

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

**HepatoPancreatoBiliary Cancers  
National Managed Clinical Network**



# **Audit Report**

## **Report of the 2021 Clinical Audit Data**

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# HPB Cancer QPI Overview

Patients diagnosed Jan - Dec 2021

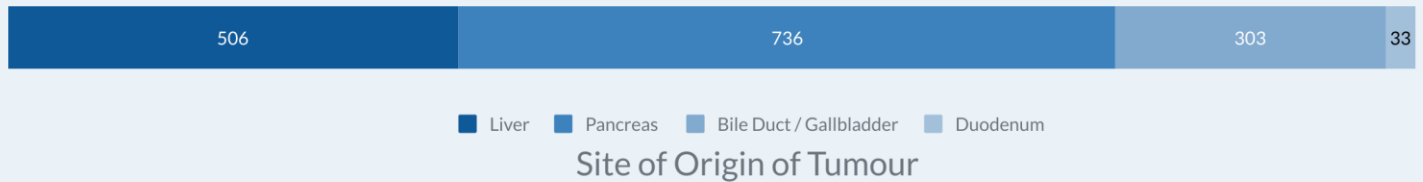
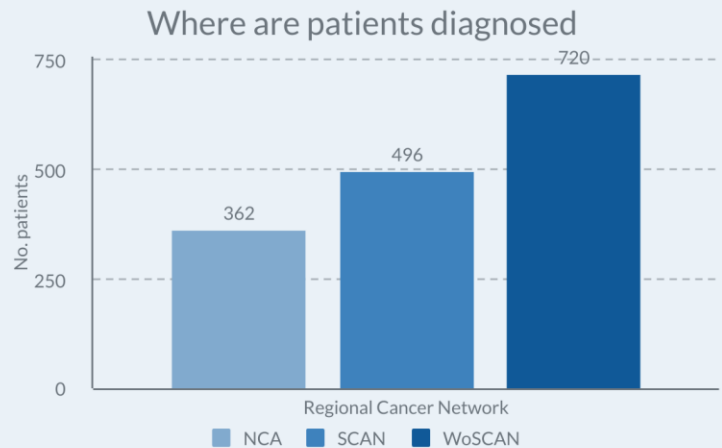
Number of patients **1578**

Median Age **73**

Gender of patients:

Male **55%**

Female **45%**



## Performance (%)

Target Performance 2021

QPI 1: MDT meeting

95%  
92%

QPI 2: Diagnosis and Staging of HCC

(i) 90% 98% (ii) 90% 76% (iii) 90% 65%

QPI 3: Referral to Scottish Liver Transplant Unit

90%  
95%

QPI 4: Palliative Treatment for HCC

40%  
37%

QPI 5: 30 Day Mortality after Curative Treatment for HCC

(i) <5% 0% (ii) <5% 0% (iii) <5% 0%

QPI 5: 90 Day Mortality after Curative Treatment for HCC

(i) <7.5% 0% (ii) <7.5% 0% (iii) <7.5% 0%

QPI 5: 30 Day Mortality after Palliative TACE for HCC

<10%  
1%

QPI 6: Radiological Diagnosis of Pancreatic, Duodenal or Biliary Tract Cancer

95%  
97%

QPI 7: Pathological Diagnosis of Pancreatic, Duodenal or Biliary Tract Cancer

90%  
87%

QPI 10: Lymph Node Yield

15  
22

QPI 11: 30 & 90 Day Mortality following Resection for Pancreatic, Duodenal or Biliary Tract Cancer

30 <5% 0% 90 <7.5% 3%

QPI 12: Volume of Cases per Centre / Surgeon

(i) 11 2 of 5 centres (ii) 4 14 of 23 surgeons

QPI 13: Clinical Trial and Research Study Access

15%  
14%

QPI 15: Access to Oncology Services for Inoperable Pancreatic, Duodenal or Biliary Tract Cancer

50%  
21%

QPI 16: Key Worker

95%  
50%

QPI 17: 30 Day Mortality following treatment for Colorectal Cancer Liver Metastases

(i) <5% 1% (ii) <5% 0%

QPI 17: 90 Day Mortality following treatment for Colorectal Cancer Liver Metastases

(i) <7.5% 2% (ii) <7.5% 3%

### Key Achievements:

- Improvements in referral of appropriate patients to Scottish Liver Transplant Unit

### Areas for Improvement:

- Timely access to oncology services and a key worker for patients across Scotland.

# **Executive Summary**

## **Introduction**

This report contains an assessment of performance of HepatoPancreatoBiliary (HPB) Cancer Services relating to patients diagnosed across Scotland during 2021.

In order to ensure the success of the Cancer Quality Performance Indicators (QPIs) in driving quality improvement in cancer care, QPIs will continue to be assessed for clinical effectiveness and relevance. Formal reviews of the HPB cancer QPIs took place in 2017 and 2020. These clinically led reviews aim to identify potential refinements to the current QPIs and involve key clinicians from each of the Regional Cancer Networks.

## **Results**

A summary of the HPB cancer QPI performance for the 2021 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.

Key
Performance (numerator / denominator)
Below QPI target
- Less than 5 patients included in denominator

QPI	QPI target	Year	NoS	SCAN	WoSCAN	Scotland
QPI 1: Proportion of patients with HPB cancer who are discussed at MDT meeting before definitive treatment.	95%	2021	96% (336/350)	90% (437/483)	91% (636/702)	92% (1409/1535)
		2020	95%	94%	91%	93%
		2019	93%	91%	89%	91%
QPI 2(i) Proportion of patients with HCC who have undergone computerised tomography (CT) or Magnetic Resonance Imaging (MRI).	90%	2021	100% (75/75)	97% (114/118)	99% (167/169)	98% (356/362)
		2020	100%	92%	98%	97%
		2019	98%	96%	99%	98%
QPI 2 (ii) Proportion of patients with HCC who have undergone computerised tomography (CT) or Magnetic Resonance Imaging (MRI) with full information recorded.	90%	2021	92% (69/75)	54% (64/118)	83% (141/169)	76% (274/362)
		2020	78%	58%	78%	72%
		2019	79%	48%	81%	71%
QPI 2 (iii) Proportion of patients with HCC who have undergone computerised tomography (CT) or Magnetic Resonance Imaging (MRI) who are assigned a BCLC Score.	90%	2021	87% (65/75)	31% (36/118)	80% (136/169)	65% (237/362)
		2020	73%	21%	76%	59%
		2019				
*QPI 3: Proportion of patients with HCC who meet the current UK listing criteria for orthotopic liver transplantation referred to the SLTU for consideration of liver transplantation.	90%	2021	100% (10/10)	96% (45/47)	93% (57/61)	95% (112/118)
		2020	100%	100%	78%	88%
		2019	100%	97%	84%	89%
*QPI 4: Proportion of patients with HCC not suitable for treatment with curative intent that undergo specific treatment with palliative intent (TACE, SACT or radiotherapy).	40%	2021	44% (18/41)	29% (22/76)	41% (47/116)	37% (87/233)
		2020	45%	45%	38%	41%
		2019	43%	33%	43%	40%
*†QPI 5a: Proportion of patients with HCC undergoing disease specific treatment who die within 30 days of liver transplant.	< 5%	2021	-	0% (0/7)	-	0% (0/7)
		2020	-	14%	-	14%
		2019	-	0%	-	0%

QPI	QPI target	Year	NoS	SCAN	WoSCAN	Scotland
*†QPI 5a: Proportion of patients with HCC undergoing disease specific treatment who die within 90 days of liver transplant.	< 7.5%	2021	-	0% (0/7)	-	0% (0/7)
		2020	-	17%	-	17%
		2019	-	0%	-	0%
*†QPI 5b: Proportion of patients with HCC undergoing disease specific treatment who die within 30 days of resection.	< 5%	2021	-	0% (0/12)	-	0% (0/13)
		2020	-	0%	-	0%
		2019	0%	0%	-	0%
*†QPI 5b: Proportion of patients with HCC undergoing disease specific treatment who die within 90 days of resection.	< 7.5%	2021	-	0% (0/12)	-	0% (0/13)
		2020	-	0%	-	0%
		2019	20%	0%	-	5%
*†QPI 5c: Proportion of patients with HCC undergoing disease specific treatment who die within 30 days of ablation.	< 5%	2021	-	0% (0/31)	0% (0/24)	0% (0/58)
		2020	-	0%	0%	0%
		2019	-	0%	0%	0%
*†QPI 5c: Proportion of patients with HCC undergoing disease specific treatment who die within 90 days of definitive treatment ablation.	< 7.5%	2021	-	0% (0/29)	0% (0/24)	0% (0/56)
		2020	-	5%	0%	3%
		2019	-	0%	3%	2%
*†QPI 5d: Proportion of patients with HCC undergoing disease specific treatment who die within 30 days of TACE.	< 10%	2021	0% (0/11)	0% (0/32)	4% (1/26)	1% (1/69)
		2020	9%	0%	0%	1%
		2019	8%	0%	0%	1%
QPI 6: Proportion of patients with pancreatic, duodenal or biliary tract cancer who undergo CT of the abdomen prior to first treatment.	95%	2021	98% (250/254)	93% (298/319)	98% (488/498)	97% (1036/1071)
		2020	95%	97%	99%	97%
		2019				
*QPI 7: Proportion of patients with pancreatic, duodenal or biliary tract cancers undergoing non-surgical treatment who have a cytological or histological diagnosis.	90%	2021	78% (40/51)	90% (35/39)	91% (73/80)	87% (148/170)
		2020	94%	89%	90%	91%
	75%	2019	81%	85%	99%	93%

QPI	QPI target	Year	NoS	SCAN	WoSCAN	Scotland
*†QPI 10: Average number of lymph nodes resected and pathologically examined per patient with pancreatic, duodenal or distal biliary tract cancer who undergo pancreatoduodenectomy performed by a specialist centre over a 1 year period.	Average of 15 nodes per patient	2021	19 (305/16)	22 (784/35)	24 (719/30)	22 (1808/81)
		2020	20	21	24	22
		2019	21	22	24	23
*†QPI 11(i): 30-day mortality after surgical resection for pancreatic, duodenal or distal biliary tract cancer.	< 5%	2021	0% (0/17)	0% (0/43)	0% (0/33)	0% (0/93)
		2020	10%	5%	0%	4%
		2019	12%	3%	0%	4%
*†QPI 11(i): 90-day mortality after surgical resection for pancreatic, duodenal or distal biliary tract cancer.	< 7.5%	2021	6 % (1/17)	3% (1/40)	3% (1/29)	3% (3/86)
		2020	10%	5%	8%	8%
		2019	16%	3%	0%	5%
*†QPI 12a: Number of surgical resections for pancreatic, duodenal or distal biliary tract cancer performed by a specialist centre over a 1 year period.	11 per centre per year	2021	3 not met	43	33	2 met 3 not met
		2020	2 met 1 not met	22	39	4 met 1 not met
		2019	1 met 2 not met	34	37	3 met 2 not met
*†QPI 12b: Number of surgical resections for pancreatic, duodenal or distal biliary tract cancer performed by each surgeon over a 1 year period.	4 per surgeon per year	2021	3 met 5 not met	6 met 4 not met	5 met	14 met 9 not met
		2020	3 met 5 not met	3 met 6 not met	5 met 1 not met	11 met 12 not met
		2019	4 met 5 not met	6 met 3 not met	4 met 1 not met	14 met 9 not met
QPI 13: Proportion of patients diagnosed with HPB cancer who are consented for a clinical trial / research study	15%	2021	9% (40/433)	19% (93/479)	14% (115/813)	14% (248/1725)
		2020	4%	6%	11%	8%
		2019	5%	2%	15%	9%
QPI 15: Proportion of patients with pancreatic, duodenal or biliary tract cancer not undergoing surgery who are seen by an oncologist (or offered an oncology clinic appointment) within 6 weeks of initial diagnostic CT scan.	50%	2021	25% (49/200)	31% (69/225)	13% (47/365)	21% (165/790)
		2020	29%	34 %	19%	26%
		2019				

QPI	QPI target	Year	NoS	SCAN	WoSCAN	Scotland
QPI 16: Proportion of patients with HCC who have an identified key worker at the time of referral to the MDT.	95%	2021	91% (68/75)	38% (45/118)	40% (68/169)	50% (181/362)
		2020	87%	44%	25%	42%
		2019				
*†QPI 17a: Proportion of patients with CRLM undergoing curative treatment (resection) who die within 30 days of treatment	< 5%	2021	0% (0/26)	2% (1/55)	0% (0/6)	1% (1/87)
		2020	0%	2%	-	1%
		2019	0%	0%	-	0%
*†QPI 17b: Proportion of patients with CRLM undergoing curative treatment (resection) who die within 90 days of treatment	< 7.5%	2021	4% (1/26)	2% (1/55)	0% (0/6)	2% (2/87)
		2020	0%	8%	-	6%
		2019	3%	0%	-	1%
*†QPI 17a: Proportion of patients with CRLM undergoing curative treatment (ablation) who die within 30 days of treatment	< 5%	2021	0% (0/7)	0% (0/14)	0% (0/9)	0% (0/30)
		2020	0%	10%	0%	3%
		2019	0%	0%	0%	0%
*†QPI 17b: Proportion of patients with CRLM undergoing curative treatment (ablation) who die within 90 days of treatment	< 7.5%	2021	14% (1/7)	0% (0/14)	0% (0/9)	3% (1/30)
		2020	0%	10%	0%	3%
		2019	0%	0%	0%	0%

*\*Small numbers in some Boards/Regions - percentage comparisons over a single year should be viewed with caution.*

*† QPIs reported by Board of surgery / Non-surgical treatment*



## Conclusions and Action Required

Cancer audit data underpins much of the development and service improvement work of the NMCN and regular reporting of activity and performance is a fundamental requirement of an MCN to assure the quality of care delivered. The Scottish HepatoPancreatoBiliary Cancer NMCN (SHPBN) remains committed to improve the quality and completeness of clinical audit data to ensure continued robust performance assessment and the identification of areas for service improvement.

We continue to reach the targets for many of the QPIs each year, which is credit to all the teams for their hard work in developing a consistent service for our patients across the country despite the challenges. It is encouraging to see a significant improvement in performance in some regions; for example referrals to the Scottish Liver transplant unit from WOSCAN. Mortality in the treatment for HCC remains low across Scotland and it is reassuring to see an improvement in mortality for pancreas resections. Surgical volumes remain low in some units and this has been acknowledged, discussed at the SHPBN National M&M meeting and actions to address this are being considered at a regional level.

It is recognised that some QPIs continue to be challenging to meet, specifically the new QPIs introduced last year; 2(iii) (recording of BLCL score), QPI 15 (access to oncological services) and QPI 16 (key worker). The QPI results have highlighted recording issues for BLCL, a lack of resources for key workers in some NHS Boards and weakness' in pathways for oncological referral. These issues have been discussed within each region and over the next few years it is hoped that there will be improvements in these areas. Specifically, a Scottish Government funded improvement project to coordinate HPB cancer patient care is currently being rolled out; this is likely to result in improvements across the HPB patient pathway from early 2023.

The Network continues to work collaboratively with a multidisciplinary approach to meet the QPI targets, and provide the highest quality of care to all our HPB cancer patients across Scotland.

