

NOSCAN

North of Scotland
Cancer Network



**NORTH OF SCOTLAND
PLANNING GROUP**

Urological Cancer Managed Clinical Network

Audit Report

Bladder Cancer Quality Performance Indicators

Patients diagnosed April 2014 – March 2015

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

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

- 341 patients diagnosed with bladder cancer were audited.
- The results reported were considered to be representative of bladder cancer services in the region.

Summary of QPI Results

QPI	QPI Target	Performance ^b				
		NOSCAN	NHS Grampian	NHS Highland	NHS Shetland	NHS Tayside
QPI 1: Multi-Disciplinary Team Meeting Discussion - Proportion of patients with bladder cancer who are discussed at MDT meeting before definitive treatment.	95%	89% n=341	89% n=147	76% n=71	100% n=5	95% n=113
QPI 2: Quality of Transurethral Resection of Bladder Tumour - Proportion of patients with bladder cancer who undergo good quality TURBT*.	80%	15% n=296	10% n=137	37% n=57	60% n=5	5% n=97
QPI 3: Mitomycin C Following Transurethral Resection of Bladder Tumour (TURBT) - Proportion of patients with NMIBC who undergo TURBT who receive a single instillation of mitomycin C within 24 hours of resection.	80%	55% n=232	71% n=98	15% n=53	-	60% n=77
QPI 4: Early Re-Transurethral Resection of Bladder Tumour (TURBT) - Proportion of patients who have undergone TURBT with high risk NMIBC, where detrusor muscle is absent from specimen or initial resection is incomplete, who have a second resection within 6 weeks of initial TURBT.						
(i) Patients with high risk NMIBC.*	80%	17% n=134	11% n=56	34% n=32	-	14% n=44
(ii) Patients where detrusor muscle absent from specimen.*	80%	15% n=61	15% n=33	13% n=16	-	17% n=12
(iii) Where initial resection is incomplete.*	80%	33% n=18	25% n=8	50% n=8	-	-

QPI 5: Pathology Reporting - Proportion of patients with bladder cancer who undergo TURBT or cystectomy reported according to the guidelines provided by the Royal College of Pathology for the reporting of these specimens.						
(i) Patients undergoing TURBT	90%	32% n=317	6% n=140	94% n=68	20% n=5	25% n=102
(ii) Patients undergoing cystectomy	90%	21% n=28	10% n=10	-	-	10% n=10
QPI 6: Lymph Node Yield - Proportion of patients with bladder cancer who undergo radical cystectomy where ≥ 10 lymph nodes are resected and pathologically examined.*	90%	44% n=25	38% n=13	-	-	50% n=10
QPI 7: Time To Treatment - Proportion of patients with MIBC who commence radical treatment within 3 months of their diagnosis of MIBC.	90%	83% n=48	90% n=21	73% n=11	-	75% n=12
QPI 8: Volume of Cases Per Surgeon - Number of radical cystectomy procedures performed by a surgeon over a 1 year period.	> 10	NHS Grampian surgeon 1 - 2 cases NHS Grampian surgeon 2 - 4 cases NHS Highland surgeon 1 - 2 cases				
QPI 9: Oncological Discussion - Proportion of patients with muscle invasive bladder cancer who had radical surgery who met with an oncologist prior to radical cystectomy.	85%	63% n=16	80% n=5	60% n=5	-	-
QPI 10: Radical Radiotherapy with Chemotherapy - Proportion of patients with transitional cell carcinoma of the bladder (T2-T4) undergoing radical radiotherapy receiving concomitant chemotherapy.	50%	50% n=26	79% n=14	33% n=6	-	0% n=5
QPI 11: 30/90 Day Mortality after Treatment for Bladder Cancer - Proportion of patients with bladder cancer who die within 30/90 days of treatment with curative intent for bladder cancer.						
(ia) Surgery – 30 day mortality*	<5%	0% n=25	0% n=13	-	-	0% n=10
(ib) Surgery – 90 day mortality*	<5%	0% n=24	0% n=13	-	-	0% n=9
(iia) Radiotherapy – 30 day mortality	<5%	4% n=27	0% n=15	0% n=6	-	20% n=5
(iib) Radiotherapy – 90 day mortality	<5%	7% n=27	7% n=15	0% n=6	-	20% n=5
(iia) Chemotherapy – 30 day mortality	<5%	0% n=33	0% n=17	0% n=8	-	-

(iiib) Chemotherapy – 90 day mortality	<5%	3% n=33	0% n=17	0% n=8	-	-
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%	0% n=341				
Translational research	15%	0% n=341				

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 2, 4, 6 & 11(i), which are presented by 'Board of Surgery'.

During this first audit cycle, only one out of the 12 quality performance targets set for bladder cancer was achieved at regional level in the North of Scotland. For the eleven QPIs where the target was not met various contributing factors were reported by the NHS Boards involved, with discrepancies between data recorded and actual clinical practice raised as a significant issue. It is therefore evident that work is required in order to improve accuracy and completeness of future data collection.

It is acknowledged that there has been significant learning at all levels during the first year of QPI reporting for bladder cancer. The knowledge that has been gained will enable further refinement of data collection and QPI definitions. In this report a number of actions have been identified to improve data collection and feed into the review of Bladder Cancer QPI currently being undertaken.

Despite some issues with data collection, results from the first year of QPI reporting have helped to identify the following actions to improve on the quality of clinical services for patients with bladder cancer in the North of Scotland:

- NHS Boards to ensure that clinicians, nursing staff and MDT co-ordinators work in collaboration to make sure all patients are discussed at MDT, including during times of staff shortages.
- All NHS Boards to ensure that there is single use of MMC where indicated: where MMC is not used, documentation of the reason should be clearly stated in the TURBT pro-forma.
- NHS Boards to ensure that all patients with indications for re-resection should have re-TURBT. If no re-resection is undertaken, reasons for this should be clearly documented.
- Cancer pathway groups in each NHS Board should work to improve the MDT review and re-TURBT pathway. For example, to avoid delay, clinicians can add these patients to the waiting list for re-TURBT when pathology results are available rather

than waiting for MDT discussion. While patients should be discussed in MDT, adding these patients on waiting lists in advance of the MDT will reduce time to re-TURBT.

- MCN to facilitate discussions with pathologists to develop a standard protocol for counting lymph nodes (e.g. counting lymph nodes in perivesical fat).
- Where clinically appropriate, patients with muscle invasive bladder cancer should have a discussion with an oncologist and surgeon; this could be achieved in joint consultation after MDT discussion.
- All NHS Boards to ensure adherence to the requirements of QPI 10 and to record the reasons for patients not receiving concomitant chemotherapy.
- Clinical trials are important aspect of current clinical practice. All NHS Boards are encouraged to participate in ongoing national or local trials for bladder cancer.

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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 Bladder Cancer QPIs are available from the ISD website¹.

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 bladder cancer in the North of Scotland Cancer Network during the twelve months from 1st April 2014 to 31st March 2015.

Using clinical audit data, which has been collected at individual Board level for all patients diagnosed with an bladder cancer during the period indicated, performance is reported against the Bladder Cancer Quality Performance Indicators (QPIs)⁶ which were implemented for patients diagnosed on or after 1st April 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 population⁷. There were 341 patients diagnosed with bladder cancer in the North of Scotland between 1st April 2014 and 31st March 2015. The configuration of the Multidisciplinary Teams (MDTs) in the North of Scotland for the management of urological cancer, which includes bladder 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 783 cases recorded in Scotland during 2013, bladder cancer is the tenth most common types of cancer. While it appears that incidence rates have decreased by 12% over the past 10 years, this is thought to be the result of a change in coding practice rather than a real change in occurrence⁸.

Survival from bladder cancer is lower than the average for all malignant neoplasms, with a one year age-standardised relative survival for 2007-2011 of 74.6% and 5-year survival of 49.1% for men and considerably lower survival rates for women. Survival from bladder cancer appears to have decreased considerably since 1987-1991, however this is an artefact of changes in the coding of bladder cancers between the two periods⁹. The table below details the percentage change in 1 and 5 year relative survival for patients diagnosed 1987-1991 to 2007-2011.

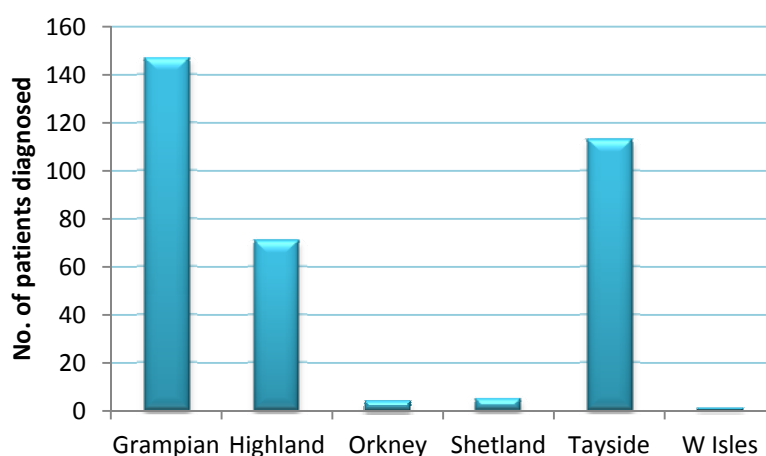
Relative age-standardised survival for bladder cancer in Scotland at 1 year and 5 years showing percentage change from 1987-1991 to 2007-2011⁹.

Sex	Relative survival at 1 year (%)		Relative survival at 5 years (%)	
	2007-2011	% change	2007-2011	% change
Male	74.6%	- 6.7%	49.1%	- 14.2%
Female	63.3%	-9.5%	36.2%	-22.0%

2.2 North of Scotland Context

Between 1st April 2014 and 31st March 2015, a total of 341 cases of bladder cancer were diagnosed in the North of Scotland and recorded through audit.

	Grampian	Highland	Orkney	Shetland	Tayside	W Isles	NoS
Number of Patients	147	71	4	5	113	1	341
% of NoS total	43%	21%	1%	1%	33%	0%	100%



Number of patients diagnosed with bladder cancer by Board of diagnosis, April 2014 – March 2015.

3. Methodology

The clinical audit data presented in this report was collected in accordance with an agreed dataset and definitions¹. 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 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 NOSCANA 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

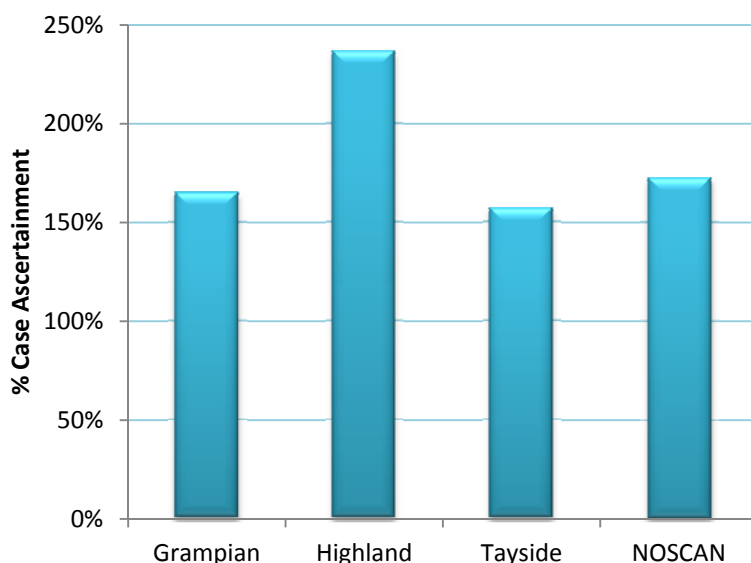
4.1 Case Ascertainment

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 North of Scotland was very high at 172%, however the reason for this high case ascertainment is due to differences between the way in which bladder cancer is defined through SCR and the QPI datasets. As such, total cause ascertainment it not particularly meaningful however comparisons between Boards may be of some interest.

