NOSCAN
North of Scotland
Cancer Network

Breast Cancer
Managed Clinical Network

Audit Report

Breast Cancer
Quality Performance Indicators

Patients diagnosed during 2016

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

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

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EXECUTIVE SUMMARY

This publication reports the fifth year of performance of breast cancer services in the six NHS Boards in the North of Scotland (NOS) against the Breast Cancer Quality Performance Indicators (QPIs) for patients diagnosed during 2016.

In 2016, following the first three years of reporting, the QPIs for breast cancer were nationally reviewed to ensure that they continued to be clinically relevant and to enhance data interpretation. As part of this national process, some of the QPI definitions were updated, either to ensure enhanced data meaningfulness, or to raise the required performance threshold. For the first time this report includes all amendments to QPIs made at the review. Results are also compared with those from previous years where appropriate.

Key points during the period audited (1st January to 31st December 2016)

- 1295 patients diagnosed with breast cancer were audited in the North of Scotland. This is an increase of 4% from 2015 (1241 patients).
- Overall case ascertainment was high (104%), and results were considered to be representative of breast cancer services in the region.
- NOSCAN boards have performed well against the required standards, exceeding the target for 9 of the 14 indicators measured.
- As in previous years, the main sources of referral were via a Primary Care Clinician (53%) and Screening Services (39%).

Summary of QPI Results

QPI	QPI Target	Performance[a]				
		NOSCAN	Grampian	Highland	Shetland	Tayside
QPI 1: Multidisciplinary Team Meeting (MDT) – Proportion of patients with breast cancer who are discussed at MDT meeting before definitive treatment.	95%	**99%** n=1291	99% n=468	99% n=259	100% n=28	98% n=534
QPI 2: Non-Operative Diagnosis – Proportion of patients with invasive or in-situ breast cancer who have a non-operative diagnosis (core biopsy / large volume biopsy).	95%	**96%** n=1288	92% n=468	96% n=255	100% n=28	98% n=535
QPI 3: Pre-Operative Assessment of Axilla – Proportion of patients with invasive breast cancer who undergo assessment of the axilla.						
i. All patients with invasive breast cancer should undergo ultrasound assessment of the axilla	95%	**98%** n=967	97% n=346	98% n=191	95% n=22	98% n=408

QPI	QPI Target	Performance[a]				
		NOSCAN	Grampian	Highland	Shetland	Tayside
ii. If findings of ultrasound are suspicious of cancer spread to nodes all patients should undergo FNA/core biopsy.	85%	**95%** n=275	100% n=84	88% n=49	-	96% n=139
QPI 4: Conservation Rate – Proportion of surgically treated patients with breast cancer less than 20mm whole tumour size on histology who achieve breast conservation.	90%	**92%** n=370	91% n=149	92% n=72	-	94% n=145
QPI 5: Surgical Margins – Proportion of surgically treated patients with breast cancer (invasive or ductal carcinoma in situ) with final radial excision margins of less than 1mm.	< 5%	**4%** n=724	5% n=265	5% n=135	-	3% n=318
QPI 6: Immediate Reconstruction Rate – Proportion of patients who undergo immediate breast reconstruction at the time of mastectomy for breast cancer.	> 25%	**26%** n=369	27% n=132	18% n=76	0% n=14	32% n=147
QPI 8: Minimising Hospital Stay – Day Case Surgery - Proportion of patients undergoing wide excision and/or an axillary sampling procedure for breast cancer as day case surgery.	60%	**45%** n=787	23% n=282	79% n=169	70% n=10	46% n=326
QPI 9: HER2 Status for Decision Making - Proportion of patients with invasive breast cancer for whom the HER2 status (as detected by immunohistochemistry (IHC) and/or FISH analysis) is reported within 2 weeks of core biopsy.	80%	**81%** n=1109	69% n=379	71% n=227	96% n=28	94% n=474
QPI 10: Radiotherapy for Breast Conservation - Proportion of patients with breast cancer who receive radiotherapy to the breast after conservation for invasive cancer.	95%	**95%** n=619	98% n=216	92% n=118	83% n=6	94% n=279
QPI 11: Adjuvant Chemotherapy - Proportion of patients with invasive breast cancer who have a ≥5% overall survival benefit of chemotherapy treatment predicted at 10 years that undergo adjuvant chemotherapy.	85%	**82%** n=142	94% n=35	82% n=50	100% n=7	70% n=50
QPI 13: Re-excision Rates - Proportion of surgically treated patients with breast cancer (invasive or in situ) who undergo re-excision or mastectomy following their initial surgery.	< 20%	**12%** n=1105	12% n=401	19% n=216	10% n=21	9% n=467
QPI 14: Referral for Genetic Testing – Proportion of patients who meet the following criteria for gene testing and are referred to a specialist genetics clinic.						

QPI	QPI Target	Performance[a]				
		NOSCAN	Grampian	Highland	Shetland	Tayside
i. Patients with breast cancer who are under 30 years of age.	90%	-	-	-	-	-
ii. Patients with triple negative breast cancer who are under 40 years of age.	90%	**100%** n=7	-	-	-	-
QPI 15: 30 Day Mortality following Chemotherapy - Proportion of patients with breast cancer who die within 30 days of chemotherapy.						
Neoadjuvant Chemotherapy	<1%	**2%** n=90	3% n=39	7% n=14	-	0% n=36
Adjuvant Chemotherapy	<1%	**0%** n=221	0% n=92	2% n=50	0% n=9	0% n=90
Palliative Chemotherapy	<5%	**10%** n=21	0% n=6	0% n=5	-	20% n=10
QPI 16: Clinical Trials Access - Proportion of patients with breast cancer who are enrolled in an interventional clinical trial or translational research.						
Interventional clinical trials	7.5%	**7%** n=1242				
Translational research	15%	**8%** n=1242				

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

2016 is the fifth year of QPI reporting, during which time NOSCAN boards have performed well against the required standards, exceeding the target for 9 of the 14 measured outcomes.

QPIs 1, 3 and 4 are once again achieved and need no further discussion.

NHS Grampian has again just failed to meet the 95% target (92.3%) for non operative diagnosis by core biopsy (QPI 2): this is a fall of 1.4% on the previous year. Regional clinical managed guidelines are due to be circulated shortly and it is hoped that the agreed anticoagulant policy for patients undergoing core biopsy may help Grampian achieve the target. Discussion with other Health Boards in the region regarding their policies for patients with co morbidities and mental health issues may also help reduce Grampian's exclusion of such patients from core biopsy.

NHS Highland just failed to meet the target for QPI 5 by 0.2%. All patients with radial margins less than 1 mm were discussed and there was no scope for further surgery. No action is required.

The North of Scotland now meet the target for immediate reconstruction (QPI 6) and while NHS Highland failed to meet the target in 2016, results were an improvement over the previous year and require no specific action.

Day case surgery (QPI 8) remains a challenge in NHS Grampian and NHS Tayside. Greater use of anaesthetic pre-assessment will continue to improve NHS Grampian figures although it is unlikely that the target will be met until the move to the new Baird Hospital. In NHS Tayside there is already wide use of anaesthetic pre-assessment and the move to same day sentinel node injection will make the target attainable.

As in previous years HER 2 availability for decision making (QPI 9) shows variation across the region with NHS Tayside once again easily achieving the target while it remains a challenge in NHS Grampian and NHS Highland. It should be emphasised that while HER2 reporting may be delayed, this does not delay treatment commencement and is always available prior to final decision making.

Both NHS Highland and NHS Tayside failed the new adjuvant chemotherapy indicator (QPI 11). However until more complete data is available next year, results for this new QPI should be treated with caution.

Some actions to improve services have been identified. These are

- **NHS Grampian to review protocol for performing core biopsy on patients taking anticoagulants and to review the risk assessment process for patients with co morbidities and mental health issues.**

- **All NHS Boards to consider greater use of anaesthetic pre-assessment and same day sentinel node injection in patients having a wide excision or an axillary sampling procedure.**

- **NHS Grampian and NHS Highland to continue to support the development of FISH testing.**

- **All NHS Boards to record PREDICT value for all patients.**

- **MCN to monitor performance against QPI 15 and benchmark against results from other Networks.**

- **All clinicians should consider opening relevant clinical trials in their tumour areas. When this is not possible patient referrals to other sites for access to clinical trials should be considered.**

Contents

Executive Summary 3
Contents 7
1. **Introduction** 8
2. Background 8
2.1 National Context 9
2.2 North of Scotland Context 9
3. Methodology 10
4. Results 10
4.1 Case ascertainment 10
4.2 Source of Referral 12
4.3 Performance against Qualify Performance Indicators (QPIs) 12
5. Conclusions 42
6. References 44
7. Appendix..... 45

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 Breast Cancer QPIs are available from the ISD website[1].

Regular reporting of activity and performance is a fundamental requirement of a Managed Clinical Network (MCN) to assure the quality of care delivered across the region. The need for regular reporting of activity and performance (to assure the quality of care delivered) was first set out nationally 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 the North of Scotland (NoS) breast cancer services, as measured against version 3.0 of the Breast Cancer Quality Performance Indicators (QPIs)[6] which were implemented for patients diagnosed on or after 1st January 2015 using clinical audit data for patients diagnosed with breast cancer in the twelve months from 1st January 2016 to 31st December 2016. Comparison with the results from both previous years, as reported in the ISD Breast Cancer QPI report[7] and NOSCAN Breast Cancer Audit Reports[8], are also provided where appropriate to illustrate trends in performance.