### Action Required:

- **All NHS Boards to ensure that the extent of metastatic disease spread is clearly recorded for all patients and accessible to cancer audit staff.**
- **SCAN NHS Boards to ensure that all HCC patients having CT or MRI imaging prior to first treatment are assigned a BCLC.**
- **All surgical centres to ensure ongoing prospective review of the surgical volumes of individual surgeons to ensure an adequate number of surgical procedures each year.**
- **All MDTs to review decision making processes around referral of patients to oncology services and report findings to NMCN.**

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.**

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 coordinate regional actions across multiple tumour groups where appropriate. 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).

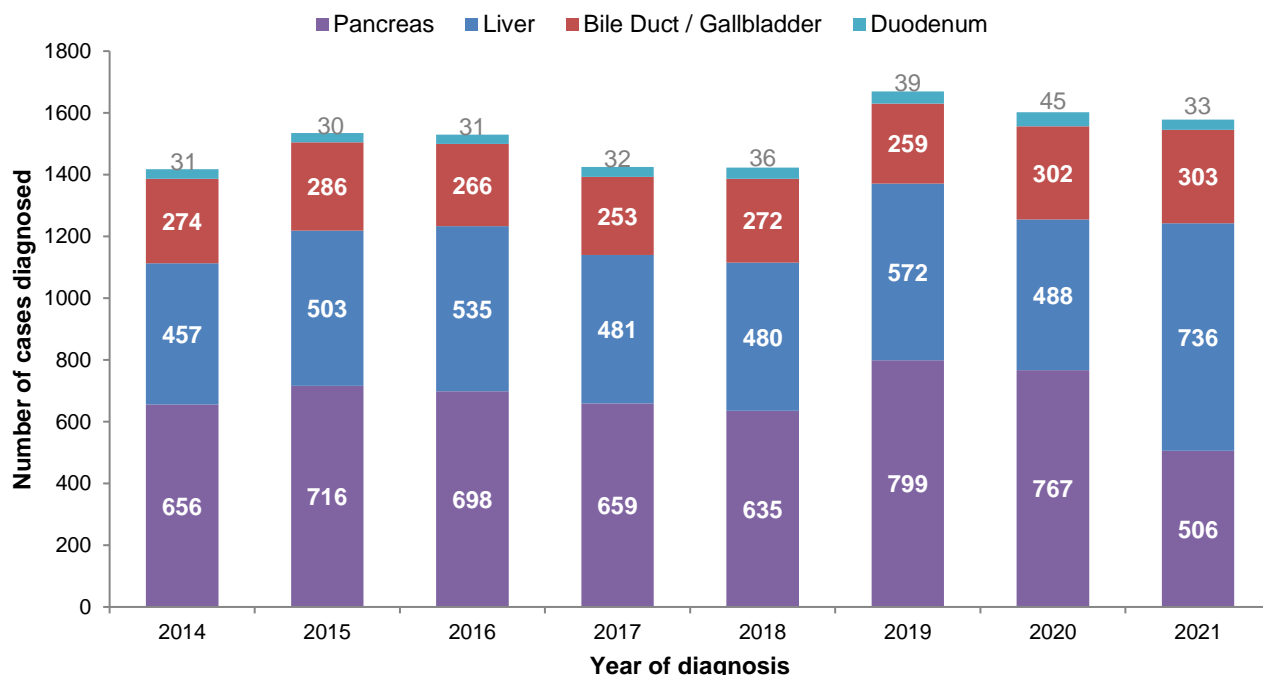
# 1. Introduction

The National Managed Clinical Network (NMCN) for HepatoPancreatoBiliary (HPB) Cancers launched in 2005 with the aim of providing quality and equitable care for all patients in Scotland. The purpose of this report is to present an assessment of performance of HPB Cancer Services relating to patients diagnosed across Scotland during 2021 through clinical audit data and to provide a summary of performance against the HPB cancer Quality Performance Indicators (QPIs). Regular reporting of activity and performance is a fundamental requirement of an NMCN to assure the quality of care delivered across the country and these audit data underpin much of the regional and national service improvement and development work of the network.

In order to ensure the success of the National Cancer QPIs in driving quality improvement in cancer care across NHS Scotland it is critical that the QPIs continue to be clinically relevant and focus on areas which will result in improvements to the quality of patient care. A programme of formal reviews of all QPIs was implemented whereby all tumour specific QPIs were reviewed following three years of comparative reporting. Formal reviews of the HPB cancer QPIs were undertaken in 2017 and 2020. Performance reported within this report was measured against v4.0 of the HPB cancer QPIs<sup>1</sup>.

# 2. Background

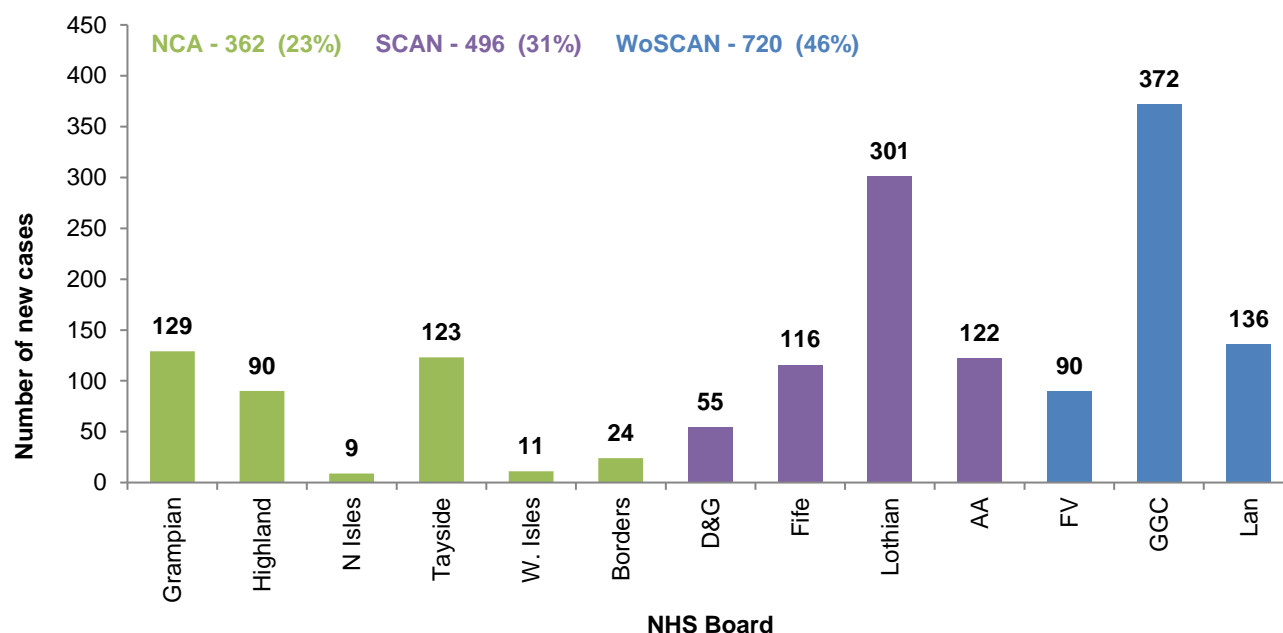
HPB cancers are a rare group of cancers. In 2021, the audit identified 1,578 patients diagnosed with a new primary cancer of the liver, pancreas, bile duct, gallbladder or duodenum in Scotland. Pancreatic cancer accounted for almost half of all HPB cancer diagnoses (46.6%). The figure below illustrates the proportion of new cases of each HPB cancer type diagnosed in Scotland over the last eight years.



Numbers of new cases of each HPB cancer type diagnosed in Scotland from 2014 to 2021.

The distribution of the 1,578 patients diagnosed in 2021 across the fourteen Scottish NHS Boards is presented below. The West of Scotland Cancer Network (WoSCAN) is the most populous of the three Regional Cancer Networks in Scotland and, with 720 patients diagnosed in WoS in 2021, represents almost half of all HPB cancer diagnoses in Scotland (45.6%). NHS Greater Glasgow and Clyde

diagnosed the greatest number of patients, followed by NHS Lothian. This reflects the population distribution in Scotland, where these are the two most heavily populated NHS Boards<sup>2</sup>.



**Number of new cases diagnosed with HPB cancer within each NHS Board across Scotland in 2021.**

The table below details the five HPB cancer centres in Scotland. These are considered the centres for specialist treatment, which includes surgery, interventional radiology (ablation and trans-arterial chemoembolisation (TACE)) and systemic anti-cancer therapy (SACT). Patients may receive diagnostic and palliative care elsewhere, usually in their local hospital, however most patients are referred to one of the five centres for specialist management. Additionally, the Scottish Liver Transplant Unit (SLTU) is located in the Royal Infirmary of Edinburgh where all liver transplant cases in Scotland are referred, this being one of the treatment options in the management of patients with primary liver cancer.

**Summary of HPB Cancer treatment provided by specialist centres in Scotland.**

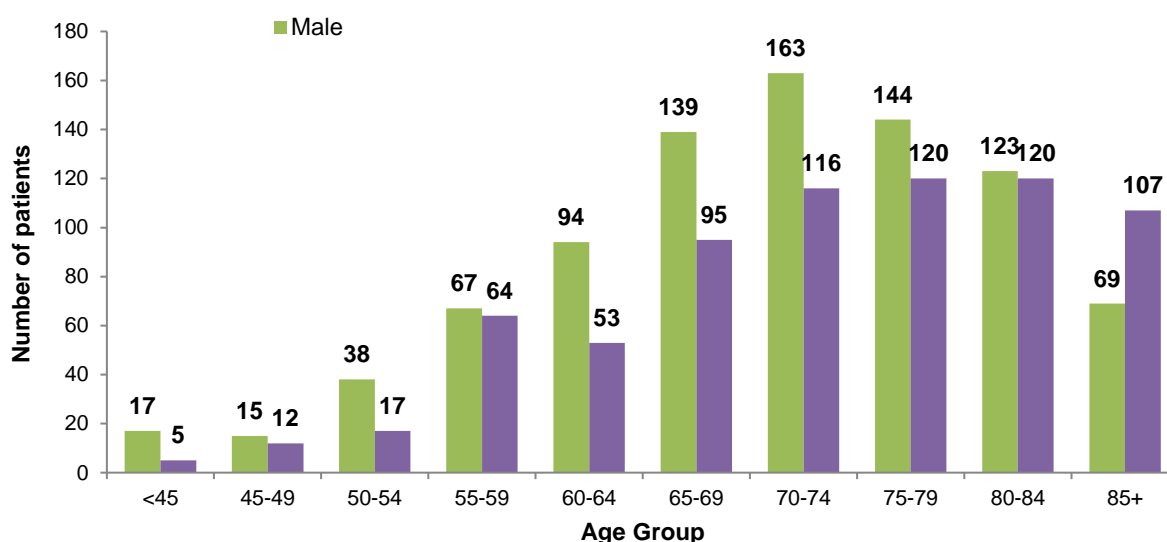
Centre	Constituent Hospital(s)
Aberdeen	Aberdeen Royal Infirmary
Dundee	Ninewells Hospital
Edinburgh*	Royal Infirmary of Edinburgh (RIE – surgery, ablation and trans-arterial chemoembolisation (TACE)) and Western General Hospital (WGH – systemic anti-cancer therapy (SACT) and radiotherapy)
Glasgow	Glasgow Royal Infirmary (GRI – surgery and TACE), Gartnavel General Hospital (GGH – ablation), Queen Elizabeth University Hospital (QEUH – TACE) and Beatson West of Scotland Cancer Centre (BWoSCC – SACT and radiotherapy)
Inverness	Raigmore Hospital

\* NB as well as patients diagnosed in SCAN, patients diagnosed in NHS Forth Valley (WoSCAN) are also referred to the Edinburgh HPB MDT

In Scotland, liver cancer is the eleventh most common cancer in males and eighteenth in females<sup>3</sup>. The incidence of liver cancer is rising and the last decade has seen the increases in incidence of 10% and 16% in males and females respectively<sup>3</sup>. The percentage frequency of liver cancer is however relatively low at 1.9% of all cancer types<sup>3</sup>. Liver cancer was ranked as the seventh most common cause of death from cancer in 2020, and the 10-year percentage change in mortality rates show considerable increases of 37% and 39% for males and females respectively.

Pancreatic cancer is the tenth most common cancer in males and eighth in females<sup>3</sup>. The incidence of pancreatic cancer has risen in male patients in the last decade by 5% in Scotland, although no change in incidence was apparent for females during this time<sup>3</sup>. Whilst pancreatic cancer is relatively rare (accounting for 3% of all cancers), it is the fifth most common cause of death from cancer in Scotland<sup>3</sup>. Pancreatic cancers tend to present at an advanced stage and are less amenable to treatment. As a result of this, survival is poor. There has been an improvement in the 1-year (Net age-standardised) survival in the last twenty years however survival rates remain low at 25.4% in males and 15.5% in females for patients diagnosed in 2013-2017; 5-year net relative survival is 5.9% in males and 4.5% in females<sup>4</sup>.

HPB cancers occur most frequently later in life. The figure below illustrates the number of new cases in 2021 by age group and sex. The incidence of HPB cancers is higher in males in most age groups; however as women live longer than men, the total number of cases diagnosed in women aged 85 years or more is greater than for males. Although the majority of cases do occur in older individuals for both sexes, it is noted that approximately a quarter of HPB cancers were diagnosed in individuals under the age of 65 years (24.2%).



Number of new cases diagnosed with HPB cancer in Scotland in 2021 by age group and sex.

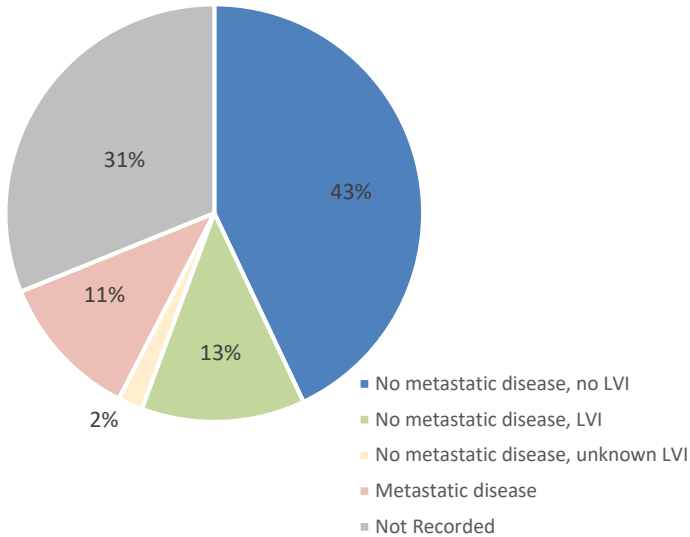
## Stage

Proportion of patients that had metastatic disease is shown in the charts below; for HCC information on lymphovascular invasion is also included where available. It should be noted that there is considerable variation in the proportion of patients with information on metastatic disease recorded between NHS Boards, with some NHS Boards recording information for nearly all patients and others recording for less than 20% of patients.

