

**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 2021 to 31 December 2021**

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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 2021 and 31st December 2021.

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 indicator.

Mesothelioma Quality Performance Indicators

Patients Diagnosed: January 2021 - December 2021

Number Diagnosed with Pleural Mesothelioma: **154**

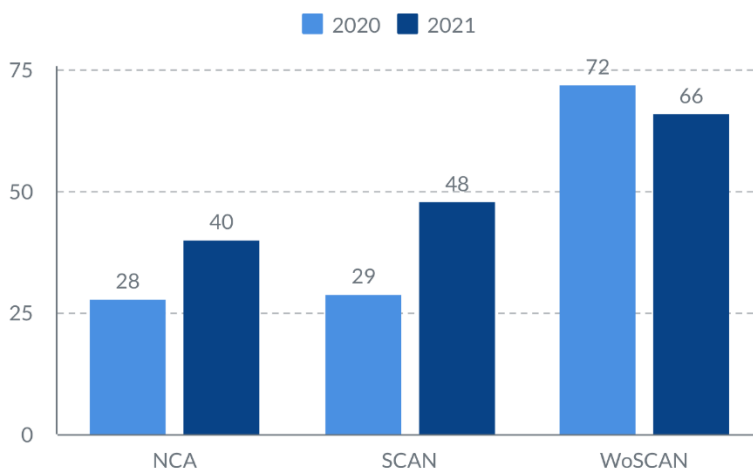
Number Diagnosed with Mesothelioma: 161

Males: **81.2%**

Females: **18.8%**

Median Age: **75**

No. Patients Diagnosed by Region of Diagnosis



QPI Performance

| QPI Title | QPI Target | National Performance | Target Met /Not Met |
|---|------------|----------------------|---------------------|
| QPI 1(i) Diagnostic Imaging | 90% | 83.8% | ✗ |
| QPI 1(ii) Diagnostic Imaging TNM Recorded | 95% | 91.5% | ✗ |
| QPI 2(i) Diagnostic Histopathology | 85% | 91.6% | ✓ |
| QPI 2(ii) Diagnostic Histopathology Subtype Identified | 95% | 100% | ✓ |
| QPI 2(iii) Diagnostic Histopathology IHC profiling undertaken | 95% | 91.5% | ✗ |
| QPI 3 National MDT Discussion | 100% | 93.5% | ✗ |
| QPI 4 SACT Treatment | 60% | 49.1% | ✗ |
| QPI 5 Radiotherapy for Management of Pain | 75% | 52.9% | ✗ |
| QPI 6 Pleural Fluid Management | 90% | 76.5% | ✗ |
| QPI 8 Post Mortem Examination | <10% | 0.0% | ✓ |

Key Achievements

This was the second year of Mesothelioma QPI data collection. 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. QPIs for histological diagnosis and post mortem examination were achieved in the WoS.

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 Action

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

- QPI 1(i) - Diagnostic Imaging
- QPI 2(iii) - IHC marker profiling
- QPI 3 - Multi-Disciplinary Team Meeting
- QPI 5 - Radiotherapy for Management of Pain

Summary of QPI Results

| National - Performance Summary | |
|--------------------------------|-------------------------|
| Clinical Leads: | |
| Date: | |
| Audit Reporting Period: | 01/01/2021 – 31/12/2021 |

| Colour Key | | Board | |
|------------|------------------|-------|---|
| | Above QPI target | % | |
| | Below QPI target | | |
| Symbol Key | | N | D |

| Quality Performance Indicator (QPI) | Performance by NHS Board | | | | | |
|--|--------------------------|------|-----------------|-----------------|-----------------|-------------------|
| | QPI target | Year | 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% | 2021 | 88% (35/40) | 85% (41/48) | 80% (53/66) | 84% (129/154) |
| | | 2020 | 96% | 83% | 82% | 85% |
| 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% | 2021 | 83% (29/35) | 100% (41/41) | 91% (48/53) | 92% (118/129) |
| | | 2020 | 96% | 92% | 97% | 96% |
| QPI 2(i) - Diagnostic: Histopathology Proportion of patients with mesothelioma who have a histopathological diagnosis. | 85% | 2021 | 83% (33/40) | 96% (46/48) | 94% (62/66) | 92% (141/154) |
| | | 2020 | 86% | 79% | 93% | 88% |
| QPI 2(ii) - Diagnostic: Histopathology Proportion of patients with a histopathological diagnosis of mesothelioma who have subtype identified. | 95% | 2021 | 100% (33/33) | 100% (46/46) | 100% (62/62) | 100% (141/141) |
| | | 2020 | 96% | 100% | 98% | 98% |
| QPI 2(iii) - Diagnostic: Histopathology Proportion of patients with a histopathological diagnosis of epithelioid mesothelioma who have IHC markers profiling undertaken. | 95% | 2021 | 100% (22/22) | 91% (32/35) | 87% (32/37) | 92% (86/94) |
| | | 2020 | 94% | 95% | 100% | 98% |

| Quality Performance Indicator (QPI) | Performance by NHS Board | | | | | |
|--|--------------------------|------|-----------------|----------------|----------------|------------------|
| | QPI target | Year | NCA | SCAN | WoSCAN | Scotland |
| QPI 3 - Multidisciplinary Team Proportion of patients with mesothelioma who are discussed at the national mesothelioma MDT meeting. | 100% | 2021 | 100% (40/40) | 96% (46/48) | 88% (58/66) | 94% (144/154) |
| | | 2020 | 100% | 90% | 93% | 94% |
| 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. (2020 Data) | 60% | 2021 | 55% (6/11) | 55% (6/11) | 45% (14/31) | 49% (26/53) |
| | | 2020 | | | | |
| 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. (2020 Data) | 75% | 2021 | 40% (2/5) | - | 55% (6/11) | 53% (9/17) |
| | | 2020 | | | | |
| 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% | 2021 | 76% (22/29) | 91% (19/21) | 68% (21/31) | 77% (62/81) |
| | | 2020 | 83% | 88% | 70% | 77% |
| QPI 8 - Post-Mortem Examination Proportion of patients who have died with a pathological diagnosis of mesothelioma who undergo post-mortem examination. | <10% | 2021 | 0.0% (0/14) | 0.0% (0/24) | 0.0% (0/35) | 0.0% (0/73) |
| | | 2021 | 0.0% | 0.0% | 3.1% | 1.7% |

(-) 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 second year of Mesothelioma QPI data collection. 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.

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

- NMCN to carry out an internal validation study of CT phase timing for quality control purposes.
- NMCN to provide more support/education to sites with below average performance to encourage engagement with MDT process.

QPI 2iii: Diagnostic: Histopathology

- NMCN to liaise with Pathology to compile an updated list of ICC markers and additional markers to be added to QPI.

QPI 3: Multidisciplinary Team

- NMCN to provide more support/education to sites with below average performance to encourage engagement with MDT process.

QPI 5: Radiotherapy for Management of Pain

- NMCN to propose amendment of QPI 5 at the Formal Review currently being undertaken to ensure that the exclusion criteria is excluding the correct cohort. An update to the wording of the QPI is also required to ensure that only patients with uncontrolled pain are included.

QPI 6: Pleural Fluid Management

- NMCN to propose a formal review change to exclude patients who do not experience symptomatic re-accumulation of pleural effusion after initial fluid aspiration or fluid removal during thoracoscopy.
- Element to be added to the pleural management box on the MDT form to accurately record cases where pleural management is not required.

