North, South East and West of Scotland Cancer Networks

HepatoPancreatoBiliary Cancers National Managed Clinical Network

Audit Report

Report of the 2017 Clinical Audit Data

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Executive Summary

Introduction

The purpose of this report is to present an assessment of performance of HepatoPancreatoBiliary (HPB) Cancer Services relating to patients diagnosed across Scotland during 2017 through clinical audit data. Results are measured against the HPB Cancer Quality Performance Indicators[1] (QPIs) which were implemented for patients diagnosed on or after 1st January 2013.

Twelve months of data were measured against the HPB Cancer QPIs for the fifth consecutive year. Some QPIs have undergone major changes after formal review and so the data for 2017 may not be comparable with data from previous years. Other QPIs have undergone minor changes where data is still comparable. QPI changes will be detailed in the performance section of each QPI. Future reports will continue to compare clinical audit data in successive years to further illustrate trends.

In order to ensure the success of the National Cancer QPIs in driving quality improvement in cancer care across NHS Scotland, QPIs will continue to be assessed for clinical effectiveness and relevance.

Background

HPB cancers are a rare group of cancers. In 2017 the audit identified 1425 patients diagnosed with a new primary cancer of the liver, pancreas, bile duct, gallbladder or duodenum in Scotland. Pancreatic cancer accounts for almost half of all HPB cancer diagnoses (46.2%).

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

The table above details the five centres carrying out HPB cancer treatment in Scotland. These are considered the centres for specialist treatment, which includes surgery, systemic anti cancer therapy (SACT) and radiotherapy. Patients may receive diagnostic and palliative care in their local hospital where appropriate however the majority of patients are referred to one of the five centres for specialist management. Additionally, the Scottish Liver Transplant Unit (SLTU), located in the Royal Infirmary of Edinburgh, is responsible for management of all liver transplant cases in Scotland, a treatment which can be indicated for some patients with primary liver cancer.

Methodology

The clinical audit data presented in this report was collected by clinical audit staff in each NHS Board in accordance with an agreed dataset and definitions. The data was recorded manually and entered locally into the electronic Cancer Audit Support Environment (eCASE): a secure centralised web-

based database. Data relating to patients diagnosed between 1st January 2017 and 31st December 2017 was downloaded from eCASE at 2200 hrs on 15th August 2018.
Analysis was performed centrally by the WoSCAN Information Team on behalf of the NMCN and the timescales agreed took into account the patient pathway to ensure that a complete treatment record was available for each case. Initial results of the analysis were provided to local Boards to check for inaccuracies, inconsistencies or obvious gaps and a subsequent download taken upon which final analysis was carried out. The final data analysis was disseminated for NHS Board verification in line with the regional audit governance process to ensure that the data was an accurate representation of service in each area.

Once all NHS Boards had been given the opportunity to verify their data, further analyses were carried out at a regional and national level to provide an overall assessment of the quality of HPB cancer services in Scotland. These treatment-centre-based results were provided to key regional clinicians/ clinical leads for comment ahead of publication.

Results

Overall case ascertainment for HPB cancer in Scotland is 89.0% which indicates good data capture through audit.

Results of the analysis of HPB Cancer Quality Performance Indicators (QPIs 1 to 13) are set out in the following sections. Data are presented 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.

Results are presented graphically and the accompanying tables also highlight any missing data and its possible effect on any of the measured outcomes for the current year of analysis. For most QPIs, only data for 2016 and 2017 (post formal review) is shown to allow for a clear graphical representation of data.

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 restricted data are denoted with a dash (-).An asterisk (*) is used to specify a denominator of zero and to distinguish between this and a 0% performance.

Where any NHS Board has either restricted data (-) or a denominator of zero (*) for all years the Board is not included in the graph. 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 data analysis.

Summary of QPI Results

Colour Key		Symbol Key	
	Above QPI target	>	Indicates increase on previous year's figure
	Below QPI target	<	Indicates decrease from previous year's figure
		=	Indicates no change from previous year
			Indicates no comparable measure from previous year

Region/Centre	
%	
N	D

N: Numerator **D**: Denominator

A dash (-) denotes restricted data where the denominator is less than 5. An asterisk (*) denotes data where the denominator is zero.

Quality Performance Indicator (QPI)	Performance by NHS Board								
	QPI target	NOSCAN		SCAN		WoSCAN		Scotland	
QPI 1: Patients with newly diagnosed HPB cancer should be discussed by a multidisciplinary team prior to definitive treatment.	**95%**	**93.6% >**		**89.8% >**		**78.6% <**		**85.6% <**	
		322	344	362	403	499	635	1183	1382
QPI 2: Patients with Hepatocellular Carcinoma (HCC) should be appropriately diagnosed and staged. **(i) CT or MRI only**	**90%**	**97.5% >**		**90.7% >**		**100.0% >**		**96.5% >**	
		78	80	97	107	160	160	335	347
QPI 2: Patients with Hepatocellular Carcinoma (HCC) should be appropriately diagnosed and staged. **(ii) CT or MRI and full info recorded**	**90%**	**47.1%**		**29.9%**		**81.9%**		**58.2%**	
		32	68	32	107	131	160	195	335
***QPI 3: Patients with early Hepatocellular Carcinoma (HCC) should be referred for consideration of liver transplantation.**	**90%**	**100.0% >**		**100.0% =**		**79.5% >**		**88.5% >**	
		10	10	24	24	35	44	69	78
***QPI 4: Patients with Hepatocellular Carcinoma (HCC) who are not suitable for curative treatment should receive palliative treatment.**	**40%**	**42.6% >**		**47.2% <**		**47.4% >**		**46.3% >**	
		23	54	34	72	54	114	111	240
***†QPI 5a: 30 day mortality following treatment for Hepatocellular Carcinoma (HCC) with curative intent.** Liver Transplant	**< 5%**	*****		**0.0% =**		*****		**0.0% =**	
		*	*	0	22	*	*	0	22

Quality Performance Indicator (QPI)	Performance by NHS Board									
	QPI target	NOSCAN		SCAN		WoSCAN		Scotland	
***†QPI 5a: 90 day mortality following treatment for Hepatocellular Carcinoma (HCC) with curative intent.** Liver Transplant	**< 7.5%**	*****		**0.0% =**		*****		**0.0% =**	
		*	*	0	21	*	*	0	21
***†QPI 5b: 30 day mortality following treatment for Hepatocellular Carcinoma (HCC) with curative intent.** Resection	**< 5%**	**0.0% >**		**0.0% =**		*****		**0.0% >**	
		0	5	0	8	*	*	0	13
***†QPI 5b: 90 day mortality following treatment for Hepatocellular Carcinoma (HCC) with curative intent.** Resection	**< 7.5%**	**0.0% >**		**0.0% =**		*****		**0.0% >**	
		0	5	0	8	*	*	0	13
***†QPI 5c: 30 day mortality following treatment for Hepatocellular Carcinoma (HCC) with curative intent.** Ablation	**< 5%**	**-**		**0.0% =**		**0.0% =**		**0.0% =**	
		-	-	0	12	0	11	0	24
***†QPI 5c: 90 day mortality following treatment for Hepatocellular Carcinoma (HCC) with curative intent.** Ablation	**< 7.5%**	**-**		**0.0% =**		**0.0% =**		**0.0% =**	
		-	-	0	12	0	11	0	24
***†QPI 5d: 30 day mortality following treatment for Hepatocellular Carcinoma (HCC) with palliative intent.** TACE	**< 10%**	**6.7% <**		**0.0% =**		**3.1% <**		**2.4% <**	
		1	15	0	38	1	32	2	85
***†QPI 5e: 30 day mortality following treatment for Hepatocellular Carcinoma (HCC) with palliative intent.** SACT	**< 10%**	**14.3% <**		**0.0% =**		**4.5% <**		**5.4% <**	
		1	7	0	8	1	22	2	37
***QPI 6: Patients with pancreatic, duodenal or biliary tract cancers should undergo a computerised tomography (CT) of the chest, abdomen and pelvis to evaluate the extent of disease.**	**80%**	**86.5% >**		**84.1% <**		**86.5% <**		**85.8% <**	
		128	148	132	157	224	259	484	564

Quality Performance Indicator (QPI)	Performance by NHS Board									
	QPI target	NOSCAN		SCAN		WoSCAN		Scotland	
***QPI 7: Patients with pancreatic, duodenal or biliary tract cancers having non-surgical treatment should have a cytological or histological diagnosis.**	**75%**	**60.6% <**		**79.4% <**		**96.3% <**		**84.6% <**	
		20	33	27	34	79	82	126	149
***†QPI 8: Patients undergoing resection for pancreatic cancer should receive neo-adjuvant or adjuvant chemotherapy, where appropriate.**	**50%**	**50.0% >**		**75.0% >**		**77.8% <**		**70.4% <**	
		3	6	9	12	7	9	19	27
***QPI 9: Patients with localised pancreatic, distal biliary tract or duodenal cancer should have surgical resection.**	**15%**	**9.3% >**		**11.3% =**		**5.4% <**		**8.0% <**	
		19	204	25	222	20	372	64	798
***†QPI 10: In patients undergoing surgery for pancreatic cancer the number of lymph nodes examined should be maximised (Average 15 lymph nodes).**	Average of 15 nodes per patient	**19 <**		**21 >**		**28 >**		**22 =**	
		280	15	494	24	440	16	1214	55
***†QPI 11(i): 30-day mortality after treatment with curative intent for pancreatic, duodenal or distal biliary tract cancer.** SURGICAL RESECTION	**< 5%**	**0.0% >**		**0.0% >**		**0.0% =**		**0.0% >**	
		0	18	0	28	0	18	0	64
***†QPI 11(i): 90-day mortality after treatment with curative intent for pancreatic, duodenal or distal biliary tract cancer.** SURGICAL RESECTION	**< 7.5%**	**5.6% >**		**0.0% >**		**0.0% >**		**1.6% >**	
		1	18	0	28	0	18	1	64
***†QPI 11(i): 30-day mortality after treatment with curative intent for pancreatic, duodenal or distal biliary tract cancer.** NEOADJUVANT CHEMO	**< 5%**	**20.0% <**		*****		**0.0% =**		**6.3% <**	
		1	5	*	*	0	11	1	16
***†QPI 11(i): 90-day mortality after treatment with curative intent for pancreatic, duodenal or distal biliary tract cancer.** NEOADJUVANT CHEMO	**< 7.5%**	**40.0% <**		*****		**9.1% <**		**18.8% <**	
		2	5	*	*	1	11	3	16

Quality Performance Indicator (QPI)	Performance by NHS Board									
	QPI target	NOSCAN		SCAN		WoSCAN		Scotland	
***†QPI 11(i): 30-day mortality after treatment with curative intent for pancreatic, duodenal or distal biliary tract cancer.** ADJUVANT CHEMO	**< 5%**	**0.0% =**		**0.0% =**		**0.0% =**		**0.0% =**	
		0	10	0	14	0	15	0	39
***†QPI 11(i): 90-day mortality after treatment with curative intent for pancreatic, duodenal or distal biliary tract cancer.** ADJUVANT CHEMO	**< 7.5%**	**0.0% =**		**0.0% =**		**0.0% >**		**0.0% >**	
		0	6	0	14	0	12	0	32
***†QPI 11(i): 30-day mortality after treatment with curative intent for pancreatic, duodenal or distal biliary tract cancer.** CHEMORADIOTHERAPY	**< 5%**	*****		*****		**0.0% =**		**0.0% =**	
		*	*	*	*	0	14	0	14
***†QPI 11(i): 90-day mortality after treatment with curative intent for pancreatic, duodenal or distal biliary tract cancer.** CHEMORADIOTHERAPY	**< 7.5%**	*****		*****		**0.0% >**		**0.0% >**	
		*	*	*	*	0	13	0	13
***†QPI 11(ii): 30-day mortality after treatment with palliative intent for pancreatic, duodenal or distal biliary tract cancer**. PALLIATIVE CHEMO	**< 10%**	**10.3% <**		**2.5% >**		**9.2% <**		**7.7% =**	
		3	29	1	40	8	87	12	156
QPI 12a: Pancreatic resectional surgery should be performed in hospitals where there is an appropriate annual volume of such cases.	**11 per centre per year**	**17 =**		**28 <**		**18 <**			
QPI 12b: Pancreatic resectional surgery should be performed in hospitals where there is an appropriate annual volume of such cases.	**4 per surgeon per year**	**4 MEETING 4 NOT MEETING**		**3 MEETING 5 NOT MEETING**		**3 MEETING 1 NOT MEETING**			
QPI 13: All patients should be considered for participation in available clinical trials/research studies, wherever eligible.	**15%**	**3.1%**		**3.6%**		**6.0%**		**4.7%**	
		11	352	15	416	39	653	67	1421

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 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.

Analysis of 2017 audit data demonstrates a continual commitment to provide an equitable and consistent standard of care for HPB cancer patients across Scotland. Improvements in data quality and completeness have been observed in recent years facilitating more meaningful data analysis and national comparison to help inform NMCN activity. The results presented illustrate that many of the QPI targets set have been challenging for NHS Boards to achieve, however it is noted that there is improved performance for some QPIs in 2017. It is encouraging that performance has improved in QPIs related to mortality rates.