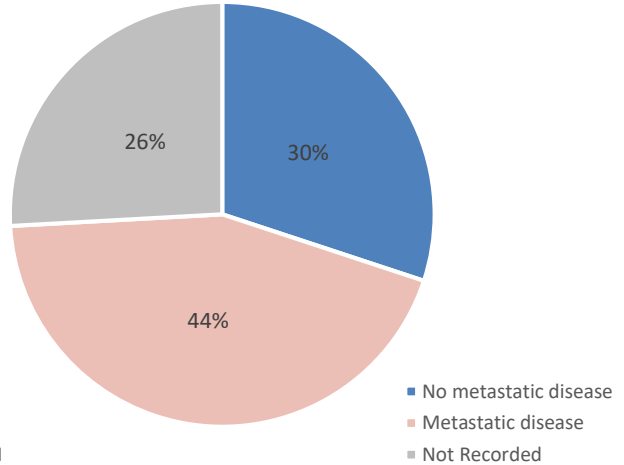
## Action Required:

- **All NHS Boards to ensure that the extent of metastatic disease spread is clearly recorded for all patients and accessible to cancer audit staff.**

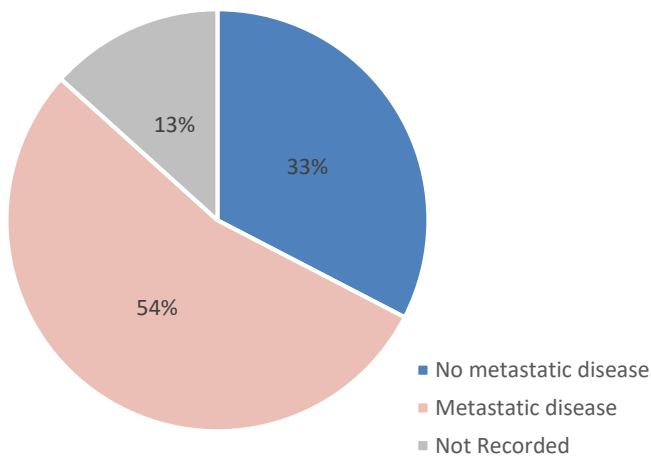
HCC patients



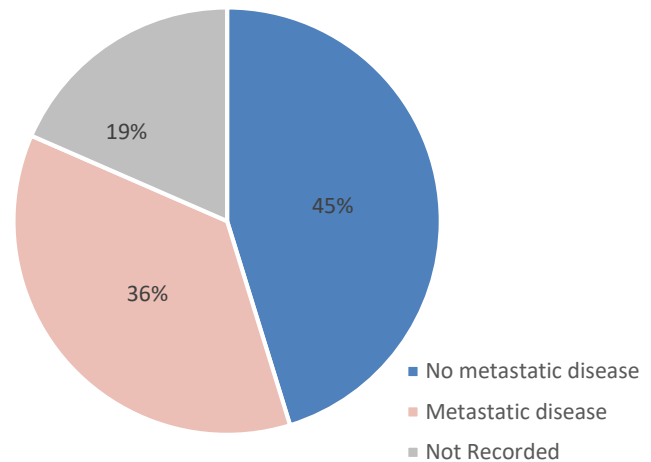
Intrahepatic bile duct cancer patients



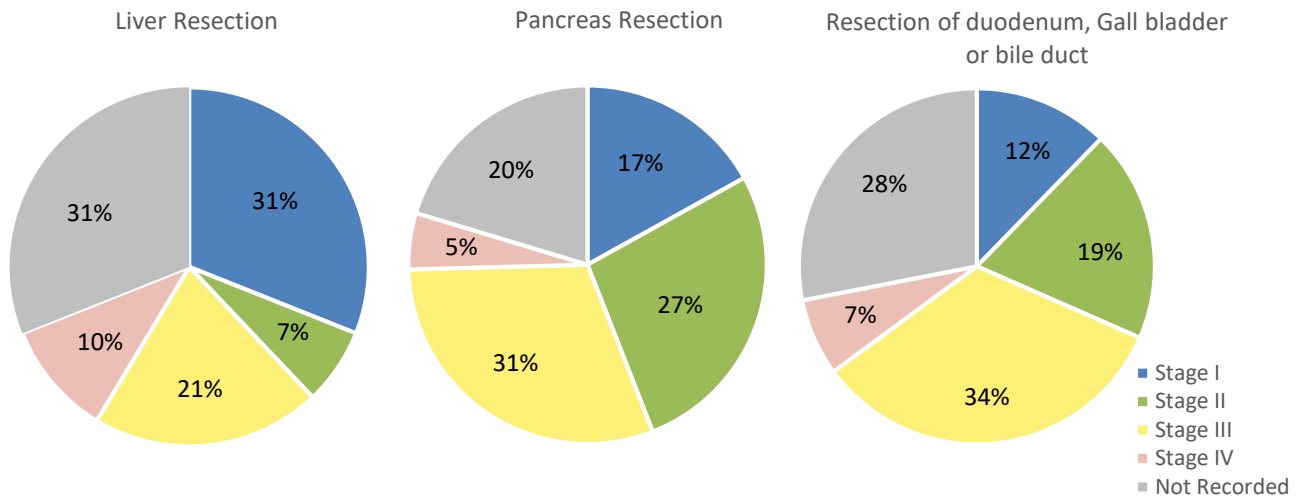
Pancreatic cancer patients



Duodenal, bile duct and gall bladder cancer patients

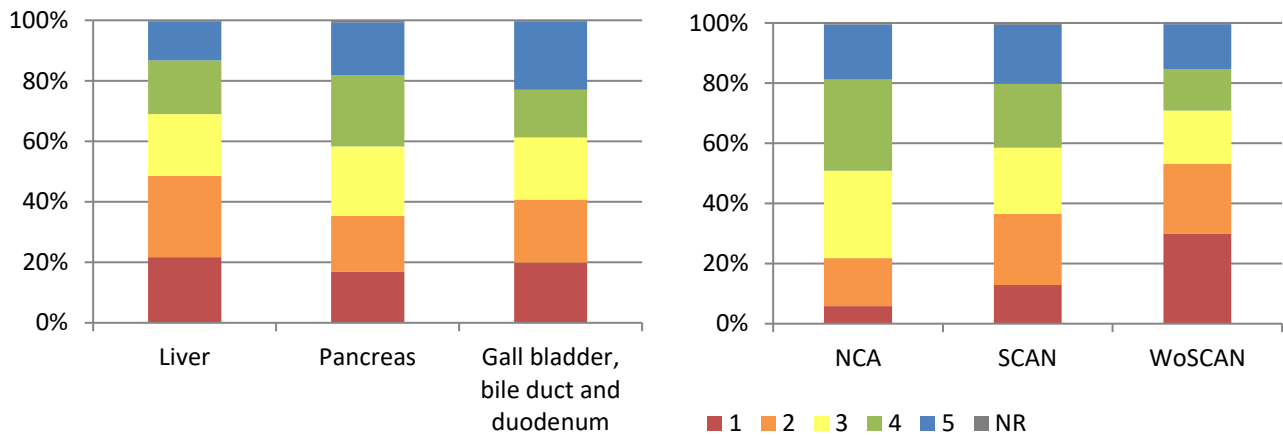


TNM staging for those patients that had surgical resection is shown below. For the majority of surgical patients with stage not recorded the extent of metastatic spread (final M stage) was the only information missing to allow stage to be calculated, although for nearly half of patients the extent of regional lymph node metastases could not be assessed or was not recorded, which contributed to the lack of completeness of these data.



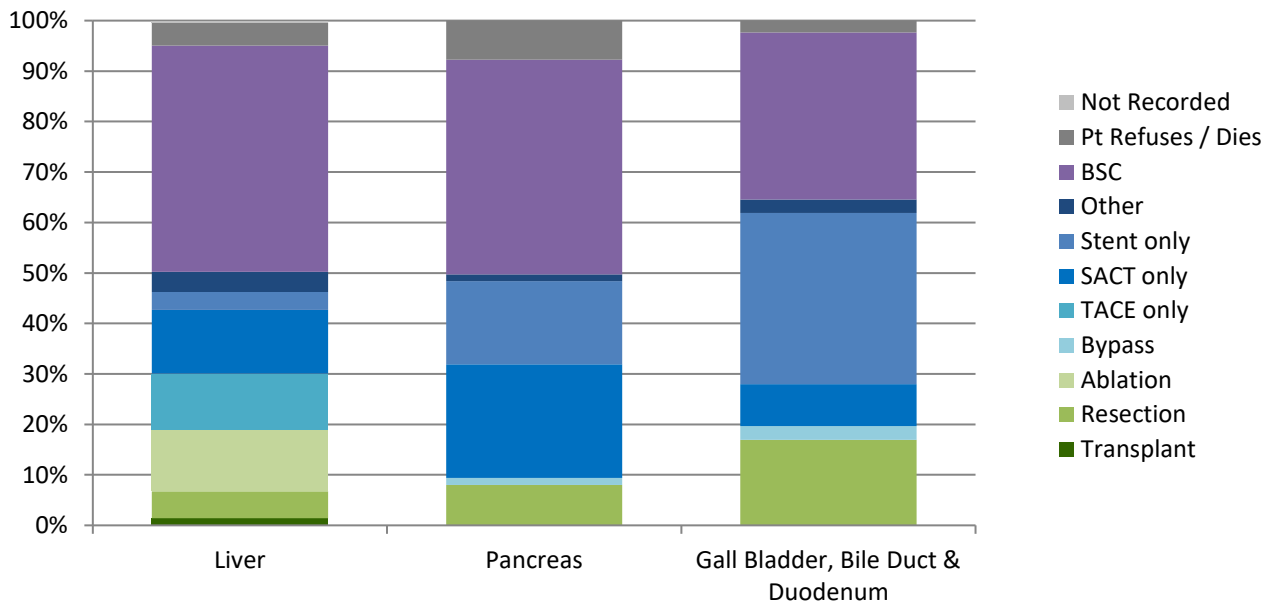
**Deprivation**

The figures below shows the Scottish Index of Multiple Deprivation (SIMD) 2020 quintiles for patients diagnosed with HPB cancer comparing site of disease and region of diagnosis; with 1 equating to the most deprived postcodes and 5 equating to the least deprived.



**Treatment**

Figure 5 shows the type of treatment HPB cancer patients receive across Scotland during their first episode of care following diagnosis. Overall 13% of all patients received treatment with curative intent (transplant, resection or ablation), 40% received palliative treatment while a further 47% received no active treatment.



### 3. Methodology

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

## 4. Results and Action Required

Results for each QPI are shown in detail in the following sections. Data are presented by location of diagnosis and illustrate NHS Board or treatment centre performance against each target and overall regional performance for each performance indicator.

Data are presented by location of diagnosis or treatment. 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 tables impacted by this restricted data are denoted with a dash (-). An asterisk (\*) is used to specify a denominator of zero. Any commentary provided by NHS Boards relating to the impacted indicators will however be included as a record of continuous improvement. Specific regional and NHS Board actions have been identified to address issues highlighted through the data analysis.

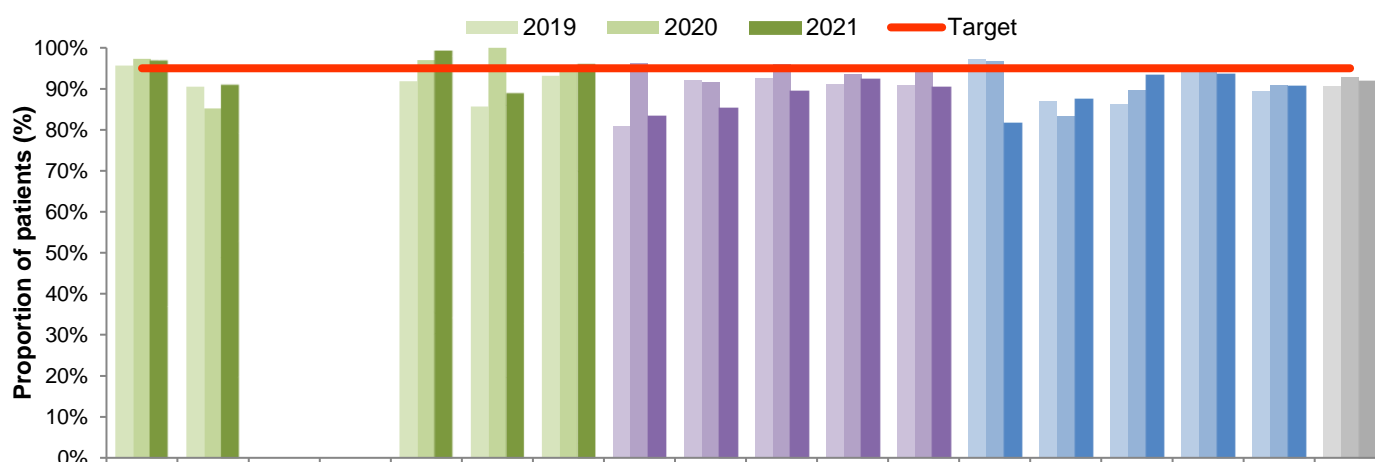


## QPI 1: Multi-Disciplinary Team (MDT) Meeting

Evidence suggests that patients with cancer who are managed through a multi-disciplinary team (MDT) experience better outcomes and improved satisfaction with care. The tolerance within the target allows for patients who need urgent treatment<sup>1</sup>.

<b>QPI 1:</b>	Patients with HPB cancer should be discussed by an MDT prior to definitive treatment.
<b>Description:</b>	Proportion of patients with HPB cancer who are discussed at MDT meeting before definitive treatment.
<b>Numerator:</b>	Number of patients with HPB cancer discussed at the MDT before definitive treatment.
<b>Denominator:</b>	All patients with HPB cancer.
<b>Exclusions:</b>	Patients who died before first treatment.
<b>Target:</b>	95%

Four of the fourteen NHS Boards met the 95% target, all within the North of Scotland; the target was not met at a national level and was only met by one region, NCA. The overall national performance was similar to previous years with 91.8% of patients being discussed at MDT before definitive treatment.



2021 data	Grampian	Highland	Orkney	Shetland	Tayside	W Isles	NCA	Borders	D&G	Fife	Lothian	SCAN	A&A	Forth Valley	GGC	Lanarkshire	WoSCAN	Scotland
Numerator	123	80	-	-	117	8	336	20	46	102	269	437	97	76	346	117	636	1409
Denominator	127	88	-	-	118	9	350	24	54	114	291	483	119	87	371	125	702	1535
Performance (%)	96.9	90.9	-	-	99.2	88.9	96.0	83.3	85.2	89.5	92.4	90.5	81.5	87.4	93.3	93.6	90.6	91.8

NHS Boards not achieving the target have reviewed patients not discussed at MDT before definitive treatment; the main reason for patients not meeting the QPI was that patients were considered to be for supportive care only and either did not require MDT discussion or had stent insertion to relieve symptoms prior to MDT discussions. Additional patients did not meet the QPI due to dying shortly after

diagnosis, HPB cancer being an incidental finding following surgery or patients requiring emergency treatment prior to MDT discussion.

Performance in a number of NHS Boards was consistently below target; NHS Ayrshire & Arran and NHS Forth Valley noted that most patients not meeting the QPI had stent insertion prior to MDT discussion, while for other NHS Boards most patients not meeting the QPI were not discussed at MDT, were incidental findings or patients required emergency treatment. Analysis indicates that patients wait a median of 12 days between being diagnosed and being discussed at MDT; while there is some variation in this time between NHS Boards there was no relationship between how long patients wait for MDT discussion and NHS Board performance against this QPI.

