NOSCAN
North of Scotland Cancer Network

NHS SCOTLAND

NORTH OF SCOTLAND PLANNING GROUP

Urological Cancer Managed Clinical Network

Audit Report

Testicular Cancer
Quality Performance Indicators

Patients diagnosed October 2014 – September 2015

Published: May 2016

Dr Graham Macdonald
NOSCAN MCN Clinical Lead for Testicular Cancer

Christine Urquhart
NOSCAN Cancer Audit & Information Manager

Derick MacRae
MCN Manager

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.

www.noscan.scot.nhs.uk

EXECUTIVE SUMMARY

This publication reports the performance of cancer services in the six NHS Boards in the North of Scotland (NoS) for patients diagnosed with testicular cancer between October 2014 and September 2015. The quality of Board and regional performance are measured and reported against a set of nationally agreed standards (the Testicular Cancer Quality Performance Indicators, or 'QPIs') that were clinically identified and thereafter service implemented across Scotland.

2014-2015 is the first year in which testicular cancer QPI data have been collected in Scotland, during which time in the North of Scotland:

- 32 patients diagnosed with testicular cancer were audited.
- Overall case ascertainment was fairly low at 66%, although this is thought to be due to lower than average numbers of patients being diagnosed during the period of audit, rather than patients not being captured by audit.
- The results reported were considered to be representative of testicular cancer services in the region.

Summary of QPI Results

QPI	QPI Target	Performance[b]		
		Grampian	Tayside	NOSCAN
QPI 1: Radiological Staging - Proportion of patients with testicular cancer who undergo CT scanning, ideally contrast-enhanced CT, of the chest, abdomen and pelvis within 3 weeks of orchidectomy.	95%	100% n=11	79% n=14	90% n=29
QPI 2: Pre-operative Assessment - Proportion of patients with testicular cancer who undergo preoperative assessment of the testicle which, at a minimum, includes: (i) STMs, and (ii) testicular ultrasound.	95%	100% n=11	93% n=14	97% n=29
QPI 3: Primary Orchidectomy - Proportion of patients with testicular cancer who undergo primary orchidectomy within 2 weeks of ultrasonographic diagnosis.*	95%	36% n=11	57% n=14	52% n=29
QPI 4: Multi-Disciplinary Team Meeting - Proportion of patients with testicular cancer who are discussed at a MDT meeting to agree a definitive management plan post orchidectomy.	95%	100% n=11	100% n=14	100% n=29
QPI 5: Pathology Reporting - Proportion of patients with testicular cancer undergoing orchidectomy where the pathology report contains tumour type and size, vascular invasion and rete stromal invasion.	90%	100% n=11	93% n=14	97% n=29

QPI 6: Adjuvant Treatment of Stage 1 Seminoma with Carboplatin - Proportion of patients with stage I seminoma receiving adjuvant single dose carboplatin AUC of 7mg/ml/min (AUC7), based on EDTA clearance, within 8 weeks of orchidectomy.	95%	80% n=5	100% n=5	90% n=10
QPI 7: Serum Tumour Markers - Proportion of patients with metastatic testicular cancer who undergo STMs 2 weeks before starting chemotherapy.	98%	Too few patients to report		
QPI 8: Systemic Therapy - Proportion of patients with metastatic testicular cancer who undergo SACT within 3 weeks of a MDT decision to treat with SACT.	95%	Too few patients to report		
QPI 9: Computed Tomography Scanning for Surveillance Patients - Proportion of patients with stage I testicular NSGCT (or mixed) under surveillance who undergo at least three CT scans of the abdomen +/- chest and pelvis within 14 months of diagnosis.	85%	To be reported with year 2 data		
QPI 10: 30 Day Mortality - Proportion of patients with testicular cancer who die within 30 days of treatment for testicular cancer.				
(a) Orchidectomy*	<5%	0% n=11	0% n=14	0% n=29
(b) Radiotherapy	<5%	Too few patients to report		
(c) Chemotherapy	<5%	0% n=7	0% n=12	0% n=22
Clinical Trials Access - Proportion of patients with colorectal cancer who are enrolled in an interventional clinical trial or translational research.				
Interventional clinical trials	7.5%	4% n=48		
Translational research	15%	38% n=48		

Performance shaded pink where QPI target has not been met by NOSCAN.
[b] Excluding Boards with less than 5 patients.
* Results are analysed by Hospital of Diagnosis with the exception of QPIs 3 & 11(a), which are presented by 'Board of Surgery'.

Within NOSCAN six out of 10 QPIs reported were achieved during this audit cycle. QPI 9 is reported one year in arrears; as such results are not yet available.

QPIs 2, 4, 5, 7, 8 and 10: The targets for these QPIs were met in NOSCAN and no systemic failure in the process was noted. However, the incidence of testis cancer during this first year of data collection was substantially lower than in previous years, and the system may not have been as 'stressed' as usual. The data from years 2 and 3 should help to clarify any systemic problems.

QPIs 1, 3 and 6: The targets for these 3 QPIs were not reached and the underlying assessment of the reasons for this are explored later in the document.

For QPI1, radiological staging, the issues surrounding CT access on a timely basis had already been identified in NHS Tayside prior to the QPI data being made available, and a process for expediting these CT staging scans has been put in place.

For QPI3, primary orchidectomy, it was noted that there is a need to improve the workflow for these patients. A new system of work is being trialled by the urologists in Grampian to ensure better access to orchidectomy.

Generic Clinical Trials access QPI: The target for translational research was met in NOSCAN, but not that for interventional trials. This reflects the lack of NCRI badged trials in testis cancer that are open at present.

In light of the actions already underway to address issues raised by QPIs 1 and 3, no further actions are identified in this report. Action may be required following analysis of year 2 and 3 data, when the system may be more 'stressed' due to higher numbers of patients.

Action may be required by NHS Grampian in future to allow a process of relaxation of the 6/4/2 theatre list system if QPI3 is not met in years 2 and 3 despite the new changes introduced.

Contents

1. Introduction

In 2010, the Scottish Cancer Taskforce established the 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 Testicular 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].

This report assesses the performance of specialist cancer services for patients diagnosed with testicular cancer in the North of Scotland Cancer Network during the twelve months from 1st October 2014 to 30th September 2015.

