North, South East and West of Scotland Cancer Networks

Mesothelioma National Managed Clinical Network

Audit Report

Mesothelioma Quality Performance Indicators

Clinical Audit Data:
01 January 2020 to 31 December 2020

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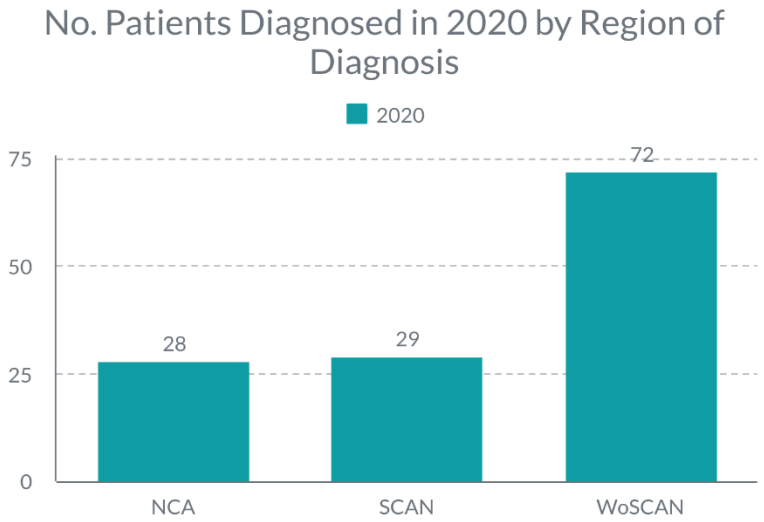
Mesothelioma Quality Performance Indicators

Patients Diagnosed: January 2020 - December 2020

Number Diagnosed:	129
Males:	82.2%
Females:	17.8%
Median Age:	75



QPI Performance

QPI Title	QPI Target	National Performance	Target Met /Not Met
QPI 1(i) Diagnostic Imaging	90%	85.3%	✗
QPI 1(ii) Diagnostic Imaging TNM Recorded	95%	95.5%	✓
QPI 2(i) Diagnostic Histopathology	85%	88.3%	✓
QPI 2(ii) Diagnostic Histopathology Subtype Identified	95%	98.2%	✓
QPI 2(iii) Diagnostic Histopathology IHC profiling undertaken	95%	97.5%	✓
QPI 3 National MDT Discussion	100%	93.8%	✗
QPI 4 SACT Treatment	60%	49.1%	✗
QPI 5 Radiotherapy for Management of Pain	75%	47.4%	✗
QPI 6 Pleural Fluid Management	90%	77.4%	✗
QPI 7 Clinical Trials & Research Study Access	15%	7.8%	✗
QPI 8 Post Mortem Examination	<10%	1.7%	✓

Key Achievements

This was the first year of Mesothelioma QPI data collection and reporting and provides the first opportunity to review performance against these new measures and to review the effectiveness of the measures themselves.

Overall performance against the 8 Mesothelioma QPIs was generally good across all NHS Regions and Boards; however no individual NHS Board or Region met all 8 QPI targets. This suggests that the target levels for the QPIs are challenging and that there are areas for improvement.

It should be noted that denominator numbers for many of the QPIs are small and this impacts on percentages. In some cases where QPI targets have not been achieved this has resulted from non compliance in only a single case in some Boards.

Areas for Improvement

NMCN will coordinate further analysis to better understand variance in performance in relation to :-

- **QPI 1(i): Diagnostic Imaging**
- **QPI 3 – Multi-Disciplinary Team Meeting**
- **QPI 4 – Systemic Anti Cancer Treatment**
- **QPI 5 - Radiotherapy for Management of Pain**
- **QPI 6 - Pleural Fluid Management**

Executive Summary

Introduction

This report contains an assessment of the performance of Scotland wide Mesothelioma services relating to patients diagnosed with mesothelioma in the twelve months between 1st January 2020 and 31st December 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 baseline review of mesothelioma QPIs took place in 2021. A formal review of mesothelioma QPIs will take place once three years of audit data is available. This clinically led review aims to identify potential refinements to the current QPIs and involves key clinicians from each of the Regional Cancer Networks.

Results

A summary of the Mesothelioma QPI performance for the 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 and illustrate NHS Board performance against each target and overall regional performance for each performance indicator.

In accordance with the regional governance process, specific NHS Board actions are identified to address issues highlighted through data analysis.

Please note actions have been categorised into the following groupings for internal management purposes to allow regional trends to be identified, and co-ordinate regional actions across multiple tumour groups where appropriate; AHP / CNS, Capacity, Clinical documentation, Clinical Trials, Data Capture, MDT, Oncology, Other, Other diagnostic, Pathology, Performance review, Practice, QPI Definition, Radiology, Resource, Surgery, Time to Treatment, Treatment Decision and Workforce.

Summary of QPI Results

National - Performance Summary	
Clinical Leads:	
Date:	
Audit Reporting Period:	01/01/2020 – 31/12/2020

Colour Key	
	Above QPI target
	Below QPI target
Symbol Key	

Board	
%	
N	**D**

Mesothelioma MCN	NCA	SCAN	WoS	Scotland
Number Diagnosed	28	29	72	129

Quality Performance Indicator (QPI)	Performance by Board									
	QPI target	NCA		SCAN		WoSCAN		Scotland	
QPI 1(i) - Diagnostic Imaging Proportion of patients in whom CT scan optimised for pleural assessment (between 60 and 90 seconds) is carried out for first discussion at the national MDT	**90%**	**96.4%**		**82.8%**		**81.9%**		**85.3%**	
		27	28	24	29	59	72	110	129
QPI 1(ii) - Diagnostic Imaging Proportion of patients in whom CT scan optimised for pleural assessment (between 60 and 90 seconds) is carried out for first discussion at the national MDT, and TNM stage is recorded.	**95%**	**96.3%**		**91.7%**		**96.6%**		**95.5%**	
		26	27	22	24	57	59	105	110
QPI 2(i) - Diagnostic: Histopathology Proportion of patients with mesothelioma who have a histopathological diagnosis.	**85%**	**85.7%**		**79.3%**		**93.0%**		**88.3%**	
		24	28	23	29	66	71	113	128
QPI 2(ii) - Diagnostic: Histopathology Proportion of patients with a histopathological diagnosis of mesothelioma who have subtype identified.	**95%**	**95.8%**		**100%**		**100%**		**98.2%**	
		23	24	22	22	62	62	107	109
QPI 2(iii) - Diagnostic: Histopathology Proportion of patients with a histopathological diagnosis of epithelioid mesothelioma who have IHC markers profiling undertaken.	**95%**	**94.1%**		**95.0%**		**100%**		**97.5%**	
		16	17	19	20	43	43	78	80

Quality Performance Indicator (QPI)	Performance by Board									
	QPI target	NCA		SCAN		WoSCAN		Scotland	
QPI 3 - Multidisciplinary Team Proportion of patients with mesothelioma who are discussed at the national mesothelioma MDT meeting.	**100%**	**100%**		**89.7%**		**93.1%**		**93.8%**	
		28	28	26	29	67	72	121	129
QPI 4 - Systemic Anti Cancer Treatment Proportion of patients with mesothelioma and performance status (PS) 0-1 who receive first line treatment with SACT using platinum and pemetrexed.	**60%**	**60.0%**		**60.0%**		**42.4%**		**49.1%**	
		6	10	6	10	14	33	26	53
QPI 5 - Radiotherapy for Management of Pain Proportion of patients with mesothelioma who are referred to the national MDT for pain relief who receive radiotherapy.	**75%**	**40.0%**		**-**		**54.5%**		**47.4%**	
		2	5	-	-	6	11	9	19
QPI 6 - Pleural Fluid Management Proportion of patients with mesothelioma with symptomatic pleural effusion who undergo either talc pleurodesis (via slurry or poudrage) or indwelling pleural catheter (IPC) insertion to manage fluid.	**90%**	**83.3%**		**88.2%**		**69.7%**		**77.4%**	
		10	12	15	17	23	33	48	62
QPI 7 - Clinical Trial and Research Study Access Proportion of patients diagnosed with mesothelioma who are consented for a clinical trial / research study.	**15%**	**10.7%**		**6.9%**		**6.9%**		**7.8%**	
		3	28	2	29	5	72	10	129
QPI 8 - Post-Mortem Examination Proportion of patients who have died with a pathological diagnosis of mesothelioma who undergo post-mortem examination.	**<10%**	**0.0%**		**0.0%**		**3.1%**		**1.7%**	
		0	17	0	11	1	32	1	60