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

Action Required:

QPI 1: Multi-Disciplinary Team (MDT) Meeting

- All Boards to ensure that patients are discussed at MDT prior to definitive treatment where it is clinically appropriate, including where patients are for supportive care only.
- NHS Greater Glasgow and Clyde to ensure that all patients discussed at local MDTs are referred to the regional NHS GGC MDT meeting.

QPI 2: Diagnosis and Staging of HCC

- NHS Lothian to inform staff of the importance of a full CT chest/abdomen/pelvis for staging purposes.
- All Boards to ensure full information is recorded where clinically appropriate.

QPI 4: Palliative Treatment for HCC

- NHS Grampian to work towards improving documentation at time of MDT discussion.

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

- NHS Lothian to remind staff that CT chest/abdomen/pelvis is required for full staging of disease.

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

- NHS Fife to provide detailed clinical feedback on cases not meeting the target.

QPI 12a/b: Volume of Cases per Centre/Surgeon

- NHS Tayside to confirm that patients requiring resectional pancreatic surgery will be routinely referred to a high volume centre.

QPI 13: Clinical Trials Access

- NMCN to produce and maintain a list of active national clinical trials.

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

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

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

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 2017 through clinical audit data and to provide a summary of the two years of analysis after the formal review. These audit data underpin much of the regional and national service improvement and development work of the NMCN. Regular reporting of activity and performance is a fundamental requirement of an NMCN to assure the quality of care delivered across the country.

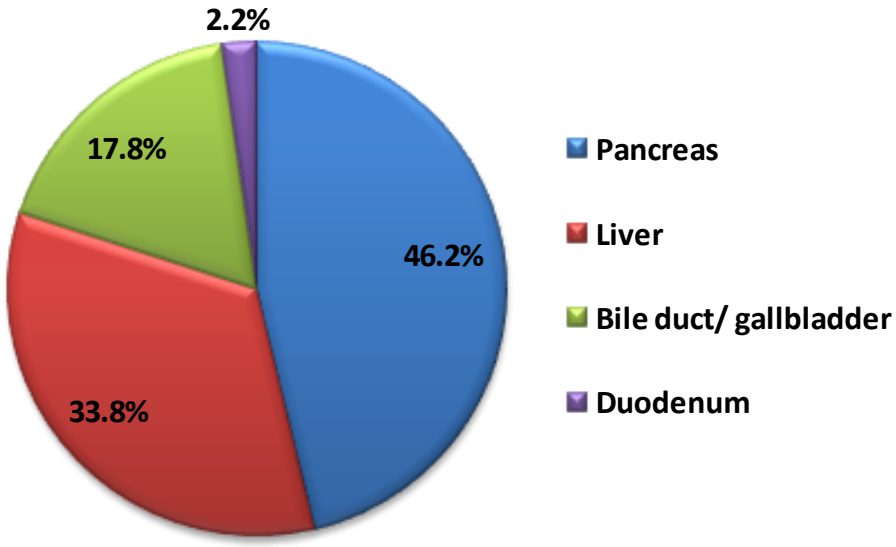
The National Cancer Quality Steering Group (NCQSG) completed a programme of work to develop national QPIs for all cancer types to enable national comparative reporting and drive continuous improvement for patients in 2014. In collaboration with the NMCN for HPB Cancers and Information Services Division (ISD) the HPB Cancer QPIs[1] were published by Healthcare Improvement Scotland (HIS) in August 2012 and implemented for patients diagnosed on or after 1st January 2013. Data definitions and measurability criteria to accompany the HPB Cancer QPIs are available from the ISD website[2].

Twelve months of data were measured against the HPB Cancer QPIs for the fifth consecutive year. Following reporting of Year 1 data (2013), a process of baseline review was undertaken to ensure QPIs were fit for purpose and truly driving quality improvement in patient care. This review process resulted in measurability changes to some QPIs. Formal review of the HPB Cancer QPIs commenced in October 2016, with the revised QPIs published at the start of 2017. Some QPIs have undergone major changes after formal review and so the data for 2016 may not be comparable with data from previous years. Other QPIs have undergone minor changes where data is still comparable. QPI changes will be detailed in the performance section of each QPI. Future reports will continue to compare clinical audit data in successive years where it is clear and possible to do so, to further illustrate trends.

2. Background

HPB cancers are a rare group of cancers. In 2017 the audit identified 1425 patients diagnosed with a new primary cancer of the liver, pancreas, bile duct, gallbladder or duodenum in Scotland. Pancreatic cancer accounts for almost half of all HPB cancer diagnoses (46.2%). Figure 1 illustrates the proportion of new cases of each HPB cancer type diagnosed in Scotland for 2017.

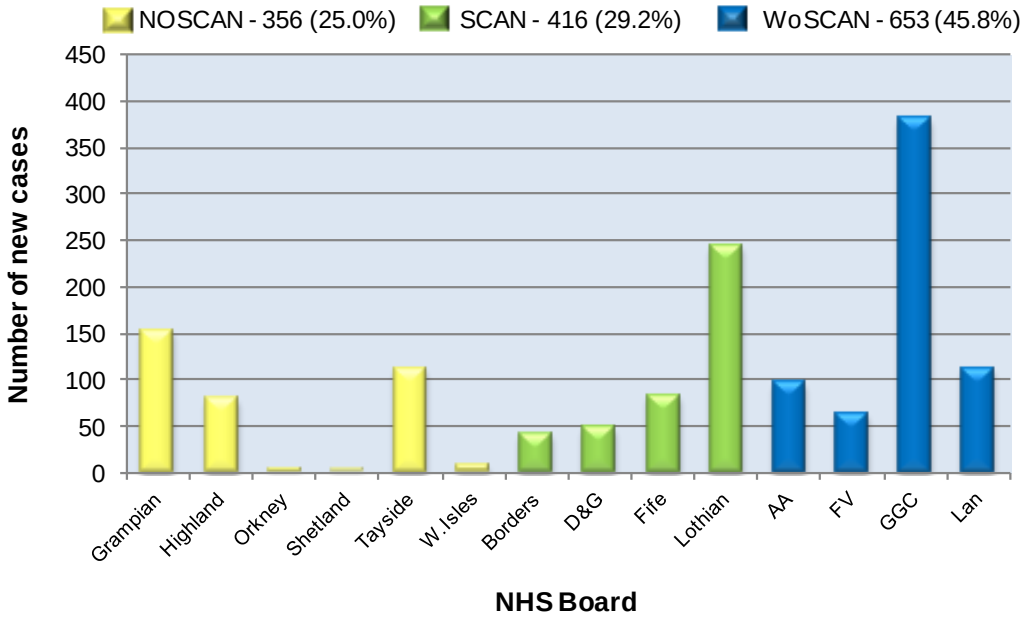
Figure 1: Proportion of new cases of HPB cancers in 2017 by site of tumour



	2011	2012	2013	2014	2015	2016	2017
Pancreas	649	653	636	656	716	698	659
Liver	347	358	446	457	503	535	481
Bile duct/ GB	160	192	266	274	286	266	253
Duodenum	28	29	38	31	30	31	32
Total	**1184**	**1232**	**1386**	**1418**	**1535**	**1530**	**1425**

The distribution of the 1425 patients diagnosed in 2017 across the fourteen Scottish NHS Boards is presented in Figure 2. The West of Scotland Cancer Network (WoSCAN) is the most populous of the three Regional Cancer Networks in Scotland and, with 653 patients diagnosed in WoS in 2017, this represents almost half of all HPB cancer diagnoses in Scotland (45.8%). 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[3].

Figure 2: Number of patients diagnosed with HPB cancer across Scotland by NHS Board in 2017



NOSCAN						SCAN				WoSCAN			
Grampian	Highland	Orkney	Shetland	Tayside	W.Isles	Borders	D&G	Fife	Lothian	AA	FV	GGC	Lan
152	79	4	2	111	8	41	49	83	243	97	63	382	111

Table 1 details the five HPB cancer centres in Scotland. These are considered the centres for specialist treatment, which includes surgery, SACT and radiotherapy. 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.

Table 1: Specialist centres for treatment of patients diagnosed with HPB cancer in Scotland

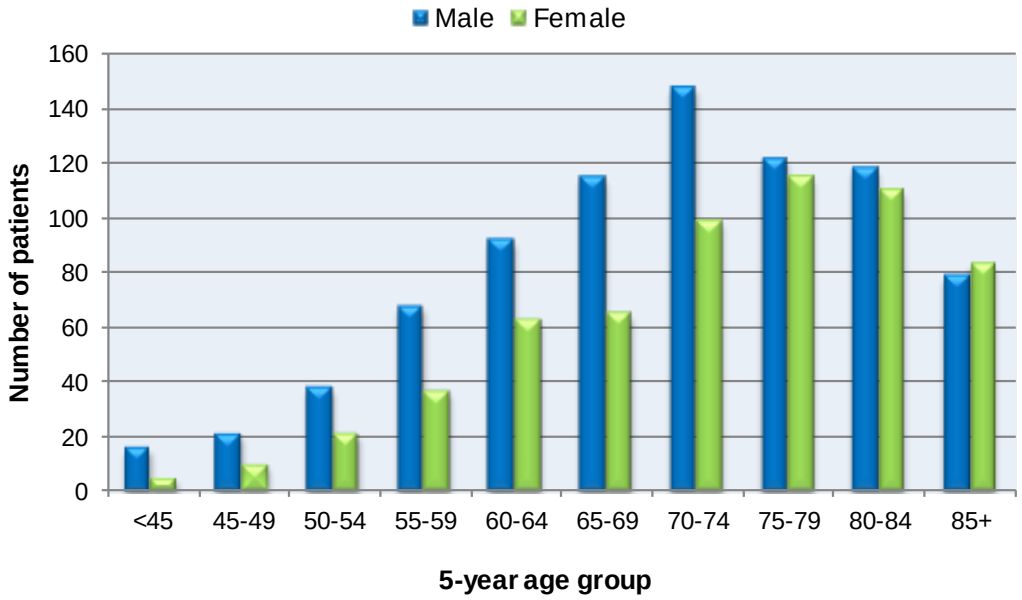
Centre	Constituent Hospital(s)
Aberdeen	Aberdeen Royal Infirmary
Dundee	Ninewells Hospital
Edinburgh	Royal Infirmary of Edinburgh (RIE – surgery, ablation and trans-arterial chemoembolisation (TACE)) and Western General Hospital (WGH – systemic anti-cancer therapy (SACT) and radiotherapy)
Glasgow	Glasgow 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

In Scotland, liver cancer is the twelfth most common cancer in males and eighteenth in females[4].The incidence of liver cancer is rising and the last decade has seen the overall incidence of liver cancer increase by 55.7% in Scotland[4], with increases in incidence of 52.6% and 64.6% in males and females respectively. The percentage frequency of liver cancer is however relatively low at 1.8% of all cancer types[4]. There has been an overall rise in mortality rates for cancer of the liver over the past ten years of 60.2%, showing a statistically significant increase in both males and females[5]. Liver cancer is now ranked as the seventh most common cause of death from cancer in 2017, and the 10-year percentage change in mortality rates show significant increases of 47.4% and 92.8% for males and females respectively[5].

Pancreatic cancer is the eleventh most common cancer in males and ninth in females[6]. The increase in incidence from 2006 to 2016 is significant in both males and females at 4.5% and 10.9% respectively[6]. Whilst pancreatic cancer is relatively rare (accounting for 2.5% of all cancers), it remains the sixth most common cause of death from cancer in Scotland[6]. 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 a slight improvement in the 1-year relative (age-standardised) survival in the last twenty years however survival rates remain low at 17.7% in males and 17.1% in females[7]. There has been no recorded improvement in 5-year survival for pancreatic cancer over the past two decades and 5-year relative survival is 3.3% in males and 4.5%in females[7].

HPB cancers occur most frequently later in life. Figure 3 illustrates the number of new cases in 2017 by age and sex. There are approximately 5 males diagnosed for every 4 females and the incidence of HPB cancers is higher in males in most age groups. 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 over a quarter of HPB cancers were diagnosed in individuals under the age of 65 years (26.0%).

Figure 3: Number of patients diagnosed with HPB cancer in Scotland in 2017 by age group and sex.



	<45	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+	Total
Male	16	21	38	68	92	115	148	122	118	79	817
Female	5	10	21	37	63	65	99	115	110	83	608

3. Methodology

The clinical audit data presented in this report was collected by clinical audit staff in each NHS Board in accordance with an agreed dataset and definitions. The data was recorded manually and entered locally into the electronic Cancer Audit Support Environment (eCASE): a secure centralised web-based database. Data relating to patients diagnosed between 1st January 2017 and 31st December 2017 was downloaded from eCASE at 2200 hrs on 15th August 2018. Cancer audit is a dynamic process with patient data continually being revised and updated as more information becomes available. This means that apparently comparable reports for the same time period and cancer site may produce slightly different figures if extracted at different times.

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

Once all NHS Boards had been given the opportunity to verify their data, further analyses were carried out at a regional and national level to provide an overall assessment of the quality of HPB cancer services in Scotland. These treatment-centre-based results were provided to key regional clinicians/ clinical leads for comment ahead of publication.