Using clinical audit data, which has been collected at individual Board level for all patients diagnosed with testicular cancer during the period indicated, performance is reported against the Testicular Cancer Quality Performance Indicators (QPIs)[6] which were implemented for patients diagnosed on or after 1st October 2014. Results are reported both by Board, and collectively as a network, with supporting narrative to enhance understanding of performance outcomes.

2. Background

Six NHS Boards across the North of Scotland serve the 1.39 million population[7]. There were 32 patients diagnosed with testicular cancer in the North of Scotland between 1st October 2014 and 30th September 2015. The configuration of the Multidisciplinary Teams (MDTs) in the North of Scotland for the management of urological cancer, which includes testicular cancer, is set out below.

MDT	Constituent Hospitals
Grampian	Aberdeen Royal Infirmary, Balfour Hospital, Kirkwall, Gilbert Bain Hospital, Lerwick
Highland	Raigmore Hospital, Inverness
Tayside	Ninewells Hospital, Dundee

2.1 National Context

Latest available cancer registration figures indicate that with 185 cases recorded in Scotland during 2013, testicular cancer is one of the less common types of cancer in men, with incidence rates changing little over the past 10 years[8].

Relative survival from testicular cancer is higher than for any other tumour types in men. Survival from testicular cancer has increased considerably since 1987-1991, due to the substantial advances in treatment of this disease during this time[9]. The table below details

the percentage change in 1 and 5 year relative survival for patients diagnosed 1987-1991 to 2007-2011.

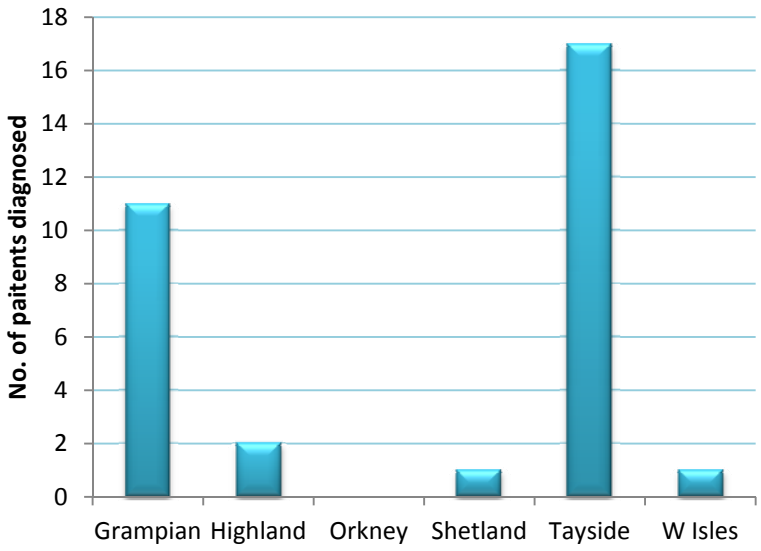
Relative age-standardised survival for testicular cancer in Scotland at 1 year and 5 years showing percentage change from 1987-1991 to 2007-2011[9].

Relative survival at 1 year (%)		Relative survival at 5 years (%)	
2007-2011	% change	2007-2011	% change
97.6%	+ 8.3%	93.4%	+ 11.9%

2.2 North of Scotland Context

Between 1st October 2014 and 30th September 2015, a total of 32 cases of testicular cancer were diagnosed in the North of Scotland and recorded through audit. The number of patients diagnosed within each Board is presented below.

	Grampian	Highland	Orkney	Shetland	Tayside	W Isles	NoS
Number of Patients	**11**	**2**	**0**	**1**	**17**	**1**	**32**
% of NoS total	**34.4%**	**6.3%**	**0%**	**3.1%**	**53.1%**	**3.1%**	**100%**



Number of patients diagnosed with testicular cancer by Board of diagnosis, October 2014 – September 2015.

3. Methodology

The clinical audit data presented in this report was collected 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 October 2014 and 30th September 2015 were locally collated by cancer audit staff within individual NHS Boards. These data 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 (i.e. time taken from first cancer diagnosis until the point at which all information required to measure the QPIs is available) and thereby 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

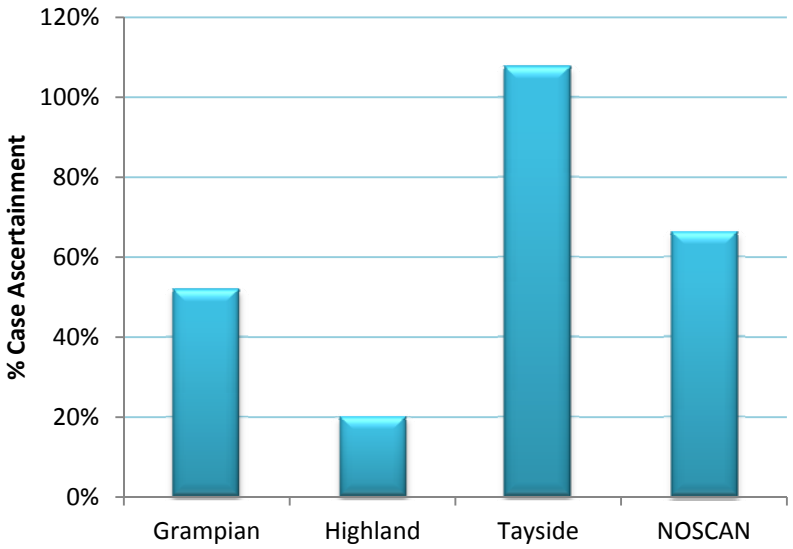
Audit data completeness can be assessed from case ascertainment, which is the proportion of expected patients that have been identified through audit within the time period measured. Case ascertainment is calculated by comparing the number of new cases identified by the cancer audit with a five year average of the total numbers having a similar diagnosis, as recorded by the National Cancer Registry (provided by Information Services Division (ISD)), for a particular NHS Board of diagnosis.

Cancer Registry figures were extracted from ACaDMe (Acute Cancer Deaths and Mental Health), a system provided by ISD. Due to timescale of data collection and verification processes, National Cancer Registry data are not available for 2015. Consequently an average of the previous five years' figures (i.e. 2010 to 2014) is used to take account of annual fluctuations in incidence within NHS Boards. It should be noted that case ascertainment figures are provided for guidance only, as it is not possible to compare the same cohort of patients they are not an exact measurement of audit completeness.