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



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

	Grampian	Highland	Orkney	Shetland	Tayside	W Isles	NoS
Cases from audit	147	71	4	5	113	1	341
ISD Cases (2010-2014)	89	30	2	4	72	2	198
% Case ascertainment	165%	237%	235%	132%	157%	59%	172%

QPI calculations based on data captured are considered to be representative of all patients diagnosed with bladder cancer during the audit period. For patients included within the audit, data collection was very good in some areas. However, the absence of recording of information on some aspects of surgical care across a number of NHS Boards did have a significant effect on the QPI results as follows;

- It is not always known if patients met the QPI. If there is no information to show that the patient met the QPI then the default position is to record the patient as not meeting it. This was a major issue for QPI 2, where there was insufficient information to assess whether 26% of patients met the QPI across the North of Scotland (61% in Tayside).
- It was not always known if patients should be included within the QPI. In the absence of sufficient information, patients will be excluded from the QPI calculation. This has affected results for QPI 4 where due to the absence of data up to 115 patients were not included in the figures.

- It is not always known if patients should be excluded from a QPI: unless there is adequate data to inform their exclusion, patients default to being included within the QPI calculation. This lack of information on whether patients should be excluded affected more than 10% of patients for each of QPI's 2, 3, 4, 6, 8, 9 and 11, with 'not recorded for exclusion' levels as high as 83% for QPI 2 and QPI 4(iii).

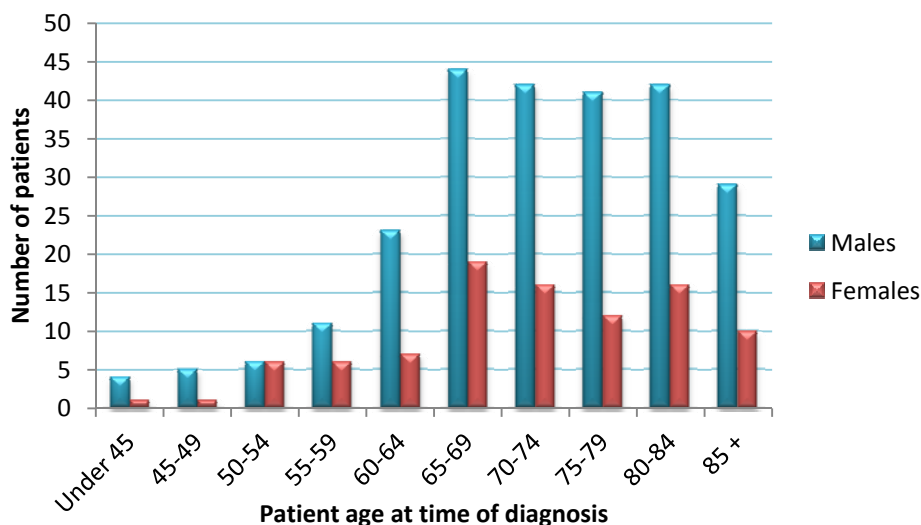
It should be noted that the data items that were not recorded differed slightly between NHS Boards, and recording was more complete in NHS Highland than in NHS Grampian and NHS Tayside. Missing data items that most greatly affected QPI results were identified as follows:

- Intent of Surgery (TURBT)
- Bladder Diagram at TURBT
- Detrusor Muscle Sampled at TURBT
- Tumour Size at TURBT
- Number of Tumours at TURBT
- Tumour Appearance at TURBT
- Intravesical Instillation of Mitomycin C
- Bladder Perforation at TURBT
- Complete Resection at TURBT
- Associated Carcinoma in Situ
- Intent of Surgery – Cystectomy

In addition for some patients in NHS Grampian, there was a lack of recording of tumour grade.

4.2 Age and Gender Distribution

The age distribution of patients diagnosed with bladder cancer in the North of Scotland in 2014-2015 is shown below. Incidence of bladder cancer were significantly higher in men than in women, with incidence peaking in the 65-69 year age group.



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

Age	Sex	Grampian	Highland	Orkney	Shetland	Tayside	W. Isles	NOSCAN
Under 45	M	3	1	0	0	0	0	4
	F	1	0	0	0	0	0	1
45-49	M	2	0	0	1	2	0	5
	F	1	0	0	0	0	0	1
50-54	M	3	1	0	0	2	0	6
	F	4	1	0	0	1	0	6
55-59	M	3	2	0	1	5	0	11
	F	2	1	0	0	3	0	6
60-64	M	9	3	1	0	10	0	23
	F	3	3	0	0	1	0	7
65-69	M	22	9	0	1	12	0	44
	F	7	5	0	0	7	0	19
70-74	M	19	7	3	1	12	0	42
	F	5	3	0	1	7	0	16
75-79	M	15	10	0	0	15	1	41
	F	4	2	0	0	6	0	12
80-84	M	21	8	0	0	13	0	42
	F	9	5	0	0	2	0	16
85+	M	11	5	0	0	13	0	29
	F	3	5	0	0	2	0	10
Total	M	108	46	4	4	84	1	247
	F	39	25	0	1	29	0	94

4.3 Performance against Quality Performance Indicators (QPIs)

Results of the analysis of Bladder 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 2, 4, 6 and 11a) are presented by Hospital of Surgery and QPI 8 is presented by surgeon. 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: Multi-Disciplinary Team Meeting Discussion

QPI 1: Multi-Disciplinary Team Meeting Discussion: Patients with bladder cancer should be discussed by a multidisciplinary team (MDT) prior to definitive treatment.

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 bladder cancer discussed at the MDT before definitive treatment (this includes: neo-adjuvant SACT, radical cystectomy, radiotherapy and supportive care only).

Denominator: All patients with bladder cancer.

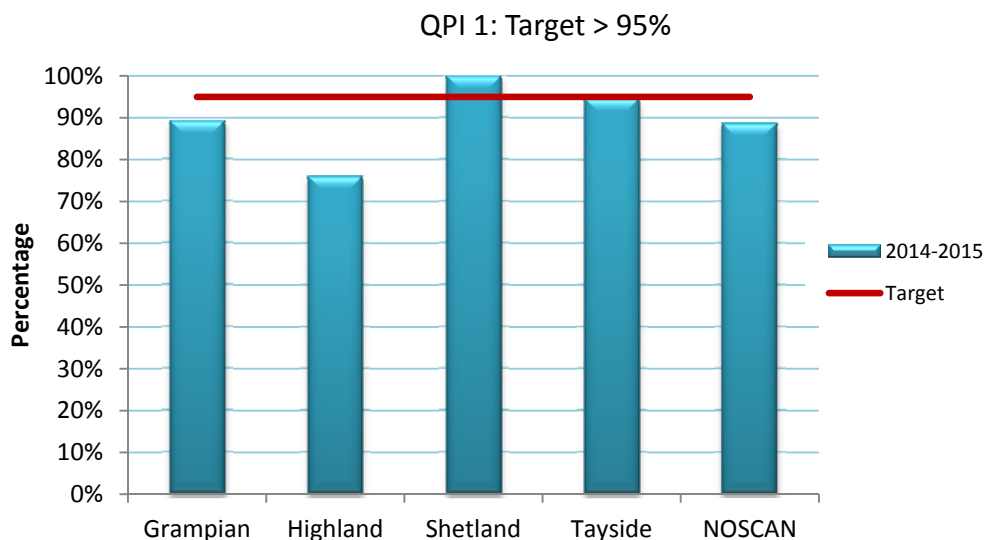
Exclusions: No Exclusions

Target: 95%

QPI 1 Performance against target

302 of the 341 patients diagnosed with bladder cancer in North of Scotland in 2014-2015 were discussed at the MDT prior to definitive treatment. This equates to a rate of 88.6%, which is below the target rate of 95%.

At an NHS Board level NHS Shetland, NHS Orkney and NHS W Isles met this QPI, with very small numbers of patients. NHS Tayside came very close to meeting the target rate with 94.7% of patients meeting this target.



	Performance (%)	Numerator	Denominator	Not recorded - Numerator	% not recorded - Numerator	Not recorded - Exclusions	% not recorded - Exclusions	Not recorded - Denominator
Grampian	89.1%	131	147	0	0%	0	0%	0
Highland	76.1%	54	71	2	2.8%	0	0%	0
Orkney*	-	-	-	-	-	-	-	-
Shetland	100%	5	5	0	0%	0	0%	0
Tayside	94.7%	107	113	2	1.8%	0	0%	0
W Isles*	-	-	-	-	-	-	-	-
NoS	88.6%	302	341	4	1.2%	0	0%	0

Failure to meet the target was attributed to various factors for example issues with staffing and multiple sites.

Actions Required:

- **NHS Boards to ensure that clinicians, nursing staff and MDT co-ordinators work in collaboration to make sure all patients are discussed at MDT, including during times of staff shortages.**

QPI 2: Quality of Transurethral Resection of Bladder Tumour

QPI2: Quality of Transurethral Resection of Bladder Tumour: Transurethral resection of bladder tumour (TURBT) procedures undertaken should be of good quality.

TURBT is considered to be the gold standard initial treatment of Non Muscle Invasive Bladder Cancer (NMIBC), with the aim of completely removing all macroscopic tumours and obtaining tissue for essential pathological evaluation. Although the 10-year disease specific survival for Ta and T1 NMIBC is 85% and 70% respectively; the risk of recurrence is as high as 70%. Most recurrences are detected at the first check cystoscopy following initial TURBT and therefore attributable to residual disease or missed tumours at initial TURBT. These recurrences have been shown to vary according to the quality of the initial TURBT. Several surgical factors have hence been found to be associated with a good quality TURBT, thereby forming the benchmark for TURBT. These factors have been incorporated into this QPI.

Numerator: Number of patients with bladder cancer who undergo TURBT where the following have been undertaken at initial resection:

- (i) Use of a bladder diagram with documentation of tumour location, size, number and appearance;
- (ii) Documented whether complete resection or not; and
- (iii) Detrusor muscle included in the specimen.

Denominator: All patients with bladder cancer who undergo TURBT.

Exclusions:

- Patients undergoing palliative resection.
- Patients with very small tumours ($\leq 5\text{mm}$).

