

**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 2019 to 31 March 2020**

Ioanna Nixon  
**National MCN Clinical Lead**

Lindsay Campbell  
**National MCN Manager**

Julie McMahon  
**Information Analyst**

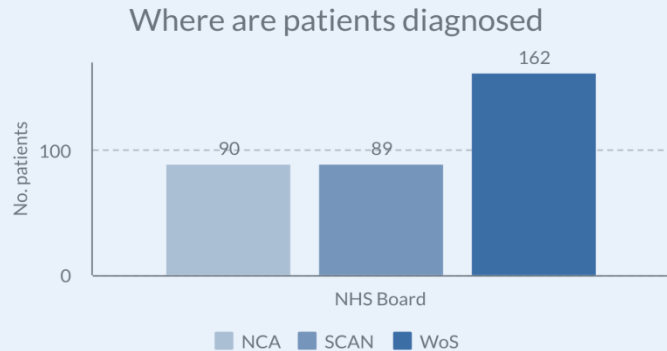
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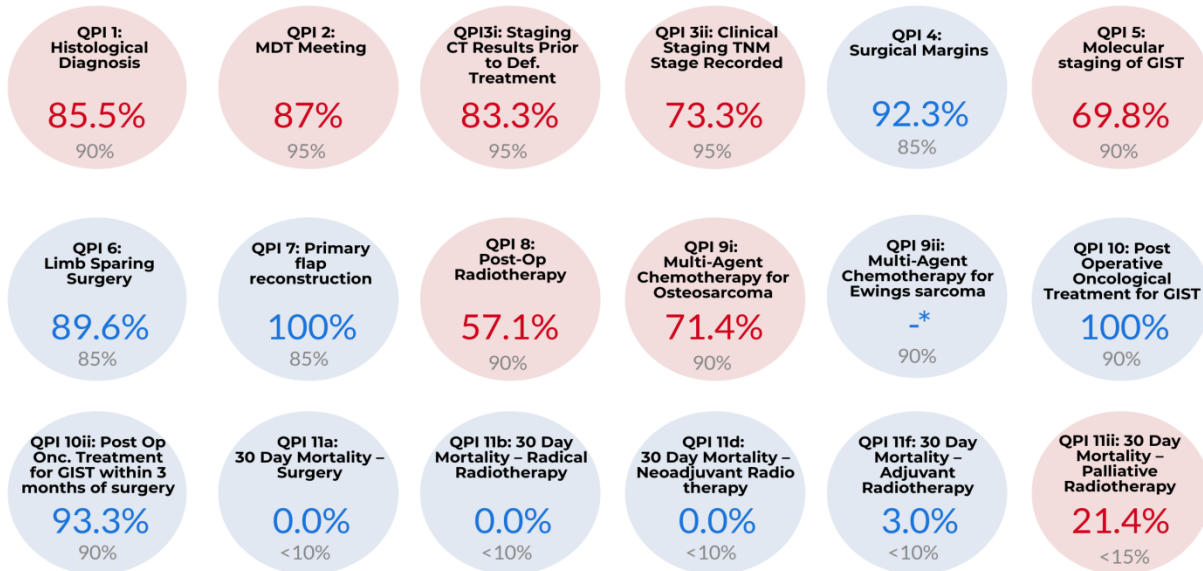
# Sarcoma QPI Overview

Patients diagnosed April 2019 - March 2020

Number of patients	341
Gender of Patients:	
Male	53.4%
Female	46.6%
Median Age of Patients:	64



## Scotland Performance (%)



\*Denominator of less than 5

### Key Achievements:

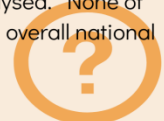
QPI results indicate that the quality of sarcoma services across Scotland is good with all regions achieving targets for surgical margins, primary flap reconstruction, multi-agent chemotherapy for Ewings sarcoma and 30 day mortality following curative treatment.



### Areas for Improvement:

QPI 5: Molecular Staging of GIST (Target 90%) - Performance across Scotland was 70% against the 90% QPI target with 30 of the 43 patients diagnosed with GISTs having mutational analysis within 3 months of diagnosis.

QPI 8: Post Operative Radiotherapy within 3 months of Surgery (Target 90%) - Denominator numbers are small for this QPI therefore 3 year aggregated data has been analysed. None of the regions achieved the 90% QPI target with an overall national performance of 59%.



## **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 2019 and 31<sup>st</sup> March 2020.

In order to ensure the success of the Cancer QPIs in driving quality improvement in cancer care, QPIs will continue to be assessed for clinical effectiveness and relevance, the initial formal review of Sarcoma QPIs took place in 2018. With 6 years of reporting now complete, a 2<sup>nd</sup> cycle of review will commence in 2021/22. This clinically led review aims to identify potential refinements to the current QPIs and involves key clinicians from each of the three Regional Cancer Networks. It is anticipated that this will be a more focussed review given the changes that have been made to the indicators to date. The review will focus on any significant changes to the QPIs that are required due to changes in evidence or clinical practice, as well as an opportunity to make adjustments to the new indicators developed at the initial formal review in 2018.

### **Results**

A summary of the Sarcoma QPI performance for the 2019/20 audit period is presented below, with a more detailed analysis of the results set out in the main report. Data are analysed by location of diagnosis or treatment, and illustrate NHS Board or treatment-centre performance against each target and overall national performance for each performance indicator.

## National - Performance Summary Report

### National Sarcoma QPI Performance Summary Report

Colour Key	
	Above QPI target
	Below QPI target
-	Denotes a denominator of less than 5. Figures have been removed to ensure confidentiality.
n/a	No patients included in denominator

No. Patients	NCA	SCAN	WoSCAN	Scotland
Sarcoma	90	89	162	341

Quality Performance Indicator (QPI)	Performance by NHS Board					
	QPI target	Year	NCA	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.	90%	2019/20	85.7%	73.9%	96.0%	85.5%
		2018/19	90.0%	88.9%	93.1%	91.2%
		2017/18	91.7%	85.0%	92.3%	89.7%
<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.	95%	2019/20	87.0%	76.9%	96.4%	87.0%
		2018/19	84.6%	84.2%	90.6%	87.5%
		2017/18	100%	95.5%	91.2%	94.3%
<b>QPI 3(i) – Clinical Staging</b> Proportion of patients with extremity soft tissue who undergo staging CT where the results are available prior to definitive treatment.	95%	2019/20	86.7%	80.0%	84.0%	83.3%
		2018/19	91.7%	71.4%	95.2%	87.2%
		2017/18				
<b>QPI 3(ii) – Clinical Staging</b> Proportion of patients whose extremity soft tissue sarcoma is staged using the TNM staging system.	95%	2019/20	66.7%	55.0%	92.0%	73.3%
		2018/19	33.3%	57.1%	85.7%	63.8%
		2017/18	20.0%	64.7%	69.0%	58.9%
<b>QPI 4 – Surgical Margins (Hospital of Surgery)</b> Proportion of patients with extremity sarcoma, who undergo surgical resection where R0* resection is achieved.	85%	2019/20	88.9%	91.3%	95.8%	92.3%
		2018/19	88.9%	75.0%	82.1%	80.7%
		2017/18	100%	90.0%	73.1%	84.5%

Quality Performance Indicator (QPI)	Performance by NHS Board					
	QPI target	Year	NCA	SCAN	WoSCAN	Scotland
<b>QPI 5 – Molecular Staging of GIST</b> Proportion of patients with GISTs who have mutational analysis within 3 months of diagnosis.	90%	2019/20	88.9%	78.6%	55.0%	69.8%
		2018/19	75.0%	73.3%	33.3%	59.0%
		2017/18	81.3%	100%	27.8%	56.8%
<b>QPI 6 – Limb Sparing Surgery</b> Proportion of patients with extremity sarcoma who undergo a primary limb-sparing surgery.	85%	2019/20	84.2%	87.5%	95.8%	89.6%
		2018/19	100%	95.0%	89.7%	93.2%
		2017/18	91.7%	90.0%	84.6%	87.9%
<b>QPI 7 – Primary Flap Reconstruction</b> Proportion of patients with extremity sarcoma who undergo successful primary flap reconstruction following surgical resection.	85%	2019/20	-	-	100%	100%
		2018/19	-	-	100%	100%
		2017/18	60%	-	100%	66.7%
<b>QPI 8 – Post Operative Radiotherapy</b> Proportion of patients with an extremity sarcoma who receive post operative radiotherapy within 3 months of surgery.	90%	2019/20	-	-	71.4%	57.1%
		2018/19	-	-	80.0%	71.4%
		2017/18	12.5%	-	66.7%	52.4%
<b>QPI 9(i) – Multi-Agent Chemotherapy for Osteosarcoma</b> Proportion of patients with osteosarcoma who receive multi-agent chemotherapy.	90%	2019/20	-	n/a	60.0%	71.4%
		2018/19	-	n/a	-	-
		2017/18				
<b>QPI 9(ii) – Multi-Agent Chemotherapy for Ewing's sarcoma</b> Proportion of patients with Ewing's sarcoma who receive multi-agent chemotherapy.	90%	2019/20	-	n/a	-	-
		2018/19	n/a	-	-	-
		2017/18				
<b>QPI 10(i) – Post Operative Oncological Treatment for GIST</b> Proportion of patients with high risk GIST who commence post-operative imatinib.	90%	2019/20	100%	-	100%	100%
		2018/19	-	75.0%	87.5%	84.6%
		2017/18	-	100%	-	78.6%
<b>QPI 10(ii) – Post Operative Oncological Treatment for GIST</b> Proportion of patients with high risk GIST who commence post-operative imatinib within 3 months of surgery.	90%	2019/20	100%	100%	85.7%	93.3%
		2018/19	-	-	100%	100%
		2017/18	-	83.3%	-	90.9%