Overall case ascertainment for the period reported in the NoS is low at 66.1%. A comparison of the clinician's dataset and the audit dataset for Grampian patients shows that the audit data were complete in North East Scotland, with only 11 patients being diagnosed with testicular germ cell tumour in the audit year. Low levels of case ascertainment therefore reflect lower than usual numbers of patients being diagnosed in 2014-2015 rather than issues with patients being captured by audit. Within the first six months of year 2, the number of patients with testicular cancer for North East Scotland exceeded the year 1 incidence.

The rarity of testis cancer and the small size of the Boards within NOSCAN will inevitably result in peaks and troughs in incidence and care must be taken not to over-interpret a single year of audit data.

Case ascertainment for each Board across the North of Scotland is illustrated in the Figure below.



Case ascertainment by NHS Board for patients diagnosed with testicular cancer in 2014-2015.

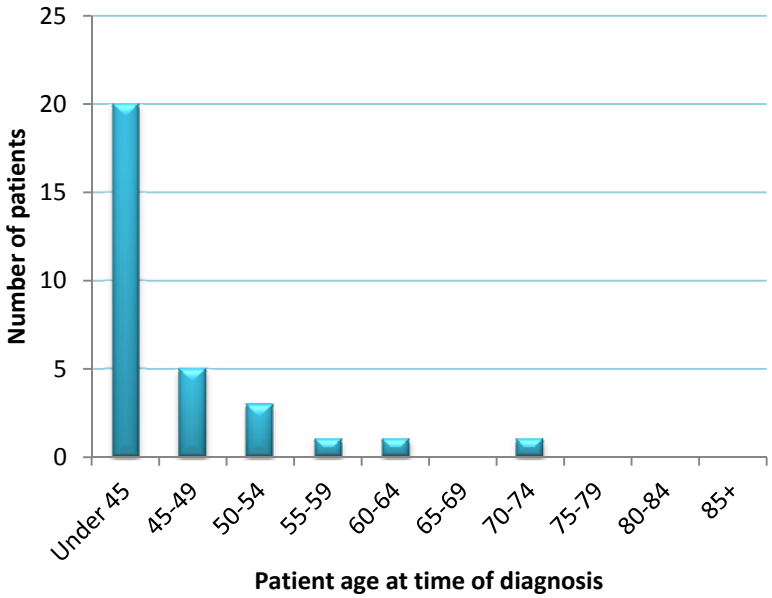
	Grampian	Highland	Orkney*	Shetland*	Tayside	W Isles*	NoS
Cases from audit	11	2	-	-	17	-	**32**
ISD Cases (2010-2014)	21.2	10.0	-	-	15.8	-	**48.4**
% Case ascertainment	51.9%	20.0%	-	-	107.6%	-	**66.1%**

Although case ascertainment was lower than usual due to low numbers of patients being diagnosed in the 2014-2015, QPI calculations based on data captured are considered to be representative of all patients diagnosed with testicular cancer during the audit period.

For patients included within the audit, data collection was very good, with only stage grouping data missing for very small numbers of patients in NHS Tayside.

4.2 Age Distribution

The graph below shows the age distribution of patients diagnosed with testicular cancer in the North of Scotland in 2014-2015.



Age distribution of patients diagnosed with testicular cancer in NOSCAN 2014-2015.

Age	Grampian	Orkney	Shetland	Highland	Tayside	W Isles	NOSCAN
Under 45	8	1	0	1	10	1	**20**
45-49	1	1	0	0	3	0	**5**
50-54	2	0	0	0	1	0	**3**
55-59	0	0	0	0	1	0	**1**
60-64	0	0	0	0	1	0	**1**
65-69	0	0	0	0	0	0	**0**
70-74	0	0	0	0	1	0	**1**
75-79	0	0	0	0	0	0	**0**
80-84	0	0	0	0	0	0	**0**
85+	0	0	0	0	0	0	**0**
Total	**11**	**2**	**0**	**1**	**17**	**1**	**32**

4.3 Performance against Quality Performance Indicators (QPIs)

Results of the analysis of Testicular Cancer Quality Performance Indicators are set out in the following sections. Graphs and charts have been provided where this aids interpretation and, where appropriate, numbers have also been included to provide context.

Data for most QPIs are presented by Board of diagnosis, however surgical QPIs (QPIs 3 and 10) are presented by Hospital of Surgery. Where performance is shown to fall below the target, commentary is often included to provide context to the variation. Specific regional and NHS Board actions have been identified to address issues highlighted through the data analysis where appropriate.

QPI 1: Radiological Staging

QPI 1: Radiological Staging: Patients with testicular cancer should be evaluated with appropriate imaging to detect the extent of disease and guide treatment decision making.

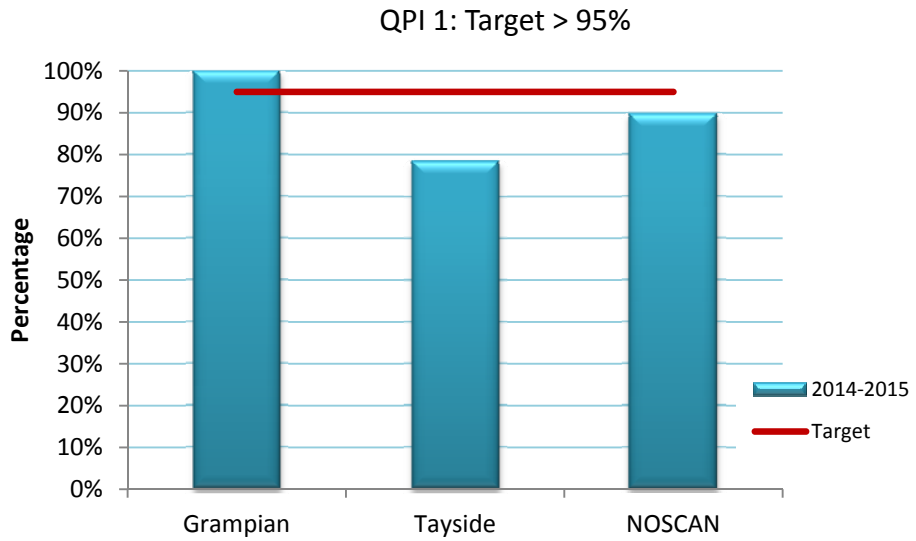
Timely imaging is important to ensure treatment decision making can occur as soon as possible. Unnecessary delays can have an impact on prognostic groups and hence survival rates. CT scanning is an essential part of the staging of all germ cell tumours.