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

Conclusions and Action Required

The three Regional Cancer Networks (North Cancer Alliance (NCA), South East Scotland Cancer Network (SCAN), and West of Scotland Cancer Network (WOSCAN)) aim to promote the highest standards of cancer care and equity of access to cancer services across Scotland. The development and introduction of national Quality Performance Indicators (QPI) represents a major step forward for patients with mesothelioma.

This was the first year of Mesothelioma QPI data collection and reporting and provides the first opportunity to review performance against these new measures and to review the effectiveness of the measures themselves. Overall performance against the eight Mesothelioma QPIs was generally good across all NHS Regions and Boards; however no individual NHS Board or Region met all 8 QPI targets. This suggests that the target levels for the QPIs are challenging and that there are areas for improvement. It should be noted that denominator numbers for many of the QPIs are small and this impacts on percentages. In some cases where QPI targets have not been achieved this has resulted from non-compliance in only a single case in some Boards.

There are a number of actions required as a consequence of this assessment of performance against the agreed criteria.

Actions required:

QPI 1:- Diagnostic Imaging

- NHS Forth Valley to provide further feedback on cases not meeting the QPI following discussions with radiology.
- NHS Ayrshire & Arran to ensure that all patients are referred to the national MDT.

NHS Boards are asked to develop local Action/Improvement Plans in response to the findings presented in the report. **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 annually to the Regional Cancer Advisory Group (RCAG) by NHS Board Territorial Lead Cancer Clinicians and MCN Clinical Leads, and nationally on a three-yearly basis to Healthcare Improvement Scotland as part of the governance processes set out in CEL 06 (2012).

1. Introduction

This report contains an assessment of the performance of Scotland wide Mesothelioma services using clinical audit data relating to patients diagnosed with mesothelioma in the twelve months between 1st January 2020 and 31st December 2020. 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 v1.0 of the Mesothelioma Quality Performance Indicators (QPIs)[1] which were implemented for patients diagnosed on or after 01 June 2019.

2. Background

Mesothelioma is a type of cancer that develops in the lining that covers the outer surface of many of the body's organs. Mesothelioma mainly affects the lining of the lungs (pleural mesothelioma), although it can also affect the lining of the abdomen (peritoneal mesothelioma), heart or testicles.

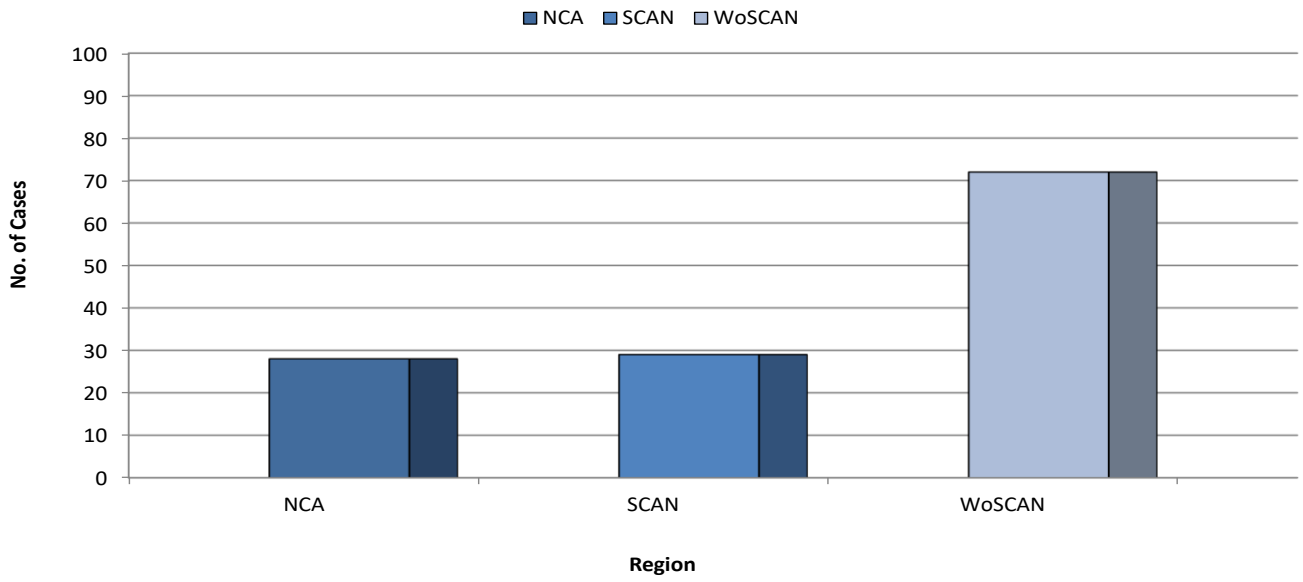
In Scotland over 200 people are diagnosed with mesothelioma each year. Exposure to asbestos is the most common cause of mesothelioma.

2.1 National Context

A total of 142 cases of mesothelioma were recorded through audit as diagnosed in Scotland in 2020. This figure is lower than the PHS national average of mesotheliomas diagnosed each year. This is likely to be due to the impact of the COVID-19 pandemic, including delayed/non presentation of late stage disease, with the first lockdown coinciding with this audit period. There is emerging evidence of considerable declines in numbers of patients being diagnosed with cancer in 2020, particularly during April – June 2020, across a range of different cancer types. There may also be differences due to the inclusion of mesothelioma cases only confirmed at post mortem within the PHS statistics. Going forward the case ascertainment figures will be scrutinised further to ensure that all appropriate cases are being captured.

The QPI analysis only focusses on diagnoses of mesothelioma of the pleura, of which there was 129 cases diagnosed in Scotland in 2020. The number of patients diagnosed with mesothelioma of the pleura within each NHS Region is presented in Figure 1.

Figure 1: Number of patients diagnosed with mesothelioma of the pleura by NHS Region of diagnosis.