2. Background

Six NHS Boards across the North of Scotland serve the 1.40 million population[9]. There were 1295 patients diagnosed with breast cancer in the North of Scotland between 1st January and 31st December 2016.

Best practice recommends that patients diagnosed with cancer should have all aspects of their clinical management multidisciplinary considered thereby ensuring enhanced consistency and quality of patient care and clinical outcomes. The configuration of the three Multidisciplinary Teams (MDTs) pertaining to the management of breast cancer in the region is set out below. It should be noted that patients from NHS W Isles attend clinic and are diagnosed in NHS Highland or NHS Greater Glasgow & Clyde, while patients from Argyll and Bute (part of NHS Highland) attend clinic and are diagnosed in NHS Greater Glasgow & Clyde.

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

2.1 National Context

Breast cancer is the most common cancer in women (and second most common cancer in both men and women combined) with over 4500 cases diagnosed in Scotland each year since 2010[10].

Over the last decade the incidence rate has increased by 6%; this is partly due to:

- increased detection by the Scottish Breast Screening Programme, which has seen a rise in attendance over the same time period,

and

- higher prevalence of known risk factors among the female population, such as increases in the mother's age at the birth of her first child, decreases in family size, increases in post-menopausal obesity, and increases in alcohol consumption[11].

Relative survival for breast cancer is also increasing[12]. The table below shows the percentage change in one-year and five-year age-standardised survival rates for female patients diagnosed in 1987-1981 compared to those diagnosed in 2007-2011. The improvement in survival for breast cancer is likely to reflect the introduction and increasing use of systemic adjuvant therapy[13] as well as the national breast-screening programme.

Relative age-standardised survival for breast cancer in Scotland at 1 year and 5 years showing percentage change from 1987-1981 to 2007-2011[12].

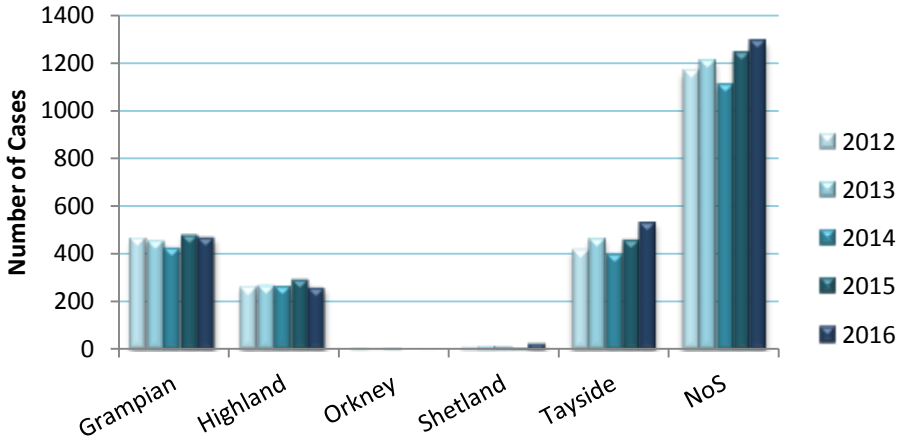
	Relative survival at 1 year (%)		Relative survival at 5 years (%)	
	2007-2011	% change	2007-2011	% change
Breast Cancer	94.6 %	+ 6.9 %	82.8 %	+ 16.6 %

2.2 North of Scotland Context

A total of 1295 cases of breast cancer were recorded through audit as diagnosed in the North of Scotland between 1st January 2016 and 31st December 2016, which is an 4.4% increase when compared with 2015 (1241 patients). The number of patients diagnosed within each Board is presented below.

	Grampian	Highland[a]	Orkney	Shetland	Tayside	NoS
Number of Patients	470	260	2	28	535	**1295**
% of NoS total	36.3%	20.1%	0.2%	2.2%	41.3%	**100%**

[a] Highland results include patients from the Western Isles.



Number of patients diagnosed with breast cancer 2012 - 2016.

3. Methodology

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

Data for patients diagnosed between 1st January 2016 and 31st December 2016 and any comments on QPI results were then signed-off at individual NHS Board level to ensure that the data were an accurate representation of service in each area prior to submission to NOSCAN for collation at a regional level. The reporting timetable was developed to take into account the patient pathway and ensure that a complete treatment record was available for the vast majority of cases.

Where the number of cases meeting the denominator criteria for any indicator is between one and four, the results have 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

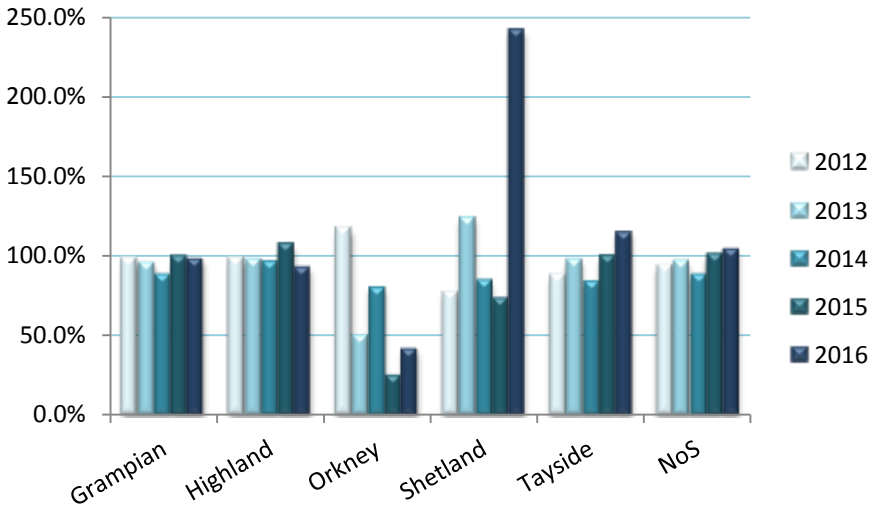
4.1 Case Ascertainment

Audit data completeness can be assessed from case ascertainment, which is the proportion of expected patients that have been identified through audit. Case ascertainment is calculated by comparing the number of new cases identified by the cancer audit with the numbers recorded by the National Cancer Registry, with analysis being undertaken by NHS Board of diagnosis. 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 2016. Consequently an average of the previous five years' figures is used to take account of annual fluctuations in incidence within NHS Boards.

Overall case ascertainment for the North of Scotland was high at 104.2%. This is an increase from the 2015 figure of 100.2%. Case ascertainment figures are provided for guidance and are not an exact measurement of audit completeness as it is not possible to compare the same cohort of patients. Case ascertainment for each Board across the North of Scotland is illustrated below. There is variation in percentage case ascertainment across the mainland Boards ranging from 97.9% to 114.8%.

The wider variation in Orkney and Shetland will reflect both the small numbers of patients in these Boards and the screening cycle in that area: the mobile screening unit visited Shetland in 2016, resulting in a spike in case ascertainment, but not Orkney.



Case ascertainment by NHS Board for patients diagnosed with breast cancer 2012 - 2016.

	Grampian	Highland[a]	Orkney	Shetland	Tayside	NoS
Cases from audit 2016	470	260	2	28	535	**1295**
ISD Cases annual average (2011-2015)	480	280	5	12	466	**1242**
Case ascertainment	97.9%	92.9%	41.7%	241.4%	114.8%	**104.2%**

[a] Highland results include patients from the Western Isles

Audit data were considered to be sufficiently complete to allow QPI calculations: the number of instances of data not being recorded was generally very low, with the only notable gap across the region being for the recording of the '% predicted survival benefit' of chemotherapy treatment. This is a new data item introduced in January 2016 and is required to report QPI 11. For 102 patients across the North of Scotland this information

was not recorded and it was not possible to identify whether patients should be included within the QPI 11 results and they were therefore excluded from calculations.

4.2 Source of referral

As in previous years reported, the majority of patient referrals in Scotland were from Primary Care Clinicians (52.9%) and the Screening Service (38.6%), and were similar across NHS Boards. In NHS Orkney there were no referrals from the screening service as the mobile breast screening service did not visit in this year.

Source of referral (%)	Grampian	Highland[a]	Orkney	Shetland	Tayside	NoS
Primary Care Clinician	56.4%	52.7%	100%	39.3%	50.5%	**52.9%**
Screening Service	37.0%	39.2%	0%	53.6%	39.1%	**38.6%**
Secondary Care	3.2%	5.4%	0%	0%	0.2%	**2.3%**
Review Clinic	1.3%	1.5%	0%	3.6%	1.5%	**1.5%**
Increased Risk Clinic	0.4%	0.8%	0%	0%	1.1%	**0.8%**
Referral from private healthcare	1.3%	0%	0%	0%	0.2%	**0.5%**
Other	0.4%	0.4 %	0%	3.6%	7.5%	**3.4%**

[a] Highland results include patients from the Western Isles

4.3 Performance against Quality Performance Indicators (QPIs)

Results of the analysis of Breast 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 are presented by individual Board of audit and collectively for the whole of the North of Scotland. 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.

QPI 1: Multidisciplinary Team Meeting (MDT)

QPI 1: Multidisciplinary Team Meeting (MDT): Patients with newly diagnosed breast cancer should be discussed by a multidisciplinary team 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 breast cancer discussed at the MDT before definitive treatment.