Numerator:	Number of patients with testicular cancer undergoing CT scanning of the chest, abdomen and pelvis within 3 weeks of orchidectomy.
Denominator:	All patients with testicular cancer undergoing orchidectomy.
Exclusions:	Patients undergoing chemotherapy prior to orchidectomy.
Target:	95%

QPI 1 Performance against target

Of the 29 patients diagnosed with testicular cancer in North of Scotland in 2014-2015 undergoing orchidectomy, 26 had a CT scan of the chest, abdomen and pelvis within 3 weeks of orchidectomy. This equates to a rate of 89.7%, which is does not the target rate of 95%.

This QPI was met by four of the five Boards with patients diagnosed with testicular cancer. NHS Tayside was the only NHS Board that did not meet the target.



	Performance (%)	Numerator	Denominator	Not recorded - Numerator	% not recorded - Numerator	Not recorded - Exclusions	% not recorded - Exclusions	Not recorded - Denominator
Grampian	**100%**	11	11	0	0%	0	0%	0
Highland*	**-**	-	-	-	-	-	-	-
Shetland*	**-**	-	-	-	-	-	-	-
Tayside	**78.6%**	11	14	0	0%	0	0%	0
W Isles*	**-**	-	-	-	-	-	-	-
NoS	**89.7%**	**26**	**29**	**0**	**0%**	**0**	**0%**	**0**

On discussion with the lead oncologist for testis cancer in Dundee, the issues surrounding CT access on a timely basis had already been identified in NHS Tayside prior to the QPI data being made available. A process for expediting these CT staging scans has been put in place, with early e-mail contact with the GU Radiologists to alert them to the patient to allow prioritisation of the scan.

Actions Required:

No new actions required at present. The need for further action will be considered following reporting of year 2 data.

QPI 2: Pre-operative Assessment

QPI2: Pre-operative Assessment: Patients with testicular cancer should have pre-operative assessment of the testicle and Serum Tumour Markers (STMs).

In most instances, the diagnosis of testicular tumours is established with a carefully performed physical examination and scrotal ultrasound.

When conducting pre-operative assessments, evidence has demonstrated the importance of investigating STM concentrations and conducting a testicular ultrasound.

Numerator: Number of patients with testicular cancer undergoing orchidectomy, who undergo a preoperative assessment of the testicle which, at a minimum, includes: (i) STMs (ii) testicular ultrasound.

Denominator: All patients with testicular cancer undergoing orchidectomy.

Exclusions:

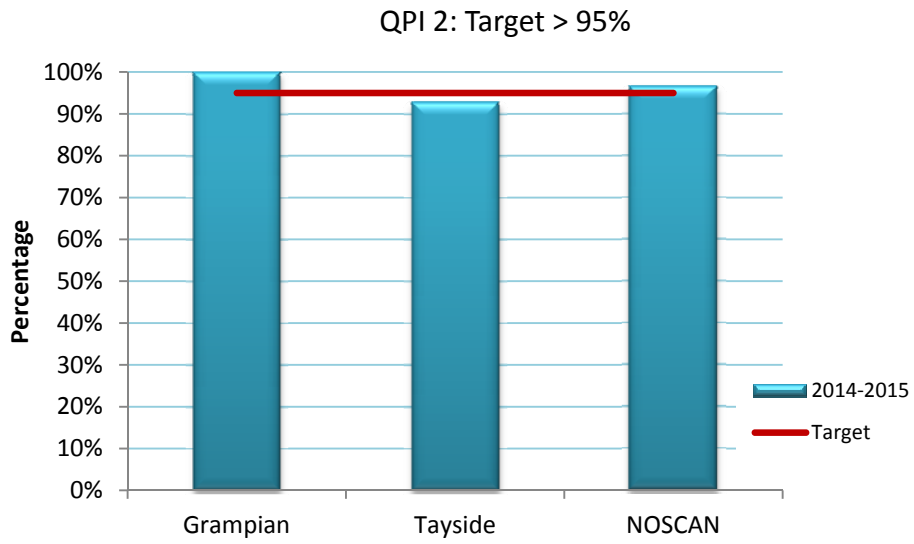
- Patients who refuse to undergo assessment.
- Patients undergoing chemotherapy prior to orchidectomy.

Target: 95%

QPI 2 Performance against target

Across the North of Scotland, 28 of the patients included within the QPI (96.6%) had a preoperative assessment of the testicle which included STMs and testicular ultrasound, meeting the target rate of 95%.

This QPI was met by four of the five NHS Boards with patients diagnosed with testicular cancer. NHS Tayside was the only NHS Board that did not meet the target, however it should be noted that due to the small numbers of patients involved NHS Tayside missed this target due to a single patient not meeting the QPI requirements.



	Performance (%)	Numerator	Denominator	Not recorded - Numerator	% not recorded - Numerator	Not recorded - Exclusions	% not recorded - Exclusions	Not recorded - Denominator
Grampian	**100%**	11	11	0	0%	0	0%	0
Highland*	**-**	-	-	-	-	-	-	-
Shetland*	**-**	-	-	-	-	-	-	-
Tayside	**92.9%**	13	14	0	0%	0	0%	0
W Isles*	**-**	-	-	-	-	-	-	-
NoS	**96.6%**	**28**	**29**	**0**	**0%**	**0**	**0%**	**0**

No systematic failures in pre-operative assessment were highlighted from the 2014-2015 data.

Actions Required:

No actions identified.

QPI 3: Primary Orchidectomy

QPI3: Primary Orchidectomy: Patients with testicular cancer should have primary orchidectomy within 2 weeks of ultrasonographic diagnosis.

Orchidectomy is the primary therapeutic intervention for patients who have early-stage testicular cancer.