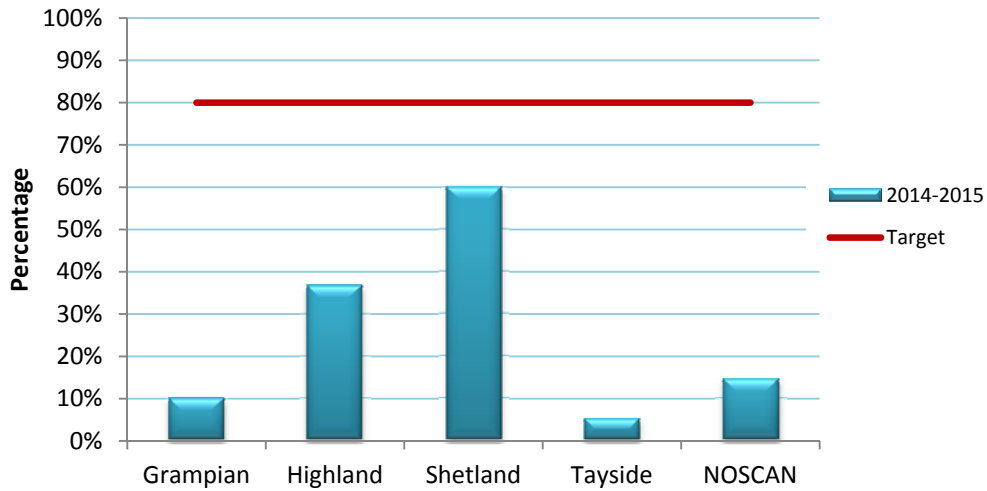
Target: 80%

QPI 2 Performance against target

Across the North of Scotland, only 14.5% of the 43 patients diagnosed with bladder cancer who had a TURBT within the audit period were considered to have had a good quality TURBT. This result falls far below the target rate of 80%. However it should be noted that there were significant problems with the availability of data to inform these results: over a quarter of patients included within the QPI did not have information to clarify whether the QPI was met, and for 82.8% of patients who were included, there was inadequate information to assess whether they should be excluded from calculations due to either the tumour being very small or patients being on a palliative pathway. As such, the MCN does not believe that these figures are a true reflection of performance.

At Board level, no NHS Boards in the North of Scotland met this QPI; results for NHS Grampian and NHS Highland were particularly low, reflecting the higher levels of unrecorded surgical data in these Boards.

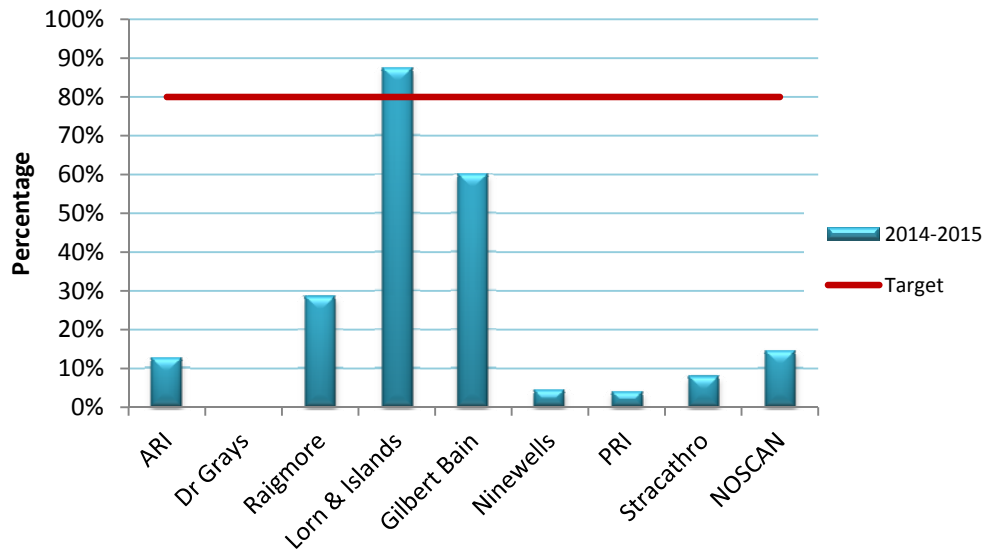
QPI 2: Target > 80%



	Performance (%)	Numerator	Denominator	Not recorded - Numerator	% not recorded - Numerator	Not recorded - Exclusions	% not recorded - Exclusions	Not recorded - Denominator
Grampian	10.2%	14	137	11	8.0%	135	98.5%	0
Highland	36.8%	21	57	9	15.8%	24	42.1%	0
Orkney	-	0	0	0	-	0	-	0
Shetland	60.0%	3	5	0	0%	2	40.0%	0
Tayside	5.2%	5	97	59	60.8%	84	86.6%	0
W Isles	-	0	0	0	-	0	-	0
NoS	14.5%	43	296	79	26.7%	245	82.8%	0

When analysed by hospital of surgery, only one hospital met the QPI target, the Lorn & Islands Hospital in NHS Highland. Results for Gilbert Bain Hospital, NHS Shetland, and Raigmore Hospital, NHS Highland, were notably higher than those from hospitals in NHS Grampian and NHS Tayside.

QPI 2: Target > 80%



	Performance (%)	Numerator	Denominator	Not recorded - Numerator	% not recorded - Numerator	Not recorded - Exclusions	% not recorded - Exclusions	Not recorded - Denominator
ARI	12.5%	14	112	11	9.8%	110	98.2%	0
Dr Grays	0.0%	0	25	0	0.0%	25	100%	0
Raigmore	28.6%	14	49	8	16.3%	23	46.9%	0
Lorn & Islands	87.5%	7	8	1	12.5%	1	12.5%	0
Gilbert Bain	60.0%	3	5	0	0%	2	40.0%	0
Ninewells	4.3%	2	47	32	68.1%	42	89.4%	0
PRI	4.0%	1	25	12	48.0%	23	92.0%	0
Stracathro	8.0%	2	25	15	60.0%	19	76.0%	0
NoS	14.5%	43	296	79	26.7%	245	82.8%	0

NHS Grampian and NHS Highland both acknowledge that these results reflect poor recording of the complicated list of data items required on TURBT. Further, NHS Grampian noted:

- a standardised pro-forma to capture all of the QPI data fields at TURBT was not used during this initial audit period to collate all information required.
- historically complete and curative TURBT was presumed to have been performed unless clearly stated otherwise, even though this implied intent and extent of resection was not recorded. This is not acceptable for the purposes of QPI data collection where this information requires to be both clearly stated and documented if it is to be properly recorded.
- although handmade drawings have been used by most surgeons these are not captured in the electronic operation note program used within ARI.

Actions Required:

- **All NHS Boards to use standard user friendly pro-formas to record TURBT data. Ideally it should be available electronically - bladder diagrams should be made editable electronically to allow entry of tumour locations. For uniformity, the MCN could develop a pro-forma for use across the region.**
- **All NHS Boards to ensure that all Urological Surgeons (consultants and trainees) are informed of the need to complete the TURBT pro-forma, and fill in all data fields at surgery.**

QPI 3: Mitomycin C Following Transurethral Resection of Bladder Tumour (TURBT)

QPI3: Mitomycin C Following Transurethral Resection of Bladder Tumour (TURBT): Patients with non muscle invasive bladder cancer (NMIBC) who undergo TURBT should receive a single instillation of mitomycin C within 24 hours of resection, unless contraindicated.

The recurrence rate in NMIBC is as high as 70%. Tumour features (number, size, grade and stage) and quality of TURBT determine overall recurrence rates. However, TURBT causes tumour cells to be dispersed within the bladder during the procedure and these could get re-implanted in the bladder mucosa, subsequently being detected as recurrence. By destroying floating cancer cells and those that have been implanted on the resection site, a single instillation of intravesical chemotherapy confers an absolute reduction in tumour recurrence of 12 %. While there does not appear to be any difference in efficacy between the various agents, the use of mitomycin C is ubiquitous in the UK and therefore specified in the QPI. A single instillation of mitomycin C within 24 hours of TURBT for NMIBC is recommended.

Numerator: Number of patients with NMIBC who undergo TURBT who receive a single instillation of mitomycin C within 1 day of initial TURBT.

Denominator: All patients with NMIBC who undergo initial TURBT.

Exclusions: Patients where there have been intra- or extraperitoneal perforation.

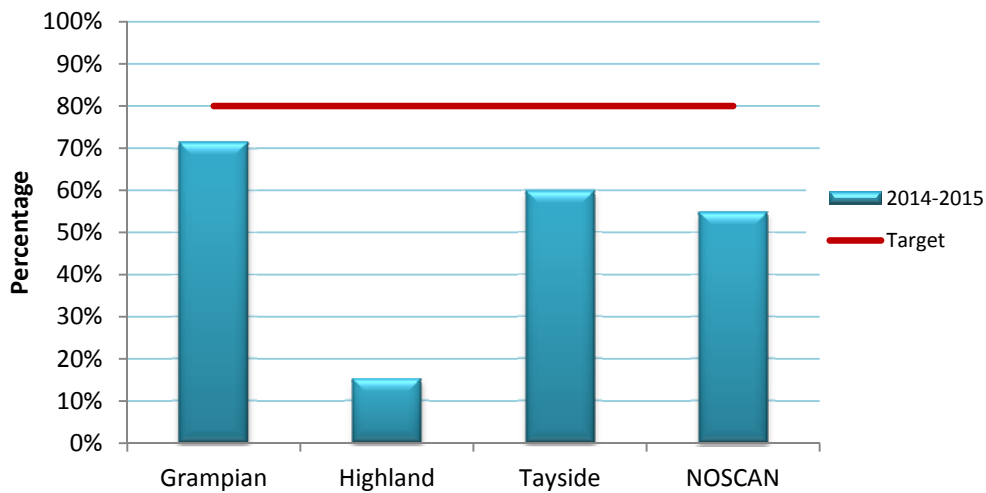
Target: 80%

QPI 3 Performance against target

In the North of Scotland 54.7% of patients diagnosed with NMIBC in 2014-2015 and undergoing TURBT received a single instillation of mitomycin C within 1 day of initial TURBT; this means that at a regional level, the target of 80% was not met.

At an NHS Board level, only NHS Shetland and NHS W Isles, with very small numbers of patients included within their QPI calculations, met the QPI standard required. Results for NHS Highland were notably lower than for other Boards, while there was data missing for a substantial number of patients in NHS Tayside (mainly information on whether Mitomycin C was given and whether an intra or extraperitoneal perforation occurred during initial TURBT).

QPI 3: Target > 80%



	Performance (%)	Numerator	Denominator	Not recorded - Numerator	% not recorded - Numerator	Not recorded - Exclusions	% not recorded - Exclusions	Not recorded - Denominator
Grampian	71.4%	70	98	1	1.0%	0	0%	0
Highland	15.1%	8	53	0	0%	0	0%	0
Orkney*	-	-	-	-	-	-	-	-
Shetland*	-	-	-	-	-	-	-	-
Tayside	59.7%	46	77	8	10.4%	65	84.4%	0
W Isles*	-	-	-	-	-	-	-	-
NoS	54.7%	127	232	10	4.3%	65	28.0%	0

The main factors resulting in the of non-compliance with this QPI are thought to be multiple sites (as in case of NHS Grampian) and patients having BCG or receiving MMC in cycles or at a later date (NHS Highland).

Actions Required:

- **All NHS Boards to ensure that there is single use of MMC where indicated: where MMC is not used, documentation of the reason should be clearly stated in the TURBT pro-forma.**

QPI 4: Early Re-Transurethral Resection of Bladder Tumour (TURBT)

QPI 4: Early Re-Transurethral Resection of Bladder Tumour (TURBT): A second resection should be carried out within 6 weeks of initial TURBT in patients with high risk non muscle invasive bladder cancer (NMIBC), when detrusor muscle is absent or when initial resection is incomplete, unless contraindicated.

