinical Audit Data:
01 January 2022 to 31 December 2022

Dr Joris van der Horst
Consultant Respiratory Physician
MCN Clinical Lead

Gillian Petty
MCN Manager

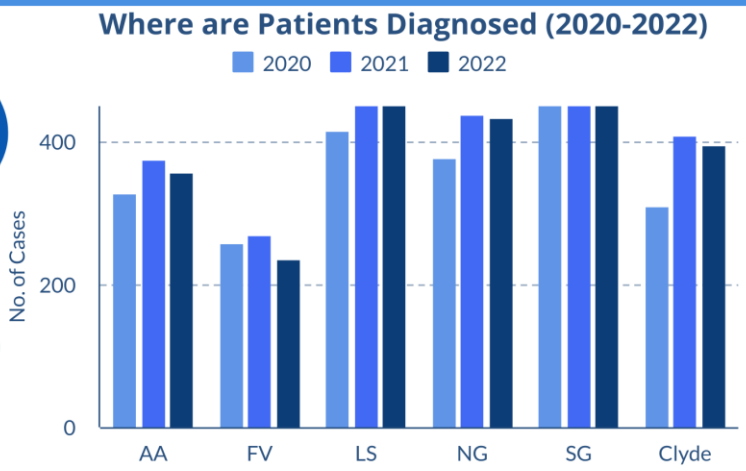
Julie McMahon
Information Analyst

Lung Cancer Quality Performance Indicators

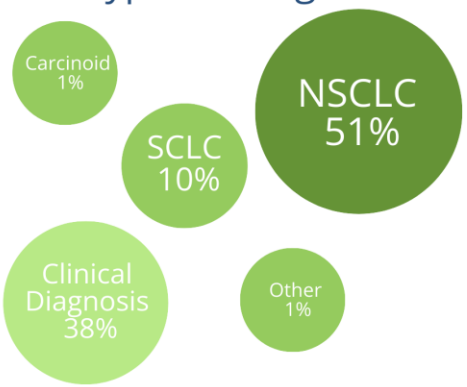
Patients Diagnosed: January 2022 - December 2022

Number of Patients Diagnosed
2499
Male: 1178 (47%)
Female: 1321 (53%)

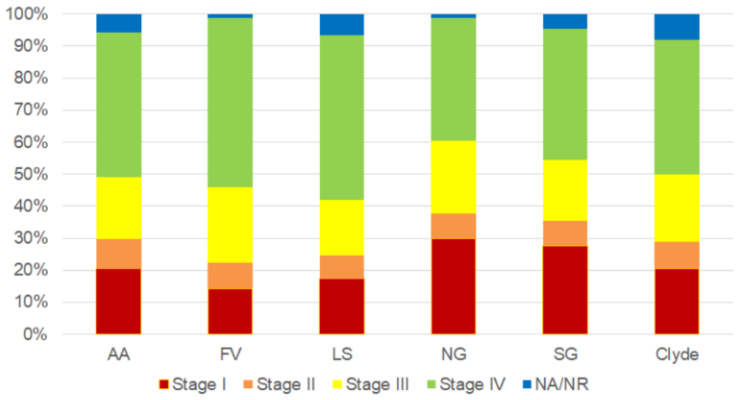
Median Age at Diagnosis
Male:73
Female:73



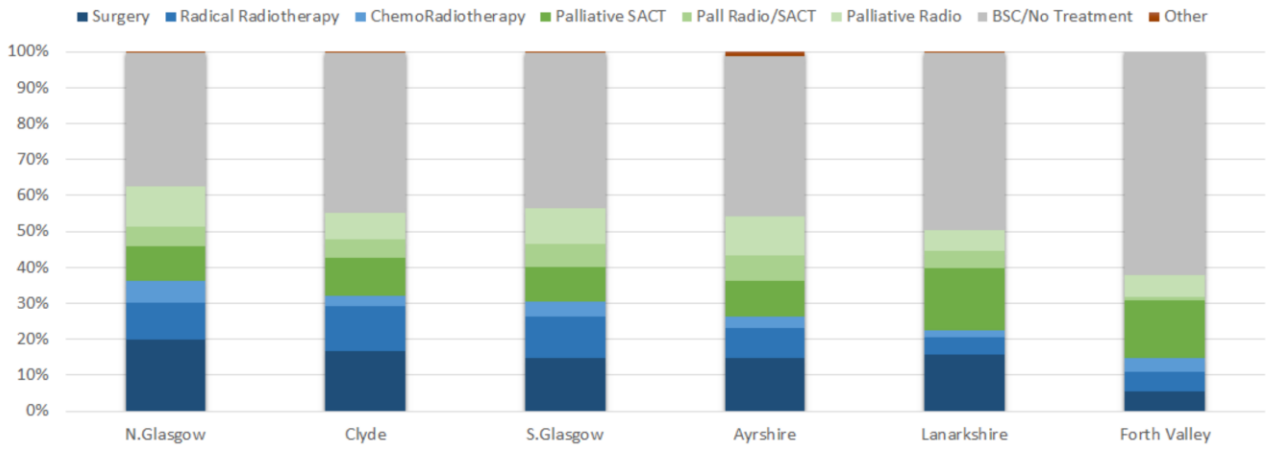
Type of Lung Cancer



Clinical TNM Stage



Lung CancerTreatment



Executive Summary

This report contains an assessment of the performance of West of Scotland (WoS) lung cancer services using clinical audit data relating to patients diagnosed with lung cancer between 01 January and 31 December 2022.

Cancer audit has underpinned much of the regional development and service improvement work of the MCN and the regular reporting of activity and performance have been fundamental in assuring the quality of care delivered across the region. With the development of QPIs, this has now become a national programme to drive continuous improvement and ensure equity of care for patients across Scotland.

Overall WoS results are reassuring and demonstrate the high standard of care provided for lung cancer patients across the West of Scotland. The results presented within this report continue to illustrate that some of the QPI targets set have remained challenging for NHS Boards to achieve These continue to be around PET CT for patients being treated with curative intent (QPI 4), pre-treatment diagnosis (QPI 15) and variance in radical treatment rates across the region has been observed.

However it is encouraging that targets relating to NSCLC tumour sub-typing and molecular profiling (QPI 2), Stage I-II NSCLC Surgery (QPI 6ii), Lymph Node Assessment (QPI 7), SACT in NSCLC (QPI 11) and Chemotherapy in SCLC (QPI 12ii) were consistently met by all Boards in this reporting period.

Encouragingly, improvements can be seen in a number of areas in the last year including Invasive Investigation of intrathoracic nodal staging (QPI 5) and Brain Imaging (QPI 16).

Some variance in performance does exist across the regions and, as per the agreed Regional governance process, each NHS Board was asked to complete a Performance Summary Report, providing a documented response where performance was below the QPI target. NHS Boards have provided detailed comments indicating valid clinical reasons or that, in some cases, patient choice or co-morbidities have influenced patient management.

There are a number of actions required as a consequence of this assessment of performance against the agreed criteria.

Action Required:

QPI 4: PET CT in patients being treated with curative intent.

- NHSGGC to explore option with PET Centre for GGC North and South to receive more PETiTe slots.

QPI 5: Invasive Investigation of Intrathoracic Staging.

- NHSGGC South and Clyde sectors to provide further detail on the 21 cases who did not undergo EBUS where it was stated that it would not alter their management plan.

QPI 6: Surgical resection in NSCLC

- WoSCAN Lead Lung Cancer Clinician to liaise with NHS Forth Valley regarding reasons for declining QPI performance in this area.

QPI 8: Radiotherapy in inoperable lung cancer.

- WoSCAN Lead Lung Cancer Clinician to liaise with NHS Forth Valley regarding reasons for declining QPI performance in this area.

QPI 11: Systemic anti-cancer therapy in non-small cell lung cancer.

- MCN to liaise with SCAN and NCA regarding updating QPI definition to reflect current SMC advice.

QPI 14: Stereotactic Ablative Radiotherapy (SABR) in inoperable stage I lung cancer.

- WoSCAN Lead Lung Cancer Clinician to liaise with NHS Forth Valley regarding reasons for declining QPI performance in this area.

QPI 16: Brain Imaging.

- WoSCAN Lead Lung Cancer Clinician to liaise with NHS Forth Valley regarding reasons for declining QPI performance in this area.

A summary of actions has been included within the Action Plan Report accompanying this report and templates have been provided to Boards.

Completed Action Plans should be returned to WoSCAN in a timely manner to allow the plans to be reviewed at the Regional Cancer Oversight Group.