Completed Action Plans should be returned to WoSCAN in a timely manner to allow the plans to be reviewed at the Regional Cancer Oversight Group.

Progress against the plans will be monitored by the NMCN 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 Lead Cancer Clinician.

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 between 1st January 2021 and 31st December 2021. 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 v2.0 of the Mesothelioma Quality Performance Indicators (QPIs)¹ which were implemented for patients diagnosed on or after 01 January 2021.

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.

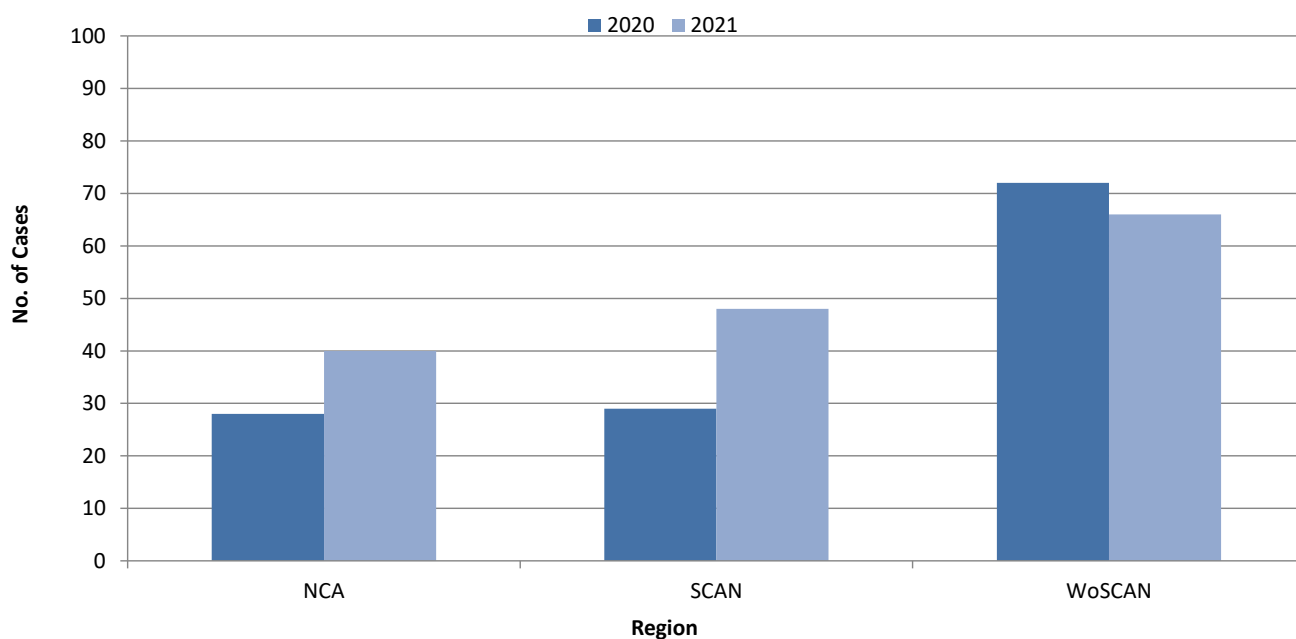
In Scotland over 200 people are diagnosed with mesothelioma each year. Exposure to asbestos is the most common cause of mesothelioma.

2.1 National Context

A total of 161 cases of mesothelioma were recorded through audit as diagnosed in Scotland in 2021. This figure is lower than the PHS national average of mesotheliomas diagnosed each year. Differences may be due to the inclusion of mesothelioma cases only confirmed at post mortem within the PHS statistics. The NMCN will carry out an audit to compare QPI data with cancer registry data 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 154 cases diagnosed in Scotland in 2021. 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.

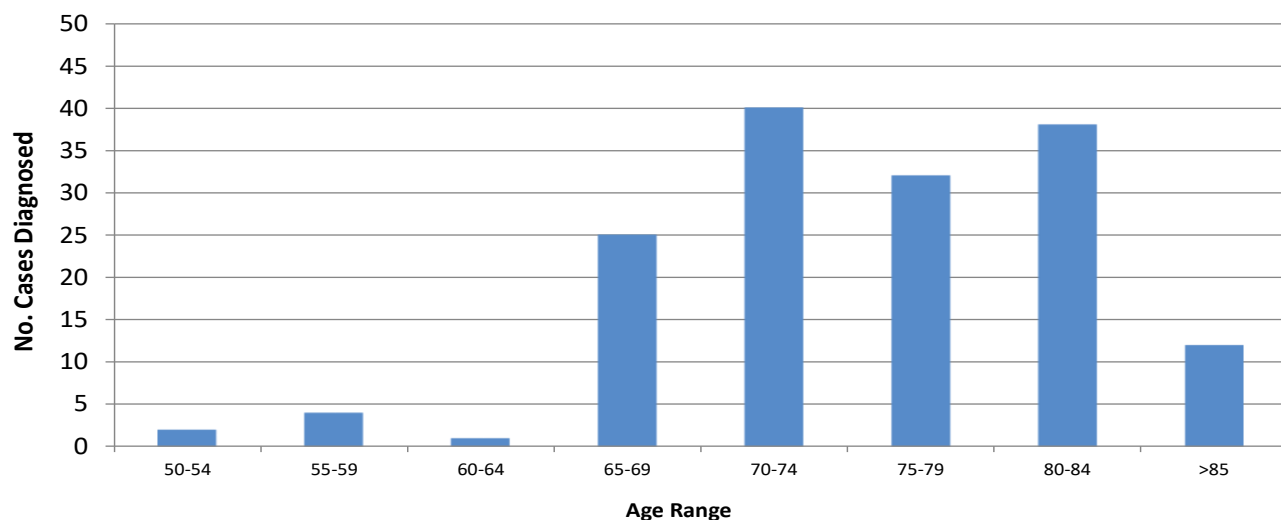


| | NCA | SCAN | WoSCAN | Scotland |
|------|-----|------|--------|----------|
| 2020 | 28 | 29 | 72 | 129 |
| 2021 | 40 | 48 | 66 | 154 |

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 78.2% of the total cases diagnosed occurring in patients within this age group. Between January 2021 and December 2021, 81% of the cases diagnosed were male with females accounting for 19% of cases.

