NOSCAN
North of Scotland
Cancer Network

NHS SCOTLAND

NORTH OF SCOTLAND
PLANNING GROUP

Lung Cancer
Managed Clinical Network

Audit Report

Lung Cancer
Quality Performance Indicators

Patients diagnosed April 2014 – March 2015

Published: May 2016

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The North of Scotland Cancer Network (or NOSCAN), is one of the 3 regional Scottish Cancer Networks, which report to their respective regional NHS Board Planning Groups and for specific workstreams, to the Scottish Cancer Taskforce Group.

The principle role of NOSCAN is to support the organization, planning and delivery of regional and national cancer services, and thereby to ensure consistent and high quality cancer care is being provided equitably across the North of Scotland.

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EXECUTIVE SUMMARY

This publication reports the performance of lung cancer services in the six NHS Boards in the North of Scotland (NOS) against the Lung Cancer Quality Performance Indicators (QPIs) for patients diagnosed between April 2014 and March 2015. This is the second year in which these QPIs have been reported in Scotland and performance in 2014-2015 is compared with that in 2013 - 2014.

- 1027 patients diagnosed with lung cancer in 2014-2015 were audited in the North of Scotland. This is a slight increase from 2013-2014 when 980 patients were audited in the region.
- Overall 2014-2015 case ascertainment was high at 96.0%, an increase from 92.2% in 2013-2014. Results were considered to be representative of lung cancer services in the region.

Summary of QPI Results

QPI	QPI Target	Performance[b]					
		NOSCAN	NHS Grampian	NHS Highland	NHS Shetland	NHS Tayside	NHS W Isles
QPI 1: Multi-Disciplinary Team (MDT) Meeting – Proportion of patients with lung cancer who are discussed at MDT meeting before definitive treatment.	**95%**	**91%** n=995	88% n=412	86% n=201	80% n=10	99% n=352	74% n=19
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.	**75%**	**90%** n=686	91% n=258	93% n=138	100% n=8	86% n=271	100% n=10
Specification (ii): Patients with a pathological diagnosis of non small cell lung cancer (NSCLC) who have tumour subtype identified.	**80%**	**90%** n=596	91% n=235	94% n=127	88% n=8	87% n=212	85% n=13
Specification (iii): Patients with a pathological diagnosis of NSCLC who have analysis of predictive markers undertaken.	**75%**	**85%** n=201	80% n=94	88% n=41	-	87% n=54	100% n=7
QPI 3: Bronchoscopy – Proportion of patients with lung cancer who have undergone bronchoscopy where CT thorax was performed prior to bronchoscopy.	**95%**	**96%** n=463	96% n=142	99% n=72	100% n=6	95% n=236	100% n=7
QPI 4: PET CT in patients being treated with curative intent – Proportion of patients with non small cell lung cancer (NSCLC) who are being treated with curative treatment (radical radiotherapy, radical chemoradiotherapy or surgical resection) who undergo PET CT prior to start of treatment.	**95%**	**99%** n=191	97% n=60	100% n=42	-	100% n=83	-

QPI	QPI Target	Performance[b]					
		NOSCAN	NHS Grampian	NHS Highland	NHS Shetland	NHS Tayside	NHS W Isles
QPI 5: Investigation of Mediastinal Malignancy – Proportion of patients with a NSCLC undergoing treatment with curative intent who have positive mediastinal / supraclavicular fossa (SCF) nodes on PET CT scan who undergo node sampling.	**80%**	**69%** n=52	58% n=12	71% n=14	-	74% n=23	-
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.	**17%**	**15%** n=594	14% n=235	20% n=127	13% n=8	15% n=210	15% n=13
Specification (ii): Patients with stage I – II NSCLC who undergo surgical resection.	**50%**	**57%** n=137	58% n=45	81% n=27	-	47% n=62	-
QPI 7: Lymph Node Assessment – 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%**	**56%** n=39	56% n=39	-	-	-	-
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.	**15%**	**34%** n=345	25% n=128	30% n=61	-	42% n=150	-
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.	**50%**	**68%** n=31	45% n=11	80% n=10	-	80% n=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.	**70%**	**70%** n=20	71% n=7	-	-	78% n=9	-
QPI 11: Systemic Anti Cancer Therapy in Non Small Cell Lung Cancer – Proportion of patients with NSCLC not undergoing surgery who receive platinum based chemotherapy.							
Specification (i): Patients with NSCLC who receive systemic anti cancer therapy.	**35%**	**46%** n=480	41% n=190	44% n=98	57% n=7	54% n=173	27% n=11
Specification (ii): Patients with stage IIIB and IV NSCLC receive doublet chemotherapy including platinum as their first line regimen.	**60%**	**73%** n=160	65% n=71	75% n=28	-	89% n=995	-

QPI	QPI Target	Performance[b]					
		NOSCAN	NHS Grampian	NHS Highland	NHS Shetland	NHS Tayside	W Isles
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.	**70%**	**78%** n=116	62% n=45	88% n=24	-	86% n=44	-
Specification (ii): All patients with SCLC not undergoing treatment with curative intent.	**50%**	**73%** n=97	55% n=38	86% n=21	-	83% n=35	-
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.							
(i) Surgery – 30 day mortality	**< 5%**	**7%** n=55	7% n=55	-	-	-	-
(i) Radical Radiotherapy – 30 day mortality	**< 5%**	**1%** n=88	0% n=22	0% n=9	-	2% n=55	-
(i) Adjuvant Chemotherapy – 30 day mortality	**< 5%**	**4%** n=27	0% n=7	0% n=6	-	8% n=13	-
(i) Chemoradiotherapy – 30 day mortality	**< 5%**	**0%** n=47	0% n=15	0% n=13	-	0% n=19	-
(i) Palliative Chemotherapy – 30 day mortality	**<10%**	**13%** n=227	15% n=82	15% n=46	-	10% n=91	-
(i) Biological Therapy – 30 day mortality	**<10%**	**8%** n=13	0% n=9	-	-	-	-
(ii) Surgery - 90 day mortality	**< 5%**	**7%** n=55	7% n=55	-	-	-	-
(ii) Radical Radiotherapy – 90 day mortality	**< 5%**	**5%** n=88	0% n=22	0% n=9	-	5% n=55	-
(ii) Adjuvant Chemotherapy – 90 day mortality	**< 5%**	**8%** n=26	0% n=7	0% n=6	-	17% n=12	-
(ii) Chemoradiotherapy – 90 day mortality	**< 5%**	**5%** n=44	0% n=14	8% n=12	-	6% n=18	-
Clinical Trials Access - Proportion of patients with colorectal cancer who are enrolled in an interventional clinical trial or translational research.							
Specification (i): Interventional Trials	**7.5%**	**1%** n=1067	-	-	-	-	-
Specification (ii): Translational Research	**15%**	**3%** n=1067	-	-	-	-	-

Performance shaded pink where QPI target has not been met.
[b] Excluding Boards with less than 5 patients.

This is the second year of reporting of lung cancer QPIs, during which NOSCAN boards have had mixed results: the targets for 8 of the 14 measured outcomes for lung cancer have been exceeded. There is overall evidence of improvement in performance when compared with patients diagnosed in 2013-2014 (where only 4 of 12 standards were met).

The cancer centres in the North of Scotland individually treat smaller numbers of patients than those in the west and east of Scotland, which in itself presents certain challenges. However, collectively as a network, NOSCAN sees a comparable number of patients presenting annually with a diagnosis of lung cancer (1129 patients in 2013) as does the South East of Scotland Network (1328 patients in 2013).

While NOSCAN has performed well in many areas during 2013-2014, the main challenge as a network appears to be in the surgical resection rate, which at 15.5%, was below the target rate of 17% and where there is room for improvement.

Actions to improve services across the NoS have been identified as follows:

- All NHS Boards to look at patients not referred to the lung MDT to ascertain whether another MDT speciality has dealt with these patients or whether they have not been brought to the attention of any of the MDT specialities.

- All NHS Boards to ensure that management teams communicate with all relevant services (e.g. general practitioners, palliative care providers, neurology) to ensure that they are aware of the necessity of referring all patients diagnosed with lung cancer to the Lung MDT.

- All NHS Board to ensure more sampling of PET-positive mediastinal lymph nodes, especially in non-surgical patients who being treated with radical intent.

- All NHS Boards to review treatment of non surgical patients treated with radical intent.

- All NHS Boards to review treatment of all patients referred to surgical teams who did not go on to have surgical resection.

- All lung MDTs to review the way in which treatment decisions are made: a visit by members of NoS Lung cancer team(s) to observe an equivalent Lung cancer MDT in the west of Scotland is currently being planned.

- MCN to progress analysis to look at the performance status and stage of patients undergoing resection compared with those receiving other radical treatment and work with colleagues nationally to compare results with those from other regions, including comparison of the numbers of patients included within the denominator for QPI 6.

- All NHS Boards to ensure that there are appropriate video-conferencing facilities to support the functioning of MDT meetings across multiple sites.

- NHS Grampian to consider undertaking more extensive lymph node dissection in surgical patients.

- MCN to compare results for QPI 7, Lymph Node Assessment, QPI 8, radiotherapy in inoperable lung cancer, and QPI 9, chemoradiotherapy in locally advanced NSCLC, with those from other networks and reflect on the relationship between results for QPIs 8 and 9 those from QPI 6, surgical resection rates.

- NHS Grampian to review patients with SCLC who did not receive chemotherapy.

The Lung Cancer QPIs are due to be formally reviewed following analysis of the third year of QPI results. In addition to the action point above, this report also highlights some issues with the QPI definitions to be discussed at formal review.

Contents

1. Introduction

National Cancer Quality Steering Group (NCQSG) to take forward the development of national Quality Improvement Indicators (QPIs) for all cancer types to enable national comparative reporting and drive continuous improvement for patients. In collaboration with the three Regional Cancer Networks (NoSCAN, SCAN & WoSCAN) and Information Services Division (ISD), the first QPIs were published by Healthcare Improvement Scotland (HIS) in January 2012. CEL 06 (2012) mandates all NHS Boards in Scotland to report on specified QPIs on an annual basis. Data definitions and measurability criteria to accompany the Lung Cancer QPIs are available from the ISD website[1].

The need for regular reporting of activity and performance (to assure the quality of care delivered) was first nationally set out as a fundamental requirement of a Managed Clinical Network (MCN) in NHS MEL(1999)10[2]. This has since been further restated and reinforced in HDL(2002)69[3], HDL (2007) 21[4], and most recently in CEL 29 (2012)[5].

Regular reporting of activity and performance to assure the quality of care delivered across the region is a fundamental requirement of a Managed Clinical Network (MCN). The following report presents the performance of the North of Scotland (NoS) lung cancer services using clinical audit data relating to patients diagnosed with lung cancer in the twelve months from 1st April 2014 to 31st March 2015.

Results are measured against the 13 Lung Cancer Quality Performance Indicators (QPIs)[6] which were implemented for patients diagnosed on or after 1st April 2014, and compares this second year of QPI reporting with earlier results from 2013-2014 (as was reported in the ISD Lung Cancer QPI report[7]). Results for the Clinical Trials Access QPI are also presented for patients with lung cancer.

2. Background

Six NHS Boards across the NoS serve the 1.38 million population[8]. There were 1027 patients diagnosed with lung cancer in the North of Scotland between 1st April 2014 and 31st March 2015. The configuration of the three Multidisciplinary Teams (MDTs) in the region is set out below.

MDT	Constituent Boards
Grampian	NHS Grampian, NHS Orkney, NHS Shetland
Highland	NHS Highland, NHS Western Isles
Tayside	NHS Tayside

Best practice recommends that patients diagnosed with cancer should have all aspects of their clinical multidisciplinary management considered thereby ensuring enhanced consistency and quality of patient care and clinical outcomes. On that basis, it is recognised that patients diagnosed with lung cancer should be discussed at a Multidisciplinary Team

Meeting (customarily referred to as an MDT or MDTM). In the North of Scotland these were usually convened on a weekly basis.

2.1 National Context

Lung cancer is the most common cancer for men and women combined in Scotland, accounting for 17% of all cancers in 2013[9], with more than 5,000 patients diagnosed each year between 2009 and 2013[10].

The long-term decline seen in the incidence rate of lung cancer in males has continued: the second most common cancer in men, there has been a significant fall in the incidence rate of 15% over the last ten years. Conversely, lung cancer incidence rates in females have increased by 13% over the last ten years. To a large extent, this trend reflects historic trends in the prevalence of smoking, which has differed between men and women[9].

Relative survival for lung cancer is increasing[11]. The table below shows the percentage change in one-year and five-year age-standardised survival rates for patients diagnosed in 1987-1991 compared to those diagnosed in 2007-2011.

Relative age-standardised survival for lung cancer in Scotland at 1 year and 5 years showing percentage change from 1987-1991 to 2007-2011[11].

	Relative survival at 1 year (%)		Relative survival at 5 years (%)	
	2007-2011	% change	2007-2011	% change
Male	30.9%	+9.0%	9.5%	+3.1%
Female	35.0%	+12.9%	12.0%	+5.0%

2.2 North of Scotland Context

A total of 1027 cases of lung cancer were recorded through audit in the North of Scotland between 1st April 2014 and 31st March 2015. This was an increase compared with 2013-2014, when 980 patients were recorded as diagnosed with lung cancer by cancer audit. The number of patients diagnosed within each Board is presented below.

	Grampian	Highland	Orkney	Shetland	Tayside	W Isles	NoS
Number of Patients	425	204	1	10	368	19	**1027**
% of NoS total	41.4%	19.9%	0.1%	1.0%	35.8%	1.9%	**100%**

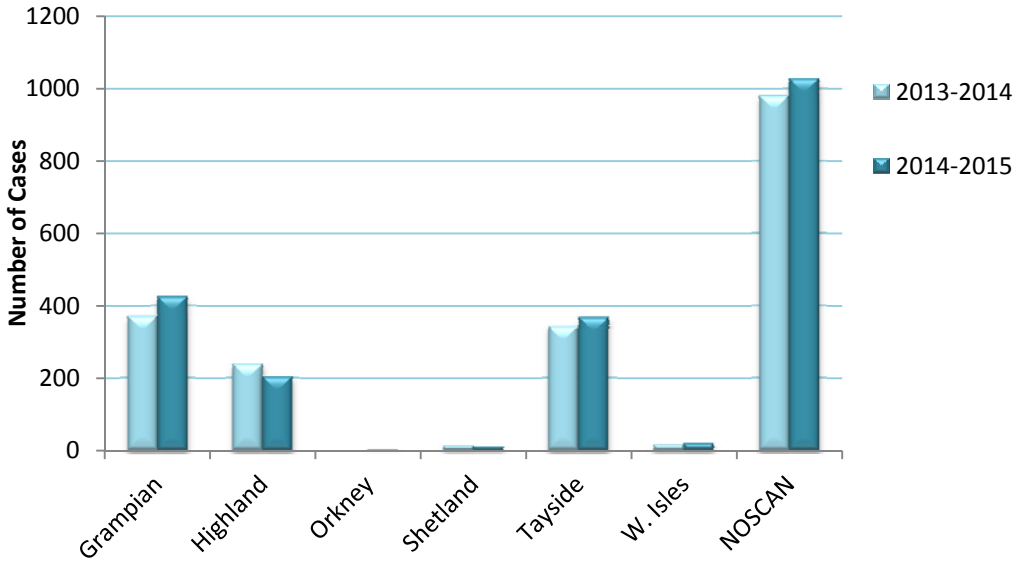


Figure 1: Number of patients diagnosed with lung cancer by Board of diagnosis in 2013-14 and 2014-15.

3. Methodology

The clinical audit data presented in this report was collected by clinical audit staff in each NHS Board in accordance with an agreed dataset and definitions[1]. The data was entered locally into the electronic Cancer Audit Support Environment (eCASE): a secure centralised web-based database.

Data for patients diagnosed between 1st April 2014 and 31st March 2015 and any comments on QPI results were then signed-off at NHS Board level to ensure that the data was an accurate representation of service in each area prior to submission to NOSCAN for collation at a regional level. The reporting timetable was developed to take into account the patient pathway and ensure that a complete treatment record was available for the vast majority of cases.

Where the number of cases meeting the denominator criteria for any indicator is between one and four, the results has not been shown in any associated charts or tables. This is to avoid any unwarranted variation associated with small numbers and to minimise the risk of disclosure. Any charts or tables impacted by this are denoted with an asterisk (*). However, any commentary provided by NHS Boards relating to the impacted indicators will be included as a record of continuous improvement.