3 Year Summary of Lung Cancer QPI Results

Lung Cancer QPI Performance Summary Report

Clinical Leads:	
Date:	
Audit Reporting Period:	01/01/2020 – 31/12/2022

Key

	Above Target Result
	Below Target Result
	No comparable measure for previous years

Quality Performance Indicator (QPI)	Performance by NHS Board								
	Target	Year	AA	FV	Lan	NG	SG	Clyde	WoS
QPI 1: Proportion of patients with lung cancer who are discussed at MDT meeting.	**95%**	2022	100% (356/356)	98% (233/237)	99.8% (536/537)	99.8% (433/434)	99% (533/539)	99% (392/395)	99% (2483/2498)
		2021	99.7%	98%	99.6%	98%	98%	98%	99%
		2020	99.7%	99%	99.5%	100%	99%	98%	99%
QPI 2(i): Proportion of patients with lung cancer who have a pathological diagnosis.	**80%**	2022	79% (182/228)	76% (106/140)	80% (281/353)	91% (243/268)	77% (275/358)	79% (214/270)	81% (1301/1617)
		2021	76%	78%	84%	83%	76%	81%	79%
		2020	75%	80%	82%	82%	79%	79%	80%
QPI 2(ii): Proportion of patients with a pathological diagnosis of non small cell lung cancer (NSCLC) who have tumour subtype identified.	**90%**	2022	96% (173/181)	91% (91/100)	97% (270/278)	94% (240/256)	92% (239/259)	92% (178/193)	94% (1191/1267)
		2021	95%	93%	95%	92%	91%	95%	93%
		2020	97%	86%	95%	93%	93%	90%	92.7%

Quality Performance Indicator (QPI)	Performance by NHS Board								
	Target	Year	AA	FV	Lan	NG	SG	Clyde	WoS
QPI 2(iii): Proportion of patients with a pathological diagnosis of non-squamous non small cell lung cancer (NSCLC) who have oncogenic mutation profiling undertaken	**80%**	2022	89% (63/71)	92% (55/60)	95% (106/112)	94% (101/107)	99% (114/115)	88% (70/80)	93% (509/545)
		2021	94%	89%	94%	100%	95%	95%	95%
		2020							
QPI 2(iv): Proportion of patients with a pathological diagnosis of NSCLC who have PD-L1 testing undertaken.	**80%**	2022	89% (100/112)	93% (78/84)	96% (169/176)	95% (152/160)	98% (148/151)	92% (109/118)	94% (756/802)
		2021	92%	91%	95%	99%	94%	94%	94%
		2020	98%	85%	93%	94%	92%	95%	93%
QPI 4: Proportion of patients with non small cell lung cancer (NSCLC) who receive curative treatment (radical radiotherapy, radical chemoradiotherapy or surgical resection) that undergo PET CT prior to start of treatment, where the report is available within 10 days of radiology request.	**95%**	2022	1% (1/75)	20% (5/25)	3% (3/105)	29% (34/118)	29% (30/104)	10% (9/95)	16% (82/522)
		2021	1%	9%	2%	36%	37%	8%	18%
		2020							
QPI 5: Proportion of patients with NSCLC undergoing treatment with curative intent who have a PET CT scan that shows enlarged or positive hilar / mediastinal / supraclavicular fossa (SCF) nodes, that have invasive nodal staging (assessment / sampling) performed and nodes sampled.	**80%**	2022	91% (21/23)	57% (8/14)	81% (13/16)	87% (40/46)	68% (30/44)	64% (21/33)	76% (133/176)
		2021	65%	62%	78%	84%	68%	50%	69%
		2020							
QPI 6(i): Proportion of patients with NSCLC who undergo surgical resection.	**20%**	2022	27% (48/181)	13% (13/100)	30% (82/278)	33% (83/255)	28% (73/257)	32% (61/192)	29% (360/1263)
		2021	27%	18%	23%	30%	26%	28%	26%
		2020	27%	26%	31%	36%	25%	28%	29%

Quality Performance Indicator (QPI)	Performance by NHS Board								
	Target	Year	AA	FV	Lan	NG	SG	Clyde	WoS
QPI 6(ii): Proportion of patients with stage I – II NSCLC who undergo surgical resection.	**60%**	2022	66% (37/56)	71% (10/14)	73% (57/78)	76% (67/88)	73% (61/84)	76% (40/53)	73% (272/373)
		2021	80%	70%	65%	76%	69%	73%	72%
		2020	75%	74%	75%	81%	73%	73%	76%
QPI 7: Proportion of patients with NSCLC undergoing surgery who have adequate sampling of lymph nodes performed at time of surgical resection or at previous mediastinoscopy.	**80%**	2022	97% (32/33)	100% (12/12)	98% (63/64)	96% (64/67)	96% (52/54)	81% (38/47)	94% (261/277)
		2021	81%	95%	98%	94%	86%	91%	91%
		2020	95%	92%	96%	86%	85%	93%	90%
QPI 8: Proportion of patients with stage I-IIIA lung cancer not undergoing surgery who receive radiotherapy with radical intent (54Gy or greater) ± chemotherapy, or SABR.	**35%**	2022	38% (28/74)	24% (12/50)	24% (22/90)	44% (51/116)	40% (55/137)	50% (48/96)	38% (216/563)
		2021	44%	53%	39%	42%	45%	50%	45%
		2020	49%	20%	49%	56%	56%	47%	49%
QPI 9: Proportion of patients with stage IIIA PS 0-1 NSCLC not undergoing surgery who receive radical radiotherapy, to 54Gy or greater, and concurrent or sequential chemotherapy.	**50%**	2022	71% (5/7)	-	-	89% (8/9)	n/a (0)	36% (4/11)	59% (19/32)
		2021	60%	33%	71%	50%	56%	38%	50%
		2020	-	n/a	20%	50%	50%	-	38%
QPI 10: Proportion of patients with limited stage SCLC treated with radical intent who receive both platinum-based chemotherapy, and radiotherapy to 40Gy or greater.	**70%**	2022	-	-	-	n/a (0)	100% (7/7)	-	93% (14/15)
		2021	n/a	-	-	-	-	-	90%
		2020	-	-	-	-	-	n/a	60%

Quality Performance Indicator (QPI)	Performance by NHS Board								
	Target	Year	AA	FV	Lan	NG	SG	Clyde	WoS
QPI 11(i): Proportion of patients with NSCLC who receive systemic anti-cancer therapy (SACT)	**35%**	2022	42% (48/114)	55% (38/69)	54% (92/171)	39% (62/158)	39% (60/155)	40% (47/119)	44% (347/786)
		2021	36%	49%	43%	43%	40%	31%	40%
		2020							
QPI 11(ii): Proportion of patients with stage IIIB - IV NSCLC that have an oncogenic driver mutation who receive targeted therapy.	**80%**	2022	100% (5/5)	-	88% (7/8)	91% (10/11)	100% (5/5)	80% (4/5)	91% (32/35)
		2021	-	-	100%	80%	71%	-	78%
		2020							
QPI 11(iii): Proportion of patients with stage IIIB – IV NSCLC with performance status 0-2 not undergoing surgery that are oncogene mutation negative who receive immunotherapy.	**40%**	2022	46% (13/28)	65% (20/31)	65% (39/60)	33% (14/43)	53% (32/60)	47% (18/38)	52% (136/260)
		2021	17%	64%	54%	42%	47%	48%	44%
		2020							
QPI 12(i): Proportion of patients with SCLC who receive chemotherapy ± radiotherapy.	**70%**	2022	68% (23/34)	75% (12/16)	78% (36/46)	78% (28/36)	78% (43/55)	73% (24/33)	76% (166/220)
		2021	78%	100%	81%	77%	88%	63%	80%
		2020	85%	75%	82%	71%	83%	76%	79%
QPI 12(ii): Proportion of patients with SCLC not undergoing treatment with curative intent who receive palliative chemotherapy.	**50%**	2022	61% (17/28)	73% (11/15)	73% (30/41)	73% (19/26)	73% (30/41)	67% (18/27)	70% (125/178)
		2021	76%	100%	80%	74%	87%	59%	77%
		2020	76%	78%	79%	64%	77%	72%	74%

Quality Performance Indicator (QPI)	Target	Year	Performance by NHS Board						
			AA	FV	Lan	NG	SG	Clyde	WoS
QPI 13: 30 day mortality (surgery). Proportion of patients with lung cancer who die within 30 days of surgery for lung cancer.	**< 5%**	2022	2% (1/53)	0% (0/13)	0% (0/85)	0% (0/86)	0% (0/78)	0% (0/66)	0.3% (1/381)
		2021	2%	0%	0%	3%	0%	2%	1%
		2020	0%	0%	2%	0%	2%	2%	1%
QPI 13: 90 day mortality (surgery). Proportion of patients with lung cancer who die within 90 days of surgery for lung cancer.	**< 5%**	2022	4% (2/51)	0% (0/13)	0% (0/83)	2% (2/86)	1% (1/73)	0% (0/65)	1% (5/371)
		2021	4%	4%	2%	3%	1%	2%	2%
		2020	0%	3%	2%	1%	2%	3%	2%
QPI 13: 30 day mortality (radical radiotherapy). Proportion of patients with lung cancer who die within 30 days of radical radiotherapy for lung cancer.	**< 5%**	2022	0% (0/29)	8% (1/13)	0% (0/26)	0% (0/49)	0% (0/64)	0% (0/51)	0.4% (1/232)
		2021	0%	3%	3%	0%	0%	2%	1%
		2020	0%	0%	2%	2%	0%	6%	2%
QPI 13: 90 day mortality (radical radiotherapy). Proportion of patients with lung cancer who die within 90 days of radical radiotherapy for lung cancer	**< 5%**	2022	7% (2/27)	23% (3/13)	4% (1/26)	0% (0/47)	5% (3/60)	6% (3/48)	5% (12/221)
		2021	4%	3%	9%	0%	3%	2%	3%
		2020	3%	7%	5%	4%	4%	9%	5%
QPI 13: 30 day mortality (radical chemoradiotherapy). Proportion of patients with lung cancer who die within 30 days of radical chemoradiotherapy for lung cancer.	**< 5%**	2022	0% (0/13)	0% (0/9)	0% (0/11)	7% (2/26)	0% (0/23)	0% (0/12)	2% (2/96)
		2021	0%	0%	0%	0%	7%	0%	1%
		2020	0%	-	10%	0%	4%	0%	3%

