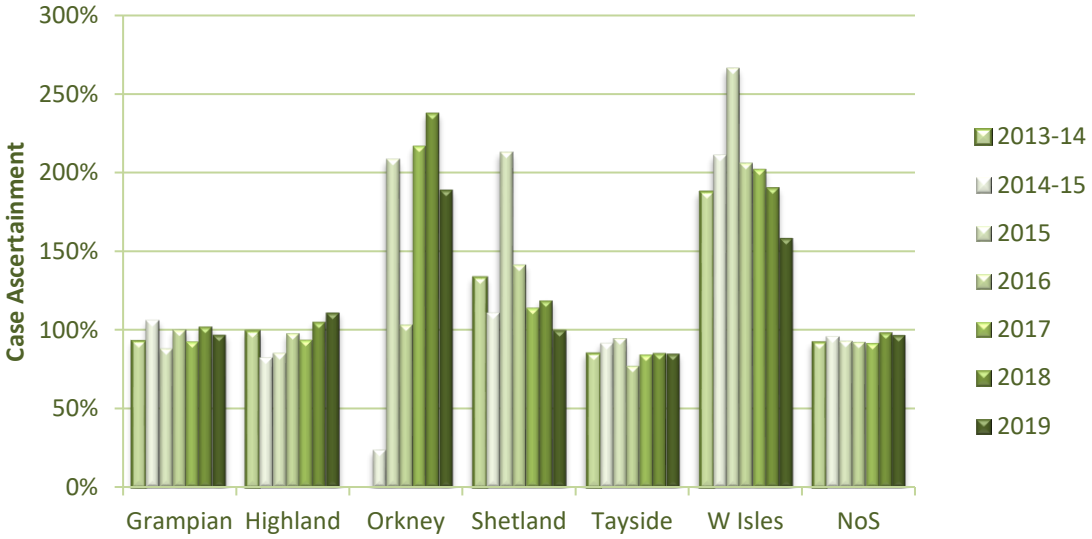
Quality Performance Indicators Audit Report

Tumour Area:	Lung Cancer
Patients Diagnosed:	1st January – 31st December 2019
Published Date:	20/04/2021

1. Patient Numbers and Case Ascertainment in the North of Scotland

Between 1st January and 31st December 2019 a total of 1,139 cases of lung cancer were diagnosed in the North of Scotland and recorded through audit. Overall case ascertainment was very high at 96.8% which indicates excellent data capture through audit. As such QPIs based on data captured are considered to be representative of all patients diagnosed with lung cancer during the audit period.



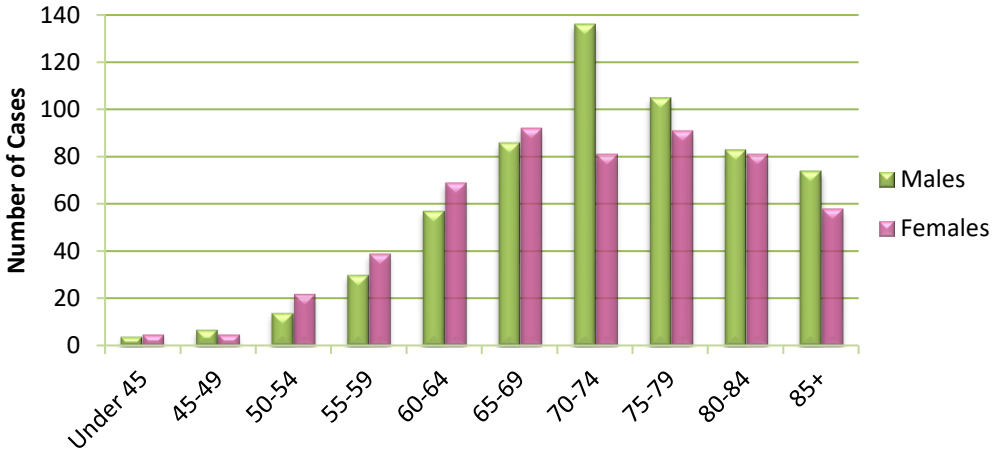
Case ascertainment by NHS Board for patients diagnosed with lung cancer in 2013-2019.

	Grampian	Highland	Orkney	Shetland	Tayside	W Isles	NoS
No. of Patients 2019	463	250	17	13	371	25	**1139**
% of NoS total	40.6%	21.9%	1.5%	1.1%	32.6%	2.2%	**100%**
Mean ISD Cases 2014-18	477	225	9	13	437	15.8	**1176.8**
% Case ascertainment 2019	97.1%	111.1%	188.9%	100%	84.9%	158.2%	**96.8%**

The number of instances of data not being recorded was generally low. Similar to previous years of reporting, the notable gaps has been the absence of recording of the stage of disease, most notably whether the patient had metastatic disease, for some patients in NHS Grampian and Highland. The effects of this on the QPI results are minimal.

2. Age Distribution

The figure below shows the age distribution of patients diagnosed with lung cancer in the North of Scotland in 2019, with numbers of patients diagnosed highest in the 70-74 year age bracket for males and in the 65-69 age bracket for females.



Age distribution of patients diagnosed with lung cancer in the North of Scotland in 2019.

3. Performance against Quality Performance Indicators (QPIs)

Definitions for the QPIs reported in this section are published by Health Improvement Scotland[1], while further information on datasets and measurability used are available from Information Services Division[2]. Data for most QPIs are presented by Board of diagnosis; however QPIs 7 and 13 (surgical mortality) are presented by Hospital of Surgery and QPI 17 (clinical trials and research access) is reported by NHS Board of residence. Please note that where QPI definitions have been amended, results are not compared with those from previous years.

**Where the number of cases per Board is between one and four, results have been excluded from charts and tables to minimise the risk of disclosure. However, all board results are included within the total for the North of Scotland.*

In regards to mortality following SACT, a decision has been taken nationally to move to a new generic QPI (30-day mortality for SACT) applicable across all tumour types. This new QPI will use CEPAS (Chemotherapy ePrescribing and Administration System) data to measure SACT mortality to ensure that the QPI focuses on the prevalent population rather than the incident population. The measurability for this QPI is still under development to ensure consistency across the country and it is anticipated that performance against this measure will be reported in the next audit cycle (the target will be revised from <5% to <10% when it is reported using CEPAS due to the increased clinical cohort who will be receiving appropriate palliative chemotherapy). In the meantime all deaths within 30 days of SACT will continue to be reviewed at NHS Board level.