Evidence suggests that re-TURBT should be performed if the primary resection was not radical, e.g. if there is no detrusor muscle in the sample and/or where the initial specimen shows a high grade Ta/T1 tumour. The second TURBT should be performed at 2-6 weeks after initial resection.

Specification (i)

Numerator: Number of patients with high risk NMIBC who have undergone TURBT who have a second TURBT within 6 weeks (42 days) of initial resection.

Denominator: All patients with high risk NMIBC who have undergone TURBT.

Exclusions:

- Patients where there have been intra- or extraperitoneal perforation.
- Patients where TURBT has been carried out for palliation.

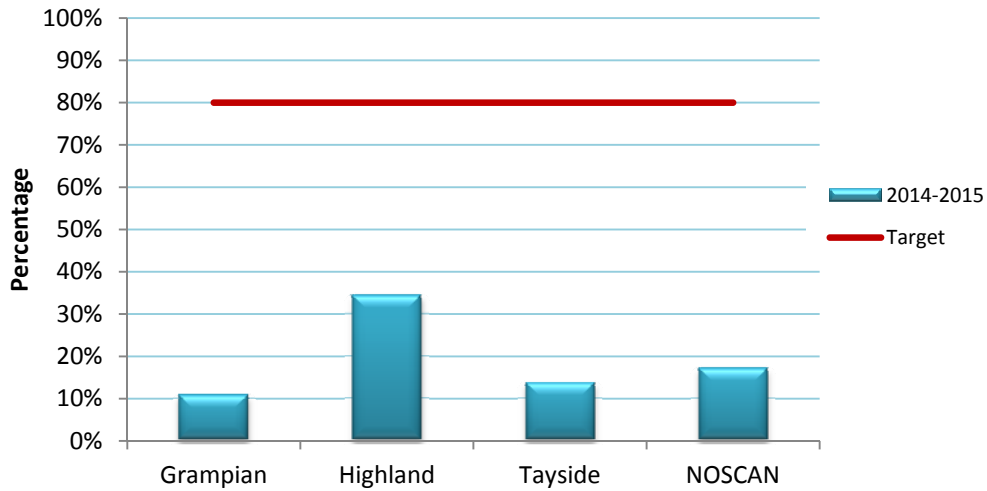
Target: 80%

QPI 4 (i) Performance against target

Of the 134 patients diagnosed during 2014-2015 with high risk NMIBC in the North of Scotland, 23 (17.2 %) were recorded to have had a second TURBT within 6 weeks. Whilst results at a regional level are well below the target rate of 80%, this is in part due to the lack of recording of some data. For example; for 78.4% of patients included in the figure, information on whether they should be excluded from the QPI was not available, and a further 44 patients could not be considered for inclusion due to a lack of information.

At individual Board level, this QPI was not met by any of the NHS Boards in the North of Scotland. Results for NHS Highland were slightly higher than those from other Boards, possibly reflecting better data collection here.

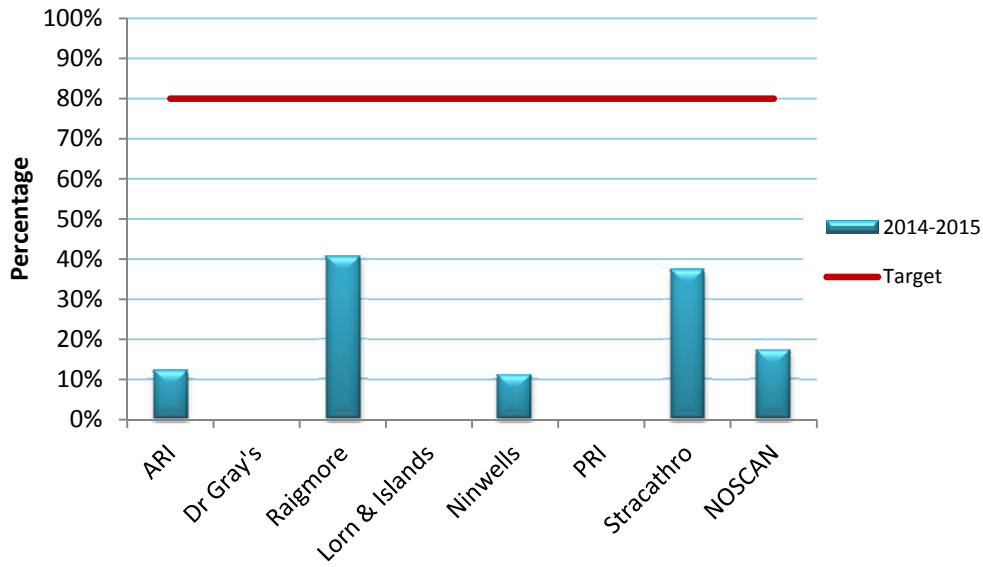
QPI 4(i): Target > 80%



	Performance (%)	Numerator	Denominator	Not recorded - Numerator	% not recorded - Numerator	Not recorded - Exclusions	% not recorded - Exclusions	Not recorded - Denominator
Grampian	10.7%	6	56	0	0%	55	98.2%	23
Highland	34.4%	11	32	0	0%	9	28.1%	0
Orkney	-	0	0	0	-	0	-	0
Shetland*	-	-	-	-	-	-	-	-
Tayside	13.6%	6	44	0	0%	41	93.2%	20
W Isles	-	0	0	0	-	0	-	0
NoS	17.2%	23	134	0	0%	105	78.4%	44

Results for individual hospitals where TURBT was performed are shown below, with results from all hospitals falling well below the target level.

QPI 4(i): Target > 80%



	Performance (%)	Numerator	Denominator	Not recorded - Numerator	% not recorded - Numerator	Not recorded - Exclusions	% not recorded - Exclusions	Not recorded - Denominator
ARI	12.2%	6	49	0	0.0%	48	98.0%	17
Dr Grays	0.0%	0	7	0	0.0%	7	100%	6
Raigmore	40.7%	11	27	0	0.0%	9	33.3%	0
Lorn & Islands	0.0%	0	5	0	0.0%	0	0.0%	0
Gilbert Bain*	-	-	-	-	-	-	-	-
Ninewells	11.1%	3	27	0	0.0%	25	92.6%	5
PRI	0.0%	0	9	0	0.0%	9	100%	8
Stracathro	37.5%	3	8	0	0.0%	7	87.5%	7
NoS	17.2 %	23	134	0	0.0%	105	78.4%	44

QPI 4: Early Re-Transurethral Resection of Bladder Tumour (TURBT)

Specification (ii)

Numerator: Number of patients with NMIBC who have undergone TURBT where detrusor muscle absent from specimen who have a second TURBT within 6 weeks (42 days) of initial resection.

Denominator: All patients with NMIBC who have undergone TURBT where detrusor muscle absent from specimen.

Exclusions:

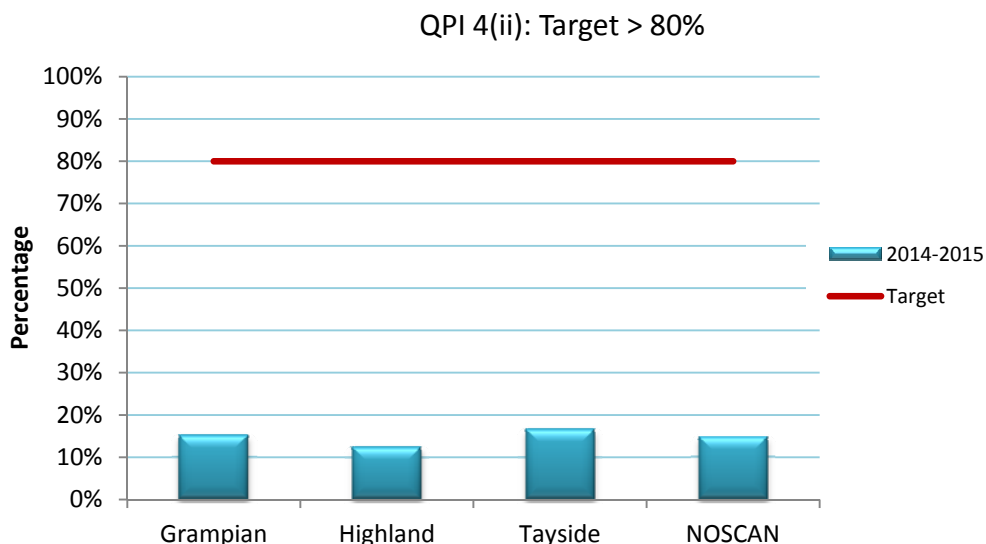
- Patients where there have been intra- or extraperitoneal perforation.
- Patients where TURBT has been carried out for palliation.

Target: 80%

QPI 4 (ii) Performance against target

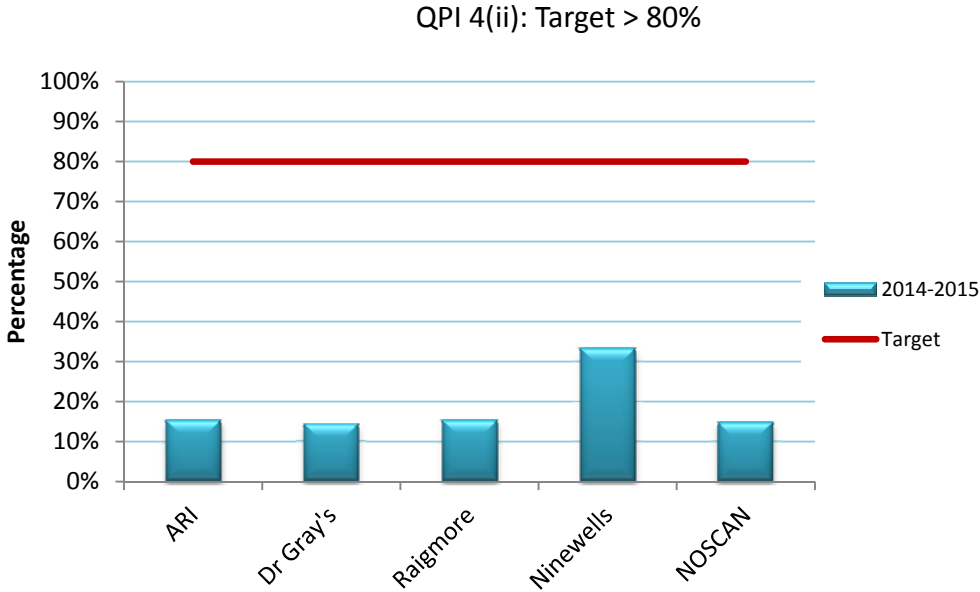
Of the 61 patients diagnosed with NMIBC in the North of Scotland during 2014-2015 who had TURBT where detrusor muscle was absent from the specimen, 9 (14.8%) had a second TURBT within 6 weeks. Consequently the target rate of 80% was not met. However as was noted for QPI 4(i) above, issues with data completeness are thought to have impacted on the results being reported.

Results for all NHS Boards in the North of Scotland fell well below the target level required.