4. Results

4.1 Case Ascertainment

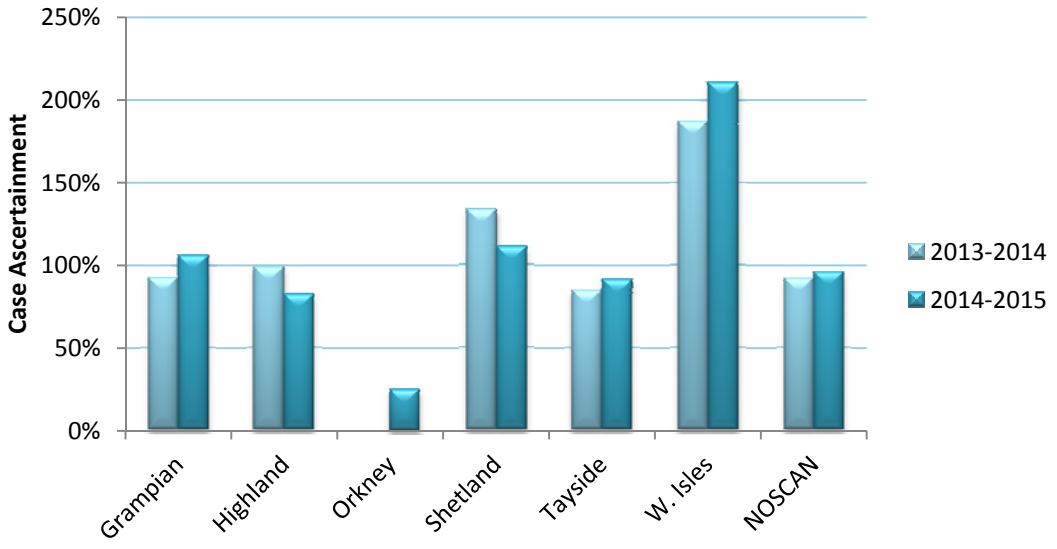
An indication of audit data completeness can be obtained from the level of 'case ascertainment' calculated. This is the proportion of expected patients who have been identified through audit. Case ascertainment is calculated by comparing the number of new cases identified by the cancer audit with the numbers recorded by the National Cancer Registry, with analysis being undertaken by NHS Board of diagnosis. It is not always

possible to compare the same cohort(s) of patients in these analyses (for example, National Cancer Registry data for 2014 is not yet available due to timescale of data collection and verification processes), consequently case ascertainment figures are not an exact measurement of audit completeness, and are provided for guidance only.

Cancer Registry figures were extracted from ACaDMe (Acute Cancer Deaths and Mental Health), a system provided by ISD. An average of the most recent five years' figures is used to take account of annual fluctuations in incidence within NHS Boards.

Overall case ascertainment for 2014-2015 in the North of Scotland was high at 96.0%, which indicates very good data capture through audit. This is an increase from the 2013-2014 figure of 92.2%. Case ascertainment for each Board across the North of Scotland is illustrated below.

Across the Boards there was variation in percentage case ascertainment, ranging from 82.5% to 106.3% in the mainland Boards during 2014-2015. Trends vary between Boards. Where numbers of patients are much smaller, such as in the island Boards, wider variation in case ascertainment is to be expected and does not reflect any inadequacies in data capture.



Case ascertainment by NHS Board for patients diagnosed with lung cancer April 2014 – March 2015 compared with 2013-2014.

	Grampian	Highland	Orkney	Shetland	Tayside	W. Isles	**NOSCAN**
Cases from audit	425	204	1	10	368	19	**1027**
ISD Cases annual average (2009-2013)	400	247	4	9	401	9	**1070**
% Case ascertainment	**106.3%**	**82.6%**	**23.8%**	**111.1%**	**91.8%**	**211.1%**	**96.0%**

Audit data were considered sufficiently complete to allow QPI calculations. The number of instances of data not being recorded was very low, with the only notable gaps being the absence of TNM recording for some patients in some NHS Boards, particularly in NHS Grampian.

4.2 Performance against Quality Performance Indicators (QPIs)

Results of the analysis of Lung Cancer Quality Performance Indicators are set out in the following sections. Graphs and charts have been provided where this aids interpretation: where appropriate, numbers have also been included to provide context. Data are presented in the main by Board of diagnosis. However, the surgical focussed QPIs (ie QPIs 7 and 13 (surgical mortality)) are reported by hospital of surgery.

Where performance is shown to fall below the required target, commentary has also been included to provide context to the variation. Furthermore, where specific regional and NHS Board actions have been identified to address issues highlighted through the data analysis, these have also been indicated in the accompanying commentary.

QPI 1: Multi-Disciplinary Team (MDT) Meeting

QPI 1: Multi-Disciplinary Team (MDT) Meeting – Patients should be discussed by a multidisciplinary team.

Evidence suggests that patients with cancer managed by a multi-disciplinary team have a better outcome. There is also evidence that the multidisciplinary management of patients increases overall satisfaction with their care.

Numerator: Number of patients with lung cancer discussed at the MDT before definitive treatment.

Denominator: All patients with lung cancer.

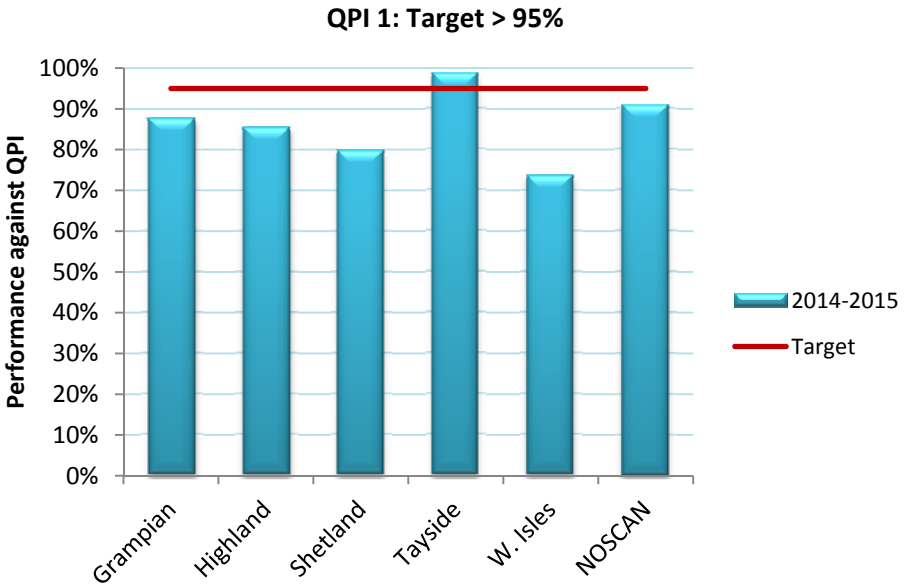
Exclusions: Patients who died before first treatment.

Target: 95%

QPI 1 Performance against target

Of the 995 lung cancer patients diagnosed in the North of Scotland in 2014-2015, 904 were discussed at the MDT before definitive treatment, which equates to a rate of 90.9%, below the target rate of 95%. This is the first time that this QPI has been reported.

NHS Tayside was the only Board in the North of Scotland to meet the target for this QPI in 2014-2015.



	Performance (%)	Numerator	Denominator	Not recorded - Numerator	% not recorded - Numerator	Not recorded - Exclusions	% not recorded - Exclusions	Not recorded - Denominator
Grampian	**87.9%**	362	412	0	0%	0	0%	0
Highland	**85.6%**	172	201	0	0%	0	0%	0
Orkney*	**-**	-	-	-	-	-	-	-
Shetland	**80.0%**	8	10	0	0%	0	0%	0
Tayside	**98.6%**	347	352	0	0%	0	0%	0
W. Isles	**73.7%**	14	19	0	0%	0	0%	0
NoS	**90.9%**	**904**	**995**	**0**	**0%**	**0**	**0%**	**0**

* Results not provided as based on 1-4 patients

It is good practice to insert a chest drain, treat spinal cord compression and manage other oncological emergencies prior to MDT discussion, and there is a 5% tolerance for this in the QPI.

However, it is undesirable practice for patients with a lung cancer diagnosis not to be referred to the MDT and the reasons why so many patients have not been referred to a Lung MDT in the North of Scotland requires to be better understood. It may be that their care is being clinically well dealt with elsewhere, never-the-less all patient diagnosed with lung cancer should be referred to the lung MDT.

NHS Tayside results show that if non-referrals can be avoided, the 95% target can be met with confidence.

Actions required:

- **All NHS Boards to look at patients not referred to the Lung MDT to ascertain whether another MDT speciality has dealt with these patients or whether they have not been brought to the attention of any of the MDT specialities.**
- **All NHS Boards to ensure that management teams communicate with all relevant services, (e.g. general practitioners, palliative care providers, neurology) to ensure that they are aware of the necessity of referring all patients diagnosed with lung cancer to the Lung MDT.**

QPI 2: Pathological Diagnosis

QPI2(i): Pathological Diagnosis - Patients should have a pathological diagnosis of lung cancer.

A definitive diagnosis is valuable in helping inform patients and carers about the nature of the disease, the likely prognosis and treatment choice.

Numerator: Number of patients with lung cancer who have a pathological diagnosis (including following surgical resection).

Denominator: All patients with lung cancer.

Exclusions:

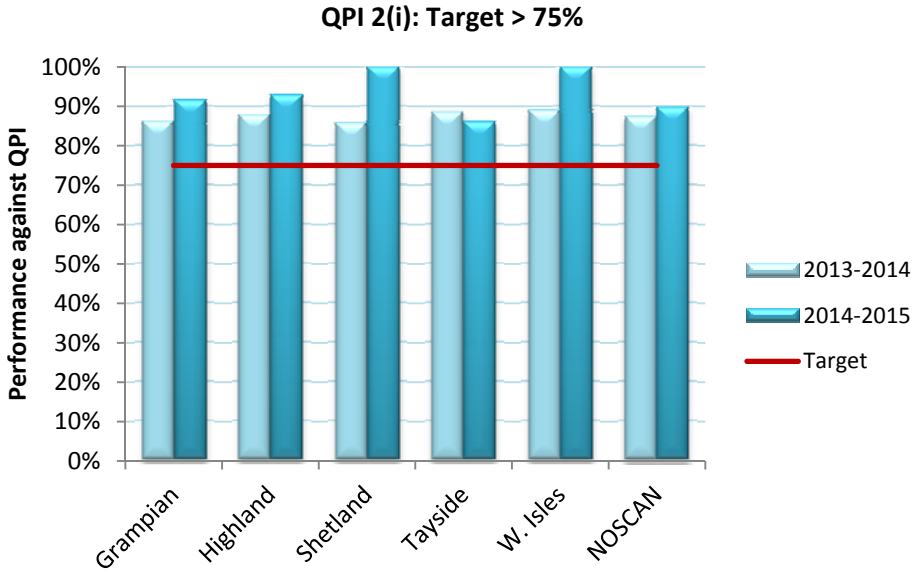
- Patients who refuse investigations or surgical resection.
- Patients receiving supportive care.

Target: 75%

QPI 2(i) Performance against target

Overall, in the north of Scotland, 89.8% of patients diagnosed with lung cancer in 2014-2015 had a pathological diagnosis. This is an increase from 2013-2014, where 87.3% of patients met this target.

All NHS Boards within the North of Scotland met this QPI in 2014-2015.



	Performance (%)	Numerator	Denominator	Not recorded - Numerator	% not recorded - Numerator	Not recorded - Exclusions	% not recorded - Exclusions	Not recorded - Denominator
Grampian	**91.5%**	236	258	0	0%	0	0%	0
Highland	**92.8%**	128	138	0	0%	0	0%	0
Orkney*	**-**	-	-	-	-	-	-	-
Shetland	**100%**	8	8	0	0%	0	0%	0
Tayside	**86.0%**	233	271	0	0%	0	0%	2
W. Isles	**100%**	10	10	0	0%	0	0%	0
NoS	**89.8%**	**616**	**686**	0	0%	0	0%	2

* Results not provided as based on 1-4 patients

	2013-2014 Performance (%)	2013-2014 Denominator	2014-2015 Performance (%)	2014-2015 Denominator	Change in Performance
Grampian	**86.1%**	295	**91.5%**	258	+5.4%
Highland	**87.8%**	172	**92.8%**	138	+5.0%
Orkney*	**-**	-	**-**	-	-
Shetland	**85.7%**	7	**100%**	8	+14.3%
Tayside	**88.5%**	243	**86.0%**	271	-2.5 %
W Isles	**88.9%**	9	**100%**	10	+11.1%
NoS	**87.3%**	**726**	**89.8%**	**686**	+2.50%

* Results not provided as based on 1-4 patients

QPI2(ii): Pathological Diagnosis - Patients with a pathological diagnosis of non small cell lung cancer (NSCLC) should have tumour subtype identified.

A definitive diagnosis is valuable in helping inform patients and carers about the nature of the disease, the likely prognosis and treatment choice.

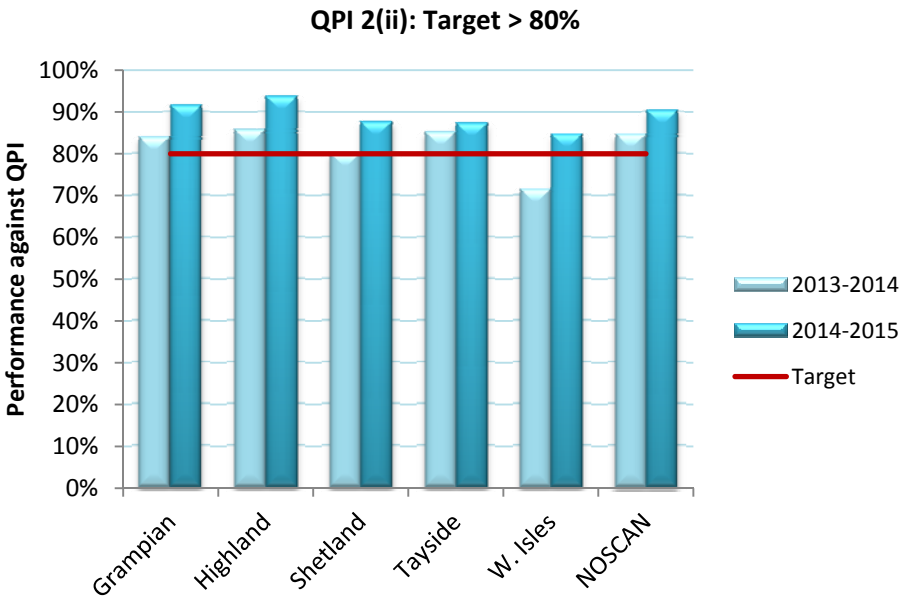
Numerator:	Number of patients with a pathological diagnosis of NSCLC who have a tumour subtype identified.
Denominator:	All patients with a pathological diagnosis of NSCLC.
Exclusions:	No exclusions.
Target:	80% or above

QPI 2(ii) Performance against target

Overall, in the north of Scotland, 538 out of the 596 patients with a pathological diagnosis of NSCLC had a tumour sub-type identified, at 90.3% this meets the target level. This is an increase from 2013-2014, where the 84.5% met this target.

However, the way in which this QPI has been calculated has changed. In 2013-2014 some of the rarer tumour sub-types were recorded in the same way as those in which the tumour sub-type had not been specified, therefore patients with these tumours failed the QPI, whereas in 2014-15 these tumours were recorded separately and patients met the QPI. This change in definition may have contributed in part to the apparent increase in patients meeting this QPI in 2014-2015.

All NHS Boards within the North of Scotland met this QPI in 2014-2015.