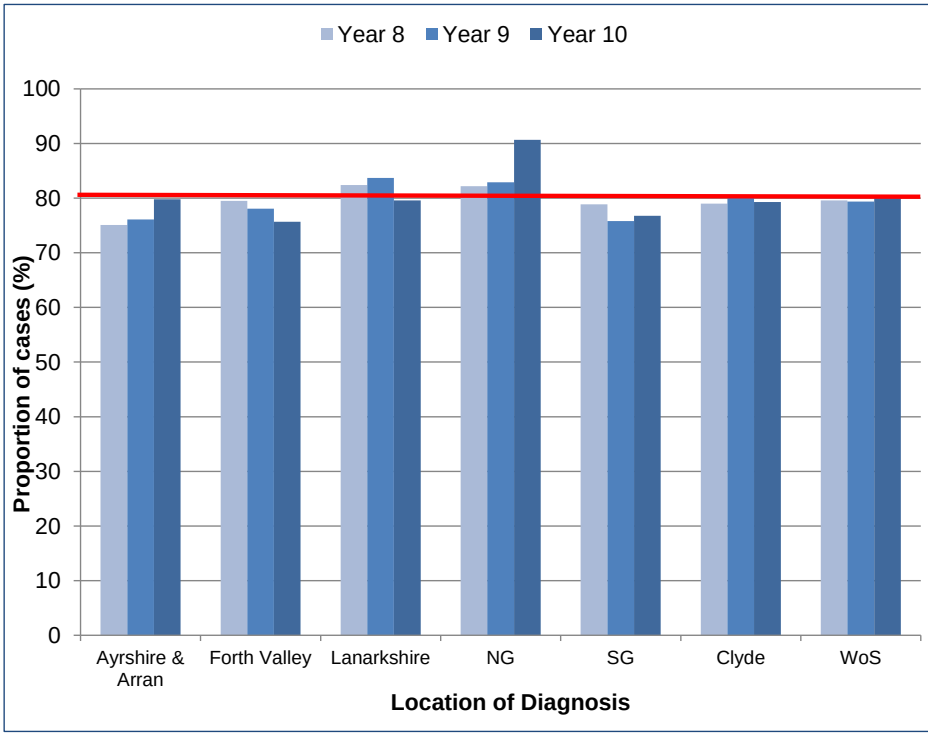
Quality Performance Indicator (QPI)	Performance by NHS Board								
	Target	Year	AA	FV	Lan	NG	SG	Clyde	WoS
QPI 13: 90 day mortality (radical chemoradiotherapy). Proportion of patients' lung cancer who die within 90 days of radical chemoradiotherapy for lung cancer.	**< 5%**	2022	0% (0/12)	0% (0/9)	0% (0/10)	7% (2/28)	5% (1/21)	0% (0/11)	3% (3/91)
		2021	0%	0%	8%	5%	7%	25%	7%
		2020	0%	-	10%	0%	12%	13%	7%
QPI 14: SABR in inoperable stage I lung cancer. Proportion of patients with stage I lung cancer not undergoing surgery who receive SABR.	**35%**	2022	31% (9/29)	15% (3/20)	28% (11/39)	44% (27/61)	35% (31/89)	44% (20/46)	36% (101/284)
		2021	47%	36%	24%	35%	40%	38%	37%
		2020	50%	17%	35%	48%	45%	43%	42%
QPI 15(i): Pre-treatment Diagnosis. Proportion of patients who receive curative treatment that have a histological/cytological diagnosis prior to surgery.	**75%**	2022	50% (26/52)	69% (9/13)	77% (65/84)	73% (63/86)	70% (55/79)	61% (40/66)	68% (258/380)
		2021	70%	60%	82%	74%	76%	62%	72%
		2020	52%	60%	55%	55%	73%	54%	59%
QPI 15(ii): Pre-treatment Diagnosis. Proportion of patients who receive curative treatment that have a histological/cytological diagnosis prior to radical radiotherapy.	**75%**	2022	73% (22/30)	83% (10/12)	76% (19/25)	51% (23/45)	49% (29/59)	61% (30/49)	61% (133/220)
		2021	55%	62%	79%	66%	52%	64%	62%
		2020	60%	73%	76%	47%	52%	53%	58%
QPI 16: Brain Imaging. Proportion of patients with N2 disease who receive curative treatment that undergo contrast enhanced CT or contrast enhanced MRI prior to start of definitive treatment.	**95%**	2022	69% (9/13)	25% (2/8)	89% (8/9)	100% (16/16)	95% (18/19)	94% (16/17)	84% (69/82)
		2021	50%	75%	100%	93%	91%	100%	89%
		2020	43%	38%	100%	93%	91%	75%	82%

(-) dash denotes a denominator of less than 5. Figures have been removed to ensure confidentiality.

QPI 2: Pathological Diagnosis

Title:	(i): Patients with lung cancer who have a pathological diagnosis.
Numerator:	Number of patients with lung cancer who have a pathological diagnosis (including following surgical resection).
Denominator:	All patients with lung cancer.
Exclusions:	Patients who decline investigations or surgical resection Patients with Performance status 3 or 4
Target:	80% or above

Figure 1: The proportion of patients who have a pathological diagnosis of lung cancer.



2022	Performance (%)	Numerator	Denominator
AA	79.8%	182	228
FV	75.7%	106	140
LAN	79.6%	281	353
NG	90.7%	243	268
SG	76.8%	275	358
Clyde	79.3%	214	270
WoS	80.5%	1301	1617

Results for this QPI indicate that the vast majority of patients with lung cancer had a pathological diagnosis, with the QPI target being met at a regional level. NHS Forth Valley and NHSGGC South and Clyde Sectors both narrowly missed the 80% QPI target.

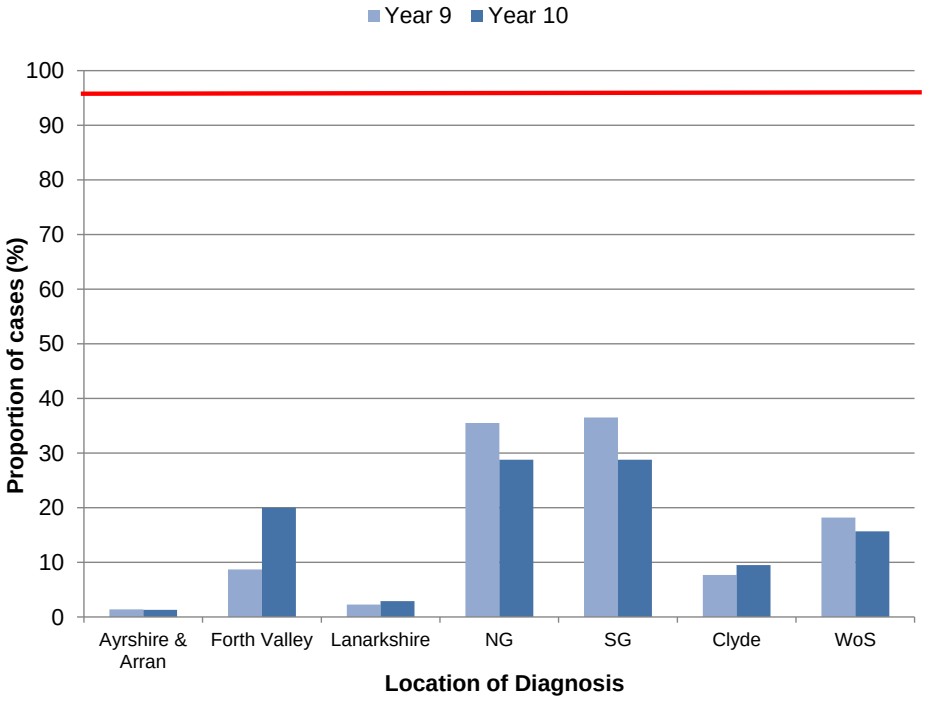
NHS Forth Valley commented that the Clinical lead has reviewed all cases that missed the target. 18 patients were not fit for pathological diagnosis, pathological diagnosis was attempted for 16 patients who either had negative pathology or were unable to complete and were for 'best supportive care'. The remaining 4 patients died shortly after CT scan.

NHSGGC reported that all cases were reviewed and reasons provided for cases not meeting the QPI included cases with negative pathology on at least one attempt, cases that were contraindicated due to comorbidity, patients that died before investigation, patients that were not fit for investigation and cases where biopsy was not technically possible. For 34 cases it was noted that having a pathological diagnosis would not alter management.

QPI 4: PET CT in patients being treated with curative intent.