Quality Performance Indicator (QPI)	Performance by NHS Board					
	QPI target	Year	NCA	SCAN	WoSCAN	Scotland
<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.	<10%	2019/20	0.0%	0.0%	0.0%	0.0%
		2018/19	0.0%	0.0%	0.0%	0.0%
		2017/18	0.0%	0.0%	0.9%	0.6%
<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.	<10%	2019/20	-	-	-	0.0%
		2018/19	-	n/a	n/a	-
		2017/18	-	n/a	-	-
<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.	<10%	2019/20	-	0.0%	0.0%	0.0%
		2018/19	-	0.0%	-	0.0%
		2017/18	n/a	-	0.0%	0.0%
<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	<10%	2019/20	0.0%	0.0%	6.3%	3.0%
		2018/19	0.0%	0.0%	0.0%	0.0%
		2017/18	0.0%	0.0%	0.0%	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.	<10%	2019/20	-	0.0%	0.0%	0.0%
		2018/19	-	0.0%	0.0%	0.0%
		2019/20	n/a	0.0%	11.1%	5.6%
<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.	<15%	2019/20	-	33.3%	16.7%	24.1%
		2018/19	20.0%	-	-	8.3%
		2017/18	-	0.0%	5.9%	3.6%
<b>Clinical Trial Access</b> Proportion of patients diagnosed with sarcoma who are consented for a clinical trial / research study.	15%	2019/20	5.4%	4.0%	11.7%	7.9%
		2018/19	3.3%	2.0%	4.9%	3.7%
		2017/18	2.2%	12.1%	9.3%	8.2%

## Conclusions and Action Required

The development of national QPIs for sarcoma 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.

It is evident that many of the QPI targets set have been challenging for centres to achieve 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.

Data capture has improved over the six year period which provides a good foundation from which to measure service improvement. All regions met QPI targets for surgical margins, primary flap reconstruction, multi agent chemotherapy for Ewing's sarcoma and 30 day mortality following curative treatment.

Some variance in performance does exist across the regions and, as per the agreed Regional governance process, each NHS Board was asked to complete a Performance Summary Report, providing a documented response where performance was below the QPI target. NHS Boards provided detailed comments indicating valid clinical reasons, or in some cases patient choice or co-morbidities, have influenced patient management. Remaining actions are summarised below and outlined in the main report under the relevant section.

### Action required:

#### *QPI 3: Clinical Staging*

- National MCN to consider an amendment to the QPI at formal review to account for patients who die before treatment.
- All regions to ensure that TNM is documented at MDT for all patients.

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

- NHS Grampian to review local processes and determine the administration support required to improve the patient pathway.
- NMCN to review access to radiotherapy to facilitate more timely access to adjuvant treatment

Please note actions have been categorised into groupings (for example surgery, oncology, pathology or data capture) for internal management purposes to allow regional trends to be identified and co-ordinate regional actions across multiple tumour groups where appropriate.

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 National Sarcoma 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 2019 and 31<sup>st</sup> March 2020. These audit data underpin much of the regional development/service improvement work of the National Managed Clinical Network (NMCN) and regular reporting of activity and performance is a fundamental requirement of a NMCN 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 sixth consecutive year of analysis following the initial Healthcare Improvement Scotland (HIS) publication of Sarcoma QPIs in 2014.

In order to ensure success of the National Cancer QPIs in driving quality improvement in cancer care across NHS Scotland it is critical that QPIs continue to be clinically relevant and focus on areas which will result in improvements to the quality of patient care. As part of the national process it was agreed that indicators would be formally reviewed following 3 years of national comparative reporting. The initial formal review of Sarcoma QPIs took place in 2018. With 6 years of reporting now complete, a 2<sup>nd</sup> cycle of review will commence in 2021/22, with an agreed delay of 1 year to allow for COVID-19 related pressures on services and clinical availability. This clinically led review aims to identify potential refinements to the current QPIs and involves key clinicians from each of the three Regional Cancer Networks. It is anticipated that this will be a more focussed review given the changes that have been made to the indicators to date. The review will focus on any significant changes to the QPIs that are required due to changes in evidence or clinical practice, as well as an opportunity to make adjustments to the new indicators developed at the initial formal review in 2018.

## 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 2019/20 the audit identified 341 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 25<sup>th</sup> most common cancer, accounting for only 0.5% of all cancers diagnosed in 2018<sup>3</sup>. The most common site of sarcoma is the extremities<sup>5</sup> which provides the focus for the majority of QPI 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 improvement in survival over the past few decades, with 5 year survival rising from 51% in 1996-2000 to 55% in 2006-2010 for soft tissue sarcoma<sup>5</sup>. The picture is very similar for bone sarcoma:

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>.

Treatment and care for sarcoma patients is delivered by a weekly national multi-disciplinary team (MDT) meeting. In addition the Edinburgh centre holds a weekly MDT which manages patients resident in the South East of Scotland and refers patients to the national sarcoma MDT as appropriate. The Glasgow centre runs a weekly virtual clinic for musculoskeletal sarcomas where the investigation and staging of musculoskeletal sarcoma patients resident in the West of Scotland is managed, patients are then referred to the Scottish sarcoma MDT for their ongoing management. Clinicians also participate in the UK Ewing's MDT where appropriate patients are also discussed.

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.

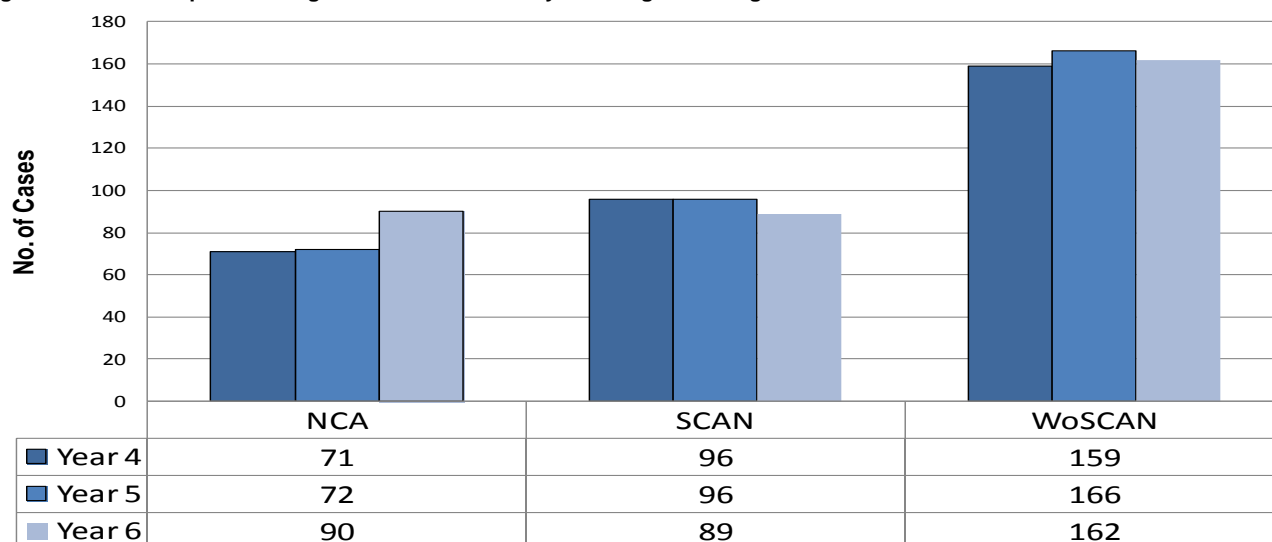
**Table 1: Sarcoma treatment centres.**

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 341 cases of sarcoma were recorded through audit as diagnosed in Scotland between 01 April 2019 and 31 March 2020. The number of patients diagnosed within each NHS Region is presented in Figure 1.

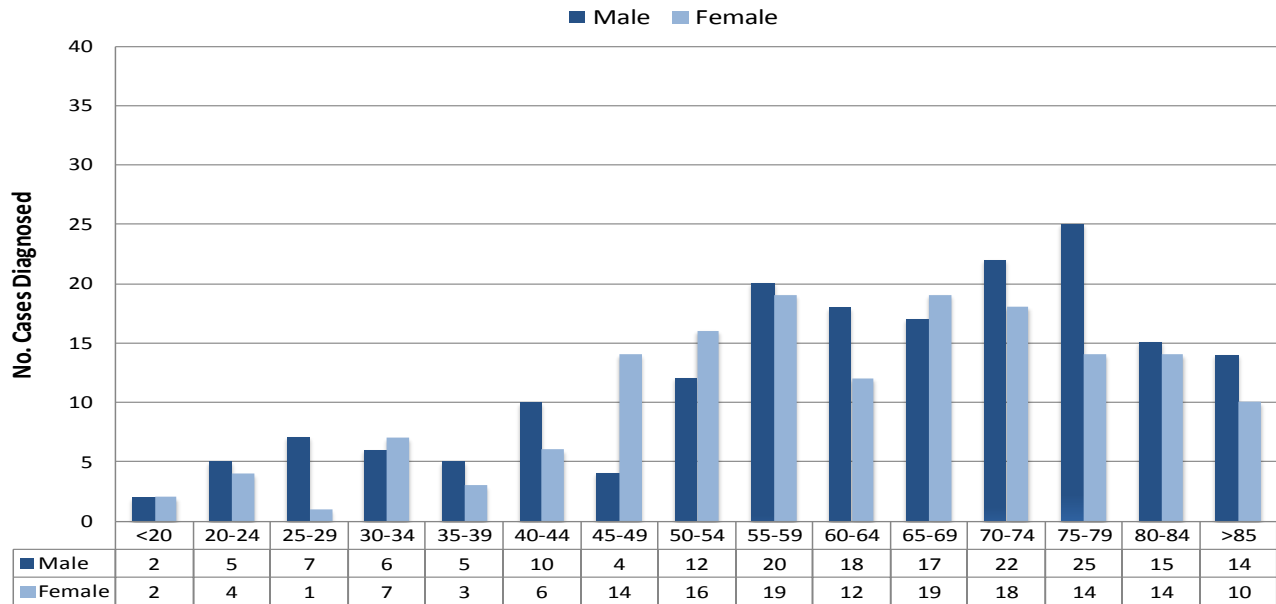
**Figure 1: Number of patients diagnosed with sarcoma by NHS Region of diagnosis.**