4. Governance and Risk

QPI performance is overseen by the North Cancer Alliance and its constituent groups, with an assessment of clinical risk and action planning undertaken collaboratively and reporting at board and regional level. Actions will be overseen by the Pathway Boards and reported concurrently into the NCA governance groups and the Clinical Governance committees at each North of Scotland health boards.

Further information is available **here.**

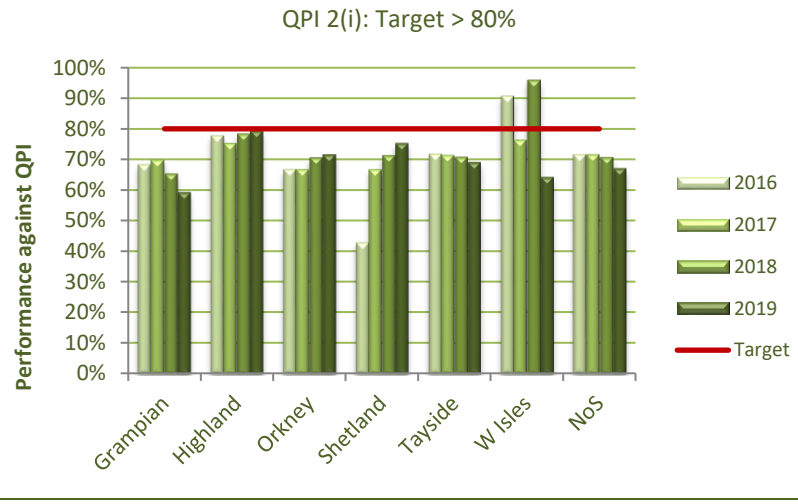
QPI 1	Multi-Disciplinary Team (MDT) Meeting
Proportion of patients with lung cancer who are discussed at MDT meeting before definitive treatment.	

	Performance (%)	Numerator	Denominator
Grampian	**93.1%**	403	433
Highland	**92.5%**	211	228
Orkney	**100%**	15	15
Shetland	**92.3%**	12	13
Tayside	**96.4%**	322	334
W Isles	**100%**	25	25
NoS	**94.3%**	**988**	**1048**

Patients who were not discussed at MDT meeting prior to definitive treatment often require emergency / immediate treatment. In future years, this QPI will require that greater than 95% of all patients are discussed at MDT meeting but no timescales are required and discussion of patients requiring emergency treatment can be discussed at Lung Cancer MDT after initial required treatment.

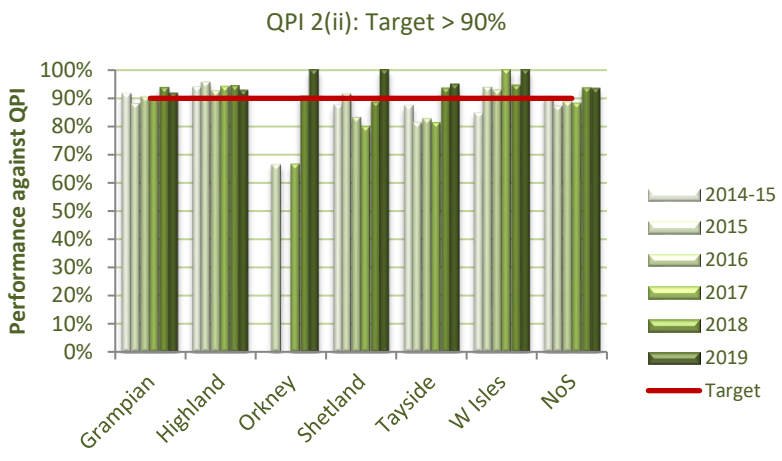
QPI 2	Pathological diagnosis
Proportion of patients who have a pathological diagnosis of lung cancer.	

Specification (i) Patients with lung cancer who have a pathological diagnosis (including following surgical resection).



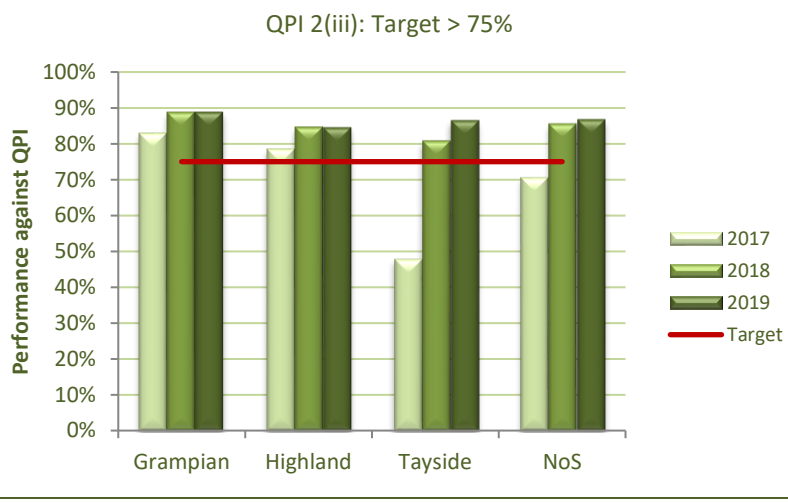
	Performance (%)	Numerator	Denominator
Grampian	**59.1%**	269	455
Highland	**79%**	181	229
Orkney	**71.4%**	10	14
Shetland	**75%**	9	12
Tayside	**68.9%**	241	350
W Isles	**64%**	16	25
NoS	**66.9%**	**726**	**1085**

Specification (ii) Patients with a pathological diagnosis of non small cell lung cancer (NSCLC) who have a tumour subtype identified.



	Performance (%)	Numerator	Denominator
Grampian	**91.7%**	199	217
Highland	**92.7%**	140	151
Orkney	**100%**	9	9
Shetland	**100%**	6	6
Tayside	**94.8%**	201	212
W Isles	**100%**	15	15
NoS	**93.4%**	**570**	**610**

Specification (iii) Patients with a pathological diagnosis of stage IIIB or IV non-squamous NSCLC who have molecular profiling undertaken.