Title:	Proportion of patients with non small cell lung cancer (NSCLC) who receive curative treatment (radical radiotherapy, radical chemoradiotherapy or surgical resection) that undergo PET CT prior to start of treatment, where the report is available within 10 days of radiology request.
Numerator:	Number of patients with NSCLC who receive curative treatment (radical radiotherapy, radical chemoradiotherapy or surgical resection) that undergo PET CT prior to start of treatment where the report is available within 10 days of radiology request.
Denominator:	All patients with NSCLC who receive curative treatment (radical radiotherapy, radical chemoradiotherapy or surgical resection) that undergo PET CT prior to start of treatment.
Exclusions:	No exclusions.
Target:	95% or above.

Figure 2: The proportion patients with NSCLC who receive curative treatment (radical radiotherapy, radical chemoradiotherapy or surgical resection) that undergo PET CT prior to start of treatment, where the report is available within 10 days of radiology request.



2022	Performance (%)	Numerator	Denominator
AA	1.3%	1	75
FV	20.0%	5	25
LAN	2.9%	3	105
NG	28.8%	34	118
SG	28.8%	30	104
Clyde	9.5%	9	95
WoS	15.7%	82	522

Review of patients not meeting this QPI indicates that patients did have appropriate imaging but this was reported more than 10 days after the radiology request, largely due to reporting capacity within radiology services. The better performance noted in the NHSGGC North and South sectors may reflect availability of 2 weekly PETiTe slots. PET in Advance of Tissue (PETiTe) is primarily for patients with locally advanced disease who have the most complex diagnostic pathway, require invasive mediastinal staging and who have most to lose from diagnostic delay. These slots have now been rolled out to all other Boards.

It should be noted that all PET-CT scans within the region are undertaken within the West of Scotland PET-CT Centre. The decline in performance against this indicator in 2021-22 is likely to be related to

ongoing radiology pressures. It is hoped that if pressures on radiology services ease and with the roll out of PETiTE across the WoS, improvement in performance may be seen in subsequent years.

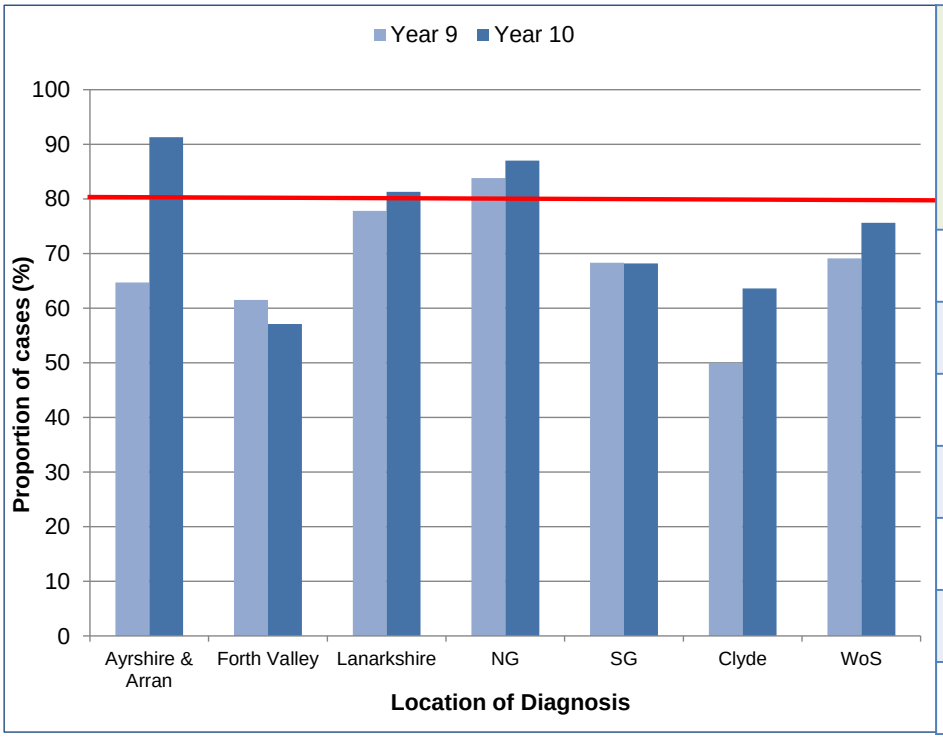
Action Required:

- NHSGGC to explore option with PET Centre for GGC North and South to receive more PETiTe slots.

QPI 5: Invasive Investigation of Intrathoracic Staging.

Title:	Proportion of patients with NSCLC undergoing treatment with curative intent who have a PET CT scan that shows enlarged or positive hilar / mediastinal / supraclavicular fossa (SCF) nodes, that have invasive nodal staging (assessment / sampling) performed and nodes sampled.
Numerator:	Number of patients with NSCLC undergoing treatment with curative intent who have a PET CT scan that shows enlarged or positive hilar / mediastinal / supraclavicular fossa (SCF) nodes, that have invasive nodal staging (assessment / sampling) performed and nodes sampled.
Denominator:	All patients with NSCLC undergoing treatment with curative intent who have a PET CT scan that shows enlarged or positive hilar (N1/N3), mediastinal (N2/N3) or SCF nodes (N3).
Exclusions:	Patients with stage IV (M1, M1a, M1b or M1c) disease. Patients who decline investigation.
Target:	80% or above.

Figure 3: The proportion of patients with NSCLC undergoing treatment with curative intent who have a PET CT scan that shows enlarged or positive hilar / mediastinal / supraclavicular fossa (SCF) nodes, that have invasive nodal staging (assessment / sampling) performed and nodes sampled.



2021/22	Performance (%)	Numerator	Denominator
AA	91.3%	21	23
FV	57.1%	8	14
LAN	81.3%	13	16
NG	87.0%	40	46
SG	68.2%	30	44
Clyde	63.6%	21	33
WoS	75.6%	133	176

NHSGGC and NHS Forth Valley provided detailed reasons for those cases not meeting the QPI criteria, including cases where EBUS was attempted but not tolerated, cases with N0 disease despite PET. And

cases that were felt to be unfit for sampling. NHSGGC also noted that 21 patients' did not undergo EBUS as it would not alter their management plan.

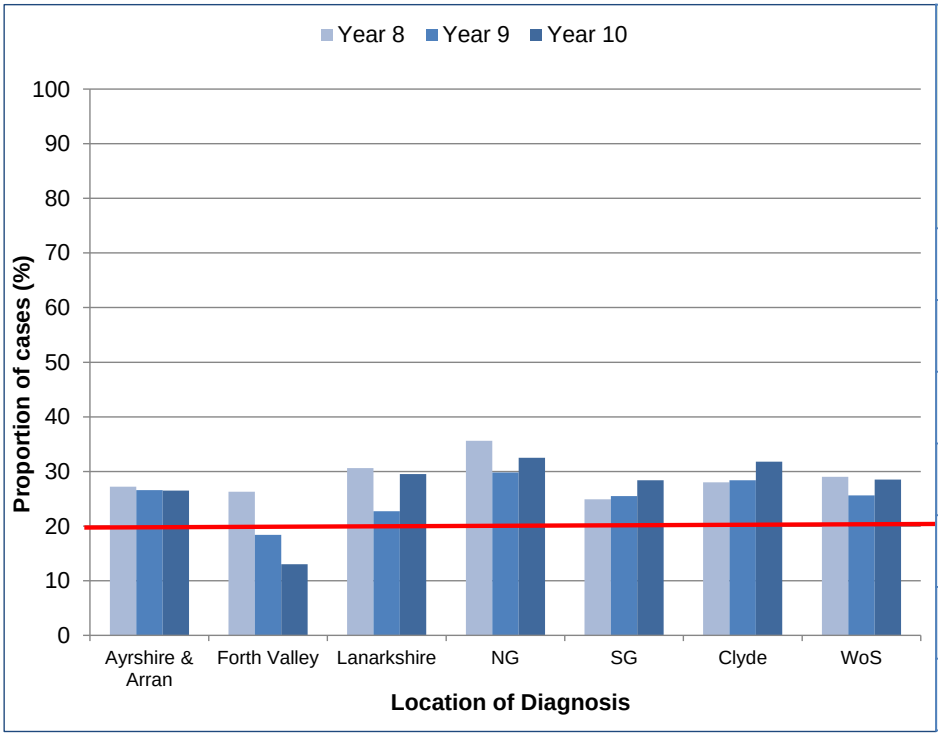
Action Required:

- NHSGGC South and Clyde sectors to provide further detail on the 21 cases who did not undergo EBUS where it was stated that it would not alter their management plan.

QPI 6: Surgical resection in NSCLC

Title:	(i) Patients with non small cell lung cancer (NSCLC) should undergo surgical resection
Numerator:	Number of patients with NSCLC who undergo surgical resection.
Denominator:	All patients with NSCLC.
Exclusions:	Patients who die before surgery.
Target:	20% or above.

Figure 4: The proportion of patients with NSCLC who undergo surgical resection.



2022	Performance (%)	Numerator	Denominator
AA	26.5%	48	181
FV	13.0%	13	100
LAN	29.5%	82	278
NG	32.5%	83	255
SG	28.4%	73	257
Clyde	31.8%	61	192
WoS	28.5%	360	1263

Although WoSCAN exceeded the 20% target for this QPI, there was significant variation in performance. NHSGGC North sector achieved 32.5% compared to 13% in NHS Forth Valley. It is felt that some of this may be driven by differences in stage distribution amongst patients. However further investigation is required to understand this difference.