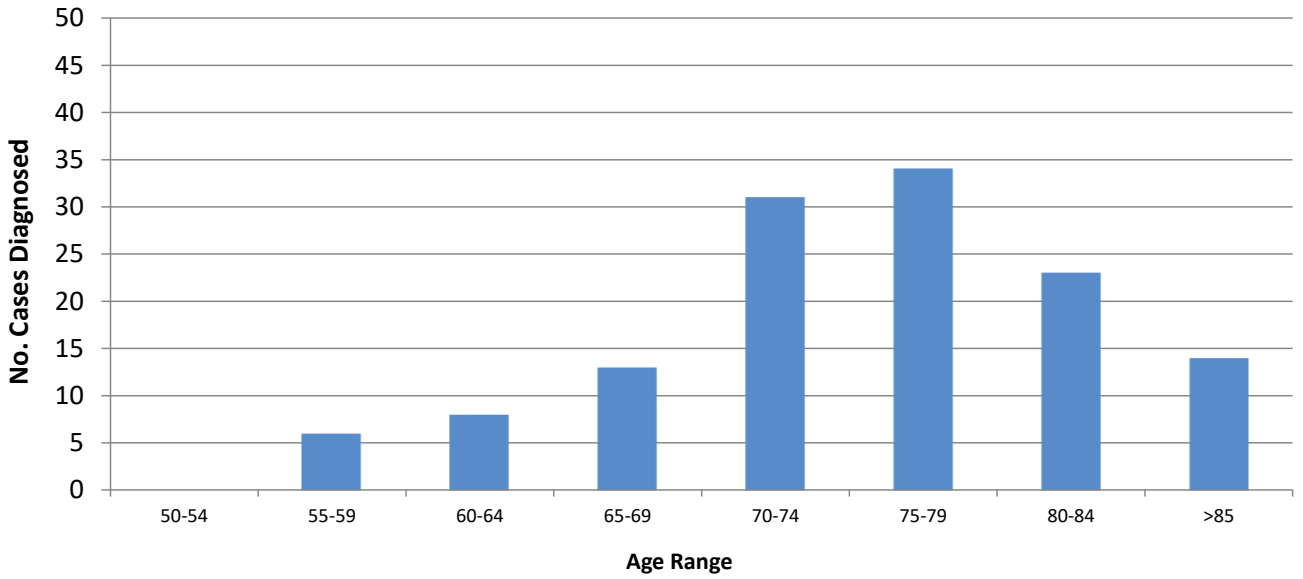


	NCA	SCAN	WoSCAN	Scotland
Year 1	28	29	72	129

2.2 Age and Gender Distribution

Figure 2 illustrates the distribution of mesothelioma cancer cases by age. Mesothelioma continues to be more prevalent in patients' ≥ 70 years with 79.1% of the total cases diagnosed occurring in patients within this age group. Between January 2020 and December 2020, 82.2% of the cases diagnosed were male with females accounting for 17.8% of cases.

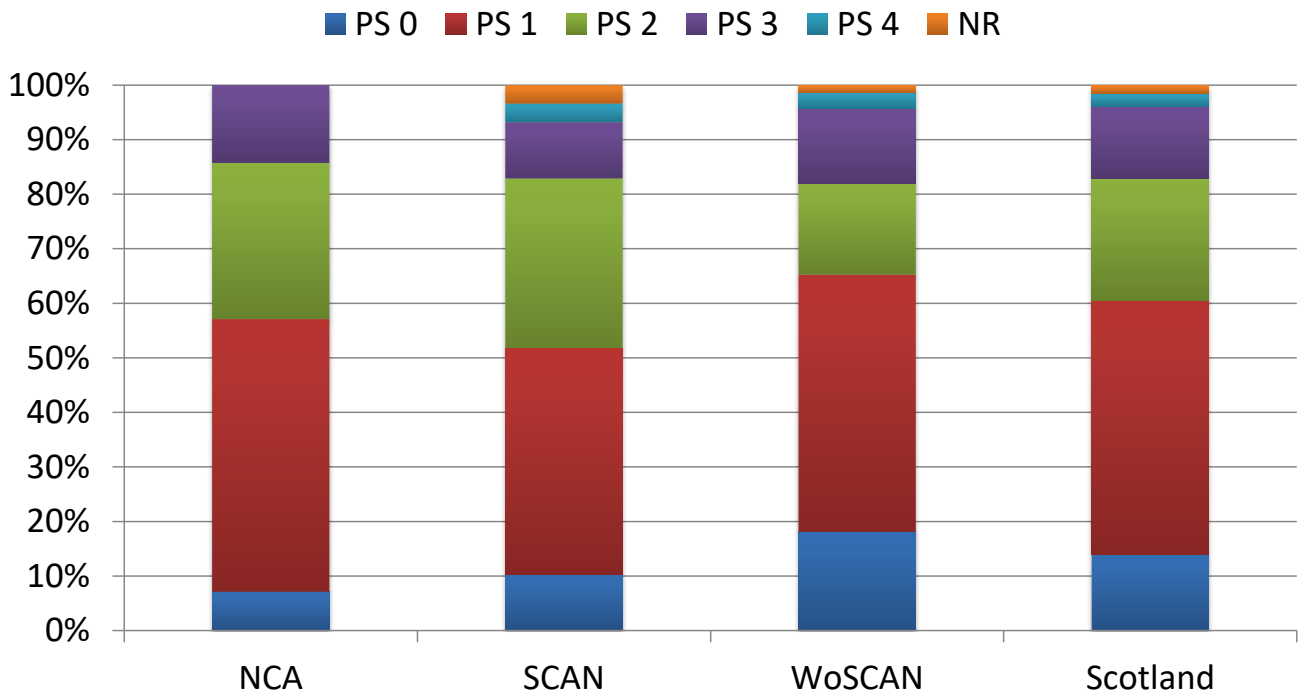
Figure 2: Age range of patients diagnosed with mesothelioma.



	<50	50-54	55-59	60-64	65-69	70-74	75-79	80-84	>85
N	0	0	6	8	13	31	34	23	14

2.3 Performance Status

Figure 3: Performance status by region.



	NCA		SCAN		WoSCAN		Scotland	
	n	%	n	%	n	%	n	%
0	2	7.1%	3	10.3%	13	18.1%	18	14.0%
1	14	50.0%	12	41.4%	34	47.2%	60	46.5%
2	8	28.6%	9	31.0%	12	16.7%	29	22.5%
3	4	14.3%	3	10.3%	10	13.9%	17	13.2%
4	-	0.0%	1	3.4%	2	2.8%	3	2.3%
NR	-	0.0%	1	3.4%	1	1.4%	2	1.6%
Total	**28**	**100.0%**	**29**	**100.0%**	**72**	**100.0%**	**129**	**100.0%**

3. Methodology

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

4. Performance against Quality Performance Indicators (QPIs)

Results for each QPI are shown in detail in the following sections. Data are presented by region of diagnosis and illustrate regional performance against each target and overall national performance for each performance indicator.

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 will however be included as a record of continuous improvement.

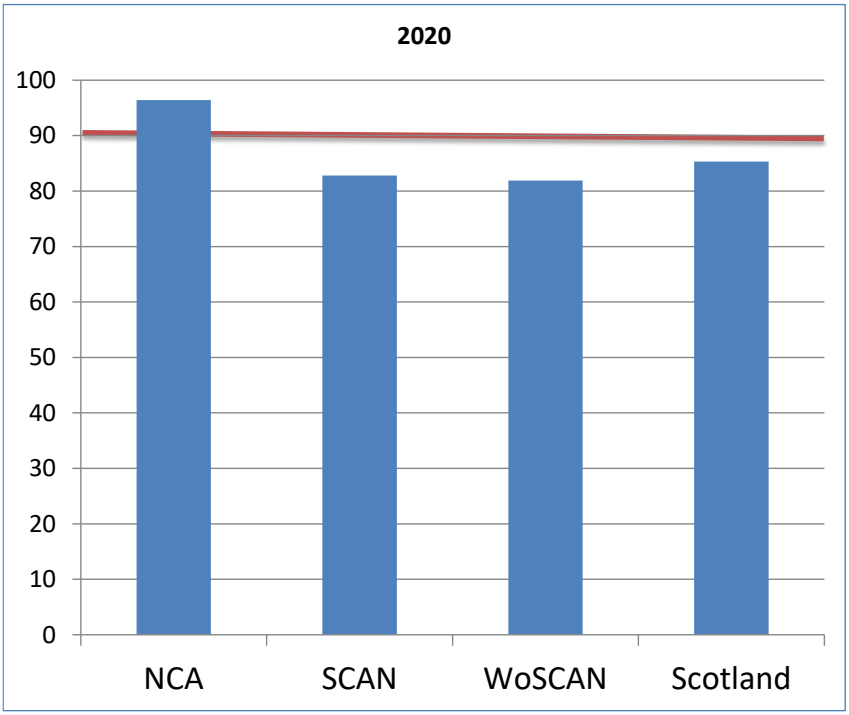
Specific national, regional and NHS Board actions have been identified to address issues highlighted through the data analysis.