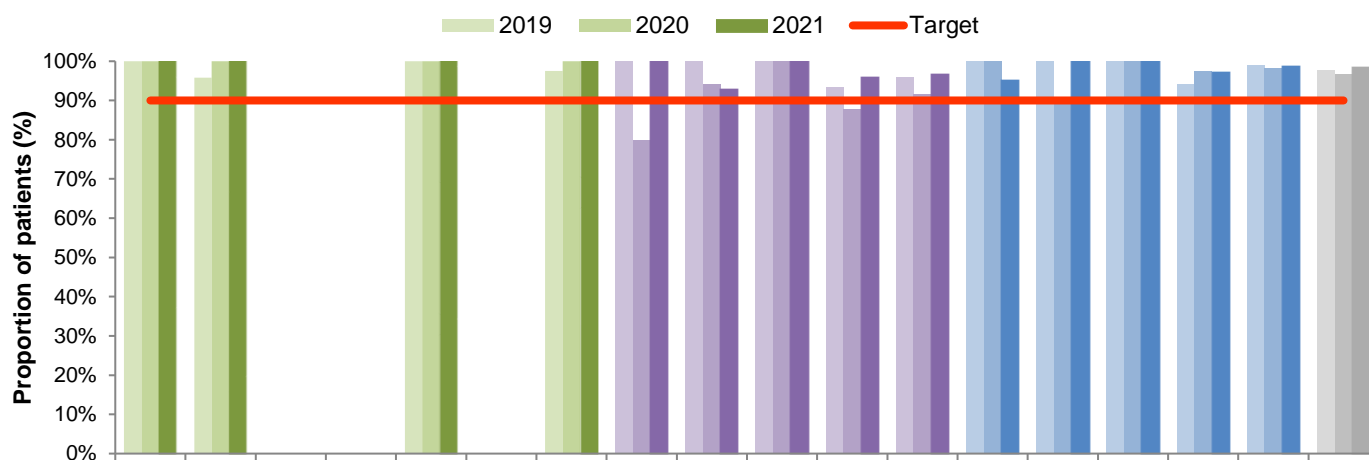
The MCN is assured by these data that, in the main, patients undergoing active treatment are discussed and considered by the MDT. While it is accepted that there will be times when it is not possible or appropriate for patients to be discussed before treatment because of the need for urgent treatment or where HPB cancer diagnosis is an incidental finding of surgery, NHS Boards should continue to encourage clinicians to refer all patients to the MDT in a timely manner, even where no active treatment is being pursued.

## QPI 2: Diagnosis and Staging of HCC

The management of Hepatocellular Carcinoma (HCC) is determined by both the stage of HCC and the presence or severity of underlying chronic liver disease<sup>1</sup>. Complete information is required to enable correct management decisions to be made by the multi-disciplinary team (MDT), such as the location, number and size of tumours. The 90% target set for QPI 2 accounts for the fact that some patients may have significant co-morbidities and therefore may not be fit for investigation and/or treatment<sup>1</sup>.

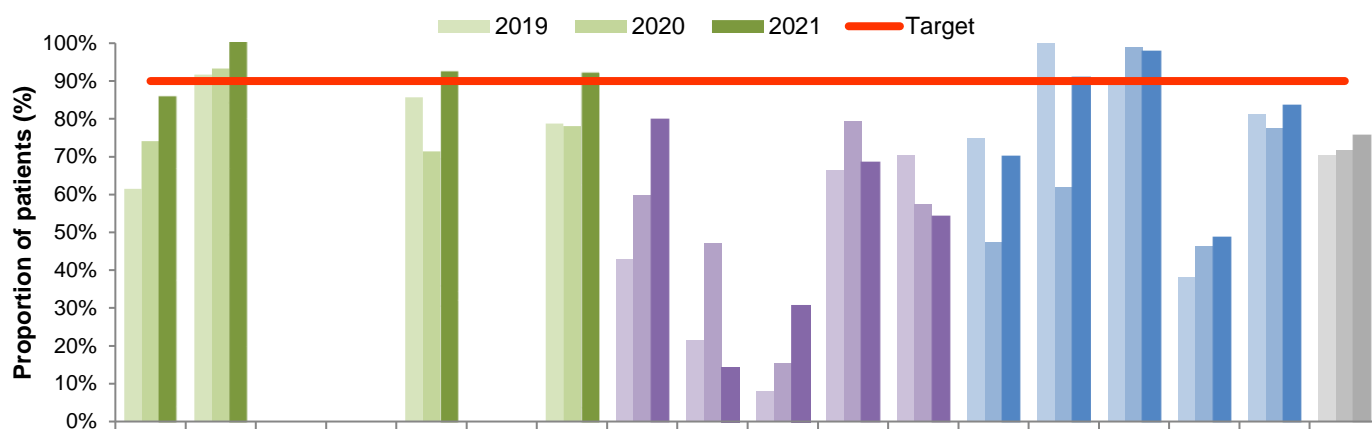
<b>QPI 2:</b>	Patients with Hepatocellular Carcinoma (HCC) should be appropriately diagnosed and staged.
<b>Description:</b>	Proportion of patients with HCC who have undergone computerised tomography (CT) or Magnetic Resonance Imaging (MRI) and with full information recorded.
<b>Numerator:</b>	(i) Number of patients with HCC undergoing either CT or MRI. (ii) Number of patients with HCC undergoing either CT or MRI with full information recorded. (iii) Number of patients with HCC undergoing either CT or MRI prior to first treatment who are assigned a BCLC Score.
<b>Denominator:</b>	All patients with HCC.
<b>Exclusions:</b>	No exclusions.
<b>Target:</b>	90%

Across Scotland 98.3% of patients with HCC had either a CT or MRI, meeting the 90% target. Twelve of the thirteen NHS Boards with patients diagnosed with HCC in 2021 met this target as did all three regions.



2021 data	Grampian	Highland	Orkney	Shetland	Tayside	W Isles	NCA	Borders	D&G	Fife	Lothian	SCAN	A&A	Forth Valley	GGC	Lanarkshire	WoSCAN	Scotland
Numerator	28	18	-	-	26	0	75	5	13	26	70	114	19	22	92	34	167	356
Denominator	28	18	-	-	26	0	75	5	14	26	73	118	20	22	92	35	169	362
Performance (%)	100	100	-	-	100	*	100	100	92.9	100	95.9	96.6	95.0	100	100	97.1	98.8	98.3

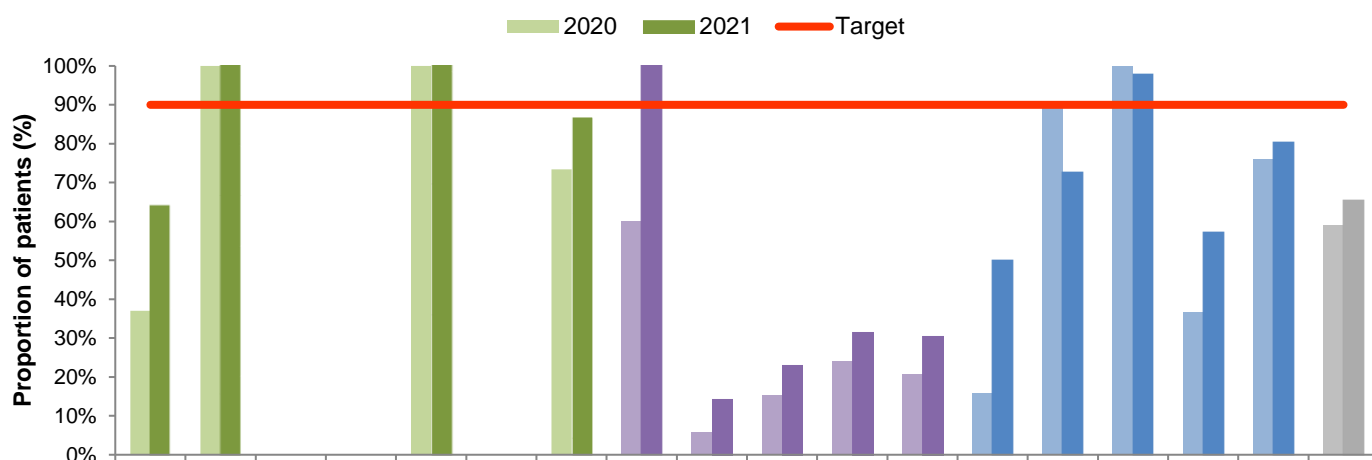
Specification (ii) considers the proportion of patients that have a CT or MRI imaging where full information is provided within the radiology report. Across Scotland 75.7% of patients with HCC had CT or MRI imaging where all required information was included within the report, below the target of 90%. Six of the thirteen Boards with patients with HCC cancer met this target, as did one region, NCA.



2021 data	Grampian	Highland	Orkney	Shetland	Tayside	W Isles	NCA	Borders	D&G	Fife	Lothian	SCAN	A&A	Forth Valley	GGC	Lanarkshire	WoSCAN	Scotland
Numerator	24	18	-	-	24	0	69	4	2	8	50	64	14	20	90	17	141	274
Denominator	28	18	-	-	26	0	75	5	14	26	73	118	20	22	92	35	169	362
Performance (%)	85.7	100	-	-	92.3	*	92.0	80.0	14.3	30.8	68.5	54.2	70.0	90.9	97.8	48.6	83.4	75.7

Review of patients not meeting specification (ii) indicates incomplete recording of the Child’s Pugh score and the extent vascular invasion accounted for many patients not meeting this QPI. The HCC referral forms were updated in 2020 in all surgical centres to require referring clinicians to record the essential data points for this QPI; referring clinicians should ensure that these forms are completed fully. A number of measures have been implemented to improve recording including MDTs calculating Child Pugh score and vascular invasion being confirmed by a Specialist Radiologist during MDT where referrers are unable to provide complete information, which is likely to have resulted in some of the improvements seen in 2021. Further, a Scottish Government funded improvement project to coordinate HPB cancer patient care is currently being rolled out; this is likely to result in improvements in referral information recording for patients being diagnosed from early 2023.

Specification (iii) considers the proportion of patients that have a CT or MRI imaging prior to first treatment who are assigned a BCLC Score. Across Scotland 65.5% of patients were assigned a BCLC Score, below the target of 90%. Six of the thirteen Boards with patients with HCC cancer met this target, it was not achieved by any of the three regions. As in 2020, performance in SCAN considerably lower than in other regions.



2021 data	Grampian	Highland	Orkney	Shetland	Tayside	W Isles	NCA	Borders	D&G	Fife	Lothian	SCAN	A&A	Forth Valley	GGC	Lanarkshire	WoSCAN	Scotland
Numerator	18	18	-	-	26	0	65	5	2	6	23	36	10	16	90	20	136	237
Denominator	28	18	-	-	26	0	75	5	14	26	73	118	20	22	92	35	169	362
Performance (%)	64.3	100	-	-	100	*	86.7	100	14.3	23.1	31.5	30.5	50.0	72.7	97.8	57.1	80.5	65.5

This is the second year of reporting of this specification and modest improvements in performance can be seen across many NHS Boards and all regions. In 2020 BCLC score was incorporated into the HCC referral forms by all 5 centres however Child Pugh score is required to calculate BCLC and therefore lack of recording of Child Pugh score, which is required to meet specification (ii), will also impact on performance against this specification. As for specification (ii), a Scottish Government funded improvement project to coordinate HPB cancer patient care is currently being rolled out and is anticipated to result in improvements in the recording of Child Pugh score and BCLC score in future years.

**Action Required:**

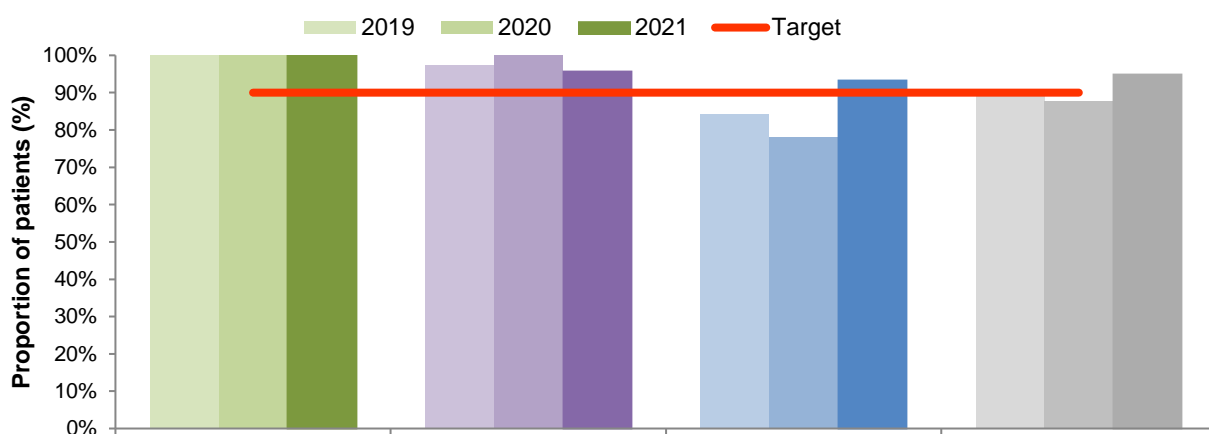
- **SCAN to ensure that all HCC patients having CT or MRI imaging prior to first treatment are assigned a BCLC.**

### QPI 3: Referral to Scottish Liver Transplant Unit

The Scottish Liver Transplant Unit (SLTU) was established in 1992 at the Royal Infirmary in Edinburgh and is the specialist centre for liver transplantation in Scotland. Liver transplantation is associated with good long term outcome in selected patients with HCC<sup>1</sup>. All patients with early HCC should be considered for liver transplantation and there should be equity of access to liver transplantation across Scotland<sup>1</sup>. The current UK listing criteria are well validated selection criteria based on tumour number and size. Full details are published within the HPB QPI document<sup>1</sup>.

<b>QPI 3:</b>	Patients with early HCC should be referred for consideration of liver transplantation.
<b>Description:</b>	Proportion of patients with HCC who meet the current UK listing criteria for orthotopic liver transplantation referred to the SLTU for consideration of liver transplantation.
<b>Numerator:</b>	Number of patients with HCC meeting the UK listing criteria that are referred to SLTU.
<b>Denominator:</b>	All patients with HCC meeting UK listing criteria <sup>1</sup> (as defined by NHS Blood and Transplant).
<b>Exclusions:</b>	<ul style="list-style-type: none"> <li>• Patients who refuse treatment.</li> <li>• Patients with evidence of vascular invasion.</li> <li>• Patients with extrahepatic disease.</li> </ul>
<b>Target:</b>	90%

Across Scotland 94.9% of patients with HCC who met the UK listing criteria were referred to SLTU in 2021, meeting the target of 90%. National improvement in performance against this measure is a result of the considerable improvement in performance in WoSCAN, where the target has been met for the first time since reporting began in 2013. Results for this QPI are reported by region rather than by NHS Board due to the small numbers of patients included for many of the Boards.