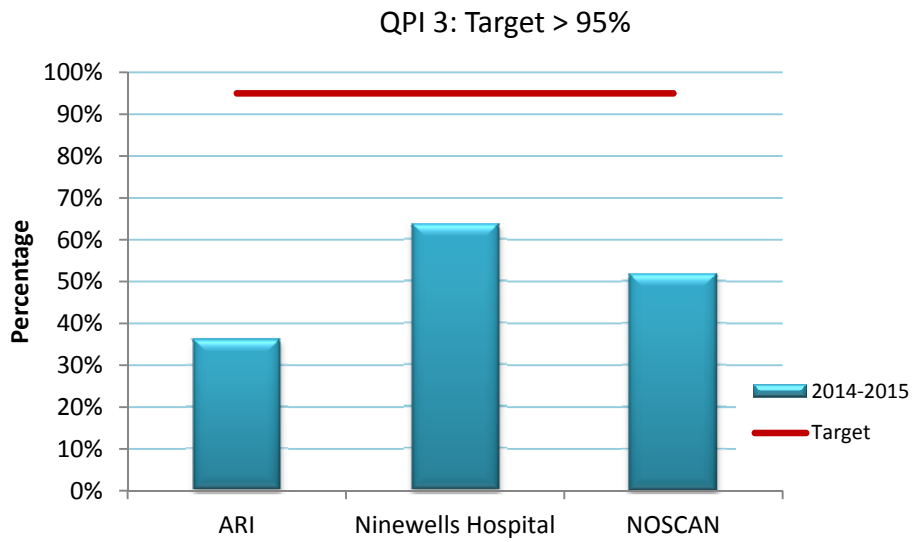
To ensure pathological information is obtained and future treatment decision making can be made, it is important that orchidectomy is carried out as quickly as possible from diagnosis.

Numerator:	Number of patients with testicular cancer undergoing orchidectomy within 2 weeks of ultrasonographic diagnosis.
Denominator:	All patients with testicular cancer undergoing orchidectomy.
Exclusions:	Patients undergoing chemotherapy prior to orchidectomy.
Target:	95%

QPI 3 Performance against target

In the North of Scotland, 51.7% of patients diagnosed with testicular cancer in 2014-2015 undergoing orchidectomy had surgery within 2 weeks of ultrasonographic diagnosis; this means that at a regional level, the target of 95% was not met.

Across the North of Scotland this QPI target was only met by one NHS Board and one hospital, Gilbert Bain Hospital in NHS Shetland, where only a single patient had surgery.



By NHS Board	Performance (%)	Numerator	Denominator	Not recorded - Numerator	% not recorded - Numerator	Not recorded - Exclusions	% not recorded - Exclusions	Not recorded - Denominator
Grampian	**36.4%**	4	11	0	0%	0	0%	0
Highland*	**-**	-	-	-	-	-	-	-
Shetland*	**-**	-	-	-	-	-	-	-
Tayside	**57.1%**	8	14	0	0%	0	0%	0
W Isles*	**-**	-	-	-	-	-	-	-
NoS	**51.7%**	**15**	**29**	**0**	**0%**	**0**	**0%**	**0**

By Hospital	Performance (%)	Numerator	Denominator	Not recorded - Numerator	% not recorded - Numerator	Not recorded - Exclusions	% not recorded - Exclusions	Not recorded - Denominator
ARI	**36.4%**	4	11	0	0%	0	0%	0
Raigmore*	**-**	-	-	-	-	-	-	-
Gilbert Bain*	**-**	-	-	-	-	-	-	-
Ninewells	**63.6%**	7	11	0	0%	0	0%	0
PRI*	**-**	-	-	-	-	-	-	-
Stracathro*	**-**	-	-	-	-	-	-	-
NoS	**51.7%**	**15**	**29**	**0**	**0%**	**0**	**0%**	**0**

While there is a need to improve the workflow for these patients, in 4 of the 7 patients from NHS Grampian, the delay was due to clinical factors rather than process factors, with the remaining 3 patients 'failing' the 2 week threshold by 2-3 days. Similarly, in NHS Tayside, the target was failed by only 2 days in 3 of the 4 patients who did not meet the QPI. In NHS Highland, only one patient breached the 2 week target and this was at the patient's request to delay surgery. Similar issues have been encountered to a greater or lesser extent throughout Scotland.

A new system of work is being trialled by the urologists in Grampian to ensure better access to orchidectomy, with streamlined patient review at UCAN centre and prebooking of anaesthetic assessment and theatre slots by secretaries.

Actions Required:

No specific further actions are identified at present, but depending on the success of the changes already made, action may be required in year 2 to relax the 6/4/2 theatre list directive to leave space on operating theatre lists to allow testicular cancer patients to be added on at short notice.

QPI 4: Multi-Disciplinary Team Meeting

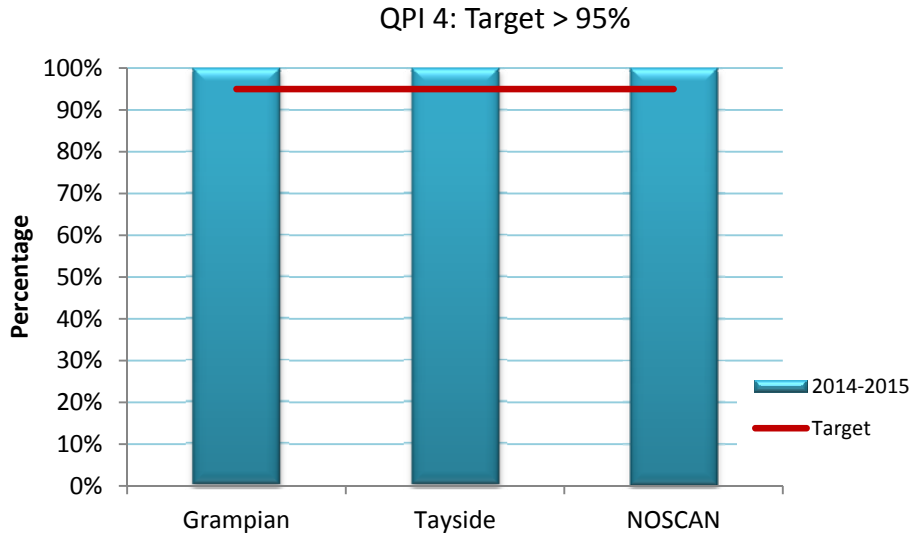
QPI 4: Multi-Disciplinary Team Meeting: Patients with testicular cancer should be discussed by a Multi Disciplinary Team (MDT) to agree a definitive management plan post orchidectomy with staging and pathology.

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

Numerator:	Number of patients with testicular cancer undergoing orchidectomy who are discussed at the MDT to agree a definitive management plan post orchidectomy.
Denominator:	All patients with testicular cancer undergoing orchidectomy.
Exclusions:	No exclusions.
Target:	95%

QPI 4 Performance against target

Of the 29 patients with testicular cancer who underwent orchidectomy in the North of Scotland all (100%) were discussed at MDT to agree a definitive management plan following surgery. Consequently the target rate of 95% was met at both a regional and NHS Board level.