QPI 1: Diagnostic Imaging

Thoracic computed tomography (CT) scan optimised for pleural assessment should be undertaken as standard for diagnosis and staging in patients with mesothelioma.[1]. The target for this QPI is 90% with the tolerance designed to account for patients with significant renal impairment (e.g. eGFR <30) or allergies to iodinated contrast. In addition, it accounts for those patients in whom diagnosis was an incidental finding on non-contrast CT, and additional imaging is not clinically required[1].

Description:	(i) Proportion of patients in whom CT scan optimised for pleural assessment (between 60 and 90 seconds) is carried out for first discussion at the national MDT.
Numerator:	Number of patients with mesothelioma in whom CT scan optimised for pleural assessment was carried out for first discussion at the national MDT meeting.
Denominator:	All patients diagnosed with mesothelioma.
Exclusions:	Patients who refused investigation.
Target:	90%

Figure 4: The proportion of patients in whom CT scan optimised for pleural assessment (between 60 and 90 seconds) is carried out for first discussion at the national MDT.



	Performance (%)	Numerator	Denominator
NCA	96.4%	27	28
SCAN	82.8%	24	29
WoSCAN	81.9%	59	72
Scotland	85.3%	110	129

Performance across Scotland was 85.3% against the 90% target with 110 of 129 patients with CT scan optimised for pleural assessment carried out for first discussion at the national MDT meeting. NCA were the only region to meet the QPI target.

SCAN commented that all cases were reviewed. Reasons provided for cases not meeting the QPI included cases that had had incorrect contrast timing for CT scan (arterial) and patients that were not discussed at national mesothelioma MDT. SCAN added that there had been a difference in protocols across Boards which has now been updated with suitable contrast timing therefore performance is expected to improve in the future.

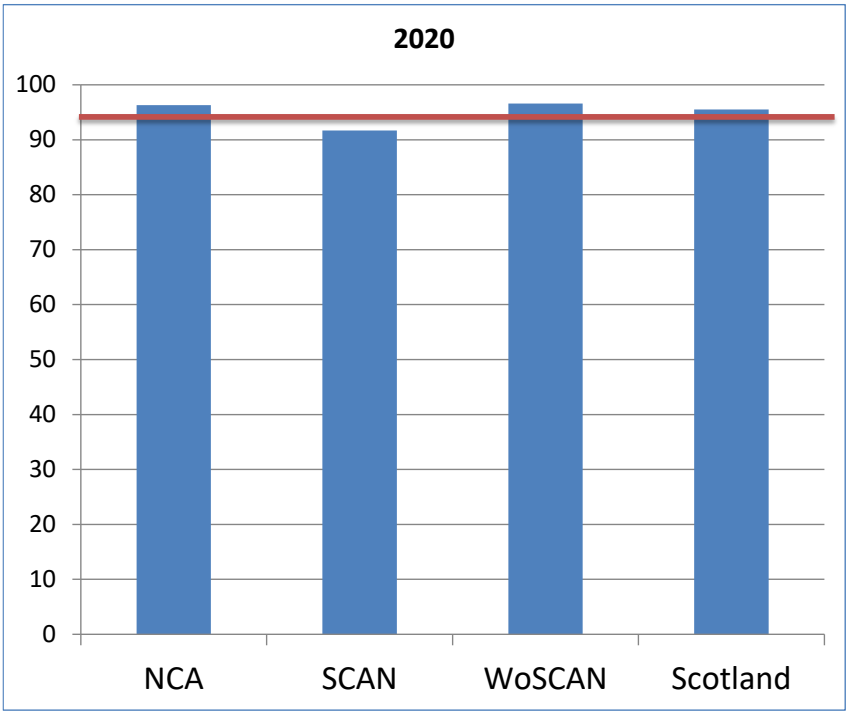
In NHS Ayrshire & Arran a number of cases not meeting the target were noted as not having been referred to the national MDT meeting but were discussed locally. The Board added the referral to the Regional MDT is not a standardised part of the Board's local process. NHS Forth Valley reported that all cases not meeting the QPI were to be discussed with radiology.

Action Required:

- NHS Forth Valley to provide further feedback on cases not meeting the QPI following discussions with radiology.
- NHS Ayrshire & Arran to ensure that all patients are referred to the national MDT.

Description:	(ii) Proportion of patients in whom CT scan optimised for pleural assessment (between 60 and 90 seconds) is carried out for first discussion at the national MDT, and TNM stage is recorded.
Numerator:	Number of patients with mesothelioma in whom CT scan optimised for pleural assessment was carried out for first discussion at the national MDT meeting, who have TNM stage recorded.
Denominator:	Number of patients with mesothelioma in whom CT scan optimised for pleural assessment was carried out for first discussion at the national MDT meeting.
Exclusions:	No exclusions.
Target:	95%

Figure 5: The proportion of patients in whom CT scan optimised for pleural assessment (between 60 and 90 seconds) is carried out for first discussion at the national MDT, and TNM stage is recorded.



	Performance (%)	Numerator	Denominator
NCA	96.3%	26	27
SCAN	91.7%	22	24
WoSCAN	96.6%	57	59
Scotland	95.5%	105	110

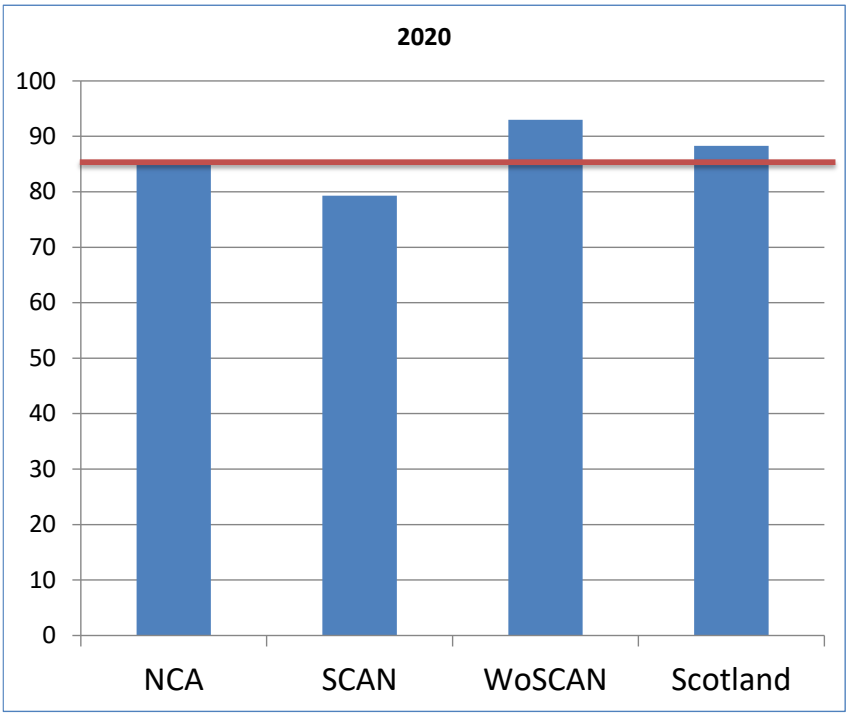
Overall, 95.5% of patients in whom CT scan was optimised for pleural assessment and carried out for first discussion at the national MDT had TNM recorded, achieving the 95% QPI target. SCAN achieved 91.7% and commented that all cases not meeting the QPI were reviewed and reasons provided included cases where TNM was not recorded in minutes and one case where only the M value was not recorded.