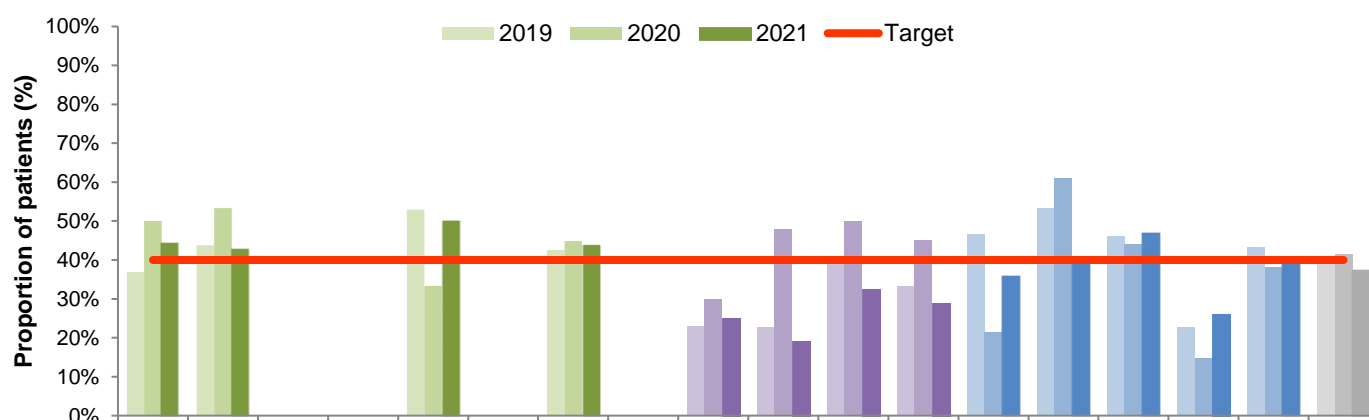
2021 data	NCA	SCAN	WoSCAN	Scotland
Numerator	10	45	57	112
Denominator	10	47	61	118
Performance (%)	100%	95.7%	93.4%	94.9%

## QPI 4: Palliative Treatment for HCC

Trans-arterial chemoembolisation (TACE) and Systemic Anti-Cancer Therapy (SACT) are palliative therapies which have been demonstrated to improve survival in patients with HCC that are not suitable for treatments with curative intent<sup>1</sup>. Historically, radiotherapy has not been used widely for the treatment of HCC due to the risk of radiation induced liver damage (RILD). However, recent technological advances in radiotherapy targeting have allowed it to become a viable treatment option for HCC<sup>6</sup>. The target within this QPI is set at 40% and accounts for the fact that some patients will have significant co-morbidities or a fitness level which means that TACE, SACT or radiotherapy are not appropriate<sup>1</sup>.

<b>QPI 4:</b>	Patients with Hepatocellular Carcinoma (HCC) who are not suitable for curative treatment should receive palliative treatment.
<b>Description:</b>	Proportion of patients with HCC not suitable for treatment with curative intent (liver transplantation, resection or ablative therapies) that undergo specific treatment with palliative intent (TACE, SACT or radiotherapy).
<b>Numerator:</b>	Number of patients with HCC not undergoing treatment with curative intent who receive TACE, SACT or radiotherapy.
<b>Denominator:</b>	All patients with HCC not undergoing treatment with curative intent (liver transplantation, resection or ablative therapies).
<b>Exclusions:</b>	<ul style="list-style-type: none"> <li>• Patients who refuse treatment.</li> <li>• Patients with decompensated chronic liver disease (Child-Pugh Grade C).</li> </ul>
<b>Target:</b>	40%

Of the 233 patients diagnosed with HCC across Scotland in 2021 and not undergoing treatment with curative intent, 87 (37.3%) received palliative treatment; therefore the QPI target of 40% was not met at a national level.



2021 data	Grampian	Highland	Orkney	Shetland	Tayside	W Isles	NCA	Borders	D&G	Fife	Lothian	SCAN	A&A	Forth Valley	GGC	Lanarkshire	WoSCAN	Scotland
Numerator	4	6	0	-	8	0	18	-	2	4	14	22	5	6	30	6	47	87
Denominator	9	14	0	-	16	0	41	-	8	21	43	76	14	15	64	23	116	233
Performance (%)	44.4	42.9	*	-	50.0	*	43.9	-	25.0	19.0	32.6	28.9	35.7	40.0	46.9	26.1	40.5	37.3

Where Boards have not met the target, cases have been reviewed. Patients not meeting the QPI were discussed at the MDT and for the vast majority of these, palliative treatment was not considered appropriate due to patient frailty and comorbidities. Small numbers of patients died before treatment or were for watchful waiting. Due to late presentation of disease and high levels of co-morbidity this QPI target is challenging to meet; the establishment of awareness campaigns aimed at encouraging improved general health and more specifically to promote early presentation of HPB cancer would likely result in an increase in the proportion of patients being suitable for treatment, both curative and palliative. While the majority of the patients that did not have palliative treatment were discussed at an MDT at one of the 5 HPB surgical centres, some were only discussed at local MDTs; primarily for patients where discussion at a regional MDT was not necessary. Performance against this QPI will continue to be reviewed, as will the extent of discussion of patients at an MDT within one of the surgical centres.

It was noted that the lack of recording of Childs Pugh score for 35 of the patients included within this QPI means that some patients with decompensated chronic liver disease (Child Pugh Grade C) may have been erroneously included within the measure, potentially lowering performance. Continued efforts to improve recording of Child Pugh score (QPI 2(ii)) should result in improved reporting against this QPI in future years.



## QPI 5: 30 and 90 Day Mortality after Curative or Palliative Treatment for HCC

Disease specific interventions for HCC are delivered with either curative (transplant, resection, ablation) or palliative (TACE) intent. In either case, treatments should be performed safely with low rates of mortality and should not be undertaken in futile situations<sup>1</sup>.

<b>QPI 5:</b>	30-day and 90-day mortality following treatment for Hepatocellular Carcinoma (HCC) with curative or palliative intent.
<b>Description:</b>	Proportion of patients with HCC undergoing disease specific treatment, either curative (liver transplantation, resection or ablation) or palliative (Trans-arterial chemoembolisation (TACE)), who die within 30 or 90 days of definitive treatment.
<b>Numerator:</b>	Number of patients with HCC undergoing curative or palliative treatment that die within 30 or 90 days of definitive treatment (90-day mortality measured for curative treatments only).
<b>Denominator:</b>	All patients with HCC undergoing disease specific treatment (liver transplant, resection, ablation or TACE)
<b>Exclusions:</b>	No exclusions
<b>Target:</b>	<p><b>Curative:</b> 30 days &lt;5% 90 days &lt;7.5%</p> <p><b>Palliative:</b> 30 days &lt;10%</p>

National mortality figures for 2019 to 2021 are presented in the table below by treatment type. Data are not displayed graphically and data for the 3 surgical centres in the North of Scotland (Aberdeen, Inverness and Dundee) are aggregated due to the small numbers of patients included within the measures. For curative treatments no patients died within 30 or 90 days of treatment in 2021. Mortality levels were well within the targets of less than 5% for 30 day mortality and less than 7.5% for 90 day mortality. One patient (1.4%) died within 30 days of receiving palliative TACE, well within the target of less than 10% of patients.

Liver Transplant		Aberdeen, Inverness and Dundee 2021	Edinburgh 2021	Glasgow 2021	Scotland 2021	Scotland 2020	Scotland 2019
30 day mortality Target < 5%	Numerator	0	0	0	0	1	0
	Denominator	0	7	0	7	7	10
	<b>Performance (%)</b>	*	0%	-	0%	14.3%	0%
90 day mortality Target < 7.5%	Numerator	0	0	0	0	1	0
	Denominator	0	7	0	7	6	10
	<b>Performance (%)</b>	*	0%	-	0%	16.7%	0%

Resection		Aberdeen, Inverness and Dundee 2021	Edinburgh 2021	Glasgow 2021	Scotland 2021	Scotland 2020	Scotland 2019
30 day mortality Target < 5%	Numerator	*	0	0	0	0	0
	Denominator	*	12	0	13	8	19
	<b>Performance (%)</b>	*	0%	-	0%	0%	0%
90 day mortality Target < 7.5%	Numerator	*	0	0	0	0	1
	Denominator	*	12	0	13	8	19
	<b>Performance (%)</b>	*	0%	-	0%	0%	5.3%

Ablation		Aberdeen, Inverness and Dundee 2021	Edinburgh 2021	Glasgow 2021	Scotland 2021	Scotland 2020	Scotland 2019
30 day mortality following Ablation Target < 7.5%	Numerator	*	0	0	0	0	0
	Denominator	*	31	24	58	38	50
	<b>Performance (%)</b>	*	0%	0%	0%	0%	0%
90 day mortality following Ablation Target < 5%	Numerator	*	0	0	0	1	1
	Denominator	*	29	24	56	37	49
	<b>Performance (%)</b>	*	0%	0%	0%	2.7%	2.0%

TACE		Aberdeen, Inverness and Dundee 2021	Edinburgh 2021	Glasgow 2021	Scotland 2021	Scotland 2020	Scotland 2019
30 day mortality following TACE Target < 10%	Numerator	0	0	1	1	1	1
	Denominator	11	32	26	69	84	91
	<b>Performance (%)</b>	0%	0%	3.8%	1.4%	1.2%	1.1%

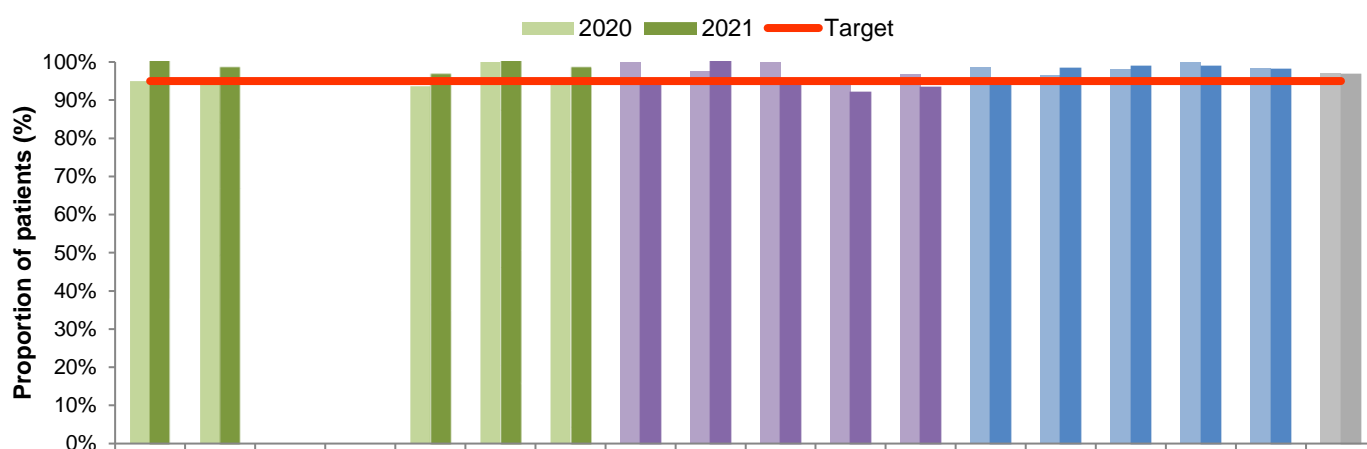
Patients that die following treatment are reviewed at the monthly centre mortality and morbidity reviews and the annual NMCN mortality and morbidity review. The number of patients who died following treatment for HCC was very low in 2021.

## QPI 6: Radiological Diagnosis of Pancreatic, Duodenal or Biliary Tract Cancer

Accurate staging is important to ensure appropriate treatment is delivered and futile interventions avoided. The primary tumour and its local extent should be defined, and the presence or absence of metastatic disease assessed. CT is recommended for the diagnosis of pancreatic cancer as it will accurately delineate tumour size, infiltration, and the presence of metastatic disease.

<b>QPI 6:</b>	Patients with pancreatic, duodenal or biliary tract cancers should undergo computerised tomography (CT) of the abdomen to evaluate the extent of disease.
<b>Description:</b>	Proportion of patients with pancreatic, duodenal or biliary tract cancer who undergo CT of the abdomen prior to first treatment.
<b>Numerator:</b>	Number of patients with pancreatic, duodenal or biliary tract cancer who undergo CT of the abdomen prior to first treatment.
<b>Denominator:</b>	All patients with pancreatic, duodenal or biliary tract cancer.
<b>Exclusions:</b>	No exclusions
<b>Target:</b>	95%

Of the 1071 patients diagnosed with pancreatic, duodenal or biliary tract cancer in Scotland in 2021, 1036 (96.7%) had a CT of the abdomen prior to first treatment. The QPI target of 95% was met at a national level; however it was not met by four of the NHS Boards nor by SCAN.



2021 data	Grampian	Highland	Orkney	Shetland	Tayside	W Isles	NCA	Borders	D&G	Fife	Lothian	SCAN	A&A	Forth Valley	GGC	Lanarkshire	WoSCAN	Scotland
Numerator	83	64	-	-	86	11	250	15	37	60	186	298	83	59	251	95	488	1036
Denominator	83	65	-	-	89	11	254	16	37	64	202	319	88	60	254	96	498	1071
Performance (%)	100	98.5	-	-	96.6	100	98.4	93.8	100	93.8	92.1	93.4	94.3	98.3	98.8	99.0	98.0	96.7

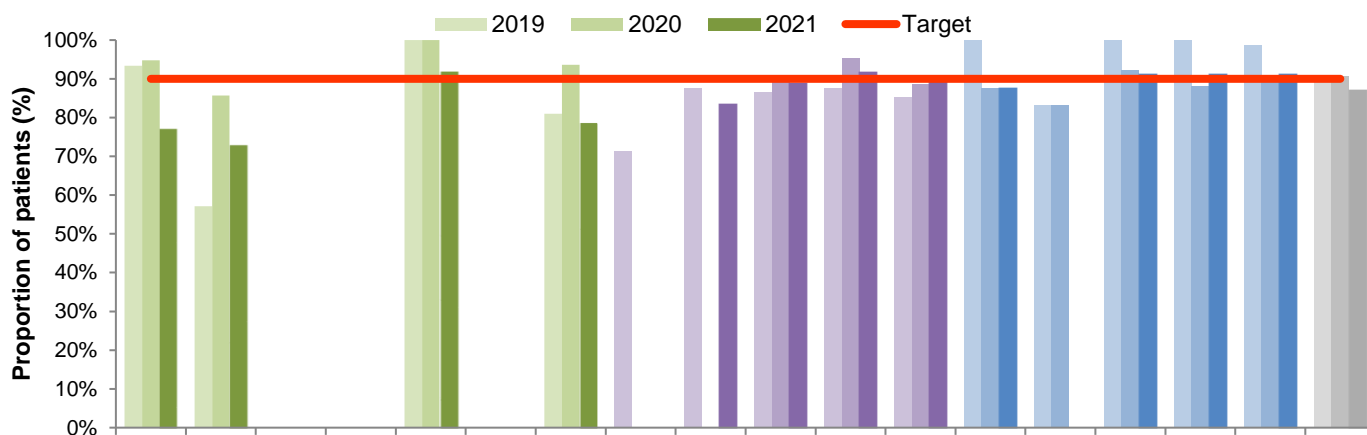
Review of patients not meeting this measure in SCAN indicated that 6 of the patients had CT imaging following stent insertion and 2 were incidental findings following surgery. The other 13 patients did not have a CT of the abdomen, however all had incomplete CT, MRT, x-ray or ultrasound performed.

