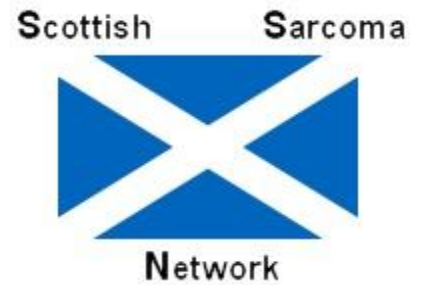


**North, South East and West of Scotland  
Cancer Networks**

**Sarcoma National Managed Clinical  
Network**



# **Audit Report**

## **Sarcoma Quality Performance Indicators**

**Clinical Audit Data:  
01 April 2017 to 31 March 2018**

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## **Executive Summary**

### **Introduction**

This report contains an assessment of the performance of Scotland wide Sarcoma services using clinical audit data relating to patients diagnosed with sarcoma in the twelve months between 1<sup>st</sup> April 2017 and 31<sup>st</sup> March 2018.

Twelve months of data were measured against v3.0 of the Sarcoma Quality Performance Indicators (QPIs) which were implemented for patients diagnosed on or after 01 April 2017. This was the fourth consecutive year of analysis following the initial Healthcare Improvement Scotland (HIS) publication of Sarcoma QPIs in 2014.

In order to ensure the success of the National Cancer QPIs in driving quality improvement in cancer care across NHS Scotland, a process of formal review was carried out after Year 3 of comparative reporting with tumour-specific Regional Clinical Leads undertaking a key role in determining the extent of the review required for each tumour type. The revised Sarcoma QPIs<sup>1</sup> were published in June 2018 and, as stated above, are valid for patients diagnosed on or after 01 April 2017.

### **Background**

Sarcomas are a rare group of cancers that arise from connective tissue, including: bone, cartilage, muscle, blood vessels, nerves and fat<sup>5</sup> which are broadly divided into bone, soft tissue sarcomas and gastrointestinal stromal tumours (GIST). In 2017/18 the audit identified 326 patients diagnosed with a new primary invasive sarcoma. Sarcomas account for around 1% of all new cancer diagnoses in the UK<sup>5</sup>. In Scotland bone and connective tissue cancers are ranked 23<sup>rd</sup> most common cancer, accounting for only 0.6% of all cancers diagnosed in Scotland in 2016<sup>3</sup>.

Unlike many other cancers, sarcomas can affect people of any age. From 2012 to 2014 in the UK 47% of all bone sarcomas occurred in people under the age of 45, whilst 57% of soft tissue sarcomas occurred in the under 65's in 2010<sup>4</sup>.

Incidence of bone sarcomas has been stable in the UK since the late 1970s whilst incidence of soft tissue sarcoma has increased overall since the late 1990s. This likely reflects improved diagnosis and data recording rather than a true increase in incidence<sup>4</sup>.

### **Methodology**

The clinical audit data presented in this report was collected by clinical audit staff in each NHS Board in accordance with an agreed dataset and definitions. The data was entered locally into the electronic Cancer Audit Support Environment (eCASE): a secure centralised web-based database. Data relating to patients diagnosed between 01 April 2017 and 31 March 2018 was downloaded from eCASE on 26 September 2018. Analysis was performed centrally by the West of Scotland Cancer Network (WoSCAN) Information Team.

Cancer patients under the age of 16 are treated in specialist children's' centres in Aberdeen, Edinburgh and Glasgow, separately from the adult services. Although QPI audit data are collected for patients under 16, this group is excluded from published QPI figures due to the very low numbers. However regions may report these separately to their clinical groups for internal management purposes.

## **Results**

Results for each QPI are shown in detail in the main report and illustrate regional or national performance against each target. Where numbers are small national results are presented to avoid any unwarranted variation associated with small numbers and to minimise the risk of disclosure. Results are presented graphically and the accompanying data table also highlights any missing data and its possible effect on any of the measured outcomes.

The summary of results over page shows the national percentage performance against each QPI target.

## National - Performance Summary Report

Quality Performance Indicator (QPI)	Performance by NHS Board								
	QPI target	NoSCAN		SCAN		WoSCAN		Scotland	
<b>QPI 1 – Histological Diagnosis</b> Proportion of patients with extremity sarcoma who have a histological diagnosis before undergoing a planned surgical resection.	<b>90%</b>	<b>91.7%</b>		<b>85.0%</b>		<b>92.3%</b>		<b>89.7%</b>	
		11	12	17	20	24	26	52	58
<b>QPI 2 – Multi-Disciplinary Team (MDT) Meeting</b> Proportion of patients with extremity sarcoma who are discussed at a MDT meeting before definitive treatment.	<b>95%</b>	<b>100.0%</b>		<b>95.5%</b>		<b>91.2%</b>		<b>94.3%</b>	
		14	14	21	22	31	34	66	70
<b>QPI 3(ii) – Clinical Staging</b> Proportion of patients whose extremity soft tissue sarcoma is staged using the TNM staging system prior.	<b>95%</b>	<b>20.0%</b>		<b>64.7%</b>		<b>69.0%</b>		<b>58.9%</b>	
		2	10	11	17	20	29	33	56
<b>QPI 4 – Surgical Margins (Hospital of Surgery)</b> Proportion of patients with extremity sarcoma, who undergo surgical resection where R0* resection is achieved.	<b>85%</b>	<b>100.0%</b>		<b>90.0%</b>		<b>73.1%</b>		<b>84.5%</b>	
		12	12	18	20	19	26	49	58
<b>QPI 6 – Limb Sparing Surgery</b> Proportion of patients with extremity sarcoma who undergo a primary limb-sparing surgery.	<b>85%</b>	<b>91.7%</b>		<b>90.0%</b>		<b>84.6%</b>		<b>87.9%</b>	
		11	12	18	20	22	26	51	58
<b>QPI 7 – Primary Flap Reconstruction</b> Proportion of patients with extremity sarcoma who undergo successful primary flap reconstruction following surgical resection.	<b>85%</b>	<b>60.0%</b>		<b>-</b>		<b>100%</b>		<b>85.7%</b>	
		3	5	-	-	12	12	18	21
<b>QPI 8 – Post Operative Radiotherapy</b> Proportion of patients with an extremity sarcoma who receive post operative radiotherapy within 3 months of surgery.	<b>90%</b>	<b>12.5%</b>		<b>-</b>		<b>66.7%</b>		<b>52.4%</b>	
		1	8	-	-	6	9	11	21
<b>QPI 11a – 30 Day Mortality – Surgery</b> Proportion of patients with sarcoma who undergo surgical resection who die within 30 days of surgical treatment.	<b>&lt; 10%</b>	<b>0.0%</b>		<b>0.0%</b>		<b>0.9%</b>		<b>0.6%</b>	
		0	17	0	34	1	115	1	166
<b>QPI 11b – 30 Day Mortality – Radical Radiotherapy</b> Proportion of patients with sarcoma who undergo radical radiotherapy with curative intent who die within 30 days of treatment.	<b>&lt; 10%</b>	<b>-</b>		<b>n/a</b>		<b>-</b>		<b>-</b>	
		-	-	0	0	-	-	0	-

Quality Performance Indicator (QPI)	Performance by NHS Board								
	QPI target	NoSCAN		SCAN		WoSCAN		Scotland	
<b>QPI 11c – 30 Day Mortality – Neo-adjuvant Chemotherapy</b> Proportion of patients with sarcoma who undergo neo-adjuvant chemotherapy with curative intent who die within 30 days.	<b>&lt; 10%</b>	-		<b>0.0%</b>		<b>14.3%</b>		<b>6.3%</b>	
		-	-	0	7	1	7	1	16
<b>QPI 11d – 30 Day Mortality – Neo-adjuvant Radiotherapy</b> Proportion of patients with sarcoma who undergo neo-adjuvant radiotherapy with curative intent who die within 30 days.	<b>&lt; 10%</b>	n/a		-		<b>0.0%</b>		<b>0.0%</b>	
		0	0	-	-	0	5	0	6
<b>QPI 11e – 30 Day Mortality – Adjuvant Chemotherapy</b> Proportion of patients with sarcoma who undergo adjuvant chemotherapy with curative intent who die within 30 days.	<b>&lt; 10%</b>	-		-		-		<b>0.0%</b>	
		-	-	-	-	-	-	0	8
<b>QPI 11f – 30 Day Mortality – Adjuvant Radiotherapy</b> Proportion of patients with sarcoma who undergo adjuvant radiotherapy with curative intent who die within 30 days.	<b>&lt; 10%</b>	<b>0.0%</b>		<b>0.0%</b>		<b>0.0%</b>		<b>0.0%</b>	
		0	8	0	9	0	15	0	32
<b>QPI 11g – 30 Day Mortality – Chemoradiotherapy</b> Proportion of patients with sarcoma who undergo chemoradiotherapy with curative intent who die within 30 days.	<b>&lt; 10%</b>	-		-		n/a		-	
		0	-	-	-	0	0	-	-
<b>QPI 11h – 30 Day Mortality – Biological Therapy</b> Proportion of patients with sarcoma who undergo biological therapy with curative intent who die within 30 days.	<b>&lt; 10%</b>	-		<b>0.0%</b>		<b>11.1%</b>		<b>5.6%</b>	
		-	-	0	8	1	9	1	18
<b>QPI 11(ii)a – 30 Day Mortality – Palliative Radiotherapy</b> Proportion of patients with sarcoma who undergo palliative radiotherapy die within 30 days of treatment.	<b>&lt;15%</b>	-		<b>0.0%</b>		<b>5.9%</b>		<b>3.6%</b>	
		-	-	0	7	1	17	1	28
<b>QPI 11(ii)a – 30 Day Mortality – Palliative Chemotherapy</b> Proportion of patients with sarcoma who undergo palliative chemotherapy die within 30 days of treatment.	<b>&lt;15%</b>	<b>60.0%</b>		-		<b>0.0%</b>		<b>15.0%</b>	
		3	5	-	-	0	11	3	20
<b>Clinical Trial Access</b> Proportion of patients diagnosed with sarcoma who are consented for a clinical trial.	<b>15%</b>	<b>2.2%</b>		<b>12.1%</b>		<b>9.3%</b>		<b>8.2%</b>	
		2	92	12	99	15	162	29	353

(-) dash denotes a denominator of less than 5. Figures have been removed to ensure confidentiality.