QPI 2: Diagnostic: Histopathology

Patients should have a histopathological diagnosis of Mesothelioma. A definitive histological diagnosis of mesothelioma is valuable in helping inform patients and carers about the nature of the disease and the likely prognosis and to facilitate compensation claims[1]. The tolerance within this target is to account for patients in whom pursuit of tissue is not clinically safe or appropriate[1].

Description:	(i) Proportion of patients with mesothelioma who have a histopathological diagnosis.
Numerator:	Number of patients with mesothelioma who have a histopathological diagnosis.
Denominator:	All patients diagnosed with mesothelioma.
Exclusions:	Patients who refuse investigation.
Target:	85%

Figure 6: The proportion of patients with mesothelioma who have a histopathological diagnosis.



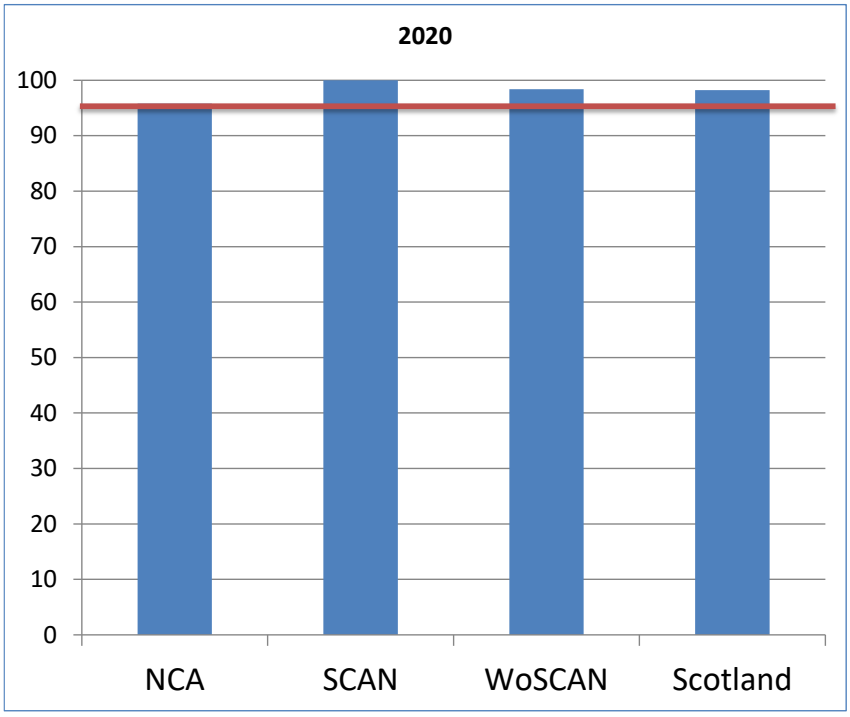
	Performance (%)	Numerator	Denominator
NCA	85.7%	24	28
SCAN	79.3%	23	29
WoSCAN	93.0%	66	71
Scotland	88.3%	113	128

Of the 128 patients diagnosed with mesothelioma, 113 had a pathological diagnosis. This resulted in a national performance of 88.3%, against the 85% QPI target. Only SCAN did not meet the QPI target. Patients not meeting this QPI have been reviewed and clinical commentary provided. Reasons for not meeting the QPI included insufficient tissue for diagnosis, negative pleural biopsy and patient fitness/frailty.

NHS Grampian performance was 60% against the 85% QPI target. The board added that they do not have access to local anaesthetic thoracoscopy (LAT), meaning referral for VATS (surgical) thoracoscopy has be considered. Many older/frailer patients do not have sufficient fitness for the general anaesthetic required for VATS or the travel involved in this pathway.

Description:	(ii)Proportion of patients with a histopathological diagnosis of mesothelioma who have subtype identified.
Numerator:	Number of patients with a histopathological diagnosis of mesothelioma who have subtype identified.
Denominator:	All patients with a histopathological diagnosis of mesothelioma.
Exclusions:	No exclusions.
Target:	95%

Figure 7: The proportion of patients with a histopathological diagnosis of mesothelioma who have subtype identified.

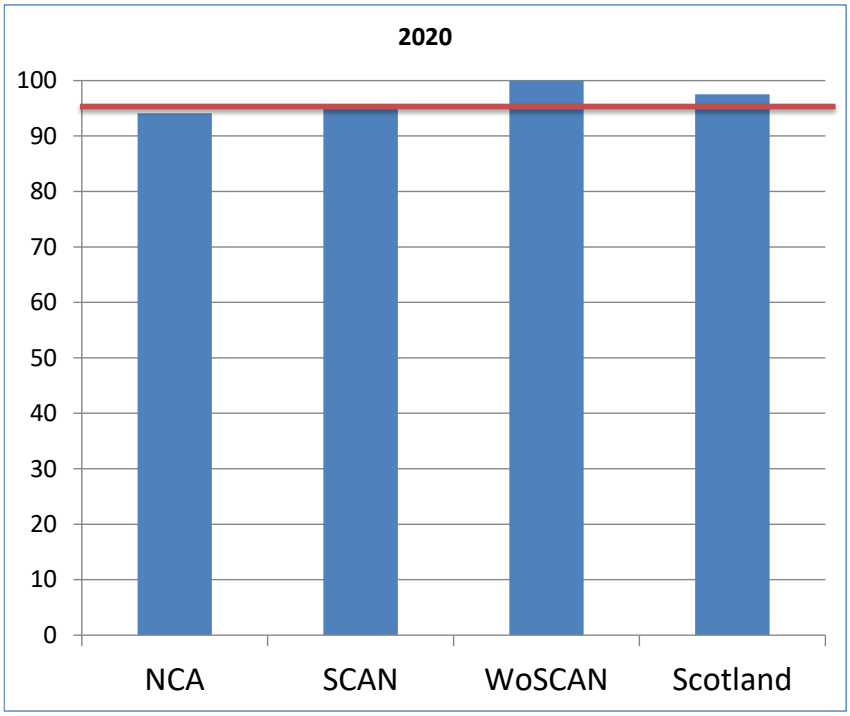


	Performance (%)	Numerator	Denominator
NCA	95.8%	23	24
SCAN	100%	22	22
WoSCAN	98.4%	62	63
Scotland	98.2%	107	109

Of the 109 patients who had a histopathological diagnosis of mesothelioma, 107 had a subtype identified resulting in a national performance of 98.2% against the 95% QPI target. All regions achieved the QPI target. The two cases not meeting have been reviewed and clinical commentary provided.

Description:	(iii) Proportion of patients with a histopathological diagnosis of epithelioid mesothelioma who have IHC marker profiling undertaken.
Numerator:	Number of patients with a histopathological diagnosis of epithelioid mesothelioma who have an appropriate immuno-histochemical panel undertaken on the biopsy.
Denominator:	All patients with a histopathological diagnosis of epithelioid mesothelioma.
Exclusions:	No exclusions.
Target:	95%

Figure 8: The Proportion of patients with a histopathological diagnosis of epithelioid mesothelioma who have IHC marker profiling undertaken.