	Performance (%)	Numerator	Denominator	Not recorded - Numerator	% not recorded - Numerator	Not recorded - Exclusions	% not recorded - Exclusions	Not recorded - Denominator
Grampian	**100%**	11	11	0	0%	0	0%	0
Highland*	**-**	-	-	-	-	-	-	-
Shetland*	**-**	-	-	-	-	-	-	-
Tayside	**100%**	14	14	0	0%	0	0%	0
W Isles*	**-**	-	-	-	-	-	-	-
NoS	**100%**	**29**	**29**	**0**	**0%**	**0**	**0%**	**0**

No systematic failures were highlighted in any of the NHS Boards from the 2014-2015 data.

Actions Required:

No actions identified.

QPI 5: Pathological Reporting

QPI 5: Pathological Reporting: All pathology reports for testicular cancer should contain full pathology information to inform patient management.

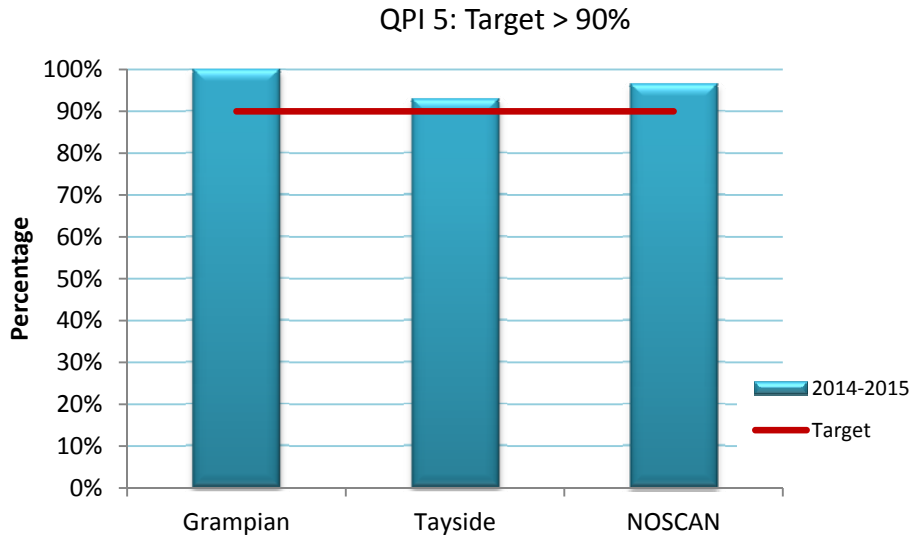
To allow treatment planning to take place for patients diagnosed with testicular cancer, it is important that adequate subtyping and staging of testicular tumours is carried out to determine clinical management. This information will allow patients to make informed decisions about their care.

Numerator:	Number of patients with testicular cancer undergoing orchidectomy where histological pathology report contains tumour type and size, vascular invasion and rete stromal invasion (based upon the current Royal College of Pathologists dataset).
Denominator:	All patients with testicular cancer undergoing orchidectomy.
Exclusions:	No exclusions.
Target:	90%

QPI 5 Performance against target

Of the 29 patients diagnosed with testicular cancer in the North of Scotland in 2014-2015 and undergoing orchidectomy, the pathology reports of 28 if these (96.6%) contained tumour type and size, vascular invasion and rete stromal invasion. These figures show that the target of 90% was met in the North of Scotland.

All NHS Boards within the North of Scotland met the QPI target.



	Performance (%)	Numerator	Denominator	Not recorded - Numerator	% not recorded - Numerator	Not recorded - Exclusions	% not recorded - Exclusions	Not recorded - Denominator
Grampian	**100%**	11	11	0	0%	0	0%	0
Highland*	**-**	-	-	-	-	-	-	-
Shetland*	**-**	-	-	-	-	-	-	-
Tayside	**92.9%**	13	14	0	0%	0	0%	0
W Isles*	**-**	-	-	-	-	-	-	-
NoS	**96.6%**	**28**	**29**	**0**	**0%**	**0**	**0%**	**0**

No systematic failures were highlighted in any of the NHS Boards from the 2014-2015 data.

Actions Required:

No actions identified.

QPI 6: Adjuvant Treatment of Stage I Seminoma with Carboplatin

QPI 6: Adjuvant Treatment of Stage I Seminoma with Carboplatin: Patients with stage I seminoma receiving adjuvant single dose carboplatin should have an AUC of 7mg/ml/min based on ethylene diamine tetra-acetic acid (EDTA) clearance.

Evidence has shown that the administration of carboplatin can prevent metastatic relapse and contralateral cancer in patients with testicular cancer.

The trial suggested that EDTA or a comparable isotope measurement technique should be used when calculating GFR; this allowed for the best survival outcomes.

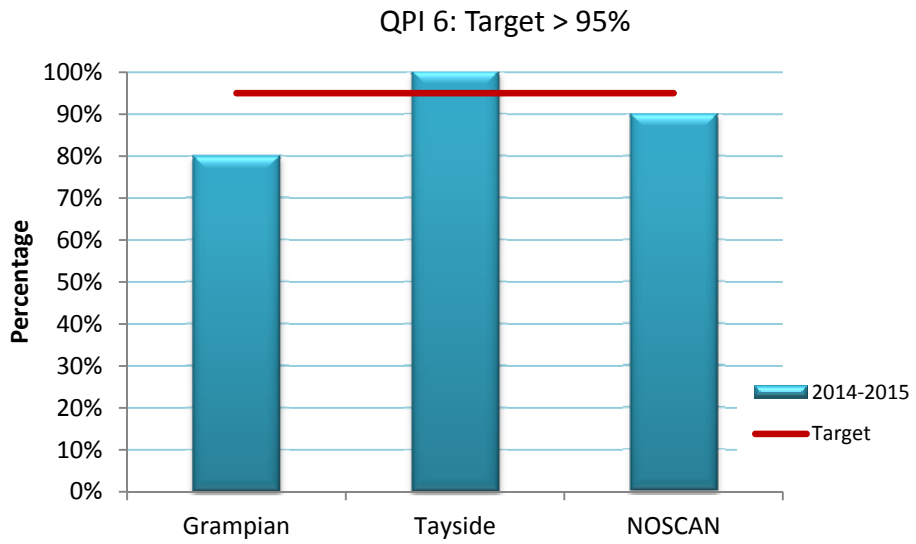
Patients receiving a single dose of adjuvant carboplatin should be given the dose AUC7, i.e. that dose required to achieve an area under the concentration time curve of 7 mg/ml per minute, based on EDTA clearance.