	Meets/exceeds QPI target
	Does not meet QPI target
>	Indicates increase on previous year's figure
<	Indicates decrease from previous year's figure
=	Indicates no change from previous year

Figures below percentage performance denote the numerator and denominator values.

(-) dash denotes a denominator of less than 5. Figures have been removed to ensure confidentiality.

## Conclusions and Action Required

The development of national QPIs for sarcoma cancers has helped drive continuous quality improvement in patient care whilst ensuring that activity is focussed on those areas that are most important in terms of improving survival and patient experience. In addition, the introduction of QPIs and the associated governance structure has facilitated regular monitoring and reporting of data to ensure equitable care across the country.

Results presented in this report demonstrate that work is still required to ensure patients with sarcoma receive an equitable and consistent standard of care across NHS Scotland. It is evident that many of the QPI targets set have been challenging for centres to achieve and some variance and a number of areas for improvement have been highlighted. It should however be noted that given the rarity of sarcoma, numbers included within the measurement of the majority of indicators are small and therefore percentages should be compared with caution.

This audit report has identified areas where data capture must improve to enable more meaningful analysis of performance against QPIs in the coming years, specifically with regards to TNM staging. However overall case ascertainment and data capture has improved in the fourth year of data collection and analysis. This provides a good foundation from which to measure service improvement in future years, however further work is required.

### Action required:

#### *QPI 11 – 30 Day Mortality*

- NoSCAN should discuss cases where patients died within 30 days of palliative chemotherapy at Morbidity and Mortality meeting and provide feedback to NMCN.

#### *QPI 4 – Surgical Margins*

- WoSCAN to discuss the future reporting of margins in cases where tissue realignment has been carried out with pathologists and agree any change required.
- WoSCAN to ensure surgeons clarify in operation note heading where any margin is planned to be positive.

#### *QPI 3 – Clinical Staging*

- NoSCAN to review cases and provide further detail on cases not meeting the QPI.
- WoSCAN to ensure more robust Performance Status recording at MDT Meetings.

Completed Action Plans should be returned to WoSCAN within two months of publication of this report. Progress against these plans will be monitored by the MCN Advisory Board and any service or clinical issue which the Advisory Board considers not to have been adequately addressed will be escalated to the NHS Board Territorial Lead Cancer Clinician and Regional Lead Cancer Clinician.

The NMCN will actively take forward national actions identified and NHS Boards are asked to develop local Action/Improvement Plans in response to the findings presented in the report.



## 1. Introduction

This report contains an assessment of the performance of Scotland wide Sarcoma services using clinical audit data relating to patients diagnosed with sarcoma in the twelve months between 1<sup>st</sup> April 2017 and 31<sup>st</sup> March 2018. These audit data underpin much of the regional development/service improvement work of the Managed Clinical Network (MCN) and regular reporting of activity and performance is a fundamental requirement of a MCN to assure the quality of care delivered across the three regions.

Twelve months of data were measured against v3.0 of the Sarcoma Quality Performance Indicators (QPIs) which were implemented for patients diagnosed on or after 01 April 2017. This was the fourth consecutive year of analysis following the initial Healthcare Improvement Scotland (HIS) publication of Sarcoma QPIs in 2014. This was part of a programme of work led by the National Cancer Quality Steering Group (NCQSG) to develop national measures in the form of QPIs for all cancer types, in collaboration with the three Regional Cancer Networks and Information Services Division (ISD).

In order to ensure the success of the National Cancer QPIs in driving quality improvement in cancer care across NHS Scotland, a process of formal review was carried out after Year 3 of comparative reporting with tumour-specific Regional Clinical Leads undertaking a key role in determining the extent of the review required for each tumour type. The revised Sarcoma QPIs<sup>1</sup> were published in June 2018 and, as stated above, are valid for patients diagnosed on or after 01 April 2017.

Annual comparisons have been made where indicators remain comparable following this formal review. Any new QPIs which were developed, or existing QPIs which required new data items to be added, will be reported in Year 5 once data becomes available for these new measures. Future reports will continue to compare clinical audit data in successive years to illustrate trends.

## 2. Background

Sarcomas are a rare group of cancers that arise from connective tissue, including: bone, cartilage, muscle, blood vessels, nerves and fat<sup>5</sup> which are broadly divided into bone, soft tissue sarcomas and gastrointestinal stromal tumours (GIST). In 2017/18 the audit identified 326 patients diagnosed with a new primary invasive sarcoma in Scotland.

Sarcomas account for around 1% of all new cancer diagnoses in the UK<sup>5</sup>. In Scotland bone and connective tissue cancers are ranked 23<sup>rd</sup> most common cancer, accounting for only 0.6% of all cancers diagnosed in 2016<sup>3</sup>. The most common site of sarcoma is the extremities<sup>5</sup> which provides the focus for the majority of data analysis.

Incidence of bone sarcomas has been stable in the UK since the late 1970s whilst incidence of soft tissue sarcoma has increased overall since the late 1990s. This likely reflects improved diagnosis and data recording rather than a true increase in incidence<sup>4</sup>. There has been significant improvement in survival over the past few decades, with 5 year survival from 1996-2000 51% rising to 56% 2006-2010 for soft tissue sarcoma, the picture is very similar for bone sarcoma<sup>5</sup>.

Unlike many other cancers, bone and soft tissue sarcomas can affect people of any age. From 2012 to 2014 in the UK 47% of all bone sarcomas occurred in people under the age of 45, whilst 57% of soft tissue sarcomas occurred in the under 65s in 2010<sup>4</sup>.

Gastrointestinal Stromal Tumours (GIST) are rare with an estimated occurrence of 1/100,000<sup>6</sup>. These tumours are extremely rare in children and young people, with the median age reported as 60-65<sup>5</sup>.

The table below details the five centres carrying out sarcoma treatment in Scotland. These are considered the centres for specialist treatment, which includes surgery, systemic anti cancer therapy (SACT) and radiotherapy. Patients may receive diagnostic and palliative care in their local hospital

where appropriate; however the majority of patients are referred to one of the five centres for specialist management.

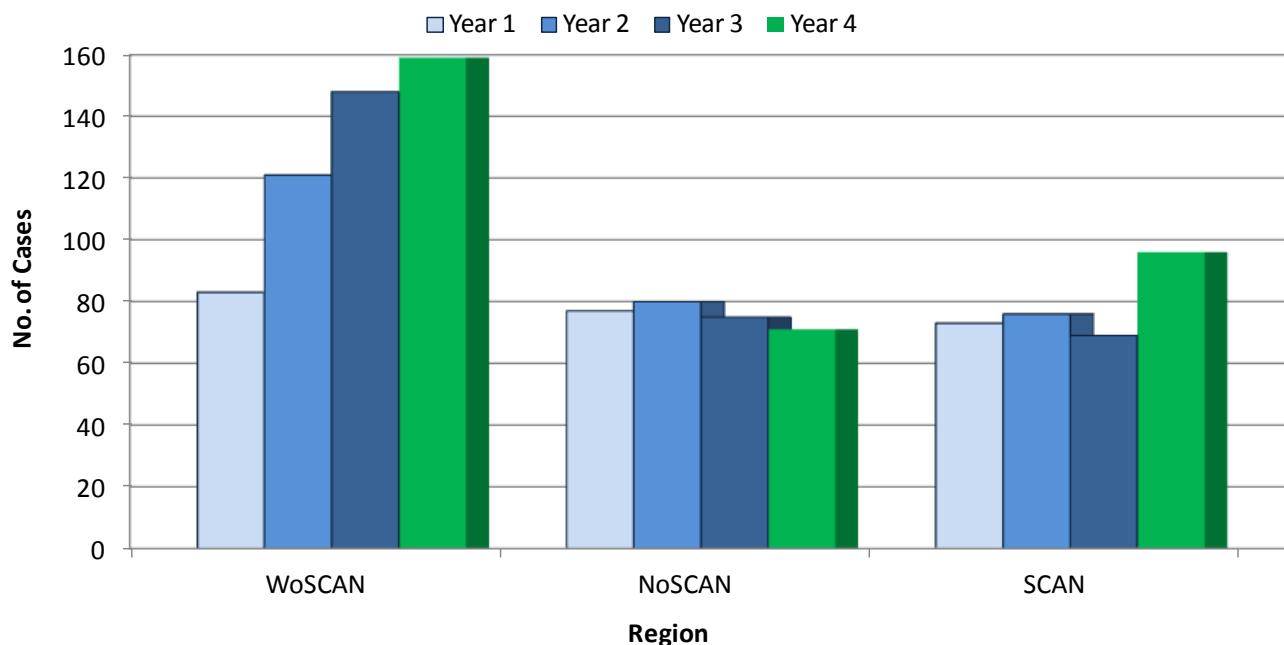
Table 1: Sarcoma treatment centres.

Centre	Constituent Hospital(s)
Aberdeen	Aberdeen Royal Infirmary (ARI), Royal Aberdeen Children's Hospital
Dundee	Ninewells Hospital (NW)
Edinburgh	Surgery: Royal Infirmary of Edinburgh (RIE) Oncology: Western General Hospital (WGH) Royal Hospital for Sick Children (RHSC)
Glasgow	Surgery: Gartnavel General Hospital (GGH); Queen Elizabeth University Hospital (QEUH); and Glasgow Royal Infirmary (GRI) Royal Hospital for Children (RHC) Oncology: Beatson West of Scotland Cancer Centre (BWoSCC)
Inverness	Raigmore Hospital

## 2.1 National Context

A total of 326 cases of sarcoma were recorded through audit as diagnosed in Scotland between 01 April 2017 and 31 March 2018. The number of patients diagnosed within each NHS Region is presented in Figure 1.