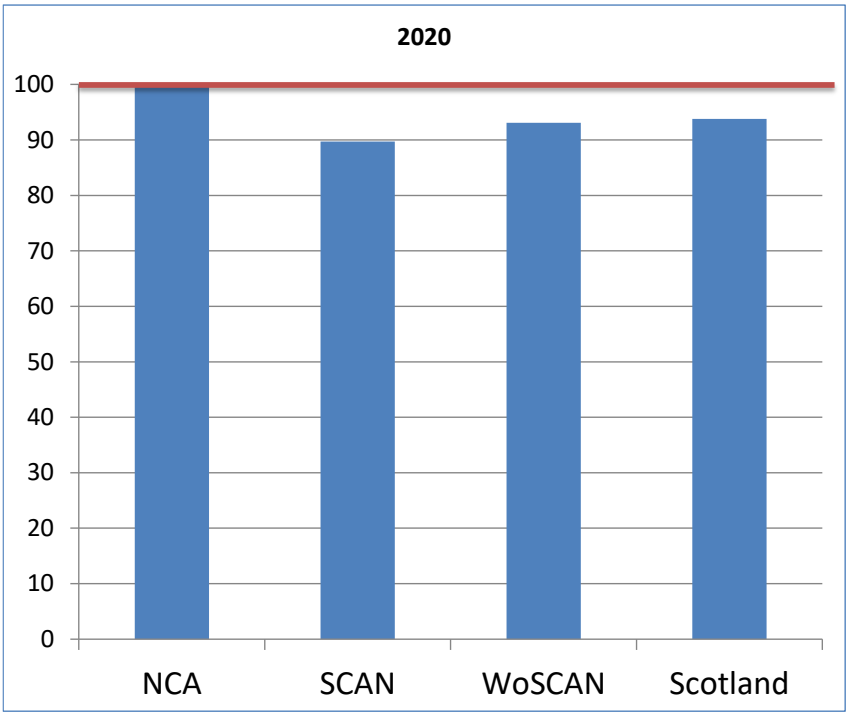
	Performance (%)	Numerator	Denominator
NCA	94.1%	16	17
SCAN	95.0%	19	20
WoSCAN	100%	43	43
Scotland	97.5%	78	80

Of the 80 patients with a histopathological diagnosis of mesothelioma who had a subtype identified, 78 patients with a diagnosis of epithelioid mesothelioma had an appropriate immuno-histochemical panel undertaken on biopsy. This resulted in a national performance of 97.5% against the 95% target. NCA were slightly under target but this is due to one case not meeting the QPI.

QPI 3: Multidisciplinary Team

Description:	Proportion of patients with mesothelioma who are discussed at the national mesothelioma MDT meeting.
Numerator:	Number of patients with mesothelioma discussed at the national mesothelioma MDT.
Denominator:	All patients diagnosed with mesothelioma.
Exclusions:	No exclusions.
Target:	100%

Figure 9: The proportion of patients with mesothelioma who are discussed at the national mesothelioma MDT meeting.



	Performance (%)	Numerator	Denominator
NCA	100%	28	28
SCAN	89.7%	26	29
WoSCAN	93.1%	67	72
Scotland	93.8%	121	129

Overall in Scotland 93.8% of patients were discussed at the national mesothelioma meeting. Only NCA achieved the 100% QPI target. SCAN and WoSCAN both reviewed cases not meeting the QPI and reported similar reasons to QPI 1.

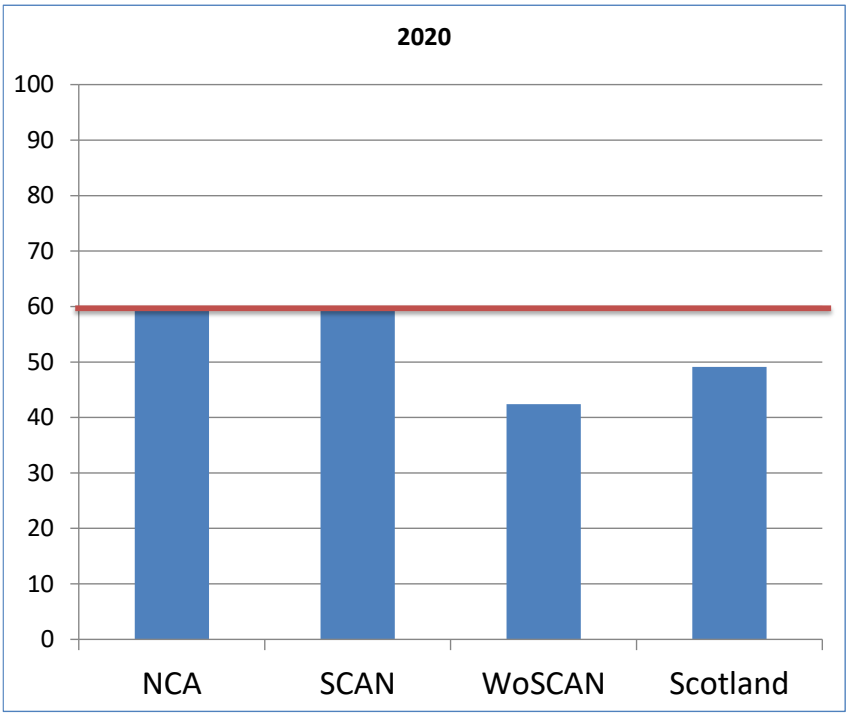
At the MCN clinical data review meeting there were discussions around MDT engagement and patients that are for best supportive care who are sometimes not referred to the regional MDT. The group discussed the education requirement around the support that can be provided through e.g. CNSs or information packs for patients who do not receive active cancer therapy. It was agreed that this could be a suitable topic for the next national mesothelioma education event and an action that the MCN will take forward during 2022.

QPI 4: Systemic Anti Cancer Treatment

Patients with good performance status should receive first line treatment with Systemic Anti Cancer Treatment (SACT)[1]. The tolerance within this target accounts for situations where patients with performance status (PS) 0 -1 may not be suitable for treatment with SACT due to co-morbidities[1] . Patients who decline or defer SACT and patients receiving SACT as part of a trial are excluded from the denominator for this measure.

Description:	Proportion of patients with mesothelioma and performance status (PS) 0-1 who receive first line treatment with SACT using platinum and pemetrexed.
Numerator:	Number of patients with a diagnosis of mesothelioma and PS 0-1 who receive first line SACT with platinum and pemetrexed.
Denominator:	All patients with a diagnosis of mesothelioma and PS 0-1.
Exclusions:	Patients who decline or defer SACT treatment, and patients receiving chemotherapy treatment as part of a clinical trial.
Target:	60%

Figure 10: The proportion of patients with mesothelioma and performance status (PS) 0-1 who receive first line treatment with SACT using platinum and pemetrexed.



	Performance (%)	Numerator	Denominator
NCA	60.0%	6	10
SCAN	60.0%	6	10
WoSCAN	42.4%	14	33
Scotland	49.1%	26	53

Overall in Scotland 49.1% of patients diagnosed with mesothelioma with PS 0-1 received first line treatment with SACT using platinum and pemetrexed. It should however be noted that numbers are low in all regions and this can have a greater effect on proportions. Only WoSCAN failed to achieve the 60% target.

All Boards not achieving the QPI reviewed cases and reasons provided for cases not meeting the QPI included; cases that were contraindicated due to fitness & co-morbidity, patients that were not fit for treatment, patients that had surgery which removed measurable disease, and cases where patients chose to defer SACT treatment. All patients were treated appropriately.