	Performance (%)	Numerator	Denominator	Not recorded - Numerator	% not recorded - Numerator	Not recorded - Exclusions	% not recorded - Exclusions	Not recorded - Denominator
Grampian	15.2%	5	33	0	0%	32	97.0%	6
Highland	12.5%	2	16	0	0%	4	25.0%	2
Orkney	-	0	0	0	-	0	-	0
Shetland	-	0	0	0	-	0	-	0
Tayside	16.7%	2	12	0	0%	12	100%	18
W Isles	-	0	0	0	-	0	-	0
NoS	14.8%	9	61	0	0%	48	78.7%	26

Analysis by hospital of TURBT is shown below. Results largely reflect NHS Board level results with no hospitals in the North of Scotland meeting the QPI target required. As the numbers of patients included within these QPIs for individual hospitals are relatively small then it is difficult to draw conclusions about differences between hospitals.



	Performance (%)	Numerator	Denominator	Not recorded - Numerator	% not recorded - Numerator	Not recorded - Exclusions	% not recorded - Exclusions	Not recorded - Denominator
ARI	15.4%	4	26	0	0.0%	25	96.2%	5
Dr Grays	14.3%	1	7	0	0.0%	7	100%	1
Raigmore	15.4%	2	13	0	0.0%	3	23.1%	1
Lorn & Islands*	-	-	-	-	-	-	-	-
Ninewells	33.3%	2	6	0	0.0%	6	100%	11
PRI*	-	-	-	-	-	-	-	-
Stracathro*	-	-	-	-	-	-	-	-
NoS	14.8 %	9	61	0	0.0%	48	78.7%	26

QPI 4: Early Re-Transurethral Resection of Bladder Tumour (TURBT)

Specification (iii)

Numerator: Number of patients with NMIBC who have undergone TURBT where initial resection is incomplete who have a second TURBT within 6 weeks (42 days) of initial resection.

Denominator: All patients with NMIBC who have undergone TURBT where initial resection is incomplete.

Exclusions:

- Patients where there have been intra- or extraperitoneal perforation.
- Patients where TURBT has been carried out for palliation.

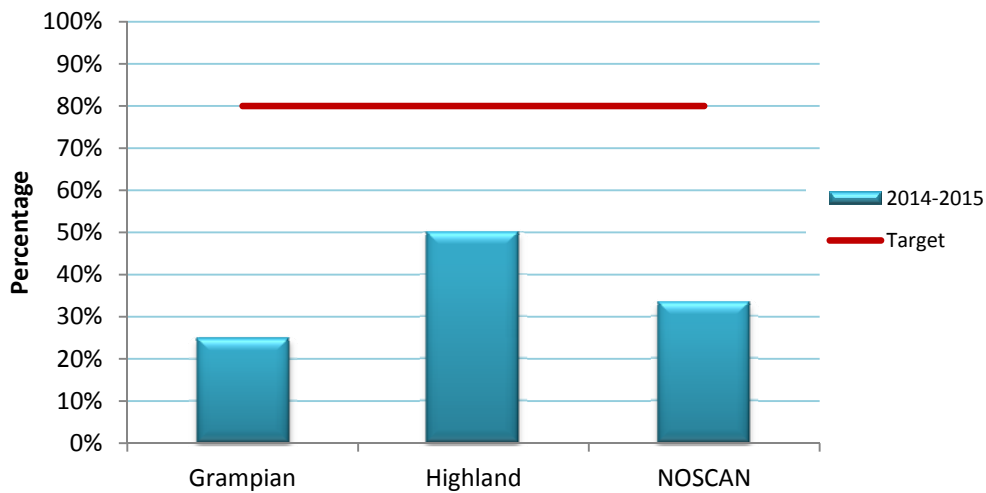
Target: 80%

QPI 4 (iii) Performance against target

Of the 18 patients diagnosed with NMIBC in the North of Scotland during 2014-2015 who had TURBT where the initial resection was incomplete, 6 (33.3%) had a second TURBT within 6 weeks. Consequently the target rate of 80% was not met. However, as with specification (i) and (ii) above, the lack of information on whether patients should be excluded from the QPI and the lack of information on whether 114 patients should be included within the QPI is likely to have impacted on these results.

No NHS Boards within the North of Scotland individually met this QPI target.

QPI 4(iii): Target > 80%



	Performance (%)	Numerator	Denominator	Not recorded - Numerator	% not recorded - Numerator	Not recorded - Exclusions	% not recorded - Exclusions	Not recorded - Denominator
Grampian	25.0%	2	8	0	0%	8	100%	63
Highland	50.0%	4	8	0	0%	6	75.0%	1
Orkney	-	0	0	0	-	0	-	0
Shetland*	-	-	-	-	-	-	-	-
Tayside	0.0%	0	2	0	0%	2	100%	49
W Isles	-	0	0	0	-	0	-	0
NoS	33.3%	6	18	0	0%	16	88.9%	114

Analysis by hospital of TURBT is shown below, with results largely reflecting those at NHS Board level. No hospitals in the North of Scotland met the QPI target for this QPI. As the numbers of patients included within these QPIs for individual hospitals are relatively small, it is difficult to draw conclusions about the differences between hospitals with any confidence.

	Performance (%)	Numerator	Denominator	Not recorded - Numerator	% not recorded - Numerator	Not recorded - Exclusions	% not recorded - Exclusions	Not recorded - Denominator
ARI	14.3%	1	7	0	0.0%	7	100%	48
Dr Grays*	-	-	-	-	-	-	-	-
Raigmore	50.0%	4	8	0	0.0%	6	75.0%	1
Gilbert Bain*	-	-	-	-	-	-	-	-
Ninewells	-	-	-	0	-	0	-	22
PRI*	-	-	-	-	-	-	-	-
Stracathro*	-	-	-	-	-	-	-	-
NoS	33.3 %	6	18	0	0.0%	15	88.9%	114

This QPI target was not achieved due to various reasons, including;

- Delays in pathology reporting, MDT discussing, pre-assessment and the adding of any patients to the waiting list.
- Some of these patients never progressed to having re-TURBT; however the reasons for not doing so have not always been captured.

Actions Required:

- **NHS Boards to ensure that all patients with indications for re-resection should have re-TURBT. If no re-resection is undertaken, reasons for this should be clearly documented.**
- **Cancer pathway groups in each NHS Board should work to improve the MDT review and re-TURBT pathway. For example, to avoid delay, clinicians can add these patients to the waiting list for re-TURBT when pathology results are available rather than waiting for MDT discussion. While patients should be discussed in MDT, adding these patients on waiting lists in advance of the MDT will reduce time to re-TURBT.**
- **MCN to suggest to Bladder QPI Review that QPI 4 should state clearly if High GRADE G2 tumours are to be treated in the same way as any other high grade tumour.**

Actions identified under QPI 2 will also help ensure robust information for reporting of this QPI.

QPI 5: Pathology Reporting

QPI 5: Pathology Reporting: All pathology reports for transurethral resection of bladder tumour (TURBT) and cystectomy specimens should contain comprehensive, standardised information according to the guidelines provided by the Royal College of Pathology.

To help plan treatment for patients diagnosed with bladder cancer, prognostic information from the TURBT and cystectomy is necessary. Standardising the information contained with pathology reports is useful in order to ensure that important prognostic information which is required to inform patients' clinical management is available, for example the staging and grading of tumours.

Numerator: Number of patients with bladder cancer who undergo TURBT or cystectomy where pathology report contains all relevant data items.

Denominator: All patients with bladder cancer who undergo TURBT or cystectomy.

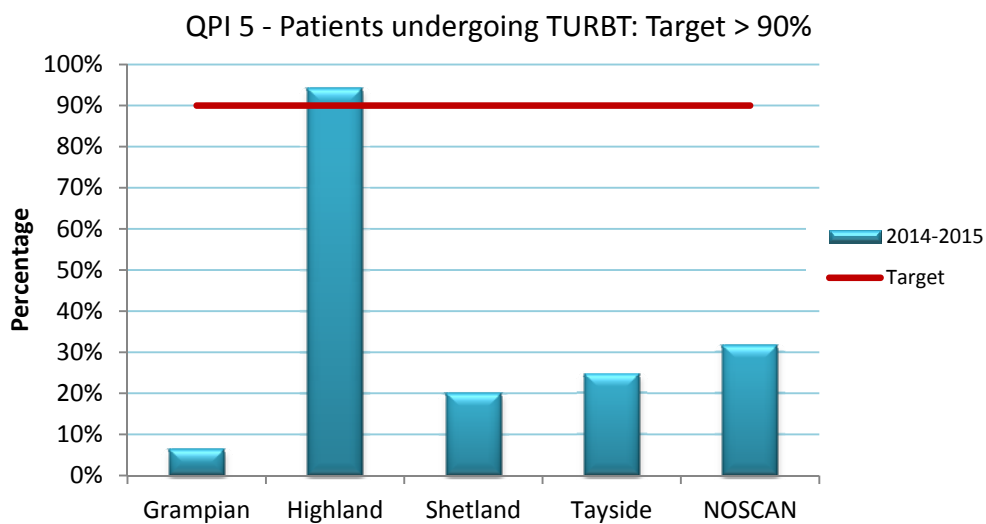
Exclusions: No exclusions.

Target: 90%

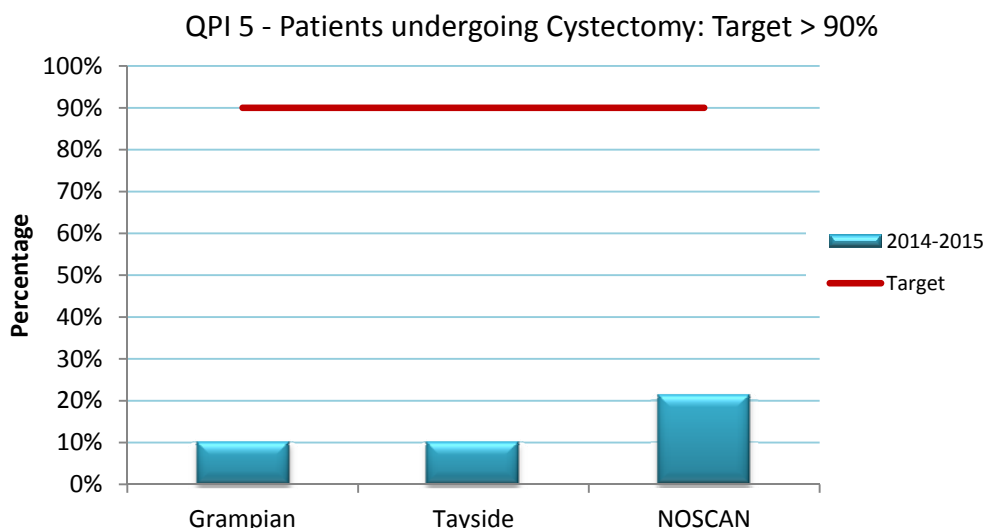
QPI 5 Performance against target

Of the 317 patients diagnosed with bladder cancer and undergoing TURBT in the North of Scotland during 2014-2015, the pathology reports of only 100 of these patients (31.5%) contained all relevant data items. Results for patients who had a cystectomy were lower, of the 28 patients diagnosed with bladder cancer in 2014-2015 and having a cystectomy 6 (21.4%) had all relevant data items within their pathology report. These figures show that the target of 90% was not met in the North of Scotland for either group of patients.