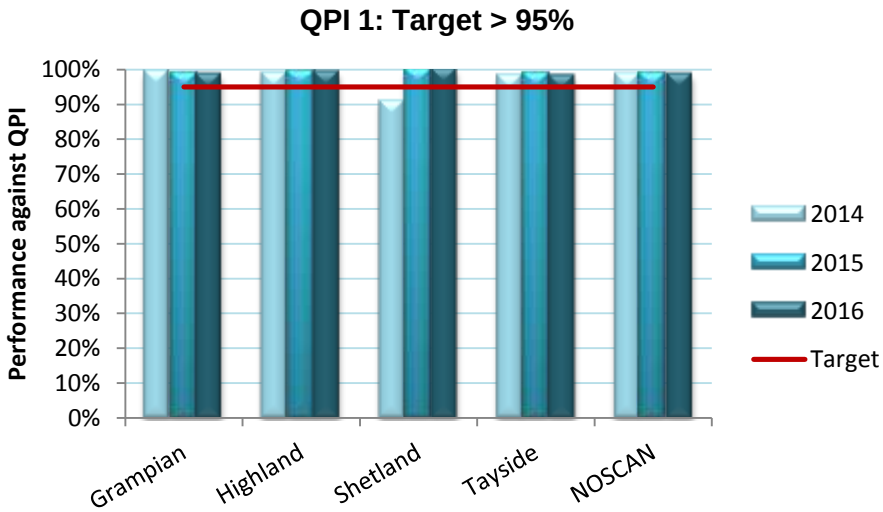
Denominator: All patients with breast cancer.

Exclusions: Patients who died before first treatment.

Target: 95%

QPI 1 Performance against target

Of the 1291 breast cancer patients diagnosed in the North of Scotland in 2016, 1272 were discussed at the MDT before definitive treatment; this equates to a rate of 98.5% and is above the target rate of 95%. This is similar to the 2015 figure of 98.9%. All NHS Boards in the North of Scotland met this QPI.



	Performance (%)	Numerator	Denominator	Not recorded - Numerator	% not recorded - Numerator	Not recorded - Exclusions	% not recorded - Exclusions	Not recorded - Denominator	Difference from 2015
Grampian	**98.5%**	461	468	0	0%	0	0%	0	-0.2%
Highland	**99.2%**	257	259	0	0%	0	0%	0	-0.1%
Orkney*	**-**	-	-	-	-	-	-	-	-
Shetland	**100%**	28	28	0	0%	0	0%	0	0%
Tayside	**98.1%**	524	534	0	0%	0	0%	0	-0.8%
NoS	**98.5%**	**1272**	**1291**	0	0%	0	0%	0	-0.4%

The North of Scotland continues to show excellent performance against this quality indicator.

Actions Required: No actions identified.

QPI 2: Non Operative Diagnosis

QPI 2: Non Operative Diagnosis: Patients with breast cancer should have a non-operative histological diagnosis.

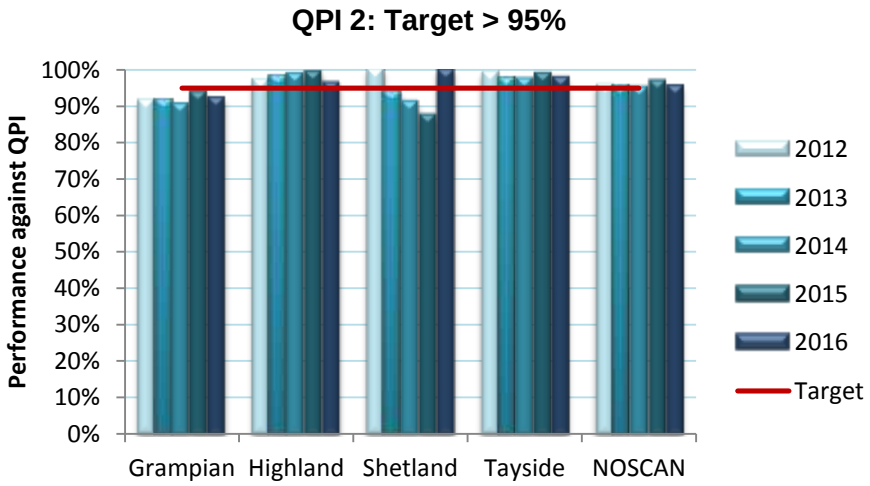
Diagnosis of patients non-operatively allows them, where possible, to have only one definitive procedure. However, it may not always be technically possible to undertake a biopsy and patient choice may also be a factor.

Numerator:	Number of patients with a non-operative diagnosis of breast cancer (core biopsy / large volume biopsy).
Denominator:	All patients with invasive or in-situ breast cancer.
Exclusions:	All breast cancer patients with lobular carcinoma in situ (LCIS).
Target:	95%

QPI 2 Performance against target

Of the 1288 invasive or in-situ breast cancer patients diagnosed in the North of Scotland in 2016, 1231 were given a non operative diagnosis; this equates to a rate of 95.6% which is above the target rate of 95% and similar to the 96.8% recorded in 2015.

At NHS Board level NHS Highland, NHS Tayside and NHS Shetland met the QPI target while NHS Grampian and NHS Orkney did not, mirroring results in previous years.



	Performance (%)	Numerator	Denominator	Not recorded - Numerator	% not recorded - Numerator	Not recorded - Exclusions	% not recorded - Exclusions	Not recorded - Denominator	Difference from 2015
Grampian	**92.3%**	432	468	1	0.2%	0	0%	0	-1.4%
Highland	**96.5%**	246	255	0	0%	0	0%	0	-2.8%
Orkney*	**-**	-	-	-	-	-	-	-	-
Shetland	**100%**	28	28	0	0%	0	0%	0	+12.5%
Tayside	**97.9%**	524	535	0	0%	0	0%	0	-1.0%
NoS	**95.6%**	**1231**	**1288**	**1**	**0.1%**	**0**	**0%**	**0**	**-1.2%**

The NHS Grampian performance against this QPI was less good than in 2015, falling by 1.4%. In this Board 35 patients did not have a core biopsy or large volume biopsy, although only 5 of these patients proceeded to surgery and 3 of these had suspicious (B4) lesions. The other 30 patients did not proceed to surgery and had FNA rather than core biopsy due to co-morbidities, anticoagulation issues and impaired mental health issues.

Actions Required:

- **NHS Grampian to review protocol for performing core biopsy on patients taking anticoagulants and to review the risk assessment process for patients with co morbidities and mental health issues.**

QPI 3: Pre-Operative Assessment of Axilla

QPI3: Pre-Operative Assessment of Axilla (i): patients with breast cancer should have pre-operative ultrasound assessment of the axilla.

A pre-operative diagnosis of nodal disease enables definitive treatment of axilla at the time of initial breast surgery. However, some patients may refuse investigation and/or treatment.

Numerator: Number of patients with invasive breast cancer who undergo assessment of the axilla by ultrasound before surgery.

Denominator: All patients with invasive breast cancer undergoing surgery.

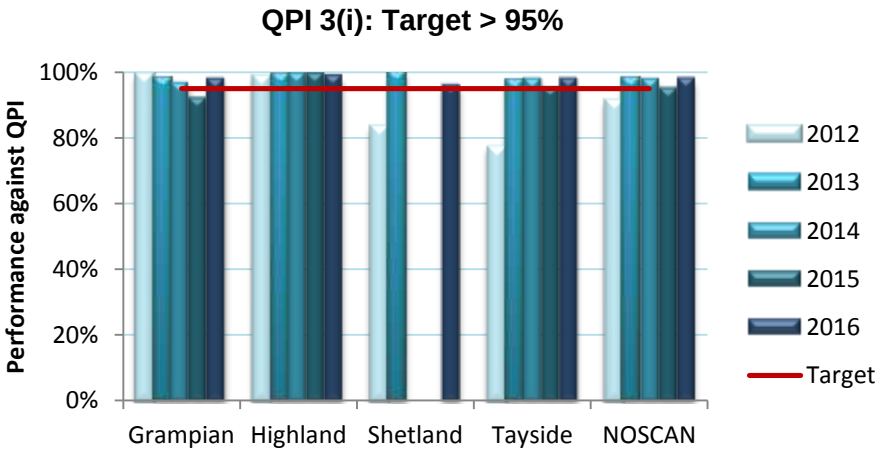
Exclusions: No exclusions.

Target: 95%

QPI 3(i) Performance against target

The regional rate for pre-operative assessment of axilla (i) was 97.6%; this is above the target rate of 95% and slightly higher than the 2015 result of 95.1%.

This QPI was met by all NHS Boards.



	Performance (%)	Numerator	Denominator	Not recorded - Numerator	% not recorded - Numerator	Not recorded - Exclusions	% not recorded - Exclusions	Not recorded - Denominator	Difference from 2015
Grampian	**97.4%**	337	346	2	0.6%	0	0%	0	+5.3%
Highland	**98.4%**	188	191	0	0%	0	0%	0	-1.2%
Orkney	**-**	-	-	0	0%	0	0%	0	-
Shetland	**95.5%**	21	22	1	4.5%	0	0%	0	-
Tayside	**97.5%**	398	408	0	0%	0	0%	0	+2.2%
NoS	**97.6%**	**944**	**967**	3	0.3%	0	0%	0	+2.5%

QPI3: Pre-Operative Assessment of Axilla (ii): patients with breast cancer whose pre-operative ultrasound assessment of the axilla found suspicious morphology should undergo FNA/core biopsy.

Patients with invasive breast cancer should undergo pre-treatment ultrasound assessment of the axilla and if morphologically suspicious nodes are identified these should be sampled using FNA or core biopsy. However, FNA/core biopsy of the axilla is not always technically possible.

Numerator: Number of patients with invasive breast cancer with suspicious morphology on ultrasound who undergo an FNA/core biopsy.

Denominator: All patients with invasive breast cancer undergoing surgery with suspicious morphology reported on ultrasound.