## 2.2 Age and Gender Distribution

Figure 2 illustrates the distribution of sarcoma cases by age group and gender. In Year 6 occurrence of sarcoma is slightly higher in males (53.4% of cases) than in females (46.6% of cases). 78% of cases diagnosed in Year 6 were in patients'  $\geq 50$  years.

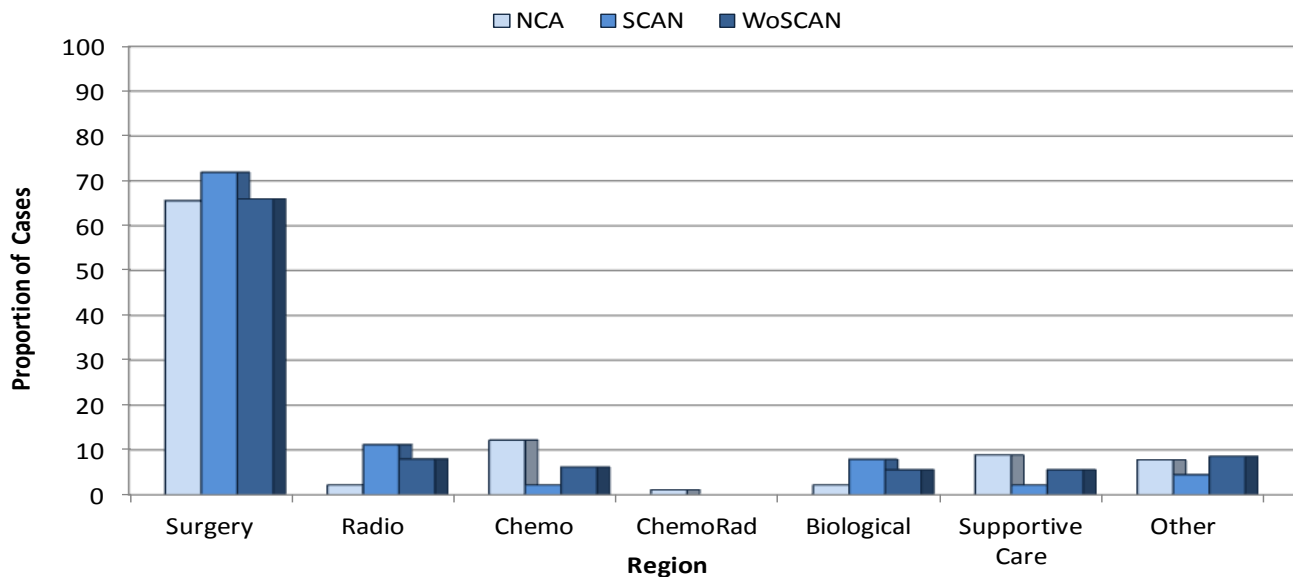
Figure 2: Age/gender distribution of sarcoma patients in Scotland April 19 to March 20.



## 2.3 Mode of First Treatment

Figure 3 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 3: Mode of First Treatment of sarcoma patients in Scotland April 19 to March 20.



	Surgery	Radio	Chemo	ChemoRad	Biological	Supportive Care	Other	Total
NCA	59	2	11	1	2	8	7	90
SCAN	64	10	2	0	7	2	4	89
WoSCAN	107	13	10	0	9	9	14	162
Scotland	230	25	23	1	18	19	25	341

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

### 3. Methodology

Further detail on the audit and analysis methodology and data quality is available in the meta data within appendix 1.

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 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.

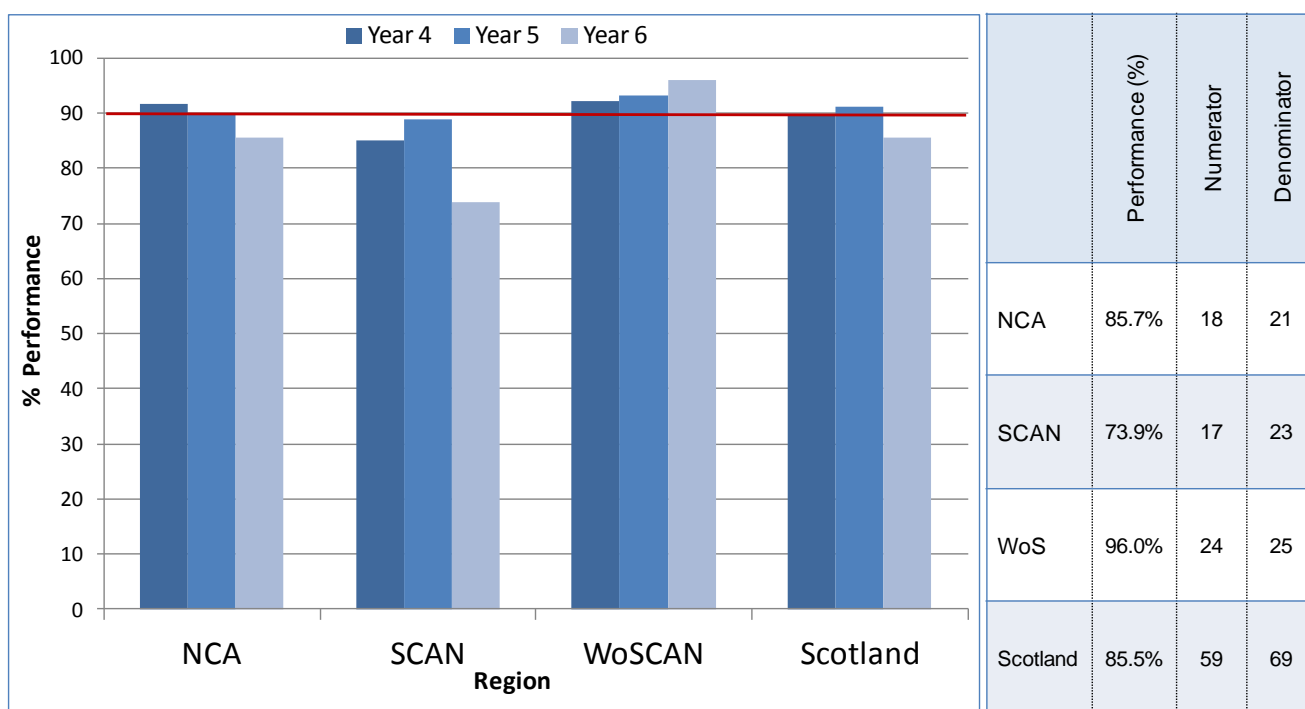
The sarcoma QPIs focus on extremity sarcomas as determined by the Sarcoma QPI Development Group, unless otherwise specified. Data is however collected on all sarcomas diagnosed in Scotland. Extremity sarcoma is defined as sarcoma of the: upper limb, shoulder girdle to fingers or lower extremity, iliac crest/buttock to toes. Extremity sarcomas account for 50-60% of all sarcomas<sup>2</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 4: Proportion of patients with extremity sarcoma that should have a histological diagnosis before undergoing a planned surgical resection.



Across Scotland 85.5% of patients with extremity sarcoma had a histological diagnosis prior to undergoing a planned surgical resection, just below the target of 90%. Slight regional variation in performance against this indicator was noted, with WoSCAN meeting the target while NCA and SCAN both fell below the target level.

NCA and SCAN commented that all cases have been reviewed and all cases not meeting the QPI were diagnosed at surgery and sarcoma was not suspected at the time of excision.