	Performance (%)	Numerator	Denominator	Not recorded - Numerator	% not recorded - Numerator	Not recorded - Exclusions	% not recorded - Exclusions	Not recorded - Denominator
Grampian	**91.5%**	215	235	0	0%	0	0%	0
Highland	**93.7%**	119	127	0	0%	0	0%	0
Orkney*	**-**	-	-	-	-	-	-	-
Shetland	**87.5%**	7	8	0	0%	0	0%	0
Tayside	**87.3%**	185	212	0	0%	0	0%	0
W. Isles	**84.6%**	11	13	0	0%	0	0%	0
NoS	**90.3%**	**538**	**596**	0	0%	0	0%	0

* Results not provided as based on 1-4 patients

	2013-2014 Performance (%)	2013-2014 Denominator	2014-2015 Performance (%)	2014-2015 Denominator	Change in Performance
Grampian	**83.9%**	217	**91.5%**	235	+7.6%
Highland	**85.6%**	153	**93.7%**	127	+8.1%
Orkney*	**-**	0	**-**	-	-
Shetland	**80.0%**	5	**87.5%**	8	+7.5%
Tayside	**85.1%**	194	**87.3%**	212	+2.2%
W Isles	**71.4%**	7	**84.6%**	13	+13.2%
NoS	**84.5%**	**576**	**90.3%**	**596**	+5.8%

* Results not provided as based on 1-4 patients

QPI2(iii): Pathological Diagnosis - Patients with a pathological diagnosis of NSCLC should have analysis of predictive markers undertaken.

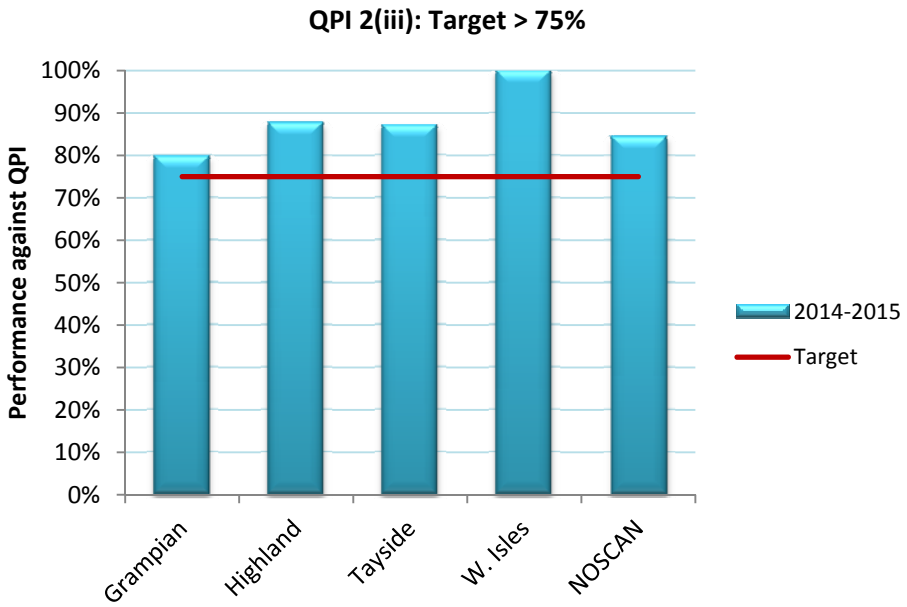
A definitive diagnosis is valuable in helping inform patients and carers about the nature of the disease, the likely prognosis and treatment choice.

Numerator:	Number of patients with a pathological diagnosis of stage IIIB or IV adenocarcinoma NSCLC who have analysis of predictive markers undertaken.
Denominator:	All patients with a pathological diagnosis of stage IIIB or IV adenocarcinoma NSCLC.
Exclusions:	Patients with performance status 4.
Target:	75% or above

QPI 2(iii) Performance against target

Overall, in the north of Scotland, 84.6% of patients diagnosed with stage IIIB or IV adenocarcinoma NSCLC in 2014-2015 had analysis of predictive markers undertaken. This result cannot be compared with the previous year's data as this QPI has been changed significantly since the first year of reporting.

All NHS Boards within the North of Scotland met this QPI in 2014-2015.



	Performance (%)	Numerator	Denominator	Not recorded - Numerator	% not recorded - Numerator	Not recorded - Exclusions	% not recorded - Exclusions	Not recorded - Denominator
Grampian	**79.8%**	75	94	0	0%	0	0%	0
Highland	**87.8%**	36	41	0	0%	0	0%	1
Orkney*	**-**	-	-	-	-	-	-	-
Shetland*	**-**	-	-	-	-	-	-	-
Tayside	**87.0%**	47	54	0	0%	0	0%	0
W. Isles	**100%**	7	7	0	0%	0	0%	0
NoS	**84.6%**	**170**	**201**	0	0%	0	0%	1

* Results not provided as based on 1-4 patients

Results indicate good practice in both sampling of diagnostic tissue and pathology reporting across the North of Scotland.

Where pathological diagnosis was not provided this was largely due to patient related factors such as the death of a patient or a patient refusing diagnostics. Some patients received radiotherapy without a pathological diagnosis as tissue sampling appeared to be not achievable or not safe.

Actions required: No actions were identified

QPI 3: Bronchoscopy

QPI 3: Bronchoscopy - Patients with lung cancer who are undergoing bronchoscopy for purposes of diagnosis and staging should have a CT thorax prior to bronchoscopy.

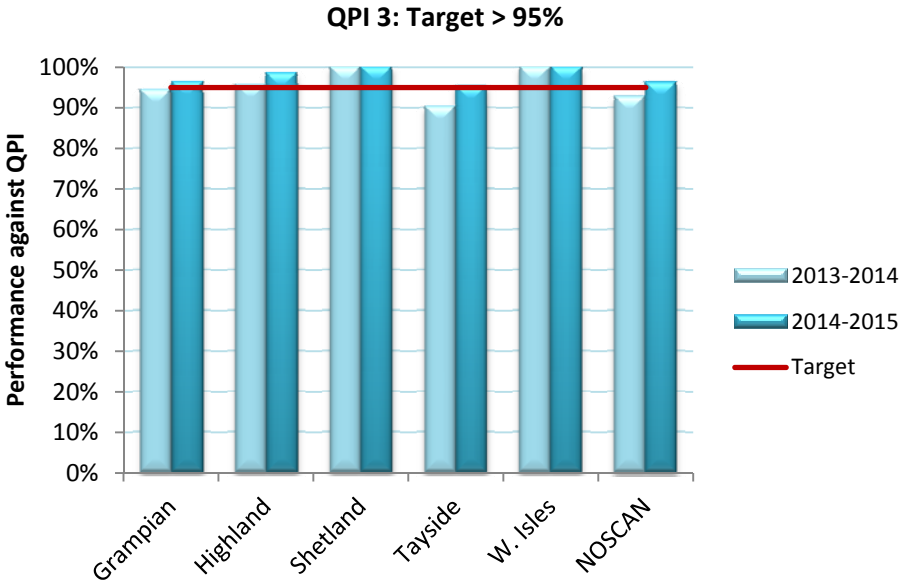
Patients with suspected lung cancer should have timely and appropriate investigations carried out to confirm a diagnosis of lung cancer. CT thorax should be performed before an intended bronchoscopy to avoid unnecessary bronchoscopy and to guide how the procedure is conducted. The sequence of investigations varies according to a variety of factors including clinical and radiological information, patient fitness, treatment intention and patient choice.

Numerator:	Number of patients with lung cancer undergoing bronchoscopy where CT thorax was performed prior to bronchoscopy.
Denominator:	All patients with lung cancer undergoing bronchoscopy.
Exclusions:	No exclusions.
Target:	95%

QPI 3 Performance against target

In the North of Scotland, 446 out of the 463 patients diagnosed with lung cancer in 2014-2015 and undergoing bronchoscopy had a CT of the thorax performed prior to bronchoscopy. At 96.3% this meets the target for this QPI. This is an improvement on the 2013-2014 result of 92.7%.

All NHS Boards in the North of Scotland met this QPI in 2014-2015, with improvements in results over the last year across the region.



	Performance (%)	Numerator	Denominator	Not recorded - Numerator	% not recorded - Numerator	Not recorded - Exclusions	% not recorded - Exclusions	Not recorded - Denominator
Grampian	**96.5%**	137	142	0	0%	0	0%	0
Highland	**98.6%**	71	72	0	0%	0	0%	0
Orkney	**-**	0	0	0	0%	0	0%	0
Shetland	**100%**	6	6	0	0%	0	0%	0
Tayside	**95.3%**	225	236	0	0%	0	0%	0
W. Isles	**100%**	7	7	0	0%	0	0%	0
NoS	**96.3%**	**446**	**463**	0	0%	0	0%	0

* Results not provided as based on 1-4 patients

	2013-2014 Performance (%)	2013-2014 Denominator	2014-2015 Performance (%)	2014-2015 Denominator	Change in Performance
Grampian	**94.4%**	126	**96.5%**	142	+2.1%
Highland	**95.7%**	93	**98.6%**	72	+2.9%
Orkney*	**-**	0	**-**	0	-
Shetland	**100%**	6	**100%**	6	0%
Tayside	**90.3%**	237	**95.3%**	236	+5.0%
W Isles	**100%**	5	**100%**	7	0%
NoS	**92.7%**	**467**	**96.3%**	**463**	**+3.6%**

* Results not provided as based on 1-4 patients

Actions required: No specific actions were identified.

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

QPI 4: PET CT in patients being treated with curative intent - Patients with lung cancer who are being treated with curative intent should have a PET CT Scan (Positron Emission Tomography – Computed Tomography) prior to treatment.

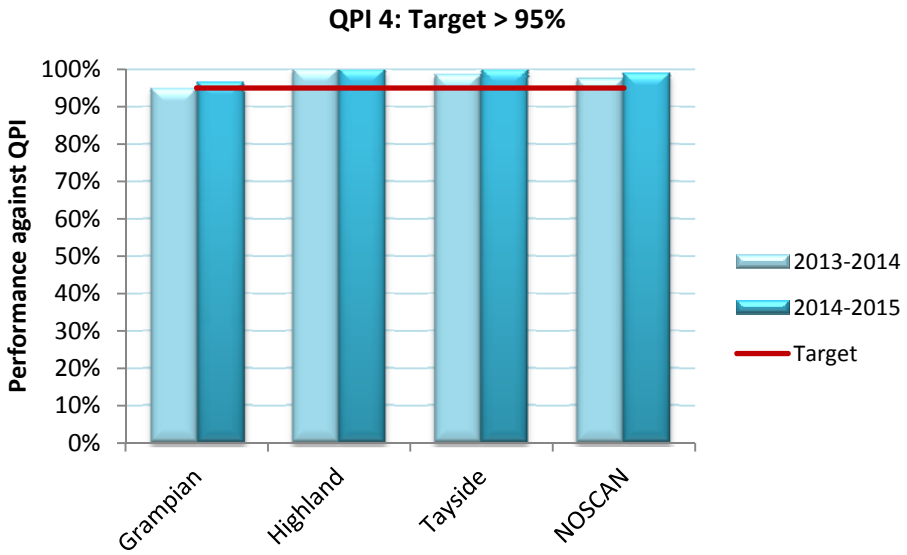
Accurate staging is important to ensure appropriate treatment is delivered to patients with lung cancer. All patients being considered for radical treatment with curative intent should have a PET CT scan completed and reported by the multidisciplinary team before treatment.

Numerator:	Number of patients with NSCLC who are treated with curative intent (radical radiotherapy, radical chemoradiotherapy or surgical resection) who undergo PET CT prior to start of treatment.
Denominator:	All patients with NSCLC who are treated with curative intent (radical radiotherapy, radical chemoradiotherapy or surgical resection).
Exclusions:	No exclusions
Target:	95%

QPI 4 Performance against target

In the North of Scotland, 189 of the 191 patients diagnosed with NSCLC in 2014-2015 who were treated with curative intent had a PET CT prior to the start of treatment. At 99.0% this exceeds the target of 95% for this QPI. This is an improvement on the 2013-2014 result of 97.4%.

All NHS Boards in the North of Scotland met this QPI 2014-2015, with results from 2013-2014 being maintained or exceeded across all Boards.



	Performance (%)	Numerator	Denominator	Not recorded - Numerator	% not recorded - Numerator	Not recorded - Exclusions	% not recorded - Exclusions	Not recorded - Denominator
Grampian	**96.7%**	58	60	0	0%	0	0%	0
Highland	**100%**	42	42	0	0%	0	0%	0
Orkney	**-**	0	0	0	0%	0	0%	0
Shetland*	**-**	-	**-**	-	**-**	-	**-**	-
Tayside	**100%**	83	83	0	0%	0	0%	0
W. Isles*	**-**	-	**-**	-	**-**	-	**-**	-
NoS	**99.0%**	**189**	**191**	0	0%	0	0%	0

* Results not provided as based on 1-4 patients

	2013-2014 Performance (%)	2013-2014 Denominator	2014-2015 Performance (%)	2014-2015 Denominator	Change in Performance
Grampian	**94.9%**	78	**96.7%**	60	+1.80%
Highland	**100%**	44	**100%**	42	0%
Orkney	**-**	0	**-**	0	-
Shetland*	**-**	-	**-**	**-**	-
Tayside	**98.6%**	69	**100%**	83	+1.4%
W Isles*	**-**	-	**-**	-	**-**
NoS	**97.4%**	**195**	**99.0%**	**191**	**+1.6%**

* Results not provided as based on 1-4 patients

Actions required: No specific actions were identified.

QPI 5: Investigation of mediastinal malignancy

QPI 5: Investigation of mediastinal malignancy - Patients with non small cell lung cancer (NSCLC) with a possibility of mediastinal malignancy demonstrated on PET CT should undergo node sampling to confirm mediastinal malignancy.

PET CT positive mediastinal nodes may be positive due to reactive changes rather than cancer. Sampling these nodes to determine if they are definitely positive for malignancy will ensure that patients suitable for radical treatment are treated appropriately.

Numerator: Number of patients with NSCLC undergoing treatment with curative intent (radical radiotherapy, radical chemoradiotherapy or surgical resection) who have a PET CT scan that shows positive mediastinal/SCF nodes (N2/N3) that have nodes sampled.

Denominator: All patients with NSCLC undergoing treatment with curative intent (radical radiotherapy, radical chemoradiotherapy or surgical resection) who have a PET CT scan that shows positive mediastinal/SCF nodes (N2/N3).

Exclusions:

- Patients with stage IV (M1a or M1b) disease.
- Patients who refuse treatment.

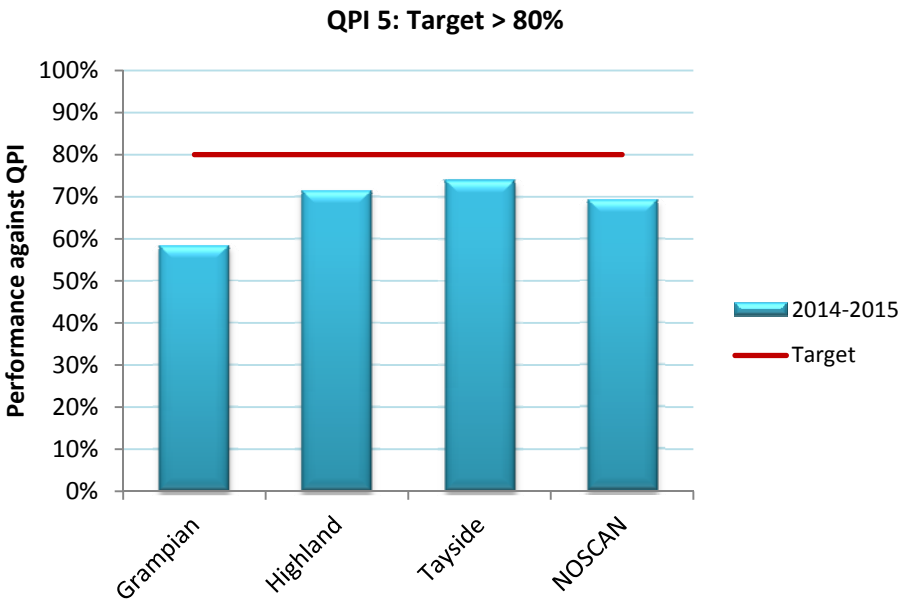
Target: 80%

QPI 5 Performance against target

During 2014-2015, 52 patients with NSCLC undergoing treatment with curative intent in the North of Scotland had a PET CT scan that showed positive mediastinal / SCF nodes (N2/M3): 36 of these patients (69.2%) had nodes sampled, well below the target rate of 80%.

There has been a significant change to how this QPI is calculated since 2013-2014 as previously the QPI was not restricted to patients undergoing treatment with curative intent. As such it is not appropriate to compare results for 2014-2015 with the QPI figures from 2013-2014. However additional analysis of the 2013-2014 data using the revised QPI definitions suggests that results would have been approximately 52% in 2013-2014, suggesting an improvement in results between the two years.

None of the NHS Boards in the North of Scotland met this QPI 2014-2015.