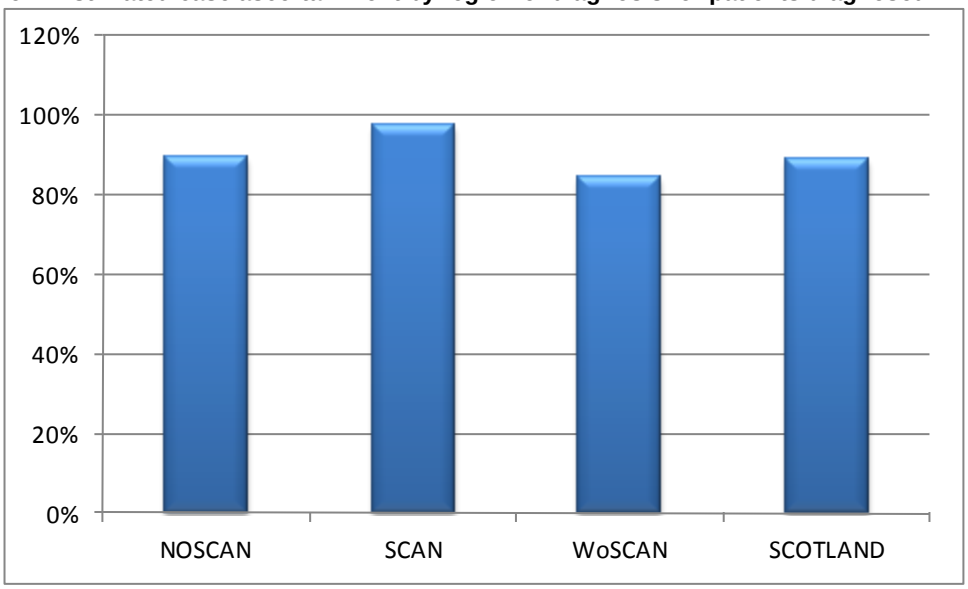
4. Results and Action Required

4.1 Data Quality

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

Overall case ascertainment for HPB cancer in Scotland is 89.0% which indicates good data capture through audit. Case ascertainment figures however are provided for guidance and are not an exact measurement as it is not possible to compare directly with the same cohort. Case ascertainment for each NHS Board across Scotland is illustrated in Figure 4 and indicates good data capture across all NHS Boards in 2017. This level of data capture aids the interpretation of analysis based on cancer audit data, as more complete data will return more reliable results.

Figure 4: Estimated case ascertainment by region of diagnosis for patients diagnosed in 2017



	NOSCAN	SCAN	WoSCAN	SCOTLAND
Cases from audit	356	416	653	1425
Cancer Reg. (2012 - 2016)	399	427	775	1602
% Case ascertainment	89.2%	97.4%	84.3%	**89.0%**

As HPB services are based around specialist centres, some QPIs are analysed based upon the location of treatment rather than the board of diagnosis. Patients often move between NHS Boards for diagnosis and treatment and this requires that robust systems are in place to ensure good data quality and completeness where there is cross-boundary movement. Continued effort in this area is essential to ensure this level of data quality is maintained.

Comparing audit figures to Cancer Registry figures on a year by year demonstrates that there has been a continual improvement in case ascertainment over the period from 2010 to 2015. When measured this way, case ascertainment has increased from 81% in 2010, to 91% in 2015.

4.2 Performance against Quality Performance Indicators (QPIs)

Results of the analysis of HPB Cancer Quality Performance Indicators (QPIs 1 to 13) are set out in the following sections. Data are presented 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.

Results are presented graphically and the accompanying tables also highlight any missing data and its possible effect on any of the measured outcomes for the current year of analysis. For the majority of QPIs, only data for 2016 and 2017 (post formal review) is shown to allow for a clear graphical representation of data.

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 restricted data are denoted with a dash (-).An asterisk (*) is used to specify a denominator of zero and to distinguish between this and a 0% performance.

Where any NHS Board has either restricted data (-) or a denominator of zero (*) for all years the Board is not included in the graph. Any commentary provided by NHS Boards relating to the impacted indicators will however be included as a record of continuous improvement.

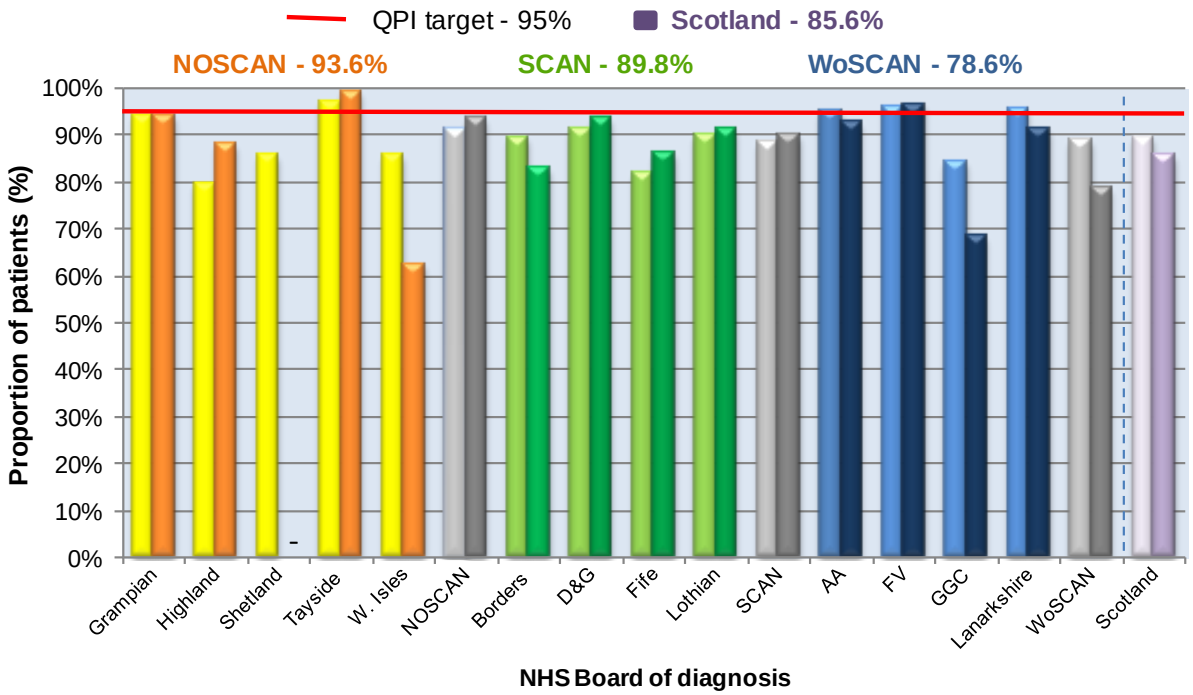
Specific regional and NHS Board actions have been identified to address issues highlighted through the data analysis.

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. QPI 1 states that 95% of patients should be discussed at the MDT prior to definitive treatment. The tolerance allows for patients who need urgent treatment[1].

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

Figure 5: Proportion of patients with HPB cancer who are discussed at MDT meeting before definitive treatment, by NHS Board of diagnosis 2016 and 2017.



QPI 1	2017 (%)	Numerator	Denominator	NR numerator	NR exclusions	NR denominator
Grampian	94.0%	141	150	0	0	0
Highland	88.0%	66	75	0	0	0
Orkney	-	-	-	0	0	0
Shetland	-	-	-	0	0	0
Tayside	99.1%	106	107	0	0	0
W. Isles	62.5%	5	8	0	0	0
NOSCAN	**93.6%**	**322**	**344**	**0**	**0**	**0**
Borders	82.9%	34	41	0	0	0
D&G	93.6%	44	47	0	0	0
Fife	86.3%	69	80	0	0	0
Lothian	91.5%	215	235	0	1	0
SCAN	**89.8%**	**362**	**403**	**0**	**1**	**0**
AA	92.7%	89	96	1	0	0
Forth Valley	96.7%	59	61	0	0	0
GGC	68.3%	254	372	2	2	0
Lanarkshire	91.5%	97	106	0	0	0
WoSCAN	**78.6%**	**499**	**635**	**3**	**2**	**0**
Scotland	**85.6%**	**1183**	**1382**	**3**	**3**	**0**

Dash (-) denotes restricted data where the denominator is less than 5. Asterisk (*) denotes a denominator of zero.

Four of the fourteen Boards met the 95% target which equals the performance of the previous year. The overall national performance was 85.6% which shows a reduction in performance on the previous year. No regions met the target but NOSCAN and SCAN showed improvement on the previous year.

Boards not meeting the target have reviewed cases not meeting the target and provided feedback. A large number of cases were not discussed as the treatment plan was for best supportive care or stent insertion. Some patients had an incidental finding at surgery or emergency admission. Other reasons included patient refusal of therapy and patients dying prior to MDT.

NHS Greater Glasgow and Clyde identified a small number of patients who were discussed at local MDT, but were not then referred to the regional NHS GGC MDT as the patients were for supportive care only. This issue was highlighted as an action within last year's audit report. NHS Greater Glasgow and Clyde will work to ensure that all patients discussed at local MDTs are referred to the regional NHS GGC MDT.

Actions:

- All Boards to ensure that patients are discussed at MDT prior to definitive treatment where it is clinically appropriate, including where patients are for supportive care only.
- NHS Greater Glasgow and Clyde to ensure that all patients discussed at local MDTs are referred to the regional NHS GGC MDT meeting.

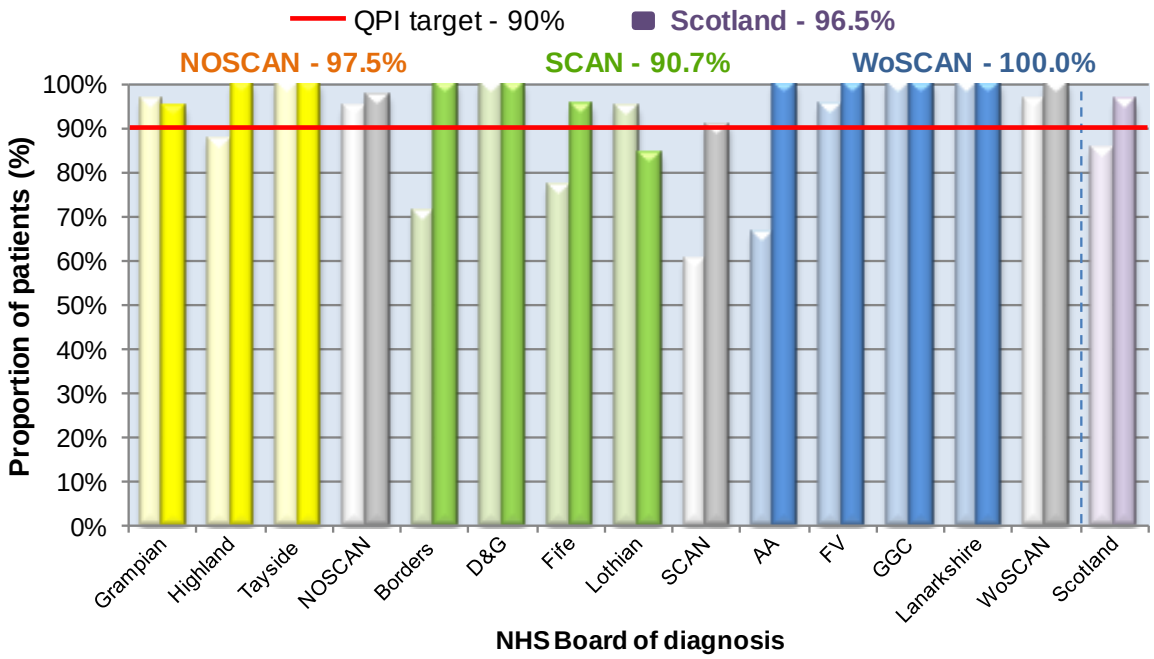
QPI 2: Diagnosis and Staging of HCC

The management of hepatocellular carcinoma (HCC) is determined by both the stage of HCC and the presence or severity of underlying chronic liver disease[1]. Complete information is required to enable correct management decisions to be made by the multidisciplinary team (MDT), such as the location, number and size of tumours. A full list of the required information is published within the HPB QPI document[1]and shown in Appendix 1. 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[1].

QPI 2:	Patients with Hepatocellular Carcinoma (HCC) should be appropriately diagnosed and staged.
Description:	Proportion of patients with HCC who have undergone computerised tomography (CT) or Magnetic Resonance Imaging (MRI) and with full information recorded.
Numerator:	(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.
Denominator:	All patients with HCC.
Exclusions:	No exclusions.
Target:	90%

QPI 2 underwent changes at formal review and was split into two parts. Part (i) looks at those undergoing CT or MRI; whilst part (ii) concerns those undergoing CT or MRI where complete staging information has been recorded. The detail of the information required is shown in Appendix 1 of this document. The change at formal review required the inclusion of a new data field for part (ii) which could not be reported on last year as one full year of data collection is required. This is therefore the first year where part (ii) will be reported using the new measurability. Part (ii) data for 2017 is presented in isolation as the data is no longer comparable with that of previous years.

Figure 6: Proportion of patients diagnosed with HCC in 2016 and 2017 that have undergone CT or MRI recorded by NHS Board of diagnosis.