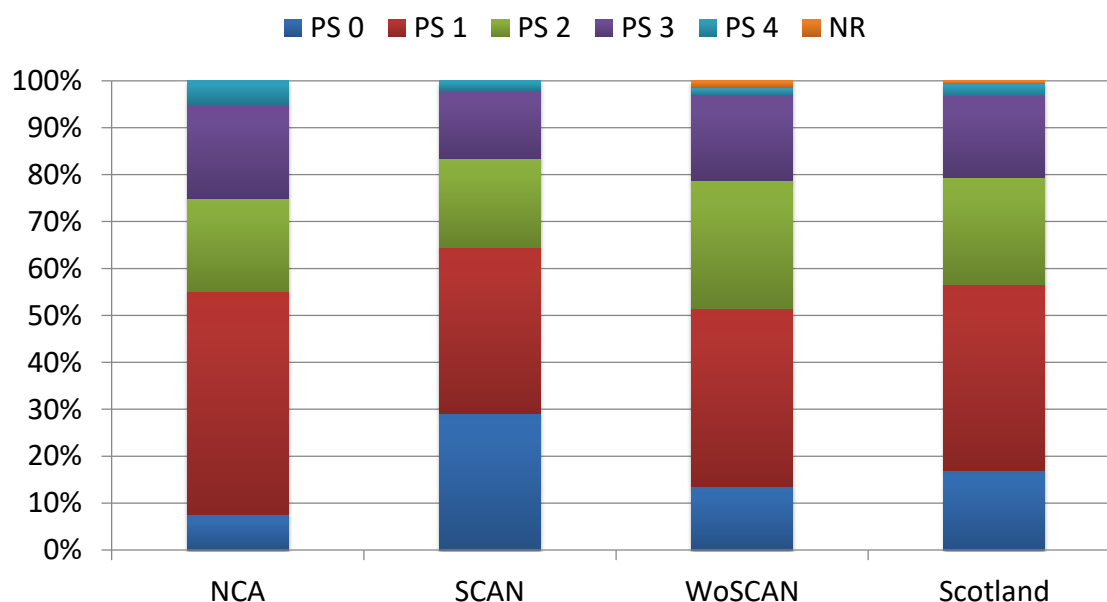
Figure 2: Age range of patients diagnosed with mesothelioma.



| | <50 | 50-54 | 55-59 | 60-64 | 65-69 | 70-74 | 75-79 | 80-84 | >85 |
|---|-----|-------|-------|-------|-------|-------|-------|-------|-----|
| N | 0 | 2 | 4 | 1 | 25 | 40 | 32 | 38 | 12 |

2.3 Performance Status

Figure 3: Performance status by region.



| | NCA | | SCAN | | WoSCAN | | Scotland | |
|--------------|-----------|-------|-----------|-------|-----------|-------|------------|-------|
| | n | % | n | % | n | % | n | % |
| 0 | 3 | 7.5% | 14 | 29.2% | 9 | 13.6% | 26 | 16.9% |
| 1 | 19 | 47.5% | 17 | 35.4% | 25 | 37.9% | 61 | 39.6% |
| 2 | 8 | 20.0% | 9 | 18.8% | 18 | 27.3% | 35 | 22.7% |
| 3 | 8 | 20.0% | 7 | 14.6% | 12 | 18.2% | 27 | 17.5% |
| 4 | 2 | 5.0% | 1 | 2.1% | 1 | 1.5% | 4 | 2.6% |
| NR | 0 | 0.0% | 0 | 0.0% | 1 | 1.5% | 1 | 0.6% |
| Total | 40 | | 48 | | 66 | | 154 | |

Figure 3 shows the WHO Performance Status (PS) of patients diagnosed with mesothelioma, with 0 being fully active and 4 being completely disabled. The majority of patients present with PS 0-1 since this is the relevant fitness threshold for active therapy/trials.

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.

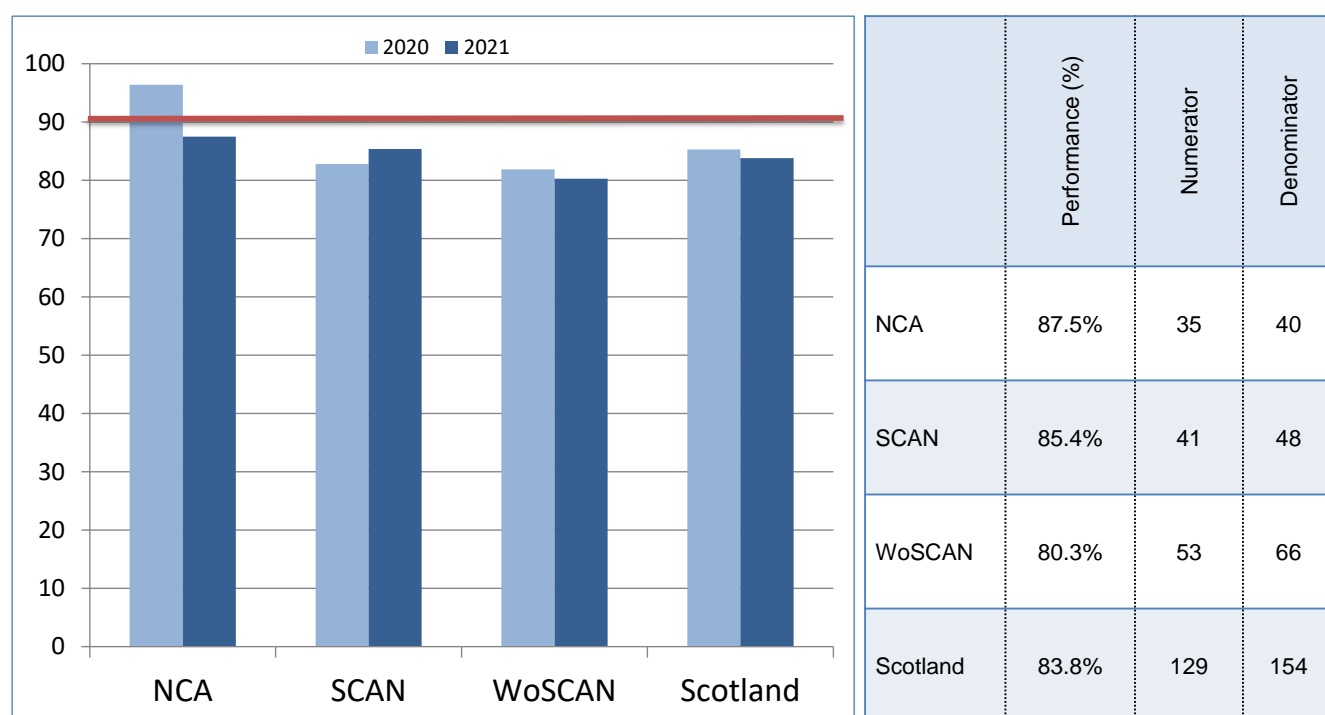
Specific national, regional and NHS Board actions have been identified to address issues highlighted through the data analysis.

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 required¹.

| | |
|---------------------|--|
| 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 across Scotland was 83.8% against the 90% target with 129 of 154 patients with CT scan optimised for pleural assessment carried out for first discussion at the national MDT meeting. No region met the QPI target.