	Performance (%)	Numerator	Denominator	Not recorded - Numerator	% not recorded - Numerator	Not recorded - Exclusions	% not recorded - Exclusions	Not recorded - Denominator
Grampian	**58.3%**	7	12	0	0%	0	0%	2
Highland	**71.4%**	10	14	0	0%	0	0%	0
Orkney	**-**	0	0	0	0%	0	0%	0
Shetland*	**-**	-	-	-	-	-	-	-
Tayside	**73.9%**	17	23	0	0%	0	0%	0
W. Isles*	**-**	-	-	-	-	-	-	-
NoS	**69.2%**	**36**	**52**	0	0%	0	0%	2

* Results not provided as based on 1-4 patients

The MCN considers this target to be achievable through the improved sampling of PET positive mediastinal lymph nodes in non-surgical patients who are treated with radical intent.

Actions required:

- **All NHS Board to ensure more sampling of PET-positive mediastinal lymph nodes, especially in non-surgical patients who being treated with radical intent.**

QPI 6: Surgical Resection in non small cell lung cancer

QPI 6(i): Surgical resection in non small cell lung cancer - Patients with non small cell lung cancer (NSCLC) should undergo surgical resection.

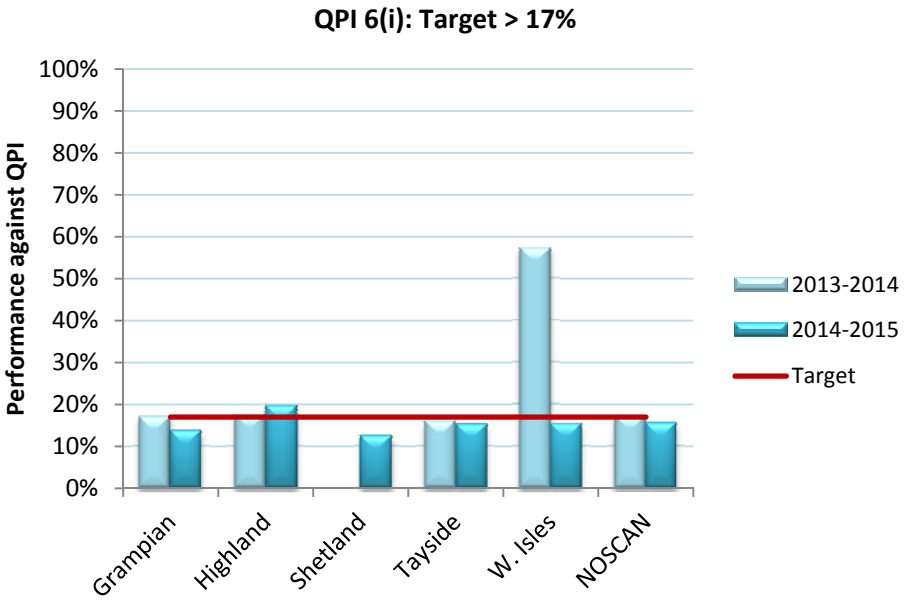
All patients should be considered for surgical treatment appropriate to their stage of disease. For patients with NSCLC who are suitable for treatment with curative intent surgical resection by lobectomy is the superior treatment option. Surgery is the treatment which offers the best chance of cure to patients with localised NSCLC.

Numerator:	Number of patients with non small cell lung cancer (NSCLC) who undergo surgical resection.
Denominator:	All patients with non small cell lung cancer (NSCLC).
Exclusions:	Patients who refuse surgery and patients who die before surgery.
Target:	17%

QPI 6(i) Performance against target

In the North of Scotland, 15.5% of the 594 patients diagnosed with NSCLC in 2014-2015 underwent surgical resection. This is just below the target of 17% and less than the 2013-2014 figure of 17.3%.

Only one NHS Board, NHS Highland, met this QPI in the North of Scotland in 2014-2015, with trends in performance since 2013-2014 varying between Boards.



	Performance (%)	Numerator	Denominator	Not recorded - Numerator	% not recorded - Numerator	Not recorded - Exclusions	% not recorded - Exclusions	Not recorded - Denominator
Grampian	**13.6%**	32	235	0	0%	0	0%	0
Highland	**19.7%**	25	127	0	0%	0	0%	0
Orkney*	**-**	-	-	-	-	-	-	-
Shetland	**12.5%**	1	8	0	0%	0	0%	0
Tayside	**15.2%**	32	210	0	0%	0	0%	2
W. Isles	**15.4%**	2	13	0	0%	0	0%	0
NoS	**15.5%**	**92**	**594**	0	0%	0	0%	2

* Results not provided as based on 1-4 patients

	2013-2014 Performance (%)	2013-2014 Denominator	2014-2015 Performance (%)	2014-2015 Denominator	Change in Performance
Grampian	**17.1%%**	216	**13.6%**	235	-
Highland	**17.6%**	153	**19.7%**	127	+2.1%
Orkney*	**-**	0	**-**	-	-
Shetland	**0%**	5	**12.5%**	8	+12.5%
Tayside	**16.1%**	186	**15.2%**	210	-0.9%
W Isles	**57.1%**	7	**15.4%**	13	-41.7%
NoS	**17.3%**	**567**	**15.5%**	**594**	-1.8%

* Results not provided as based on 1-4 patients

QPI 6(ii): Surgical resection in non small cell lung cancer - Patients with stage I – II non small cell lung cancer (NSCLC) should undergo surgical resection.

All patients should be considered for surgical treatment appropriate to their stage of disease. For patients with NSCLC who are suitable for treatment with curative intent surgical resection by lobectomy is the superior treatment option. Surgery is the treatment which offers the best chance of cure to patients with localised NSCLC.

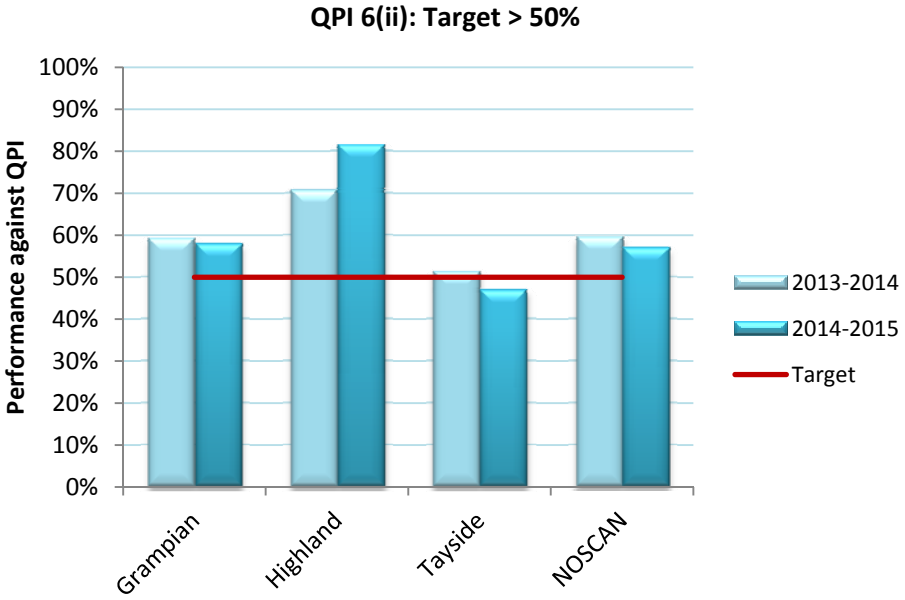
Patients with stage I and II NSCLC are more likely to be suitable for surgical resection.

Numerator:	Number of patients with stage I-II (T1aN0 - T2bN1, or T3N0) NSCLC who undergo surgical resection.
Denominator:	All patients with stage I-II (T1aN0 - T2bN1, or T3N0) NSCLC.
Exclusions:	Patients who refuse surgery and patients who die before surgery.
Target:	50%

QPI 6(ii) Performance against target

In 2014-2015, 78 out of the 137 patient diagnosed with stage I-II NSCLC in the North of Scotland underwent surgical resection. At 56.9% this meets the target of 50% but is slightly below the 59.5% figure for 2013-2014.

All NHS Boards in the North of Scotland met this QPI in 2014-2015 except for NHS Tayside (46.7%) and NHS W Isles (who only had one patient included within this measure). There were varying trends in performance over time at a Board level, although numbers are relatively small and therefore conclusions difficult to draw.



	Performance (%)	Numerator	Denominator	Not recorded - Numerator	% not recorded - Numerator	Not recorded - Exclusions	% not recorded - Exclusions	Not recorded - Denominator
Grampian	**57.8%**	26	45	0	0%	0	0%	5
Highland	**81.5%**	22	27	0	0%	0	0%	2
Orkney	**-**	0	0	0	0%	0	0%	0
Shetland*	**-**	-	-	-	-	-	-	-
Tayside	**46.8%**	29	62	0	0%	0	0%	1
W. Isles*	**-**	-	-	-	-	-	-	-
NoS	**56.9%**	**78**	**137**	0	0%	0	0%	8

* Results not provided as based on 1-4 patients

	2013-2014 Performance (%)	2013-2014 Denominator	2014-2015 Performance (%)	2014-2015 Denominator	Change in Performance
Grampian	**59.2%**	49	**57.8%**	45	-1.4%
Highland	**70.6%**	34	**81.5%**	27	+10.9%
Orkney	**-**	0	**-**	0	-
Shetland*	**-**	-	**-**	-	-
Tayside	**51.2%**	41	**46.8%**	62	-4.4%
W Isles*	**-**	-	**-**	-	-
NoS	**59.5%**	**126**	**56.9%**	**137**	-2.6%

* Results not provided as based on 1-4 patients

The main concern with these figures however is the discrepancy between NOSCAN and the other cancer networks, which both achieved over 25% for specification (i) of this QPI in 2013-2014. It is noted that both NHS Tayside and NHS Highland have approximately half of their surgical patients resected outside NOSCAN, which may suggest that the regional differences are not related to the surgical team, but to other considerations. However, this needs further investigation.

The resection rate is thought to be influenced in a number of ways including:

- **Patient factors** such as co-morbidities, disease progression, performance status and age.

- **MDT factors** such as patients not being referred to surgical teams, staging and performance status.
- **Surgical team factors** such as patients being turned down for surgery once referred.

Whilst it is recognised that the numbers of patients presenting and considered suitable for surgery will fluctuate annually due to chance, it is nonetheless felt that all the above factors need further investigation to more appropriately understand the reason why, as a network and at Board level in each of NHS Tayside and NHS Grampian, the numbers of patients proceeding to surgery is so low.

Actions required:

- **All NHS Boards to review non surgical patients treated with radical intent.**

- **All NHS Boards to review all patients referred to surgical teams who did not go on to have surgical resection.**

- **All Lung MDTs to review the way in which decisions are made: a visit by members of NoS Lung cancer team(s) to observe an equivalent lung cancer MDT in the west of Scotland is currently being planned.**

- **MCN to progress analysis to look at the performance status and stage of patients undergoing resection compared with those receiving other radical treatment and work with colleagues nationally to compare results with those from other regions, including comparison of the numbers of patients included within the denominator for QPI 6.**

- **All NHS Boards to ensure that there are appropriate video-conferencing facilities to support the functioning of MDT meetings across multiple sites.**

QPI 7: Lymph Node Assessment

QPI 7: Lymph node assessment - In patients with non small cell lung cancer (NSCLC) undergoing surgery, adequate assessment of lymph nodes should be made.

Adequate assessment of lymph nodes for accurate staging will help guide prognosis and further treatment management. Nodal dissection should be performed for all patients undergoing surgery with curative intent.

Numerator: Number of patients with NSCLC undergoing surgical resection by lobectomy or pneumonectomy that have at least 1 node from at least 3 N2 stations sampled at time of resection at previous mediastinoscopy.

Denominator: All patients with NSCLC undergoing surgical resection by lobectomy or pneumonectomy.

Exclusions: No exclusions.

Target: 80%

QPI 7 Performance against target

22 out of the 39 patient diagnosed with NSCLC in 2014-2015 and undergoing surgical resection by lobectomy or pneumonectomy in the North of Scotland had at least 1 node from at least 3 N3 stations sampled. At 56.4% this does not meet the QPI target of 80%. This QPI was changed significantly after the first year of reporting and as such there are no data for 2013-2014 to compare the 2014-2015 results with.

Within the North of Scotland this surgery is only undertaken at Aberdeen Royal Infirmary, NHS Grampian. It is therefore not possible to compare performance between Boards and these results are not displayed in a chart.

	Performance (%)	Numerator	Denominator	Not recorded - Numerator	% not recorded - Numerator	Not recorded - Exclusions	% not recorded - Exclusions	Not recorded - Denominator
ARI (NHS Grampian)	**56.4%**	22	39	0	0%	0	0%	0
NoS	**56.4%**	22	39	0	0%	0	0%	0

To have any significance, these results need to be considered in the context of the results from other regions in Scotland. However, the MCN recognises that with a move to more extensive lymph node dissection, there may be room for performance improvement

Actions required:

- **MCN to consider results for QPI 7 in the context of those from other networks.**
- **NHS Grampian to consider undertaking more extensive lymph node dissection in surgical patients.**
- **MCN to suggest adding mediastinoscopy results into QPI 7 at formal review.**

QPI 8: Radiotherapy in inoperable lung cancer

QPI 8: Radiotherapy in inoperable lung cancer - Patients with inoperable lung cancer should receive radiotherapy ± chemotherapy.

Radiotherapy is an important treatment option for patients with lung cancer; it has a proven survival benefit for patients with lung cancer.

For patients with stage I, II or III NSCLC, radical radiotherapy is the recommended treatment option if patients are not suitable for surgery.

Numerator: Number of patients with lung cancer not undergoing surgery who receive radical radiotherapy (> 54Gy) ± chemotherapy.

Denominator: All patients with lung cancer not undergoing surgery.

Exclusions:

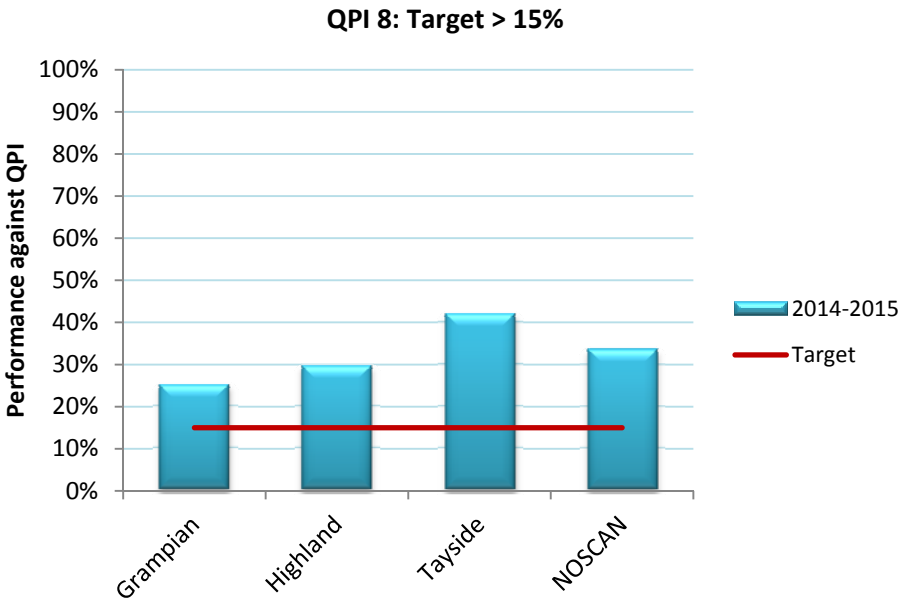
- Patients with Small Cell Lung Cancer (SCLC)
- Patients who refuse radiotherapy
- Patients who die prior to treatment
- Patients with stage IV (M1a or M1b) disease.

Target: 15%

QPI 8 Performance against target

Of the 345 patients diagnosed with lung cancer in the North of Scotland in 2014-2015 and not undergoing surgery, 116 patients received radical radiotherapy. At 33.6%, this meets the target of 15%. Due to changes in the way the QPI has been calculated since 2013-2014, results for the two years cannot be compared.

All NHS Boards in the North of Scotland met this QPI in 2014-2015.