NHS Forth Valley reviewed all cases that missed the target, noting that year to year variability is observed depending on patient cohort e.g. 26% and 31% was achieved in previous years.

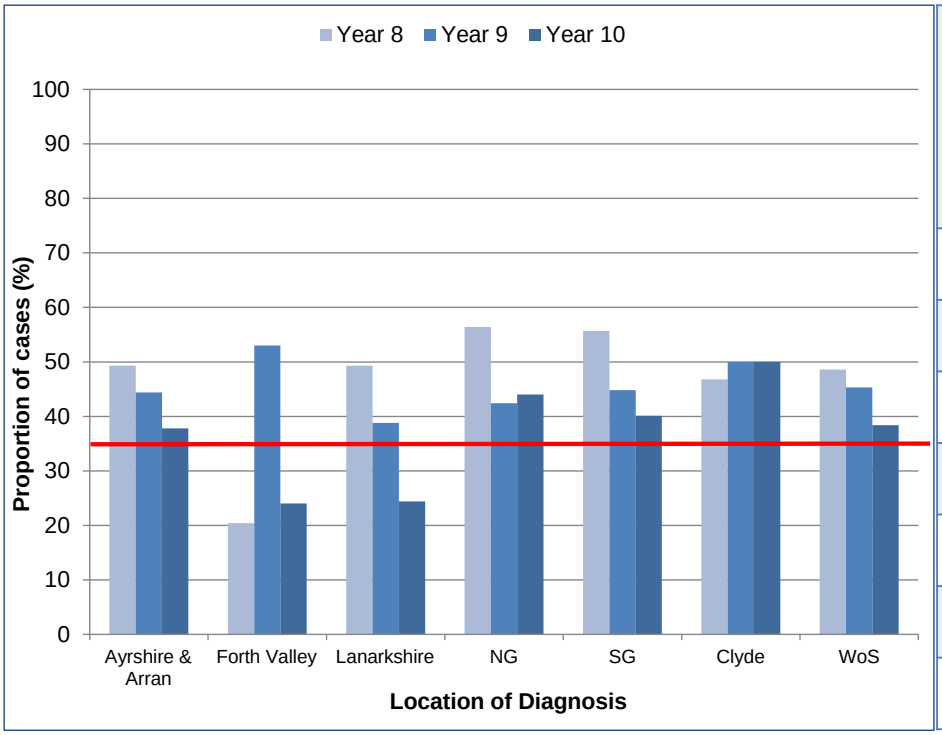
Action required:

- WoSCAN Lead Lung Cancer Clinician to liaise with NHS Forth Valley regarding reasons for declining QPI performance in this area.

QPI 8: Radiotherapy in inoperable lung cancer.

Title:	Patients with inoperable lung cancer should receive radiotherapy ± chemotherapy, or SABR.
Numerator:	Number of patients with stage I-IIIA lung cancer not undergoing surgery who received radical radiotherapy (≥54Gy) ± chemotherapy, or SABR.
Denominator:	All patients with stage I-IIIA lung cancer not undergoing surgery
Exclusions:	Patients with SCLC Patients who refuse radiotherapy. Patients who die prior to treatment.
Target:	35%

Figure 5: The proportion of patients with stage I-IIIA lung cancer not undergoing surgery who received radical radiotherapy ± chemotherapy, or SABR.



2022	Performance (%)	Numerator	Denominator
AA	37.8%	28	74
FV	24.0%	12	50
LAN	24.4%	22	90
NG	44.0%	51	116
SG	40.1%	55	137
Clyde	50.0%	48	96
WoS	38.4%	216	563

Results for this QPI indicate that 38.4% of patients with stage I-IIIa inoperable lung cancer received radiotherapy ± chemotherapy or SABR, with the QPI target being met at a regional level. NHS Lanarkshire and NHS Forth Valley did not achieve the QPI target and both showed a decline in performance from the previous year.

Review of patients in NHS Forth Valley that missed the target indicated that; 13 patients were not fit for radiotherapy, 13 were deemed not appropriate and for 'best supportive care', 6 patients had co morbidities, 4 patients declined investigations and 2 patients received palliative radiotherapy. NHS

Lanarkshire commented that the Board has failed to meet this QPI for the first time since 2017. All cases have been reviewed and were treated appropriately based on performance status.

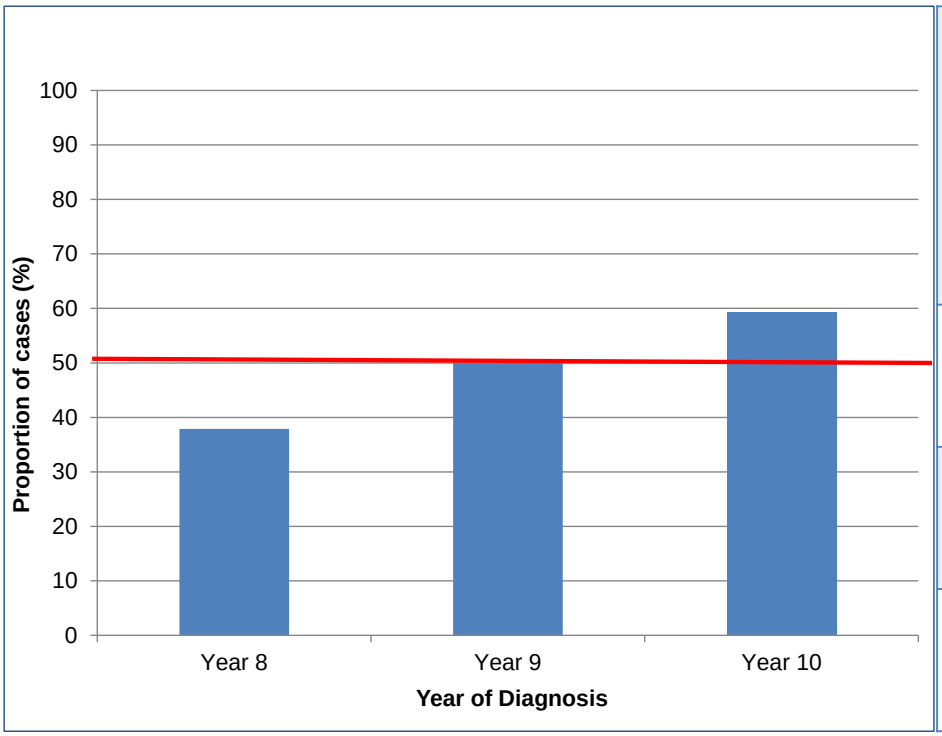
Action Required:

- WoSCAN Lead Lung Cancer Clinician to liaise with NHS Forth Valley regarding reasons for declining QPI performance in this area.

QPI 9: Chemoradiotherapy in locally advanced NSCLC

Title:	Patients with locally advanced non small cell lung cancer (NSCLC) not undergoing surgery should receive potentially curative radiotherapy and concurrent or sequential chemotherapy
Numerator:	All patients with stage IIIa NSCLC with performance status 0-1 not undergoing surgery who receive chemoradiotherapy (radical radiotherapy ≥54Gy and concurrent or sequential chemotherapy).
Denominator:	All patients with stage IIIa NSCLC with performance status 0-1 not undergoing surgery who receive radical radiotherapy ≥54Gy.
Exclusions:	Patients who decline chemotherapy treatment. Patients who die prior to treatment. Patients receiving Continuous Hyperfractionated Radiotherapy.
Target:	50%

Figure 6: The proportion of patients with stage IIIa NSCLC with PS 0-1 not undergoing surgery who receive chemoradiotherapy.



	Performance (%)	Numerator	Denominator
Year 8	38%	11	29
Year 9	50%	24	48
Year 10	59%	19	32

Due to the smaller numbers included within this QPI cumulative WoS results are presented in Figure 6. Four of the six units achieved the QPI target.

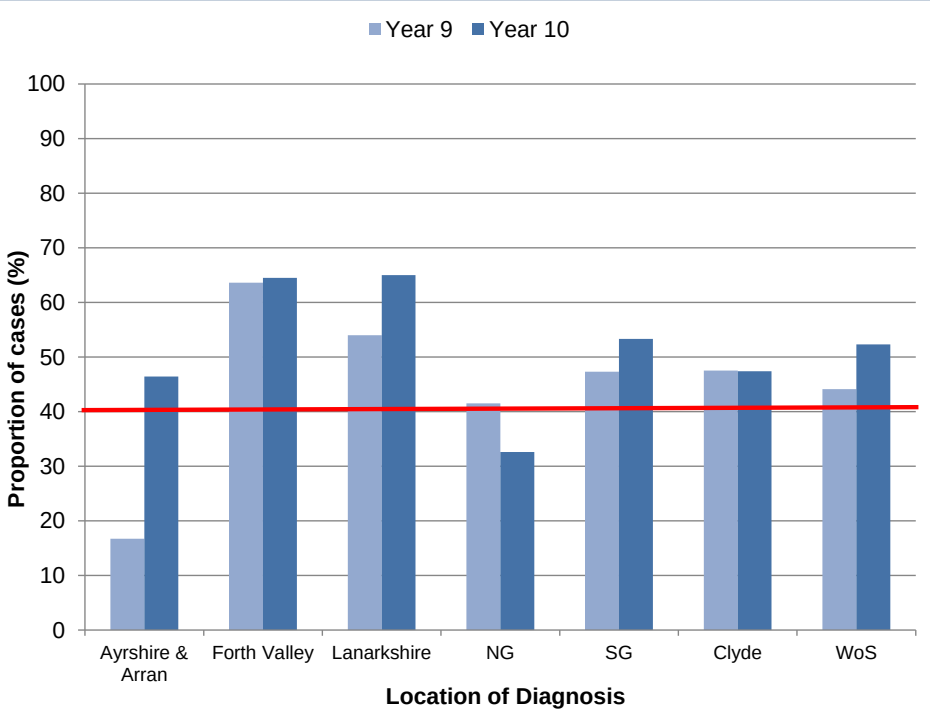
The cases not meeting the QPI in NHSGGC Clyde sector and NHS Forth Valley were reviewed and reasons provided included cases where the patients were not fit for SACT, patients with contraindicated

comorbidity, patients who received radical radiotherapy and cases where concurrent chemoradiotherapy was stopped due to disease progression.