## QPI 7: Pathological Diagnosis of Pancreatic, Duodenal or Biliary Tract Cancer

In patients who are being considered for anti-cancer therapy, definitive cytological or histological diagnosis is essential before chemotherapy to ensure full benefit of any treatment offered<sup>1</sup>. Even when no active treatment is being considered, a definitive diagnosis is valuable in helping to inform patients and carers about the nature of the disease and the likely prognosis<sup>1</sup>. It is not always appropriate, safe or possible to obtain a histological or cytological diagnosis due to the performance status of the patient or advanced nature of the disease and the 90% target reflects this and also patient choice.

<b>QPI 7:</b>	Patients with pancreatic, duodenal or biliary tract cancers having non-surgical treatment should have a cytological or histological diagnosis
<b>Description:</b>	Proportion of patients with pancreatic, duodenal or biliary tract cancer undergoing non-surgical treatment who have a cytological or histological diagnosis
<b>Numerator:</b>	Number of patients with pancreatic, duodenal or distal biliary tract cancer undergoing non-surgical treatment who have a histological or cytological diagnosis (e.g. brush cytology, endoscopic or image guided biopsy)
<b>Denominator:</b>	All patients with pancreatic, duodenal or distal biliary tract undergoing non-surgical treatment
<b>Exclusions:</b>	No exclusions
<b>Target:</b>	90%

Of the 170 patients diagnosed with pancreatic, duodenal or distal biliary tract in Scotland in 2021 and undergoing non-surgical treatment 87.1% had a cytological or histological diagnosis, below the target of 90% and a decrease from 2020. The QPI was met by 5 of the 12 NHS Boards with patients measured within the QPI.



2021 data	Grampian	Highland	Orkney	Shetland	Tayside	W Isles	NCA	Borders	D&G	Fife	Lothian	SCAN	A&A	Forth Valley	GGC	Lanarkshire	WoSCAN	Scotland
Numerator	10	8	0	0	22	-	40	0	5	8	22	35	7	-	41	21	73	148
Denominator	13	11	0	0	24	-	51	0	6	9	24	39	8	-	45	23	80	170
Performance (%)	76.9	72.7	*	*	91.7	-	78.4	*	83.3	88.9	91.7	89.7	87.5	-	91.1	91.3	91.3	87.1

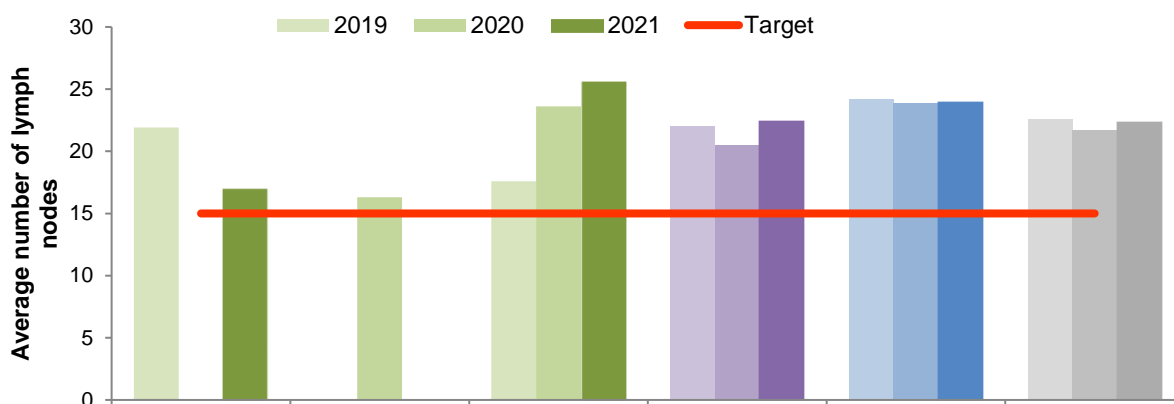
Review of patients not meeting this measure indicate that for the vast majority, pathology reports were negative or suspicious of cancer. In addition, for a small number of patients biopsy attempts were unsuccessful. While cytological or histological diagnosis is important to inform palliative treatment decisions, in certain circumstances (for example patients with strong radiological findings and supporting CA (cancer antigen) 19-9 results) it may be in the best interest of patients to progress with treatment in the absence of a definitive histological or cytological diagnosis to improve the patients' quality of life. NHS Grampian and NHS Highland, where the largest decreases in performance were observed, noted that the impact of the COVID-19 pandemic on the accessibility of endoscopic diagnostics may have impacted on performance against this QPI during the 2021 reporting period. Performance against this QPI is expected to return to pre-pandemic levels in 2022 as endoscopy services return to normal; the results of this QPI will continue to be reviewed to ensure this is the case.

## QPI 10: Lymph Node Yield

Adequate lymph node yield is important for accurate staging and is a surrogate marker of adequacy of en-bloc cancer resection and diligence of the pathologist<sup>1</sup>. Evidence suggests that pancreatoduodenectomy should yield a minimum of 15 lymph nodes from the principal specimen<sup>1</sup>.

<b>QPI 10:</b>	In patients undergoing surgery for pancreatic, duodenal or distal biliary tract cancer the number of lymph nodes examined should be maximised.
<b>Description:</b>	Average number of lymph nodes resected and pathologically examined for patients with pancreatic, duodenal or biliary tract cancer who undergo pancreatoduodenectomy performed by a specialist centre, over a 1 year period.
<b>Numerator:</b>	Total number of lymph nodes resected and pathologically examined for all patients with pancreatic, duodenal or distal biliary tract cancer who undergo pancreatoduodenectomy.
<b>Denominator:</b>	All patients with pancreatic, duodenal or distal biliary tract cancer who undergo pancreatoduodenectomy (no exclusions).
<b>Exclusions:</b>	No exclusions.
<b>Target:</b>	Average of 15 nodes per patient per centre.

In 2021, as in previous years, all five surgical centres across Scotland had an average lymph node yield of more than 15 nodes per patient. Across Scotland patients who had a pancreatoduodenectomy had an average of 22 lymph nodes resected and pathologically examined.



2021 data	Aberdeen	Inverness	Dundee	Edinburgh	Glasgow	Scotland
No. nodes examined	119	-	128	784	719	<b>1808</b>
No. surgeries	7	-	5	35	30	<b>81</b>
Average no. nodes	17	-	26	22	24	<b>22</b>

## QPI 11: 30 and 90-day Mortality Following Surgical Resection for Pancreatic, Duodenal or Distal Biliary Tract Cancer

Mortality following resection for HPB cancer has fallen over the past 30 years and in specialist units should be less than 5%<sup>1</sup>. Treatment related mortality is a marker of the quality and safety of the whole service provided by the multidisciplinary team.

<b>QPI 11:</b>	30-day and 90-day mortality surgical resection for pancreatic, duodenal or distal biliary tract cancer.
<b>Description:</b>	Proportion of patients with pancreatic, duodenal or distal biliary tract cancer who die within 30/90 days of surgical resection.
<b>Numerator:</b>	Number of patients with pancreatic, duodenal or distal biliary tract cancer who undergo surgical resection that die within 30/90 days of treatment.
<b>Denominator:</b>	All patients with pancreatic, duodenal or distal biliary tract cancer who undergo surgical resection.
<b>Exclusions:</b>	No exclusions.
<b>Target:</b>	30 days <5% 90 days <7.5%

Across Scotland no patients having surgical resection died within 30 days of surgery, meeting the target of less than 5% across all surgical centres and at a regional level. 3.2% of patients having surgical resection died within 90 days of surgery, meeting the target of less than 7.5%. Analysis by surgical centre indicates that this target was met in 4 of the 5 centres, although caution should again be exercised in interpreting variation based on the outcomes of small numbers of patients.

Resection		Aberdeen, Inverness and Dundee 2021	Edinburgh 2021	Glasgow 2021	Scotland 2021	Scotland 2020	Scotland 2019
30 day mortality Target < 7.5%	Numerator	0	0	0	0	4	4
	Denominator	17	43	33	93	92	96
	<b>Performance (%)</b>	0%	0%	0%	0%	4.3%	4.2%
90 day mortality Target < 5%	Numerator	1	1	1	3	7	5
	Denominator	17	40	29	86	92	96
	<b>Performance (%)</b>	5.9%	2.5%	3.4%	3.2%	7.6%	5.2%

All patients that die following treatment are reviewed at the monthly centre mortality and morbidity reviews and the annual NMCN mortality and morbidity review.

## QPI 12: Volume of Cases per Centre/Surgeon

HPB resectional surgery should be performed by surgeons who work in a specialist multidisciplinary team in a specialist centre, with outcomes audited regularly and benchmarked nationally<sup>1</sup>. Surgical resection should be confined to specialist centres to increase resection rates and reduce hospital morbidity and mortality. The literature demonstrates that there is a relationship between increasing surgical volumes for major HPB resections and improved patient outcomes (mortality) <sup>1</sup>.

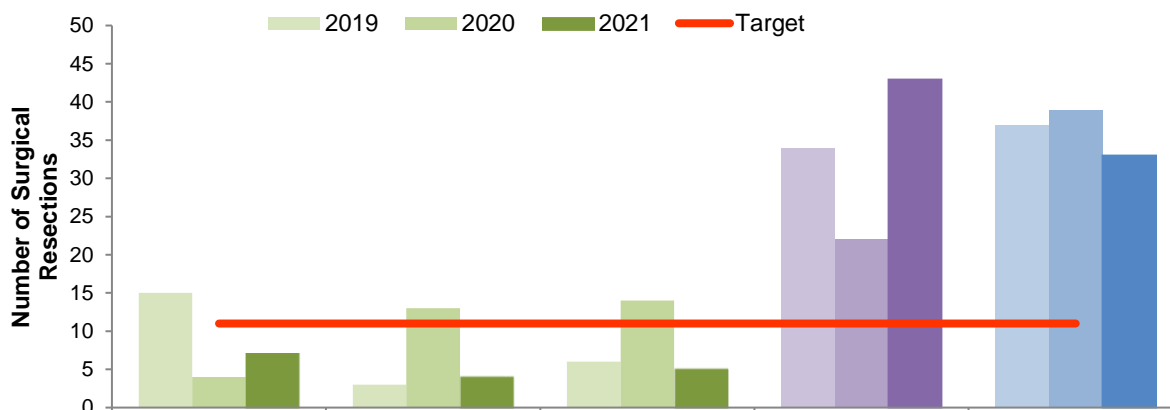
**QPI 12a/b:** HPB resectional surgery should be performed in hospitals where there is an appropriate annual volume of such cases.

**Description:** Number of surgical resections for pancreatic, duodenal or distal biliary tract cancer performed by a specialist centre (a), and surgeon (b), over a 1 year period.

**Target:**  
a) Minimum of 11 cases per centre in a one year period.  
b) Minimum of 4 procedures per surgeon in a one year period.

### Number of surgical resections per centre

Of the five surgical centres in Scotland, two met the target for the minimum number of cases required within a one year period in 2021.



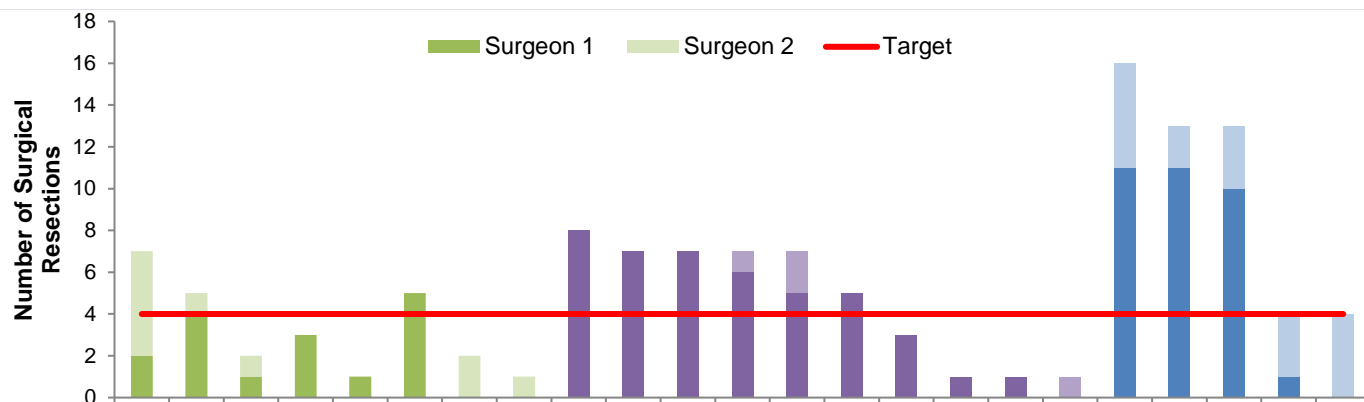
Number of Surgical Resections	Aberdeen	Inverness	Dundee	Edinburgh	Glasgow
2019	15	3	6	34	37
2020	4	13	14	22	39
2021	7	4	5	43	33

This QPI was not met in any of the three surgical centres in the North of Scotland in 2021, although it was noted that in Inverness and Dundee additional pancreatic resections were performed in 2021 that are not included within this QPI, for example for tumours with different pathology or patients diagnosed outwith the audit period. Surgical services at the Aberdeen centre were suspended in 2020 and not resumed until spring 2021 resulting in a decrease in numbers of patients having surgery in Aberdeen during this reporting period. Overall there are insufficient numbers of patient requiring surgery to enable this QPI to be met across 3 surgical centres in the North of Scotland; this is recognised and work is advancing as part of the low volume surgery programme to address the minimal volumes requirements with the full collaboration of the North of Scotland centres. An outcome to this process will be available in due course.



## Number of surgical resections per surgeon

Of the 23 surgeons undertaking surgical resection in 2021, 14 undertook four or more surgeries within the year, therefore meeting the QPI target. Of the 9 surgeons performing less than four surgeries in the year, 5 were from surgical centres in the NoS and 4 from Edinburgh.



Centre	Aberdeen			Inverness		Dundee			Edinburgh									Glasgow					
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
Performed as surgeon 1	2	4	1	3	1	5	0	0	8	7	7	6	5	5	3	1	1	0	11	11	10	1	0
Performed as surgeon 2	5	1	1	0	0	0	2	1	0	0	0	1	2	0	0	0	0	1	5	2	3	3	4
<b>Total</b>	<b>7</b>	<b>5</b>	<b>2</b>	<b>3</b>	<b>1</b>	<b>5</b>	<b>2</b>	<b>1</b>	<b>8</b>	<b>7</b>	<b>7</b>	<b>7</b>	<b>7</b>	<b>5</b>	<b>3</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>16</b>	<b>13</b>	<b>13</b>	<b>4</b>	<b>4</b>

Performance against this QPI can be affected by the situations of individual surgeons and staffing changes have affected performance in Aberdeen (currently 2 surgeons undertaking surgery), Dundee (2 surgeons now undertaking surgery) and Edinburgh. In addition the Royal Infirmary of Edinburgh surgical team have reviewed performance against this QPI and have identified the need for prospective tracking and review of surgical volumes and outcomes.

While it is acknowledged that, like surgical volumes per surgical centre, this measure does not encompass all resections undertaken by surgeons, it is hoped that the changes outlined above will result in improvement in performance against this QPI.