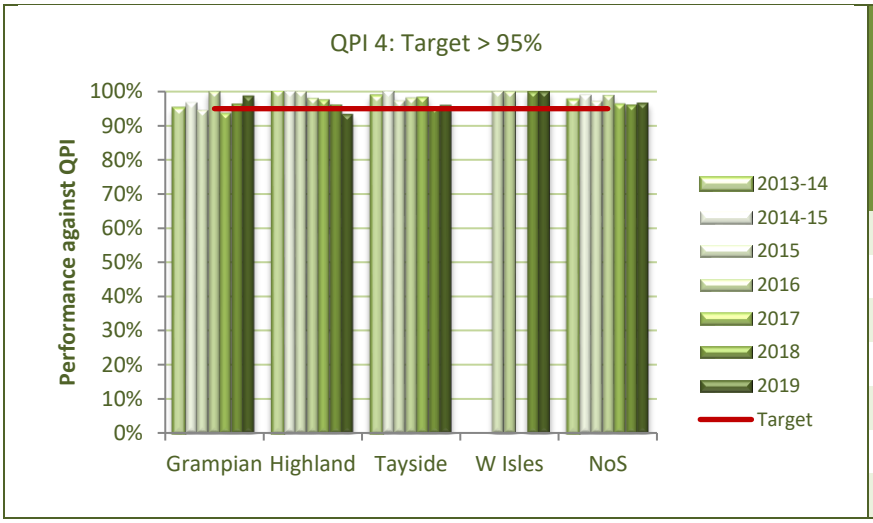
	Performance (%)	Numerator	Denominator
Grampian	**88.7%**	86	97
Highland	**84.4%**	65	77
Orkney*	-	-	-
Shetland*	-	-	-
Tayside	**86.4%**	76	88
W Isles*	-	-	-
NoS	**86.7%**	**235**	**271**

The majority of patients who did not have a pathological diagnosis were of a poor performance status which precluded active treatment, and in this scenario, invasive tissue biopsies are not appropriate.

It is important to note that the North of Scotland met specifications (ii) and (iii) of this QPI; these patient cohorts require a pathological diagnosis to support decision-making for potential treatments. Performance in these specifications continues to improve across the North of Scotland.

These QPI targets remain challenging to meet nationally; specification (i) results are SCAN 64% and WOSCAN 71%.

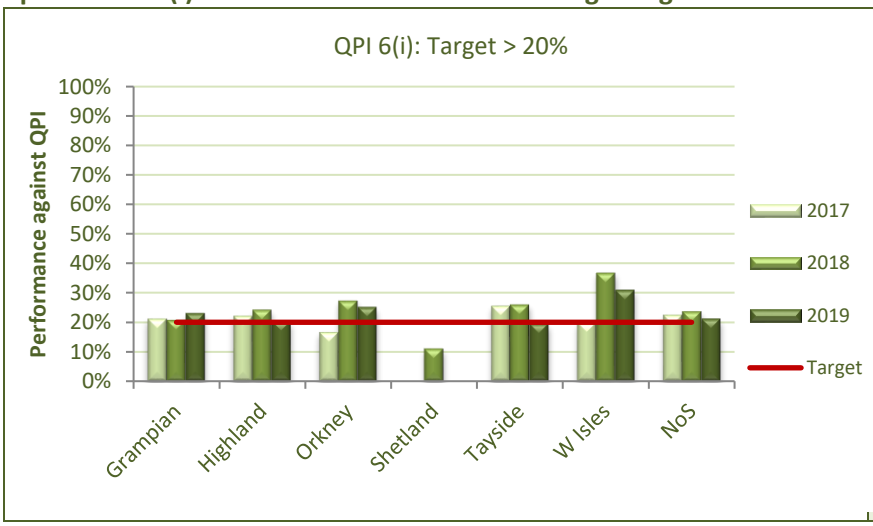
QPI 4	PET CT in patients being treated with curative intent
Proportion of patients with NSCLC who receive curative treatment (radical radiotherapy, radical chemoradiotherapy or surgical resection) who undergo PET CT prior to start of treatment.	



	Performance (%)	Numerator	Denominator
Grampian	**98.7%**	74	75
Highland	**93.3%**	42	45
Orkney*	-	-	-
Shetland*	-	-	-
Tayside	**95.9%**	71	74
W Isles	**100%**	7	7
NoS	**96.6%**	**200**	**207**

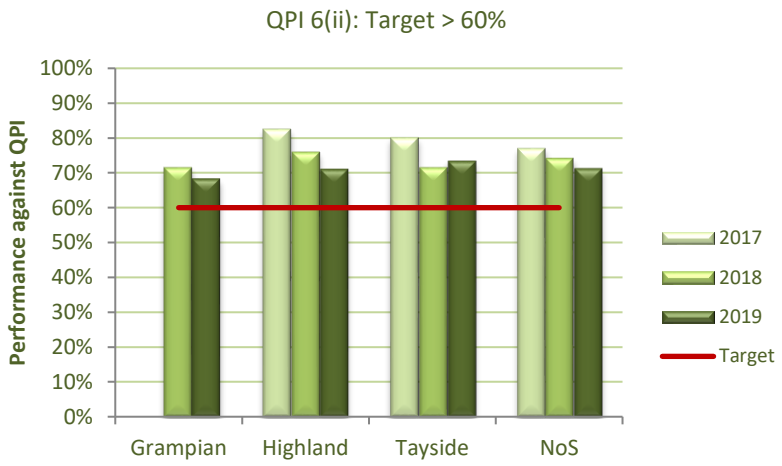
QPI 6	Surgical resection in non small cell lung cancer
Proportion of patients who undergo surgical resection for NSCLC.	

Specification (i) Patients with NSCLC who undergo surgical resection.



	Performance (%)	Numerator	Denominator
Grampian	**23%**	49	213
Highland	**20.4%**	30	147
Orkney	**25%**	2	8
Shetland	**0%**	0	6
Tayside	**19.5%**	38	195
W Isles	**30.8%**	4	13
NoS	**21.1%**	**123**	**582**

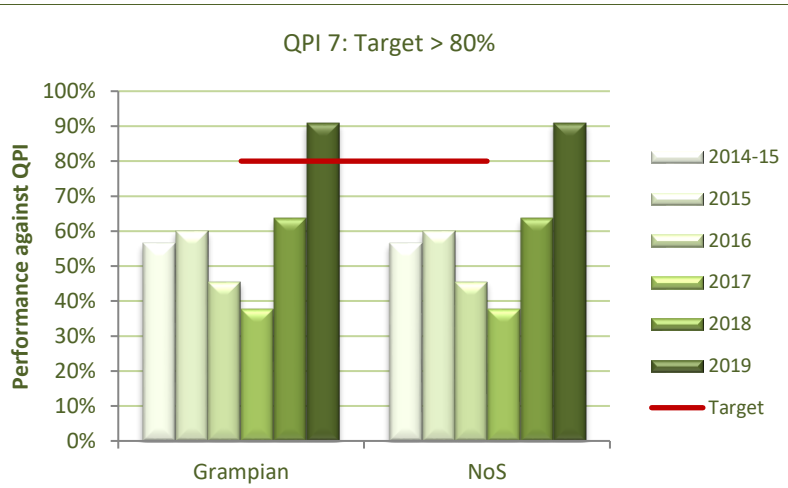
Specification (ii) Patients with stage I - II NSCLC who undergo surgical resection.