QPI 11: Systemic anti-cancer therapy in non-small cell lung cancer.

Title:	(iii) Patients with stage IIIB – IV NSCLC with performance status 0-2 not undergoing surgery that are oncogene mutation negative who receive immunotherapy.
Numerator:	Number of patients with stage IIIB – IV NSCLC, with performance status 0-2 not undergoing surgery that are oncogene mutation negative who receive immunotherapy.
Denominator:	All patients with stage IIIB – IV NSCLC, with performance status 0-2 not undergoing surgery that are oncogene mutation negative.
Exclusions:	Patients who decline SACT. Patients who die prior to treatment. Patients who are participating in clinical trials.
Target:	40%

Figure 7: The proportion of patients with stage IIIB – IV NSCLC, with performance status 0-2 not undergoing surgery that are oncogene mutation negative who receive immunotherapy.



2022	Performance (%)	Numerator	Denominator
AA	46.4%	13	28
FV	64.5%	20	31
LAN	65.0%	39	60
NG	32.6%	14	43
SG	53.3%	32	60
Clyde	47.4%	18	38
WoS	52.3%	136	260

Overall, 52.3% of patients with NSCLC not undergoing surgery in the WoS, received systemic anti-cancer therapy. Only NHSGGC North sector did not meet the QPI. NHSGGC North sector review concluded that those patients not meeting the QPI criteria were either not fit for SACT, had contraindicated comorbidities or treatment was discontinued due to progression.

The definition for QPI 11 may require revision as it is not in line with current SMC guidance. The existing QPI definition requires patients to have a performance status of 0-2 whilst current SMC guidance is that patients should be performance status 0-1.

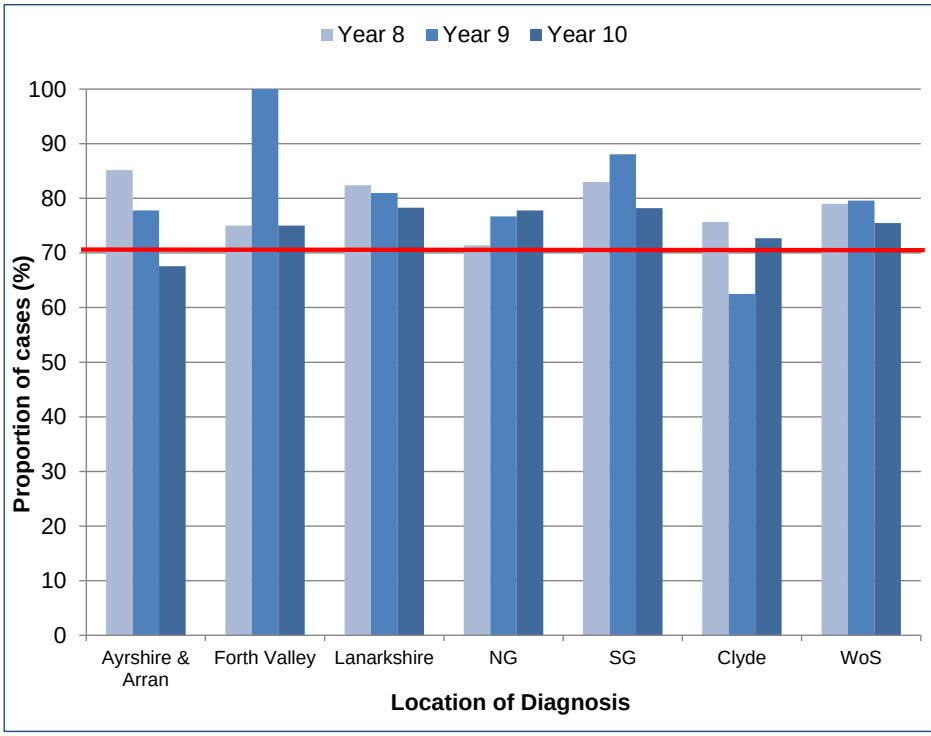
Action Required:

- MCN to liaise with SCAN and NCA regarding updating QPI definition to reflect current SMC advice.
-

QPI 12: Chemotherapy in SCLC

Title:	(i) Patients SCLC should receive chemotherapy.
Numerator:	All patients with SCLC who receive first line chemotherapy ± radiotherapy.
Denominator:	All patients with SCLC.
Exclusions:	Patients who refuse chemotherapy. Patients who die prior to treatment. Patients who are participating in clinical trials.
Target:	70%

Figure 8: The proportion of patients with SCLC who receive first line chemotherapy ± radiotherapy.



2022	Performance (%)	Numerator	Denominator
AA	67.6%	23	34
FV	75.0%	12	16
LAN	78.3%	36	46
NG	77.8%	28	36
SG	78.2%	43	55
Clyde	72.7%	24	33
WoS	75.5%	166	220

Results for this QPI indicate that SCLC patients are having first line chemotherapy, with the QPI target being comfortably met across all WoS Boards with the exception of NHS Ayrshire & Arran.

Review of patients in NHS Ayrshire & Arran not undergoing first line chemotherapy highlighted that 10 patients were for 'best supportive care' and 1 patient had palliative radiotherapy. The Board added that all cases were discussed by the MDT and treatment offered based on patient fitness and staging and that this years' cohort were not a fit as others.

QPI 13: 30/90 Day Mortality: 30/90 day mortality following treatment for lung cancer

Title:	30/90 day Mortality following treatment for lung cancer.
Numerator:	All patients with lung cancer who receive treatment with curative intent who die within 30/90 days of treatment.
Denominator:	All patients with lung cancer who receive treatment with curative intent.
Exclusions:	No exclusions.
Target:	<5%

Table 1: Proportion of patients with lung cancer who receive treatment with curative intent who die within 30 or 90 days of treatment.

	QPI Target	WoS Result (Year 8)	WoS Result (Year 9)	WoS Result (Year 10)
Surgery	<5 %	1% (3/332)	1% (4/344)	0.3% (1/381)
Radical Radiotherapy	<5 %	2% (4/256)	1% (3/279)	0.4% (1/232)
Radical Chemoradiotherapy	<5%	3% (2/71)	1% (1/73)	2% (2/96)

The target was achieved at regional level for all surgery, radical radiotherapy and chemoradiotherapy mortality. NHSGGC North sector did not meet the <5% target with two deaths recorded within 30 days of chemoradiotherapy resulting in a 7% mortality rate. NHSGGC commented that all cases are routinely reviewed by the BWoSCC and no action was required. NHS Forth Valley had one death noted within 30 days of radical radiotherapy resulting in an 8% mortality rate which the Board noted would be reviewed as part of the regional mortality meeting.

Table 2: Proportion of patients with lung cancer who receive treatment with curative intent who die within 30 or 90 days of treatment.