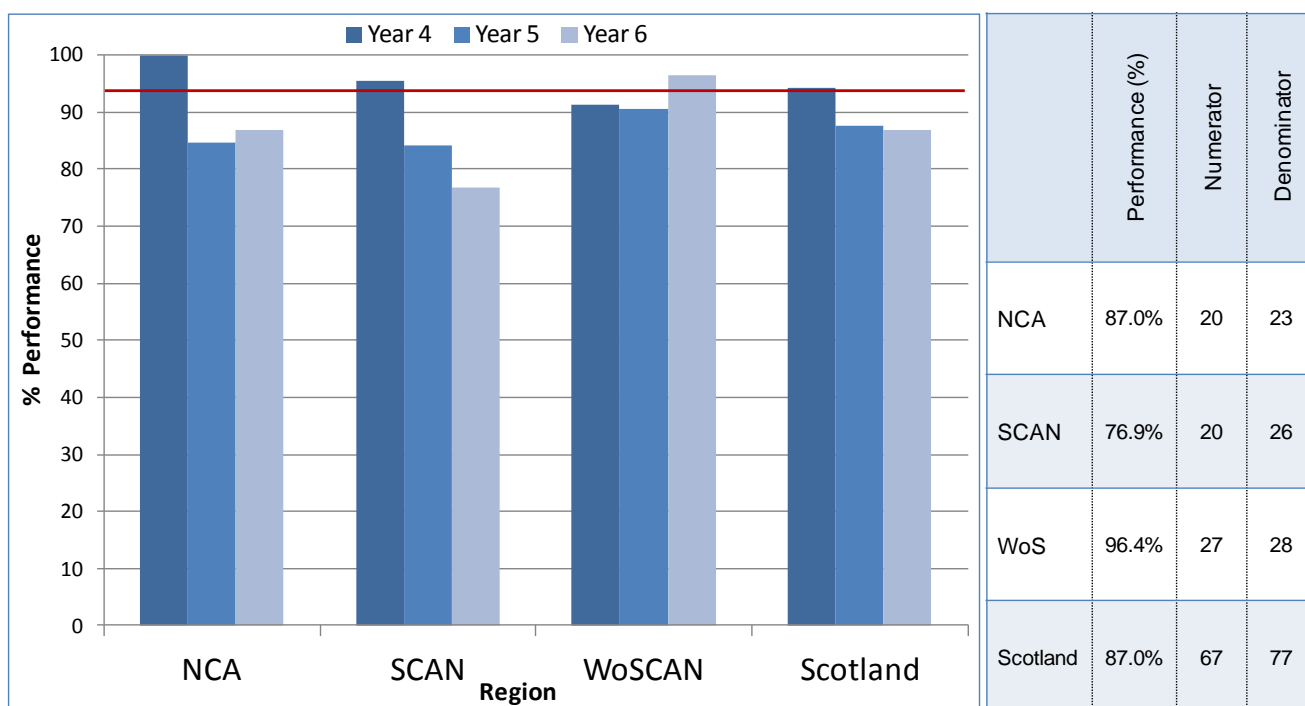
## QPI 2 – Multi Disciplinary Team Meeting

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



Performance across Scotland was 87% against the 95% QPI target with 67 of 77 patients diagnosed with extremity sarcoma in Year 6 being discussed at MDT meeting before definitive treatment. WoSCAN met the QPI target and showed improvement on the previous year. NCA and SCAN were both below target.

SCAN commented that all cases have been reviewed. Six cases were diagnosed at surgery and sarcoma was not suspected at the time of excision. All patients were discussed at MDT after diagnosis. Patients were treated appropriately and discussed at MDT after surgery.

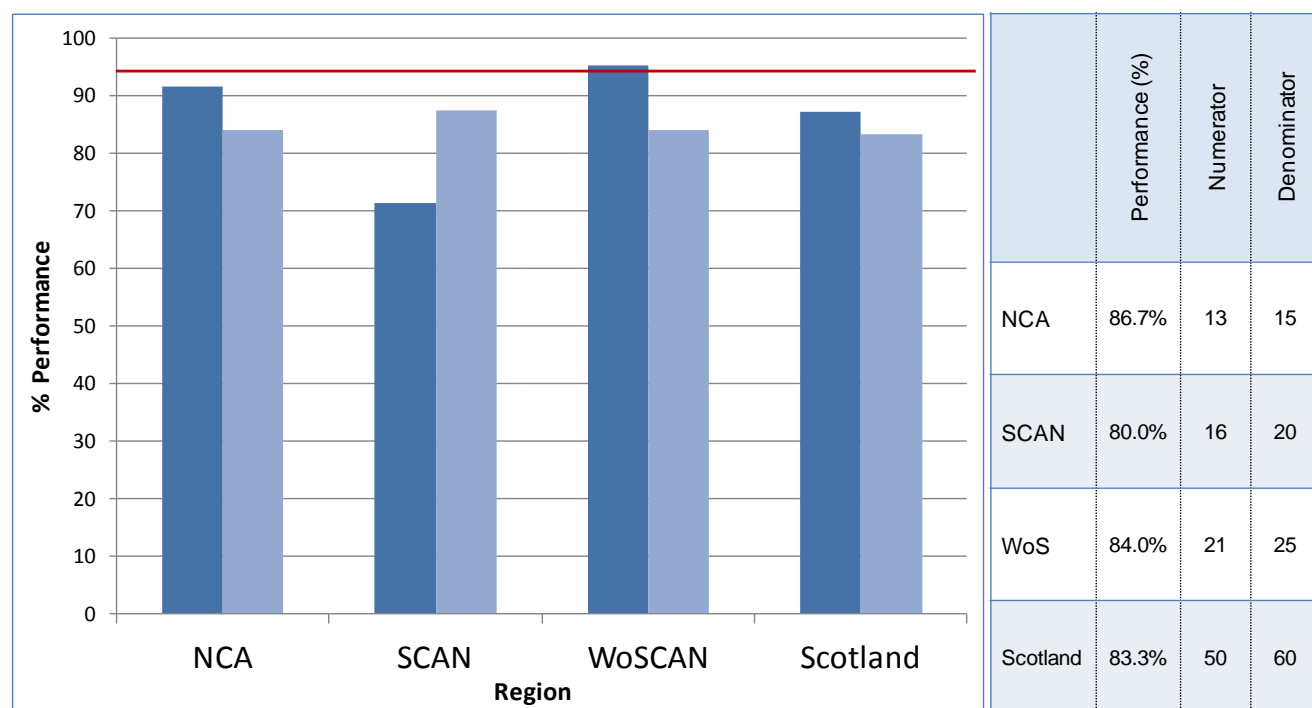
NCA also commented that two cases were diagnosed at surgery and in one case the clinical decision was made not to delay surgery as not to risk further morbidity. All cases were discussed at MDT after definitive treatment.

### 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>. Patients with a confirmed soft tissue sarcoma should be staged with a CT chest to exclude pulmonary metastases prior to definitive treatment. Clinical staging should follow the principles of TNM classification; this aids the determination of prognosis and choice of therapy<sup>1</sup>.

<b>QPI Title:</b>	(i) Patients with extremity soft tissue sarcoma should be staged by CT scan.
<b>Numerator:</b>	Number of patients with extremity soft tissue sarcoma who undergo staging CT scan where the results are available prior to definitive treatment.
<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 6: Proportion of patients with extremity soft tissue sarcoma who undergo staging CT scan where the results are available prior to definitive treatment.



Overall in Scotland, 83.3% of patients with extremity soft tissue sarcoma who underwent staging CT scan had the results available prior to definitive treatment. No region met the QPI target of 95%.

NCA were just below target with 86.7% and commented that one patient declined further investigation after treatment and one case which was an incidental finding had CT after treatment as CT staging was not indicated initially.



SCAN reviewed all cases and stated that all cases were diagnosed at surgery and staging CTs were carried out and reported afterwards.

WoSCAN reviewed cases and reasons provided for cases not meeting the QPI included cases where no surgical staging investigations were performed due to sarcoma being an incidental finding, cases that died before treatment therefore have no definitive treatment date so fail to make the numerator requirements of the QPI.

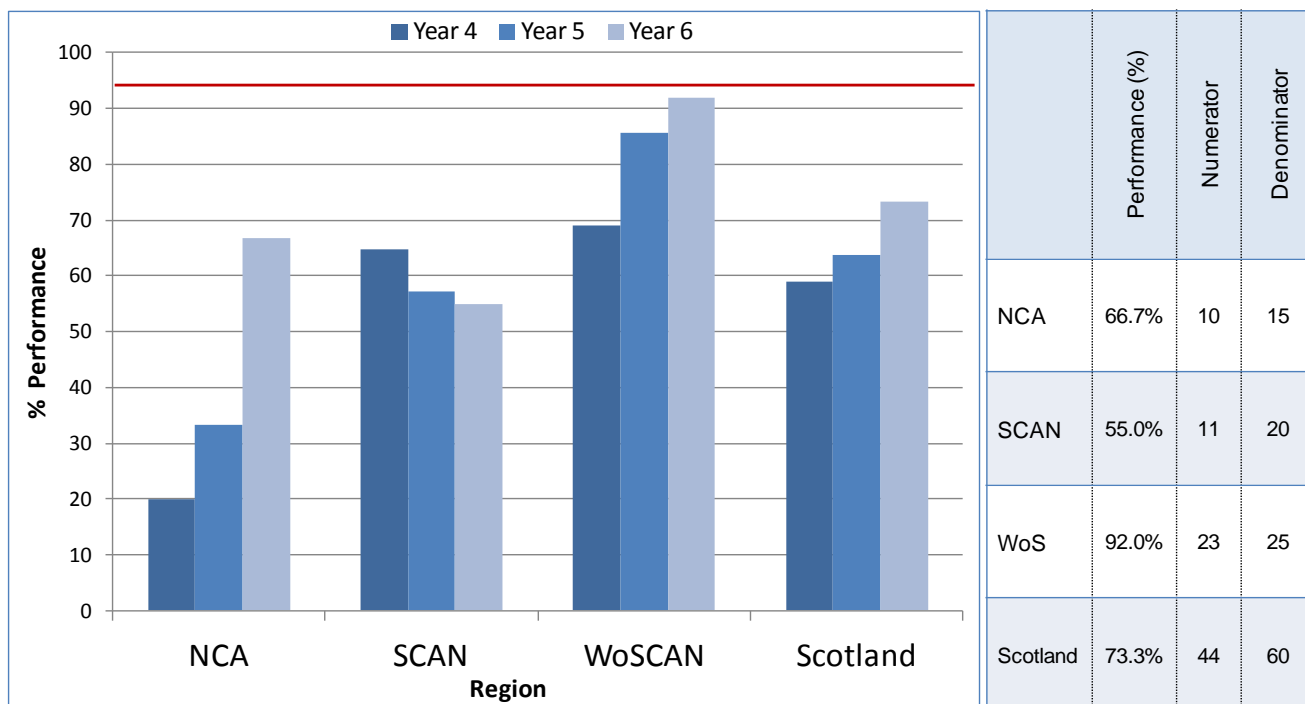
**Action required:**

- National MCN to consider an amendment to the QPI at formal review to account for patients who die before treatment.