	Performance (%)	Numerator	Denominator
Grampian	**68.2%**	30	44
Highland	**71%**	22	31
Orkney*	-	-	-
Shetland*	-	-	-
Tayside	**73.3%**	33	45
W Isles*	-	-	-
NoS	**71.1%**	**91**	**128**

The North of Scotland continue to meet the target of NSCLC patients who undergo surgical resection and performance is consistent with the other Scottish regions.

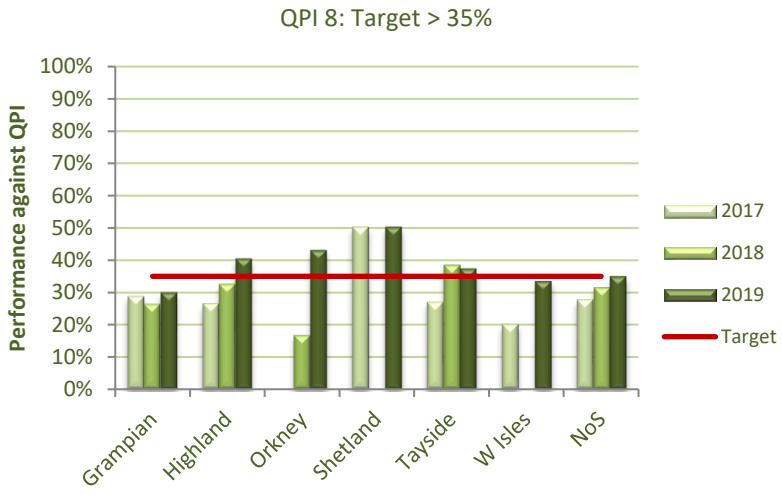
QPI 7	**Lymph node assessment**
Proportion of patients with NSCLC undergoing surgery who have adequate sampling of lymph nodes (at least 1 node from at least 3 N2 stations) performed at time of surgical resection or at previous mediastinoscopy.	



	Performance (%)	Numerator	Denominator
Grampian	**90.7%**	39	43
Highland	-	0	0
Orkney	-	0	0
Shetland	-	0	0
Tayside	-	0	0
W Isles	-	0	0
NoS	**90.7%**	**39**	**43**

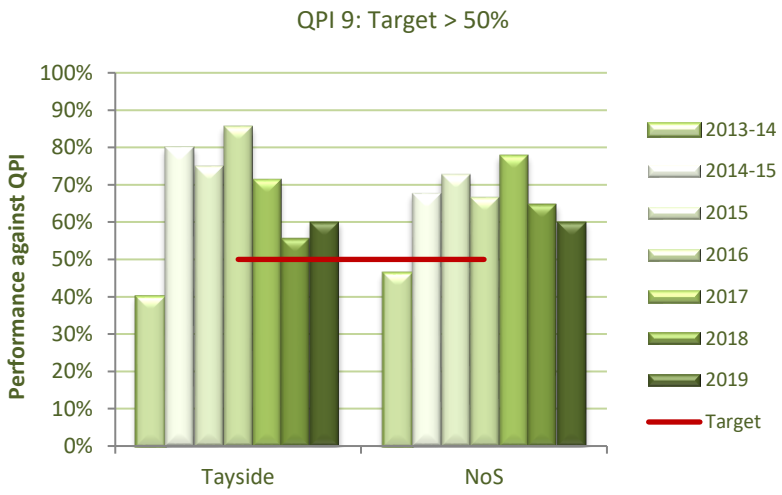
It should be noted that compliance with this QPI has been achieved for the first year in the lifetime of the QPIs. Considerable effort has been made by the Thoracic Surgery Service at Aberdeen Royal Infirmary to drive improvement and this reflects wider improvements in the surgery service delivered by NHS Grampian.

QPI 8	Radiotherapy in inoperable lung cancer
Proportion of patients with lung cancer not undergoing surgery who receive radiotherapy with radical intent (54Gy or greater) ± chemotherapy, or SABR.	



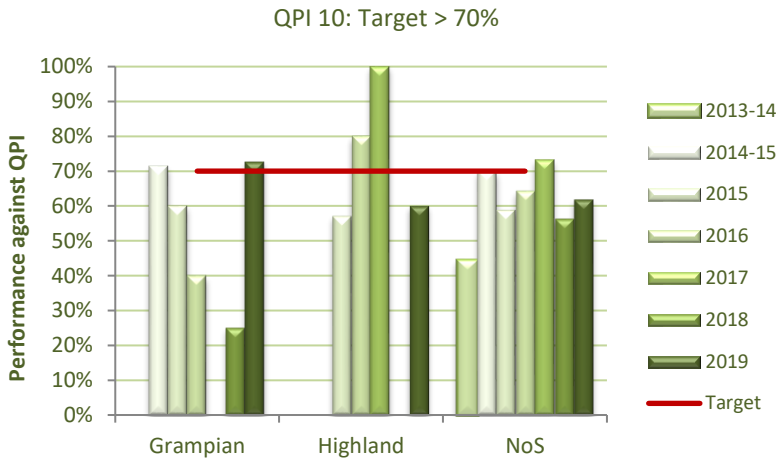
	Performance (%)	Numerator	Denominator
Grampian	**29.9%**	49	164
Highland	**40.3%**	25	62
Orkney	**42.9%**	3	7
Shetland	**50%**	3	6
Tayside	**37.2%**	54	145
W Isles	**33.3%**	3	9
NoS	**34.9%**	**137**	**393**

QPI 9	Chemoradiotherapy in locally advanced non small cell lung cancer
Proportion of patients with NSCLC not undergoing surgery who receive radical radiotherapy, to 54Gy or greater, and concurrent or sequential chemotherapy.	



	Performance (%)	Numerator	Denominator
Grampian*	-	-	-
Highland*	-	-	-
Orkney*	-	-	-
Shetland	-	0	0
Tayside	**60%**	3	5
W Isles	-	0	0
NoS	**60%**	**6**	**10**

QPI 10	Chemoradiotherapy in limited stage small cell lung cancer
Proportion of patients with limited stage (stage I – IIIB) SCLC treated with radical intent who receive both platinum-based chemotherapy, and radiotherapy to 40Gy or greater.	