Figure 1: Number of patients diagnosed with sarcoma by NHS Region of diagnosis.

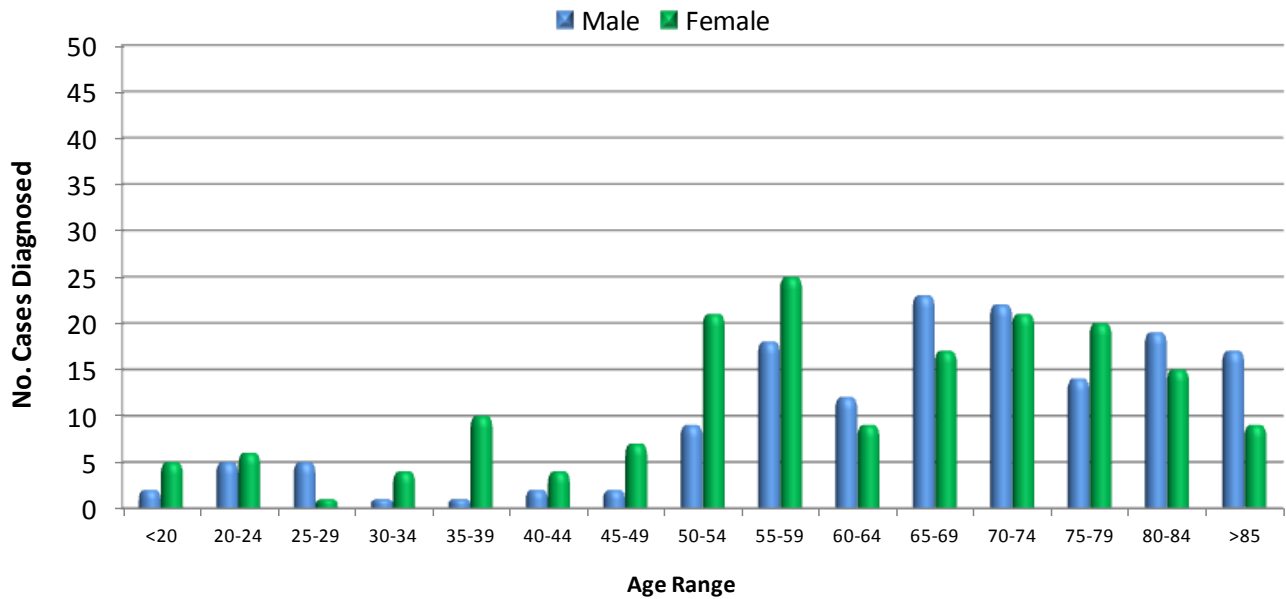


	WoSCAN	NoSCAN	SCAN	Scotland
Year 1	83	77	73	233
Year 2	121	80	76	277
Year 3	148	75	69	292
Year 4	159	71	96	326

## 2.2 Age and Gender Distribution

Figure 2 illustrates the distribution of sarcoma cases by age group and gender. In Year 4 occurrence of sarcoma is higher in females (53.4% of cases) than in males (46.6% of cases). 83.1% of cases diagnosed in Year 4 were in patients'  $\geq 50$  years.

Figure 2: Age/gender distribution of sarcoma patients in Scotland April 17 to March 18.

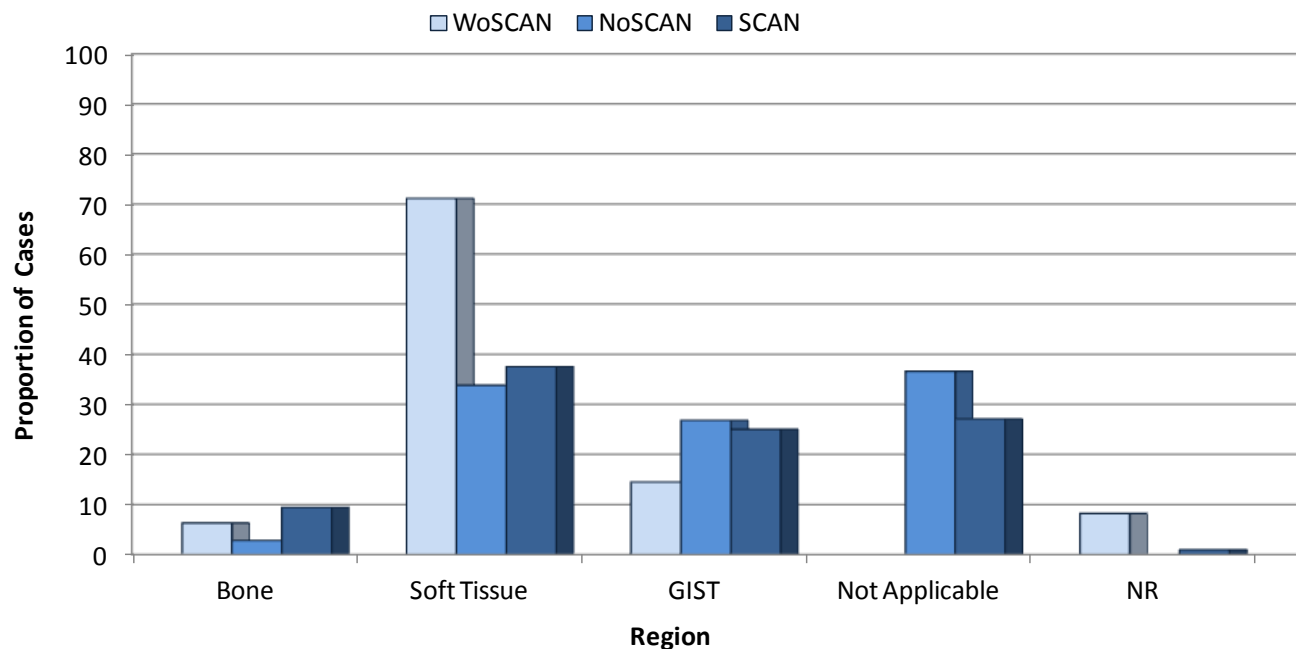


	<20	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	>85	Total
Male	2	5	5	1	1	2	2	9	18	12	23	22	14	19	17	152
Female	5	6	1	4	10	4	7	21	25	9	17	21	20	15	9	174

## 2.3 Location of Sarcoma

Figure 3 illustrates the distribution of sarcoma cases by location within a given site and highlights that soft tissue sarcomas continue to be the most common type of sarcoma, accounting for 53.1% of the total cases registered. This is consistent with previous years analysis and is in line with UK data.

Figure 3: Location of Sarcoma April 17 to March 18.

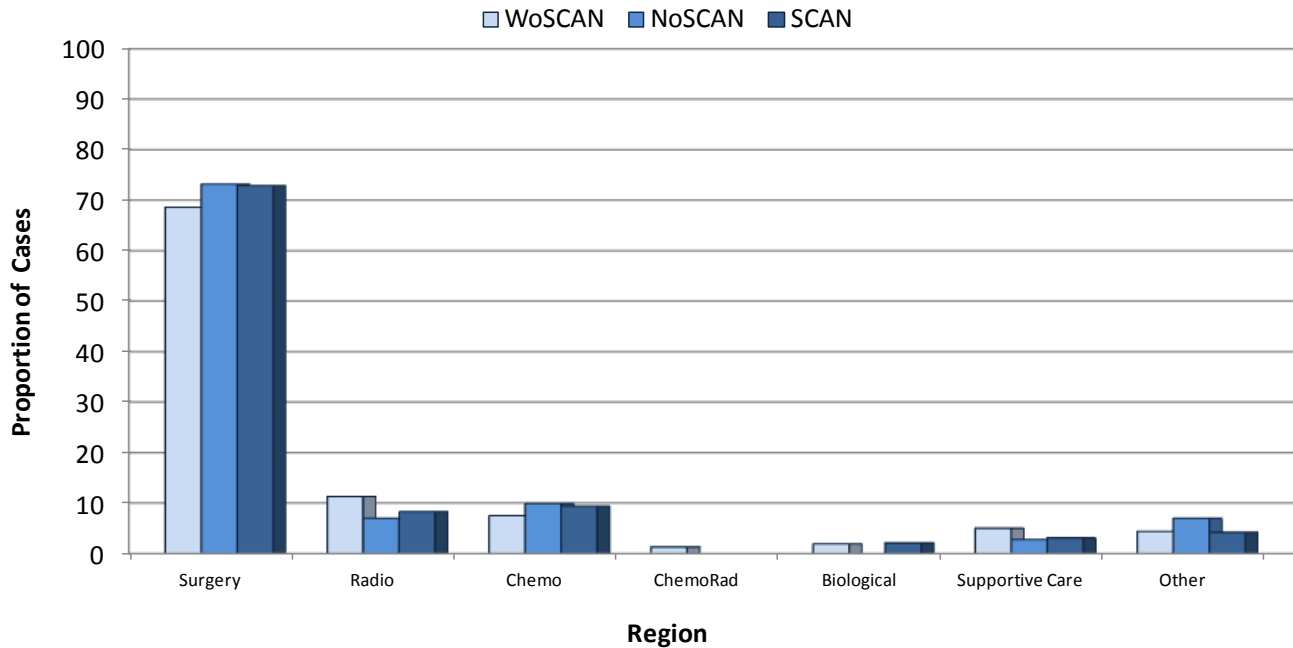


	Bone	Soft Tissue	GIST	Not Applicable	NR
WoSCAN	10	113	23	0	13
NoSCAN	2	24	19	26	0
SCAN	9	36	24	26	1
Scotland	21	173	66	52	14

## 2.4 Mode of First Treatment

Figure 4 shows the distribution of first treatment for patients diagnosed with sarcoma. In all three regions the majority of sarcoma patients received surgery as their first treatment.