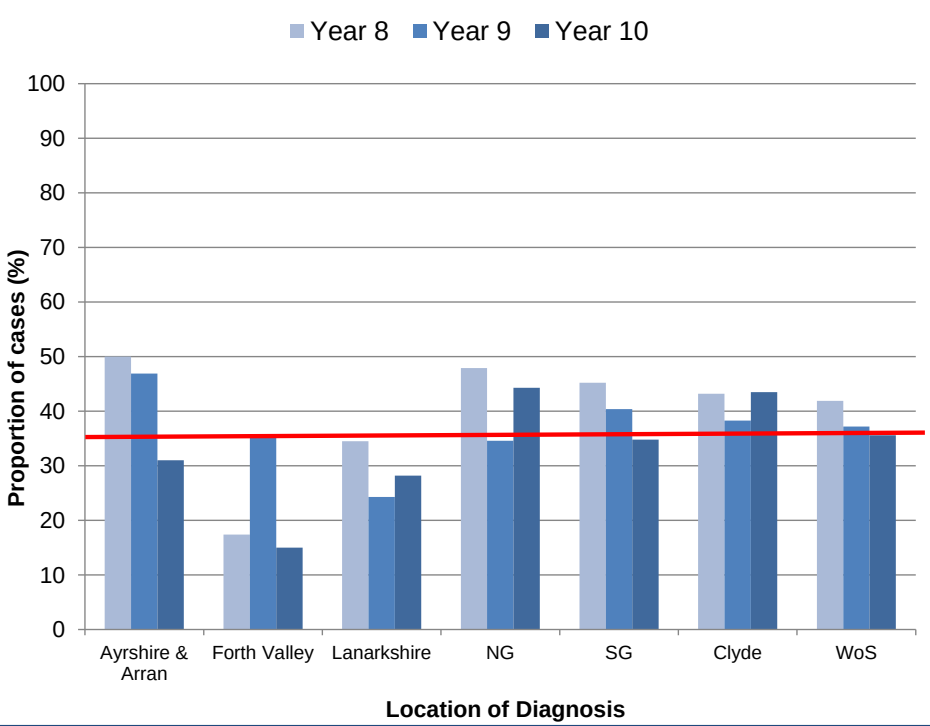
	QPI Target	WoS Result (Year 8)	WoS Result (Year 9)	WoS Result (Year 10)
Surgery	< 5%	2% (5/331)	2% (8/340)	1% (5/371)
Radical Radiotherapy	< 5%	5% (12/247)	3% (8/273)	5% (12/221)
Radical Chemoradiotherapy	< 5%	7% (5/70)	7% (5/72)	3% (3/91)

Table 2 highlights that the WoS met the <5% target for 90 day mortality for surgery, radical radiotherapy and chemoradiotherapy. Three Boards did not meet the QPI target for radical radiotherapy however all cases were reviewed and are routinely discussed at regional morbidity meetings.

QPI 14: Stereotactic Ablative Radiotherapy (SABR) in inoperable stage I lung cancer.

Title:	Patients with inoperable stage I lung cancer should receive SABR.
Numerator:	Number of patients with stage I lung cancer not undergoing surgery who receive SABR.
Denominator:	All patients with stage I lung cancer not undergoing surgery.
Exclusions:	Patients with SCLC, Patients who refuse SABR, Patients who die prior to treatment.
Target:	35%

Figure 9: The proportion of patients with stage I lung cancer not undergoing surgery who receive SABR.



2022	Performance (%)	Numerator	Denominator
AA	31.0%	9	29
FV	15.0%	3	20
LAN	28.2%	11	39
NG	44.3%	27	61
SG	34.8%	31	89
Clyde	43.5%	20	46
WoS	35.6%	101	284

This QPI looks at the number of Stage 1 patients not undergoing surgery who receive SABR. All patients not meeting the QPI were reviewed and the majority of patients were deemed not fit for treatment and were for best supportive care.

NHS Forth Valley added that of the 17 cases that did not meeting the target 14 had a comorbidity and 3 further patients chose not to have SABR. Patients who decline SABR are excluded from this QPI therefore Forth Valley should ensure that these cases are recorded correctly in eCASE.

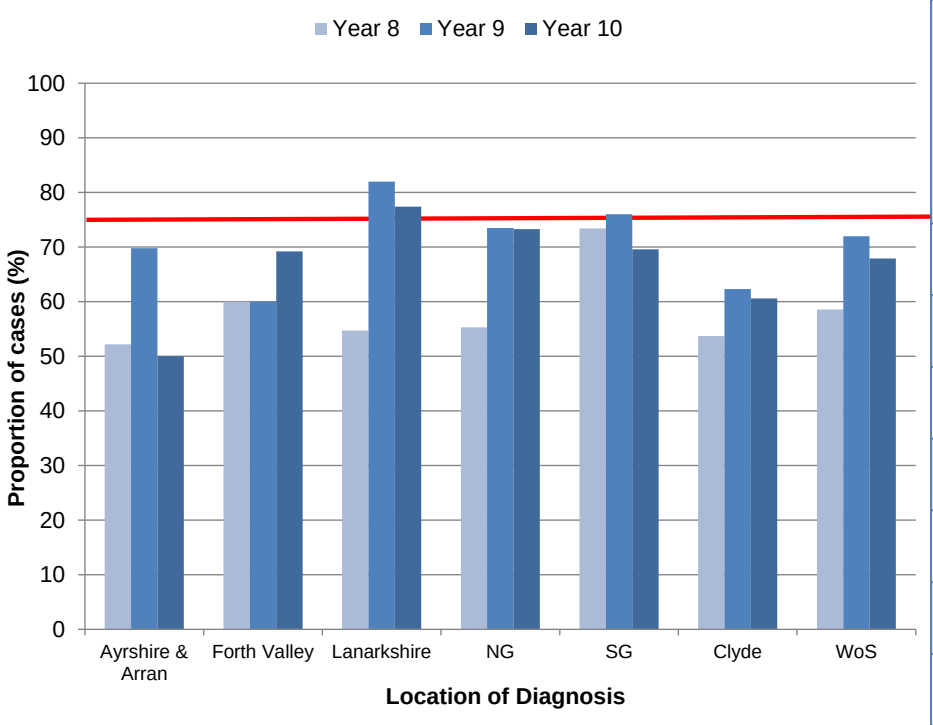
Action Required:

- WoSCAN Lead Lung Cancer Clinician to liaise with NHS Forth Valley regarding reasons for declining QPI performance in this area.

QPI 15: Pre Treatment Diagnosis.

Title:	Where possible patients should have a cytological/histological diagnosis prior to definitive treatment.
Numerator:	Number of patients who received curative treatment that have a cytological/ histological diagnosis prior to starting definitive treatment. (surgery, radiotherapy, chemoradiotherapy)
Denominator:	All patients with lung cancer who receive curative treatment.
Exclusions:	Patients who refuse investigation.
Target:	75%

Figure 10: The proportion of patients who received curative treatment that have a cytological /histological diagnosis prior to surgery.



2022	Performance (%)	Numerator	Denominator
AA	50.0%	26	52
FV	69.2%	9	13
LAN	77.4%	65	84
NG	73.3%	63	86
SG	69.6%	55	79
Clyde	60.6%	40	66
WoS	67.9%	258	380

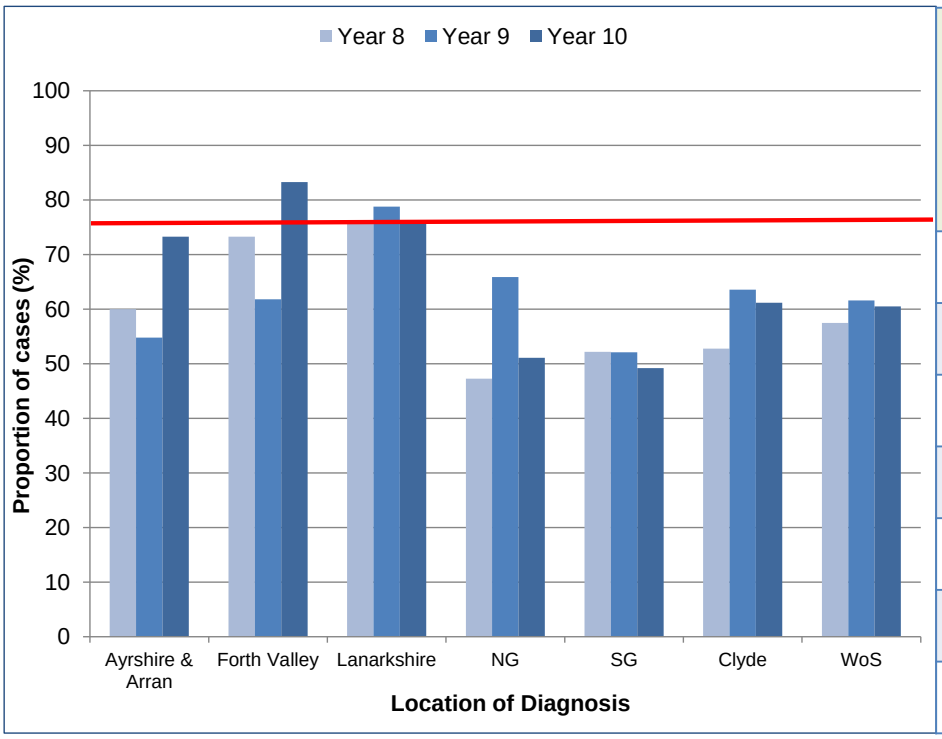
Overall WoS achieved 68% against the 75% target. All patients that did not have a cytological/histological diagnosis prior to undergoing surgery were reviewed.

NHS Ayrshire and Arron commented that the patients not meeting the QPI had lesions that were either too small or were not accessible for biopsy.

NHS Forth Valley reviewed all cases that missed the target. In the majority of cases the position of tumour was too risky for biopsy and in one case the lesion was too small to biopsy so patient went straight to surgical resection. All patients were dealt with clinically appropriately and improvement from previous year was noted.

NHSGGC commented that all cases had been reviewed. Reasons provided for cases not meeting the QPI target included; cases that were contraindicated, comorbidity/risk, negative pathology with at least one attempt, cases where biopsy was technically not possible and cases where biopsy was attempted but failed to get tissue.

Figure 11: The proportion of patients who received curative treatment that have a cytological /histological diagnosis prior to starting radical radiotherapy.