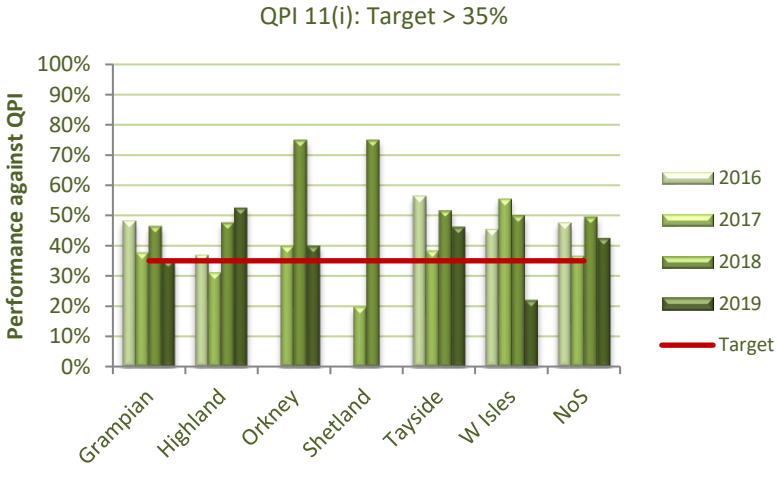
	Performance (%)	Numerator	Denominator
Grampian	**72.7%**	8	11
Highland	**60%**	3	5
Orkney	-	0	0
Shetland*	-	-	-
Tayside*	-	-	-
W Isles	-	0	0
NoS	**61.9%**	**13**	**21**

All patients included in this QPI who did not receive platinum-based chemotherapy have been reviewed at board-level. As demonstrated in the chart, there has been fluctuation in performance in the North of Scotland due to the small denominator across the three mainland boards.

Performance in the North of Scotland is consistent with the other Scottish regions; WOSCAN 57% SCAN 62%.

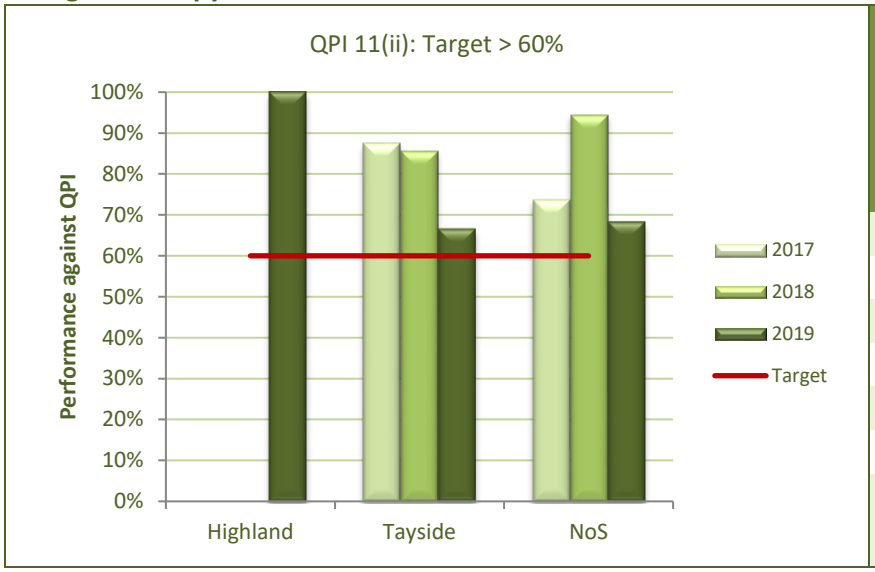
QPI 11	Systemic anti cancer therapy in non small cell lung cancer
Proportion of patients with NSCLC not undergoing surgery who receive chemotherapy or biological therapy where appropriate.	

Specification (i) Patients with NSCLC who receive systemic anti cancer therapy (SACT).



	Performance (%)	Numerator	Denominator
Grampian	**35.3%**	55	156
Highland	**52.5%**	52	99
Orkney	**40%**	2	5
Shetland	**0%**	0	6
Tayside	**46.2%**	73	158
W Isles	**22.2%**	2	9
NoS	**42.5%**	**184**	**433**

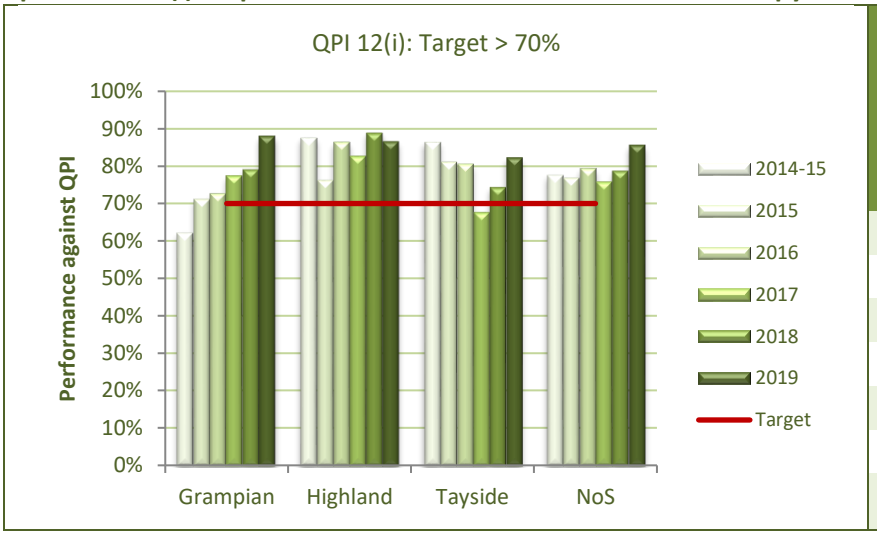
Specification (ii) Patients with stage IIIB and IV NSCLC that are EGFR or ALK positive who receive biological therapy.