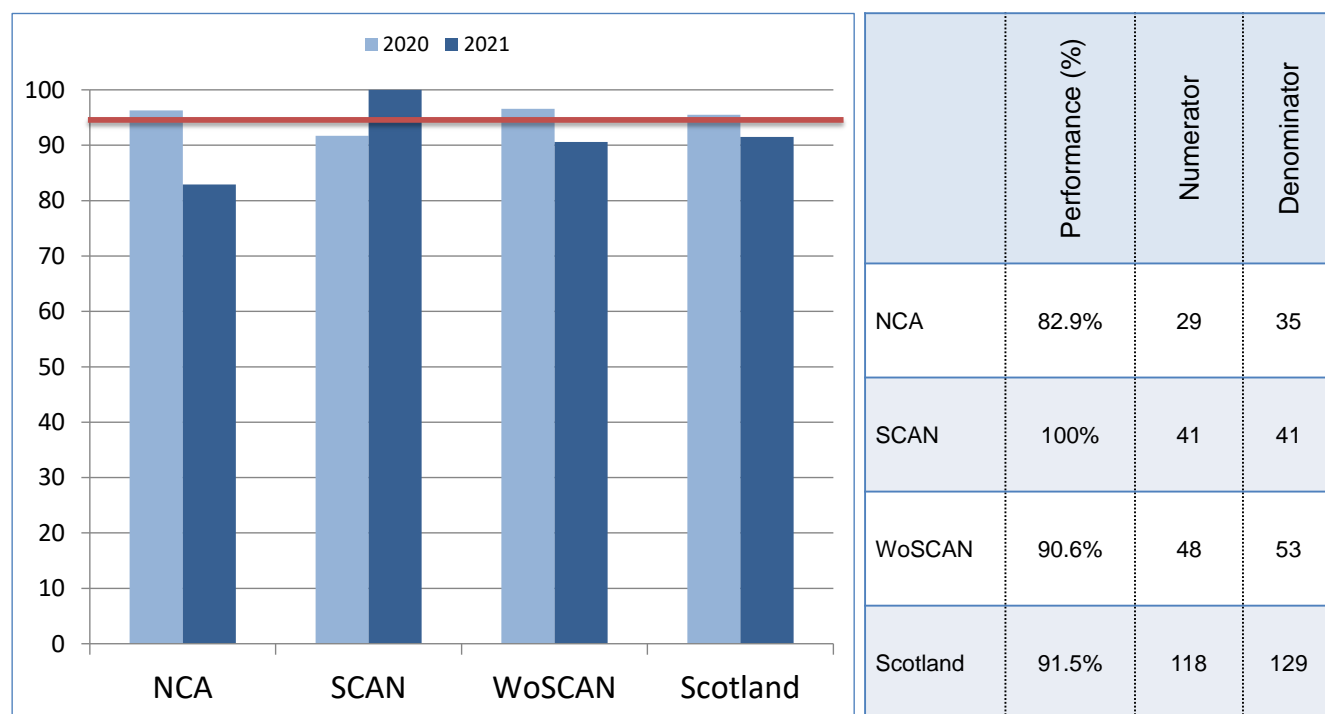
NHS Ayrshire & Arran performance was noted as 22.2% against the 90% target, The Board commented that of the 7 cases not meeting the QPI none were referred to the National MDT meeting.

At the National data review meeting there was discussion around how contrast timing is determined. It was confirmed that the MDT form had been adjusted to capture this data and that CTs are checked if contrast, non-contrast or arterial and recorded on the MDT form. It was noted there was a potential for

error and it was decided that a validation study would be carried out to determine if correct contrast phase was being recorded accurately at time of MDT discussion.

| | |
|---------------------|--|
| 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.



Overall, 91.5% of patients in whom CT scan was optimised for pleural assessment and carried out for first discussion at the national MDT had TNM recorded, which is below the 95% QPI target. SCAN achieved 100% compliance. All cases not meeting the QPI were reviewed and reasons provided included cases that had only part of TNM recorded, cases that were not discussed at MDT and patients who had findings suspicious of mesothelioma based on cytology and CT imaging and therefore TNM staging was not offered to these patients.

Action Required:-

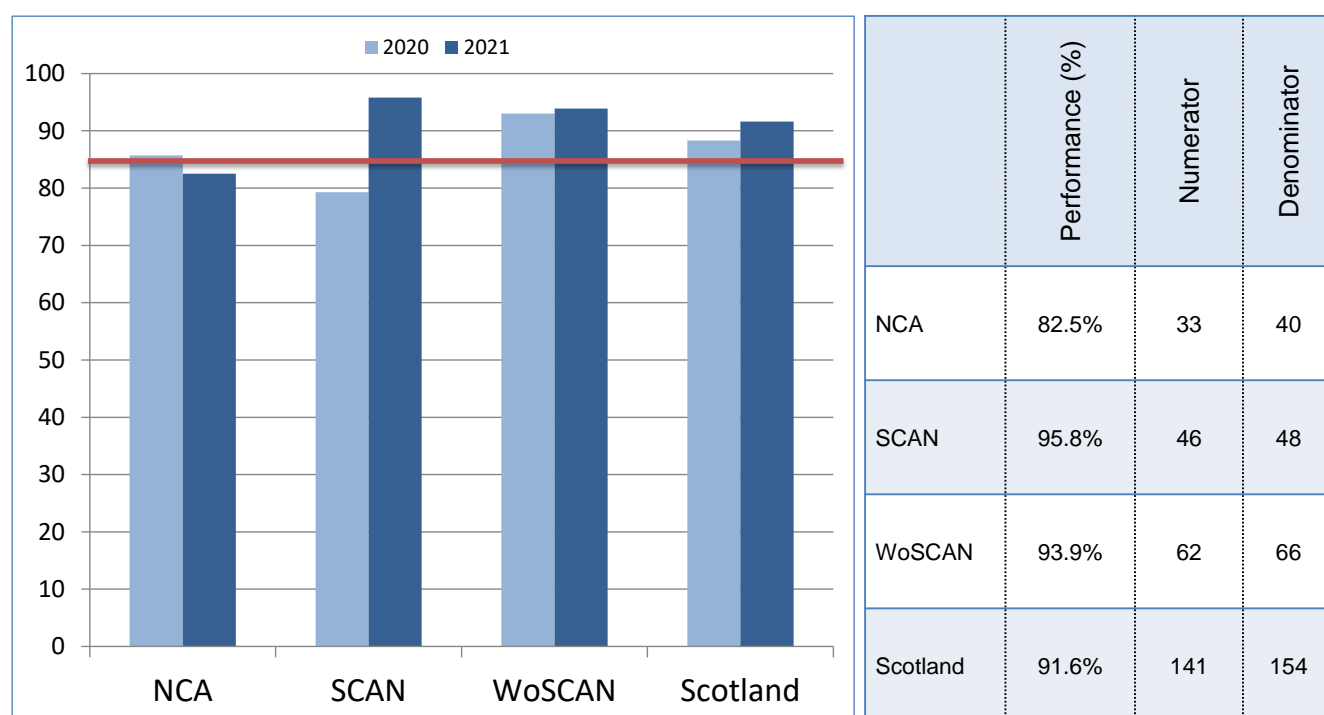
- NMCN to carry out an internal validation study of CT phase timing for quality control purposes.
- NMCN to provide more support/education to sites with below average performance to encourage engagement with MDT process.

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 claims¹. The tolerance within this target is to account for patients in whom pursuit of tissue is not clinically safe or appropriate¹.

| | |
|---------------------|--|
| 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.