At a Board level this QPI was met by NHS Highland and NHS W Isles for patients undergoing both TURBT and cystectomy. No other NHS Boards met the required target.



TURBT	Performance (%)	Numerator	Denominator	Not recorded - Numerator	% not recorded - Numerator	Not recorded - Exclusions	% not recorded - Exclusions	Not recorded - Denominator
Grampian	6.4%	9	140	0	0%	0	0%	0
Highland	94.1%	64	68	0	0%	0	0%	0
Orkney*	-	-	-	-	-	-	-	-
Shetland	20.0%	1	5	0	0%	0	0%	0
Tayside	24.5%	25	102	0	0%	0	0%	0
W Isles*	-	-	-	-	-	-	-	-
NoS	31.5	100	317	0	0%	0	0%	0



Cystectomy	Performance (%)	Numerator	Denominator	Not recorded - Numerator	% not recorded - Numerator	Not recorded - Exclusions	% not recorded - Exclusions	Not recorded - Denominator
Grampian	10.0%	1	10	0	0%	0	0%	0
Highland*	-	-	-	-	-	-	-	-
Orkney*	-	-	-	-	-	-	-	-
Shetland*	-	-	-	-	-	-	-	-
Tayside	10.0%	1	10	0	0%	0	0%	0
W Isles	-	0	0	0	-	0	-	0
NoS	21.4%	6	28	0	0%	0	0%	0

During the first year of QPI reporting, compliance with this QPI was not attained in most centres, with only NHS Highland and NHS W Isles meeting the required target. It is noted that results have been affected by issues with the way in which this QPI is defined. A number of the data items which need to be recorded in order for this QPI to be met should not be recorded for all patients. For example;

- WHO grade is applicable to surface papillary surface tumours only. Accordingly, solid muscle-invasive urothelial cell carcinomas are not graded and this distinction is missing in the QPI.
- Depth of tumour invasion (formal pT) can only be reported for radical cystectomy specimens. With respect to TURBTs, the Royal College of Pathologists currently advocates "at least" 'T1' or 'T2' and does not recommend using pT. Furthermore, although the WHO/ISUP recommendations may change in the near

future, sub-staging on TURBT specimens is currently controversial and not advocated by the Royal College of Pathologists.

- Similarly, the Royal College of Pathologists recommend that Lymphovascular space invasion is only noted in the report for invasive carcinoma. Therefore not all reports will contain this information.

Consequently, the MCN believes that this QPI requires amending to ensure that only data applicable to all patients are include.

Actions Required:

- **MCN to highlight concerns with QPI 5 at Baseline Review and advise collaboration with the Royal College of Pathologists on any revisions.**
- **Once any amendments to QPI 5 have been agreed, MCN to ensure that the pathology reporting requirements should be discussed with all uro-pathologists within NOSCAN.**

QPI 6: Lymph Node Yield

QPI 6: Lymph Node Yield: For patients undergoing radical cystectomy for bladder cancer the number of lymph nodes examined should be maximised.

Adequate lymph node yield is important for accurate staging.

Numerator: Number of patients with bladder cancer who undergo a radical cystectomy where ≥ 10 lymph nodes are resected and pathologically examined.

Denominator: All patients with bladder cancer who undergo a radical cystectomy.

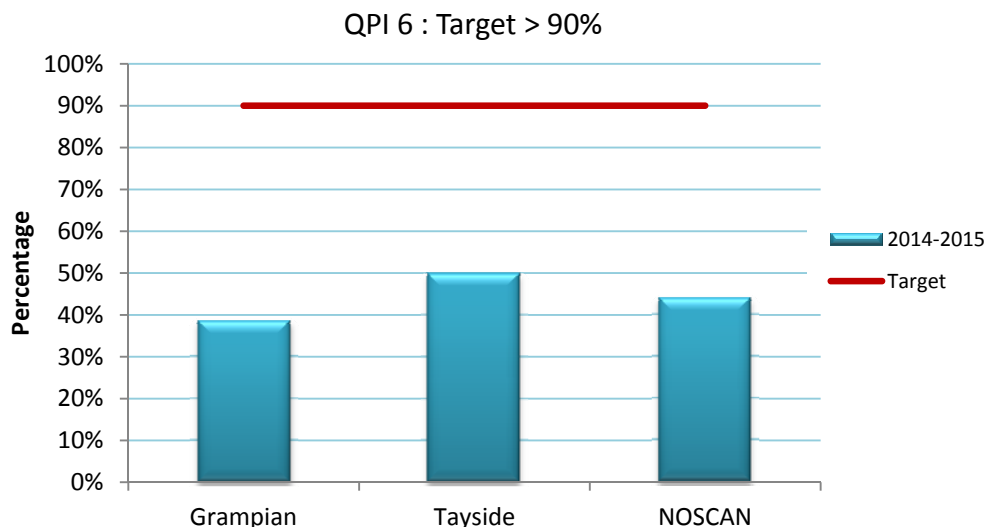
Exclusions: Patients having a palliative cystectomy.

Target: 90%

QPI 6 Performance against target

In 2014 - 2015, 25 patients diagnosed with bladder cancer in the North of Scotland had a radical cystectomy. Of these, 11 (44.0%) had 10 or more lymph nodes resected and pathologically examined, which is well below the target rate of 90%. It should be noted however, that the absence of information for some patients will have affected the results of this QPI. In particular, in the absence of information on the intent of surgery for the majority of patients, some patients on a palliative pathway may have been erroneously included within this QPI.

At individual level, this QPI was not met by any of the NHS Boards in the North of Scotland in 2014-2015, with results from across the region at a similar level. Analysis by hospital of surgery is identical to that for NHS Board of surgery, as this procedure was only undertaken in Aberdeen Royal Infirmary (NHS Grampian), Raigmore Hospital (NHS Highland) and Ninewells Hospital (NHS Tayside).



	Performance (%)	Numerator	Denominator	Not recorded - Numerator	% not recorded - Numerator	Not recorded - Exclusions	% not recorded - Exclusions	Not recorded - Denominator
Grampian	38.5%	5	13	1	7.7%	7	53.8%	0
Highland*	-	-	-	-	-	-	-	-
Orkney	-	0	0	0	-	0	-	0
Shetland	-	0	0	0	-	0	-	0
Tayside	50.0%	5	10	0	0%	9	90%	0
W Isles	-	0	0	0	-	0	-	0
NoS	44.0%	11	25	2	8%	16	64%	0

The MCN noted that the QPI target was not met but was affected by missing data and was based small numbers of patients.

Actions Required:

- **All NHS Boards to ensure that intent of surgery is clearly documented.**
- **Electronic pro-forma for radical cystectomy to be developed to include all operative information, including intent of surgery.**
- **MCN to suggest at QPI Review that the level of lymph node dissection should be included in QPI 6.**
- **MCN to facilitate discussions with pathologists to develop a standard protocol for counting lymph nodes (e.g. counting lymph nodes in perivesical fat).**

QPI 7: Time to Treatment

QPI 7: Time To Treatment: Patients with muscle invasive bladder cancer (MIBC) undergoing treatment with radical intent should commence treatment as soon as possible (within 3 months of diagnosis).

Patients with bladder cancer should have cystectomy within 3 months of diagnosis as this has optimum survival benefit, if delayed for more than this time it can increase the risk of progression and cancer specific death.

Neoadjuvant chemotherapy should be offered to suitable patients prior to definitive radical therapy, this includes radical cystectomy, radical radiation therapy, or preoperative radiotherapy and cystectomy, therefore this treatment should be commenced as soon as possible following diagnosis.

Numerator: Number of patients with MIBC who commence radical treatment (neo-adjuvant chemotherapy, cystectomy and/or radiotherapy) within 3 months (92 days) of diagnosis of MIBC.

Denominator: All patients with MIBC undergoing radical treatment (neo-adjuvant chemotherapy, cystectomy and/or radiotherapy).

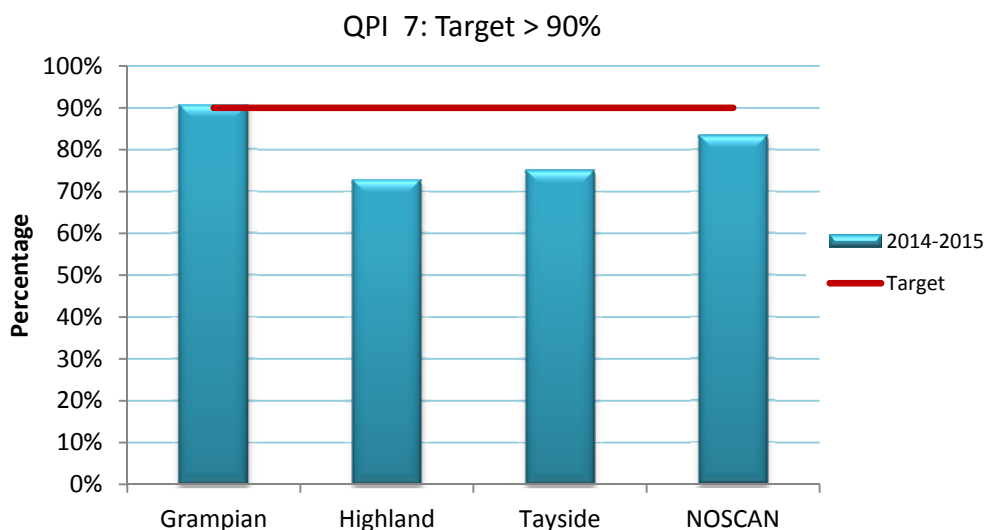
Exclusions: No exclusions

Target: 90%

QPI 7 Performance against target

Of the 48 patients diagnosed with MIBC in the North of Scotland during 2014-2015 and undergoing radical treatment, 40 (83.3 %) began their treatment within 92 days of diagnosis. This means that at regional level, the North of Scotland did not meet the performance target of 90%.

At individual Board level however, three of the 6 NoS Boards did achieve the required target for this QPI, NHS Grampian, NHS Orkney and NHS Shetland.



	Performance (%)	Numerator	Denominator	Not recorded - Numerator	% not recorded - Numerator	Not recorded - Exclusions	% not recorded - Exclusions	Not recorded - Denominator
Grampian	90.5%	19	21	0	0%	1	4.8%	0
Highland	72.7%	8	11	0	0%	0	0%	0
Orkney*	-	-	-	-	-	-	-	-
Shetland*	-	-	-	-	-	-	-	-
Tayside	75.0%	9	12	0	0%	2	16.7%	0
W Isles	-	0	0	0	-	0	-	0
NoS	83.3%	40	48	0	0%	3	6.3%	0

The view of the MCN is that in its present form, this QPI does not measure what was originally intended. Furthermore, it is agreed that in order to provide more clinically relevant information, amendments to the existing QPI definition should be nationally considered.

Actions Required:

- **MCN to suggest amendment of QPI 7 at QPI Baseline Review to consider;**
 - **The measurement of two elements of the patient pathway separately within this QPI;**
 - **time from diagnosis to chemotherapy and**
 - **time from the end of chemotherapy to surgery or radiotherapy.**

Definitive surgery or radiotherapy should be within 6 weeks of last cycle of chemotherapy.