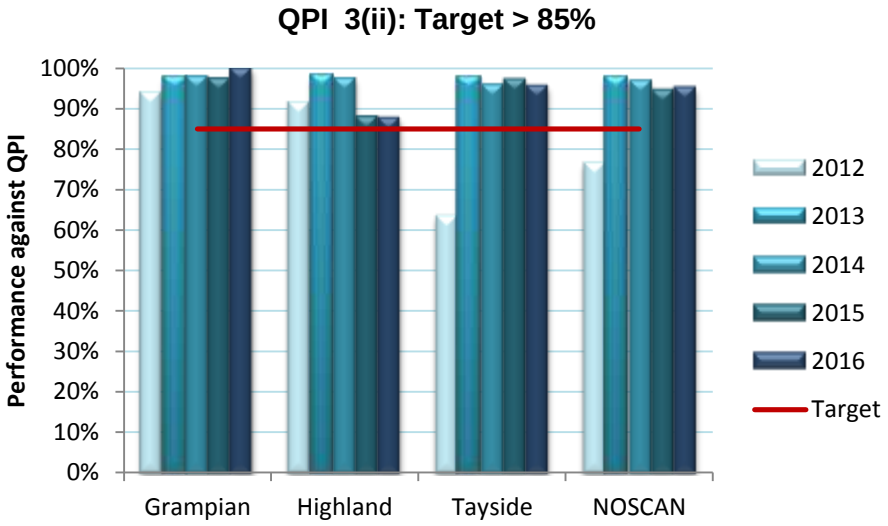
Exclusions: No exclusions.

Target: 85%

QPI 3 (ii) Performance against target

A total of 375 breast cancer patients in the North of Scotland were found to have morphologically suspicious nodes after ultrasound assessment of the axilla. Of these, 262 (95.3%) underwent FNA/core biopsy; this means that at a regional level, the target of 85% was met. This is very similar to the 2015 result of 94.6%.

All NHS Boards in the North of Scotland exceeded the required performance level except for NHS Shetland, where the target was not met due to the outcome of a single patient.



	Performance (%)	Numerator	Denominator	Not recorded - Numerator	% not recorded - Numerator	Not recorded - Exclusions	% not recorded - Exclusions	Not recorded - Denominator	Difference from 2015
Grampian	**100%**	84	84	0	0%	0	0%	2	+2.6%
Highland[a]	**87.8%**	43	49	0	0%	0	0%	0	-0.2%
Orkney	**-**	0	0	0	-	0	-	0	-
Shetland*	**-**	-	-	-	-	-	-	-	-
Tayside	**95.7%**	133	139	0	0%	0	0%	0	-1.5%
NoS	**95.3%**	**262**	**275**	**0**	**0%**	**0**	**0%**	**3**	**+0.7%**

The North of Scotland continues to show excellent performance against this quality indicator.

Actions Required: No actions identified.

QPI 4: Conservation Rate

QPI 4: Conservation rate: patients with small breast cancers should undergo breast conservation whenever appropriate.

Breast conservation is appropriate for small breast cancers. Randomised trials have shown no difference in survival for tumours treated by conservation surgery followed by radiotherapy to mastectomy.

Breast conservation may not be appropriate for all patients for a variety of reasons including patient choice, genetic risk and small breast size.

Numerator: Number of surgically treated patients with breast cancer less than 20mm whole tumour size on histology (invasive plus in situ disease) treated by breast conservation surgery.

Denominator: All surgically treated patients with breast cancer less than 20mm whole tumour size on histology (invasive plus in situ disease).

Exclusions:

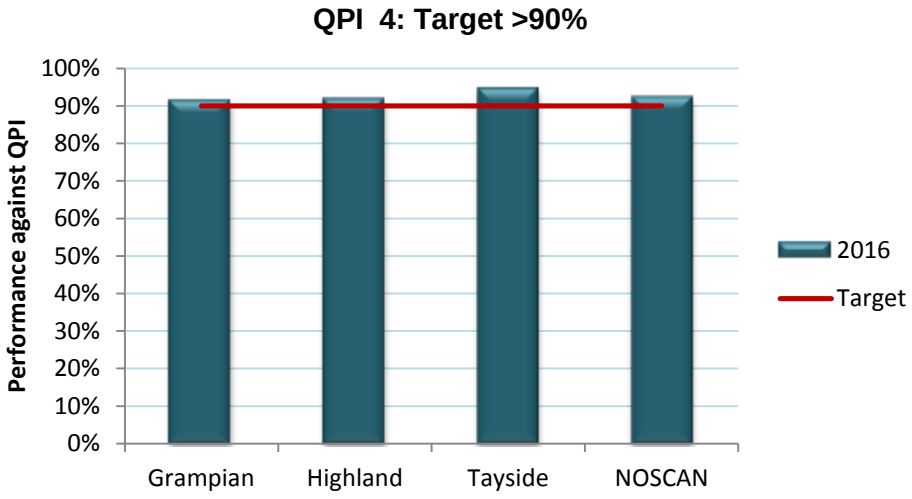
- All patients with multifocal breast cancer.
- All patients with breast cancer who have received neoadjuvant systemic therapy for ≥6 weeks (hormonal therapy or chemotherapy).
- Patients with high risk.
- Patients who have had previous radiotherapy.
- All male patients.

Target: 90%

QPI 4 Performance against target

The breast conservation rate in the North of Scotland was 92.2% in 2016. Results are not comparable with previous years due to changes in the way this QPI is measured.

All NHS Boards in the North of Scotland met this QPI target in 2016 except NHS Shetland, where figures were based on very small numbers of patients.



	Performance (%)	Numerator	Denominator	Not recorded - Numerator	% not recorded - Numerator	Not recorded - Exclusions	% not recorded - Exclusions	Not recorded - Denominator
Grampian	**91.3%**	136	149	0	0%	0	0%	0
Highland	**91.7%**	66	72	0	0%	0	0%	0
Orkney	**-**	0	0	0	-	0	-	0
Shetland*	**-**	-	-	-	-	-	-	-
Tayside	**94.5%**	137	145	0	0%	0	0%	0
NoS	**92.2%**	**341**	**370**	**0**	**0%**	**0**	**0%**	**0**

The North of Scotland continues to show excellent performance against this quality indicator.

Actions Required: No actions identified.

QPI 5: Surgical Margins

QPI 5: Surgical margins: Breast cancers which are surgically treated should be adequately excised.

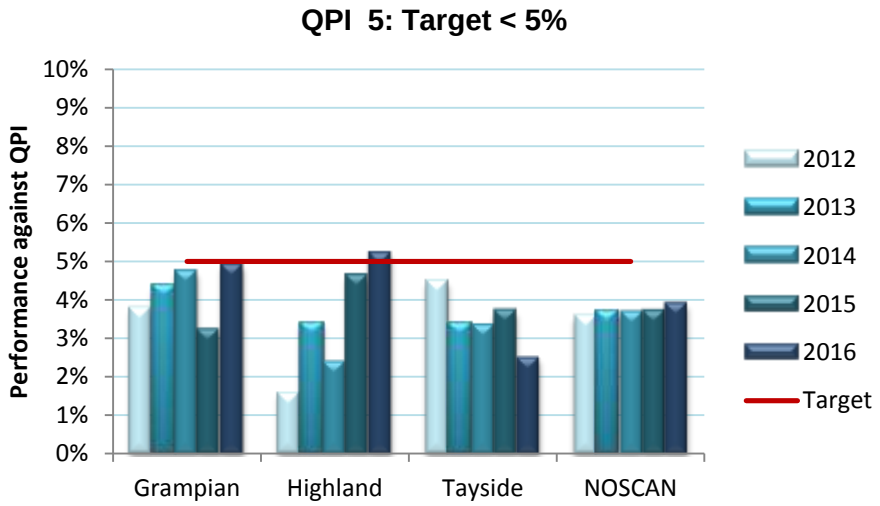
There is an increased risk of local recurrence if radial surgical excision margins are less than 1mm after breast cancer surgery.

Numerator:	Number of patients with breast cancer (invasive or ductal carcinoma in situ) having breast conservation surgery with final radial (i.e. superior, inferior, medial or lateral) excision margins less than 1mm (on pathology report).
Denominator:	All patients with breast (invasive or ductal carcinoma in situ) cancer having breast conservation surgery.
Exclusions:	LCIS alone.
Target:	< 5%

QPI 5 Performance against target

Overall in 2016, 28 out of 724 surgically treated breast cancer patients in the region had final radial excision margins of less than 1mm. At a rate of 3.9%, this meets the target set at less than 5% of patients and is very similar to results from 2015 when the rate was 3.7%.

All NHS Boards in the North of Scotland me the target for this QPI except NHS Highland, who narrowly missed the target.



	Performance (%)	Numerator	Denominator	Not recorded - Numerator	% not recorded - Numerator	Not recorded - Exclusions	% not recorded - Exclusions	Not recorded - Denominator	Difference from 2015
Grampian	**4.9%**	13	265	0	0%	0	0%	0	+1.7%
Highland	**5.2%**	7	135	0	0%	0	0%	0	+0.6%
Orkney	**0**	0	0	0	-	0	-	0	-
Shetland	**0%**	0	6	0	0%	0	0%	0	-
Tayside	**2.5%**	8	318	0	0%	0	0%	0	-1.2%
NoS	**3.9%**	**28**	**724**	0	0%	0	0%	0	+0.2%

NHS Highland's failure to meet the standard relates to 7 patients. Five of these had no scope for further surgery to radial margins and the other 2 were palliative procedures under local anaesthetic. Numbers are small and this standard was met by NHS Highland in previous years, as such results do not raise any clinical concerns.