Figure 4: Mode of First Treatment of sarcoma patients in Scotland April 17 to March 18.



	Surgery	Radio	Chemo	ChemoRad	Biological	Supportive Care	Other	Total
WoSCAN	109	18	12	2	3	8	7	159
NoSCAN	52	5	7	0	0	2	5	71
SCAN	70	8	9	0	2	3	4	96
Scotland	231	31	28	2	5	13	16	326

Other category includes watchful wait, patient refused treatment, patient died before treatment and treatment not recorded.

## 3. Methodology

The clinical audit data presented in this report was collected by clinical audit staff in each NHS Board in accordance with an agreed dataset and definitions. Data was recorded manually and entered locally into the electronic Cancer Audit Support Environment (eCASE): a secure centralised web-based database. Data relating to patients diagnosed between 01 April 2017 and 31 March 2018 was downloaded from eCASE at 2200 hrs on 26 September 2018. Cancer audit is a dynamic process with patient data continually being revised and updated as more information becomes available. This means that apparently comparable reports for the same time period and cancer site may produce slightly different figures if extracted at different times.

Analysis was performed centrally by the WoSCAN Information Team and the timescales agreed took into account the patient pathway to ensure that a complete treatment record was available for each case. Initial results of the analysis were provided to local NHS Boards to check for inaccuracies, inconsistencies or obvious gaps and a subsequent download taken upon which final analysis was carried out. The final data analysis was disseminated for NHS Board verification in line with the regional audit governance process to ensure that the data was an accurate representation of service in each area.

Cancer patients under the age of 16 are treated in specialist childrens' centres in Aberdeen, Edinburgh and Glasgow, separately from the adult services. Although QPI audit data are collected for patients under 16, this group is excluded from published QPI figures due to the very low numbers. However regions may report these separately to their clinical groups for internal management purposes.

## 4. Results and Action Required

### 4.1 Data Quality

Audit data quality can be assessed in the first instance by estimating the proportion of expected patients that have been identified through audit. Case ascertainment is calculated as the number of new cases identified by the audit as a proportion of the number of cases reported by the National Cancer Registry (provided by Information Services Division, National Services Scotland). Cancer Registry figures were extracted from ACaDMe (Acute Cancer Deaths and Mental Health), a system provided by Information Services Division (ISD). Cancer Registry figures are an average of the previous five years' figures to take account of annual fluctuations in incidence within NHS Regions.

Overall case ascertainment for Scotland is excellent at 92.4%, especially when it is taken into consideration that collection of clinical audit data for Sarcoma was introduced in 2014. Case ascertainment figures in WoSCAN have shown year on year improvement rising from 55% in year 1 to 92.4% in year 4.

Case ascertainment figures however are provided for guidance and are not an exact measurement as it is not possible to compare directly with the same cohort. Lower or higher figures can also indicate changes in incidence of a particular cancer type within a Board or region over time. Case ascertainment for each region is illustrated in Table 2.

**Table 2: Case ascertainment by region for patients diagnosed with sarcomas in Scotland**

	WoSCAN	NoSCAN	SCAN	Scotland
Cases from audit	159	71	96	326
ISD Cases (2011-2015 average)	162	92	99	353
% Case ascertainment	98.1%	77.2%	97%	92.4%

### 4.2 Performance against Quality Performance Indicators (QPIs)

Results of the analysis of Sarcoma 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 for each QPI at a national or regional level both graphically and in table format. Centre level data has been reviewed by local teams however given the small numbers involved it has not been presented at this level. Aggregated centre level data will be presented in future reports when sufficient data is available to make more robust conclusions on performance. Specific regional and national actions have been identified to address issues highlighted through the data analysis.

Where the number of cases meeting the denominator criteria for any indicator is between one and four, the percentage calculation has not been shown on 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 a dash (-). Any commentary provided by NHS Boards relating to the impacted indicators is however included as a record of continuous improvement.

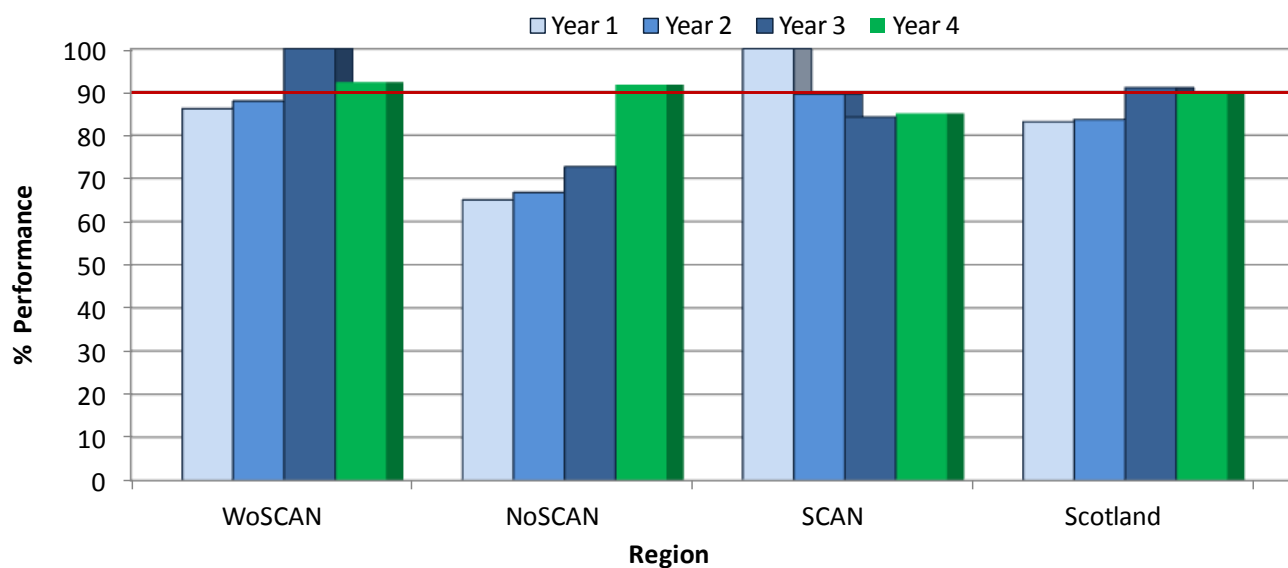
The sarcoma QPIs focus on extremity sarcomas as determined by the Sarcoma QPI Development Group, unless otherwise specified. Data is however collected on all sarcomas diagnosed in Scotland. Extremity sarcoma is defined as sarcoma of the: upper limb, shoulder girdle to fingers or lower extremity, iliac crest/buttock to toes. Extremity sarcomas account for 50-60% of all sarcomas<sup>1</sup>.

### QPI 1 – Histological Diagnosis

Histological typing of extremity sarcomas is essential for planning appropriate treatment and to provide important information relating to prognosis<sup>1</sup>. A histological diagnosis should be obtained before a planned surgical resection takes place as unplanned surgery has been shown to affect morbidity and mortality<sup>1</sup>. The 90% target set for the QPI accounts for small superficial lesions where the diagnosis of sarcoma may not be reasonably suspected clinically<sup>1</sup>.

<b>QPI Title:</b>	Patients with extremity sarcoma should have a histological diagnosis before undergoing a planned surgical resection.
<b>Numerator:</b>	Number of patients with extremity sarcoma who undergo a planned surgical resection who have a histological diagnosis before surgical resection takes place.
<b>Denominator:</b>	All patients with extremity sarcoma who undergo a planned surgical resection.
<b>Exclusions:</b>	Patients with cutaneous sarcomas.
<b>Target:</b>	90%

Figure 5: Proportion of patients with extremity sarcoma that should have a histological diagnosis before undergoing a planned surgical resection.



	Performance (%)	Numerator	Denominator	Not recorded numerator	Not recorded numerator (%)	Not recorded exclusions	Not recorded exclusions (%)	Not recorded denominator
WoSCAN	92.3%	24	26	0	0.0%	0	0.0%	0
NoSCAN	91.7%	11	12	0	0.0%	0	0.0%	0
SCAN	85.0%	17	20	0	0.0%	0	0.0%	0
Scotland	89.7%	52	58	0	0.0%	0	0.0%	0

Overall results for Scotland show that 89.7% of patients with extremity sarcoma had a histological diagnosis prior to undergoing surgical resection. WoSCAN and NoSCAN both met the 90% QPI target achieving 92.3% and 91.7% respectively.

SCAN reviewed cases not meeting the QPI and commented that all three patients who did not have a histological diagnosis before undergoing a planned surgical resection were diagnosed with atypical lipomatous tumours with preoperative decisions not to biopsy.