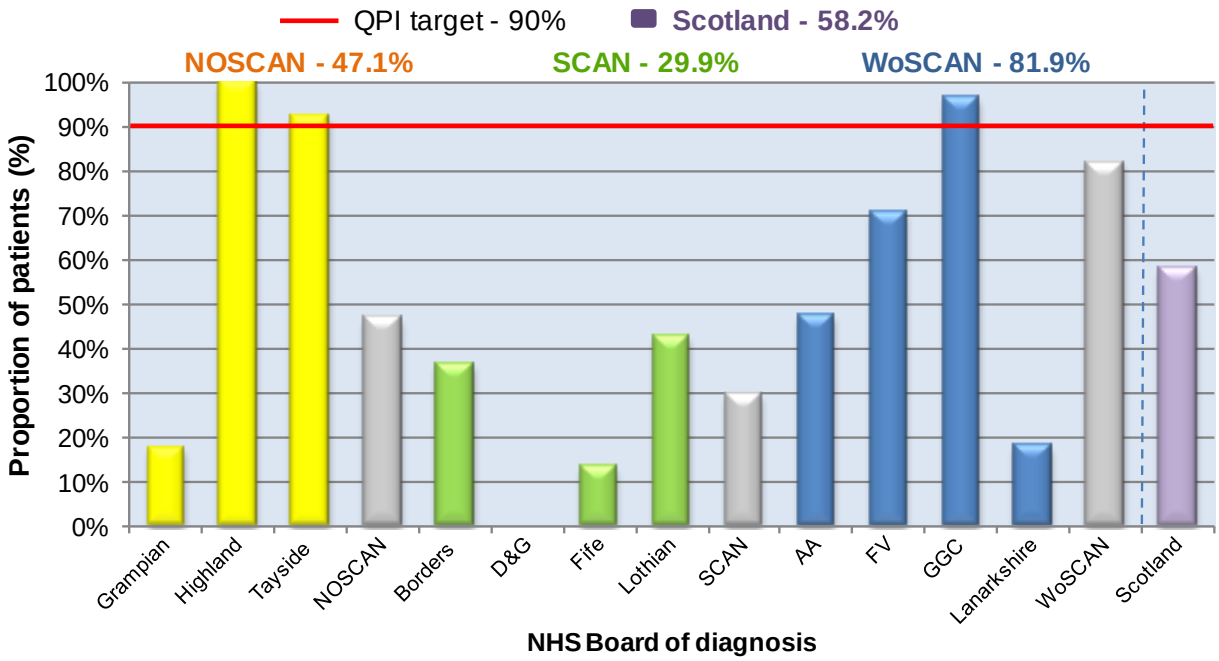
QPI 2(i)	2017 (%)	Numerator	Denominator	NR numerator	NR exclusions	NR denominator
Grampian	95.0%	38	40	0	0	0
Highland	100.0%	13	13	0	0	0
Orkney	*	*	*	0	0	0
Shetland	*	*	*	0	0	0
Tayside	100.0%	25	25	0	0	0
W. Isles	-	-	-	0	0	0
NOSCAN	**97.5%**	**78**	**80**	**0**	**0**	**0**
Borders	100.0%	11	11	0	0	0
D&G	100.0%	16	16	0	0	0
Fife	95.5%	21	22	0	0	0
Lothian	84.5%	49	58	0	0	0
SCAN	**90.7%**	**97**	**107**	**0**	**0**	**0**
AA	100.0%	21	21	0	0	0
Forth Valley	100.0%	17	17	0	0	0
GGC	100.0%	111	111	0	0	0
Lanarkshire	100.0%	11	11	0	0	0
WoSCAN	**100.0%**	**160**	**160**	**0**	**0**	**0**
Scotland	**96.5%**	**335**	**347**	**0**	**0**	**0**

Dash (-) denotes restricted data where the denominator is less than 5. Asterisk (*) denotes a denominator of zero.

Ten of the eleven Boards with data shown met the 90% target. The target was met within all three regions and the national performance was 96.5%.

NHS Lothian provided feedback on cases not meeting the target and stated that the majority of patients did not receive imaging as their tumour was an incidental finding at surgery. The remainder of cases received a CT of the abdomen and pelvis but not the chest. NHS Lothian remind staff that a full CT of chest, abdomen and pelvis is required for staging purposes.

Figure 7: Proportion of patients diagnosed with HCC in 2017 that have undergone CT or MRI with full information recorded by NHS Board of diagnosis.



QPI 2(ii)	2017 (%)	Numerator	Denominator	NR numerator	NR exclusions	NR denominator
Grampian	17.5%	7	40	0	0	0
Highland	100.0%	13	13	0	0	0
Orkney	*	*	*	0	0	0
Shetland	*	*	*	0	0	0
Tayside	92.3%	12	13	0	0	0
W. Isles	-	-	-	0	0	0
NOSCAN	**47.1%**	**32**	**68**	**0**	**0**	**0**
Borders	36.4%	4	11	0	0	0
D&G	0.0%	0	16	0	0	0
Fife	13.6%	3	22	0	0	0
Lothian	43.1%	25	58	0	0	0
SCAN	**29.9%**	**32**	**107**	**0**	**0**	**0**
AA	47.6%	10	21	0	0	0
Forth Valley	70.6%	12	17	0	0	0
GGC	96.4%	107	111	0	0	0
Lanarkshire	18.2%	2	11	0	0	0
WoSCAN	**81.9%**	**131**	**160**	**0**	**0**	**0**
Scotland	**58.2%**	**195**	**335**	**0**	**0**	**0**

Dash (-) denotes restricted data where the denominator is less than 5. Asterisk (*) denotes a denominator of zero.

NHS Highland, NHS Tayside and NHS Greater Glasgow and Clyde met the 90% target, with NHS Highland achieving a performance of 100.0%. No regions met the target. The best performing region was WoSCAN with 81.9%. The national performance was 58.2%.

Boards have provided feedback on cases not meeting the target.

NHS Grampian stated that they will make efforts to improve information recording at time of MDT. Going forward, a hepatologist and radiologist will be nominated to provide further input if required.

NHS Lothian stated that protocols are available for staff. All staff will be reminded of the requirements around documentation.

NHS Forth Valley commented that obtaining all information items would have required additional invasive tests and investigations that had no impact on treatment decisions. NHS Ayrshire and Arran commented that obtaining Child Pugh scores from referring clinicians continues to be challenging.

NHS Lanarkshire stated that a new electronic MDT form has been developed to be implemented from October 2018 onwards. This should aid the MDT to record full information where possible.

Actions:

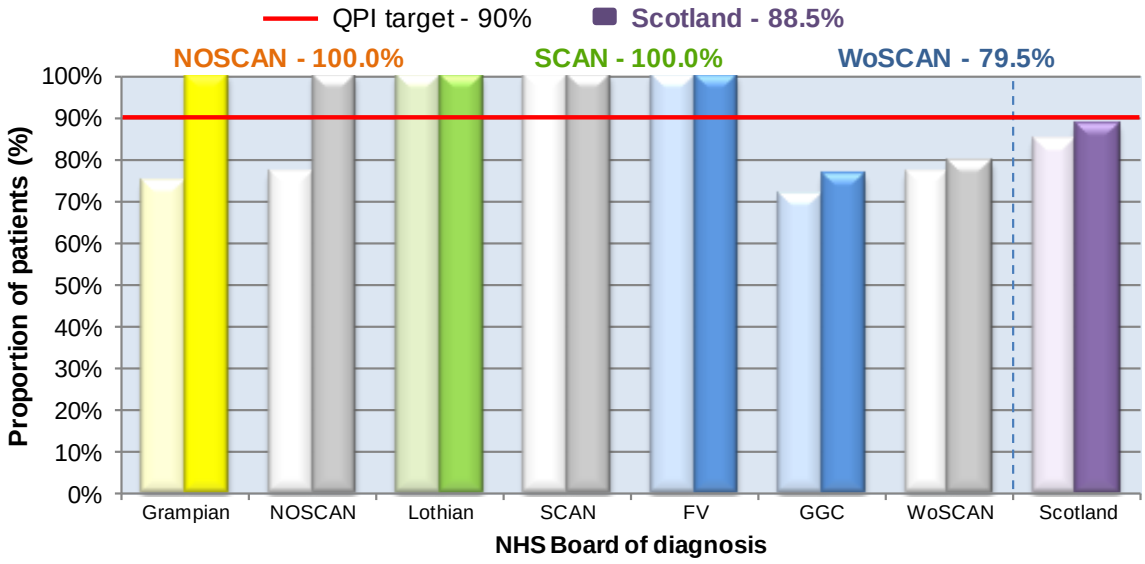
- NHS Lothian to inform staff of the importance of a full CT chest/abdomen/pelvis for staging purposes.
- All Boards to ensure full information is recorded where clinically appropriate.

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[1]. All patients with early HCC should be considered for liver transplantation and there should be equity of access to liver transplantation across Scotland[1]. 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[1].

QPI 3:	Patients with early HCC should be referred for consideration of liver transplantation.
Description:	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.
Numerator:	Number of patients with HCC meeting the UK listing criteria that are referred to SLTU.
Denominator:	All patients with HCC meeting UK listing criteria[1] (as defined by NHS Blood and Transplant).
Exclusions:	• Patients who refuse treatment. • Patients with evidence of vascular invasion. • Patients with extrahepatic disease.
Target:	90%

Figure 8: Proportion of patients diagnosed with HCC in 2016 and 2017 who meet the UK listing criteria for orthotopic liver transplantation referred to the SLTU for consideration of liver transplant.



QPI 3	2017 (%)	Numerator	Denominator	NR numerator	NR exclusions	NR denominator
Grampian	100.0%	7	7	0	5	23
Highland	-	-	-	0	1	0
Orkney	*	*	*	0	0	0
Shetland	*	*	*	0	0	0
Tayside	-	-	-	0	0	0
W. Isles	*	*	*	0	0	2
NOSCAN	**100.0%**	**10**	**10**	**0**	**6**	**25**
Borders	-	-	-	0	0	0
D&G	-	-	-	0	1	5
Fife	*	*	*	0	0	0
Lothian	100.0%	20	20	0	1	0
SCAN	**100.0%**	**24**	**24**	**0**	**2**	**5**
AA	-	-	-	0	0	0
Forth Valley	100.0%	7	7	0	0	0
GGC	76.5%	26	34	0	3	0
Lanarkshire	*	*	*	0	0	1
WoSCAN	**79.5%**	**35**	**44**	**0**	**3**	**1**
Scotland	**88.5%**	**69**	**78**	**0**	**11**	**31**

Dash (-) denotes restricted data where the denominator is less than 5. Asterisk (*) denotes a denominator of zero.

NOSCAN and SCAN met the 90% target, both with 100%. WoSCAN was short of the target with 79.5%. The overall national performance was just short of the target with 88.5%.

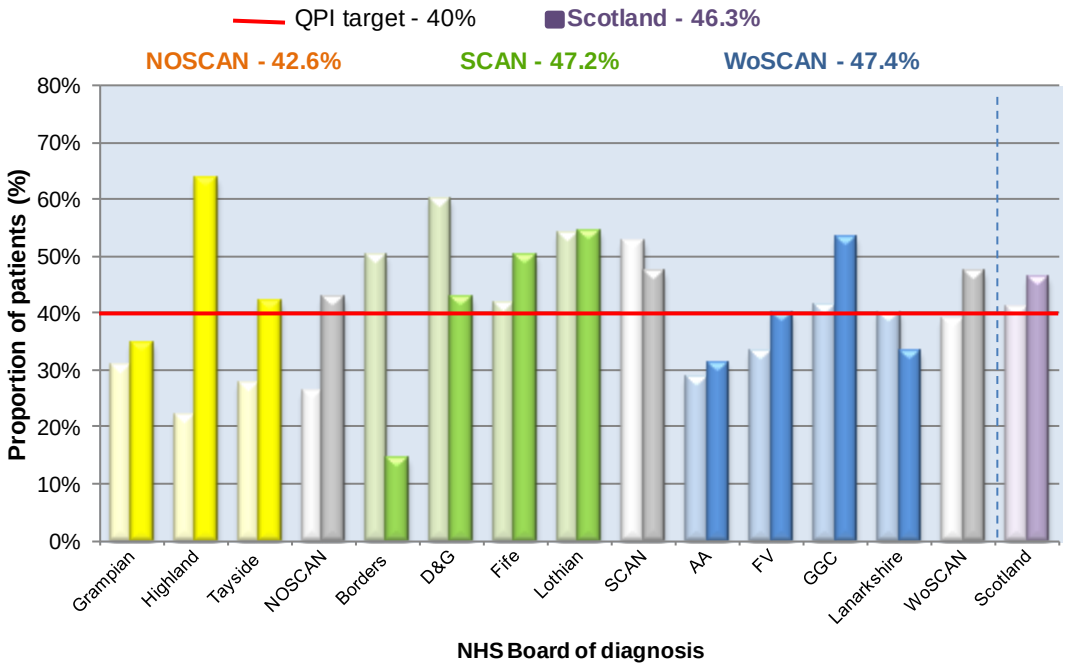
NHS Greater Glasgow and Clyde and NHS Ayrshire and Arran provided feedback on cases not meeting the target. Both Boards highlighted patient frailty and comorbidities as reasons for not meeting the target.

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 and well compensated chronic liver disease that are not suitable for treatments with curative intent[1].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[8].
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[1].