	Performance (%)	Numerator	Denominator	Not recorded - Numerator	% not recorded - Numerator	Not recorded - Exclusions	% not recorded - Exclusions	Not recorded - Denominator
Grampian	**25.0%**	32	128	0	0%	17	13.3%	0
Highland	**29.5%**	18	61	0	0%	0	0%	9
Orkney	**-**	0	0	0	0%	0	0%	0
Shetland*	**-**	-	-	-	-	-	-	-
Tayside	**42.0%**	63	150	0	0%	0	0%	3
W. Isles*	**-**	-	-	-	-	-	-	-
NoS	**33.6%**	**116**	**345**	0	0%	17	4.9%	12

* Results not provided as based on 1-4 patients

While the target for QPI 8 has been exceeded by a significant margin, it should be considered in relation to the relatively low surgical resection rates.

Actions required:

- **MCN to compare results for QPI 8, radiotherapy in inoperable lung cancer, with those from other networks and reflect on the relationship between results for this QPI and those from QPI 6, surgical resection rates.**

QPI 9: Chemoradiotherapy in locally advanced non small cell lung cancer

QPI 9: Chemoradiotherapy in locally advanced non small cell lung cancer - Patients with inoperable locally advanced non small cell lung (NSCLC) cancer should receive potentially curative radiotherapy and concurrent or sequential chemotherapy.

Patients with stage III NSCLC who are not suitable for surgery should receive chemoradiotherapy, as this has a proven survival benefit. Potential benefit of survival does, however, have to be balanced with the risk of additional toxicities from this treatment.

Numerator: Number of patients with stage IIIA NSCLC, with performance status 0-1, not undergoing surgery who receive chemoradiotherapy (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:

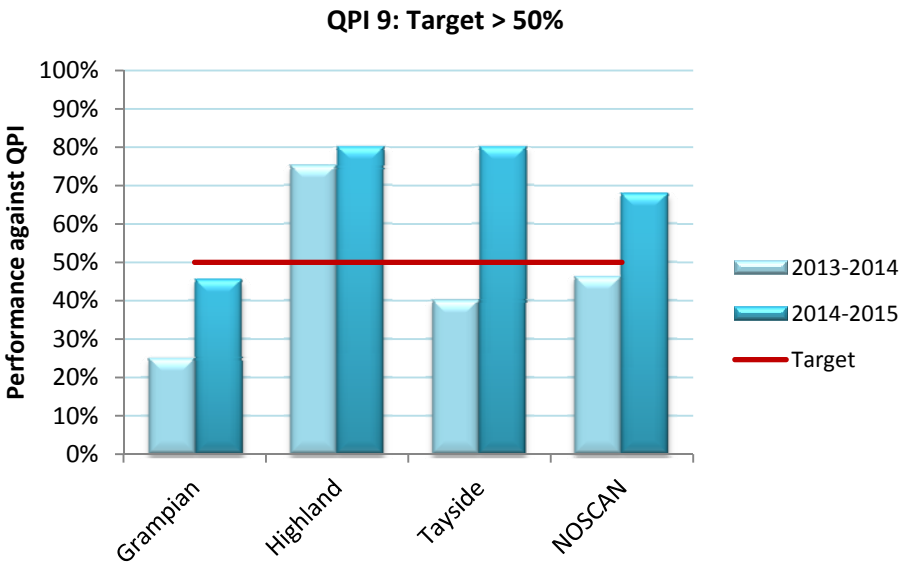
- Patients who refuse treatment.
- Patients who die before treatment.
- Patients receiving Continuous Hyperfractionated Radiotherapy.
- Patients receiving Stereotactic radiotherapy.

Target: 50%

QPI 9 Performance against target

In the North of Scotland, 21 out of the 31 patient included within the denominator of this QPI received chemoradiotherapy. At 67.7% this meets the 50% target for this QPI and is an improvement on the 2013-2014 result of 46.2%.

All NHS Boards in the North of Scotland met this QPI 2014-2015, with improvements in results over the last year across the region, although numbers are small.



	Performance (%)	Numerator	Denominator	Not recorded - Numerator	% not recorded - Numerator	Not recorded - Exclusions	% not recorded - Exclusions	Not recorded - Denominator
Grampian	**45.5%**	5	11	0	0%	0	0%	0
Highland	**80.0%**	8	10	0	0%	0	0%	0
Orkney	**-**	0	0	0	0%	0	0%	0
Shetland	**-**	0	0	0	0%	0	0%	0
Tayside	**80.0%**	8	10	0	0%	0	0%	0
W. Isles	**-**	0	0	0	0%	0	0%	0
NoS	**67.7%**	**21**	**31**	0	0%	0	0%	0

	2013-2014 Performance (%)	2013-2014 Denominator	2014-2015 Performance (%)	2014-2015 Denominator	Change in Performance
Grampian	**25.0%**	8	**45.5%**	11	+20.5%
Highland	**75.0%**	8	**80.0%**	10	+5.0%
Orkney	**-**	0	**-**	0	-
Shetland	**-**	0	**-**	0	-
Tayside	**40.0%**	10	**80.0%**	10	+40.0%
W Isles	**-**	0	**-**	0	-
NoS	**46.2%**	**26**	**67.7%**	**31**	+21.5%

As for QPI 8, while the target for QPI 9 has been exceeded by a significant margin, it should be considered in relation to the relatively low surgical resection rates.

Actions required:

- **MCN to compare results for QPI 9, chemoradiotherapy in locally advanced NSCLC, with those from other networks and reflect on the relationship between results for this QPI and those from QPI 6, surgical resection rates.**

QPI 10: Chemoradiotherapy in limited stage small cell lung cancer

QPI 10: Chemoradiotherapy in limited stage small cell lung cancer - Patients with limited stage small cell lung cancer (SCLC) should receive platinum-based chemotherapy and (concurrent or sequential) radiotherapy.

Patients with limited stage disease SCLC should receive concurrent chemoradiotherapy, as this is proven to improve survival. Combination treatment is dependent on patient fitness levels and any potential survival benefit should be balanced with the risk of additional toxicities of this treatment.

Numerator: Number of patients with T1-4, N0-3, M0 (stage I to IIIB) SCLC, performance status 0 or 1 who receive chemoradiotherapy (radiotherapy > 40Gy and concurrent or sequential platinum-based chemotherapy).

Denominator: All patients with T1-4, N0-3, M0 (stage I to IIIB) SCLC, performance status 0 or 1.

Exclusions:

- Patients who refuse treatment.
- Patients who die before treatment.
- Patients who undergo surgical resection.

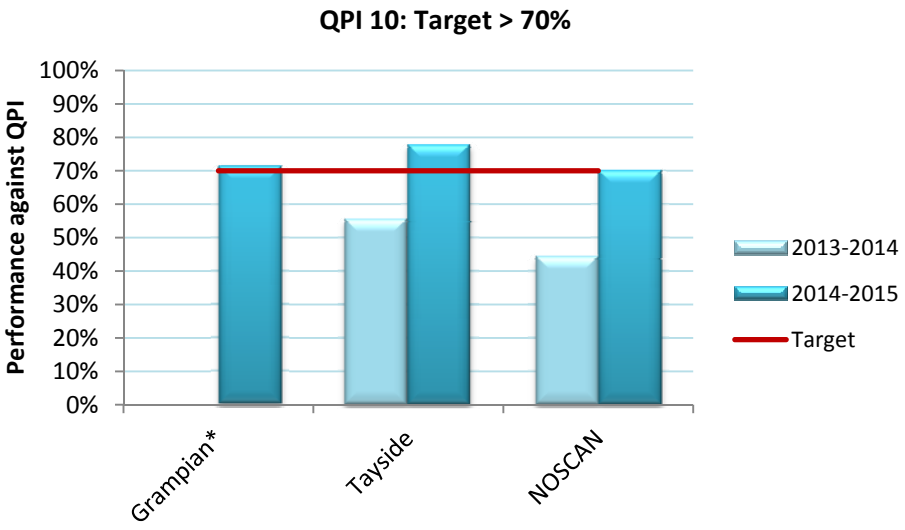
Target: 70%

QPI 10 Performance against target

14 out of the 20 patients diagnosed with limited stage small cell lung cancer in the North of Scotland in 2014-2015 (and with performance status of 0 or 1) had chemoradiotherapy. At 70.0% this just meets the target for this QPI. This is an improvement on the 2013-2014 result of 44.4%.

In 2014-2015, both NHS Grampian and NHS Tayside met this QPI whereas NHS Highland did not. However, as only very small numbers of patients were included in calculations, any variation either between NHS Boards or between years is difficult to interpret.

Actions required: No specific actions were identified.



	Performance (%)	Numerator	Denominator	Not recorded - Numerator	% not recorded - Numerator	Not recorded - Exclusions	% not recorded - Exclusions	Not recorded - Denominator
Grampian	**71.4%**	5	7	0	0%	0	0%	1
Highland*	-	-	-	-	-	-	-	-
Orkney	-	0	0	0	0%	0	0%	0
Shetland	-	0	0	0	0%	0	0%	0
Tayside	**77.8%**	7	9	0	0%	0	0%	0
W. Isles	-	0	0	0	0%	0	0%	0
NoS	**70.0%**	**14**	**20**	0	0%	0	0%	1

* Results not provided as based on 1-4 patients

	2013-2014 Performance (%)	2013-2014 Denominator	2014-2015 Performance (%)	2014-2015 Denominator	Change in Performance
Grampian*	-	-	**71.4%**	7	-
Highland*	-	-	-	-	-
Orkney	-	0	-	0	-
Shetland	-	0	-	0	-
Tayside	**55.6%**	9	**77.8%**	9	+22.2%
W Isles*	-	-	-	0	-
NoS	**44.4%**	**18**	**70.0%**	**20**	**+25.6%**

* Results not provided as based on 1-4 patients

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

QPI 11(i): Systemic anti cancer therapy in non small cell lung cancer: Patients with inoperable non small cell lung cancer (NSCLC) should receive systemic anti cancer therapy, where appropriate.

Systemic anti cancer therapy should be offered to all patients with NSCLC and good performance status, to improve survival, disease control and quality of life.

Numerator: Number of patients with NSCLC not undergoing surgery who receive systemic anti cancer therapy.

Denominator: All patients with NSCLC not undergoing surgery.

Exclusions:

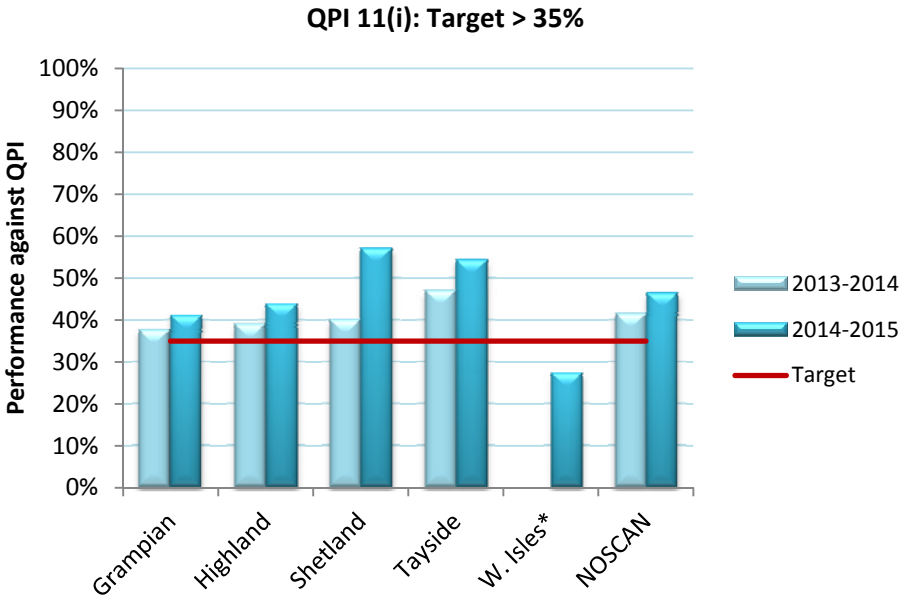
- Patients who refuse chemotherapy.
- Patients who die before treatment.
- Patients who are participating in clinical trials.

Target: 35%

QPI 11(i) Performance against target

Out of the 480 patients diagnosed with NSCLC in the North of Scotland in 2014-2015 and not undergoing surgery, 223 received systemic anti cancer therapy. At 46.5%, this was above the target of 35% which is an improvement on the 2013-2014 result of 41.5%.

All NHS Boards in the North of Scotland met this QPI in 2014-2015 with the exception of NHS W Isles, where there were small numbers of patients. Improvements in results for this QPI can be seen across all Boards except NHS W Isles between 2013-2014 and 2014-2015.



	Performance (%)	Numerator	Denominator	Not recorded - Numerator	% not recorded - Numerator	Not recorded - Exclusions	% not recorded - Exclusions	Not recorded - Denominator
Grampian	**41.1%**	78	190	0	0%	1	0.5%	0
Highland	**43.9%**	43	98	-	-	-	-	-
Orkney*	**-**	-	-	-	-	-	-	-
Shetland	**57.1%**	4	7	0	0%	0	0%	0
Tayside	**54.3%**	94	173	0	0%	0	0%	2
W. Isles	**27.3%**	3	11	0	0%	0	0%	0
NoS	**46.5%**	**223**	**480**	0	0%	1	0.2%	2

* Results not provided as based on 1-4 patients

	2013-2014 Performance (%)	2013-2014 Denominator	2014-2015 Performance (%)	2014-2015 Denominator	Change in Performance
Grampian	37.6%	165	41.1%	190	+3.5%
Highland	39.0%	118	43.9%	98	+4.9%
Orkney	-	0	-	-	-
Shetland	40.0%	5	57.1%	7	+17.1%
Tayside	46.9%	147	54.3%	173	+7.4%
W Isles*	-	-	27.3%	11	-
NoS	**41.5%**	**439**	**46.5%**	**480**	+5.0%

* Results not provided as based on 1-4 patients

QPI 11(ii): Systemic anti cancer therapy in non small cell lung cancer: Patients with stage IIIB and IV NSCLC should receive doublet chemotherapy including platinum as their first line regimen.

Patients with stage III or IV NSCLC should be offered chemotherapy, dependent on fitness level, as this is proven to improve survival, provides palliation for symptoms caused by primary or metastatic tumour and improves quality of life.

Numerator: Number of patients with stage IIIB or IV NSCLC, with performance status 0-1 not undergoing surgery who receive doublet chemotherapy, including platinum, as their first-line regimen.

Denominator: All patients with stage IIIB or IV NSCLC, with performance status 0-1 not undergoing surgery.

Exclusions:

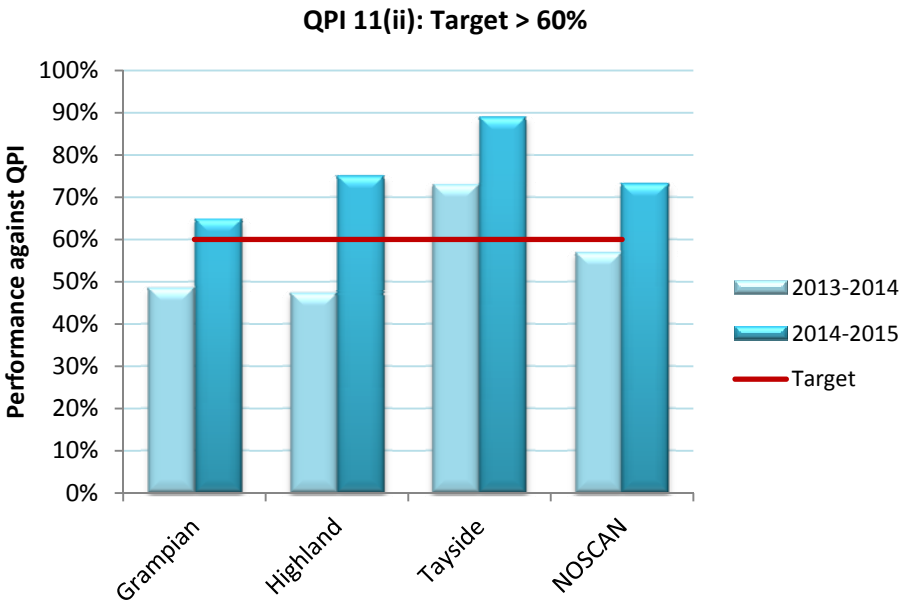
- Patients who refuse chemotherapy.
- Patients who die before treatment.
- Patients who are participating in clinical trials.
- Patients with known EGFR mutation.