Actions Required: No actions identified.

QPI 6: Immediate Reconstruction Rate

QPI 6: Immediate Reconstruction Rate: Patients undergoing mastectomy for breast cancer should have access to immediate breast reconstruction.

Evidence suggests that breast reconstruction is not associated with an increase in the rate of local recurrence, nor does it affect the ability to detect recurrence and it can yield psychological benefit. Access to immediate breast reconstruction is difficult to measure so uptake is used as a proxy. Patient choice is a key factor in the number who undergo immediate breast reconstruction. Age and co-morbidity factors (associated with deprivation category) should be taken into account when reviewing data for this QPI.

Numerator: Number of patients with breast cancer undergoing immediate breast reconstruction at the time of mastectomy.

Denominator: All patients with breast cancer undergoing mastectomy.

Exclusions:

- All patients with M1 disease.
- All male patients.

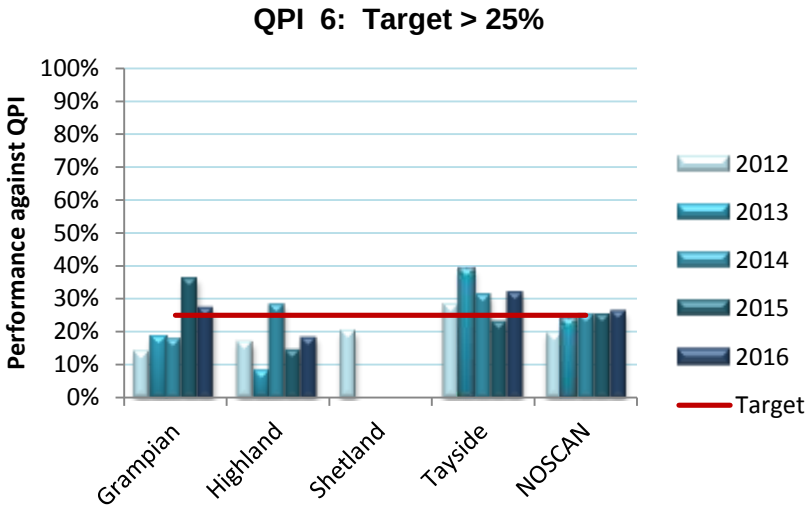
Target: 25%

QPI 6 Performance against target

In 2016, 97 patients diagnosed with breast cancer in the North of Scotland underwent immediate breast reconstruction at the time of mastectomy, which is a rate of 26.3%. This is very similar to the 2015 rate of 25.2% and just meets the target of 25%.

Following national review, the target for this QPI was increased in 2016 from 10% to 25%. This revised target was not met in NHS Highland or NHS Shetland. It should be noted that any patients from Shetland having reconstructive surgery would travel to NHS Grampian for this procedure and therefore be included within the NHS Grampian audit figures: as such, and despite patients from this Board having the option of reconstructive surgery in Aberdeen, NHS Shetland will never appear to meet this QPI.

It has been noted that the time a patient may have to wait for reconstructive surgery may impact on patients choosing this as a treatment option. As such, additional analysis was undertaken to assess the number of days to surgery. Figures showed that patients going straight to surgery waited on average 73 days for surgery, with averages in individual NHS Boards varying little, ranging from 64 to 75. Unsurprisingly, patients undergoing chemotherapy prior to surgery waited longer for surgery, on average 187 days.



	Performance (%)	Numerator	Denominator	Not recorded - Numerator	% not recorded - Numerator	Not recorded - Exclusions	% not recorded - Exclusions	Not recorded - Denominator	Difference from 2015
Grampian	**27.3%**	36	132	0	0%	1	0.8%	0	-8.7%
Highland	**18.4%**	14	76	0	0%	0	0%	0	+3.8%
Orkney	**-**	0	0	0	-	0	-	0	-
Shetland	**0%**	0	14	0	0%	0	0%	0	-
Tayside	**32.0%**	47	147	0	0%	2	1.4%	0	+9.0%
NoS	**26.3%**	**97**	**369**	**0**	**0%**	**3**	**0.8%**	**0**	**+1.1%**

In NHS Highland immediate reconstruction is discussed with all patients and it is noted that performance in 2016 was an improvement on that in 2015.

Actions Required: No actions identified.

QPI 8: Minimising Hospital Stay – Day Case Surgery

QPI 8: Minimising Hospital Stay – Day Case Surgery: Patients should have the opportunity for day case surgery wherever appropriate.

It is safe to perform wide excision and axillary staging as a short stay procedure in the majority of patients and clinical quality has been shown to be improved utilising this model, resulting in better patient outcomes. Benefits of short stay include reduction in readmissions, reduction in complications, improved patient mobility and enhanced recovery.

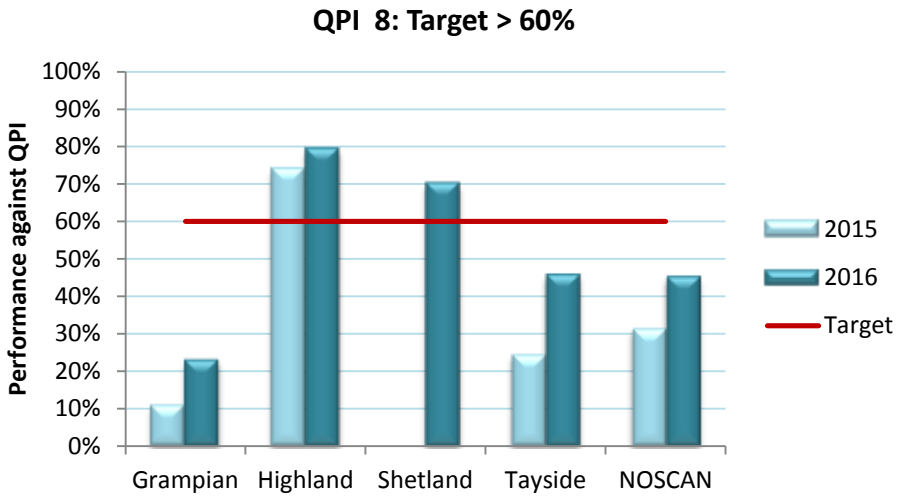
However, it is not always appropriate for all patients due to social circumstances, co-morbidities and/or geographical residence.

Numerator:	Number of patients with breast cancer undergoing wide excision and/or axillary sampling procedure (sentinel node biopsy or 4 node sample) as day case surgery.
Denominator:	All patients with breast cancer undergoing wide excision and/or axillary sampling procedure (sentinel node biopsy or 4 node sample).
Exclusions:	All patients with breast cancer undergoing partial breast reconstruction.
Target:	60%

QPI 8 Performance against target

In the North of Scotland during 2016, out of a possible 787 total procedures identified, there were 355 operations conducted as a day case surgery, which at 45.1%, is well below the QPI target level of 60%. However, this is a considerable improvement on the 2015 figure of 31.3%.

Although improvements in performance can be seen across all NHS Boards during 2016, only NHS Highland and NHS Shetland met the target required.



	Performance (%)	Numerator	Denominator	Difference from 2015
Grampian	**23.0%**	65	282	+12.0%
Highland[a]	**79.3%**	134	169	+5.2%
Orkney	**-**	0	0	-
Shetland	**70.0%**	7	10	-
Tayside	**45.7%**	149	326	+21.4%
NoS	**45.1%**	**355**	**787**	**+13.8%**

NHS Grampian failed this QPI in 2015 (11%) and the improved performance in 2016 reflects an increase in the use of anaesthetic pre-assessment and nurse led discharge since then. Despite these improvements, it is recognised that until the Breast Unit moves to the new Baird Hospital it is unlikely that the target will be fully achieved.

NHS Tayside still fails to meet the target but has improved by 21.4% which reflects greater use of anaesthetic pre-assessment. The imminent change in practice to same day sentinel node injection should make the target achievable by next year.

Actions Required:

- **All NHS Boards to consider greater use of anaesthetic pre-assessment and same day sentinel node injection in patients having a wide excision or an axillary sampling procedure.**

QPI 9: HER2 Status for Decision Making

QPI9: HER2 Status for Decision Making: HER2 status should be available to inform treatment decision making.

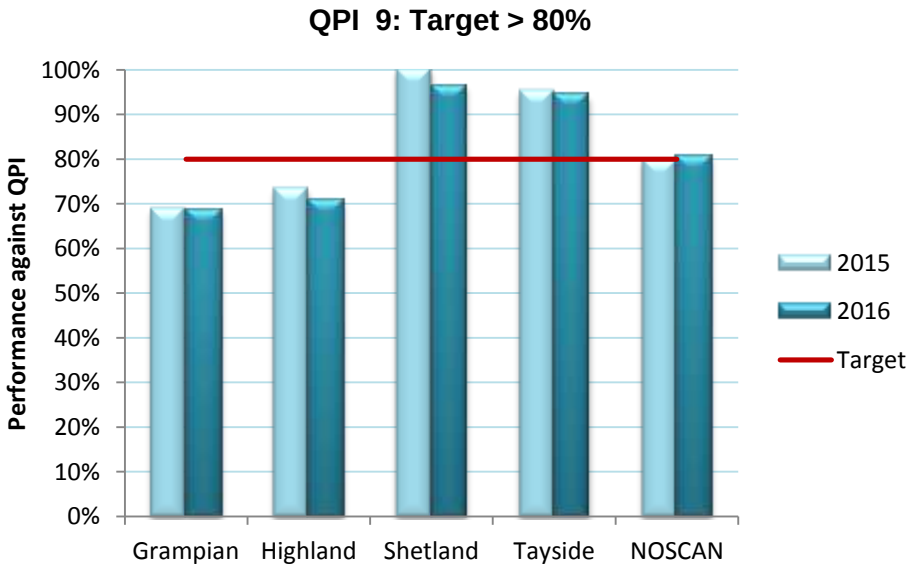
HER2 status has a significant impact on survival and so has a significant influence on decisions on neoadjuvant and adjuvant treatment. Delay in the availability of a HER2 result may lead to a delay in appropriate neoadjuvant or adjuvant therapy and make communication of a clear plan to the patient more difficult.