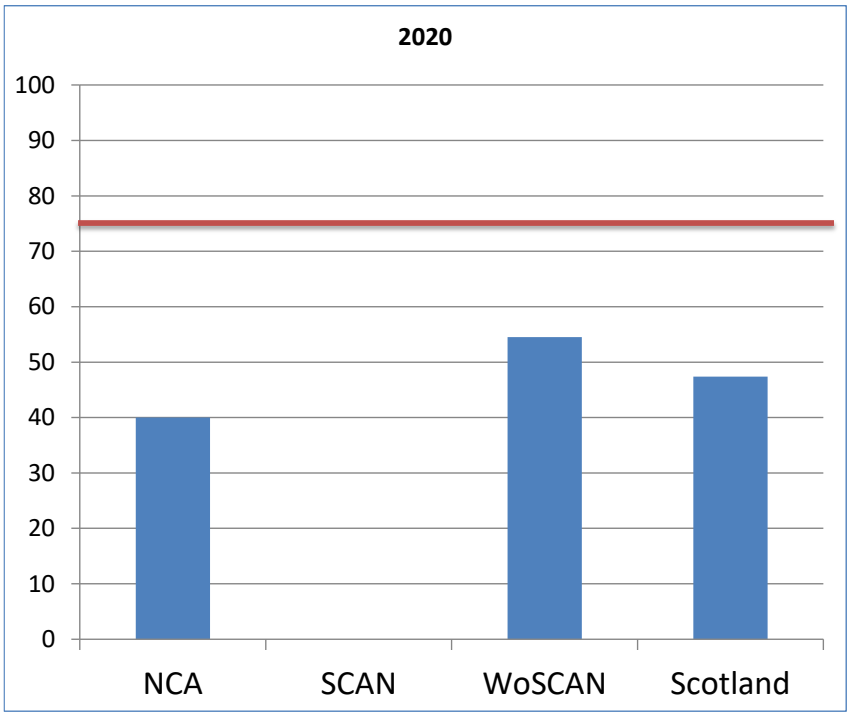
At the MCN clinical data review meeting it was noted that there were difficulties faced by the audit facilitators in being able to record cases where patients defer SACT treatment. It was agreed that the data definitions would be updated to allow these cases to be entered and also the QPI will be reported a year in arrears to ensure that it captures as many patients as possible undergoing SACT treatment.

QPI 5: Radiotherapy for Management of Pain

Radiotherapy should be given for pain management in patients with mesothelioma where appropriate[1]. The tolerance within this target accounts for the fact that due to co-morbidities and fitness not all patients will be suitable for radiotherapy. It also accounts for factors of patient choice.

Description:	Proportion of patients with mesothelioma who are referred to the national MDT for pain relief who receive radiotherapy.
Numerator:	Number of patients with Mesothelioma referred to the national MDT for pain relief who receive radiotherapy.
Denominator:	All patients with mesothelioma referred to the national MDT for pain relief.
Exclusions:	Patients who decline radiotherapy treatment and patients receiving radiotherapy treatment as part of a clinical trial.
Target:	75%

Figure 11: The proportion of patients with mesothelioma who are referred to the national MDT for pain relief who receive radiotherapy.



	Performance (%)	Numerator	Denominator
NCA	40.0%	2	5
SCAN	-	-	-
WoSCAN	54.5%	6	11
Scotland	47.4%	9	19

- Denominator is less than 5.

Overall in Scotland 47.4% of patients with mesothelioma referred to the national MDT for pain relief received radiotherapy. No region met the 75% QPI target.

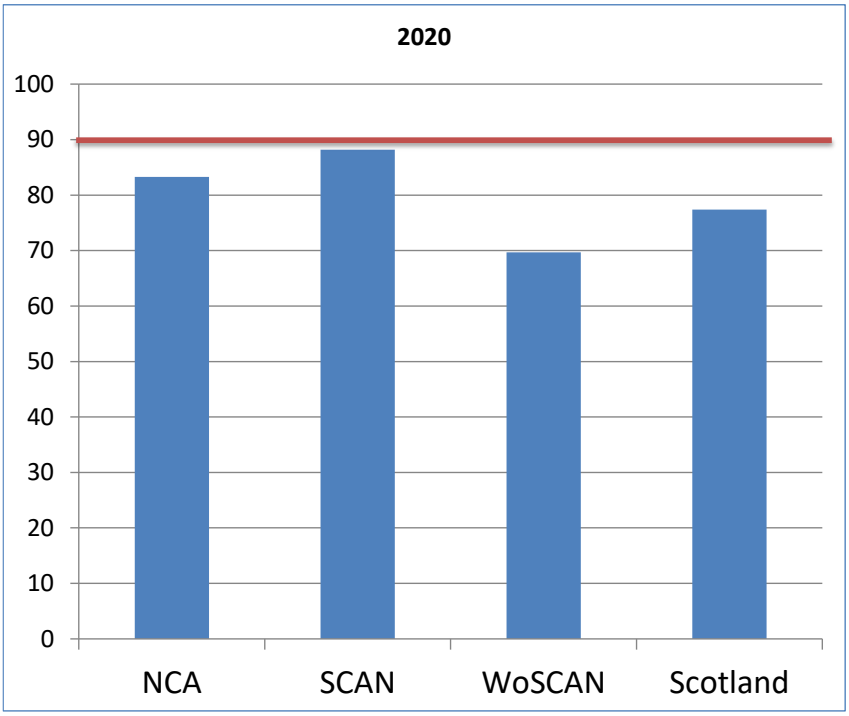
During the data review meeting it was acknowledge that this QPI is difficult to measure as significant pain often happens at a later stage well after the initial treatment pathway. Going forward this QPI will be reported one year in arrears. This will enable reporting of all patients referred to the national MDT for pain management who receive radiotherapy within 18 months following diagnosis. It was agreed that the MDT form would also be updated to improve data capture. This will ensure that it is only those patients with uncontrolled pain that are included within the denominator rather than those with pain where analgesia is the appropriate management rather than radiotherapy.

QPI 6: Pleural Fluid Management

Patients with mesothelioma, who have symptomatic pleural effusion should be offered talc pleurodesis or indwelling pleural catheter (IPC) to manage fluid. No single fluid control technique has been shown to be superior in terms of patients' symptoms or pleurodesis success in mesothelioma. However, it is important that patients are able to be offered both techniques and given the choice on fluid management[1]. As patient choice is difficult to measure the type of fluid management procedure undertaken is utilised within this QPI as a proxy measure. This will provide an indication of any variation in practice across NHS Boards[1].

Description:	Proportion of patients with mesothelioma with symptomatic pleural effusion who undergo either talc pleurodesis (via slurry or poudrage) or indwelling pleural catheter (IPC) insertion to manage fluid.
Numerator:	Number of patients with mesothelioma who have symptomatic pleural effusion who undergo either talc pleurodesis (via slurry or poudrage) or indwelling pleural catheter (IPC) insertion to manage fluid.
Denominator:	All patients with mesothelioma who have symptomatic pleural effusion.
Exclusions:	Patients who refuse to undergo fluid management procedures.
Target:	90%

Figure 12: The proportion of patients with mesothelioma with symptomatic pleural effusion who undergo either talc pleurodesis (via slurry or poudrage) or indwelling pleural catheter (IPC) insertion to manage fluid.



	Performance (%)	Numerator	Denominator
NCA	83.3%	10	12
SCAN	88.2%	15	17
WoSCAN	69.7%	23	33
Scotland	77.4%	48	62

Overall in Scotland 77.4% of patients with mesothelioma who had symptomatic pleural effusion underwent either talc pleurodesis (via slurry or poudrage) or indwelling pleural catheter (IPC) insertion to manage fluid which is below the 90% QPI target. No region achieved the QPI target with performance ranging from 88.2% in SCAN to 69.7% in WoSCAN.

The cases that did not meet this QPI have been reviewed by the regions and considered to be managed appropriately.

It was highlighted that patients that have a large volume pleural aspiration performed first and then have either talc pleurodesis or IPC insertion are failing the QPI. The mesothelioma data definitions state that only the first procedure should be recorded. It was agreed that the data definitions would be updated accordingly to ensure that these procedures can be recorded.

QPI 7: Clinical Trial and Research Study Access

All patients with mesothelioma should be considered for participation in available clinical trials / research studies[1]. Clinical trials are necessary to demonstrate the efficacy of new therapies and other interventions. Evidence suggests improved patient outcomes when hospitals are actively recruiting patients into clinical trials[1].

Description:	Proportion of patients diagnosed with mesothelioma who are consented for a clinical trial / research study.
Numerator:	Number of patients diagnosed with mesothelioma who are consented for a clinical trial / research study.
Denominator:	All patients diagnosed with mesothelioma.
Exclusions:	No exclusions.
Target:	15%

Overall 7.8% (10/129) of patients diagnosed with mesothelioma in Scotland were consented for a clinical trial/research study, which is below the 15% QPI target.