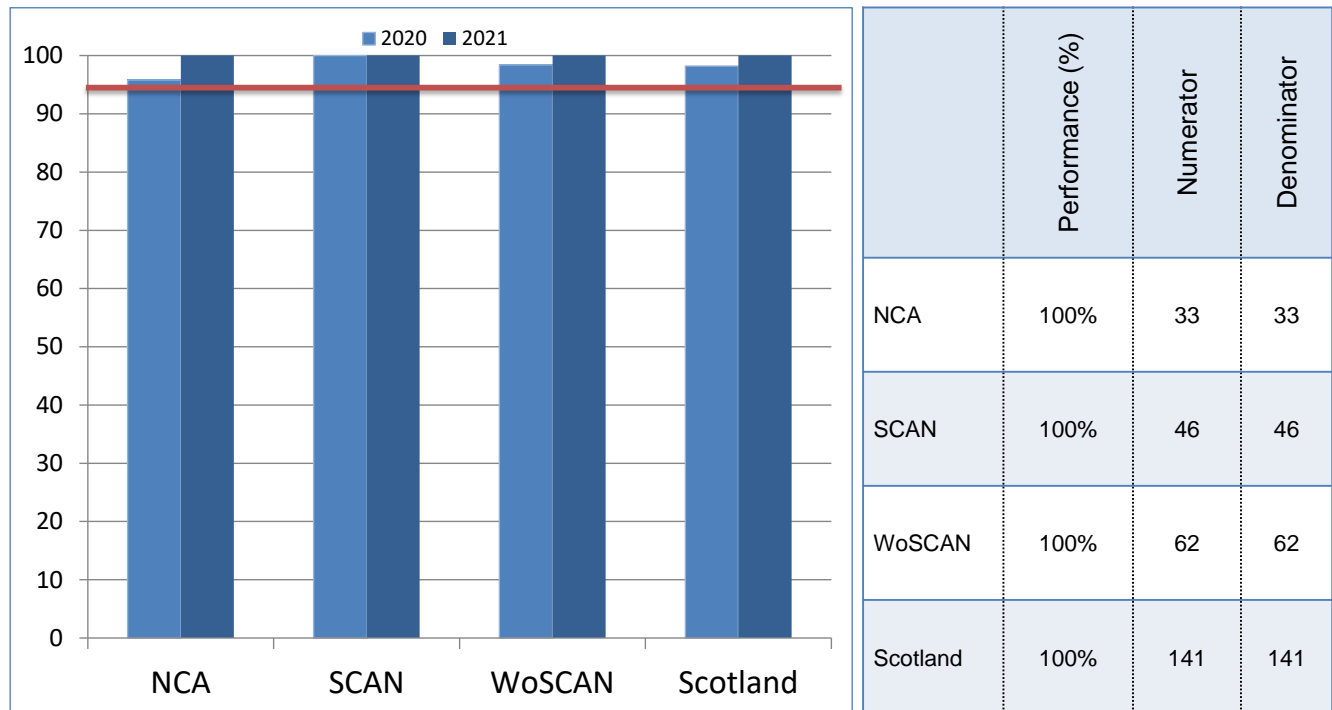


Of the 154 patients diagnosed with mesothelioma, 141 had a pathological diagnosis. This resulted in a national performance of 91.6%, against the 85% QPI target. Only NCA did not meet the QPI target.

NHS Grampian commented that most patients who did not have histological diagnosis are elderly and frail and are not fit to have VATS procedure under General Anaesthetic. There was no access to Local Anaesthetic Thoracoscopy (LAT) in Grampian in 2021. Two patients were offered LAT in Glasgow which they declined. Aberdeen Royal Infirmary Respiratory Team have since established LAT service with support from the Network and improvement is anticipated going forward.

| | |
|---------------------|--|
| 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% |

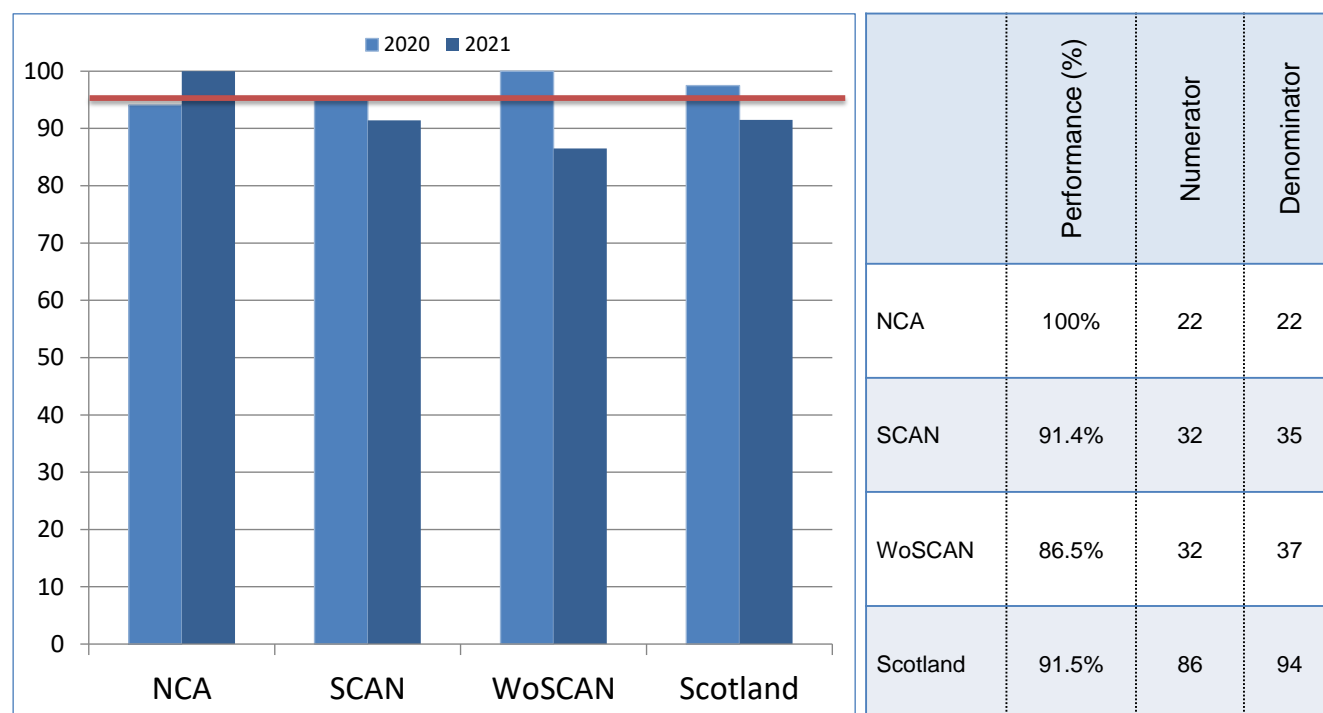
Figure 7: The proportion of patients with a histopathological diagnosis of mesothelioma who have subtype identified.



Of the 141 patients who had a histopathological diagnosis of mesothelioma, all had a subtype identified resulting in a national performance of 100% against the 95% QPI target.

| | |
|---------------------|--|
| 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.



Of the 94 patients with a histopathological diagnosis of mesothelioma who had a subtype identified, 86 patients with a diagnosis of epithelioid mesothelioma had an appropriate immuno-histochemical panel undertaken on biopsy. This resulted in a national performance of 91.5% against the 95% target.

All cases not meeting the QPI were reviewed and reasons provided included cases where IHC marker profiling was carried out but the report did not state which IHC markers were examined and cases which had markers undertaken but some of these did not appear on the pre-specified list. Discussion at the data review meeting suggested these latter events reflected a positive evolution of the evidence base in this area in that that new markers are available but are not on the original list, e.g. Claudin-4.