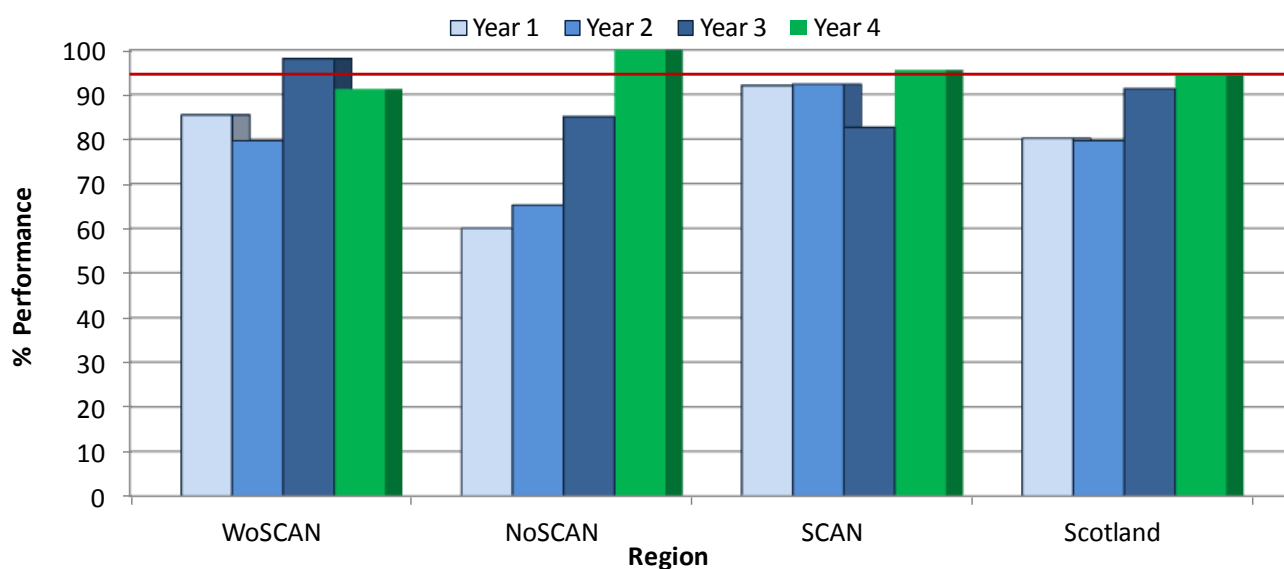
## QPI 2 – Multi Disciplinary Team Meeting

Evidence suggests that patients with cancer managed by a multi-disciplinary team have a better outcome. There is also evidence that the multidisciplinary management of patients increases their overall satisfaction with their care<sup>1</sup>.

Discussion prior to definitive treatment decisions being made provides reassurance that patients are being managed appropriately<sup>1</sup>. The target for this QPI is 95%, which accounts for situations where patients require treatment urgently<sup>1</sup>.

<b>QPI Title:</b>	Patients with extremity sarcoma should be discussed by a multidisciplinary team (MDT) prior to definitive treatment.
<b>Numerator:</b>	Number of patients with extremity sarcoma discussed at the MDT before definitive treatment.
<b>Denominator:</b>	All patients with extremity sarcoma.
<b>Exclusions:</b>	Patients who died before first treatment. Patients with cutaneous sarcomas.
<b>Target:</b>	95%

Figure 6: Proportion of patients with extremity sarcoma that should be discussed by a multidisciplinary team (MDT) prior to definitive treatment.



	Performance (%)	Numerator	Denominator	Not recorded numerator	Not recorded numerator (%)	Not recorded exclusions	Not recorded exclusions (%)	Not recorded denominator
WoSCAN	91.2%	31	34	0	0.0%	0	0.0%	0
NoSCAN	100.0%	14	14	0	0.0%	0	0.0%	0
SCAN	95.5%	21	22	0	0.0%	0	0.0%	0
Scotland	94.3%	66	70	0	0.0%	0	0.0%	0

Performance across Scotland was 94.3% against the 95% QPI target with 66 of 70 patients diagnosed with extremity sarcoma in Year 4 being discussed at MDT meeting before definitive treatment. SCAN and NOSCAN met the QPI target with both showing improvement on the previous year. WoSCAN was below target with 91.2% of patients meeting the QPI criteria

WoSCAN reviewed the three cases not meeting the QPI target and commented that two cases were incidental findings and the third was incorrectly included due to a local data recording error.

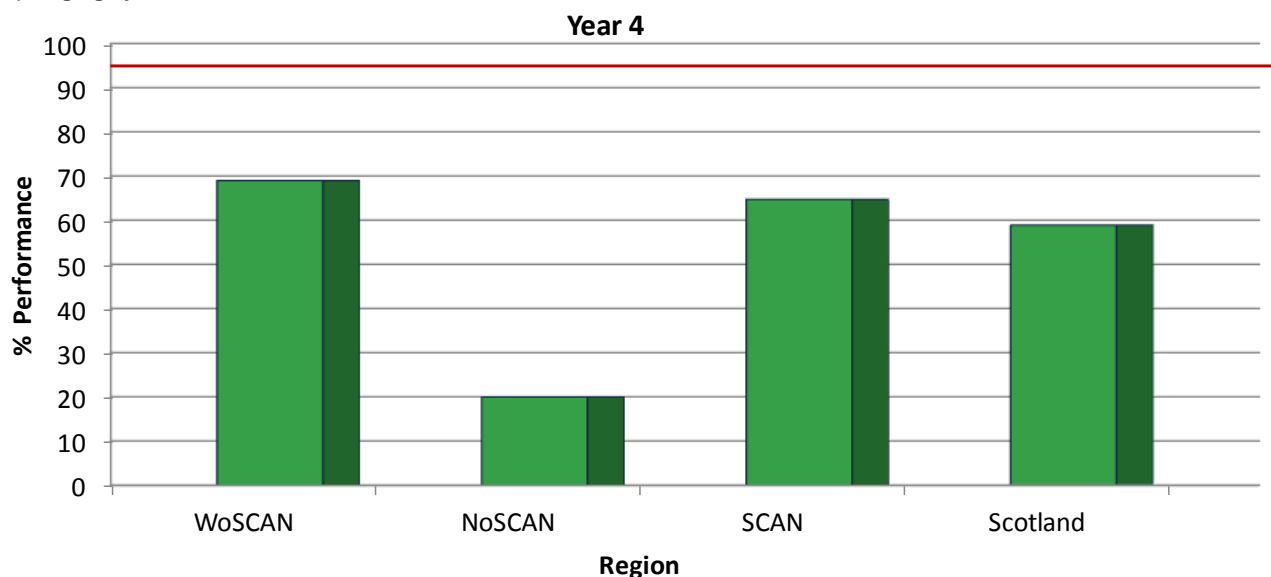
### QPI 3 – Clinical Staging

Staging has an important role in determining the most effective treatment for soft tissue sarcoma and provides information on prognosis<sup>1</sup>. Clinical staging should follow the principles of TNM classification; this aids the determination of prognosis and choice of therapy<sup>1</sup>.

Following formal review QPI 3 was separated into two parts. Part one looks at cases where staging CT scan results are available prior to definitive treatment. As this required a new data field results will not be available till Year 5. Part two looked at the number of patients with extremity soft tissue sarcoma who were clinically staged using TNM staging system. TNM is no longer required to be recorded *prior* to treatment.

<b>QPI Title:</b>	Patients with extremity soft tissue sarcoma should be staged using the Tumour Node Metastases (TNM) staging system.
<b>Numerator:</b>	Number of patients with extremity soft tissue sarcoma who are clinically staged using TNM staging.
<b>Denominator:</b>	All patients with extremity soft tissue sarcoma.
<b>Exclusions:</b>	Patients with rhabdomyosarcomas, patients with cutaneous sarcomas.
<b>Target:</b>	95%

Figure 7: Proportion of patients with extremity soft tissue sarcoma who should be staged using the Tumour Node Metastases (TNM) staging system.



	Performance (%)	Numerator	Denominator	Not recorded numerator	Not recorded numerator (%)	Not recorded exclusions	Not recorded exclusions (%)	Not recorded denominator
WoSCAN	69.0%	20	29	18	52.9%	0	0.0%	0
NoSCAN	20.0%	2	10	8	57.1%	0	0.0%	0
SCAN	64.7%	11	17	0	0.0%	0	0.0%	0
Scotland	58.9%	33	56	26	46.4%	0	0.0%	0

Following formal review QPI 3 was updated with the QPI separated into 2 parts with part 1 looking at staging CT scan results available prior to definitive treatment. As this required a new data field results will not be available till Year 5. Part two looked at the number of patients with extremity soft tissue sarcoma who were clinically staged using TNM staging system. TNM is no longer required to be recorded *prior* to treatment.



Recording of TNM staging is still extremely variable across NHS Scotland, with national performance 58.9%. There are a high proportion of cases with not recorded information, of T, N, or M stage, in both NOSCAN and WoSCAN, which accounts for the considerably lower percentage performance in these regions.

Improved recording of TNM staging would improve the quality of results for QPI 3. In Scotland, 46.4% of cases in the numerator do not have T, N, or M stage recorded and an improvement in data capture through MDT outcomes would likely have a significant effect on results presented for this QPI in subsequent years.

WoSCAN reviewed all cases and commented that 6 of these 9 patients only had their M status documented. MDT meeting is not conducive to assigning TNM in some cases. WoSCAN added that the MDT continues to try and improve TNM recording.

SCAN commented that one case of exstasketal Ewing sarcoma was a deliberate decision to start chemotherapy treatment promptly without awaiting final imaging, because chemotherapy was needed whatever the CT result. Two patients had excision biopsies revealing sarcoma and were also deliberate decisions not to wait, because re-excision after a diagnostic excision biopsy was needed anyway, whatever the CT result. The other 3 cases did not have TNM recorded, but did have preoperative staging carried out (2 of these cases were recorded as cMx).

No comments were received in relation to this QPI from NoSCAN.

**Action Required:**

- NoSCAN to review cases and provide further detail on cases not meeting the QPI.
- WoSCAN to ensure more robust Performance Status recording at MDT Meetings.