As identified for the previous specification, work is advancing in the NCA as part of the low volume surgery programme to address the minimal volumes requirements with the full collaboration of the North of Scotland centres. An outcome to this process is likely to impact on the volumes of surgery undertaken by individual surgeons as well as by surgical centres.

### Action Required:

- **All surgical centres to ensure ongoing prospective review of the surgical volumes of individual surgeons to ensure an adequate number of surgical procedures each year.**

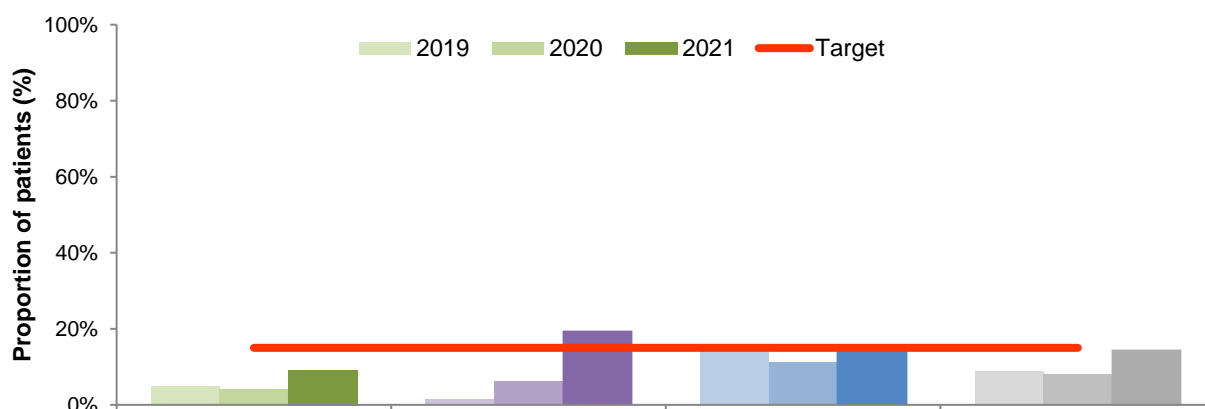
## QPI 13: Clinical Trials and Research Study Access

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. Clinicians are therefore encouraged to enter patients into well designed trials and to collect long term follow up data<sup>1</sup>.

The clinical trials QPI is measured utilising Scottish Cancer Research Network (SCRN) data and ISD incidence data, as 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>2</sup>.

<b>QPI 13:</b>	All patients should be considered for participation in available clinical trials/research studies, wherever eligible.
<b>Description:</b>	Proportion of patients diagnosed with HPB cancer who are consented for a clinical trial/research study.
<b>Numerator:</b>	Number of patients diagnosed with HPB cancer consented for a clinical trial/research study.
<b>Denominator:</b>	All patients diagnosed with HPB cancer.
<b>Exclusions:</b>	<ul style="list-style-type: none"> <li>No exclusions</li> </ul>
<b>Target:</b>	15%

Across Scotland 14.4% of patients were consented for clinical trials or research studies in 2021, below the target of 15% but a considerable improvement on previous years. Further, SCAN exceeded the 15% target.



2021 data	NCA	SCAN	WoSCAN	Scotland
Numerator	40	93	115	248
Denominator	433	479	813	1725
<b>Performance (%)</b>	<b>9.2%</b>	<b>19.4%</b>	<b>14.1%</b>	<b>14.4%</b>

HPB Clinical Trials and Research Studies open to recruitment in Scotland in 2021	Patients Consented
21136 - Multi-indication study of regorafenib plus nivolumab	Y
A Phase I/IIa trial of BT1718 in patients with advanced solid tumours	Y
A study of NUC-7738 for the treatment of solid cancers or lymphoma	Y
ABC-07: Addition of stereotactic body radiotherapy to systemic chemotherapy in locally advanced biliary tract cancers	Y
ACELARATE	Y
ACTICCA-1	N
AFPc332T Cell Therapy in Advanced Hepatocellular Carcinoma (HCC)	Y
ART27.13-100	Y
ATRIUM	Y
Bas301	Y
Biobank SR1418	Y
BNT411-01	Y
BTC Study	Y
Cancer of Unknown Primary Bio Study	Y
CCP-Cancer UK	Y
Childhood cancer diagnosis	Y
Clinical trial protocol Module C	Y
CRUK HUNTER Accelerator – delivering immunotherapy for liver cancer	Y
ECMC EXPLOR BIOMARKER	Y
IMAGINE	Y
Keynote - 937	Y
Keynote - 966	Y
MEDIVIR MIV-818-101/201	Y
MTL-CEBPA in combination with a PD-1 inhibitor in solid tumours v1.1	Y
The MENAC Trial	Y
NuTide:121 - Patients with Advanced or Metastatic Biliary Tract Cancer	Y
PHITT	Y
PIONEER	Y
PrecisionPanc	Y
PRIMUS 001	Y
PRIMUS 002	Y
REG-BIL	Y
Revolution Study - Lothian St Columba's Hospice	Y
SCCAMP V1.0	Y
SN38-SPL9111 in advanced solid tumours	Y
Solid Tumors - 0027/0134-UCB Pharma	Y

Study of DTX-SPL8783 in Combination with Anti-Cancer Treatments	Y
TACE-3	Y
TOASTIE	Y
WP42627: RO7300490 +/- Atezolizumab in solid tumours	Y

This is a generic QPI which applies to all tumour groups. The target of 15% is challenging, particularly for tumours with relatively low curative treatment rates such as HPB cancer. As such performance achieved against this QPI in recent years is considered to be a success with the performance largely due to efforts of oncology services across Scotland.

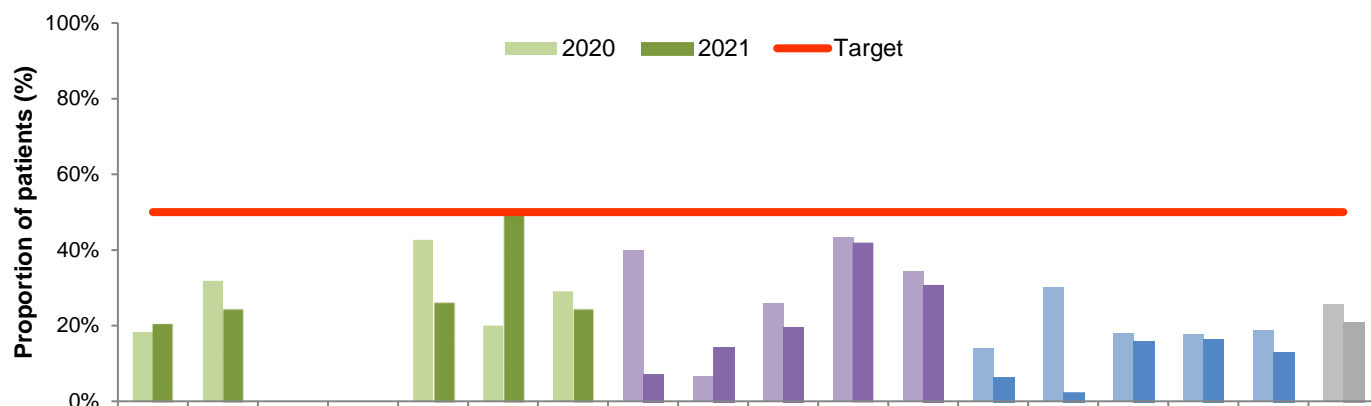
Accessibility of clinical trials and research studies to patients depends on whether trials are open for patients locally and whether they are eligible for entry into these trials. The majority of HPB trials in Scotland are undertaken at surgical centres. The SHPBN website<sup>8</sup> provides information on the clinical trials currently open across the 5 surgical centres in Scotland; this helps promote awareness of trial availability to clinical staff from across Scotland.

This QPI will be removed from the QPI reporting process in future years. Going forward there will be a suite of measures around clinical trial activity reported by the NHS Research Scotland Central Management Team to support improvement in this area.

## QPI 15: Access to Oncology Services for Inoperable Pancreatic, Duodenal or Biliary Tract Cancer

Approximately 80% of patients with pancreatic, duodenal or biliary tract cancer will not be suitable for potentially curative surgical resection due to fitness or advanced disease at presentation. Palliative treatment options have increased in recent years however rapid disease progression can result in potentially fit patients becoming unsuitable for treatment; therefore timely assessment is important.

<b>QPI 15:</b>	Patients with inoperable pancreatic, duodenal or biliary tract cancer should be seen by an oncologist to assess suitability for systemic treatment
<b>Description:</b>	Proportion of patients with pancreatic, duodenal or biliary tract cancer not undergoing surgery who are seen by an oncologist (or offered an oncology clinic appointment) within 6 weeks of initial diagnostic CT scan
<b>Numerator:</b>	Number of patients with pancreatic, duodenal or biliary tract cancer not undergoing surgery who are seen by an oncologist (or offered an oncology clinic appointment) within 6 weeks of initial diagnostic CT scan
<b>Denominator:</b>	All patients with pancreatic, duodenal or biliary tract cancer not undergoing surgery.
<b>Exclusions:</b>	No exclusions
<b>Target:</b>	50%



2021 data	Grampian	Highland	Orkney	Shetland	Tayside	W Isles	NCA	Borders	D&G	Fife	Lothian	SCAN	A&A	Forth Valley	GGC	Lanarkshire	WoSCAN	Scotland
Numerator	13	11	-	-	21	4	49	1	4	11	53	69	4	1	29	13	47	165
Denominator	63	45	-	-	80	8	200	14	28	56	127	225	62	42	182	79	365	790
Performance (%)	20.6	24.4	-	-	26.3	50.0	24.5	7.1	14.3	19.6	41.7	30.7	6.5	2.4	15.9	16.5	12.9	20.9
<b>Additional information</b>																		
% patients discussed at any time	39%	49%	-	-	53%	63%	48%	29%	32%	34%	53%	44%	21%	19%	35%	42%	32%	39%
% of appointments within 6 weeks	50%	50%	-	-	50%	80%	52%	25%	44%	58%	79%	70%	31%	13%	46%	39%	40%	53%

Of the 790 patients diagnosed with pancreatic, duodenal or distal biliary tract in Scotland in 2021 and not undergoing surgery, 20.9% were seen by an oncologist (or offered an oncology clinic appointment) within 6 weeks of diagnosis, below the target of 50% and a decrease from 2020.

In the second year of reporting of this QPI performance was a little lower than in 2020. Analysis of whether patients were offered an oncology clinic appointment at any time indicated that 18% had access to an appointment more than 6 weeks after their CT scan but the majority of patients (61%) were not offered an oncology clinic appointment. Further, there appears to be some variation across Scotland in the proportion of patients being referred, and the timeliness of appointments for those patients referred; that can be seen in the additional information provided in the table above.

Clinical review of patients not meeting the QPI suggested that the majority of patients were not considered fit for oncological treatment and were therefore not referred to oncological services, while smaller numbers of patients did not want to be considered for further treatment.

A Scottish Government funded improvement project to coordinate HPB cancer patient care is currently being rolled out; this project is likely to result in improvements in timeliness of referral to oncology services when referrals are made but will not impact on the decision to refer patients nor resources within oncology services. There is a need to understand the constraints to meeting this QPI, especially in WoSCAN where performance is lower than other regions.

**Action Required:**

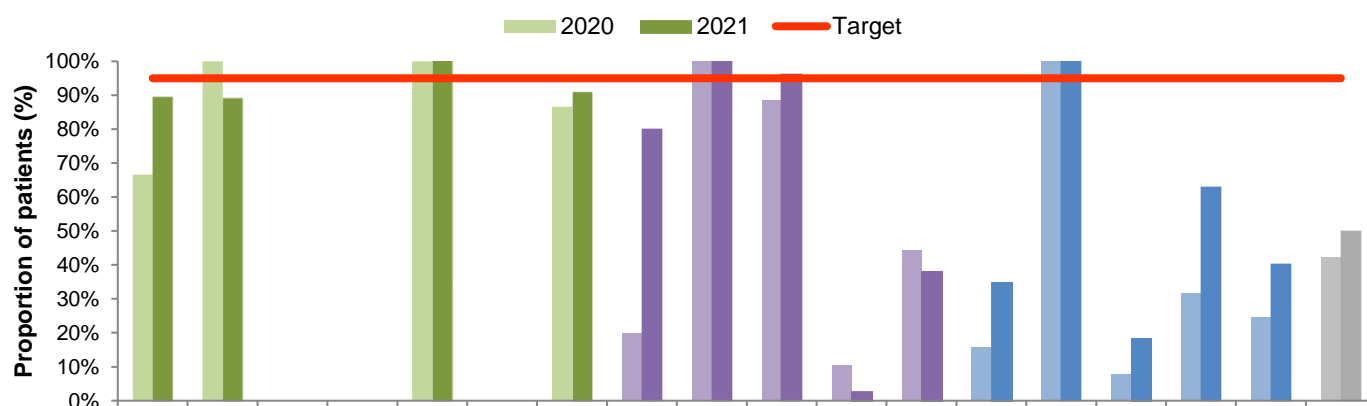
- **All MDTs to review decision making processes around referral of patients to oncology services and report findings to NMCN.**

## QPI 16: Key Worker

Primary liver cancer is a complex cancer to treat with various management options requiring input from multiple specialties, and as a result can require treatment across multiple health boards. Communication and continuity of care is vital for these patients to allow a co-ordinated, patient centred approach to their care. Mechanisms should be developed to promote continuity of care which may include the nomination of a person to take on the role of a key worker. This role will include communication with regards to care plans to all involved in a patient's care, ensuring patients know who to contact and managing transition of care.

<b>QPI 16:</b>	Patients with hepatocellular cancer (HCC) should have an identified key worker to co-ordinate care across the patient pathway
<b>Description:</b>	Proportion of patients with HCC who have an identified key worker at the time of referral to the MDT
<b>Numerator:</b>	Number of patients with HCC who have an identified key worker at the time of referral to the MDT
<b>Denominator:</b>	All patients with HCC
<b>Exclusions:</b>	No exclusions
<b>Target:</b>	95%

Of the 362 patients diagnosed with Hepatocellular cancer (HCC) in Scotland in 2021, 50.0% had an identified keyworker at the time of referral to the MDT below the target of 95% and a slight improvement on performance in 2020. There was considerable variation in performance against this QPI with 3 NHS Boards meeting the QPI with 100% but no regions achieving the target.



2021 data	Grampian	Highland	Orkney	Shetland	Tayside	W Isles	NCA	Borders	D&G	Fife	Lothian	SCAN	A&A	Forth Valley	GGC	Lanarkshire	WoSCAN	Scotland
Numerator	25	16	-	-	26	0	68	4	14	25	2	45	7	22	17	22	68	181
Denominator	28	18	-	-	26	0	75	5	14	26	73	118	20	22	92	35	169	362
Performance (%)	89.3	88.9	-	-	100	*	90.7	80.0	100	96.2	2.7	38.1	35.0	100	18.5	62.9	40.2	50.0

The results for this QPI indicate considerable variation in performance across NHS Boards and identify an unmet need for Cancer Nurse Specialist (CNS) involvement in the care of patients with HCC in some NHS Boards including NHS Lothian and NHSGGC. Improvements in performance in NHS Borders is likely to be due to the recruitment of CNS within the Board, while NHS Lothian have recruited a CNS since the end of the 2021 audit period which should result in improvement in performance in future years. NHSGGC continue to seek resource for a CNS for patients with HCC.