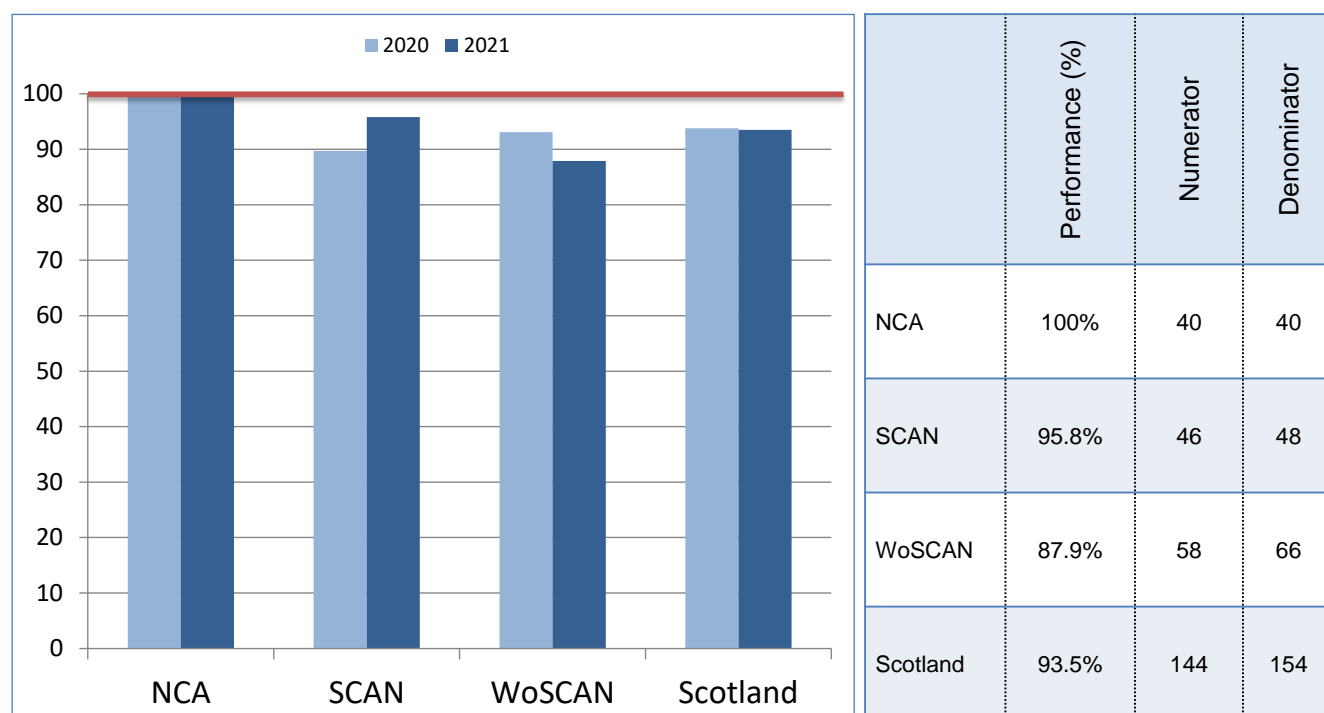
Action Required:-

- NMCN to liaise with Pathology to compile an updated list of ICC markers and additional markers to be added to 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.



Overall in Scotland 93.5% of patients were discussed at the national mesothelioma meeting. Only NCA achieved the 100% QPI target.

WoS achieved 87.9% against the QPI target. The majority of cases not meeting the target were from NHSAA where performance was noted as 20%. NHSSAA noted a number of reasons for lack of engagement with the national MDT, including lack of job planned time to attend.

SCAN commented that the two patients have been reviewed and both had CTs that showed pleural malignancy but not specific to mesothelioma and were subsequently diagnosed on post mortem.

There was national discussion at the data review meeting with regards to the 100% target being too ambitious and the general consensus was that the target should be reduced to 95% which would be in line with other tumour sites. This will be implemented for the next reporting cohort (Jan to Dec 2022).

Action Required:-

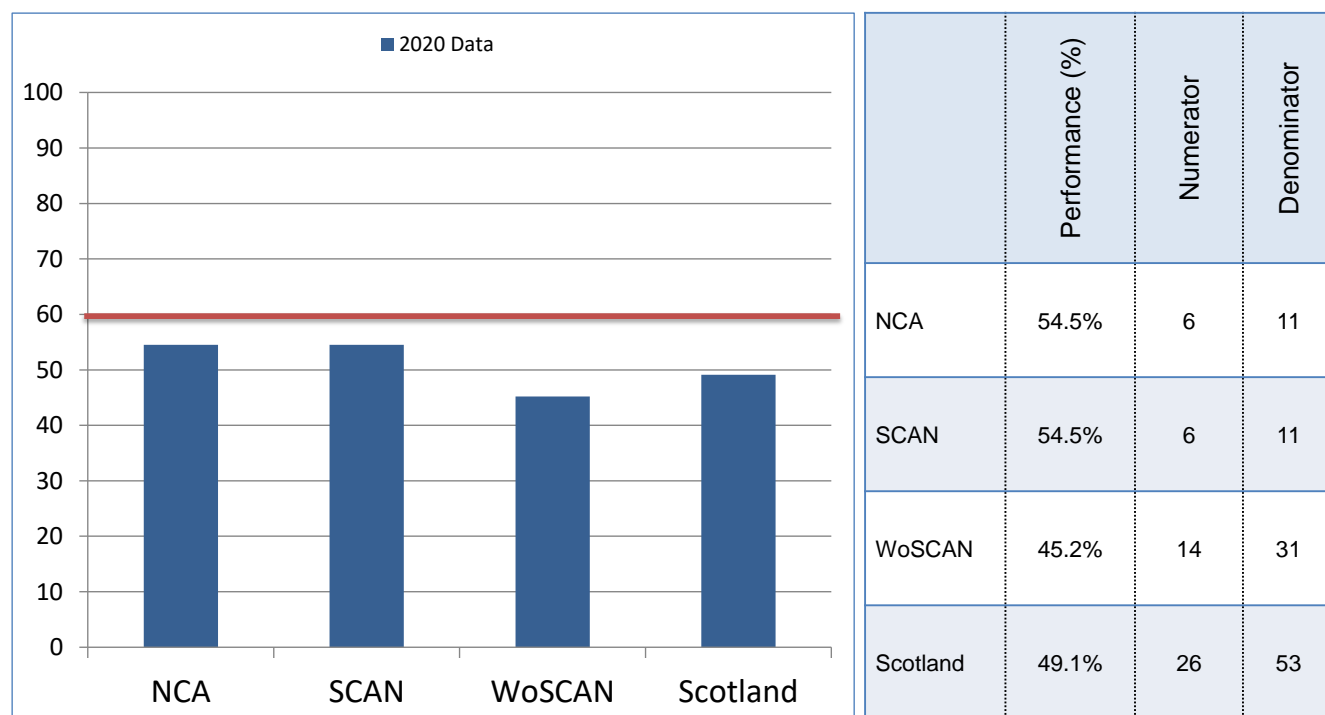
- NMCN to provide more support to sites with below average performance to encourage engagement with MDT process.

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-morbidities¹. 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.



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. No region met the 60% QPI target.

All regions reviewed cases and reasons provided for cases not meeting the QPI included patients that were contraindicated due to comorbidity, patients that had all measurable disease removed at surgery, patients that were deferred due to COVID19 and patients that were not fit for treatment.