Part two looks at the number of patients with extremity soft tissue sarcoma who were clinically staged using TNM staging system.

<b>QPI Title:</b>	(ii) Patients with extremity soft tissue sarcoma should be clinically staged using the TNM staging system.
<b>Numerator:</b>	Number of patients with extremity soft tissue sarcoma who are clinically staged using the TNM staging system.
<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 whose extremity soft tissue sarcoma is staged using the TNM staging system.



Recording of TNM staging at MDT is still extremely variable across NHS Scotland. National performance is 73.3% and year on year improvement is noted however overall performance is still below the QPI target of 95%. No region met the target however WoSCAN and NCA showed improvement on the previous years result.

NCA commented that they will try to ensure that TNM is documented for all patients at the National MDT.

SCAN commented that all cases have been reviewed. Nine cases did not have TNM recorded before the definitive treatment. In eight of these cases the MDT decision was to proceed with treatment if staging clear. These patients went to have CT chest followed by surgery or radiotherapy and were not discussed again at MDT before the definitive treatment. Three of these cases had TNM recorded at MDT at the first opportunity after the staging CT had been done, but after the surgical treatment. In one case patient had started palliative radiotherapy before the Sarcoma MDT discussion when TNM was recorded.

WoSCAN stated that two patients did not have TNM recorded at MDT. WoSCAN will continue to strive to assign a stage at MDT for all patients.

**Action required:**

- All regions to ensure that TNM is documented at MDT for all patients.

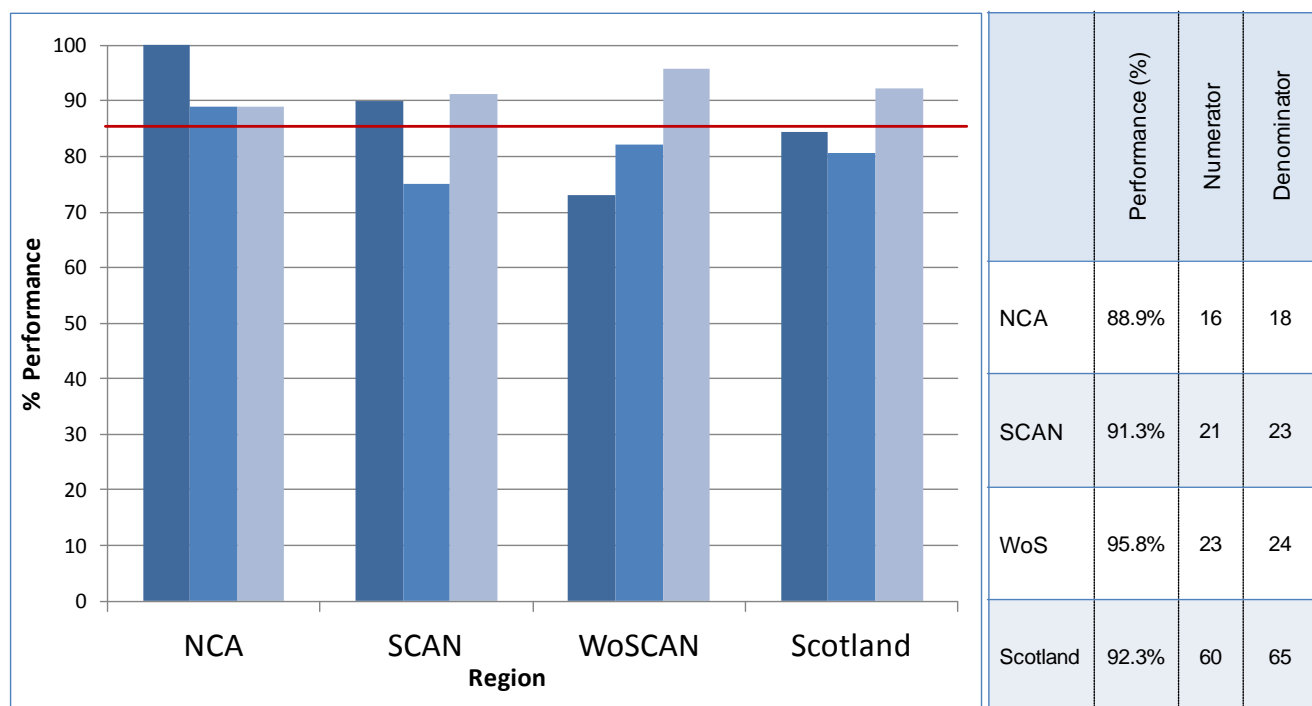
**QPI 4 – Surgical Margins**

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* 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%

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



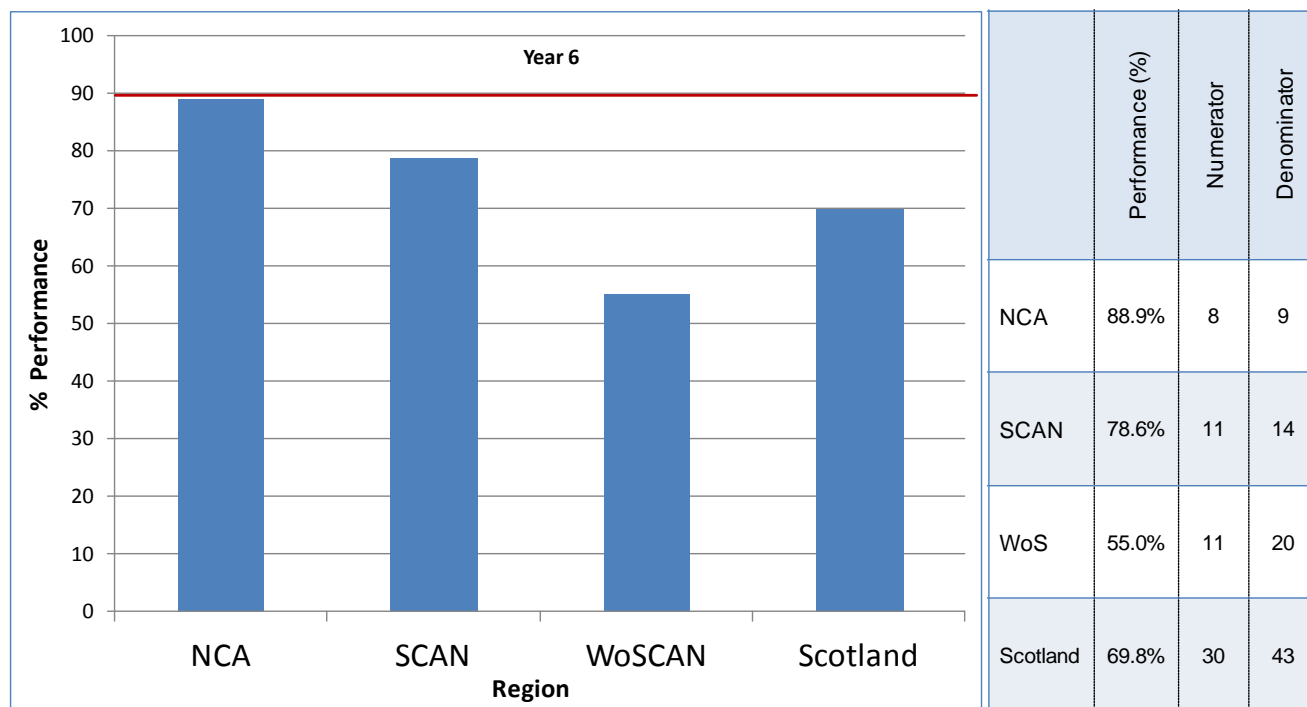
Performance across Scotland was 92.3% against the 85% QPI target with 60 of 65 patients diagnosed with extremity sarcoma undergoing surgical resection having their tumour adequately excised. All regions met the target and year on year improvement was noted.

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

All small bowel GISTs and all intermediate and high risk GISTs, regardless of location, should have mutational analysis. This will provide information on the tumour and will allow for a more detailed prognosis. In addition, mutational analysis can provide important information that will influence the type of treatment to use<sup>1</sup>.

<b>QPI Title:</b>	Proportion of patients with GISTs who have mutational analysis within 3 months of diagnosis.
<b>Numerator:</b>	Number of patients with GISTs who have a mutational analysis within 3 months of diagnosis
<b>Denominator:</b>	All patients with GISTs.
<b>Exclusions:</b>	Patients with low risk non metastatic GISTs.
<b>Target:</b>	90%

Figure 9: Proportion of patients with GISTs who have mutational analysis within 3 months of diagnosis.



Results for QPI 5 relating to GIST tumours are not directly comparable to earlier years due to previous data definition and measurability issues that were identified in these measures.