In NHS Ayrshire & Arran, NHS Lanarkshire and NHS Grampian not all patients are referred to the CNSs available, at times due to patients being directly referred by other specialities to the Edinburgh HPB or Glasgow HCC MDT, although performance has improved considerably in all of these NHS Boards over the last year. In NHS Grampian the MDT co-ordinator now assigns patients to the relevant CNS. NHS Lanarkshire continue to encourage referral to the local MDT at the same time as referral to tertiary MDTs so that patients can be provided with support from the local Upper GI CNS team and it is hoped that this will continue to result in improvements in performance in NHS Lanarkshire in future years.

A number of boards noted that small numbers of patients died shortly after diagnosis, before being assigned a CNS.



## QPI 17: 30 / 90 Day Mortality following Treatment for Colorectal Liver Metastases

Over 50% of patients with primary colorectal cancer will develop liver metastases. Liver resection has now been widely accepted as the treatment of choice for primary colorectal liver metastases (CRLM), providing the only potential curative treatment with 5 year survival rates of 40 – 60% reported<sup>1</sup>. This QPI is intended to ensure treatment is given appropriately, and the outcome reported on and reviewed.

<b>QPI 17:</b>	30 and 90 day mortality following treatment for Colorectal liver metastases (CRLM) with curative intent.
<b>Description:</b>	Proportion of patients with CRLM undergoing curative treatment (resection / ablation) who die within 30 or 90 days of treatment.
<b>Numerator:</b>	All patients with CRLM undergoing curative treatment (resection / ablation) who die within 30/90 days of treatment.
<b>Denominator:</b>	All patients with CRLM undergoing curative treatment (resection / ablation).
<b>Exclusions:</b>	No exclusions.
<b>Target:</b>	30 days <5% 90 days <7.5%

Across Scotland one patient with colorectal liver metastasis died within 30 days of resection and two within 90 days of resection; while the target was met for both measures at a national level the 90 day mortality target of < 7.5% was narrowly missed for the Aberdeen centre due to the outcome of a single patient.

Resection	2021 data	Aberdeen	Inverness	Dundee	Edinburgh	Glasgow	Scotland
30 day mortality Target < 5%	Numerator	0	0	0	1	0	1
	Denominator	8	6	12	55	6	87
	<b>Performance (%)</b>	0%	0%	0%	1.8%	0%	1.1%
90 day mortality Target < 7.5%	Numerator	1	0	0	1	0	2
	Denominator	8	6	12	55	6	87
	<b>Performance (%)</b>	12.5%	0%	0%	1.8%	0%	2.3%

No patients with colorectal liver metastasis died within 30 of ablation and one died within 90 days; while the QPI targets were met at a national level the 90 day target was not met for patients having treatment in Dundee due to the outcome of this single patient.

Ablation	2021 data	Aberdeen	Inverness	Dundee	Edinburgh	Glasgow	Scotland
30 day mortality Target < 5%	Numerator	0	0	0	0	0	0
	Denominator	0	0	7	14	9	30
	<b>Performance (%)</b>	*	*	0%	0%	0%	0%
90 day mortality Target < 7.5%	Numerator	0	0	1	0	0	1
	Denominator	0	0	7	14	9	30
	<b>Performance (%)</b>	*	*	14.3%	0%	0%	3.3%

The Aberdeen centre failed to meet the target for 90 day mortality following resection due to the outcome of one patient. All patients that die following treatment were reviewed at the monthly centre mortality and morbidity reviews and the annual NMCN mortality and morbidity review; this has resulted in the development of a protocol for early referral of patients readmitted to local hospitals to the surgical team in Aberdeen Royal Infirmary.

## **5. Next Steps**

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

Additionally, progress will be reported to the Regional Cancer Advisory Groups (RCAGs) annually by NHS Board Territorial Lead Cancer Clinicians and NMCN Clinical Lead, and nationally on a three-yearly basis to Healthcare Improvement Scotland as part of the governance processes set out in CEL 06 (2012).

## **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 HPB cancer for their contribution to the clinical audit process.

## Abbreviations

<b>AA</b>	NHS Ayrshire & Arran
<b>ACaDMe</b>	Acute Cancer Deaths and Mental Health
<b>ARI</b>	Aberdeen Royal Infirmary
<b>BWoSCC</b>	Beatson West of Scotland Cancer Centre
<b>CBD</b>	Common Bile Duct
<b>CEL(-06)</b>	Chief Executive Letter (-06)
<b>CT</b>	Computerised tomography
<b>D&amp;G</b>	NHS Dumfries & Galloway
<b>eCASE</b>	Electronic Cancer Audit Support Environment
<b>FV</b>	NHS Forth Valley
<b>GGC</b>	NHS Greater Glasgow and Clyde
<b>GGH</b>	Gartnavel General Hospital
<b>GRI</b>	Glasgow Royal Infirmary
<b>HCC</b>	Hepatocellular Carcinoma
<b>HIS</b>	Healthcare Improvement Scotland
<b>HPB</b>	HepatoPancreatoBiliary
<b>ISD</b>	Information Services Division
<b>Lan</b>	NHS Lanarkshire
<b>MCN</b>	Managed Clinical Network
<b>MDT</b>	Multidisciplinary Team
<b>M&amp;M</b>	Morbidity and Mortality
<b>MRI</b>	Magnetic Resonance Imaging
<b>NCQSG</b>	National Cancer Quality Steering Group
<b>NHSBT</b>	NHS Blood and Transplant
<b>NHSGGC</b>	NHS Greater Glasgow and Clyde
<b>NMCN</b>	National Managed Clinical Network
<b>NCA</b>	North Cancer Alliance
<b>QEUH</b>	Queen Elizabeth University Hospital
<b>QPI(s)</b>	Quality Performance Indicator(s)
<b>RCAG(s)</b>	Regional Cancer Advisory Group(s)
<b>RIE</b>	Royal Infirmary of Edinburgh
<b>SACT</b>	Systemic Anti-Cancer Therapy
<b>SCAN</b>	South East Scotland Cancer Network
<b>SHPNB</b>	Scottish Hepatopancreatobiliary Network
<b>SLTU</b>	Scottish Liver Transplant Unit
<b>TACE</b>	Trans-arterial chemoembolisation

<b>TNM</b>	Tumour, Nodes, Metastases (staging system)
<b>WGH</b>	Western General Hospital
<b>WoSCAN</b>	West of Scotland Cancer Network

## References

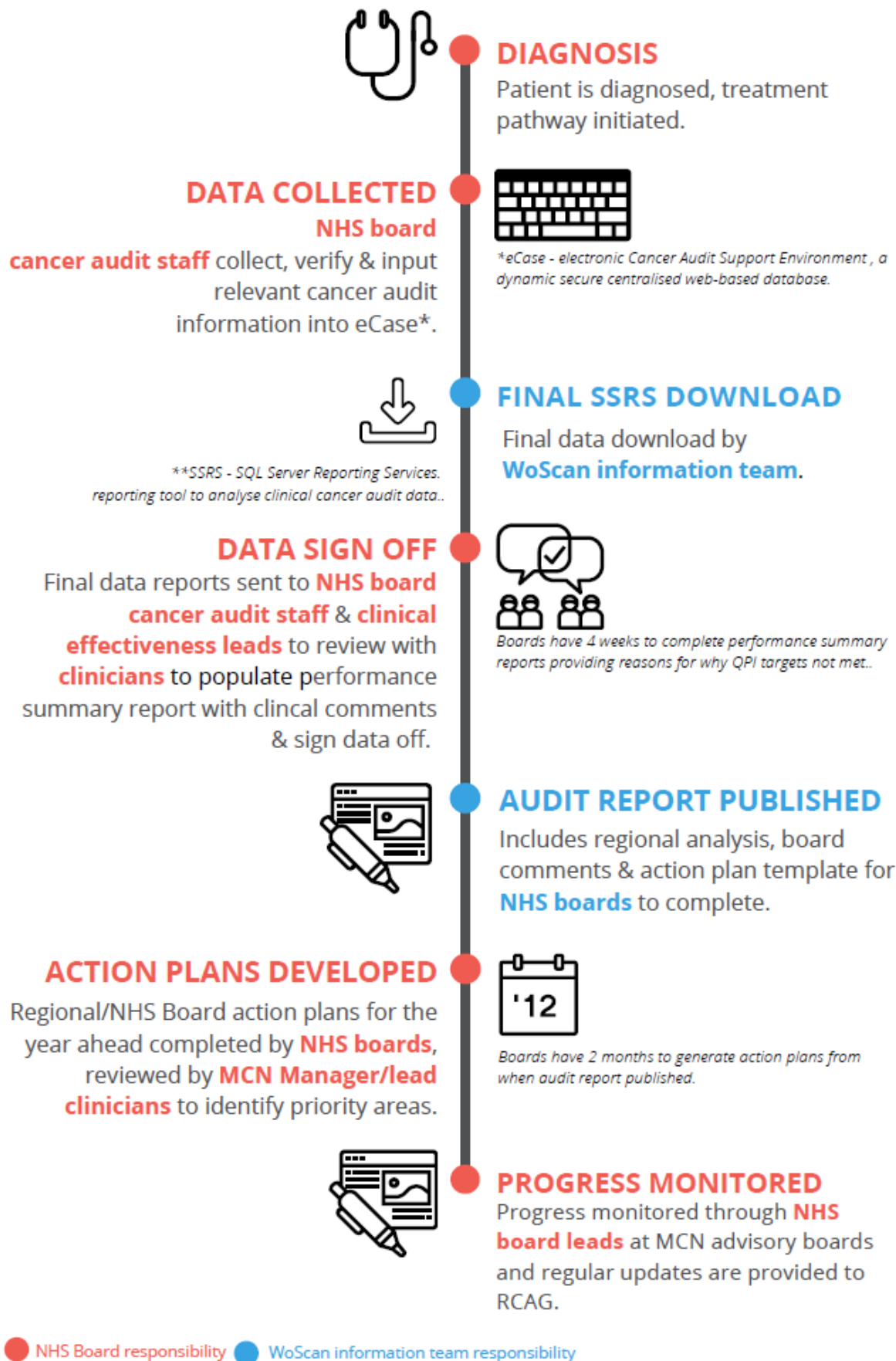
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7. <https://www.shpbn.scot.nhs.uk/clinical-trials/>

## Appendix 1: Meta Data

Report Title	Audit Report: HPB Cancer Quality Performance Indicators																				
Time Period	Patients diagnosed 01 January 2021 to 31 December 2021																				
Data Source	Electronic 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 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 infographic in appendix 2 for a more detailed look at the reporting process.</p>																				
Data Quality	<p>Audit data completeness can be assessed by estimating the proportion of expected patients that have been identified through audit compared to the number reported by the National Cancer registry (provided by ISD, National Services Division), this is known as case ascertainment. Figures should only be used as a guide as it is not possible to compare the same exact cohort from each data source. Note that a 5 year average is taken for cancer registry cases to take account of annual fluctuations in incidence within NHS Boards.</p> <table border="1" data-bbox="415 1283 1336 1549"> <thead> <tr> <th>Health Board of diagnosis</th> <th>2021 Audit Data</th> <th>Cases from Cancer registry (2016 - 2020)</th> <th>Case Ascertainment</th> </tr> </thead> <tbody> <tr> <td>NCA</td> <td>362</td> <td>433</td> <td>83.6%</td> </tr> <tr> <td>SCAN</td> <td>496</td> <td>479</td> <td>103.5%</td> </tr> <tr> <td>WoSCAN</td> <td>720</td> <td>813</td> <td>88.6%</td> </tr> <tr> <td><b>Scotland Total</b></td> <td><b>1578</b></td> <td><b>1709</b></td> <td><b>92.3%</b></td> </tr> </tbody> </table>	Health Board of diagnosis	2021 Audit Data	Cases from Cancer registry (2016 - 2020)	Case Ascertainment	NCA	362	433	83.6%	SCAN	496	479	103.5%	WoSCAN	720	813	88.6%	<b>Scotland Total</b>	<b>1578</b>	<b>1709</b>	<b>92.3%</b>
Health Board of diagnosis	2021 Audit Data	Cases from Cancer registry (2016 - 2020)	Case Ascertainment																		
NCA	362	433	83.6%																		
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<b>Scotland Total</b>	<b>1578</b>	<b>1709</b>	<b>92.3%</b>																		



## Appendix 2: WoSCAN QPI Reporting Process



### 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.

#### Action / Improvement Plan

<b>Area:</b>	Aberdeen Centre/ NHS Grampian, NHS Orkney and NHS Shetland
<b>Action Plan Lead:</b>	
<b>Date:</b>	

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

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>
	All NHS Boards to ensure that the extent of metastatic disease spread is clearly recorded for all patients and accessible to cancer audit staff.						
12(ii)	All surgical centres to ensure ongoing prospective review of the surgical volumes of individual surgeons to ensure an adequate number of surgical procedures each year.						
15	All MDTs to review decision making processes around referral of patients to oncology services and report findings to NMCN.						

## Action / Improvement Plan

<b>Area:</b>	Inverness Centre/ NHS Highland and NHS Western Isles
<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)

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>
	All NHS Boards to ensure that the extent of metastatic disease spread is clearly recorded for all patients and accessible to cancer audit staff.						
12(ii)	All surgical centres to ensure ongoing prospective review of the surgical volumes of individual surgeons to ensure an adequate number of surgical procedures each year.						
15	All MDTs to review decision making processes around referral of patients to oncology services and report findings to NMCN.						

## Action / Improvement Plan

<b>Area:</b>	Dundee Centre/ NHS Tayside
<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)

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>
	All NHS Boards to ensure that the extent of metastatic disease spread is clearly recorded for all patients and accessible to cancer audit staff.						
12(ii)	All surgical centres to ensure ongoing prospective review of the surgical volumes of individual surgeons to ensure an adequate number of surgical procedures each year.						
15	All MDTs to review decision making processes around referral of patients to oncology services and report findings to NMCN.						

## Action / Improvement Plan

<b>Area:</b>	Edinburgh Centre/ NHS Borders, NHS Dumfries & Galloway, NHS Fife, NHS Forth Valley and NHS Lothian
<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)

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>
	All NHS Boards to ensure that the extent of metastatic disease spread is clearly recorded for all patients and accessible to cancer audit staff.						
2(iii)	SCAN NHS Boards to ensure that all HCC patients having CT or MRI imaging prior to first treatment are assigned a BCLC.						
12(ii)	All surgical centres to ensure ongoing prospective review of the surgical volumes of individual surgeons to ensure an adequate number of surgical procedures each year.						
15	All MDTs to review decision making processes around referral of patients to oncology services and report findings to NMCN.						

## Action / Improvement Plan

<b>Area:</b>	Glasgow Centre/ NHS Ayrshire & Arran, NHS Greater Glasgow & Clyde, NHS Lanarkshire
<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)

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>
	All NHS Boards to ensure that the extent of metastatic disease spread is clearly recorded for all patients and accessible to cancer audit staff.						
12(ii)	All surgical centres to ensure ongoing prospective review of the surgical volumes of individual surgeons to ensure an adequate number of surgical procedures each year.						
15	All MDTs to review decision making processes around referral of patients to oncology services and report findings to NMCN.						

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