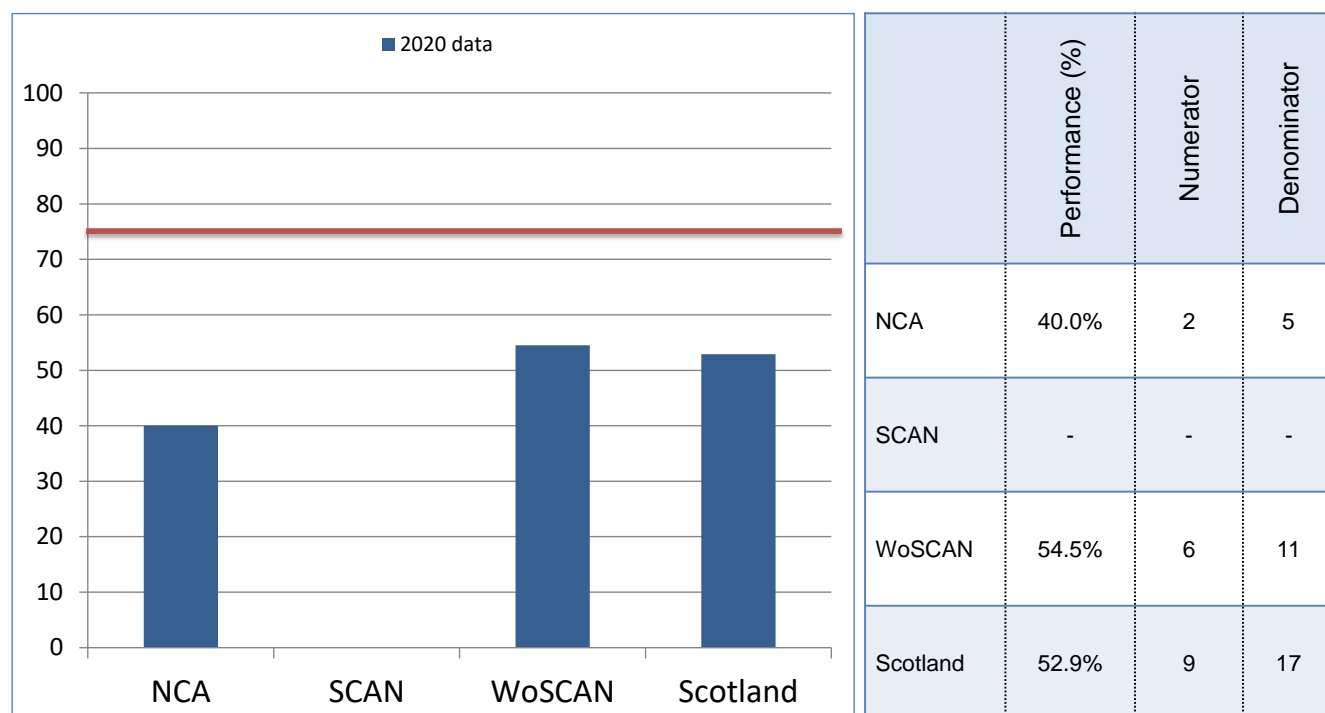
Going forward the QPI will be extended to include combination immunotherapy as an alternative SACT to platinum/pemetrexed. There was also agreement at the data review meeting to simplify the QPI to include all patients with PS 0-1 who receive first line treatment with SACT.

QPI 5: Radiotherapy for Management of Pain

Radiotherapy should be given for pain management in patients with mesothelioma where appropriate¹. 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.



QPI 5 is reported one year in arrears. This enables reporting of all patients referred to the national MDT for pain management who receive radiotherapy within 18 months following diagnosis. This has been deemed a more appropriate time frame to capture this particular aspect of treatment since severe pain may not be an issue immediately after diagnosis in many patients.

Overall in Scotland 52.9% of patients with mesothelioma referred to the national MDT for pain relief received radiotherapy. No region met the 75% QPI target.

All regions reviewed cases not meeting the QPI and reasons provided included patients who died before radiotherapy treatment and cases where radiotherapy treatment was not indicated.

Action Required:

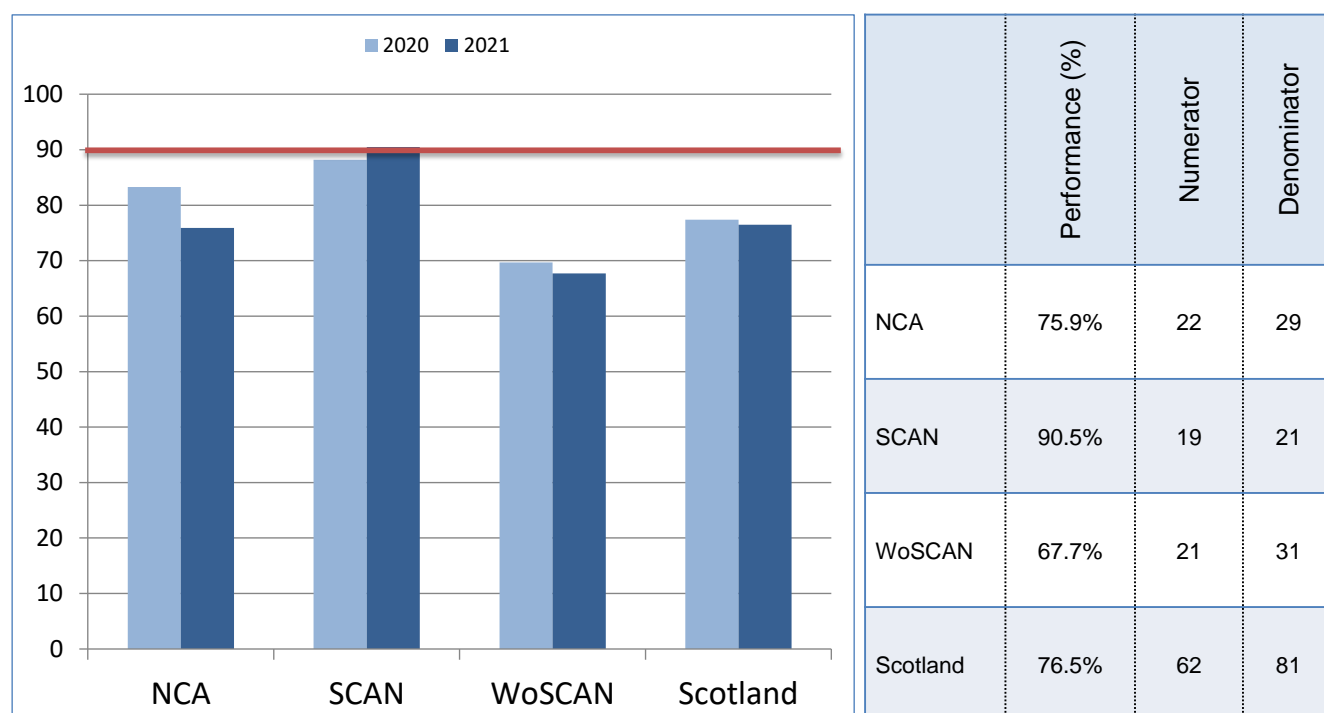
- MCN to propose amendment of QPI 5 at the Formal Review currently being undertaken to ensure that the exclusion criteria is excluding the correct cohort. An update to the wording of the QPI is also required to ensure that only patients with uncontrolled pain are included.

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 management¹. 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 Boards¹.

| | |
|---------------------|---|
| 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.



Overall in Scotland 76.5% 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.

All regions reviewed cases not meeting the QPI and provided detailed clinical feedback. Reasons provided included patients who died before IPC, patients who declined IPC, patients who had pleural biopsy only and patients whose effusion did not re-accumulate after diagnostic procedure.

It was agreed at the data review meeting that if thoracoscopy was performed and a patient had no symptomatic recurrence then those patients should be excluded. Currently this information is captured on the MDT form by identifying if pleural effusion is symptomatic. It was suggested that the introduction of another element to the pleural management tickbox such as 'not required' would facilitate the exclusion of patients who have been deemed by a consultant as not requiring pleural management.