Performance across Scotland was 69.8% against the 90% QPI target with 30 of 43 patients diagnosed with GISTs having mutational analysis within 3 months of diagnosis. No regional met the target with NCA just under the 90% target with a performance of 88.9%.

SCAN and WoSCAN both reviewed cases and provided detailed commentary on why cases were not meeting the QPI. Reasons provided included patients that had biopsy only and then declined treatment, cases diagnosed by FNA and there was insufficient tissue for mutational analysis, cases where the patient was unfit for any oncological treatment, so mutational analysis would not have informed treatment planning and cases where patients had mutational analysis performed more than 3 months after diagnosis. The Glasgow Centre noted a delay in the request for analysis in a small Scottish Sarcoma Network: Final NMCN QPI Audit Report v1.0 – 14 June 2021

number of cases. It is important to note that analysis of all Glasgow samples was carried out in Dundee during the period audited. Action was taken by the national MCN last year to audit the pathway, and a change in process is already underway. Samples can now be tested within NHSGGC, ensuring results are available in a timelier manner. The handover between the Dundee and Glasgow laboratories is now underway and therefore improvements are anticipated from the end of 2021 onwards. In addition to this the Scottish MDT co-ordinator is proactive in the tracking of requests for analysis and monitoring the receipt of results, ensuring delays are minimised and that the national MDT receives lab results directly.

SCAN also added that patients who were stratified into low risk group after biopsy are not excluded from the QPI. GIST risk is recorded as 'Not applicable' for biopsies.

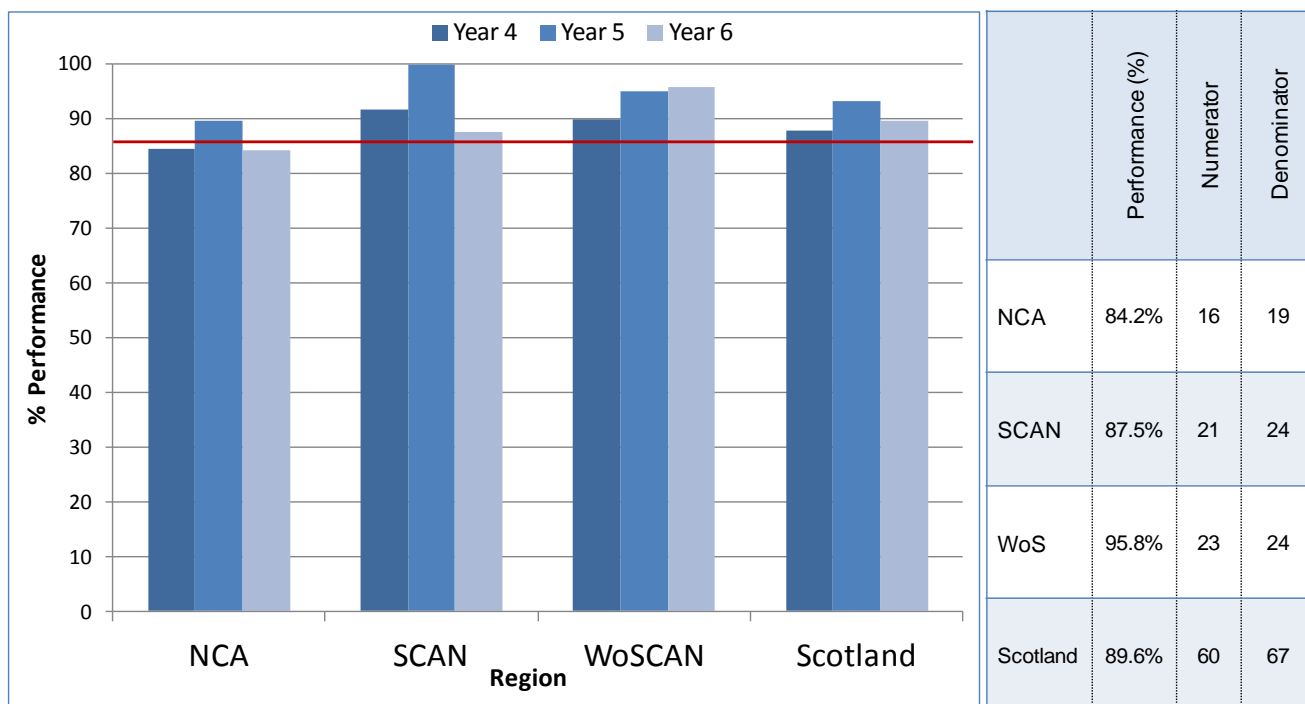
## QPI 6 – Limb Sparing Surgery

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 has 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 10: Proportion of patients with extremity sarcoma who undergo a primary limb-sparing surgery.



Overall performance across Scotland was 89.6% which successfully meets the 85% QPI target for the third consecutive year. NCA just fell short of the target achieving 84.2%.

NCA reviewed all cases and provided clinical comments for cases not meeting the QPI. Reasons included patients who were deemed as having non salvageable limbs that had progressed whilst on chemotherapy.

## QPI 7 – Primary Flap Reconstruction

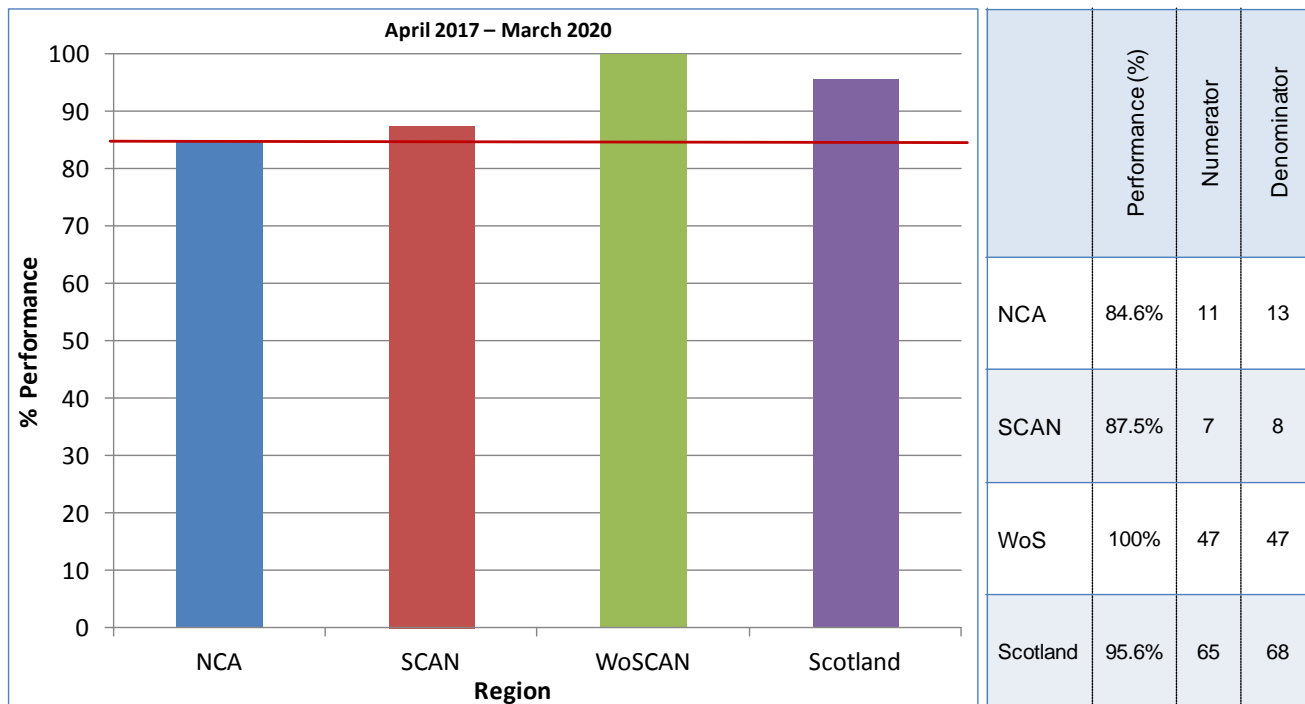
After surgical resection, reconstructive surgery may be needed to cover wounds, preserve function and/or improve the cosmetic outcome<sup>1</sup>. When conducting reconstructive surgery, surgeons should consider the flap success rate as one factor in choosing the best construction for any individual 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 11: Proportion of patients with extremity sarcoma who undergo successful\* primary flap reconstruction.



Due to the small numbers meeting the denominator criteria in each year of analysis individual year results cannot be presented therefore Figure 11 shows aggregated three year results.