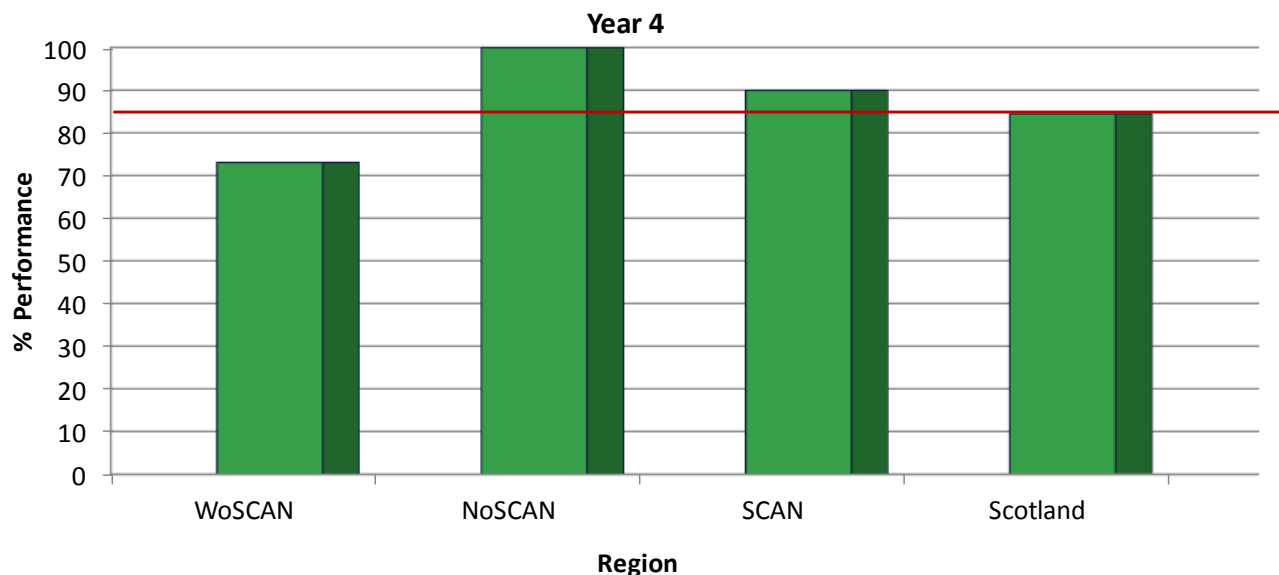
## QPI 4 – Surgical Margins

The surgical margin achieved within surgical resection impacts on local recurrence rates and survival of patients<sup>1</sup>. It is important that surgical procedures are planned in advance of surgery, this allows for the necessary treatment planning to take place before the initiation of treatment<sup>1</sup>.

The target level for this QPI is set at 85% to account for situations where it is agreed due to anatomical constraints a planned positive surgical margin is acceptable.

<b>QPI Title:</b>	Patients with extremity sarcoma undergoing surgical resection should have their tumour adequately excised.
<b>Numerator:</b>	Number of patients with extremity sarcoma who undergo surgical resection where R0 <sup>*</sup> resection is achieved.
<b>Denominator:</b>	All patients with extremity sarcoma who undergo surgical resection.
<b>Exclusions:</b>	Patients with cutaneous sarcomas.
<b>Target:</b>	85%
*R0 resection is a surgical resection where surgical margins are clear of microscopic disease.	

Figure 8: Proportion of patients with extremity sarcoma undergoing surgical resection who have their tumour adequately excised.



	Performance (%)	Numerator	Denominator	Not recorded numerator	Not recorded numerator (%)	Not recorded exclusions	Not recorded exclusions (%)	Not recorded denominator
WoSCAN	73.1%	19	26	0	0.0%	0	0.0%	0
NoSCAN	100.0%	12	12	0	0.0%	0	0.0%	0
SCAN	90.0%	18	20	0	0.0%	0	0.0%	0
Scotland	84.5%	49	58	0	0.0%	0	0.0%	0

Following formal review QPI 4 was updated to include all surgical resections rather than only those with 'curative intent' therefore data is not comparable to previous years.

Performance across Scotland was 85.4% against the 85% target for QPI 4 with 49 of 58 cases meeting the QPI criteria. NoSCAN and SCAN achieved the QPI with a performance of 100% and 90% respectively.

WoSCAN reviewed all cases not meeting the QPI and provided detailed clinical comments. One case was a straightforward case with an unplanned positive margin. Two cases were myxofibrosarcoma, Final Published - National Sarcoma MCN QPI Audit Report v1.0 16/04/2019

and the associated risks with this type of sarcoma were taken into consideration at the time of surgery. In a further case the post surgical realignment of tissue resulted in a positive margin being identified, however the surgeon noted that when deeper muscles were excised the true margin was negative. One patient had a non malignant tumour and should not have been recorded within this audit by the local audit team. One case was an incidental finding during a routine procedure for a non cancer related issue and another patient had a planned positive deep periosteal margin which is standard practice for the type of tumour involved.

**Action Required:**

- WoSCAN to discuss the future reporting of margins in cases where tissue realignment has been carried out with pathologists and agree any change required.
- WoSCAN to ensure surgeons clarify in operation note heading where any margin is planned to be positive.

**QPI 5 – Molecular Staging of Gastrointestinal Stromal Tumour (GIST)**

Following formal review, QPI 5 was updated to focus on all GISTs excluding low risk non-metastatic GISTs. Due to new data items being required to measure this, performance against this revised QPI cannot be reported until next year.

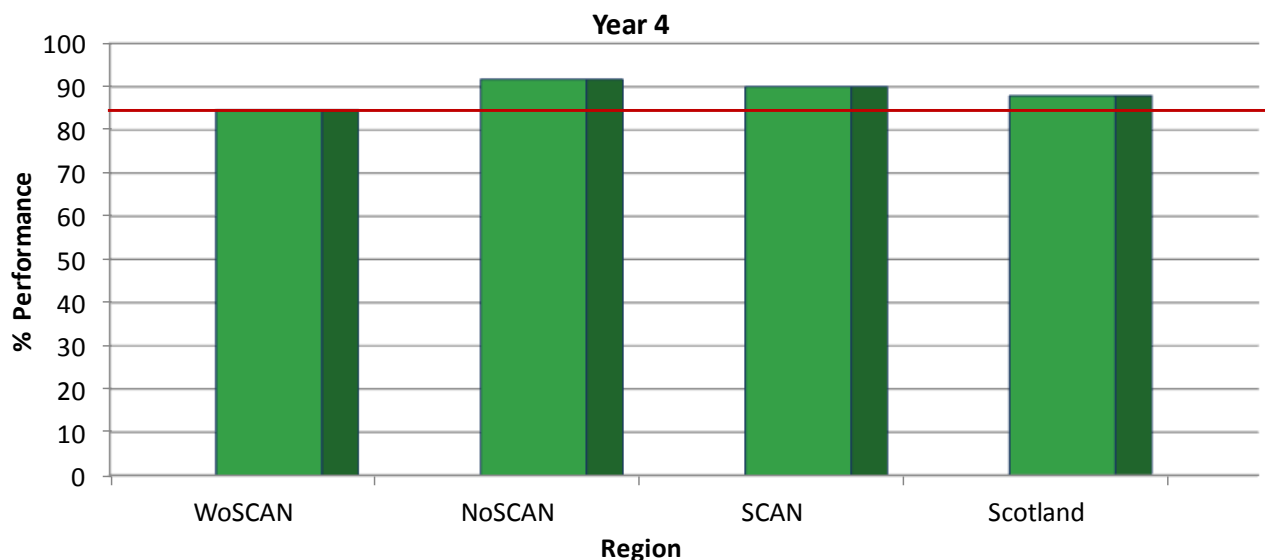
## QPI 6 – Limb Sparing Surgery

Studies have shown that surgical treatment for approximately 90-95% of patients involves limb sparing surgery<sup>1</sup>. Rates of amputation have decreased over the years and this treatment approach is typically reserved for patients with locally advanced disease that cannot be managed by limb sparing surgery<sup>1</sup>. Patients who undergo limb sparing surgery have reportedly improved quality of life post treatment, uncompromised survival rates and local tumour control, as well as, an asymptomatic and functional limb<sup>1</sup>.

Following formal review this QPI was updated to account only for those patients who undergo surgery and the target tolerance statement been updated to account for those patients with advanced disease that cannot be managed with limb sparing surgery and also to reflect factors of patient choice.

<b>QPI Title:</b>	Patients with extremity sarcoma should have primary limb-sparing surgery.
<b>Numerator:</b>	Number of patients with extremity sarcoma who undergo a primary limb-sparing surgery.
<b>Denominator:</b>	All patients with extremity sarcoma.
<b>Exclusions:</b>	Patients who died before first treatment and patients with cutaneous sarcomas.
<b>Target:</b>	85%

Figure 9: Proportion of patients with extremity sarcoma who undergo a primary limb-sparing surgery.



	Performance (%)	Numerator	Denominator	Not recorded numerator	Not recorded numerator (%)	Not recorded exclusions	Not recorded exclusions (%)	Not recorded denominator
WoSCAN	84.6%	22	26	0	0.0%	0	0.0%	0
NoSCAN	91.7%	11	12	0	0.0%	0	0.0%	0
SCAN	90.0%	18	20	0	0.0%	0	0.0%	0
Scotland	87.9%	51	58	0	0.0%	0	0.0%	0

Overall performance across Scotland was 87.9% with 51 of 58 patients with extremity sarcoma undergoing a primary limb sparing surgery.

## QPI 7 – Primary Flap Reconstruction

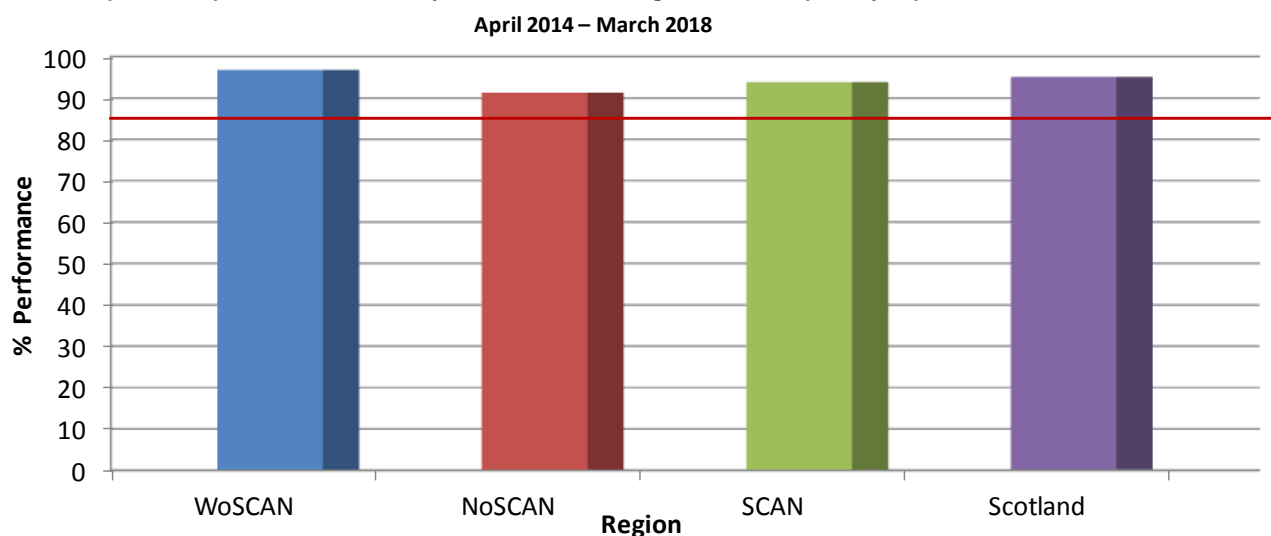
After surgical resection, reconstructive surgery may be needed to cover wounds, preserve function and/or improve the cosmetic outcome<sup>1</sup>. When conducting reconstructive surgery, surgeons should consider the flap success rate as one factor in choosing the best construction for any individual patient<sup>1</sup>.