Numerator:	Number of patients with invasive breast cancer for whom the HER2 status (as defined by immunohistochemistry (IHC) and/or FISH analysis) is reported within 2 weeks of core biopsy.
Denominator:	All patients with invasive breast cancer.
Exclusions:	No exclusions.
Target:	80%

QPI 9 Performance against target

From a total of 1109 patients diagnosed with invasive breast cancer in the North of Scotland during 2016, 895 patients had their HER2 status reported within 2 weeks of core biopsy. This equates to 80.7% which just meets the target figure of over 80% and is very similar to the 2015 figure of 79.8%.

Only two Board, NHS Tayside and NHS Shetland, met this QPI target during 2016, as in 2015.



	Performance (%)	Numerator	Denominator	Not recorded - Numerator	% not recorded - Numerator	Not recorded - Exclusions	% not recorded - Exclusions	Not recorded - Denominator	Difference from 2015
Grampian	**68.6%**	260	379	1	0.3%	0	0%	0	-0.4%
Highland	**70.9%**	161	227	0	0%	0	0%	0	-2.6%
Orkney*	**-**	-	-	-	-	-	-	-	-
Shetland	**96.4%**	27	28	0	0%	0	0%	0	-3.6%
Tayside	**94.3%**	447	474	0	0%	0	0%	0	-1.0%
NoS	**80.7%**	**895**	**1109**	1	0.1%	0	0%	0	+0.9%

The North if Scotland overall has achieved the target at 80.7%. This reflects an extremely high level of attainment of the target by NHS Tayside and NHS Shetland.

NHS Grampian and NHS Highland continue to fail this target with very similar figures to those in 2015. In NHS Grampian this reflects staffing shortages and should improve by next year. It is important to recognise that FISH results are available for decision making and HER2 reporting time is not felt to significantly delay in chemotherapy treatment in either NHS Grampian or NHS Highland.

Actions Required:

- **NHS Grampian and NHS Highland to continue to support the development of FISH testing.**

QPI 10: Radiotherapy for Breast Conservation

QPI 10: Radiotherapy for Breast Conservation: After wide local excision patients with breast cancer should receive radiotherapy

Trials have demonstrated a significant reduction in local recurrence with the use of radiotherapy after breast conservation. Patient choice and fitness for treatment will have an effect on uptake.

Numerator: Number of patients with invasive breast cancer having conservation surgery receiving radiotherapy to the breast.

Denominator: All patients with invasive breast cancer having conservation surgery.

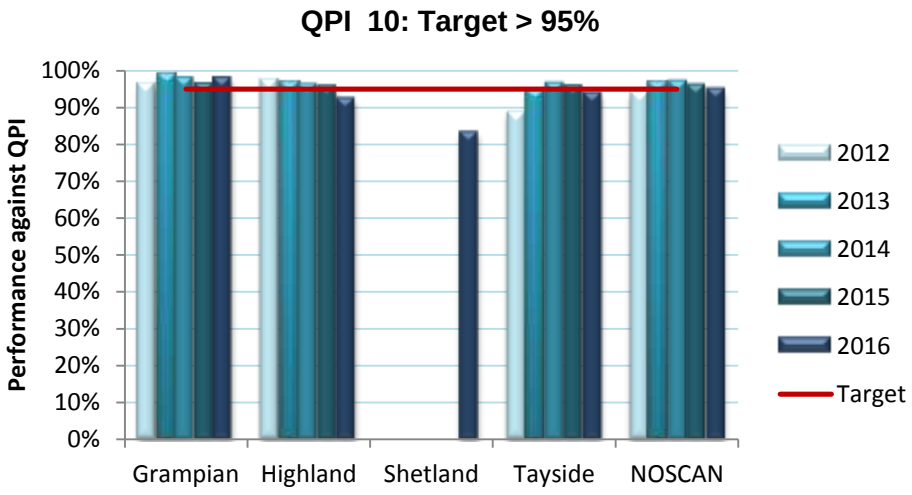
Exclusions:

- All patients with breast cancer taking part in clinical trials of radiotherapy treatment.
- All patients with M1 disease.

Target: 95%

QPI 10 Performance against target

Overall in 2016, 588 out of 619 (95.0%) of patients diagnosed with breast cancer in the North of Scotland received radiotherapy after wide local excision. This level of performance is very similar to the 2015 result of 95.9% and once again just meets the required target of 95,. However at an NHS Board level only NHS Grampian met this QPI.



	Performance (%)	Numerator	Denominator	Not recorded - Numerator	% not recorded - Numerator	Not recorded - Exclusions	% not recorded - Exclusions	Not recorded - Denominator	Difference from 2015
Grampian	**98.1%**	212	216	0	0%	1	0.5%	0	+1.9%
Highland	**92.4%**	109	118	1	0.8%	0	0%	0	-3.2%
Orkney	**-**	0	0	0	-	0	-	0	-
Shetland	**83.3%**	5	6	0	0%	0	0%	0	-
Tayside	**93.9%**	262	279	0	0%	5	1.8%	0	-1.9%
NoS	**95.0%**	**588**	**619**	1	0.2%	6	1.0%	0	-0.9%

While both NHS Tayside and NHS Highland just fail this target, due to the patient numbers being small and this standard having been met by both NHS Boards in previous years, these results do not raise any clinical concerns.

Actions Required: No actions identified.

QPI 11: Adjuvant Chemotherapy

QPI11: Adjuvant chemotherapy: patients with breast cancer should receive chemotherapy post operatively where it will provide a survival benefit for patients.

Clinical trials have demonstrated that adjuvant drug treatments substantially reduce 5-year recurrence rates and 15-year mortality rates.

Success of treatment is based on a number of different factors including tumour size, grade and involvement of lymph nodes. Prognostic tools such as PREDICT assist clinicians and patients to make informed decisions on appropriate treatment by predicting survival and determining those patients likely to benefit from adjuvant treatment.

Numerator: Number of patients with invasive breast cancer who have a ≥5% overall survival benefit of chemotherapy treatment predicted at 10 years that undergo adjuvant chemotherapy.

Denominator: All patients with invasive breast cancer who have a ≥5% overall survival benefit of chemotherapy treatment predicted at 10 years.

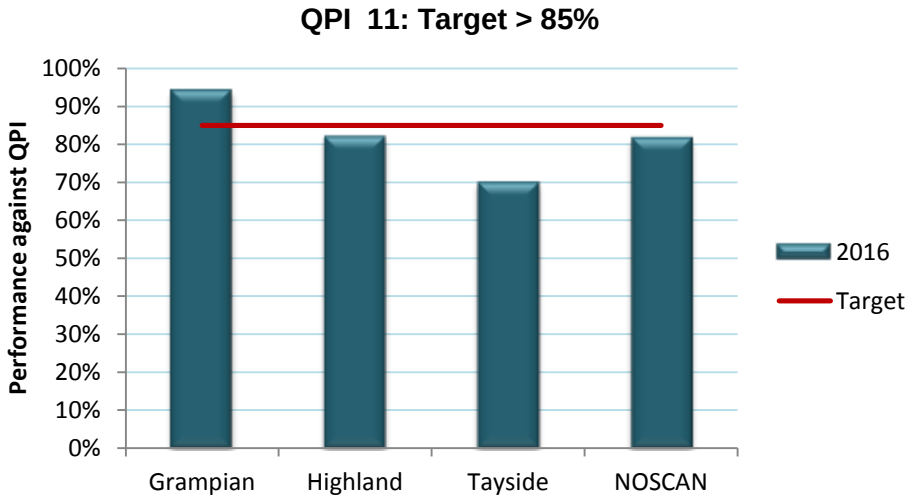
Exclusions:

- All patients with breast cancer taking part in trials of chemotherapy treatment.
- All patients with breast cancer who have had neo-adjuvant chemotherapy.
- All patients with M1 disease.

Target: 85%

QPI 11 Performance against target

Overall, in 2016, 142 patients were diagnosed with invasive breast cancer in the North of Scotland and had a ≥ 5% overall survival benefit of chemotherapy treatment predicted at 10 years. Of these patients, 116 (81.7%) received adjuvant chemotherapy. This level of performance does not meet the required target of 85%. This QPI was met in NHS Grampian and NHS Shetland but not in NHS Highland or NHS Tayside. As this is a new indicator there are no comparable data for previous years.



	Performance (%)	Numerator	Denominator	Not recorded - Numerator	% not recorded - Numerator	Not recorded - Exclusions	% not recorded - Exclusions	Not recorded - Denominator
Grampian	**94.3%**	33	35	0	0%	0	0%	60
Highland	**82.0%**	41	50	0	0%	0	0%	0
Orkney	**-**	0	0	0	-	0	-	0
Shetland	**100%**	7	7	0	0%	0	0%	2
Tayside	**70.0%**	35	50	0	0%	0	0%	44
NoS	**81.7%**	**116**	**142**	0	0%	0	0%	106

Despite the target being achieved in NHS Grampian, as a region, the North of Scotland did not meet this QPI due to performance in NHS Highland and NHS Tayside. In Highland this was due to a combination of patients refusing treatment or the fitness of patients for treatment.