- **Separate reporting for different treatment modalities. This will help identify where any problems lie.**
- **Separate reporting of patients not receiving neoadjuvant chemotherapy. For these patients, the time to radical cystectomy or radiotherapy should be 31 days, with exclusions for medically less fit patients.**

QPI 8: Volume of Cases per Surgeon

QPI 8: Volume of Cases per Surgeon: Radical cystectomy should be performed by surgeons who perform the procedure routinely.

Although evidence has shown varied results, recent studies have shown that there is a positive relationship between volume and reintervention rates.

Within each network, bladder cancer should be managed by multidisciplinary teams, with surgical and other radical treatments administered by those with appropriate expertise and caseloads.

Specification: Number of radical cystectomy procedures performed by each surgeon in a given year.

Exclusions: No exclusions.

Target: Minimum 10 procedures per surgeon in a 1 year period.

QPI 8 Performance against target

None of the 3 surgeons recorded as performing radical cystectomies in the North of Scotland during 2014-2015 were identified as performing 10 or more procedures: thereby no surgeons met the QPI target required.

However, it should be noted that figures include only those cystectomies recorded to have been carried out with curative intent. Information on the intent of cystectomy was largely missing from the dataset audited, and therefore these results do not reflect the full extent of radical cystectomy procedures that were carried out by surgeons in the North of Scotland.

Board of Surgery	Surgeon	Number of Cystectomy Procedures in 2014-2015
Highland	1	2
Grampian	1	2
	2	4

Actions Required:

Data recording issues need to be addressed to more accurately reflect clinical activity and improve results for this QPI. Actions to address these are identified under QPI 6 above.

QPI 9: Oncological Discussion

QPI 9: Oncological Discussion: Patients with muscle invasive bladder cancer should have all treatment options discussed with them prior to radical cystectomy.

Evidence has shown that an informed discussion with patients to outline the aims, benefits and toxicity of treatment is necessary before therapy begins.

Numerator: Number of patients with muscle invasive bladder cancer who undergo cystectomy who met with an oncologist prior to radical cystectomy.

Denominator: All patients with muscle invasive bladder cancer who undergo radical cystectomy.

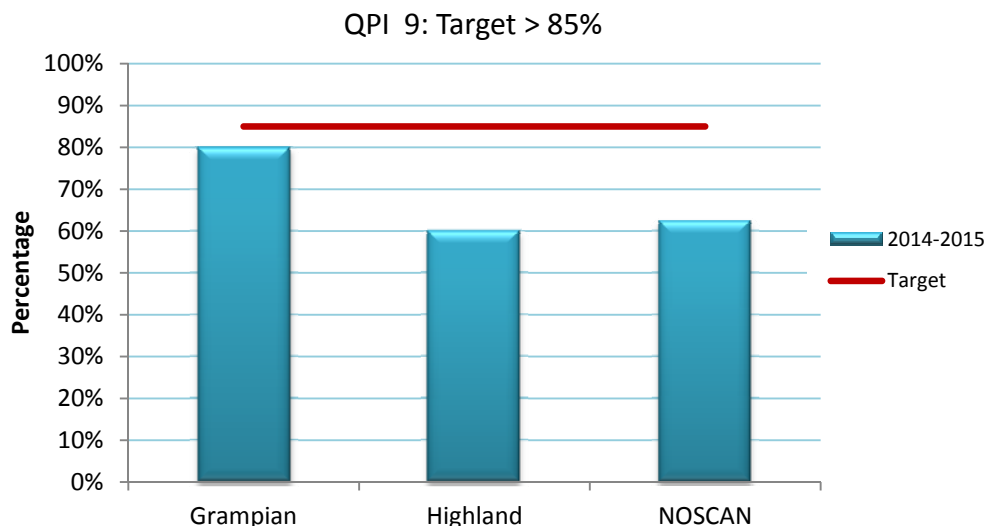
Exclusions: No Exclusions

Target: 85%

QPI 9 Performance against target

In the North of Scotland during 2014 – 2015, 16 patients were diagnosed with muscle invasive bladder cancer and subsequently went on to have radical cystectomy. Of these patients, only 10 (62.5%) met with an oncologist prior to surgery: this falls short of the required target of 85%.

At individual NHS Board level, only two Boards (NHS Orkney and NHS Shetland) met this QPI in the North of Scotland. However, it is noted that both of these Boards had very small numbers of patients QPI included.



	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%	4	80%	0
Highland	60.0%	3	5	0	0%	0	0%	0
Orkney*	-	-	-	-	-	-	-	-
Shetland*	-	-	-	-	-	-	-	-
Tayside*	-	-	-	-	-	-	-	-
W Isles	-	0	0	0	-	0	-	0
NoS	62.5%	10	16	0	0%	6	37.5%	0

It was noted that this QPI was based on very small numbers of patients during 2014-2015.

Actions Required:

- **Where clinically appropriate, patients with muscle invasive bladder cancer should have discussion with an oncologist and surgeon; this could be achieved in joint consultation after MDT discussion.**

QPI 10: Radical Radiotherapy with Chemotherapy

QPI 10: Radical Radiotherapy with Chemotherapy: Patients undergoing radical radiotherapy for transitional cell carcinoma of bladder should be considered for concomitant chemotherapy.

A well-conducted randomised trial concluded treating patients with transitional cell carcinoma of the bladder with combined chemotherapy as opposed to radiotherapy alone significantly improves local control with no significant increase in toxicity.

Numerator: Number of patients with transitional cell carcinoma of the bladder (T2-T4) receiving radical radiotherapy treated concomitantly with chemotherapy.

Denominator: All patients with transitional cell carcinoma of the bladder (T2-T4) receiving radical radiotherapy.

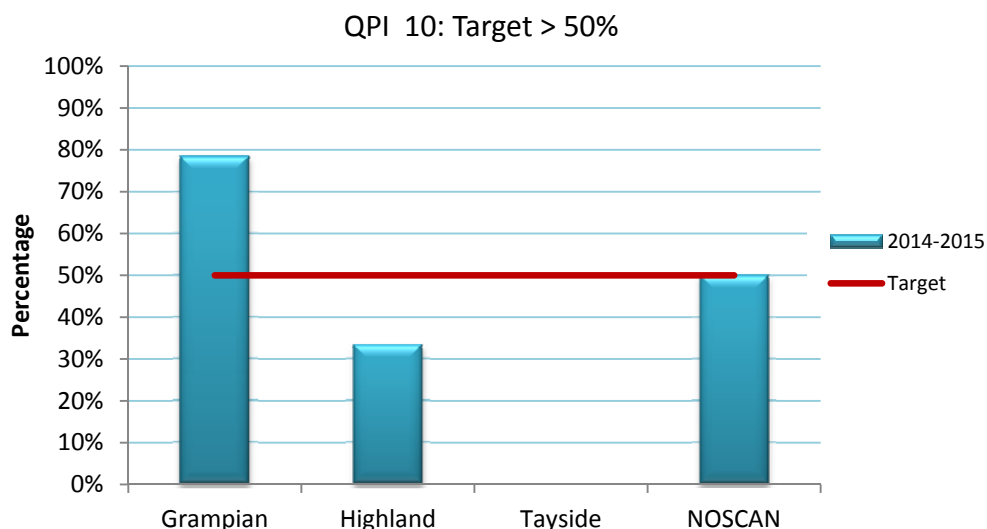
Exclusions: No Exclusions

Target: 50%

QPI 10 Performance against target

In the North of Scotland during 2014 – 2015, 50% of patients with transitional cell carcinoma of the bladder (T2-T4) and receiving radical radiotherapy were treated concomitantly with chemotherapy. This just meets of the target of 50%.

Across the North of Scotland, only NHS Grampian met the target for this QPI, although it should be noted that results are based on small numbers of patients.



	Performance (%)	Numerator	Denominator	Not recorded - Numerator	% not recorded - Numerator	Not recorded - Exclusions	% not recorded - Exclusions	Not recorded - Denominator
Grampian	78.6%	11	14	0	0%	0	0%	0
Highland	33.3%	2	6	0	0%	0	0%	0
Orkney*	-	-	-	-	-	-	-	-
Shetland	-	0	0	0	-	0	-	0
Tayside	0%	0	5	0	0%	0	0%	1
W Isles	-	0	0	0	-	0	-	0
NoS	50.0%	13	26	1	3.8%	0	0%	1

Actions Required:

- **All NHS Boards to ensure adherence to the requirements of QPI 10 and to record the reasons for patients not receiving concomitant chemotherapy.**

QPI 11: 30/90 Day Mortality after Treatment for Bladder Cancer

QPI 11: 30/90 day mortality following treatment with curative intent for bladder cancer.

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

Outcomes of treatment, including treatment related morbidity and mortality should be regularly assessed.

Treatment should only be undertaken in individuals that may benefit from that treatment, that is, treatments should not be undertaken in futile situations. This QPI is intended to ensure treatment is given appropriately, and the outcome reported on and reviewed.

Numerator: Number of patients with bladder cancer who receive treatment with curative intent (radical cystectomy, radiotherapy and chemotherapy) that die within 30/90 days of treatment.

Denominator: All patients with bladder cancer who receive treatment with curative intent (radical cystectomy, radiotherapy and chemotherapy).

Exclusions: No Exclusions

Target: < 5%

QPI 11 Performance against target

Radical cystectomy

None of the patients diagnosed with bladder cancer in the North of Scotland during 2014-2015 and who subsequently proceeded to have a radical cystectomy died within either 30 days or 90 days of surgery (0%). This level of performance far exceeded the required target of less than 5%.

With zero mortality, all NHS Boards met this QPI. As radical cystectomies are only undertaken in a single hospital per NHS Board (ie, Aberdeen Royal Infirmary (NHS Grampian), Raigmore Hospital (NHS Highland) and Ninewells Hospital (NHS Tayside)), analysis by hospital of surgery yields identical results to analysis by NHS Board of Surgery.