For the purpose of reporting this QPI a successful primary flap has been defined as a patient who does not need to return to theatre for unplanned surgery. The target level for this QPI is 85%; this is to account for situations where re-exploration of flaps is undertaken due to vascular insufficiency.

<b>QPI Title:</b>	Patients with extremity sarcoma should have successful primary flap reconstruction following surgical resection.
<b>Numerator:</b>	Number of patients with extremity sarcoma who undergo successful* primary flap reconstruction.
<b>Denominator:</b>	All patients with extremity sarcoma who undergo primary flap reconstruction.
<b>Exclusions:</b>	Patients with cutaneous sarcomas.
<b>Target:</b>	85%

\*Successful has been defined as patients who do not need to return to theatre for unplanned surgical debridement of a sufficient volume of the flap reconstruction such that secondary reconstruction is required.

Figure 10: Proportion of patients with extremity sarcoma who undergo successful\* primary flap reconstruction.



	Performance (%)	Numerator	Denominator	Not recorded numerator	Not recorded numerator (%)	Not recorded exclusions	Not recorded exclusions (%)	Not recorded denominator
<b>WoSCAN</b>	96.8%	61	63	0	0.0%	0	0.0%	2
<b>NoSCAN</b>	91.3%	21	23	0	0.0%	0	0.0%	2
<b>SCAN</b>	93.8%	15	16	0	0.0%	0	0.0%	0
<b>Scotland</b>	95.1%	97	102	0	0.0%	0	0.0%	4

Due to the small numbers meeting the denominator criteria in each year of analysis individual year results cannot be presented therefore Figure 10 shows aggregated four year results.

All three regions exceeded the 85% target. Overall Scotland performance was 95.1% with 97 of 102 patients undergoing a successful primary flap reconstruction.

### **QPI 8 – Post Operative Radiotherapy**

Post operative radiotherapy is advocated for those with a deep tumour (any size, grade 2 or 3), who have had an R0 or R1 excision. Evidence suggests that post operative radiotherapy should start within 3 months of surgery<sup>1</sup>. The target level for this indicator is set at 90% to account for situations where co-morbidities, severe post-operative complications or frailty can mean the patient is not suitable for post operative radiotherapy.

<b>QPI Title:</b>	Patients with extremity sarcoma should receive radiotherapy within 3 months of surgery.
<b>Numerator:</b>	All patients aged 16 and over, with extremity sarcoma who commenced post operative radiotherapy within 3 months of surgery.
<b>Denominator:</b>	All patients aged 16 and over, with extremity sarcoma who undergo post operative radiotherapy.
<b>Exclusions:</b>	Patients with cutaneous sarcomas. Patients with osteosarcomas. Patients with Ewings sarcoma. Patients with chondrosarcomas.
<b>Target:</b>	90%
* Deep can be defined as: deep to fascia, this is determined radiologically.	

Due to the small numbers meeting the denominator criteria in each year of analysis individual region results cannot be presented. Scotland performance against this QPI for Year 4 was 52.4% (11 out of 21 cases).

### **QPI 9 – Multi-agent Chemotherapy for Osteosarcoma or Ewing’s sarcoma**

Following formal review, QPI 9 was updated to focus on patients with osteosarcoma or ewing’s sarcoma receiving multi-agent chemotherapy. Due to new data items being required to measure this, performance against this revised QPI cannot be reported until next year.

### **QPI 10 – Adjuvant Oncological Treatment for Gastrointestinal Stromal Tumour (GIST)**

Following formal review, QPI 10 was revised. Due to new data codes being required to measure Gastrointestinal Stromal Tumour Risk Score, performance against this revised QPI cannot be reported until next year.

## QPI 11 – 30 Day Mortality

Treatment related mortality is a marker of the quality and safety of the whole service provided by the Multi Disciplinary Team (MDT)<sup>1</sup>. 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<sup>1</sup>.

The QPI is split into 2 separate sections; the first measures the proportion of patients who die within 30 days of treatment with curative intent and the second those patients who die within 30 days of palliative treatment. The target level is less than 10% for curative treatments and less than 15% for palliative treatments.

<b>QPI Title:</b>	30 day mortality following curative treatment for sarcoma.
<b>Numerator:</b>	Number of patients with sarcoma who undergo surgical resection or oncological treatment with curative intent who die within 30 days of treatment.
<b>Denominator:</b>	All patients with sarcoma who undergo surgical resection or oncological treatment with curative intent.
<b>Exclusions:</b>	No exclusions.
<b>Target:</b>	<10%

**Table 3: Proportion of patients with sarcoma who undergo surgical resection or oncological treatment with curative intent who die within 30 days of treatment.**

	QPI Target	WoSCAN	NoSCAN	SCAN	Scotland
Surgery	<10 %	0.9% (1/115)	0.0%	0.0%	0.6% (1/166)
Radical Radiotherapy	<10 %	n/a	0.0%	n/a	0.0%
Neo-Adjuvant Chemotherapy	<10%	14.3% (1/7)	0.0%	0.0%	6.3% (1/16)
Neo-Adjuvant Radiotherapy	<10%	0.0%	n/a	0.0%	0.0%
Adjuvant Chemotherapy	<10%	0.0%	0.0%	0.0%	0.0%
Adjuvant Radiotherapy	<10%	0.0%	0.0%	0.0%	0.0%
Chemoradiotherapy	<10%	n/a	0.0%	0.0%	0.0%
Biological Therapy	<10%	11.1% (1/9)	0.0%	0.0%	5.6% (1/18)

Overall in Scotland the 30 day mortality target for patients undergoing treatment with curative intent was achieved for all treatment types. Regionally only WoSCAN did not meet the target for neo-adjuvant chemotherapy and biological therapy 30 day mortality achieving 14.3% and 11.1% respectively. However, it should be noted that small numbers have impacted upon percentages and there was a single death in each treatment modality.

WoSCAN reported that both deaths were reviewed and discussed at a local morbidity and mortality meeting. Both cases were particularly complex due to previous intensive chemotherapy and radiotherapy for a different tumour and multiple metastatic tumours at the same time.

<b>QPI Title:</b>	30 day mortality following palliative treatment for sarcoma.
<b>Numerator:</b>	Number of patients with sarcoma who undergo palliative treatment who die within 30 days of treatment.
<b>Denominator:</b>	All patients with sarcoma who undergo palliative treatment.
<b>Exclusions:</b>	No exclusions.
<b>Target:</b>	<15%

Table 4: Proportion of patients with sarcoma who undergo palliative radiotherapy or palliative chemotherapy who die within 30 days of treatment.

	QPI Target	WoSCAN	NoSCAN	SCAN	Scotland
Palliative Radiotherapy	<15%	5.9% (1/17)	0.0%	0.0%	3.6% (1/28)
Palliative Chemotherapy	<15%	0.0%	60.0% (3/5)	0.0%	15% (3/20)

Overall in Scotland 3.6% (1 out of 28) of patients who received palliative radiotherapy died within 30 days of treatment which is below the <15% target. With regards to palliative chemotherapy treatment 3 out of 20 cases in Scotland died within 30 days of treatment. This resulted in an overall performance of 15%. NoSCAN did not meet the QPI target achieving 60% however, the number of patients included in the denominators is low and this can have a considerable effect on proportions.

#### Action Required:

- NoSCAN should discuss cases where patients died within 30 days of palliative chemotherapy at Morbidity and Mortality meeting and provide feedback to NMCN.

#### Clinical Trial Access QPI

Clinical trials are necessary to demonstrate the efficacy of new therapies and other interventions. Evidence suggests improved patient outcomes from participation in clinical trials<sup>1</sup>. 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<sup>1</sup>.

The clinical trials QPI is measured utilising Scottish Cancer Research Network (SCRN) data and ISD incidence data, as this is the methodology currently utilised by the Chief Scientist Office (CSO) and the National Cancer Research Institute (NCRI). The principal benefit of this approach is that this data is already collected utilising a robust mechanism<sup>1</sup>. The QPI looks at *all* patients with sarcoma entered into a trial in the calendar year 1<sup>st</sup> January to 31<sup>st</sup> December 2017, and not just those patients who had an initial diagnosis in that same period.

Following formal review the Clinical Trials Access QPI was updated to measure the number of patients consented for participation in a clinical trial rather than only those who are enrolled. There are a number of patients who undergo screening but do not proceed to enrolment for various reasons, e.g. they do not have the mutation required for entry on to the trial.



<b>QPI Title:</b>	All patients should be considered for participation in available clinical trials/research studies, wherever eligible.
<b>Numerator:</b>	Number of patients with sarcoma who are consented for a clinical trial / research study.
<b>Denominator:</b>	All patients with sarcoma.
<b>Exclusions:</b>	No exclusions.
<b>Target:</b>	15%

The target is to consent a minimum of 15% of patients with sarcoma for a clinical trial/research study.