	Performance (%)	Numerator	Denominator
Grampian*	-	-	-
Highland	**100%**	5	5
Orkney*	-	-	-
Shetland	-	0	0
Tayside	**66.7%**	6	9
W Isles*	-	-	-
NoS	**68.4%**	**13**	**19**

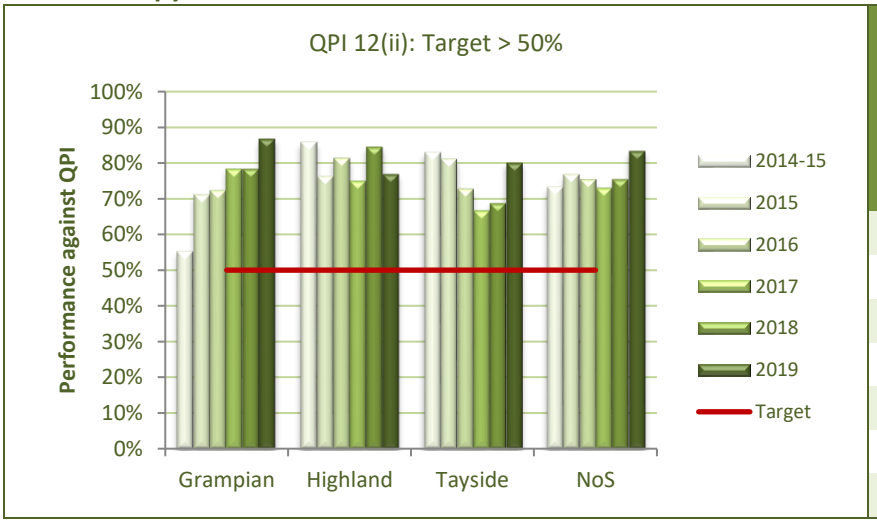
QPI 12	Chemotherapy in small cell lung cancer
Proportion of patients with SCLC who receive first line chemotherapy ± radiotherapy.	

Specification (i) All patients with SCLC who receive chemotherapy ± radiotherapy



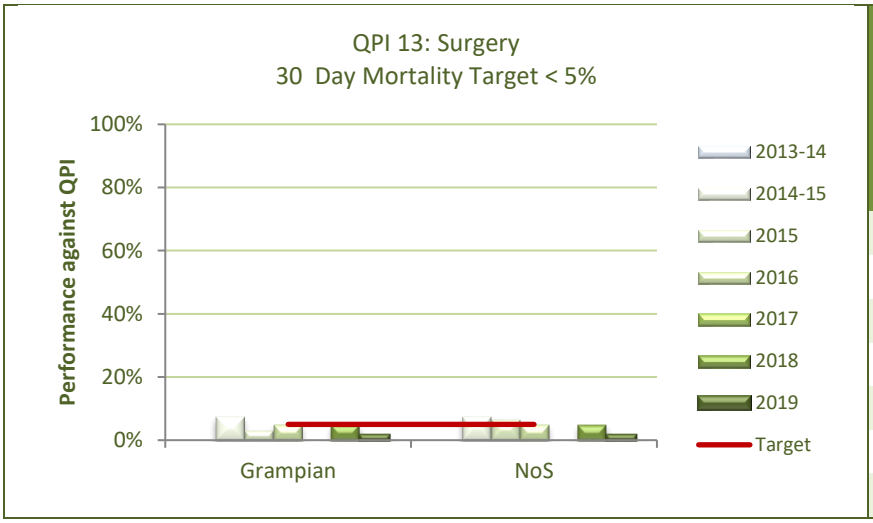
	Performance (%)	Numerator	Denominator
Grampian	**87.8%**	36	41
Highland	**86.4%**	19	22
Orkney*	-	-	-
Shetland*	-	-	-
Tayside	**82.1%**	23	28
W Isles*	-	-	-
NoS	**85.4%**	**82**	**96**

Specification (ii) Patients with SCLC not undergoing treatment with curative intent who receive palliative chemotherapy.

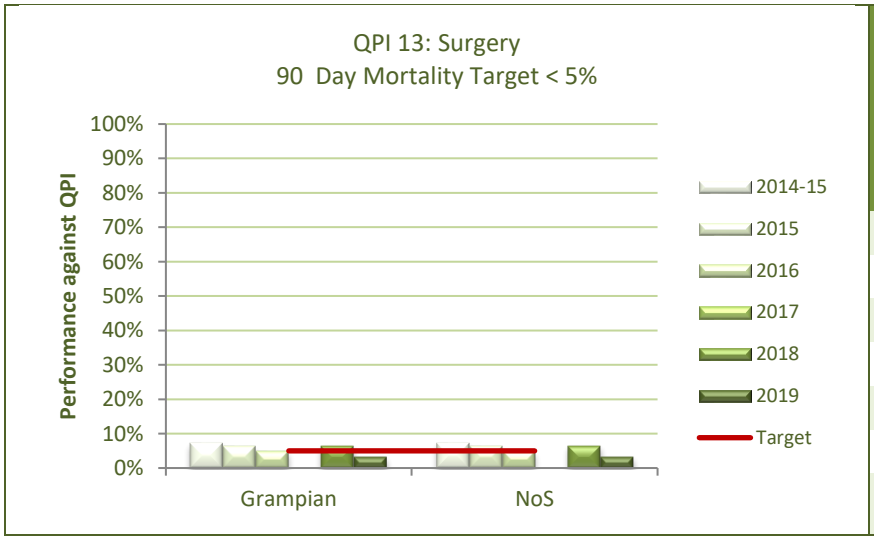


	Performance (%)	Numerator	Denominator
Grampian	**86.7%**	26	30
Highland	**76.9%**	10	13
Orkney*	-	-	-
Shetland*	-	-	-
Tayside	**80%**	20	25
W Isles*	-	-	-
NoS	**83.3%**	**60**	**72**

QPI 13	Mortality following treatment for lung cancer
Proportion of patients with lung cancer who die within 30 or 90 days of active treatment for lung cancer.	



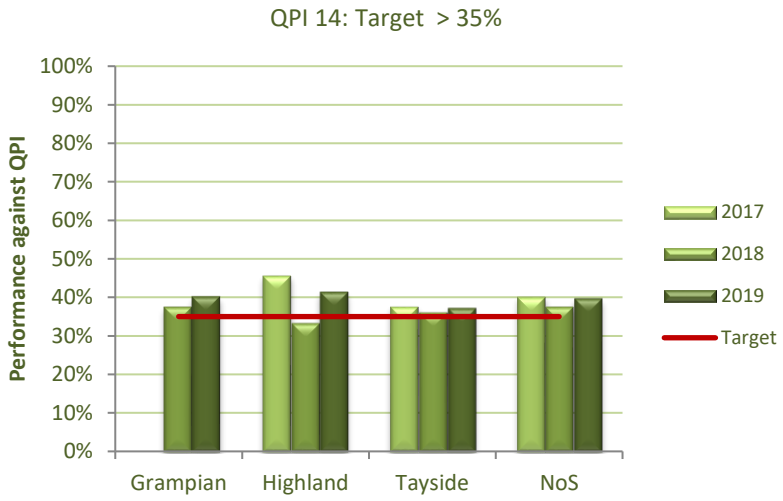
	Performance (%)	Numerator	Denominator
Grampian	**1.6%**	1	62
Highland	-	0	0
Orkney	-	0	0
Shetland	-	0	0
Tayside	-	0	0
W Isles	-	0	0
NoS	**1.6%**	**1**	**62**