30 Day Mortality	Performance (%)	Numerator	Denominator	Not recorded - Numerator	% not recorded - Numerator	Not recorded - Exclusions	% not recorded - Exclusions	Not recorded - Denominator
Grampian	0%	0	13	0	0%	7	53.8%	0
Highland*	-	-	-	-	-	-	-	-
Orkney	-	0	0	-	-	0	-	0
Shetland	-	0	0	-	-	0	-	0
Tayside	0%	0	10	0	0%	9	90.0%	0
W Isles	-	0	0	-	-	0	-	0
NoS	0%	0	25	0	0%	16	64%	0

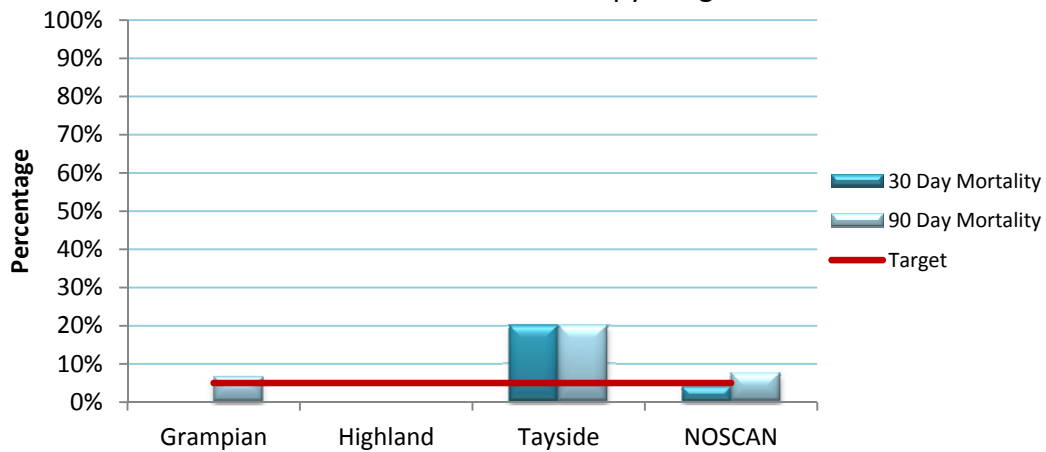
90 Day Mortality	Performance (%)	Numerator	Denominator	Not recorded - Numerator	% not recorded - Numerator	Not recorded - Exclusions	% not recorded - Exclusions	Not recorded - Denominator
Grampian	0%	0	13	0	0%	7	53.8%	0
Highland*	-	-	-	-	-	-	-	-
Orkney	-	0	0	-	-	0	-	0
Shetland	-	0	0	-	-	0	-	0
Tayside	0%	0	9	0	0%	8	88.9%	0
W Isles	-	0	0	-	-	0	-	0
NoS	0%	0	24	0	0%	15	62.5%	0

Radiotherapy

3.7% of patients diagnosed with bladder cancer in the North of Scotland during 2014-2015 and receiving radiotherapy died within 30 days of treatment, which is well within the target of less than 5%. However, at 7.4%, 90 day mortality following radiotherapy was higher and does not meet the QPI target.

At individual NHS Board level the 30 day post radiotherapy mortality target was met by all NHS Boards except NHS Tayside, while the 90 day mortality target was met by neither NHS Tayside nor NHS Grampian. In both cases results were due to the death of one patient.

QPI 11 - Radiotherapy: Target < 5%



30 Day Mortality	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	6	0	0%	0	0%	0
Orkney	-	0	0	0	-	0	-	0
Shetland*	-	-	-	-	-	-	-	-
Tayside	20.0%	1	5	0	0%	0	0%	0
W Isles	-	0	0	0	-	0	-	0
NoS	3.7%	1	27	0	0%	0	0%	0

90 Day Mortality	Performance (%)	Numerator	Denominator	Not recorded - Numerator	% not recorded - Numerator	Not recorded - Exclusions	% not recorded - Exclusions	Not recorded - Denominator
Grampian	6.7%	1	15	0	0%	0	0%	0
Highland	0%	0	6	0	0%	0	0%	0
Orkney	-	0	0	0	-	0	-	0
Shetland*	-	-	-	-	-	-	-	-
Tayside	20.0%	1	5	0	0%	0	0%	0
W Isles	-	0	0	0	-	0	-	0
NoS	7.4%	2	27	0	0%	0	0%	0

Chemotherapy

None of the patients diagnosed with bladder cancer during 2014-2015 and undergoing chemotherapy died within 30 days of treatment. Ninety day mortality was slightly higher at 3.0%. This meets the target of less than 5%.

All NHS Boards met the QPI target for 30 day mortality; however one NHS Board, NHS Tayside, did not meet the 90 day mortality target. It should be noted that the NHS Tayside figure was the result of the death of a single patient.

30 Day Mortality	Performance (%)	Numerator	Denominator	Not recorded - Numerator	% not recorded - Numerator	Not recorded - Exclusions	% not recorded - Exclusions	Not recorded - Denominator
Grampian	0%	0	17	0	0%	0	0%	0
Highland	0%	0	8	0	0%	0	0%	0
Orkney*	-	-	-	-	-	-	-	-
Shetland*	-	-	-	-	-	-	-	-
Tayside*	-	-	-	-	-	-	-	-
W Isles	-	0	0	0	-	0	-	0
NoS	0%	0	33	0	0%	0	0%	0

90 Day Mortality	Performance (%)	Numerator	Denominator	Not recorded - Numerator	% not recorded - Numerator	Not recorded - Exclusions	% not recorded - Exclusions	Not recorded - Denominator
Grampian	0%	0	17	0	0%	0	0%	0
Highland	0%	0	8	0	0%	0	0%	0
Orkney*	-	-	-	-	-	-	-	-
Shetland*	-	-	-	-	-	-	-	-
Tayside*	-	-	-	-	-	-	-	-
W Isles	-	0	0	0	-	0	-	0
NoS	3.0%	1	33	0	0%	0	0%	0

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 bladder cancer enrolled in an interventional clinical trial or translational research.
Denominator:	All patients with bladder cancer.
Exclusions:	No exclusions
Target:	Interventional clinical trials – 7.5% Translational research - 15%

Key points during the period audited:

- None of the patients diagnosed with bladder cancer in the North of Scotland in 2014 (0%) 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 also zero (0%), clearly missing the target of 15%.

	Number of patients recruited	ISD Cases annual average (2010-2014)	Percentage of patients recruited
Interventional Clinical Trials	0	198	0%
Translational Research	0	198	0%

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 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 bladder cancer trials that are currently open to recruitment in the North of Scotland 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 bladder cancer

During 2014 in NOSCAN, there were 3 interventional trials open to recruiting patients, thereby offering patients with a bladder cancer diagnosis the opportunity to participate in a range of different bladder cancer trials. Furthermore, all the bladder cancer patients passing through the cancer centres in NOSCAN will have been assessed for eligibility for clinical trials: unfortunately no patients were recruited into bladder cancer trials during 2014.

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 North of Scotland. 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

Actions Required:

- **Clinical trials are important aspect of current clinical practice. All NHS Boards are encouraged to participate in ongoing national or local trials for bladder cancer.**

5. Conclusions

The Quality Performance Indicators programme was first introduced in order to launch and thereafter 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 Bladder 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.

Case ascertainment was not a reliable measure of audit completeness due to the different ways in which bladder cancer has been defined in cancer audit compared with the Scottish Cancer Registry data. While it is thought that most patients have been captured by cancer audit, it is clear that there are significant gaps in the data collected for many of the patients, particularly in relation to surgical information. These gaps in the data have significantly affected the QPI results for this first year of QPI reporting.

The QPI targets were met for only one of the twelve QPIs measured. There were eleven QPIs where the target was not met various contributing factors were reported by NHS Boards. Discrepancy between data recorded and actual clinical practice was raised as a significant issue and it is realised that there is a need for the development of strategies to improve accuracy and completeness of data collection.

The actions so far identified to improve data collection and service delivery in the North of Scotland include;

- NHS Boards to ensure that clinicians, nursing staff and MDT co-ordinators work in collaboration to make sure all patients are discussed at MDT, including during times of staff shortages.
- All NHS Boards to ensure that there is single use of MMC where indicated: where MMC is not used, documentation of the reason should be clearly stated in the TURBT pro-forma.
- All NHS Boards to use standard user friendly pro-formas to record TURBT data. Ideally it should be available electronically - bladder diagrams should be made editable electronically to allow entry of tumour locations. For uniformity, the MCN could develop a pro-forma for use across the region.
- All NHS Boards to ensure that all Urological Surgeons (consultants and trainees) are informed of the need to complete the TURBT pro-forma, and fill in all data fields at surgery.

- NHS Boards to ensure that all patients with indications for re-resection should have re-TURBT. If no re-resection is undertaken, reasons for this should be clearly documented.
- Cancer pathway groups in each NHS Board should work to improve the MDT review and re-TURBT pathway. For example, to avoid delay, clinicians can add these patients to the waiting list for re-TURBT when pathology results are available rather than waiting for MDT discussion. While patients should be discussed in MDT, adding these patients on waiting lists in advance of the MDT will reduce time to re-TURBT.
- Once any amendments to QPI 5 have been agreed, MCN to ensure that the pathology reporting requirements should be discussed with all uro-pathologists within NOSCAN.
- All NHS Boards to ensure that intent of surgery is clearly documented.
- Electronic pro-forma for radical cystectomy to be developed to include all operative information, including intent of surgery.
- MCN to facilitate discussions with pathologists to develop a standard protocol for counting lymph nodes (e.g. counting lymph nodes in perivesical fat).
- Where clinically appropriate, patients with muscle invasive bladder cancer should have a discussion with an oncologist and surgeon; this could be achieved in joint consultation after MDT discussion.
- All NHS Boards to ensure adherence to the requirements of QPI 10 and to record the reasons for patients not receiving concomitant chemotherapy.
- Clinical trials are important aspect of current clinical practice. All NHS Boards are encouraged to participate in ongoing national or local trials for bladder cancer.

In addition, a number of generic actions have been highlighted that would help improve data collection and service delivery throughout the patient pathway as follows;

- Collaboration between cancer audit facilitators and surgeons to improve data collection.
- Development of pathways at NHS Board level to improve data collection, pathology reporting and timing of surgery/definitive therapy.
- All stake holders (surgeons, urology specialist nurses, pathologists, oncologists) to be included in discussions around QPIs.

- MCN to consider training needs of audit facilitators and expansion of support to cover the collection of BAUS datasets.
- As well as creating annual reports, it is recommended that NHS Boards analyse and review their QPI results on a three monthly or six monthly basis to inform ongoing improvements in data collection and service delivery.

A number of other areas have also been identified where further work might be required with national partners to ensure that the bladder cancer QPIs are as clinically relevant as possible in the future, and able to better evaluate patient and service outcomes. These include:

- MCN to suggest to Bladder QPI Review that QPI 4 should state clearly if High Grade G2 tumours are to be treated in the same way as any other high grade tumour.
- MCN to highlight concerns with QPI 5 at Baseline Review and advise collaboration with the Royal College of Pathologists on any revisions.
- MCN to suggest at QPI Review that the level of lymph node dissection should be included in QPI 6.
- MCN to suggest amendment of QPI 7 at QPI Baseline Review to consider;
 - The measurement of two elements of the patient pathway separately within this QPI;
 - time from diagnosis to chemotherapy and
 - time from the end of chemotherapy to surgery or radiotherapy.
 Definitive surgery or radiotherapy should be within 6 weeks of last cycle of chemotherapy.
 - Separate reporting for different treatment modalities. This will help identify to know where any problems lie.
 - Separate reporting of patients not receiving neoadjuvant chemotherapy. For these patients, the time to radical cystectomy or radiotherapy should be 31 days, with exclusions for medically less fit patients.

The North of Scotland Urological Cancer 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 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 Bladder Cancer Clinical Lead as

part of the regional audit governance process to enable RCAF to review and monitor regional improvement.

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Appendix: 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.



North of Scotland
Cancer Network

Action Plan: Bladder 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			
	<i>Ensure actions mirror those detailed in Audit Report</i>	<i>Detail specific actions that will be taken by the NHS Board</i>	<i>Insert date</i>	<i>Insert date</i>	<i>Insert name of responsible lead for each action.</i>	<i>Detail actions in progress, changes in practice, problems encountered or reasons why no action has been taken.</i>	<i>Insert no. from key</i>