This is the first year that this QPI has looked at survival benefit using the PREDICT tool, which is designed to help clinicians and patients make informed decisions about treatment following breast cancer surgery by predicting an individual's survival both with and without adjuvant therapy. It was noted that a significant number of patients have no PREDICT score recorded and have therefore been excluded from analysis (44 in Tayside, 60 in Grampian). PREDICT is now being used routinely in Tayside and until more complete data is available next year results for this new QPI should be interpreted with caution.

Actions Required:

- **All NHS Boards to record PREDICT value for all patients.**

QPI 13: Re-excision Rates

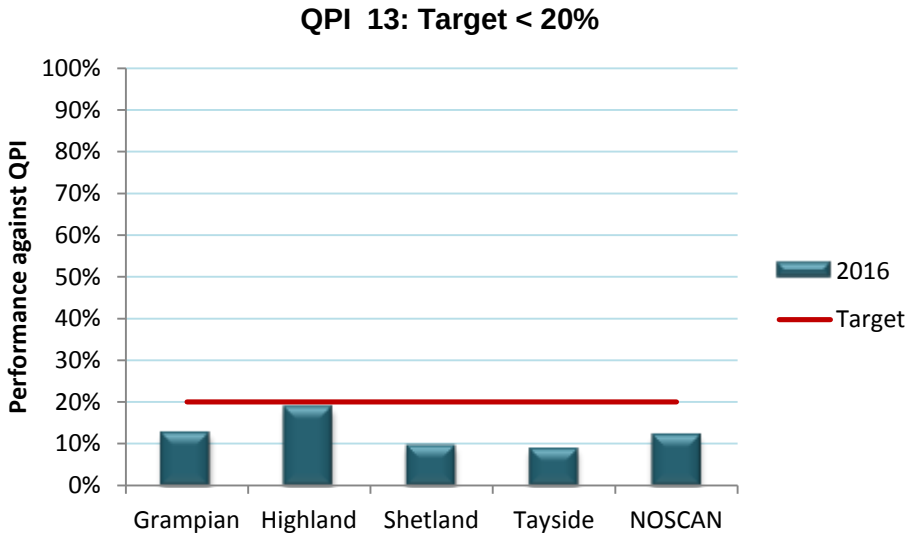
QPI13: Re-excision Rates: Patients undergoing surgery for breast cancer should only undergo one definitive operation where possible.

It is important to minimise treatment related morbidity. Patients undergoing additional surgical procedures can be subject to unnecessary stress, as well as potential complications and delays in recovery. Re-operation is also a factor related to poorer cosmetic outcomes for patients.

Numerator:	Number of patients with breast cancer (invasive or in situ) having breast conservation surgery who undergo re-excision or mastectomy following initial breast surgery.
Denominator:	All patients with breast (invasive or in situ) cancer having breast conservation surgery as their initial or only breast surgery.
Exclusions:	LCIS alone
Target:	< 20%

QPI 13 Performance against target

Overall, in 2016, 1105 patients were diagnosed with breast cancer in the North of Scotland and had conservation surgery as their initial or only breast surgery. Of these, 133 patients (12.0%) had a re-excision or mastectomy following initial breast surgery. This level of performance meets the required target of less than 20% by each individual NHS Board as well as at a regional level in the North of Scotland. As this is a new indicator there are no comparable data for previous years.



	Performance (%)	Numerator	Denominator	Not recorded - Numerator	% not recorded - Numerator	Not recorded - Exclusions	% not recorded - Exclusions	Not recorded - Denominator
Grampian	**12.5%**	50	401	0	0%	0	0%	0
Highland	**18.5%**	40	216	0	0%	0	0%	0
Orkney	**-**	0	0	0	-	0	-	0
Shetland	**9.5%**	2	21	0	0%	0	0%	0
Tayside	**8.8%**	41	467	0	0%	0	0%	0
NoS	**12.0%**	**133**	**1105**	0	0%	0	0%	0

Actions Required: No actions identified.

QPI 14: Referral for Genetics Testing

QPI 14: Referral for Genetics Testing: Patients with breast cancer should be offered referral to a specialist genetics clinic where appropriate.

Where patients have breast cancer, genetic testing should be offered if their combined BRCA1 and BRCA2 mutation carrier probability is ≥10%.

Specification (i)

Numerator: Number of patients with breast cancer under 30 years of age referred to a specialist clinic for genetic testing.

Denominator: All patients with breast cancer who are under 30 years of age.

Exclusions: No Exclusions

Specification (ii)

Numerator: Number of patients with triple negative breast cancer under 40 years of age referred to a specialist clinic for genetic testing.

Denominator: Number of patients with triple negative breast cancer under 40 years of age referred to a specialist clinic for genetic testing.

Exclusions: No Exclusions

Target: 90%

QPI 14 Performance against target

In 2016, only four patients under the age of 30 were diagnosed with breast cancer in the North of Scotland. Of these 3 (75%) were referred to a specialist clinic for generic testing, below the target of 90%.

During the same period, there were seven patients under the age of 40 with triple negative breast cancer, all of which were referred to a specialist clinic for genetic testing. At 100% this meets the QPI target of 90%.

Due to small numbers of patients included within this performance indicator, results for this QPI are not provided in graphs or tables and a comparison between NHS Boards is not considered appropriate. Further, as this is a new indicator there are no comparable data for previous years.

Actions Required: No actions identified.

QPI 15: 30 Day Mortality following Chemotherapy

QPI 15:* 30 Day Mortality following Chemotherapy*: 30 day mortality following chemotherapy treatment for breast 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. This QPI is intended to ensure treatment is given appropriately, and the outcome reported on and reviewed.

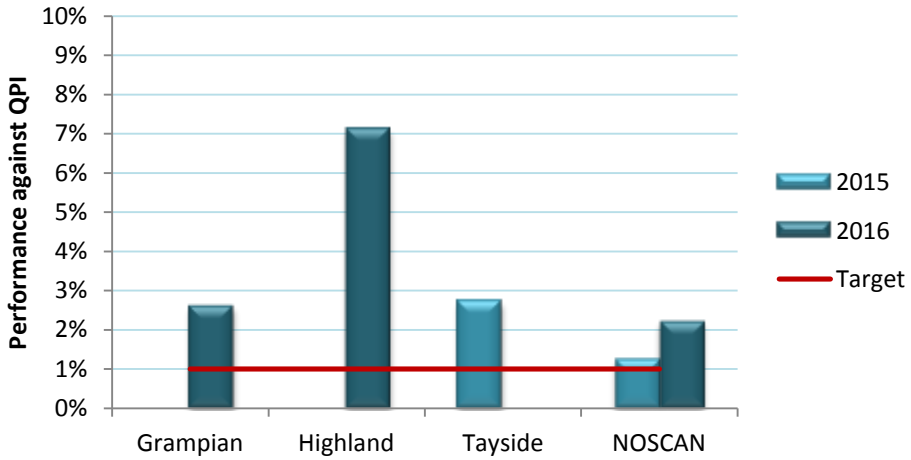
Numerator:	Number of patients with breast cancer who undergo chemotherapy that die within 30 days of treatment.
Denominator:	All patients with breast cancer who undergo chemotherapy.
Exclusions:	No exclusions
Target:	Neoadjuvant and adjuvant treatment <1% Palliative treatment < 5%

QPI 15 Performance against target

Neoadjuvant chemotherapy

In 2016 two patients died within 30 days of receiving neoadjuvant chemotherapy in the North of Scotland; as this constitutes 2.2% of all patients receiving this treatment, the target of less than 1% was not met. This is similar to the 2015 position, when the rate was 1.2%. Due to the small numbers involved, comparisons of mortality between NHS Boards have not been made.

QPI 15 - Neoadjuvant Chemotherapy: Target < 1%



Neoadjuvant Chemotherapy	Performance (%)	Numerator	Denominator	Not recorded - Numerator	% not recorded - Numerator	Not recorded - Exclusions	% not recorded - Exclusions	Not recorded - Denominator	Change since 2015
Grampian	**2.6%**	1	39	0	0%	0	0%	0	+2.6%
Highland	**7.1%**	1	14	0	0%	0	0%	0	+7.1%
Orkney	**-**	0	0	0	-	0	-	0	-
Shetland*	**-**	-	-	-	-	-	-	-	-
Tayside	**0%**	0	36	0	0%	0	0%	0	-2.7%
NoS	**2.2%**	**2**	**90**	0	0%	0	0%	0	+1.0%

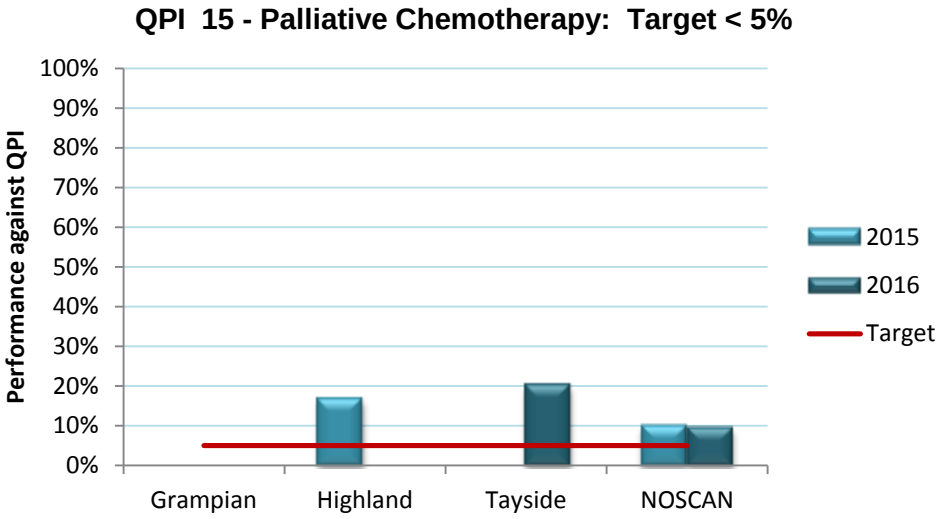
Adjuvant chemotherapy

Of the 258 patients diagnosed with breast cancer in 2016 and undergoing adjuvant chemotherapy, none (0%) died within 30 days of treatment and therefore the target of <1% was met both at a regional level and by all NHS Boards in the North of Scotland. This is similar to the 2015 figure of 0%.