	Performance (%)	Numerator	Denominator
Grampian	**3.2%**	2	62
Highland	-	0	0
Orkney	-	0	0
Shetland	-	0	0
Tayside	-	0	0
W Isles	-	0	0
NoS	**3.2%**	**2**	**62**

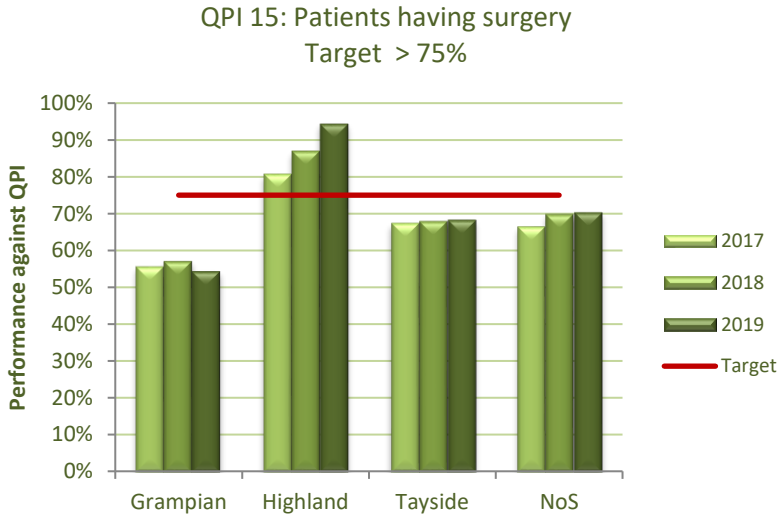
In regards to mortality following SACT, a decision has been taken nationally to move to a new generic QPI (30-day mortality for SACT) applicable across all tumour types. This new QPI will use CEPAS (Chemotherapy ePrescribing and Administration System) data to measure SACT mortality to ensure that the QPI focuses on the prevalent population rather than the incident population. The measurability for this QPI is still under development to ensure consistency across the country and it is anticipated that performance against this measure will be reported in the next audit cycle (the target will be revised from <5% to <10% when it is reported using CEPAS due to the increased clinical cohort who will be receiving appropriate palliative chemotherapy). In the meantime all deaths within 30 days of SACT will continue to be reviewed at NHS Board level.

QPI 14	Stereotactic Ablative Radiotherapy (SABR) in inoperable stage I lung cancer
Proportion of patients with stage I lung cancer not undergoing surgery who receive SABR.	

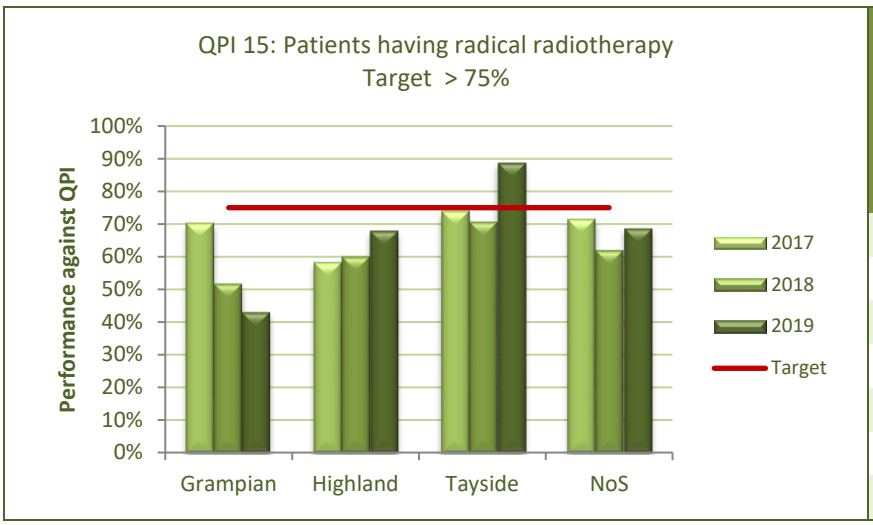


	Performance (%)	Numerator	Denominator
Grampian	**40%**	24	60
Highland	**41.2%**	7	17
Orkney*	-	-	-
Shetland*	-	-	-
Tayside	**37%**	17	46
W Isles*	-	-	-
NoS	**39.5%**	**51**	**129**

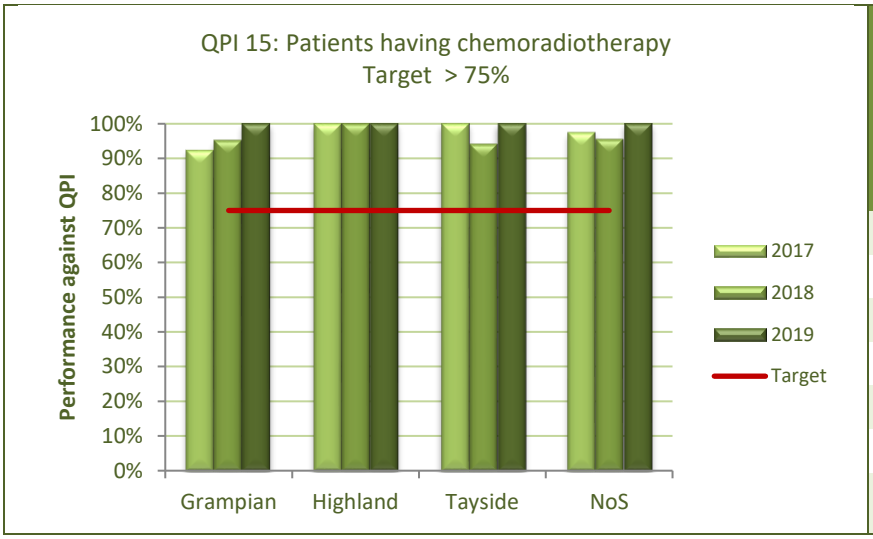
QPI 15	Pre-treatment diagnosis
Proportion of patients who receive curative treatment (radical radiotherapy, radical chemoradiotherapy or surgical resection) that have a cytological / histological diagnosis prior to treatment.	