It was noted that mesothelioma study recruitment was severely affected by the COVID pandemic as all personnel and services were diverted to support other services.

This is a generic QPI across all tumour types and is being considered separately via the national clinical trials forums. It has been agreed in principle to replace the QPI with more relevant trials data produced by the national clinical trials forums and any changes will be implemented in due course. In the meantime the QPI will continue to be examined using both audit and SCRN data.

QPI 8: Post-Mortem Examination

Patients with a diagnosis of mesothelioma should only undergo post-mortem examination in the absence of pathological evidence of diagnosis[1].

Description:	Proportion of patients who have died with a pathological diagnosis of mesothelioma who undergo post-mortem examination.
Numerator:	Number of patients who have died with a pathological diagnosis of mesothelioma who undergo post- mortem examination.
Denominator:	All patients who have died with a pathological diagnosis of mesothelioma.
Exclusions:	None.
Target:	<10%

Of the 60 patients who died with a pathological diagnosis of mesothelioma one underwent post-mortem examination, resulting in a performance of 1.7% against the <10% target.

5. Next Steps

The NMCN will actively take forward regional actions identified and NHS Boards are asked to develop local Action/Improvement Plans in response to the findings presented in the report. A summary of actions for each NHS region has been included within the Action Plan templates in Appendix I.

Acknowledgements

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 mesothelioma for their contribution to the clinical audit process.

Abbreviations

CT	Computed tomography
eCASE	Electronic Cancer Audit Support Environment
IHC	Immuno-histochemical
IPC	Indwelling Pleural Catheter
LATS	Local Anaesthetic Thoracoscopy
MCN	Managed Clinical Network
MDT(s)	Multidisciplinary Team(s)
NCA	North Cancer Alliance
NMCN	National Managed Clinical Network
PS	Performance Status
QPI(s)	Quality Performance Indicator(s)
RCAG	Regional Cancer Advisory Group
SACT	Systemic Anti-Cancer Therapy
SCAN	South East Scotland Cancer Network
SCRN	Scottish Cancer Research Network
TNM	Tumour, Nodes, Metastases (staging system)
WGH	Western General Hospital
WoS	West of Scotland
WoSCAN	West of Scotland Cancer Network

References

1. Healthcare Improvement Scotland. Mesothelioma Quality Performance Indicators, June 2019. [Accessed on: 7th December 2021]. Available at: http://www.healthcareimprovementscotland.org/our_work/cancer_care_improvement/cancer_qpis/quality_performance_indicators.aspx

2. Information Services Division. Data Definitions for the National Minimum Core Data Set to support the introduction of Mesothelioma Quality Performance Indicators [Accessed on: 7th December 2021]. Available at: https://www.isdscotland.org/Health-Topics/Cancer/Cancer-Audit/

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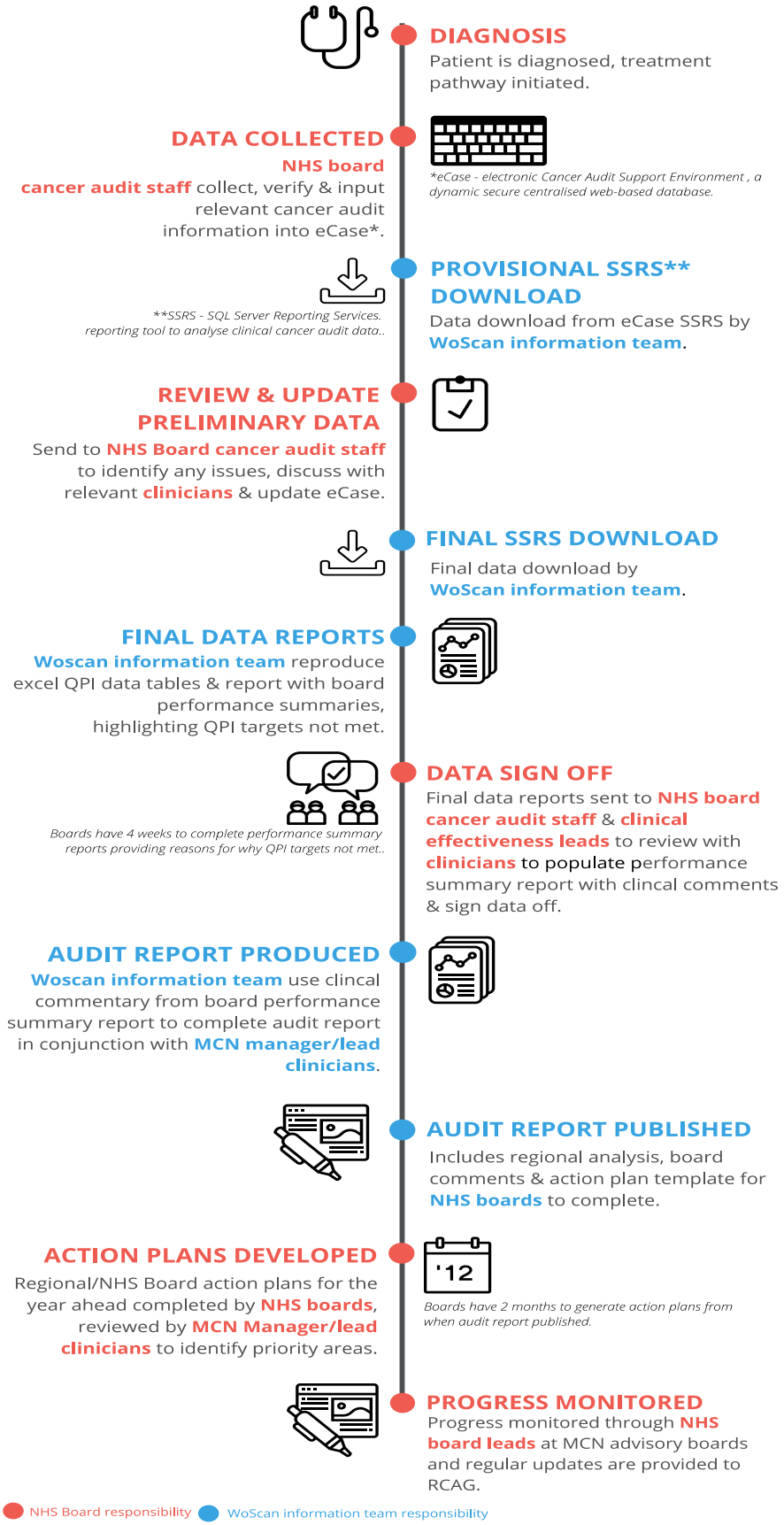
Appendix 1: Meta Data

Report Title	Cancer Audit Report: Mesothelioma Quality Performance Indicators
Time Period	Patients diagnosed between 01 January 2020 to 31 December 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 8th September 2021
Methodology	Analysis was performed centrally for the region 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. 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. 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.

Appendix 2: Cancer Audit Timeline



Appendix 3: NHS Board Action Plans

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

Mesothelioma QPI Action / Improvement Plan

Area:	WoSCAN
Action Plan Lead:	
Date:	

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

QPI No.	Action Required	Health Board Action Taken	Timescales		Lead	Progress/Action Status	Status (see Key)
			Start	End			
	Ensure actions mirror those detailed in Audit Report.	*Detail specific actions that will be taken by the NHS Board.*	*Insert date*	*Insert date*	*Insert name of responsible lead for each specific action.*	*Provide detail of action in progress, change in practices, problems encountered or reasons why no action taken.*	*Insert No. from key above*.
	QPI 1:- Diagnostic Imaging NHS Forth Valley to provide further feedback on cases not meeting the QPI following discussions with radiology.						
	QPI 1:- Diagnostic Imaging NHS Ayrshire & Arran to ensure that all patients are referred to the national MDT.						