**Table 5: Proportion of patients consented for clinical trials for Sarcoma by NHS Board of residence.**

Sarcoma	Consented (QPI target 15%)		
	N	D	%
NOSCAN	2	92	2.2%
SCAN	12	99	12.1%
WoSCAN	15	162	9.3%
Scotland	29	353	8.2%

Overall for patients in Scotland, 29 (8.2%) patients were consented for clinical trials for sarcoma. It is important to note that the denominator used in the measurement of this QPI is the 5 year average of ISD incidence data for sarcoma in Scotland (2011 -2015). No regions met the 15% target for patients consented for clinical trials.

**Table 6: List of clinical trials carried out in 2017 and the number of patients with sarcoma recruited into each clinical trial per year.**

Short Title	Consented
Euro Ewing 2012	4
HGUSStudy	1
rEECur	1
SSG XXII	2
Genetics of Multiple Cancers Study (GeMCaS)	2
TYA Research Study	3
CDI-CS-002	1
TIOMA	1
FACT	2
Chronic Stress and Reproductive Function in Female Cancer Survivors	2
Optimisation of Circulating Tumour Cell Detection in Bone Sarcomas	2
The MENAC Trial	1
HORIZONS: Understanding the impact of cancer diagnosis and treatment	1
A Phase 1b (Open Label) / Phase 2 (Randomized, Double-Blinded) Study Evaluating the Efficacy of Gemcitabine and Docetaxel With or Without a Human Anti-PDGFRa Monoclonal Antibody (Olaratumab) in the Treatment of Advanced Soft Tissue Sarcoma	6
<b>Total</b>	<b>29</b>

## 5. Conclusions

Cancer audit underpins much of the development and service improvement work of Managed Clinical Networks and the regular reporting of activity and performance are fundamental in assuring the quality of care delivered across NHSScotland. The development and implementation of Sarcoma QPIs will help drive continuous quality improvement in patient care whilst ensuring that activity is focussed on those areas that are most important in terms of improving survival and patient experience. In addition, the introduction of QPIs and the associated governance structure will facilitate regular monitoring and reporting of data to ensure equitable care across the country.

Results presented in this report demonstrate that work is still required to ensure patients with sarcoma receive an equitable and consistent standard of care across NHS Scotland. It is evident that many of the QPI targets set have been challenging for centres to achieve and some variance and a number of areas for improvement have been highlighted. It should however be noted that given the rarity of sarcoma numbers included within the measurement of the majority of indicators are small and therefore percentages should be compared with caution.

This audit report has identified areas where data capture must improve to enable more meaningful analysis of performance against QPIs in the coming years, specifically with regards to TNM staging. However overall case ascertainment and data capture has improved in the fourth year of data collection and analysis. This provides a good foundation from which to measure service improvement in future years, however further work is required.

NHS Boards are asked to develop local Action/Improvement Plans in response to the findings presented in the report

### Action required:

#### *QPI 11 – 30 Day Mortality*

- NoSCAN should discuss cases where patients died within 30 days of palliative chemotherapy at Morbidity and Mortality meeting and provide feedback to NMCN.

#### *QPI 4 – Surgical Margins*

- WoSCAN to discuss the future reporting of margins in cases where tissue realignment has been carried out with pathologists and agree any change required.
- WoSCAN to ensure surgeons clarify in operation note heading where any margin is planned to be positive.

#### *QPI 3 – Clinical Staging*

- NoSCAN to review cases and provide further detail on cases not meeting the QPI.
- WoSCAN to ensure more robust Performance Status recording at MDT Meetings.

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

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

Additionally, progress will be reported to the Regional Cancer Advisory Group (RCAG) annually by NHS Board Territorial Lead Cancer Clinicians and MCN Clinical Leads, as part of the regional audit governance process to enable RCAG to review and monitor regional improvement.

## **Acknowledgement**

This report has been prepared using clinical audit data provided by each of the fourteen NHS Boards in Scotland. We would like to thank colleagues in the clinical effectiveness departments throughout Scotland for gathering, submitting and verifying these data. We would also like to thank the clinicians, nurses and others involved in the management of patients with sarcoma for their contribution to the clinical audit process.

## Abbreviations

<b>ARI</b>	Aberdeen Royal Infirmary
<b>ACaDMe</b>	Acute Cancer Deaths and Mental Health
<b>BWoSCC</b>	Beatson West of Scotland Cancer Centre
<b>CMG</b>	Clinical Management Guideline
<b>CT</b>	Computed Tomography
<b>eCASE</b>	Electronic Cancer Audit Support Environment
<b>GGH</b>	Gartnavel General Hospital
<b>GIST</b>	Gastrointestinal Stromal Tumour
<b>GRI</b>	Glasgow Royal Infirmary
<b>HIS</b>	Healthcare Improvement Scotland
<b>ISD</b>	Information Services Division
<b>MDT</b>	Multidisciplinary Team
<b>NW</b>	Ninewells Hospital
<b>NMCN</b>	National Managed Clinical Network
<b>NCQSG</b>	National Cancer Quality Steering Group
<b>NHSGGC</b>	NHS Greater Glasgow and Clyde
<b>NOSCAN</b>	North of Scotland Cancer Network
<b>QEUH</b>	Queen Elizabeth University Hospital
<b>QPI (s)</b>	Quality Performance Indicator (s)
<b>RCAG</b>	Regional Cancer Advisory Group
<b>RHC</b>	Royal Hospital for Children
<b>RHSC</b>	Royal Hospital for Sick Children
<b>RIE</b>	Royal Infirmary of Edinburgh
<b>SACT</b>	Systemic Anti Cancer Therapy
<b>SCAN</b>	South and East of Scotland Cancer Network

<b>TNM</b>	Classification of Malignant Tumours
<b>WGH</b>	Western General Hospital
<b>WHO</b>	World Health Organisation
<b>WoS</b>	West of Scotland
<b>WoSCAN</b>	West of Scotland Cancer Network

## References

1. Healthcare Improvement Scotland. Sarcoma Quality Performance Indicators, v1.0; March 2014 [Accessed on: 27<sup>th</sup> April 2016] Available at: [http://www.healthcareimprovementscotland.org/our\\_work/cancer\\_care\\_improvement/cancer\\_qpis/quality\\_performance\\_indicators.aspx](http://www.healthcareimprovementscotland.org/our_work/cancer_care_improvement/cancer_qpis/quality_performance_indicators.aspx)
2. Information Services Division. National Data Definitions for the Minimum Core Data Set for Sarcoma Quality Performance Indicators v1.4; November 2015 [Accessed on: 27<sup>th</sup> April 2016] Available at: <http://www.isdscotland.scot.nhs.uk/Health-Topics/Cancer/Cancer-Audit/>
3. Information Services Division, Cancer Statistics, Summary statistics for bone and connective tissue cancer - Scotland. [Accessed on: 27<sup>th</sup> April 2016]. Available at: <http://www.isdscotland.scot.nhs.uk/Health-Topics/Cancer/Cancer-Statistics/Bone-and-Connective-Tissue/>
4. Cancer Research UK. Soft Tissue Sarcoma Statistics. [Accessed on: 27<sup>th</sup> April 2016]. Available at: <http://www.cancerresearchuk.org/health-professional/cancer-statistics/statistics-by-cancer-type/soft-tissue-sarcoma>
5. National Cancer Intelligence Network. Bone and Soft Tissue Sarcomas UK Incidence and Survival 1996 to 2010 v2.0 November 2013.

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## Appendix 1: NHS Board Action Plans

A summary of actions for each NHS Board has been included within the Action Plan templates in Appendix 1. Completed Action Plans should be returned to WoSCAN within two months of publication of this report.

### Sarcoma QPI Action / Improvement Plan

<b>Region:</b>	WoSCAN
<b>Action Plan Lead:</b>	
<b>Date:</b>	

KEY (Status)	
<b>1</b>	Action fully implemented
<b>2</b>	Action agreed but not yet implemented
<b>3</b>	No action taken (please state reason)

No	Action Required	Health Board Action Taken	Timescales		Lead	Progress/Action Status	Status (see key)
			Start	End			
	<i>Action</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 specific action.</i>	<i>Provide detail of action in progress, change in practices, problems encountered or reasons why no action taken.</i>	<i>Insert No. from key above</i>
1.	<b>Action required:</b> <i>QPI 4 – Surgical Margins</i> WoSCAN to discuss the future reporting of margins in cases where tissue realignment has been carried out with pathologists and agree any change required. WoSCAN to ensure surgeons clarify in operation note heading where any margin is planned to be positive.						
2.	<i>QPI 3 – Clinical Staging</i> WoSCAN to ensure more robust Performance Status recording at MDT Meetings.						



## Sarcoma QPI Action / Improvement Plan

<b>Region:</b>	NoSCAN
<b>Action Plan Lead:</b>	
<b>Date:</b>	

<b>KEY (Status)</b>	
<b>1</b>	Action fully implemented
<b>2</b>	Action agreed but not yet implemented
<b>3</b>	No action taken (please state reason)

<b>No</b>	<b>Action Required</b>	<b>Health Board Action Taken</b>	<b>Timescales</b>		<b>Lead</b>	<b>Progress/Action Status</b>	<b>Status (see key)</b>
			<b>Start</b>	<b>End</b>			
	<i>Action</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 specific action.</i>	<i>Provide detail of action in progress, change in practices, problems encountered or reasons why no action taken.</i>	<i>Insert No. from key above</i>
1.	<b>Action required:</b> <i>QPI 11 – 30 Day Mortality</i> NoSCAN should discuss cases where patients died within 30 days of palliative chemotherapy at Morbidity and Mortality meeting and provide feedback to NMCN.						
2.	<i>QPI 3 – Clinical Staging</i> NoSCAN to review cases and provide further detail on cases not meeting the QPI.						