QPI 4:	Patients with Hepatocellular Carcinoma (HCC) who are not suitable for curative treatment should receive palliative treatment.
Description:	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 (Trans-arterial chemoembolisation (TACE), Systemic Anti Cancer Therapy (SACT) or radiotherapy).
Numerator:	Number of patients with HCC not undergoing treatment with curative intent who receive TACE, SACT or radiotherapy.
Denominator:	All patients with HCC not undergoing treatment with curative intent (liver transplantation, resection or ablative therapies).
Exclusions:	• Patients who refuse treatment. • Patients with decompensated chronic liver disease (Child-Pugh Grade C).
Target:	40%

Figure 9: Proportion of patients diagnosed with HCC in 2016 and 2017 not suitable for treatment with curative intent that undergo specific treatment with palliative intent (TACE, SACT and radiotherapy) by NHS Board of diagnosis.



QPI 4	2017 (%)	Numerator	Denominator	NR numerator	NR exclusions	NR denominator
Grampian	34.8%	8	23	0	9	0
Highland	63.6%	7	11	0	0	0
Orkney	*	*	*	0	0	0
Shetland	*	*	*	0	0	0
Tayside	42.1%	8	19	0	0	0
W. Isles	-	-	-	0	1	0
NOSCAN	**42.6%**	**23**	**54**	**0**	**10**	**0**
Borders	14.3%	1	7	0	6	0
D&G	42.9%	6	14	0	12	0
Fife	50.0%	8	16	0	14	0
Lothian	54.3%	19	35	0	6	0
SCAN	**47.2%**	**34**	**72**	**0**	**38**	**0**
AA	31.3%	5	16	0	8	0
Forth Valley	40.0%	6	15	0	2	0
GGC	53.2%	47	77	1	2	1
Lanarkshire	33.3%	2	6	0	1	0
WoSCAN	**47.4%**	**54**	**114**	**1**	**13**	**1**
Scotland	**46.3%**	**111**	**240**	**1**	**61**	**1**

Dash (-) denotes restricted data where the denominator is less than 5. Asterisk (*) denotes a denominator of zero.

Seven out of the eleven Boards shown met the 40% target. Of the Boards not meeting the target, NHS Grampian and NHS Ayrshire and Arran showed improvement on the previous year; while NHS Borders and NHS Lanarkshire showed a drop in performance compared to last year. All three regions met the target, and the national performance was above target at 46.3%.

Where Boards have not met the target, cases have been reviewed. All reviewed patients were not suitable for treatment for a multitude of reasons including advanced/metastatic disease and multiple comorbidities. In most cases, patients were for supportive care only. NHS Grampian anticipates that performance will improve with efforts to develop better documentation at time of MDT discussion.

Actions:

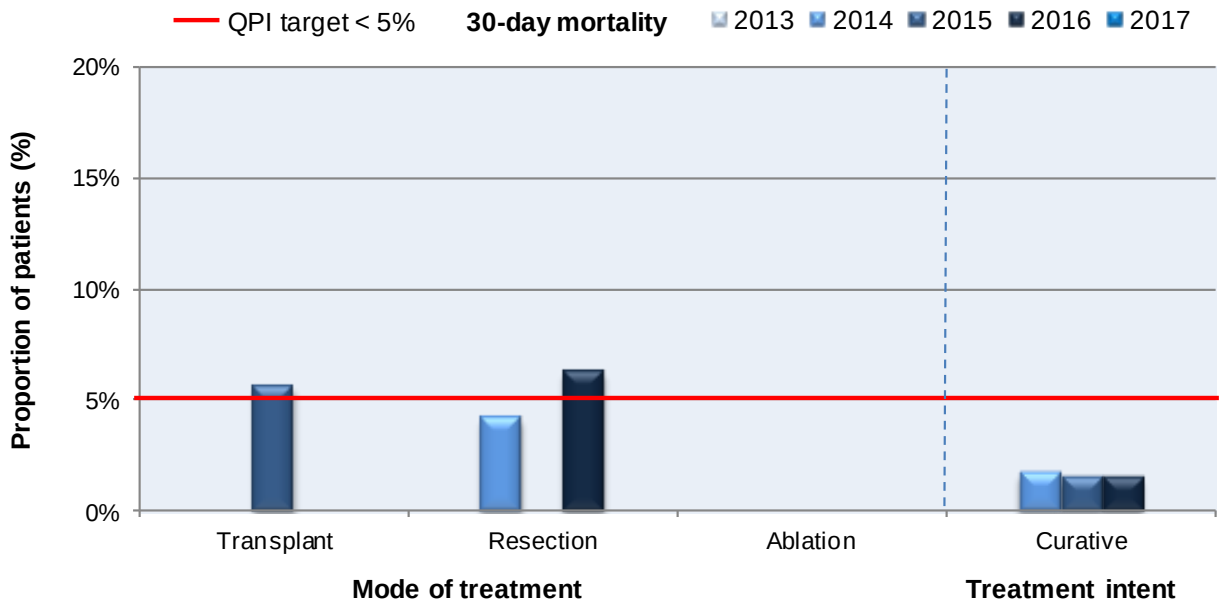
- NHS Grampian to work towards improving documentation at time of MDT discussion.

QPI 5a-e: 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, SACT) intent. In either case, treatments should be performed safely with low rates of mortality and should not be undertaken in futile situations[1]. Mortality figures by treatment type are presented graphically for Scotland as a whole, and the accompanying table illustrates figures by treatment type for each regional centre. Mortality rates should be less than 10% for both curative and palliative treatments.

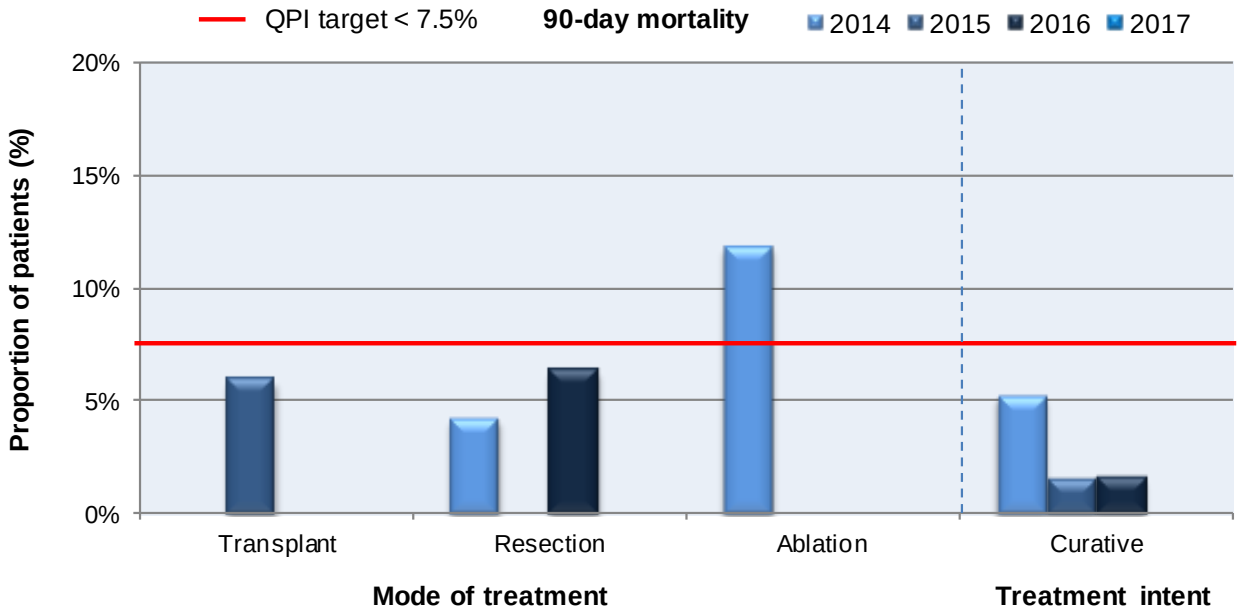
QPI 5:	30-day and 90-day mortality following treatment for Hepatocellular Carcinoma (HCC) with curative (transplant, resection, ablation) or palliative (TACE, SACT) intent.
Description:	Proportion of patients with HCC undergoing disease specific treatment, either curative or palliative, who die within 30 or 90days of definitive treatment.
Numerator:	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).
Denominator:	All patients with HCC undergoing:- **Curative:**(30 and 90-day mortality) a) Liver transplant b) Resection c) Ablation **Palliative:** (30-day mortality only) d) TACE e) SACT
Exclusions:	No exclusions
Target:	**Curative:** 30 days <5% 90 days <7.5% **Palliative:**< 10%

Figure 10: Proportion of patients in Scotland diagnosed with HCC 2013 to 2017 undergoing disease-specific treatment with curative intent that die within 30 days of definitive treatment.



QPI 5 30-day	Performance (%)	Numerator	Denominator	NR numerator	NR exclusions	NR denominator
Liver Transplant	**0.0%**	**0**	**22**	**0**	**0**	**0**
Liver Resection	**0.0%**	**0**	**13**	**0**	**0**	**0**
Ablation	**0.0%**	**0**	**24**	**0**	**0**	**0**
Curative	**0.0%**	**0**	**59**	**0**	**0**	**0**

Figure 11: Proportion of patients in Scotland diagnosed with HCC from 2014 to 2017 undergoing disease-specific treatment that die within 90 days of definitive treatment (curative treatment only).

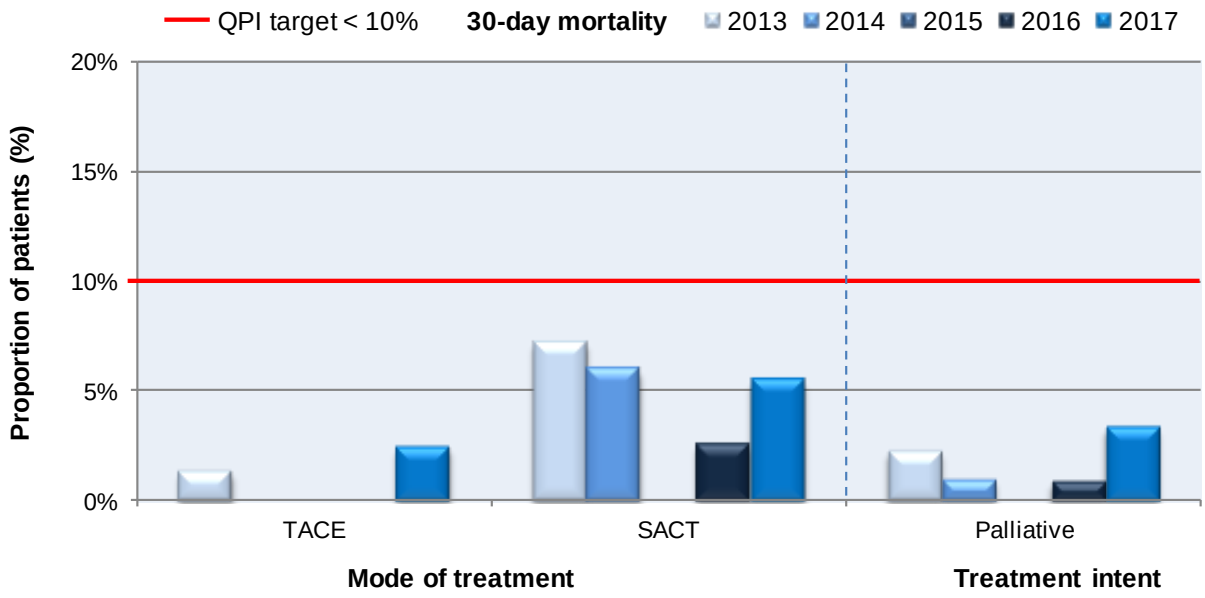


QPI 5 90-day	Performance (%)	Numerator	Denominator	NR numerator	NR exclusions	NR denominator
Liver Transplant	**0.0%**	**0**	**21**	**0**	**0**	**0**
Liver Resection	**0.0%**	**0**	**13**	**0**	**0**	**0**
Ablation	**0.0%**	**0**	**24**	**0**	**0**	**0**
Curative	**0.0%**	**0**	**58**	**0**	**0**	**0**

90 day mortality was not measured in 2013.

Results are presented by mode of treatment at a national level. There were no deaths within 30 or 90 days of treatment with curative intent in Scotland for 2017. This shows the best overall performance for all years of analysis.

Figure 12: Proportion of patients in Scotland diagnosed with HCC 2013 to 2017 undergoing disease-specific treatment with palliative intent that die within 30 days of definitive treatment.