2022	Performance (%)	Numerator	Denominator
AA	73.3%	22	30
FV	83.3%	10	12
LAN	76.0%	19	25
NG	51.1%	23	45
SG	49.2%	29	59
Clyde	61.2%	30	49
WoS	60.5%	133	220

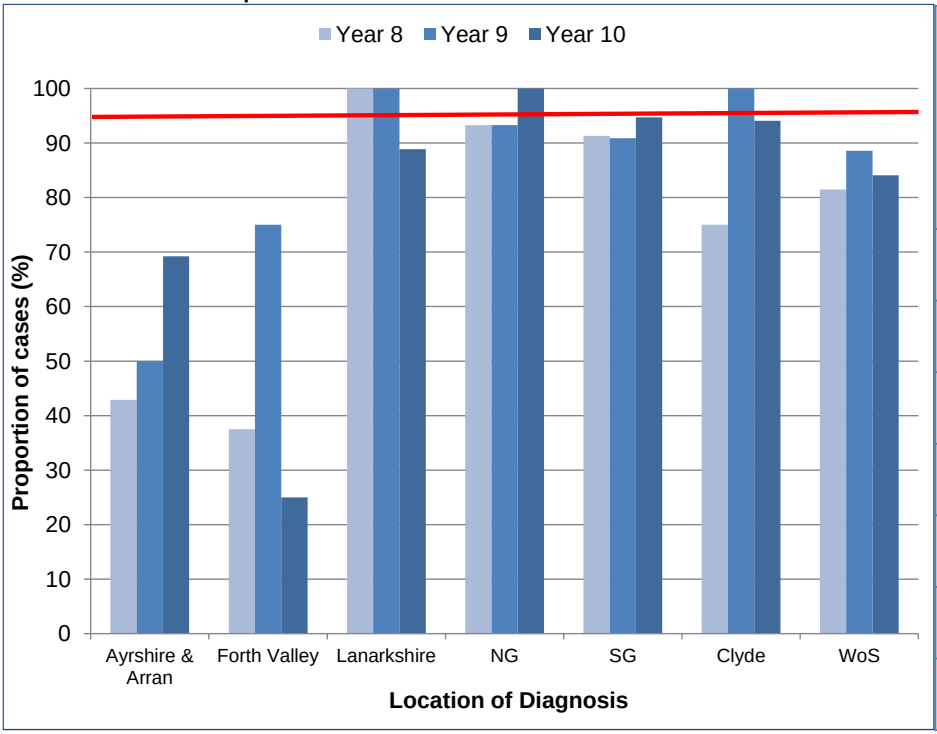
Feedback from Boards not meeting the QPI reflects the comments made previously for QPI 15 (i).

It is acknowledged that the variation across the region in the QPI performance is due to a variety of factors including: differences in practice in relation to performing CT guided biopsies for peripheral lesions and an increase in the proportion of patients receiving curative treatments despite being medically unwell.

QPI 16: Brain Imaging.

Title:	Patients with N2 disease who are undergoing curative treatment should have brain imaging performed prior to commencing definitive treatment.
Numerator:	Number of patients with N2 disease who receive curative treatment that undergo contrast enhanced CT or contrast enhanced MRI prior to start of definitive treatment.
Denominator:	All patients with N2 disease who receive curative treatment.
Exclusions:	Patients who decline brain imaging, patients with small cell lung cancer (SCLC).
Target:	95%

Figure 12: The proportion of patients with N2 disease who receive curative treatment that undergo contrast enhanced CT or contrast enhanced MRI prior to start of treatment.



2022	Performance (%)	Numerator	Denominator
AA	69.2%	9	13
FV	25.0%	2	8
LAN	88.9%	8	9
NG	100%	16	16
SG	94.7%	18	19
Clyde	94.1%	16	17
WoS	84.1%	69	82

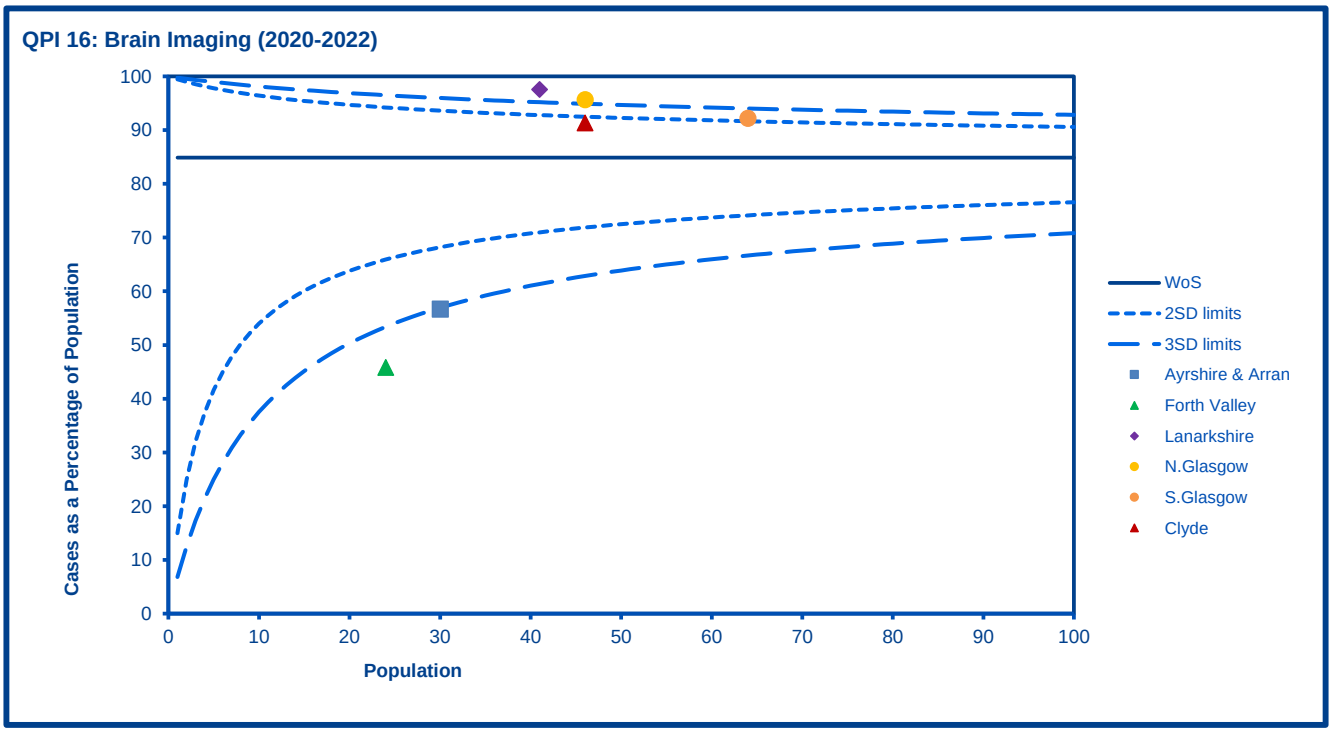
Overall WoSCAN achieved 84% compliance with this QPI, which was below the 95% target. It was noted that NHS Forth Valley results were significantly below the results of the other health boards.

It was noted that NHS Forth Valley results were significantly below the results of the other health boards, however denominator numbers are low.

All Boards reviewed cases not meeting the QPI criteria and the majority of patients not meeting this QPI did have imaging carried out but after treatment had commenced.

NHS Lanarkshire had a small number of not recorded cases which were reviewed and found to be related to incomplete staging due to poor documentation. All patients were treated appropriately. NHS Lanarkshire added that they will remind the MDT to document TNM and it will be monitored through local reports.

Figure 13: QPI 16: funnel plot of 2020-2022 data



Aggregated results shown in Figure 13 illustrates that NHS Forth Valley & NHS Ayrshire & Arran both fall below the WoS average with NHS Forth Valley also lying below the lower control limit.

Action Required:

- WoSCAN Lead Lung Cancer Clinician to liaise with NHS Forth Valley regarding reasons for declining QPI performance in this area.

Appendix 1: Meta Data

<table>
<tr><td>Report Title</td><td>Cancer Audit Report: Lung Cancer Quality Performance Indicators</td></tr>
<tr><td>Time Period</td><td>Patients diagnosed between 01 January 2022 and 31 December 2022</td></tr>
<tr><td>Data Source</td><td>Cancer Audit Support Environment (eCASE). A secure centralised web-based database which holds cancer audit information in Scotland.</td></tr>
<tr><td>Data extraction date</td><td>2200 hrs on 16th August 2023</td></tr>
<tr><td>Data Quality</td><td>Lung Cancer
<table>
<tr><th>Health Board of diagnosis</th><th>(01/01/2022-31/12/2022) Audit</th><th>Cancer Reg 2017-21*</th><th>Case Ascertainment</th></tr>
<tr><td>Ayrshire & Arran</td><td>357</td><td>404</td><td>88.4%</td></tr>
<tr><td>GGC</td><td>1368</td><td>1481</td><td>92.4%</td></tr>
<tr><td>Forth Valley</td><td>237</td><td>314</td><td>75.5%</td></tr>
<tr><td>Lanarkshire</td><td>537</td><td>581</td><td>92.4%</td></tr>
<tr><td>WoS Total</td><td>2499</td><td>2780</td><td>89.9%</td></tr>
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