Numerator:	Number of patients with stage I seminoma undergoing adjuvant single dose carboplatin AUC7, based on EDTA clearance, within 8 weeks of orchidectomy.
Denominator:	All patients with stage I seminoma undergoing adjuvant single dose carboplatin AUC7.
Exclusions:	Patients who are treated within a clinical trial.
Target:	95%

QPI 6 Performance against target

In 2014 - 2015, 10 patients diagnosed with stage I seminoma underwent adjuvant single dose carboplatin AUC7 in the North of Scotland. Of these 9 (90%) had treatment based on EDTA clearance and within 8 weeks of orchidectomy. While this is below the target rate of 95% it should be noted that numbers of patients were very small and only a single patient did not meet the indicator.

Numbers of patients included within this QPI are considered to be too small to enable any useful comparison between Boards to be drawn.



	Performance (%)	Numerator	Denominator	Not recorded - Numerator	% not recorded - Numerator	Not recorded - Exclusions	% not recorded - Exclusions	Not recorded - Denominator
Grampian	**80.0%**	4	5	0	0%	0	0%	0
Highland	**-**	0	0	0	-	0	-	0
Shetland	**-**	0	0	0	-	0	-	0
Tayside	**100%**	5	5	0	0%	0	0%	0
W Isles	**-**	0	0	0	-	0	-	0
NoS	**90%**	**9**	**10**	**0**	**0%**	**0**	**0%**	**0**

Although NOSCAN failed to reach the target of 95% in this QPI (achieving 90%), this was due to 1 patient who received adjuvant chemotherapy just over 8 weeks after surgery. This delay was intended to allow a PET scan to be performed to ensure that the patient was truly stage I. There appears therefore to be no systemic failure.

Actions Required:

No actions identified.

QPI 7: Serum Tumour Markers

QPI 7: Serum Tumour Markers: Patients with metastatic testicular cancer should undergo Serum Tumour Markers (STMs) before starting chemotherapy to determine their correct International Germ Cell Cancer Collaborative Group (IGCCCG) prognostic grouping.

Advanced testicular cancer studies have shown that it is beneficial to measure STMs pre-chemotherapy. The value of this is to allow for appropriate treatment planning for patients with elevated STMs.

Numerator:	Number of patients with metastatic testicular cancer undergoing chemotherapy who have STMs checked 2 weeks before starting chemotherapy.
Denominator:	All patients with metastatic testicular cancer undergoing chemotherapy.
Exclusions:	No exclusions
Target:	98%

QPI 7 Performance against target

Only two patients diagnosed with testicular cancer in 2014-2015 in the North of Scotland that had metastatic disease and had chemotherapy undergoing neo-adjuvant chemotherapy, both of these (100%) had STMs checked 2 weeks before starting chemotherapy. This means that the North of Scotland met the required performance target of 98%, as did both NHS Boards with patients included within this QPI.

Results are not provided in graphical or tabular form due to the very small numbers of patients involved.

No systematic failures were highlighted in any of the NHS Boards from the 2014-2015 data, although the number of patients was small.

Actions Required:

No actions identified.

QPI 8: Systemic Therapy

QPI 8: Systemic Therapy: Patients with metastatic testicular cancer who are undergoing systemic therapy should receive Systemic Anti-Cancer Therapy (SACT) within 3 weeks of a MDT decision to treat with SACT.

Evidence has demonstrated that delays in diagnosis and treatment can have a negative impact on the survival rates of patients.

In certain types of testicular cancer this can have a bigger impact on prognosis and survival.

Numerator:	Number of patients with metastatic testicular cancer undergoing SACT within 3 weeks of an MDT decision to treat with SACT.
Denominator:	All patients with metastatic testicular cancer undergoing SACT.
Exclusions:	Patients whose primary chemotherapy management is as part of a chemotherapy clinical trial.
Target:	95%

QPI 8 Performance against target

In 2014 - 2015 both of patients diagnosed with metastatic testicular cancer in the North of Scotland and undergoing SACT had this treatment within 3 weeks of an MDT decision to treat. This equates to 100% and therefore both the North of Scotland and individual Boards with patients included within this QPI meets the target of 95%.

Results are not provided in graphical or tabular form due to the very small numbers of patients involved.

No systematic failures were highlighted in any of the NHS Boards from the 2014-2015 data.

Actions Required:

No actions identified.

QPI 9: Computed Tomography Scanning for Surveillance Patients

QPI 9: Computed Tomography Scanning for Surveillance Patients: Patients with stage I testicular non-seminomatous (or mixed) germ cell tumour (NSGCT) under surveillance should undergo Computed Tomography (CT) scanning of the abdomen +/- chest and pelvis, as per clinical relevance.

There are several ways to manage patients with stage I testicular nonseminomatous germ cell tumours. Active surveillance is a standard approach to take. Evidence has shown that the results from surveillance are as favourable as those who undertake adjuvant therapy. It is important that the individual will comply with the surveillance protocol.

Numerator: Patients with stage I testicular non-seminomatous (or mixed) germ cell tumour who undergo at least three CT scans of the abdomen +/- chest and pelvis within 14 months of diagnosis.

Denominator: All patients with stage I testicular non-seminomatous (or mixed) germ cell tumour.

Exclusions:

- Patients who have received adjuvant chemotherapy.
- Patients who are treated within a clinical trial.

Target: 85%

This QPI cannot be reported until 14 months of have elapsed since diagnosis. As such results for QPI 9 will be reported a year in arrears.

QPI 10: 30 Day Mortality

QPI 10: 30 Day Mortality: 30 day mortality following treatment for testicular cancer.

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

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

Denominator: All patients with testicular cancer undergoing treatment (orchidectomy, chemotherapy, radiotherapy).

Exclusions: No Exclusions

Target: < 5%

QPI 10 Performance against target

Surgery

In 2014 – 2015 in the North of Scotland, none of the patients diagnosed with testicular cancer and undergoing surgery died within 30 days of surgery. At 0% this meets the target of less than 5%.

With zero mortality, this QPI was met across the North of Scotland at both a Hospital and Board level. Results are not presented graphically as results for all NHS Boards and centres are zero.