Adjuvant Chemotherapy	Performance (%)	Numerator	Denominator	Not recorded - Numerator	% not recorded - Numerator	Not recorded - Exclusions	% not recorded - Exclusions	Not recorded - Denominator	Change since 2015
Grampian	**0%**	0	92	1	1.1%	0	0%	0	0%
Highland	**2.0%**	1	50	0	0%	0	0%	0	+2.0%
Orkney	**-**	0	0	0	-	0	-	0	-
Shetland	**0%**	0	9	0	0%	0	0%	0	-
Tayside	**0%**	0	70	0	0%	0	0%	0	-
NoS	**0.5%**	**1**	**221**	**1**	**0.5%**	**0**	**0%**	**0**	**+0.5%**

Palliative chemotherapy

Of the 21 patients diagnosed with breast cancer in 2016 and undergoing palliative chemotherapy, two (9.5%) died within 30 days of treatment and therefore the target of less that 5% was not met at a regional level. This is similar to the 2015 figure of 10.0%. Due to the small numbers involved comparison of results between Boards is not considered to be appropriate.



Palliative Chemotherapy	Performance (%)	Numerator	Denominator	Not recorded - Numerator	% not recorded - Numerator	Not recorded - Exclusions	% not recorded - Exclusions	Not recorded - Denominator	Change since 2015
Grampian	**0%**	0	6	0	0%	0	0%	0	0%
Highland	**0%**	0	5	0	0%	0	0%	0	-16.7%
Orkney	**-**	0	0	0	-	0	-	0	-
Shetland	**-**	0	0	0	-	0	-	0	-
Tayside	**20.0%**	2	10	0	0%	0	0%	0	-
NoS	**9.5%**	**2**	**21**	0	0%	0	0%	0	-0.5%

With just two years of data and small numbers of patients involved, it is hard to draw meaningful conclusions from results at this time. Performance against this QPI will be monitored over time and benchmarked against results for other regions when these become available.

Actions Required:

- **MCN to monitor performance against QPI 15 and benchmark against results from other Networks.**

QPI 16: Clinical Trials Access

QPI 16: Clinical Trials Access QPI: All patients should be considered for participation in available clinical trials, wherever eligible.

Clinical trials are necessary to demonstrate the efficacy of new therapies and other interventions. Furthermore evidence suggests improved patient outcomes from participation in clinical trials.

Clinicians are therefore encouraged to enter patients into well-designed trials and to collect longer-term follow-up data.

High accrual activity into clinical trials is used as a goal of an exemplary clinical research site.

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

Denominator: All patients with breast cancer.

Exclusions: No Exclusions

Target: Interventional clinical trials – 7.5%

Translational research - 15%

Key points during the period audited:

- 7.2% of patients with breast cancer in the North of Scotland were recruited into interventional clinical trials in one of the three cancer centres in the region in 2016, similar to the 2015 figure of 6.5% and just below the required target of 7.5%.
- Though a similar level of recruitment into translational research was attained in 2016, 8.2%, it fell well below the more challenging target which is set at 15% as in 2015 when recruitment was 6.2%

	Number of patients recruited	ISD Cases annual average (2011-2015)	Percentage of patients recruited
Interventional Clinical Trials	90	1242	**7.2%**
Translational Research	102	1242	**8.2%**

The QPI targets for clinical trials are particularly 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 breast 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 breast cancer.

During 2016 in NOSCAN, there were 11 interventional trials and 5 translational trials open and recruiting patients in the North of Scotland. All the breast cancer patients passing through the cancer centres in NOSCAN will have been assessed for eligibility for clinical trials: further enquiry indicates that of patients diagnosed with breast cancer in the North of Scotland during 2016, 98 (7.9%) were screened for interventional trials and 87 (7.0%) were screened for translational trials during the reporting period. The numbers screened and recruited for breast cancer have increase from the previous year. The number of patients screened for clinical trials is often higher than the number recruited as not all patients will pass the screening stage, however the screening phase can be a involve a considerable amount of time and resource.

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.

A**ctions Required:**

- **All clinicians should consider opening relevant clinical trials in their tumour areas. When this is not possible patient referrals to other sites for access to clinical trials should be considered.**

5. Conclusions

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

Overall, results from the fifth year of Breast Cancer QPI reporting are encouraging; case ascertainment and data capture is of a high standard overall, with significant improvements having been reported in some boards over the last year. Further, during 2016 QPI definitions were reviewed nationally to provide an improved set of indicator and results using these new definitions are reported here for this for first time in full.

The audit report indicated that during 2016, the QPI targets for breast cancer were met over the North of Scotland for nine of the 14 QPIs.

QPIs 1, 3 and 4 are once again achieved and need no further discussion.

With a fall in performance of 1.4% on the previous year, NHS Grampian has once again just failed to meet the 95% target (92.3%) for non operative diagnosis by core biopsy (QPI 2). Regional clinical managed guidelines are due to be circulated shortly and it is hoped that the agreed anticoagulant policy for patients undergoing core biopsy may help Grampian achieve the target. Discussion with other Health Boards in the region regarding their policies for patients with co morbidities and mental health issues may also help reduce Grampian's exclusion of such patients from core biopsy.

NHS Highland just failed to meet the target for QPI 5 by 0.2%. All patients with radial margins less than 1 mm were discussed and there was no scope for further surgery. No action is required.

The North of Scotland now meet the target for immediate reconstruction (QPI 6) and while NHS Highland failed to meet the target in 2016, results were an improvement over the previous year and require no specific action.

Day case surgery (QPI 8) remains a challenge in NHS Grampian and NHS Tayside. Greater use of anaesthetic pre-assessment will continue to improve NHS Grampian figures although it is unlikely that the target will be met until the move to the new Baird Hospital. In NHS Tayside there is already wide use of anaesthetic pre-assessment and the move to same day sentinel node injection will make the target attainable.

As in previous years HER 2 availability for decision making (QPI 9) shows variation across the region with NHS Tayside once again easily achieving the target while it remains a challenge in NHS Grampian and NHS Highland. It should be emphasised that while HER2 reporting may be delayed it is always available prior to final decision making.

Both NHS Highland and NHS Tayside failed the new adjuvant chemotherapy indicator (QPI 11) however results for this new QPI should be treated with caution until more complete data is available next year.

Some actions to improve services have been identified. These are

- **NHS Grampian to review protocol for performing core biopsy on patients taking anticoagulants and review the risk assessment process for patients with co morbidities and mental health issues.**

- **All NHS Boards to consider greater use of anaesthetic pre-assessment and same day sentinel node injection in patients having a wide excision or an axillary sampling procedure.**

- **NHS Grampian and NHS Highland to continue to support the development of FISH testing.**

- **All NHS Boards to record PREDICT value for all patients.**

- **MCN to monitor performance against QPI 15 and benchmark against results from other Networks.**

- **All clinicians should consider opening relevant clinical trials in their tumour areas. When this is not possible patient referrals to other sites for access to clinical trials should be considered.**

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

Completed Action Plans should be returned to NOSCAN within a month of publication of this report.

Progress against these plans will be monitored by the 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 Breast 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 1: Open clinical trials for breast cancer into which patients were recruited in 2016.

Trial	Principle Investigator	Trial Type
ARB	Jane Macaskill (Tayside)	Interventional
AURORA	Sarah Vinniecombe (Tayside)	Interventional
BI-1280.4	Douglas Adamson (Tayside)	Interventional
Digital breast tomosynthesis in younger symptomatic women.	Andrew Evans (Tayside)	Interventional
IBIS 3: POLaR (Feasibility)	Jane Macaskill (Tayside)	Interventional
Add-Aspirin	Russell Mullen (Highland)	Interventional
LORIS	Jane Macaskill (Tayside)	Interventional
POSNOC	Ravi Sharma (Grampian) Nick Abbott (Highland) Douglas Brown (Tayside)	Interventional
MAMMO-50	Andrew Evans (Tayside)	Interventional
UNIRAD	Jane Macaskill (Tayside)	Interventional
Vac Node	Andrew Evans (Tayside)	Interventional
Baronet	Jane Macaskill (Tayside)	Translational
MIMIC - clinical case collection	Andrew Evans (Tayside)	Translational
Clinical data collections for SPECIALS	Andrew Evans (Tayside)	Translational
Poetic (Version 6) Sub Study	Ravi Sharma (Grampian)	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 a month of publication of this report.

NOSCAN
North of Scotland Cancer Network

Action Plan: Breast Cancer

Based in patients diagnosed in 2016

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*