Target: 60%

QPI 11(ii) Performance against target

In 2014-2015, there were 160 patients diagnosed with stage IIIB or IV NSCLC in the North of Scotland who had a performance status 0-1 and did not undergo surgery. Of these, 73.1% received doublet chemotherapy, including platinum, as their first-line regimen, thereby meeting the target of 60% for this QPI. This is an improvement on the 2013-2014 result of 57.0%.

Most NHS Boards in the North of Scotland met this QPI in 2014-2015. The QPI was not met in NHS Shetland or NHS W Isles, however numbers of patients included within the QPI were very small in these Boards and only one patient did not meet the indicator in each Board. Improvements in results for this QPI can be seen across all mainland Boards between 2013-2014 and 2014-2015.



	Performance (%)	Numerator	Denominator	Not recorded - Numerator	% not recorded - Numerator	Not recorded - Exclusions	% not recorded - Exclusions	Not recorded - Denominator
Grampian	**64.8%**	46	71	0	0%	0	0%	7
Highland	**75.0%**	21	28	0	0%	0	0%	2
Orkney	**-**	0	0	0	-	0	-	0
Shetland*	**-**	-	-	-	-	-	-	-
Tayside	**88.9%**	48	54	0	0%	0	0%	2
W. Isles*	**-**	-	-	-	-	-	-	-
NoS	**73.1%**	**117**	**160**	0	0%	0	0%	9

* Results not provided as based on 1-4 patients

	2013-2014 Performance (%)	2013-2014 Denominator	2014-2015 Performance (%)	2014-2015 Denominator	Change in Performance
Grampian	48.6%	70	64.8%	71	+16.2%
Highland	47.4%	38	75.0%	28	+27.6%
Orkney	-	0	-	0	-
Shetland*	-	-	-	-	-
Tayside	73.1%	52	88.9%	54	+15.8%
W Isles*	-	-	-	-	-
NoS	**57.0%**	**165**	**73.1%**	**160**	**+16.1%**

* Results not provided as based on 1-4 patients

Actions required: No specific actions were identified.

QPI 12: Chemotherapy in small cell lung cancer

QPI 12(i): Chemotherapy in small cell lung cancer: Patients with small cell lung cancer (SCLC) should receive chemotherapy.

Patients with SCLC should receive combination chemotherapy, dependent on fitness levels, as this has a proven survival benefit and provides palliation for symptoms caused by primary or metastatic tumour.

Numerator: Number of patients with SCLC who receive chemotherapy ± radiotherapy.

Denominator: All patients with SCLC.

Exclusions:

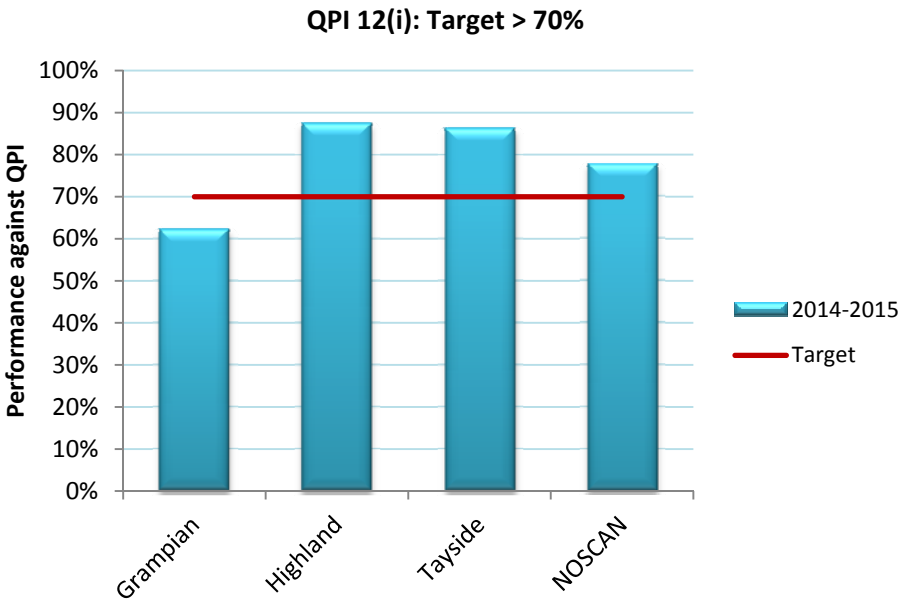
- Patients who refuse chemotherapy.
- Patients who die prior to treatment.
- Patients who are participating in clinical trials.

Target: 70%

QPI 12(i) Performance against target

90 out of the 116 patients diagnosed with SCLC in the North of Scotland in 2014-2015 had chemotherapy. At 77.6% this exceeds the target for this QPI. It is not possible to compare results with those of 2013-2014 for this QPI due to changes in the way that this QPI is calculated since this time.

All Boards in the North of Scotland met this QPI in 2014-2015 except for NHS Grampian.



	Performance (%)	Numerator	Denominator	Not recorded - Numerator	% not recorded - Numerator	Not recorded - Exclusions	% not recorded - Exclusions	Not recorded - Denominator
Grampian	**62.2%**	28	45	0	0%	0	0%	0
Highland	**87.5%**	21	24	0	0%	0	0%	0
Orkney	**-**	0	0	0	0%	0	0%	0
Shetland	**-**	0	0	0	0%	0	0%	0
Tayside	**86.4%**	38	44	0	0%	0	0%	2
W. Isles*	**-**	-	-	-	-	-	-	-
NoS	**77.6%**	**90**	**116**	0	0%	0	0%	2

* Results not provided as based on 1-4 patients

QPI 12(ii): Chemotherapy in small cell lung cancer: Patients with small cell lung cancer (SCLC) should receive chemotherapy.

Patients with SCLC should receive combination chemotherapy, dependent on fitness levels, as this has a proven survival benefit and provides palliation for symptoms caused by primary or metastatic tumour.

Numerator: Number of patients with SCLC not undergoing treatment with curative intent who receive palliative chemotherapy.

Denominator: All patients with SCLC not undergoing treatment with curative intent.

Exclusions:

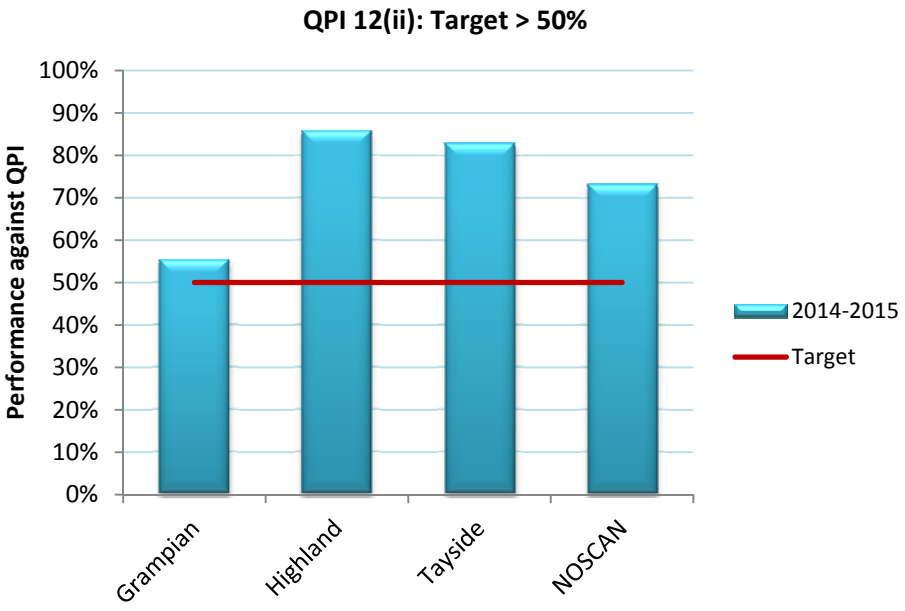
- Patients who refuse chemotherapy.
- Patients who die prior to treatment.
- Patients who are participating in clinical trials.

Target: 50%

QPI 12(ii) Performance against target

71 out of the 97 patients diagnosed with SCLC in the North of Scotland in 2014-2015 and not undergoing treatment with curative intent had palliative chemotherapy. At 73.2% this exceeds the target for this QPI of 50%. It is not possible to compare results with those of 2013-2014 for this QPI due to changes in the way that this QPI is calculated since this time.

All Boards in the North of Scotland met this QPI in 2014-2015.



	Performance (%)	Numerator	Denominator	Not recorded - Numerator	% not recorded - Numerator	Not recorded - Exclusions	% not recorded - Exclusions	Not recorded - Denominator
Grampian	**55.3%**	21	38	0	0%	0	0%	0
Highland	**85.7%**	18	21	0	0%	0	0%	0
Orkney	**-**	0	0	0	0%	0	0%	0
Shetland	**-**	0	0	0	0%	0	0%	0
Tayside	**82.9%**	29	35	0	0%	0	0%	2
W. Isles*	**-**	-	-	-	-	-	-	-
NoS	**73.2%**	**71**	**97**	0	0%	0	0%	2

* Results not provided as based on 1-4 patients

This QPI was met across the region with the exception of NHS Grampian, who did not meet specification (i).

Actions required:

- **NHS Grampian to review patients with SCLC who did not receive chemotherapy.**

QPI 13: 30 and 90 day mortality following treatment for lung cancer

QPI 13: 30 and 90 day mortality following treatment for lung cancer.

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

Specification (i)

Numerator: Number of patients with lung cancer who receive active treatment who die within 30 days of treatment.

Denominator: All patients with lung cancer who receive active treatment.

Exclusions: No Exclusions

Targets: <5% (Surgery, Radical Radiotherapy, Adjuvant Chemotherapy and Radical Chemoradiotherapy)

<10% (Palliative Chemotherapy/Biological Therapy)

QPI 13(i) Performance against target

Surgery

Out of the 55 patients diagnosed with lung cancer in 2014-2015 who underwent surgery, four died within 30 days of treatment. All four deaths were discussed in the cardio-thoracic surgical mortality and morbidity meeting. At a rate of 7.3% this does not meet the target for this QPI of less than 5% and is higher than for 2013-2014, when 30 day mortality was 0%.

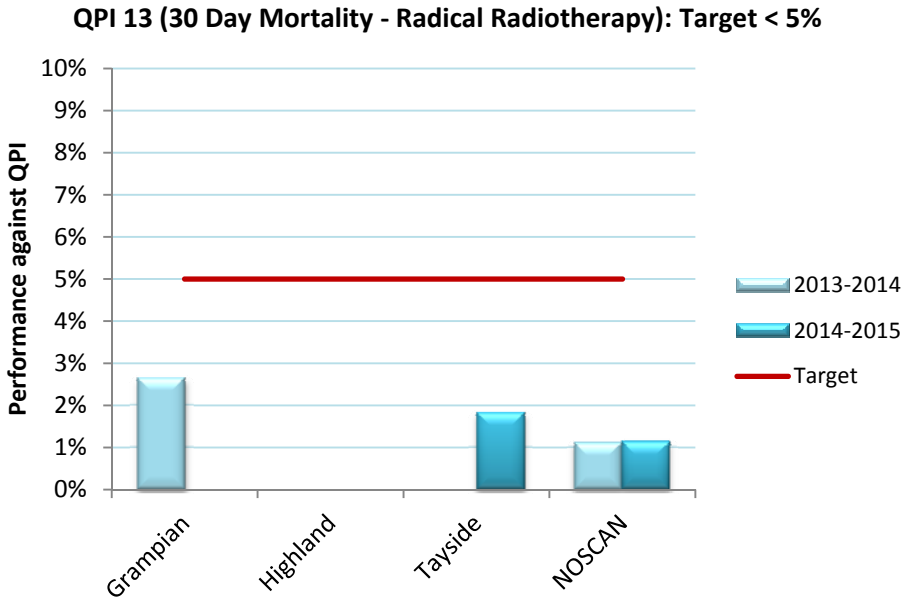
NHS Grampian is the only centre within the north of Scotland at which such surgery was undertaken in 2014-2015, as such it is not possible to compare results between Boards and data are not displayed graphically.

	Performance (%)	Numerator	Denominator	Not recorded - Numerator	% not recorded - Numerator	Not recorded - Exclusions	% not recorded - Exclusions	Not recorded - Denominator
Grampian	7.3%	4	55	0	0%	0	0%	0
Highland	-	0	0	0	0%	0	0%	0
Orkney	-	0	0	0	0%	0	0%	0
Shetland	-	0	0	0	0%	0	0%	0
Tayside	-	0	0	0	0%	0	0%	0
W. Isles	-	0	0	0	0%	0	0%	0
NoS	**7.3%**	**4**	**55**	**0**	**0%**	**0**	**0%**	**0**

Radical Radiotherapy

One of the 88 patients diagnosed with lung cancer in 2014-2015 who received radical radiotherapy died within 30 days of treatment. At a rate of 1.1% this is well within the target for this QPI of less than 5% and very similar to 2013-2014, when the rate also 1.1%.

The target was met across all NHS Boards in the North of Scotland.



	Performance (%)	Numerator	Denominator	Not recorded - Numerator	% not recorded - Numerator	Not recorded - Exclusions	% not recorded - Exclusions	Not recorded - Denominator
Grampian	0%	0	22	0	0%	0	0%	0
Highland	**0%**	0	9	0	0%	0	0%	0
Orkney	**-**	0	0	0	0%	0	0%	0
Shetland*	**-**	-	-	-	-	-	-	-
Tayside	**1.8%**	1	55	0	0%	0	0%	0
W. Isles	**-**	0	0	0	0%	0	0%	0
NoS	**1.1%**	**1**	**88**	**0**	**0%**	**0**	**0%**	**0**

* Results not provided as based on 1-4 patients

	2013-2014 Performance (%)	2013-2014 Denominator	2014-2015 Performance (%)	2014-2015 Denominator	Change in Performance
Grampian	2.6%	38	0%	22	-2.6%
Highland	0%	9	**0%**	9	0%
Orkney	-	0	**-**	0	-
Shetland*	-	-	**-**	-	-
Tayside	0%	42	**1.8%**	55	+1.8%
W Isles	-	0	**-**	0	-
NoS	**1.1%**	**90**	**1.1%**	**88**	0.0%

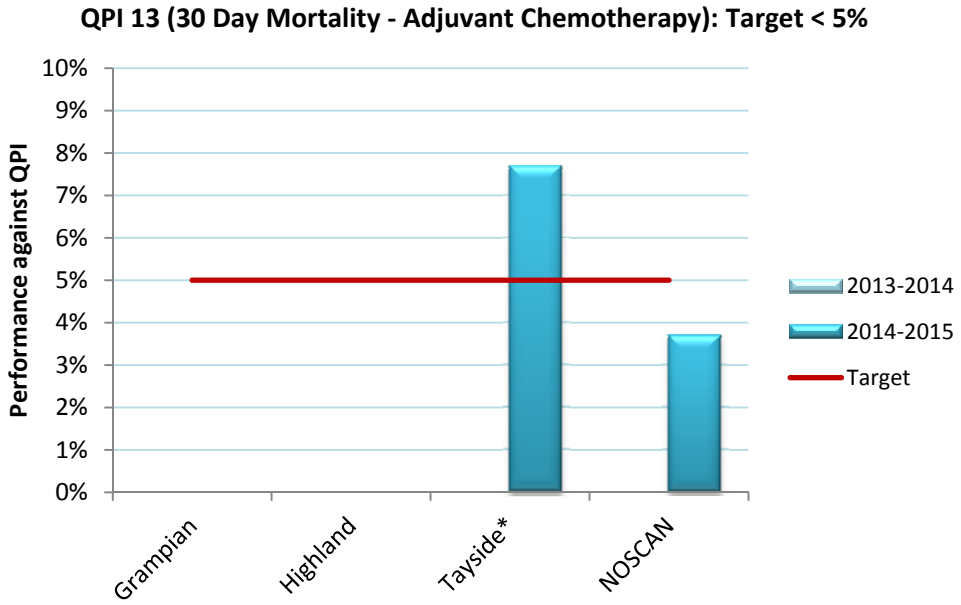
* Results not provided as based on 1-4 patients

Adjuvant Chemotherapy

Out of the 27 patients diagnosed with lung cancer in 2014-2015 who underwent adjuvant chemotherapy, one died within 30 days of treatment. At a rate of 3.7% this meets the target for this QPI of less than 5%, but is higher than in 2013-2014, when 30 day mortality was 0%.

It requires noted that the numbers of patients included within calculations for individual NHS Boards are very low and it is therefore difficult to compare results between Boards.