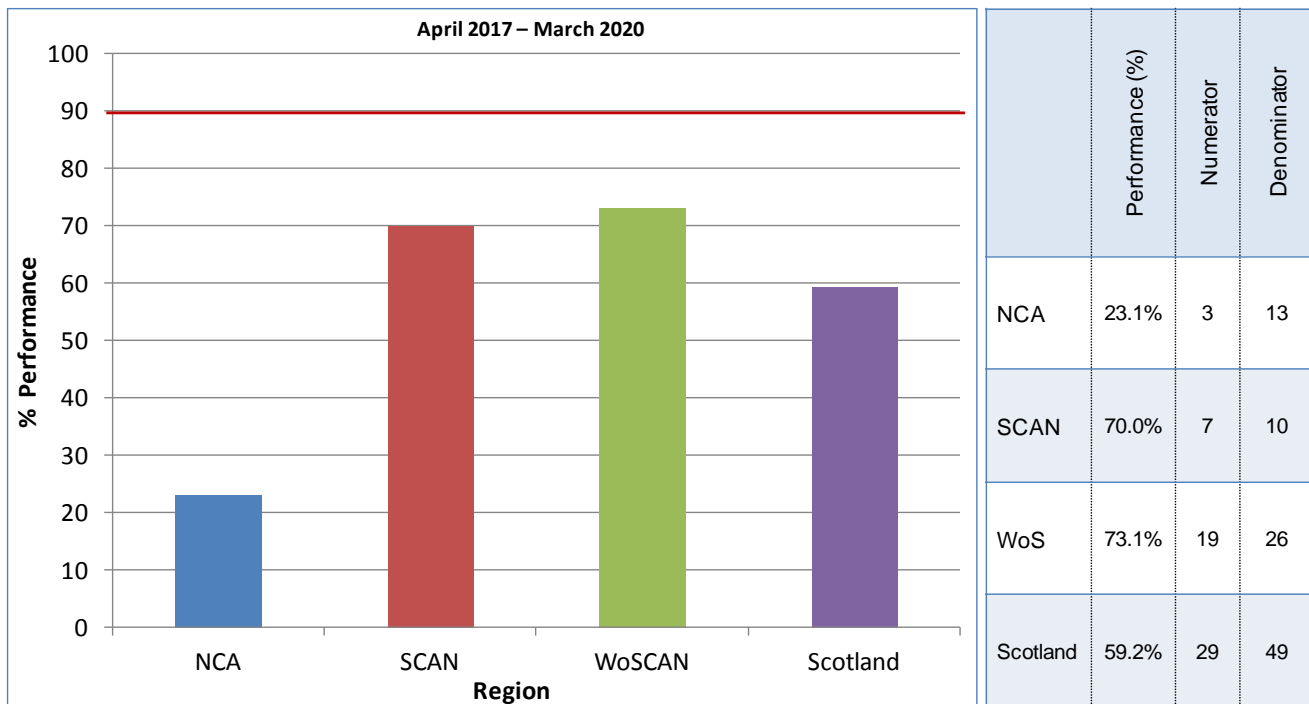
Overall Scotland performance was 95.1% with 97 of 102 patients undergoing a successful primary flap reconstruction. NCA were just under the 85% target using the aggregated figures, however year 6 performance was noted as 100%.

### 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.	

Figure 12: Proportion of patients aged 16 and over, with extremity sarcoma who commenced post operative radiotherapy within 3 months of surgery.



Due to the small numbers meeting the denominator criteria in each year of analysis individual year results cannot be presented therefore Figure 12 shows aggregated three year results.



Overall in Scotland 59.2% of patients aged 16 and over, with extremity sarcoma commenced post operative radiotherapy within 3 months of surgery. No region met the target with 3 year performance in NCA noted as 23.1%.

The majority of cases not meeting the target were noted as being just outside the 90 days and detailed clinical reasons were provided for the delays, including post-surgical complications unavoidably delaying adjuvant treatment and wound healing/mobility issues limiting the ability to tolerate MR/planning CT in the treatment position.

NHS Grampian added that delays in treatment reflects the pressures on radiotherapy services and lack of admin/MDT co-ordinator support in Aberdeen for the sarcoma MDT thus relying on clinicians to fulfil necessary administration for local MDT and listing of patients.

**Action required:**

- NHS Grampian to review local processes and determine the administration support required to improve the patient pathway.
- NMCN to review access to radiotherapy to facilitate more timely access to adjuvant treatment.

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

Only a very small number of patients were included within the measurement of this QPI across Scotland and therefore individual regional results cannot be presented at this time. At a national level, data shows that 5 of 7 patients with osteosarcoma under the age of 40 underwent multi-agent chemotherapy resulting in a performance of 71.4% against the 90% target.

WoSCAN reviewed the two cases that did not receive neo-adjuvant multi-agent chemotherapy and provided detailed clinical commentary. The Glasgow Centre concluded that both cases were treated appropriately.

Results for Ewing’s sarcoma show that 100% (4 out of 4) of patients under the age of 50 underwent multi- agent chemotherapy.

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

Adjuvant imatinib therapy given for a period of three years compared to one year, significantly improved the recurrence free survival in adult patients at significant risk of relapse following resection of GIST<sup>1</sup>.

<b>QPI Title:</b>	Patients with high risk GIST should commence post-operative imatinib within 3 months of surgery.
<b>Numerator:</b>	Number of patients aged 16 and over with high risk GIST who undergo surgery that receive post-operative imatinib.
<b>Denominator:</b>	All patients aged 16 and over with high risk GIST who undergo surgery.
<b>Exclusions:</b>	Patients enrolled in a clinical trial..
<b>Target:</b>	90%

Only a very small number of patients were included within the measurement of this QPI across Scotland and therefore individual regional results cannot be presented at this time. At a national level, data shows that 15 of 15 patients aged 16 and over with high risk GIST who underwent surgery received post-operative imatinib, resulting in a performance of 100% against the 90% target.

The second part of the QPI looks at those patients who received post-operative imatinib and commenced this within 3 months of surgery. Overall in Scotland 14 of the 15 patient's commenced imatinib within 3 months of surgery resulting a performance of 93.3% against the 90% target. WoSCAN reviewed the one case not meeting the QPI and provided a valid clinical reason for the delay.

## 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.

With regards to mortality following SACT, a decision has been taken nationally to move to a new generic QPI (30-day mortality for SACT) applicable across all tumour types. This new QPI will use CEPAS (Chemotherapy ePrescribing and Administration System) data to measure SACT mortality to ensure that the QPI focuses on the prevalent population rather than the incident population. The measurability for this QPI is still under development to ensure consistency across the country and it is anticipated that performance against this measure will be reported in the next audit cycle. In the meantime all deaths within 30 days of SACT will continue to be reviewed at a NHS Board level.

<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 2: Proportion of patients with sarcoma who undergo surgical resection or oncological treatment with curative intent who die within 30 days of treatment.**

	QPI Target	NCA	SCAN	WoSCAN	Scotland
Surgery	<10 %	0.0%	0.0%	0.0%	0.0%
Radical Radiotherapy	<10 %	0.0%	0.0%	0.0%	0.0%
Neo-Adjuvant Radiotherapy	<10%	0.0%	0.0%	0.0%	0.0%
Adjuvant Radiotherapy	<10%	0.0%	0.0%	6.3% (1/16)	3.0%(1/33)

Overall in Scotland the 30 day mortality target for patients undergoing treatment with curative intent was achieved for all treatment types. The <10% target was met by also met by all three regions.

The single death following adjuvant radiotherapy was reviewed and the cause of death was unrelated to radiotherapy treatment.

<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 3: Proportion of patients with sarcoma who undergo palliative radiotherapy or palliative chemotherapy who die within 30 days of treatment.**

	QPI Target	NCA	SCAN	WoSCAN	Scotland
Palliative Radiotherapy	<15%	0.0%	33.3% (2/6)	16.7% (1/6)	21.4%% (3/14)

Overall in Scotland 21.4% (3 out of 14) of patients who received palliative radiotherapy died within 30 days of treatment which is over the <15% target. SCAN and WoSCAN did not meet the QPI target achieving 33.3% and 16.7% respectively however, the number of patients included in the denominators is low and this can have a considerable effect on proportions. All patients have been reviewed by both Boards and each Board concluded that all were treated appropriately. It is important to note that patients often receive palliative radiotherapy for symptom or pain relief as part of their end of life care.

## 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 2019, 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 4: Proportion of patients consented for clinical trials for Sarcoma by NHS Board of residence.

Sarcoma	Consented (QPI target 15%)		
	N	D	%
NCA	5	92	5.4%
SCAN	4	99	4.0%
WoSCAN	19	162	11.7%
Scotland	28	353	7.9%

Overall for patients in Scotland, 7.9% 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.

The Scottish Sarcoma Network (SSN) published its research strategy in August 2019 which details a way forward with clinical trials and access in Scotland. Presently, not every trial can be opened in all centres but where possible, patients are referred to the treatment centre with the most appropriate trial. The approval of medicines by the Scottish Medicines Consortium (SMC) is increasing for sarcoma but some manufacturers do not submit their medicine for approval by the SMC therefore the

sarcoma team submit individual patient treatment requests as appropriate. Also, individual cases are often complex and there can be insufficient time in clinics to fully embrace inclusion to a clinical trial.

## **5. Next Steps**

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. A summary of actions for each NHS Board has been included within the Action Plan templates in Appendix I.