	Performance (%)	Numerator	Denominator
Grampian	**54.5%**	30	55
Highland	**94.4%**	34	36
Orkney*	-	-	-
Shetland	-	0	0
Tayside	**68.4%**	26	38
W Isles*	-	-	-
NoS	**70.4%**	**95**	**135**



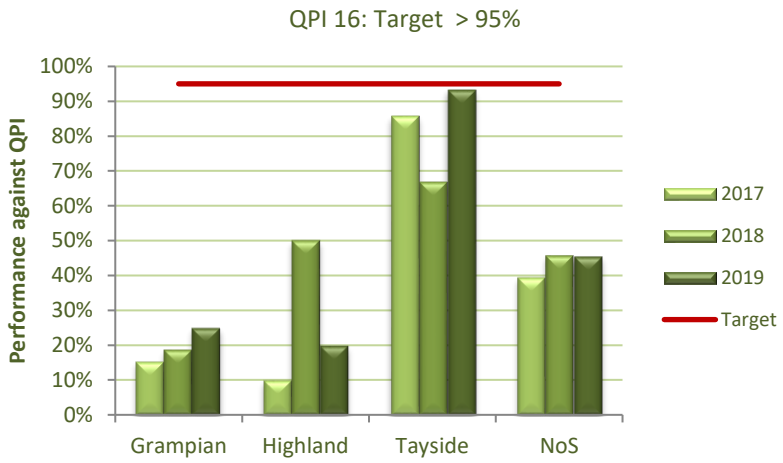
	Performance (%)	Numerator	Denominator
Grampian	**43.2%**	19	44
Highland	**68%**	17	25
Orkney*	-	-	-
Shetland*	-	-	-
Tayside	**88.7%**	47	53
W Isles*	-	-	-
NoS	**68.7%**	**90**	**131**



	Performance (%)	Numerator	Denominator
Grampian	**100%**	17	17
Highland	**100%**	10	10
Orkney*	-	-	-
Shetland	-	0	0
Tayside	**100%**	8	8
W Isles	-	0	0
NoS	**100%**	**36**	**36**

Patients who did not have a pathological diagnosis have been investigated at board level. Often many patients have been through one or two attempts at gaining a tissue diagnosis before it is decided to proceed without. The other main limitation to this is the ability to access the tissue either due to the location of the lesion, or co-existing lung disease making the sampling technique too high risk.

QPI 16	Brain Imaging
Proportion of patients with N2 disease who receive curative treatment (radical radiotherapy, radical chemoradiotherapy or surgical resection) that undergo contrast enhanced CT or contrast enhanced MRI prior to start of treatment.	

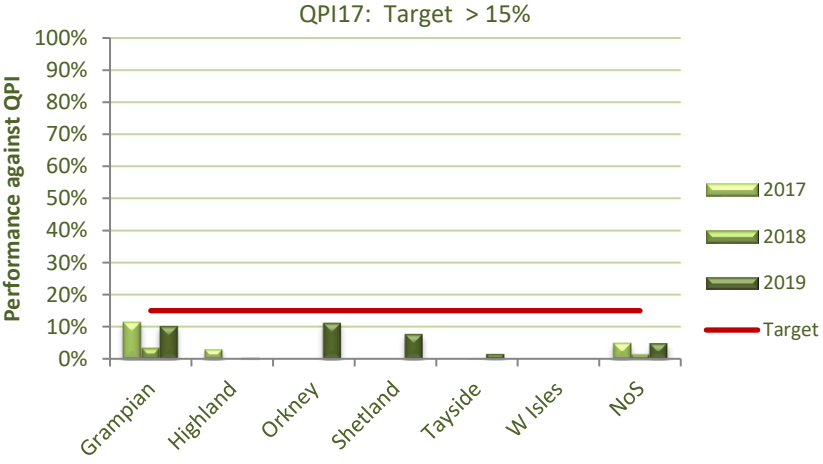


	Performance (%)	Numerator	Denominator
Grampian	**25%**	4	16
Highland	**20%**	2	10
Orkney*	-	-	-
Shetland*	-	-	-
Tayside	**93.3%**	14	15
W Isles*	-	-	-
NoS	**45.5%**	**20**	**44**

This QPI has been a focus for improvement in the NCA and we believe the 2020 data will reflect this. These pathways for brain imaging are embedded in the North of Scotland Lung Cancer Clinical Management Guidelines, scheduled to be published by spring 2021.

This QPI currently includes patients with SCLC who do not require brain imaging for decision-making on management. In future years, these patients will be excluded.

QPI 17 Clinical Trials Access
Proportion of patients with lung cancer who are consented for a clinical trial / translational research. Figures show patients consented for clinical trials or research studies during 2018.



	Performance (%)	Numerator	Denominator
Grampian	**10.1%**	48	477
Highland	**0.4%**	1	225
Orkney	**11.1%**	1	9
Shetland	**7.7%**	1	13
Tayside	**1.6%**	7	437
W Isles	**0%**	0	16
NoS	**4.9%**	**58**	**1177**

Inclusion in trials remains a focus of improvement. However, this is challenging to meet due to pressures on staffing and Radiology capacity. There is ongoing work with in the NCA to promote inclusion in studies and ensure access for patients across the North of Scotland.

References

1. Scottish Cancer Taskforce, 2017. Lung Cancer Clinical Performance Indicators, Version 3.1. Health Improvement Scotland. http://www.healthcareimprovementscotland.org/his/idoc.ashx?docid=ca8878fd-6a36-4c47-8151-836756f44c0c&version=-1

2. http://www.isdscotland.org/Health-Topics/Cancer/Cancer-Audit/

Appendix 1: Clinical Trials and Research studies open to recruitment in the North of Scotland in 2019

Trial	Principle Investigator	Patients consented
CA209-73L	Claire Stilwell (Grampian)	N
CANC-4880 - PEARLS: A randomized, phase 3 trial with anti-PD-1 monoclonal antibody pembrolizumab (MK-3475) versus placebo for patients with early stage NSCLC after resection and completion of standard adjuvant therapy (PEARLS)	Angela Scott (Tayside) Gillian Price (Grampian)	N
CONFIRM	Gillian Price (Grampian) Angela Scott (Tayside) Carol MacGregor (Highland)	Y
DARWIN1	Gillian Price (Grampian)	N
DARWIN2	Gillian Price (Grampian)	Y
LEAP-006	Gillian Price (Grampian)	N
LEAP-008	Gillian Price (Grampian)	N
ORION	Hannah Lord (Tayside)	Y
NIVO PASS	Gillian Price (Grampian)	Y
SMP2	Gillian Price (Grampian)	N
SYSTEMS-2	Claire Stilwell (Grampian)	Y
TRACERx	Gillian Price (Grampian)	Y