QPI 5 30-day	Performance (%)	Numerator	Denominator	NR numerator	NR exclusions	NR denominator
TACE	**2.4%**	**2**	**85**	**0**	**0**	**0**
SACT	**5.4%**	**2**	**37**	**0**	**0**	**0**
Palliative	**3.3%**	**4**	**122**	**0**	**0**	**0**

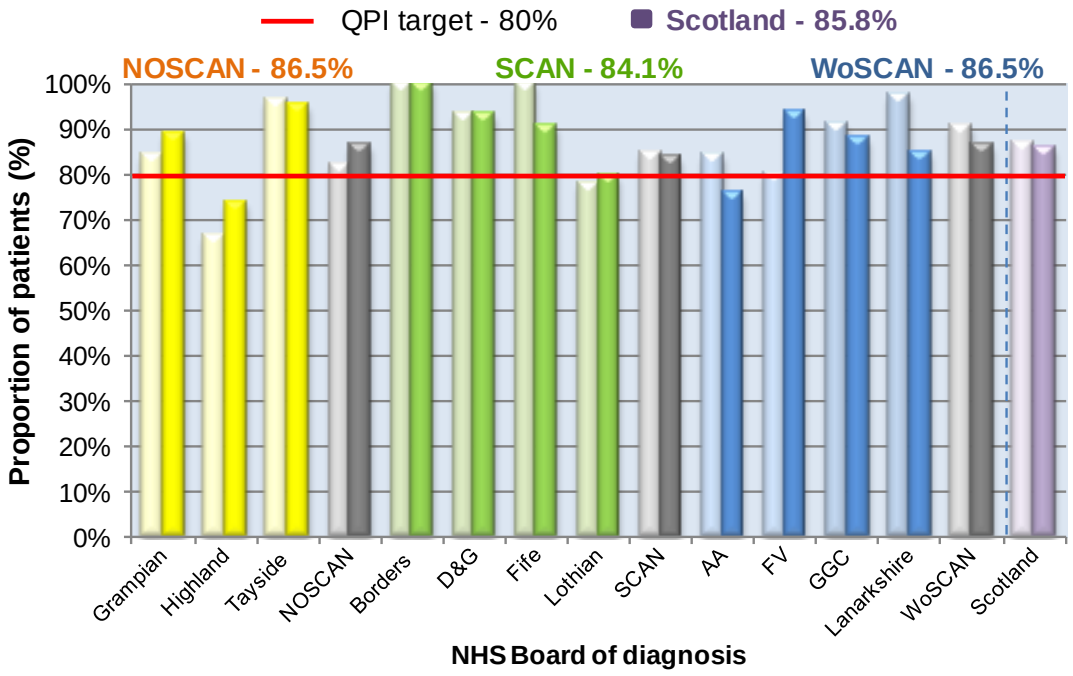
There were four cases of mortality within 30 days of treatment with palliative intent. The performance of 3.3% is the highest of all years measured, but falls well within the 10% target. Performances for both TACE and SACT were within the target range.

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[1]. 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[1]. Some patients may present with very advanced disease and may not be fit for investigation and/or treatment and the 80% target accounts for such patients.

QPI 6:	Patients with pancreatic, duodenal or biliary tract cancers should undergo a computerised tomography (CT) of the chest, abdomen and pelvis to evaluate the extent of disease.
Description:	Proportion of patients with pancreatic, duodenal or biliary tract cancer who undergo CT of the chest, abdomen and pelvis.
Numerator:	Number of patients with pancreatic, duodenal or biliary tract cancer who undergo CT of the chest, abdomen and pelvis.
Denominator:	All patients with pancreatic, duodenal or biliary tract cancer.
Exclusions:	Patients undergoing supportive care only.
Target:	80%

Figure 13: Proportion of patients diagnosed with pancreatic, duodenal or biliary tract cancer in 2016 and 2017 that underwent CT of the chest, abdomen and pelvis.



QPI 6	2017 (%)	Numerator	Denominator	NR numerator	NR exclusions	NR denominator
Grampian	89.3%	50	56	0	0	0
Highland	73.9%	34	46	0	0	0
Orkney	-	-	-	0	0	0
Shetland	*	*	*	0	0	0
Tayside	95.3%	41	43	0	0	0
W. Isles	-	-	-	0	0	0
NOSCAN	**86.5%**	**128**	**148**	**0**	**0**	**0**
Borders	100.0%	13	13	0	0	0
D&G	93.3%	14	15	0	0	0
Fife	90.5%	19	21	0	0	0
Lothian	79.6%	86	108	0	1	0
SCAN	**84.1%**	**132**	**157**	**0**	**1**	**0**
AA	76.0%	19	25	0	0	0
Forth Valley	93.8%	15	16	0	0	0
GGC	87.9%	145	165	0	0	0
Lanarkshire	84.9%	45	53	0	0	0
WoSCAN	**86.5%**	**224**	**259**	**0**	**0**	**0**
Scotland	**85.8%**	**484**	**564**	**0**	**1**	**0**

Dash (-) denotes restricted data where the denominator is less than 5. Asterisk (*) denotes a denominator of zero.

Eight out of the eleven Boards shown met the 80% target. NHS Lothian was marginally short with 79.6% while NHS Highland and NHS Ayrshire and Arran also did not meet the target. All three regions met the target. The national performance was above the target with 85.8%.

NHS Lothian and NHS Highland commented that the majority of patients not meeting the target had a CT chest/abdomen or CT abdomen/pelvis. As in QPI 2, NHS Lothian will remind staff that CT chest/abdomen/pelvis is required for full staging of disease. NHS Highland has introduced a new proforma to be completed at the time of MDT to ensure that all patients receive a CT chest/abdomen/pelvis.

NHS Ayrshire and Arran stated that the majority of cases not meeting the target were patients who were for supportive care only.

Actions:

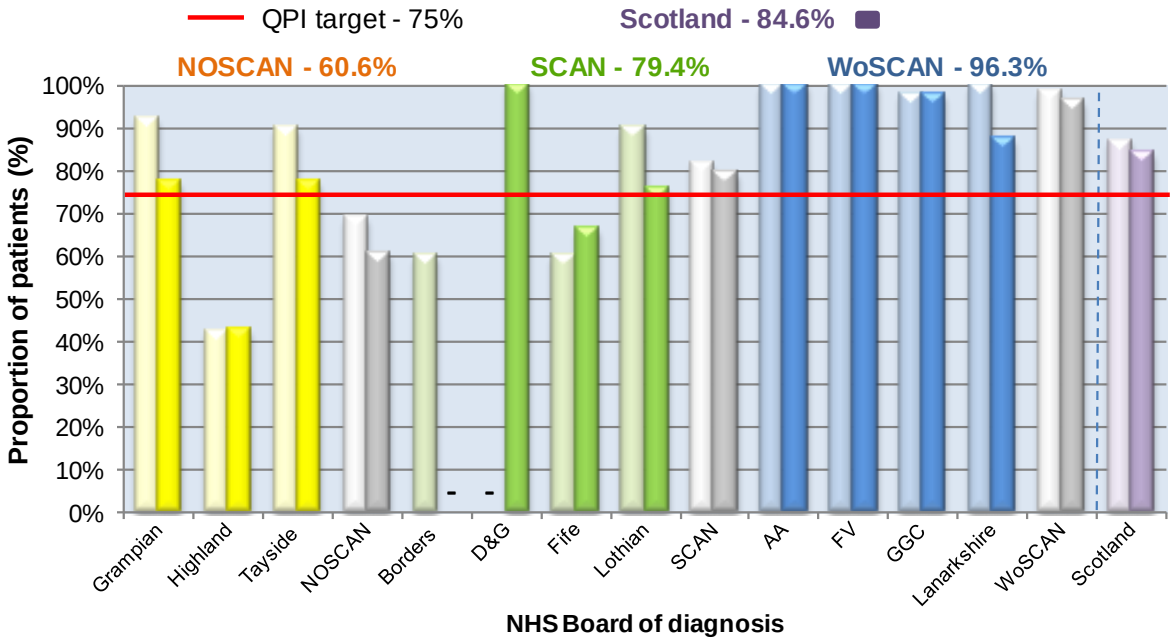
- NHS Lothian to remind staff that CT chest/abdomen/pelvis is required for full staging of disease.

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[1]. 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[1]. 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 75% target reflects this and also factors relating to patient choice.

QPI 7:	Patients with pancreatic, duodenal or biliary tract cancers having non-surgical treatment should have a cytological or histological diagnosis
Description:	Proportion of patients with pancreatic, duodenal or biliary tract cancer undergoing non-surgical treatment who have a cytological or histological diagnosis
Numerator:	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)
Denominator:	All patients with pancreatic, duodenal or distal biliary tract undergoing non-surgical treatment
Exclusions:	No exclusions
Target:	75%

Figure 14: Proportion of patients diagnosed with pancreatic, duodenal or biliary tract cancer undergoing non-surgical treatment that have a cytological or histological diagnosis in 2016 and 2017.



QPI 7	2017 (%)	Numerator	Denominator	NR numerator	NR exclusions	NR denominator
Grampian	77.8%	7	9	0	0	0
Highland	42.9%	6	14	0	0	0
Orkney	*	*	*	0	0	0
Shetland	*	*	*	0	0	0
Tayside	77.8%	7	9	0	0	0
W. Isles	-	-	-	0	0	0
NOSCAN	**60.6%**	**20**	**33**	**0**	**0**	**0**
Borders	-	-	-	0	0	0
D&G	100.0%	6	6	0	0	0
Fife	66.7%	4	6	0	0	0
Lothian	76.2%	16	21	0	0	0
SCAN	**79.4%**	**27**	**34**	**0**	**0**	**0**
AA	100.0%	8	8	0	0	1
Forth Valley	100.0%	6	6	0	0	0
GGC	98.1%	51	52	0	0	0
Lanarkshire	87.5%	14	16	0	0	0
WoSCAN	**96.3%**	**79**	**82**	**0**	**0**	**1**
Scotland	**84.6%**	**126**	**149**	**0**	**0**	**1**

Dash (-) denotes restricted data where the denominator is less than 5. Asterisk (*) denotes a denominator of zero.

Of the ten Boards with data displayed for 2017, eight Boards met the 75% target. NHS Highland and NHS Fife were short of the target with 42.9% and 66.7% respectively. NHS Fife showed improvement on last year whilst the performance of NHS Highland is comparable with that of last year. However, small numbers for some Boards mean that comparisons between Boards should be made with caution. NOSCAN were the only region to not meet the target with 60.6%. The overall national performance was above the target at 84.6%.

NHS Highland stated that all patients not meeting the target had a FNA or biopsy performed. Only two of the eight patients who failed the target had a sample that was suspicious of cancer. The remainder had inadequate samples or samples that were not suggestive of cancer. NHS Highland is in the process of changing from EUS FNA (Endoscopic Ultrasound-guided Fine Needle Aspiration) to EUS FNB (Endoscopic Ultrasound-guided Fine Needle Biopsy) in order to improve the diagnostic yield from samples.

NHS Western Isles provided feedback on the case not meeting the target. The patient was managed in a clinically appropriate manner.

NHS Fife is requested to provide detailed clinical feedback as to why histological or cytological diagnosis was not obtained.

Actions:

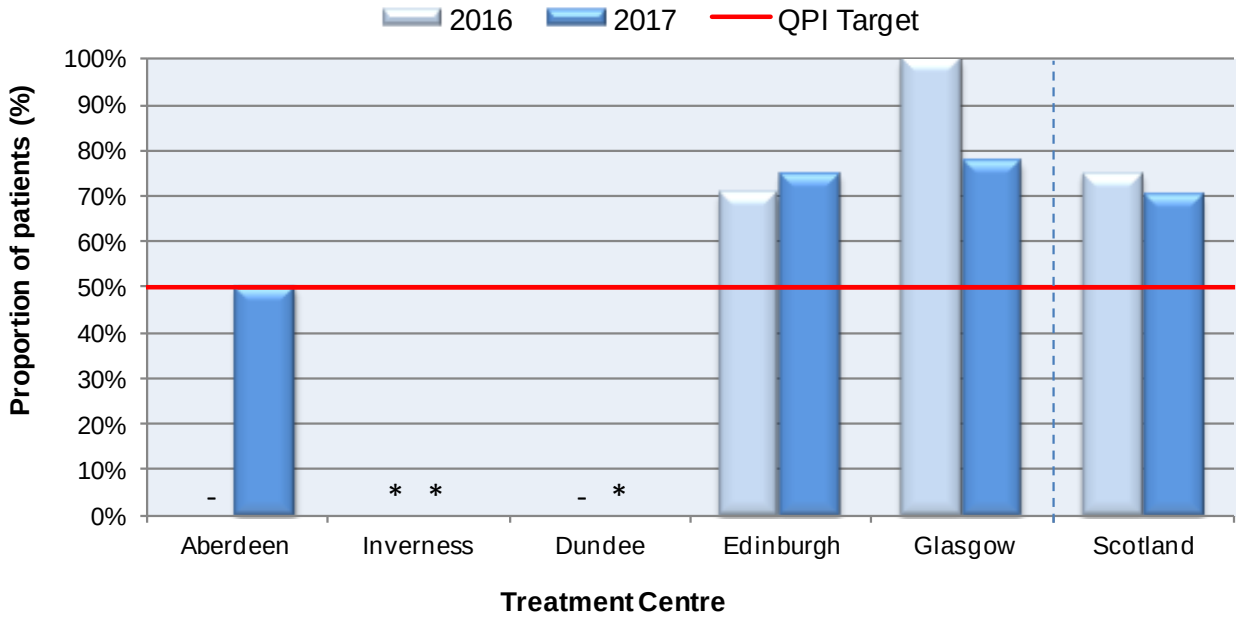
- NHS Fife to provide detailed clinical feedback on cases not meeting the target.

QPI 8: Systemic Therapy for Pancreatic Cancer

Adjuvant chemotherapy is the accepted standard of care for patients with pancreatic cancer following surgical resection and is proven to have survival benefit[1]. The 50% target accounts for patients who may have post-operative complications that preclude consideration of adjuvant therapy.