NHS Tayside did not meet the target for this QPI due to the death of one patient within 30 days of treatment.



	Performance (%)	Numerator	Denominator	Not recorded - Numerator	% not recorded - Numerator	Not recorded - Exclusions	% not recorded - Exclusions	Not recorded - Denominator
Grampian	0%	0	7	0	0%	0	0%	0
Highland	**0%**	0	6	0	0%	0	0%	0
Orkney	**-**	0	0	0	0%	0	0%	0
Shetland	**-**	0	0	0	0%	0	0%	0
Tayside	**7.7%**	1	13	0	0%	0	0%	0
W. Isles*	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
NoS	**3.7%**	**1**	**27**	**0**	**0%**	**0**	**0%**	**0**

* Results not provided as based on 1-4 patients

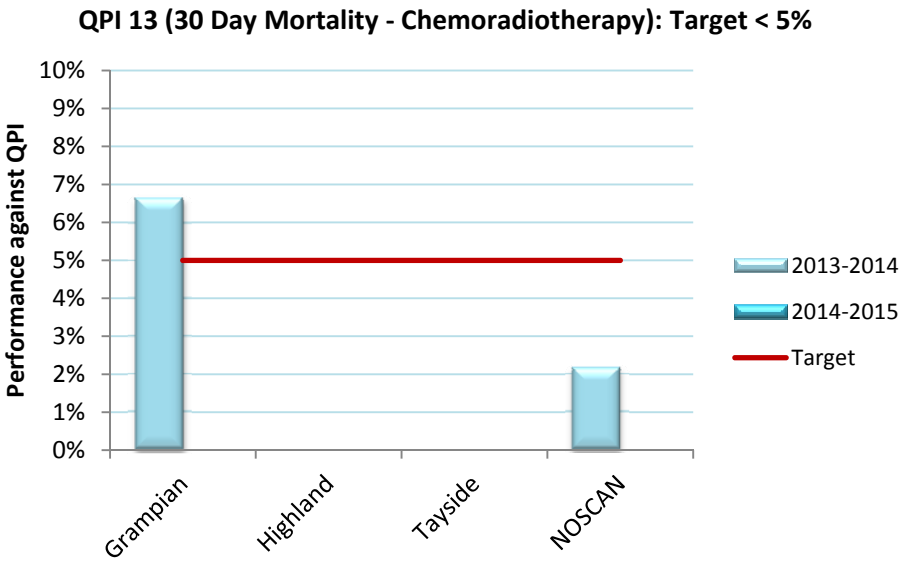
	2013-2014 Performance (%)	2013-2014 Denominator	2014-2015 Performance (%)	2014-2015 Denominator	Change in Performance
Grampian	0%	11	0%	7	0%
Highland	0%	7	**0%**	6	0%
Orkney	-	0	**-**	0	-
Shetland	-	0	**-**	0	-
Tayside*	-	-	**7.7%**	13	-
W Isles*	-	-	**-**	**-**	-
NoS	**0%**	**25**	**3.7%**	**27**	**+3.7%**

* Results not provided as based on 1-4 patients

Chemoradiotherapy

Out of the 47 patients diagnosed with lung cancer in 2014-2015 who underwent chemoradiotherapy, none died within 30 days of treatment. At a rate of 0% this meets the target for this QPI of less than 5% and is lower than the 2013-2014 figures, when 30 day mortality was 2.2%.

With 0% 30 day mortality following chemoradiotherapy treatment across all NHS Boards in the North of Scotland this QPI was met across the region.



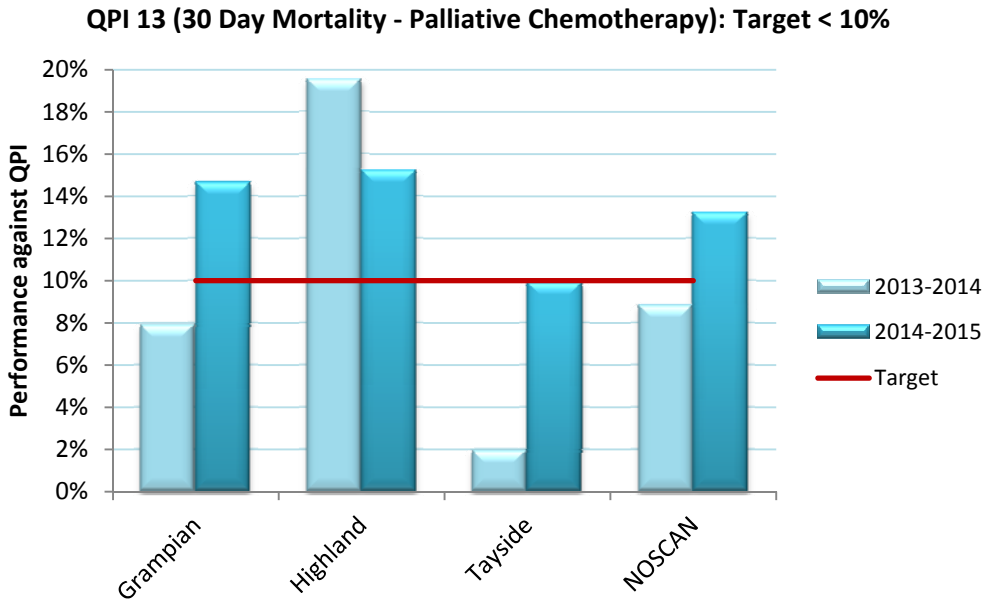
	Performance (%)	Numerator	Denominator	Not recorded - Numerator	% not recorded - Numerator	Not recorded - Exclusions	% not recorded - Exclusions	Not recorded - Denominator
Grampian	0%	0	15	0	0%	0	0%	0
Highland	**0%**	0	13	0	0%	0	0%	0
Orkney	**-**	0	0	0	0%	0	0%	0
Shetland	**-**	0	0	0	0%	0	0%	0
Tayside	**0%**	0	19	1	5.3%	0	0%	0
W. Isles	**-**	0	0	0	0%	0	0%	0
NoS	**0%**	**0**	**47**	**1**	**2.1%**	**0**	**0%**	**0**

	2013-2014 Performance (%)	2013-2014 Denominator	2014-2015 Performance (%)	2014-2015 Denominator	Change in Performance
Grampian	6.7%	15	0%	15	-6.7%
Highland	0%	14	**0%**	13	0%
Orkney	-	0	**-**	0	-
Shetland	-	0	**-**	0	-
Tayside	0%	17	**0%**	19	0%
W Isles	-	0	**-**	0	-
NoS	**2.2%**	**46**	**0%**	**47**	**-2.2%**

Palliative Chemotherapy

Out of the 227 patients diagnosed with lung cancer in 2014-2015 who underwent palliative chemotherapy, 30 patients died within 30 days of treatment. At a rate of 13.2% this does not meet the target for this QPI of less than 10% and is higher than in 2013-2014, when 30 day mortality was 8.8%.

Across the North of Scotland this QPI target was only met in NHS Tayside and NHS Orkney. Comparison of results between 2013-2014 and 2014-2015 shows increases in some NHS Boards and decreases in others, with no common trend.



	Performance (%)	Numerator	Denominator	Not recorded - Numerator	% not recorded - Numerator	Not recorded - Exclusions	% not recorded - Exclusions	Not recorded - Denominator
Grampian	14.6%	12	82	0	0%	0	0%	0
Highland	**15.2%**	7	46	0	0%	0	0%	0
Orkney*	-	-	-	-	-	-	-	-
Shetland*	-	-	-	-	-	-	-	-
Tayside	**9.9%**	9	91	0	0%	0	0%	0
W. Isles*	-	-	-	-	-	-	-	-
NoS	**13.2%**	**30**	**227**	**0**	**0%**	**0**	**0%**	**0**

* Results not provided as based on 1-4 patients

	2013-2014 Performance (%)	2013-2014 Denominator	2014-2015 Performance (%)	2014-2015 Denominator	Change in Performance
Grampian	7.9%	38	14.6%	82	+6.7%
Highland	19.5%	41	**15.2%**	46	-4.3%
Orkney*	-	0	**-**	**-**	-
Shetland*	-	-	**-**	**-**	-
Tayside	2.0%	51	**9.9%**	91	+7.9%
W Isles*	-	-	**-**	**-**	-
NoS	**8.8%**	**136**	**13.2%**	**227**	+4.4%

* Results not provided as based on 1-4 patients

It was considered that in trying to reduce the mortality for palliative chemotherapy there was the potential for under-treatment. As such it was considered that the target for this should perhaps be reconsidered.

Actions required:

- **MCN to highlight the possibility that the 10% target for QPI 13, palliative chemotherapy, may result in under-treatment of patients at the formal review of Lung Cancer QPIs.**

Biological therapy

One of the 13 patients diagnosed with lung cancer in 2014-2015 who were treated with biological therapy died within 30 days of treatment. At a rate of 7.7% this meets the target for this QPI of less than 10%. This is a slightly higher rate than 2013-2014, when 30 day mortality was 5.9%.

Biological therapy was only given to patients diagnosed in NHS Grampian and NHS Highland. NHS Grampian met the QPI target while NHS Highland did not. However it should be noted that the inability of NHS Highland to meet the QPI target in 2014-2015 was the results of the outcome of a single patient, due to the small numbers of patients included within this QPI. In 2013-2014, 30 day mortality for patients treated with biological therapy was 0% in NHS Highland.

Due to the restricted amount of data for this QPI, results are not presented graphically.

	Performance (%)	Numerator	Denominator	Not recorded - Numerator	% not recorded - Numerator	Not recorded - Exclusions	% not recorded - Exclusions	Not recorded - Denominator

Grampian	0%	0	9	0	0%	0	0%	0
Highland*	-	-	-	-	-	-	-	-
Orkney	-	0	0	0	0%	0	0%	0
Shetland	-	0	0	0	0%	0	0%	0
Tayside	-	0	0	0	0%	0	0%	0
W. Isles	-	0	0	0	0%	0	0%	0
NoS	**7.7%**	**1**	**13**	**0**	**0%**	**0**	**0%**	**0**

* Results not provided as based on 1-4 patients

	2013-2014 Performance (%)	2013-2014 Denominator	2014-2015 Performance (%)	2014-2015 Denominator	Change in Performance
Grampian	9.1%	11	0%	9	-1.9%
Highland*	0%	6	-	-	-
Orkney	-	0	-	0	-
Shetland	-	0	-	0	-
Tayside	-	0	-	0	-
W Isles	-	0	-	0	-
NoS	**5.9%**	**17**	**7.7%**	**13**	+1.8%

* Results not provided as based on 1-4 patients

QPI 13: 30 and 90 day mortality following treatment for lung cancer.

Specification (ii):

Numerator: Number of patients with lung cancer who receive treatment with curative intent (surgery, radical radiotherapy or chemoradiotherapy) who die within 90 days of treatment.

Denominator: All patients with lung cancer who receive treatment with curative intent (surgery, radical radiotherapy or chemoradiotherapy).

Exclusions: No Exclusions

Targets: <5%

QPI 13(ii) Performance against target

Surgery

Out of the 55 patients diagnosed with lung cancer in 2014-2015 who underwent surgery, four died within 90 days of treatment, identical to rates for 30 day mortality. At a rate of 7.3% this does not meet the target for this QPI of less than 5%. There are no comparable results for 2013-2014. All four deaths were discussed in the cardio-thoracic surgical mortality and morbidity meeting.

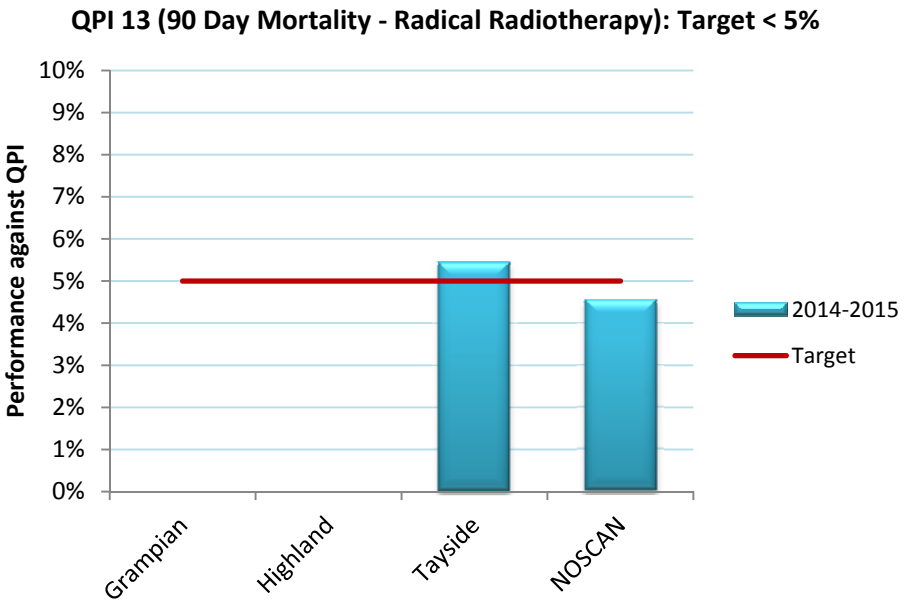
NHS Grampian is the only centre within the north of Scotland at which such surgery was undertaken in 2014-2015, as such it is not possible to compare results between Boards and data are not displayed graphically.

	Performance (%)	Numerator	Denominator	Not recorded - Numerator	% not recorded - Numerator	Not recorded - Exclusions	% not recorded - Exclusions	Not recorded - Denominator
Grampian	7.3%	4	55	0	0%	0	0%	0
Highland	-	0	0	0	0%	0	0%	0
Orkney	-	0	0	0	0%	0	0%	0
Shetland	-	0	0	0	0%	0	0%	0
Tayside	-	0	0	0	0%	0	0%	0
W. Isles	-	0	0	0	0%	0	0%	0
NoS	**7.3%**	**4**	**55**	**0**	**0%**	**0**	**0%**	**0**

Radical Radiotherapy

Four of the 88 patients diagnosed with lung cancer in 2014-2015 who received radical radiotherapy died within 90 days of treatment. At a rate of 4.6% this is within the target for this QPI of less than 5%. There are no comparable results for 2013-2014.

The target for this QPI was met by NHS Grampian and NHS Highland but not in NHS Tayside and NHS Shetland, although it should be noted that in NHS Shetland numbers of patients included within the QPI were very small and the Boards which did not meet the target were due to the outcome of a single patient.



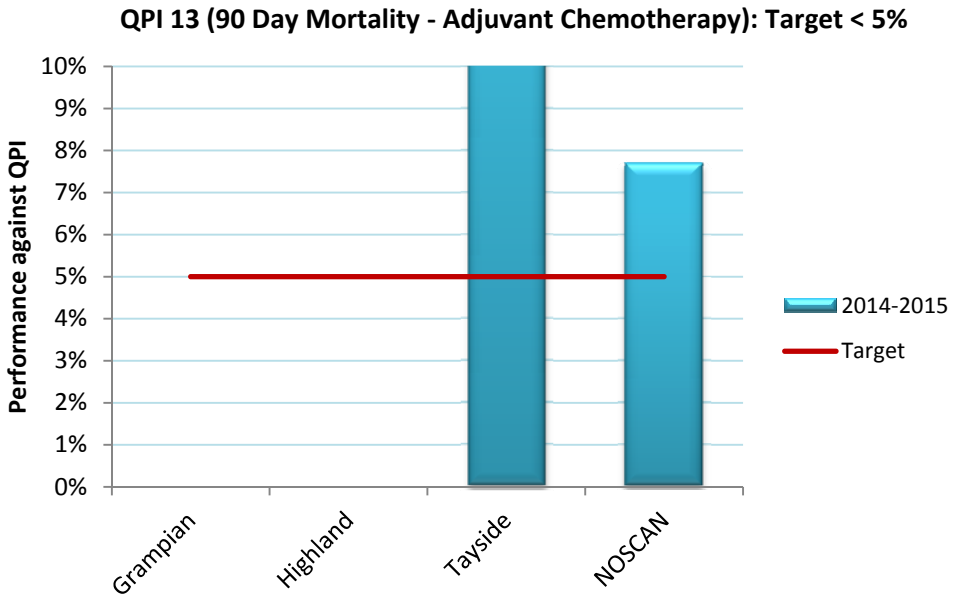
	Performance (%)	Numerator	Denominator	Not recorded - Numerator	% not recorded - Numerator	Not recorded - Exclusions	% not recorded - Exclusions	Not recorded - Denominator
Grampian	0%	0	22	0	0%	0	0%	0
Highland	**0%**	0	9	0	0%	0	0%	0
Orkney	**-**	0	0	0	0%	0	0%	0
Shetland*	**-**	-	-	-	-	-	-	-
Tayside	**5.5%**	3	55	0	0%	0	0%	0
W. Isles	**-**	0	0	0	0%	0	0%	0
NoS	**4.6%**	**4**	**88**	**0**	**0%**	**0**	**0%**	**0**

* Results not provided as based on 1-4 patients

Adjuvant Chemotherapy

Out of the 26 patients diagnosed with lung cancer in 2014-2015 who underwent adjuvant chemotherapy, two died within 90 days of treatment. At a rate of 7.7% this does not meet the target for this QPI of less than 5%. There are no comparable results for 2013-2014.