## **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>NCA</b>	North Cancer Alliance
<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>SMC</b>	Scottish Medicines Consortium
<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

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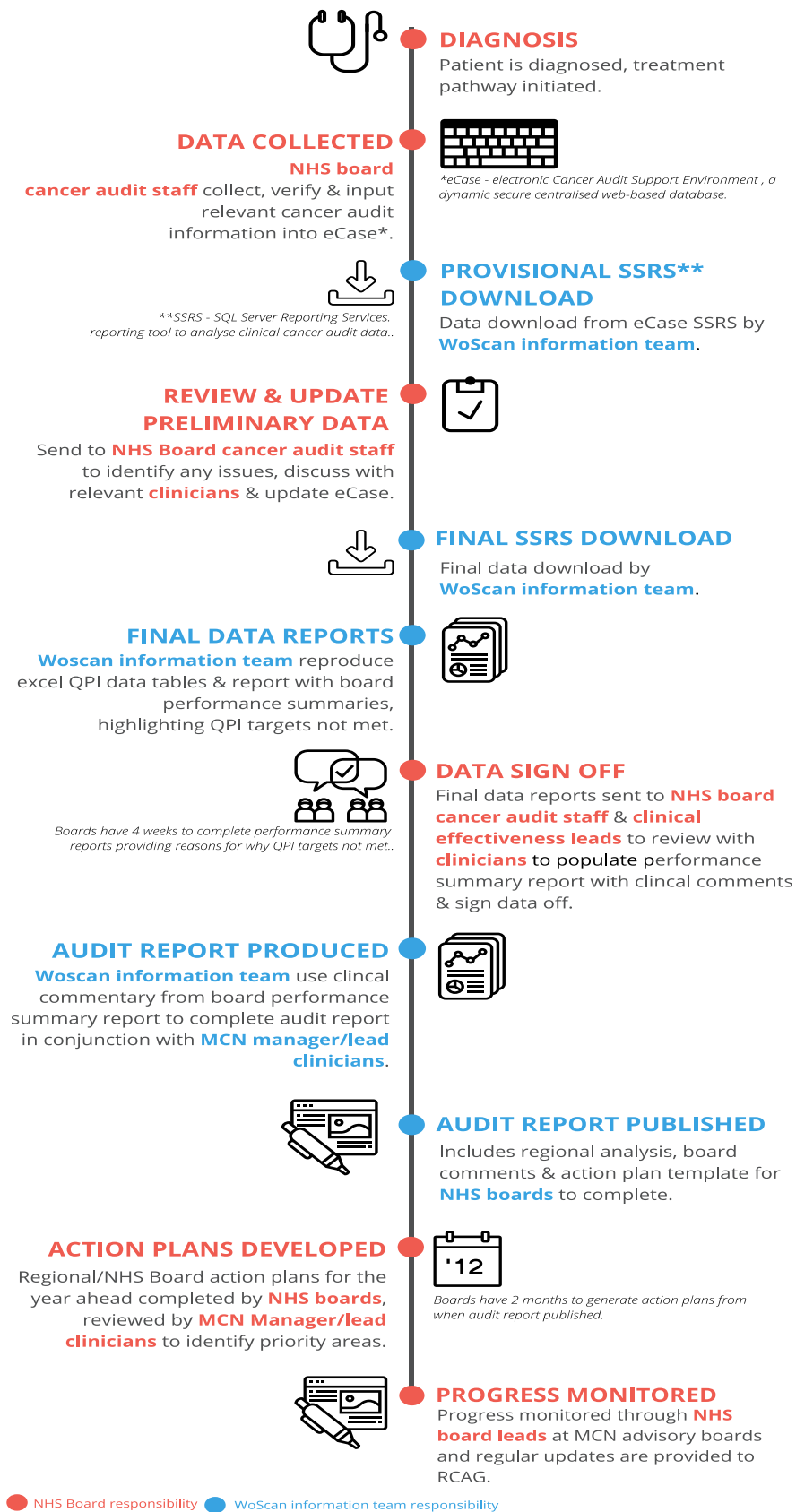
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## Appendix 1: Meta Data

Report Title	Cancer Audit Report: Sarcoma Quality Performance Indicators
Time Period	Patients diagnosed between 01 April 2019 and 31 March 2020
Data Source	Cancer Audit Support Environment (eCASE). A secure centralised web-based database which holds cancer audit information in Scotland.
Data extraction date	2200 hrs on 20 January 2020
Methodology	<p>Analysis was performed centrally by the WoSCAN Information Team. The timescales agreed took into account the patient pathway to ensure that a complete treatment record was available for the majority of patients.</p> <p>Initial results were provided to Boards to check for inaccuracies, inconsistencies or obvious gaps and a subsequent download taken upon which final analysis was carried out.</p> <p>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. Please see info graphic in appendix 2 for a more detailed look at the reporting process.</p>

## Appendix 2: Cancer Audit Timeline



### Appendix 3: Percentage of Patients Included Within QPIs

The following table shows the percentage of patients included in the denominator for each applicable QPI by NHS Board and Region; it can be seen that only a small proportion of those diagnosed with sarcoma are included in the measurement of many of the QPIs due to the specific nature of the measures. Clinical trials data are not shown in the table below as it is not appropriate considering the QPI definitions.

No audited	Board	% of audited patients in QPI denominator																	
		1	2	3(i)	3(ii)	4	5	6	7	8	9i	9ii	10i	10ii	11ia	11ib	11id	11if	11iia
54	Grampian	22%	26%	17%	17%	33%	7%	35%	7%	6%	2%	4%	6%	6%	65%	2%	2%	13%	2%
16	Highland	19%	25%	6%	6%	0%	25%	0%	0%	0%	6%	0%	13%	13%	44%	0%	0%	6%	6%
17	Tayside	18%	24%	24%	24%	0%	6%	0%	0%	0%	0%	0%	0%	0%	29%	6%	0%	0%	0%
1	Argyll	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1	Shetland	0%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1	W. Isles	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%
<b>90</b>	<b>NCA</b>	<b>20%</b>	<b>26%</b>	<b>17%</b>	<b>17%</b>	<b>20%</b>	<b>10%</b>	<b>21%</b>	<b>4%</b>	<b>3%</b>	<b>2%</b>	<b>2%</b>	<b>6%</b>	<b>6%</b>	<b>53%</b>	<b>2%</b>	<b>1%</b>	<b>9%</b>	<b>2%</b>
5	Borders	40%	40%	40%	40%	0%	20%	0%	0%	20%	0%	0%	0%	0%	0%	0%	0%	20%	0%
8	D&G	13%	13%	13%	13%	0%	25%	0%	0%	13%	0%	0%	20%	20%	25%	0%	0%	13%	13%
19	Fife	26%	37%	32%	32%	5%	5%	5%	0%	0%	0%	0%	5%	5%	0%	16%	16%	0%	5%
57	Lothian	26%	28%	19%	19%	39%	18%	40%	2%	4%	0%	0%	2%	2%	11%	2%	4%	12%	7%
<b>89</b>	<b>SCAN</b>	<b>26%</b>	<b>29%</b>	<b>22%</b>	<b>22%</b>	<b>26%</b>	<b>16%</b>	<b>27%</b>	<b>1%</b>	<b>4%</b>	<b>0%</b>	<b>0%</b>	<b>3%</b>	<b>3%</b>	<b>9%</b>	<b>4%</b>	<b>6%</b>	<b>10%</b>	<b>7%</b>
21	A&A	10%	14%	24%	24%	5%	5%	5%	0%	0%	0%	0%	0%	0%	38%	5%	0%	10%	0%
13	FV	0%	0%	0%	0%	0%	23%	0%	0%	0%	0%	8%	8%	8%	46%	0%	0%	0%	0%
25	LAN	12%	12%	12%	12%	0%	20%	0%	0%	8%	0%	0%	4%	4%	36%	0%	8%	8%	4%
103	GGC	19%	21%	17%	17%	22%	22%	22%	18%	5%	5%	1%	5%	5%	95%	1%	7%	12%	5%
<b>162</b>	<b>WoSCAN</b>	<b>15%</b>	<b>17%</b>	<b>15%</b>	<b>15%</b>	<b>15%</b>	<b>12%</b>	<b>15%</b>	<b>12%</b>	<b>4%</b>	<b>3%</b>	<b>1%</b>	<b>4%</b>	<b>4%</b>	<b>75%</b>	<b>1%</b>	<b>6%</b>	<b>10%</b>	<b>4%</b>
<b>341</b>	<b>Scot</b>	<b>20%</b>	<b>23%</b>	<b>18%</b>	<b>18%</b>	<b>19%</b>	<b>13%</b>	<b>20%</b>	<b>7%</b>	<b>4%</b>	<b>2%</b>	<b>1%</b>	<b>4%</b>	<b>4%</b>	<b>52%</b>	<b>2%</b>	<b>4%</b>	<b>10%</b>	<b>4%</b>

## Appendix 4: NHS Board Action Plans

A summary of actions for each NHS Board has been included within the Action Plan templates in Appendix 3. Completed Action Plans should be returned to WoSCAN within two months of publication of this report.

### Sarcoma Action / Improvement Plan

<b>Region:</b>	WoSCAN
<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>QPI 3: Clinical Staging</b> All regions to ensure that TNM is documented at MDT for all patients (category: clinical documentation).						



## Sarcoma Action / Improvement Plan

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

KEY (Status)	
1	Action fully implemented
2	Action agreed but not yet implemented
3	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>QPI 3: Clinical Staging</b> All regions to ensure that TNM is documented at MDT for all patients (category: clinical documentation).						
2.	<b>QPI 8 – Post Operative Radiotherapy</b> NHS Grampian to review local processes and determine the administration support required to improve the patient pathway (category: other).						

## Sarcoma Action / Improvement Plan

Region:	SCAN
Action Plan Lead:	
Date:	

KEY (Status)	
1	Action fully implemented
2	Action agreed but not yet implemented
3	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.	QPI 3: Clinical Staging All regions to ensure that TNM is documented at MDT for all patients (category: clinical documentation).						

## Sarcoma Action / Improvement Plan

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

KEY (Status)	
1	Action fully implemented
2	Action agreed but not yet implemented
3	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>QPI 3: Clinical Staging</b> NMCN to consider an amendment to the QPI at formal review to account for patients who die before treatment (category: QPI definition).						
	<b>QPI 8 – Post Operative Radiotherapy</b> NMCN to review access to radiotherapy to facilitate more timely access to adjuvant treatment. (category: oncology).						