QPI 8:	Patients undergoing resection for pancreatic cancer should receive neo-adjuvant or adjuvant chemotherapy, where appropriate
Description:	Proportion of patients undergoing resection for pancreatic cancer receiving neo-adjuvant or adjuvant chemotherapy
Numerator:	Number of patients undergoing pancreatic cancer resection who receive neo-adjuvant or adjuvant chemotherapy
Denominator:	All patients undergoing resection for pancreatic cancer
Exclusions:	• Patients who die post-operatively (within 60 days of surgery) • Patients who refuse chemotherapy
Target:	50%

Figure 15: Proportion of patients diagnosed with pancreatic cancer undergoing surgery that receive neo-adjuvant or adjuvant chemotherapy, 2016 and 2017.



QPI 8	2017 (%)	Num	Den	NR numerator	NR exclusions	NR denominator
Aberdeen	50.0%	3	6	0	0	0
Inverness	*	*	*	0	0	0
Dundee	*	*	*	0	0	0
Edinburgh	75.0%	9	12	0	0	0
Glasgow	77.8%	7	9	0	0	0
SCOTLAND	**70.4%**	**19**	**27**	**0**	**0**	**0**

Dash (-) denotes restricted data where the denominator is less than 5. Asterisk (*) denotes a denominator of zero.

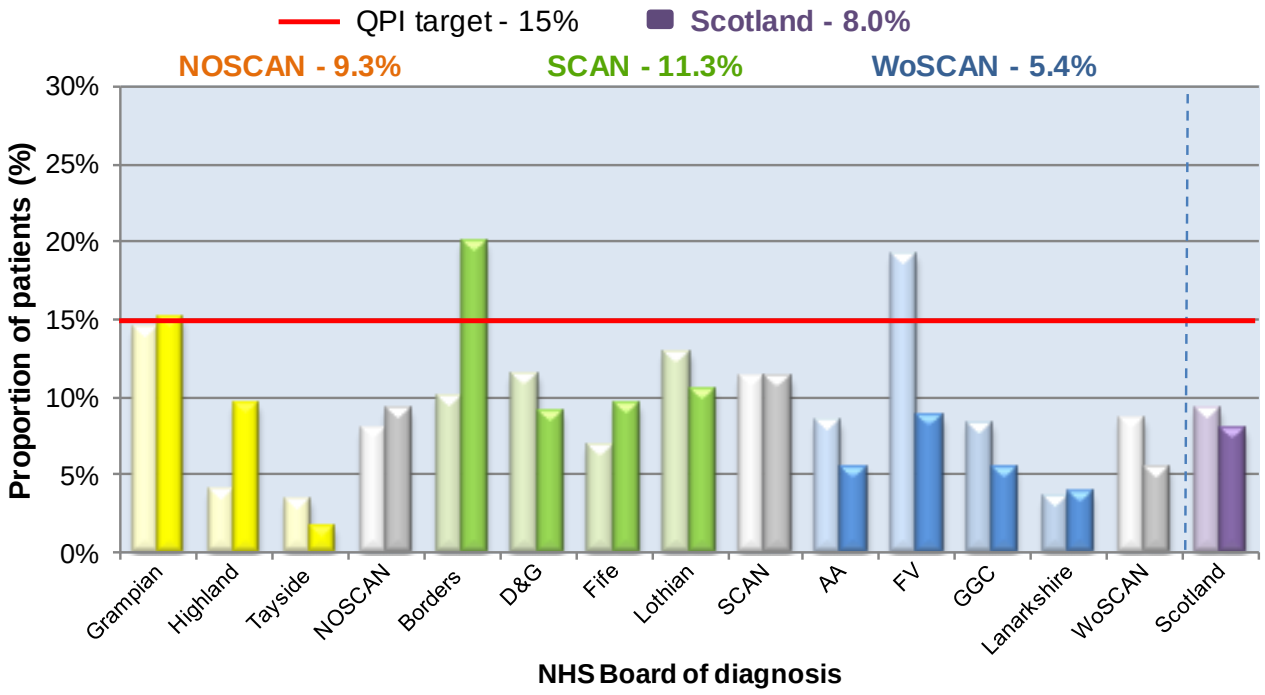
Aberdeen (50.0%), Edinburgh (75.0%) and Glasgow (77.8%) centres all met the 50% target. There were no patients from Inverness or Dundee centres who met the QPI denominator. The national performance of 70.4% is slightly down on last year when 75.0% was achieved. However, it should be noted that small numbers mean that comparison of results should be made with caution.

QPI 9: Resection Rate for Pancreatic, Duodenal or Biliary Tract Cancer

Surgical resection is the only potentially curative treatment for pancreatic cancer. Where surgical resection is not carried out, the reason(s) should be clearly documented by the MDT[1]. The 15% target for this QPI takes into consideration patient choice as well as patients who may develop complications during the pre-operative phase. The target recognises that the majority of patients will have advanced disease at presentation and will therefore not be suitable for curative surgery.

QPI 9:	Patients with pancreatic, distal biliary tract or duodenal cancer should have surgical resection.
Description:	Proportion of patients who undergo resection for pancreatic, distal biliary tract or duodenal cancer.
Numerator:	Number of patients with pancreatic, duodenal or distal biliary tract cancer who undergo resection.
Denominator:	All patients with pancreatic, duodenal or distal biliary tract cancer.
Exclusions:	No exclusions.
Target:	15%

Figure 16: Proportion of patients diagnosed with pancreatic, distal biliary tract or duodenal cancer that undergo resection, 2016-17.



QPI 9	2017 (%)	Numerator	Denominator	NR numerator	NR exclusions	NR denominator
Grampian	15.1%	13	86	0	0	0
Highland	9.6%	5	52	0	0	0
Orkney	-	-	-	0	0	0
Shetland	-	-	-	0	0	0
Tayside	1.7%	1	59	0	0	0
W. Isles	-	-	-	0	0	0
NOSCAN	**9.3%**	**19**	**204**	**0**	**0**	**0**
Borders	20.0%	5	25	0	0	0
D&G	9.1%	2	22	0	0	0
Fife	9.5%	4	42	0	0	0
Lothian	10.5%	14	133	0	0	0
SCAN	**11.3%**	**25**	**222**	**0**	**0**	**0**
AA	5.4%	3	56	0	0	0
Forth Valley	8.8%	3	34	0	0	0
GGC	5.4%	11	204	0	0	0
Lanarkshire	3.8%	3	78	0	0	0
WoSCAN	**5.4%**	**20**	**372**	**0**	**0**	**0**
Scotland	**8.0%**	**64**	**798**	**0**	**0**	**0**

Dash (-) denotes restricted data where the denominator is less than 5. Asterisk (*) denotes a denominator of zero.

The target for this QPI continues to be challenging for all Boards to achieve. NHS Grampian and NHS Borders were the only Boards, of the eleven shown, to meet the 15% target with 15.1% and 20.0% respectively. No regions met the target. The overall national performance was slightly down on last year at 8.0%, compared to 9.2% in 2016.

Boards not meeting the target have reviewed cases and provided feedback. The general feeling from Boards is that the target of this QPI is aspirational. The majority of patients not meeting the target do not undergo resection due to advanced disease and comorbidities. Most of these patients are for palliative therapy or best supportive care. A small number of patients refused surgery.

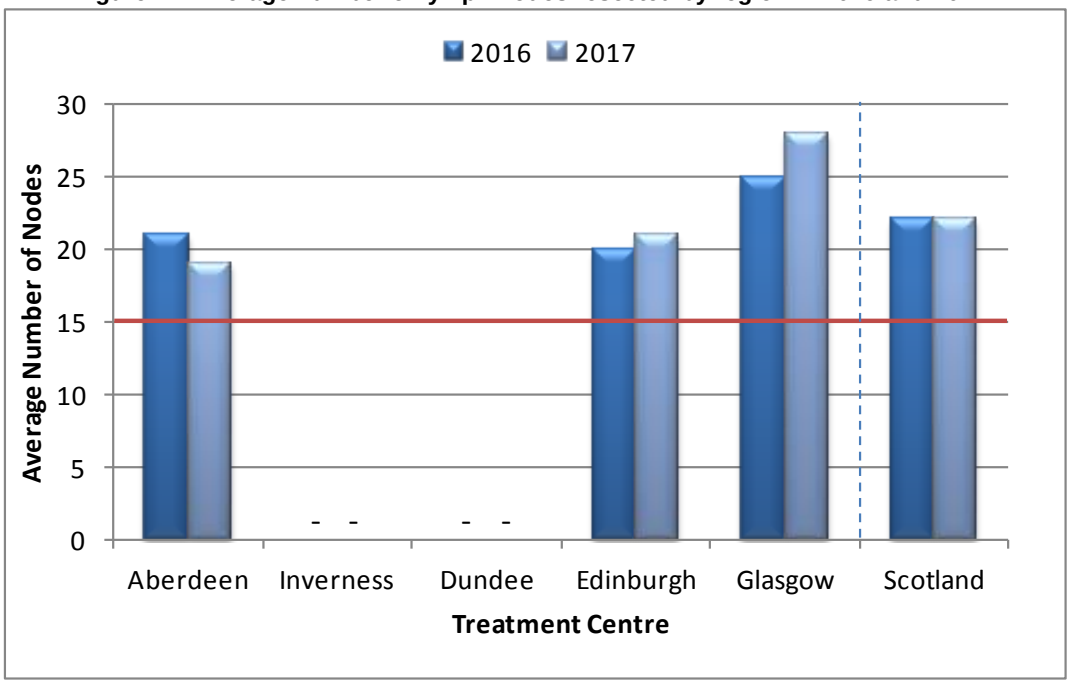
NHS Greater Glasgow and Clyde have stated that they have started to target improved patient fitness through the use of High Risk Anaesthetic Clinic review. The Board also commented that earlier diagnosis can be helped through education of the public and health care professionals.

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[1]. Evidence suggests that pancreatoduodenectomy should yield a minimum of 15 lymph nodes from the principal specimen[1]. Within the measurement of this QPI, pancreatoduodenectomy is being utilised as a proxy measurement for all surgical resection to ensure consistent and comparable measurement across NHS Scotland. The baseline review group proposed that the QPI should be broadened to look at all patients undergoing pancreatoduodenectomy, rather than only patients diagnosed with pancreatic cancer, to ensure consistency between all surgical QPIs. The denominator was therefore updated to include duodenal and distal biliary tract cancers.

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

Figure 17: Average number of lymph nodes resected by region in 2016 and 2017.



QPI 10	2017 Avg	Numerator	Denomintator	NR numerator	NR exclusions	NR denominator
Aberdeen	19	194	10	0	0	0
Inverness	-	-	-	0	0	0
Dundee	-	-	-	0	0	1
Edinburgh	21	494	24	0	0	0
Glasgow	28	440	16	0	0	0
SCOTLAND	**22**	**1214**	**55**	**0**	**0**	**1**

Dash (-) denotes restricted data where the denominator is less than 5.

All shown centres met the target of a 15 node average. The average number of nodes resected improved in 2017 for both Edinburgh and Glasgow centres. There was a slight reduction in performance for Aberdeen. The performance for Inverness and Dundee centres is not shown due to small numbers. The average number of nodes resected nationally remains the same as last year at 22.

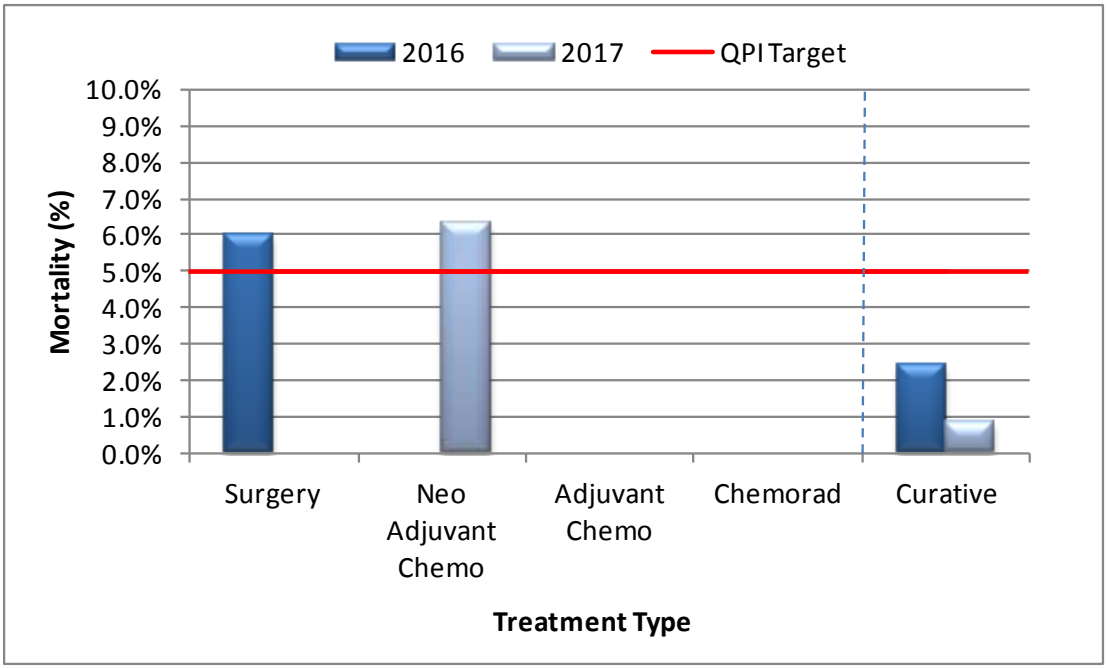
QPI 11: 30 and 90-day Mortality after Curative or Palliative treatment for Pancreatic, Duodenal or Distal Biliary Tract Cancer

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

QPI 11a/b:	30-day and 90-day mortality following treatment for pancreatic, duodenal or distal biliary tract cancer with either curative or palliative intent.	
Description:	Proportion of patients with pancreatic, duodenal or distal biliary tract cancer who die within 30/90 days of definitive treatment with either curative or palliative intent.	
Numerator:	(i)	Number of patients with pancreatic, duodenal or distal biliary tract cancer who receive curative treatment that die within 30 or 90 days of treatment.
	(ii)	Number of patients with pancreatic, duodenal or distal biliary tract cancer who receive palliative treatment that die within 30 days of treatment.
Denominator:	(i)	All patients with pancreatic, duodenal or distal biliary tract cancer who receive curative treatment.
	(ii)	All patients with pancreatic, duodenal or distal biliary tract cancer who receive palliative treatment.
Exclusions:	No exclusions.	
Target:	(i) 30 days <5% 90 days <7.5% (ii) 30 days <10%	

This QPI was been updated at formal review to incorporate both curative and palliative therapies, and the target for 90 day mortality (curative) increased to <7.5%. Data is presented at a national level.