Please note than numbers of patients included within calculations for individual NHS Boards are very low and it is difficult to compare results between Boards. NHS Tayside did not meet the target for this QPI due to the death of two patients within 90 days of treatment.



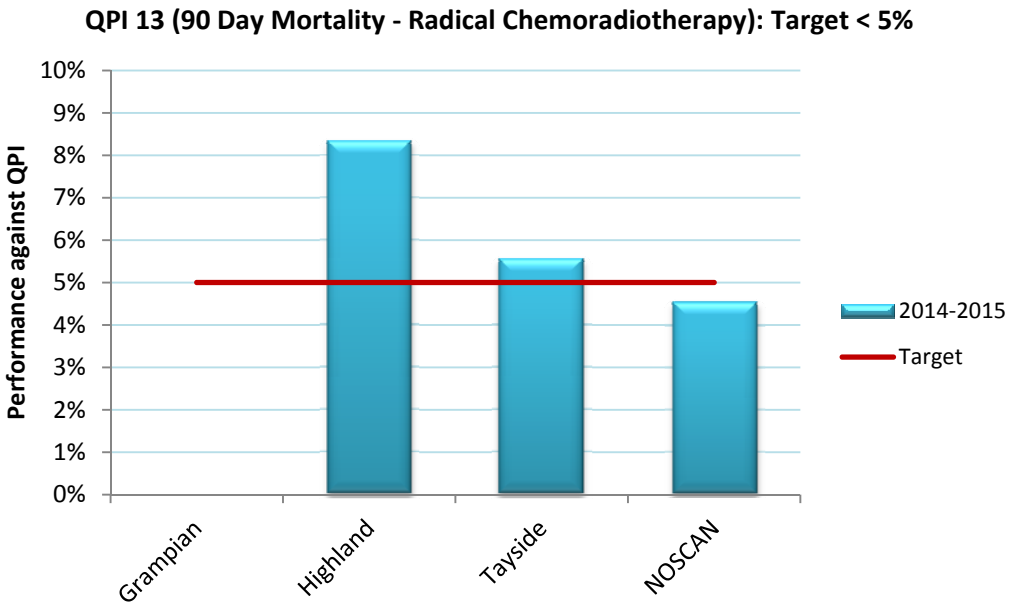
	Performance (%)	Numerator	Denominator	Not recorded - Numerator	% not recorded - Numerator	Not recorded - Exclusions	% not recorded - Exclusions	Not recorded - Denominator
Grampian	0%	0	7	0	0%	0	0%	0
Highland	**0%**	0	6	0	0%	0	0%	0
Orkney	-	0	0	0	0%	0	0%	0
Shetland	-	0	0	0	0%	0	0%	0
Tayside	**16.7%**	2	12	0	0%	0	0%	0
W. Isles*	-	-	-	-	-	-	-	-
NoS	**7.7%**	**2**	**26**	**0**	**0%**	**0**	**0%**	**0**

* Results not provided as based on 1-4 patients

Chemoradiotherapy

Out of the 44 patients diagnosed with lung cancer in 2014-2015 who underwent chemoradiotherapy, two died within 90 days of treatment. At a rate of 4.6% this meets the target for this QPI of less than 5%. There are no comparable results for 2013-2014.

At an NHS Board level this QPI target was not met in either NHS Tayside or NHS Highland, although it should be noted that due to the small numbers of patients measured in this QPI, the inability to meet the target was due to the outcomes of single patients in both cases.



	Performance (%)	Numerator	Denominator	Not recorded - Numerator	% not recorded - Numerator	Not recorded - Exclusions	% not recorded - Exclusions	Not recorded - Denominator
Grampian	0%	0	14	0	0%	0	0%	0
Highland	**8.3%**	1	12	0	0%	0	0%	0
Orkney	**-**	0	0	0	0%	0	0%	0
Shetland	**-**	0	0	0	0%	0	0%	0
Tayside	**5.6%**	1	18	0	0%	0	0%	0
W. Isles	**-**	0	0	0	0%	0	0%	0
NoS	**4.6%**	**2**	**44**	**0**	**0%**	**0**	**0%**	**0**

Clinical Trials Access QPI

The ability of patients to readily access a Clinical Trial is a common issue for all cancer types, and in order to further support recruitment through more active comparison and measurement of Board and network performance across the country, a generic QPI was developed as part of the National Programme of cancer quality improvement. Further details on the development and definition of this QPI can be found here.

The QPI is defined as follows.

Clinical Trials Access QPI

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

Numerator: Number of patients with lung cancer enrolled in an interventional clinical trial of translational research.

Denominator: All patients with lung cancer.

Exclusions: No Exclusions

Target: Interventional clinical trials – 7.5%

Translational research - 15%

Key points during the period audited:

- 1.1% of patients with lung cancer in the North of Scotland were recruited into interventional clinical trials in 2014 in one of the three cancer centres in the region; this is well below the required target of 7.5%.
- 2.7% of patients with lung cancer in the North of Scotland were recruited into translational research in 2014, well below the more challenging target which is set at 15%.

	Number of patients recruited	ISD Cases annual average (2009-2013)	Percentage of patients recruited
Interventional Clinical Trials	12	1067	**1.1%**
Translational Research	29	1067	**2.7%**

The QPI targets for clinical trials are 7.5% for interventional trials and for translational trials are 15%. It should be noted that these targets are ambitious, particularly with the move towards more targeted trials.

All cancer patients who pass through each of the three cancer centres in NOSCAN are considered for potential participation in the open trials currently available. However, as with other cancer specific studies, consequent to the demise of larger general trials and the advent of genetically selective trials that only target small populations of patients, many of the lung cancer trials that are currently open to recruitment in the NoS have very select eligibility criteria. Consequently they will only be available to a small percentage of the total number of people who were diagnosed with lung cancer.

During 2014 in NOSCAN, there were 4 interventional trials and 3 translational trials open and recruiting patients[1], thereby offering patients with a lung cancer diagnosis the opportunity to participate in a range of different lung cancer tumour types and levels of treatment investigation. Furthermore, all the lung cancer patients passing through the cancer centres in NOSCAN will have been assessed for eligibility for clinical trials: further enquiry indicates that of patients diagnosed with lung cancer in the NoS during 2014, 36 (3.4%) patients were screened for interventional trials and 25 (2.3%) were screened for translational trials during the reporting period

Due to the increasing complexity of trials and time burden needed to run them effectively, and a lack of clinical and research support to run such further trials, it is not currently possible to open a greater number (and thereby to have a greater scope) of available trials in the NoS. Constraints imposed by the commercial trial sponsors also limit the number of trials it is possible to open in smaller cancer centres such as those in the NOSCAN region. However a large number of feasibility requests for trials are continually being reviewed by all consultants and if an expression of interest is submitted, the chances that the site will be selected for running the trial are high.

[1] These are listed in the Appendix

5 Conclusions

The Quality Performance Indicators programme was developed to drive continuous improvement and ensure equity of care for cancer patients across Scotland. As part of this the North of Scotland has implemented a programme of annual reporting of regional performance against QPIs. This is the first regional Lung Cancer QPI comparative performance report to be published by NOSCAN and will help to provide a clearer indication of performance and a more formal structure for enabling improvements to be made.

Results for patients diagnosed in 2014-2015 are compared with results from 2013-2014, the first year of QPI reporting[7]. However, it should be noted that we would not expect to see the effects of changes based on the results of the 2013-2014 analysis at this time; these will only start affecting patients diagnosed in 2015 and will not have been implemented for the full cohort of patients until 2016-2017. However, results may reflect improvements in QPI definitions, data collection and improvements in service delivery made during 2014 and 2015.

Overall, results from the second year of Lung Cancer QPI reporting are encouraging: case ascertainment and data capture is of a high standard overall. The audit report indicated that over the North of Scotland, QPI targets were met for 8 of the 13 tumour specific QPIs and was not met for the Clinical Trials QPI.

The main challenge for NOSCAN appears to be in the surgical resection rate, which in 2013-2014 were 15.5%, below the target rate of 17%. Throughout the UK the surgical resection rate on average is sitting around 15%, with some centres achieving up to 25 % (British Thoracic Oncology Group, Dublin 2016). Therefore, the more relevant issue is the discrepancy between NOSCAN and the resection rates that are reported for the other regions in Scotland.

A number of actions have been identified in this report to address this issue, including cooperation with other regional cancer networks in Scotland to identify the causes for these discrepancies, which the MCN considers paramount. Furthermore there is scope for improved managerial input in relation to the Surgical Referral Activities, particularly in ensuring that there are adequate video-conferencing facilities available to enable the multi-Board MDTs in the North of Scotland to function properly.

More generically, adequate staffing levels are paramount to providing and improving the quality of lung cancer services in the north of Scotland: understaffing in Chest Medicine, Radiology, Oncology, Radiotherapy, Lung Cancer Support Nurses and Pathology have been long standing and are responsible for constrains to the service.

The cancer centres in the North of Scotland are smaller than those in the west and east of Scotland, which brings certain challenges. While NOSCAN has performed well in many areas, the MCN also recognises that there is room for improvement. Addressing external pressures and internal constraints is paramount to ensuring quality lung cancer services in the region.

Actions identified that will improve lung cancer services in the North of Scotland are as follows:

- All NHS Boards to look at patients not referred to the lung MDT to ascertain whether another MDT speciality has dealt with these patients or whether they have not been brought to the attention of any of the MDT specialities.

- All NHS Boards to ensure that management teams communicate with all relevant services (e.g. general practitioners, palliative care providers, neurology) to ensure that they are aware of the necessity of referring all patients diagnosed with lung cancer to the Lung MDT.

- All NHS Board to ensure more sampling of PET-positive mediastinal lymph nodes, especially in non-surgical patients who being treated with radical intent.

- All NHS Boards to review treatment of non surgical patients treated with radical intent.

- All NHS Boards to review treatment of all patients referred to surgical teams who did not go on to have surgical resection.

- All lung MDTs to review the way in which treatment decisions are made: a visit by members of NoS Lung cancer team(s) to observe an equivalent Lung cancer MDT in the west of Scotland is currently being planned.

- MCN to progress analysis to look at the performance status and stage of patients undergoing resection compared with those receiving other radical treatment and work with colleagues nationally to compare results with those from other regions, including comparison of the numbers of patients included within the denominator for QPI 6.

- All NHS Boards to ensure that there are appropriate video-conferencing facilities to support the functioning of MDT meetings across multiple sites.

- NHS Grampian to consider undertaking more extensive lymph node dissection in surgical patients.

- MCN to compare results for QPI 7, Lymph Node Assessment, QPI 8, radiotherapy in inoperable lung cancer, and QPI 9, chemoradiotherapy in locally advanced NSCLC, with those from other networks and reflect on the relationship between results for QPIs 8 and 9 those from QPI 6, surgical resection rates.

- NHS Grampian to review patients with SCLC who did not receive chemotherapy.

The first years of reporting against the Lung Cancer QPIs have been a learning process during which both the QPIs themselves and the way in which data is collected to report them have been refined and developed. Consequently there will be a formal review of the Lung Cancer QPIs following this third year of QPI reporting, some further actions have been identified to feed into this process.

- MCN to suggest adding mediastinoscopy results into QPI 7 at formal review.

- MCN to highlight the possibility that the 10% target for QPI 13, palliative chemotherapy, may result in under-treatment of patients at the formal review of Lung Cancer QPIs.

The MCN will actively take forward regional actions identified and NHS Boards are asked to develop local Action / Improvement Plans in response to the findings presented in the report. A blank action plan template can be found in the Appendix.

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

Progress against these plans will be monitored by the MCN Advisory Board and any service or clinical issue which the Advisory Board considers not to have been adequately addressed will be escalated to the NHS Board Lead Cancer Clinician and Regional Lead Cancer Clinician.

Additionally, progress will be reported to the Regional Cancer Advisory Forum (RCAF) annually by the NOSCAN Lead Cancer Clinician, as part of the regional audit governance process to enable RCAF to review and monitor regional improvement.

6 References

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

2. NHS MEL (1999)10. Introduction of Manager Clinical Networks within the NHS in Scotland http://www.show.scot.nhs.uk/sehd/mels/1999_10.htm

3. HDL(2002)69. Promoting the development of Managed Clinical Networks in NHSScotland. http://www.show.scot.nhs.uk/sehd/mels/HDL2002_69.pdf

4. HDL (2007)21. Strengthening the role of Manager Clinical Networks. http://www.show.scot.nhs.uk/sehd/mels/HDL2007_21.pdf

5. CEL 29 (2012). Managed Clinical Networks: Supporting and Delivering the Healthcare Quality Strategy. http://www.sehd.scot.nhs.uk/mels/CEL2012_29.pdf

6. Scottish Cancer Taskforce, 2015. Lung Cancer Clinical Performance Indicators, Version 2.1. Health Improvement Scotland. Available at http://www.healthcareimprovementscotland.org/our_work/cancer_care_improvement/programme_resources/cancer_qpis.aspx

7. NHS Information Services Division. 2015. Lung Cancer Quality Performance Indicators: Patients diagnosed during April 2014 – March 2015. http://www.isdscotland.org/Health-Topics/Quality-Indicators/Publications/2015-05-19/2015-05-19-Lung-QPI-Report.pdf

8. ScotPHO, Public Health Information for Scotland. Population: estimates by NHS Board [Accessed on: 21st September 2015] Available at: http://www.scotpho.org.uk/population-dynamics/population-estimates-and-projections/data/nhs-board-population-estimates

9. Information Services Division. Cancer in Scotland, 2015. Available at: http://www.isdscotland.org/Health-Topics/Cancer/Publications/2015-04-28/Cancer_in_Scotland_summary_m.pdf

10. Information Services Division. Cancer Statistics Lung Cancer. [Accessed on: 21st September 2015]. Available at: http://www.isdscotland.org/Health-Topics/Cancer/Cancer-Statistics/Lung-Cancer-and-Mesothelioma/

11. ISD, NHS National Services Scotland. Cancer Survival in Scotland, 1987-2011. March 2015. Available at: https://isdscotland.scot.nhs.uk/Health-Topics/Cancer/Publications/2015-03-03/2015-03-03-CancerSurvival-Report.pdf

Appendix 1: Clinical trials into which lung cancer patients in the North of Scotland were recruited in 2014.

Trial	Principle Investigator	Trial Type
NCRN552 - oral LDK378 versus standard chemotherapy in ALK-rearranged (ALK-positive) NSCLC	Marianne Nicolson (Grampian)	Interventional
MK-3475 KEYNOTE 024	Marianne Nicolson (Grampian)	Interventional
STOMP	Marianne Nicolson (Grampian)	Interventional
SELECT 1	Marianne Nicolson (Grampian)	Interventional
Bio-repository (lung)	(Grampian)	Translational
SPUtNik	Lesley Gomersall (Grampian)	Translational
TRACERx	Marianne Nicolson (Grampian)	Translational

Appendix 2: Blank Board Action Plan template

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

NOSCAN
North of Scotland Cancer Network

Action Plan: Lung Cancer

Board:	
Action Plan Lead:	
Date:	

Status key	
1	**Action Fully Implemented**
2	**Action agreed but not yet implemented**
3	**No action taken (please state reason)**

QPI	Action Required	NHS Board Action Taken	Date		Lead	Progress	Status
			Start	End			
	Ensure actions mirror those detailed in Audit Report	*Detail specific actions that will be taken by the NHS Board*	*Insert date*	*Insert date*	*Insert name of responsible lead for each action.*	*Detail actions in progress, changes in practice, problems encountered of reasons why no action has been taken.*	*Insert no. from key*