Action Required:

- NMCN to propose a formal review change to exclude patients who do not experience symptomatic re-accumulation of pleural effusion after initial fluid aspiration or fluid removal during thoracoscopy.
- Element to be added to the pleural management box on the MDT form to accurately record cases where pleural management is not required.

QPI 7: Clinical Trial and Research Study Access

All patients with mesothelioma should be considered for participation in available clinical trials / research studies¹. 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 trials¹.

| | |
|---------------------|---|
| 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% |

It has been agreed that going forward the clinical trials QPIs will be reported via the SCRn and therefore the current Clinical Trials QPI will no longer be included in cancer QPI publications.

QPI 8: Post-Mortem Examination

Patients with a diagnosis of mesothelioma should only undergo post-mortem examination in the absence of pathological evidence of diagnosis¹.

| | |
|---------------------|---|
| 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 73 patients who died with a pathological diagnosis of mesothelioma none underwent post-mortem examination, resulting in a performance of 0%, and achieving 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: 21 February 2023]. 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: 21 February 2023]. Available at: <https://www.isdscotland.org/Health-Topics/Cancer/Cancer-Audit/>

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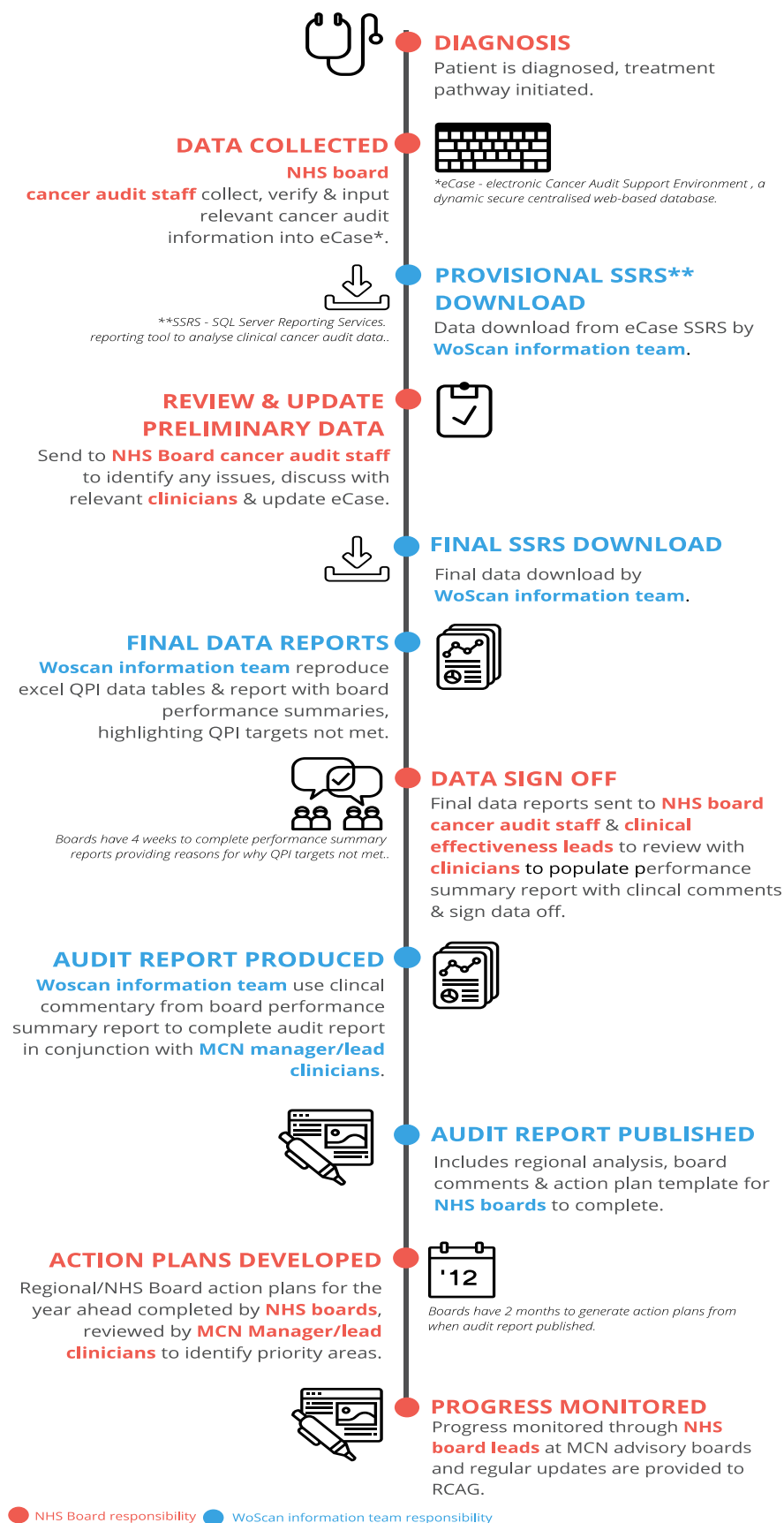
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Appendix 1: Meta Data

| | |
|----------------------|---|
| Report Title | Cancer Audit Report: Mesothelioma Quality Performance Indicators |
| Time Period | Patients diagnosed between 01 January 2021 to 31 December 2021 |
| 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 17 th August 2022 |
| Methodology | <p>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.</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: 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: | NMCN |
| 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 | | | |
| | <i>Ensure actions mirror those detailed in Audit Report.</i> | <i>Detail specific actions that will be taken by the NHS Board.</i> | <i>Insert date</i> | <i>Insert date</i> | <i>Insert name of responsible lead for each 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> |
| | QPI 1: Diagnostic Imaging NMCN to carry out an internal validation study of CT phase timing for quality control purposes. | | | | | | |
| | QPI 1: Diagnostic Imaging NMCN to provide more support/education to sites with below average performance to encourage engagement with MDT process. | | | | | | |
| | QPI 2iii: Diagnostic: Histopathology NMCN to liaise with Pathology to compile an updated list of ICC markers and additional markers to be added to QPI. | | | | | | |

| QPI No. | Action Required | Health Board Action Taken | Timescales | | Lead | Progress/Action Status | Status (see Key) |
|---------|---|---------------------------|------------|-----|------|------------------------|------------------|
| | | | Start | End | | | |
| | QPI 3: Multidisciplinary Team NMCN to provide more support/education to sites with below average performance to encourage engagement with MDT process. | | | | | | |
| | QPI 5: Radiotherapy for Management of Pain NMCN to propose amendment of QPI 5 at the Formal Review currently being undertaken to ensure that the exclusion criteria is excluding the correct cohort. An update to the wording of the QPI is also required to ensure that only patients with uncontrolled pain are included. | | | | | | |
| | QPI 6: Pleural Fluid Management NMCN to propose a formal review change to exclude patients who do not experience symptomatic re-accumulation of pleural effusion after initial fluid aspiration or fluid removal during thoracoscopy. | | | | | | |
| | QPI 6: Pleural Fluid Management Element to be added to the pleural management box | | | | | | |

| QPI No. | Action Required | Health Board Action Taken | Timescales | | Lead | Progress/Action Status | Status (see Key) |
|---------|--|---------------------------|------------|-----|------|------------------------|------------------|
| | | | Start | End | | | |
| | on the MDT form to accurately record cases where pleural management is not required. | | | | | | |