By Board	Performance (%)	Numerator	Denominator	Not recorded - Numerator	% not recorded - Numerator	Not recorded - Exclusions	% not recorded - Exclusions	Not recorded - Denominator
Grampian	**0%**	0	11	0	0%	0	0%	0
Highland*	**-**	-	-	-	-	-	-	-
Shetland*	**-**	-	-	-	-	-	-	-
Tayside	**0%**	0	14	0	0%	0	0%	0
W Isles*	**-**	-	-	-	-	-	-	-
NoS	**0%**	**0**	**29**	**0**	**0%**	**0**	**0%**	**0**

By Hospital	Performance (%)	Numerator	Denominator	Not recorded - Numerator	% not recorded - Numerator	Not recorded - Exclusions	% not recorded - Exclusions	Not recorded - Denominator
ARI	**0%**	0	11	0	0%	0	0%	0
Raigmore*	**-**	-	-	-	-	-	-	-
Gilbert Bain*	**-**	-	-	-	-	-	-	-
Ninewells	**0%**	0	11	0	0%	0	0%	0
PRI*	**-**	-	-	-	-	-	-	-
Stracathro*	**-**	-	-	-	-	-	-	-
NoS	**0%**	**0**	**29**	**0**	**0%**	**0**	**0%**	**0**

Chemotherapy

None of the 22 patients diagnosed with testicular cancer during 2014-2015 and undergoing chemotherapy died within 30 days of treatment. At 0% this meets the target of less than 5%. With zero mortality, this QPI was met across the North of Scotland at both a Hospital and Board level. Results are not presented graphically as results for all NHS Boards are zero.

	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*	**-**	-	-	-	-	-	-	-
Shetland	**-**	0	0	0	-	0	-	0
Tayside	**0%**	0	12	0	0%	0	0%	0
W Isles*	**-**	-	-	-	-	-	-	-
NoS	**0%**	**0**	**22**	**0**	**0%**	**0**	**0%**	**0**

Radiotherapy

Only two of patients diagnosed with testicular cancer in the North of Scotland during 2014-2015 and receiving radiotherapy. Neither of these patients died within 30 days of

treatment. With 0% mortality the North of Scotland met the target of less than 5% as do all NHS Boards with patients receiving radiotherapy.

Results are not provided in graphical or tabular form due to the very small numbers of patients involved.

No patients died within 30 days of any treatment for testis cancer in year 1, however, note should be made that due to small numbers of patients in the region, a single death in any audited year would likely result in failure of the QPI.

Actions Required:

No actions identified.

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 testicular cancer enrolled in an interventional clinical trial of translational research.

Denominator: All patients with testicular cancer.

Exclusions: No exclusions

Target: Interventional clinical trials – 7.5%

Translational research - 15%

Key points during the period audited:

- 4.2% of patients diagnosed with testicular cancer in the North of Scotland in 2014 were recruited into interventional clinical trials in one of the three cancer centres in the region; this is well below the required target of 7.5%.
- Recruitment into translational research was much higher at 37.5%, significantly exceeding the target of 15%.

	Number of patients recruited	ISD Cases annual average (2010-2014)	Percentage of patients recruited
Interventional Clinical Trials	2	48	**4.2%**
Translational Research	18	48	**37.5%**

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.

A limited number of testicular cancer trials were open during 2014 in NOSCAN. Testicular cancer has a relative small incidence within the region. There are also a small number of trials available within the UK for testicular cancer. Therefore cancer centres within NOSCAN were not able to open a large number of trials. NOSCAN had 1 interventional trial and 1 translational trial open to recruitment during 2014. NOSCAN has screened 2 (4.5%) patients for interventional trials and 18 (40.9%) for translational trials during the reporting period.

All cancer patients that 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 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 cancer. 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.

5. Conclusions

The Quality Performance Indicators programme was first introduced in order to drive forward a programme of continuous service improvement and to ensure the quality and equity of access to care for cancer patients across Scotland.

As part of this programme, the North of Scotland has recently launched a programme of annual reporting of regional performance against QPIs. This is the first time that the results of individual Board performance against the Testicular Cancer QPIs have been reported in the North of Scotland, providing a clearer measure of overall performance across the region, and a more formal structure around which any improvements will be made.

Although case ascertainment was relatively low (at only 66%) overall, results of both Board and regional performance against the Testicular Cancer QPI's for patients diagnosed between 1st October 2014 and 30th September 2015 were considered to be representative of cancer services specific to the management of testicular cancer in the North of Scotland.

For six of the ten QPIs measured, the audit report indicated that the required QPI targets were met. There were three tumour specific QPIs where the target was not met, and in addition the Clinical Trials QPI was not met for this tumour group. Of the QPIs not met, results of two of these have already resulted in changes in service delivery as follows;

- For QPI 1, radiological staging, the issues surrounding CT access on a timely basis had already been identified in NHS Tayside prior to the QPI results being made available, and a process for expediting these CT staging scans has been put in place.

- For QPI 3, primary orchidectomy, it was noted that there is a need to improve the workflow for these patients. A new system of work is being trialled by the urologists in Grampian to ensure better access to orchidectomy.

As actions to address issues highlighted within the QPI results for testicular cancer are already underway no further actions have been identified, however the need for further action regarding QPIs 1 and 3 should be carefully reassessed once the results of the second year of QPI reporting are available.

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 to this report.

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 North of Scotland Urological Cancer MCN 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 Testicular Cancer Clinical Lead as part of the regional audit governance process to enable RCAF to review and monitor regional improvement.

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, 2014. Testicular Cancer Clinical Performance Indicators, Version 1.0. Health Improvement Scotland. http://www.healthcareimprovementscotland.org/our_work/cancer_care_improvement/cancer_qpis/quality_performance_indicators.aspx

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

8. Information Services Division. Cancer in Scotland, 2004. https://isdscotland.scot.nhs.uk/Health-Topics/Cancer/Publications/2015-11-17/Cancer_in_Scotland_summary_m.pdf?14:05:13

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

Appendix 1: List of clinical trials for patients with testicular cancer into which patients were recruited in 2014.

Trial	Principle Investigator	Trial Type
TRISST	Graham Macdonald (Grampian)	Interventional
The UK Genetics of Testicular Cancer Study	Neil McPhail (Highland)	Translational

Appendix 2: NHS Board Action Plans

A blank Action Plan template can be found attached. Completed Action Plans should be returned to NOSCAN within two months of publication of this report.

NOSCAN
North of Scotland Cancer Network

Action Plan: Testicular 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*