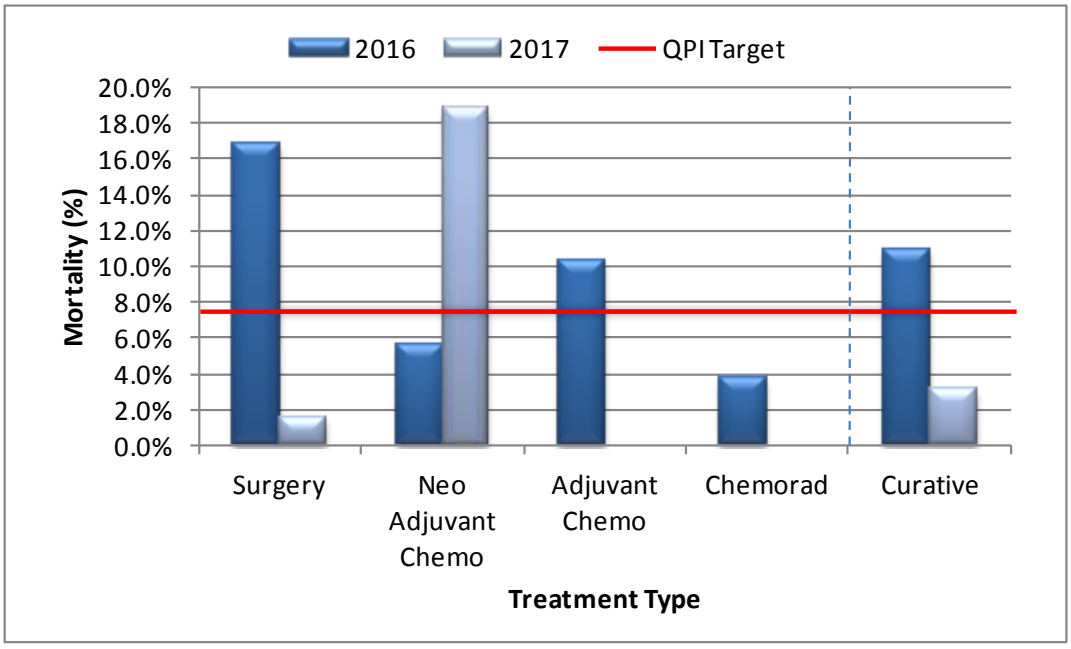
Figure 18: Proportion of patients diagnosed with pancreatic, duodenal or distal biliary tract cancer who die within 30 days of definitive treatment with curative intent in 2016 and 2017.



QPI 11(i) (30 day curative)	2017 (%)	Num	Den	NR numerator	NR exclusions	NR denominator
Surgery	0.0%	0	64	0	0	0
Neo-Adjuvant Chemotherapy	6.3%	1	16	0	0	2
Adjuvant Chemotherapy	0.0%	0	39	1	0	1
Chemoradiotherapy	0.0%	0	14	0	0	2
Curative	**0.8%**	**1**	**133**	**1**	**0**	**5**

There were no cases of mortality within the first 30 days after surgery, adjuvant chemotherapy and chemoradiotherapy in 2017. There was one case of mortality within 30 days of neo-adjuvant chemotherapy, giving a performance of 6.3%. This performance exceeds the 5% target, but it should be noted that this is only one case of mortality with a small denominator which inflates the percentage. The surgical mortality is much improved on last year. The overall 30 day mortality for curative treatments has improved on last year from 2.4% to 0.8%. The one case of mortality has been reviewed locally at the Morbidity and Mortality meeting (M&M). The M&M review group concluded that the case was handled in a clinically appropriate manner.

Figure 20: Proportion of patients diagnosed with pancreatic, duodenal or distal biliary tract cancer who die within 90 days of definitive treatment with curative intent in 2016 and 2017.



QPI 11(i) (90 day curative)	2017 (%)	Num	Den	NR numerator	NR exclusions	NR denominator
Surgery	1.6%	1	64	0	0	0
Neo-Adjuvant Chemotherapy	18.8%	3	16	0	0	2
Adjuvant Chemotherapy	0.0%	0	32	1	0	1
Chemoradiotherapy	0.0%	0	13	0	0	2
Curative	**3.2%**	**4**	**125**	**1**	**0**	**5**

NB: The denominator for 30-day and 90-day mortality may differ if 90 days has not passed since the date of surgery at time of audit.

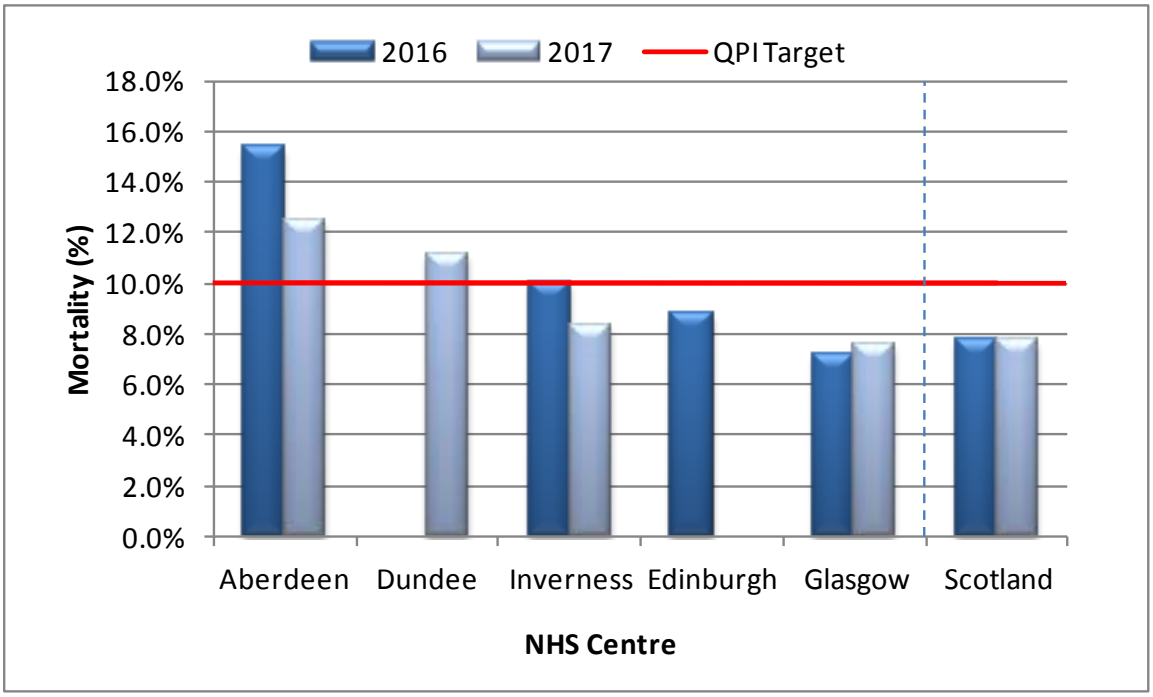
Mortality within 90 days after treatment has improved in 2017 for surgery, adjuvant chemotherapy and chemoradiotherapy. The performance for these treatment modalities is within the 7.5% target. 90 day mortality after neo-adjuvant chemotherapy has increased from 5.6% in 2016 to 18.8% in 2017. Again, it should be noted that this is a smaller cohort of patients. Overall curative mortality 90 days after treatment has improved from 10.9% in 2016 to 3.2% in 2017, which now falls within the target range.

Boards have reviewed cases not meeting the target and provided feedback. Cases have been reviewed locally with no issues raised. The surgical case was discussed at the National HPB M&M meeting in June 2018.

NHS Grampian noted that one case of mortality was counted for surgery and neo-adjuvant chemotherapy (as the patient received both), which impacted upon overall mortality rates for the Board.

During the audit period the Glasgow centre noted unacceptably high rates of mortality after neo-adjuvant chemotherapy. As a result, the administration of neo-adjuvant chemotherapy was limited to clinical trials from 2018.

Figure 24: Proportion of patients diagnosed with pancreatic, duodenal or distal biliary tract cancer who die within 30 days of definitive treatment with palliative intent in 2016 and 2017.



QPI 11(ii) (30 day palliative)	2017 (%)	Num	Den	NR numerator	NR exclusions	NR denominator
Aberdeen	12.5%	1	8	0	0	0
Dundee	11.1%	1	9	0	0	0
Inverness	8.3%	1	12	3	0	0
Edinburgh	0.0%	0	26	0	0	0
Glasgow	7.6%	6	79	5	0	1
Non specialised centres	**13.6%**	**3**	**22**	**2**	**0**	**0**
SCOTLAND	**7.7%**	**12**	**156**	**10**	**0**	**1**

Inverness, Edinburgh and Glasgow centres met the 10% target for mortality 30 days after treatment with palliative intent. Aberdeen and Dundee exceeded the target with 12.5% and 11.1% respectively. There were 22 patients treated at non-specialised centres (an increase on 9 in 2016). Overall national mortality was within the target at 7.7%.

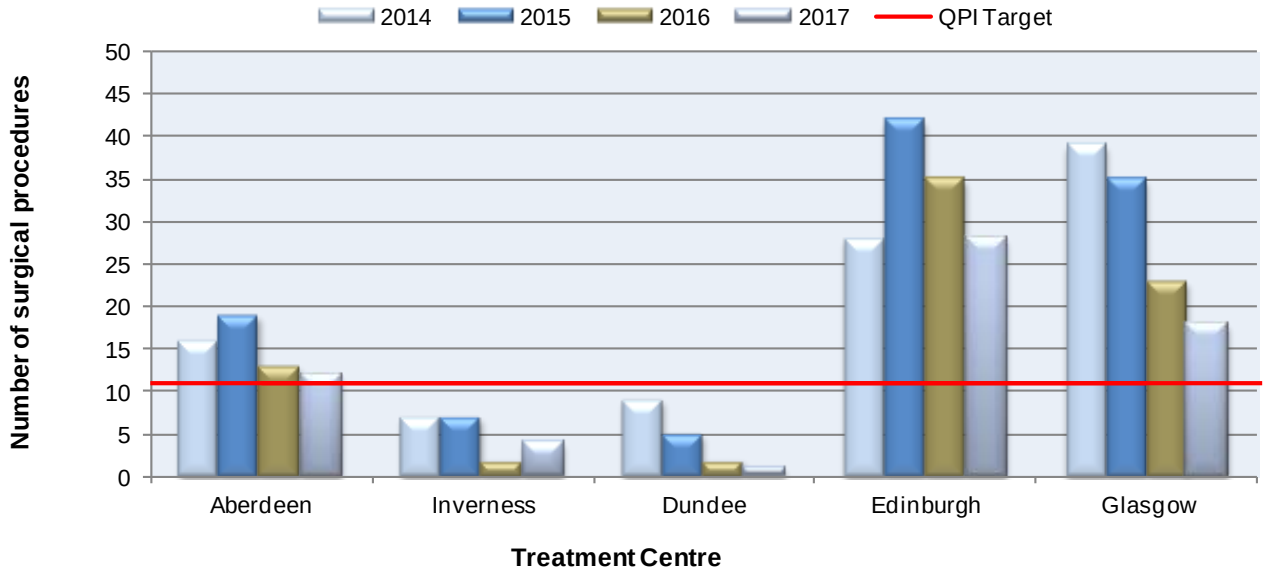
Boards have reviewed cases not meeting the target. NHS Lanarkshire noted that one case was incorrectly coded as palliative therapy. This would come off the total for non-specialised centres to give 2/21, 9.5%. This in turn would amend the national performance to 11/155, 7.1%.

QPI 12a/b: 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[1]. 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 hepatopancreatobiliary resections and improved patient outcomes (mortality)[1].

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.

Figure 25: Number of surgical resections for pancreatic, duodenal and biliary tract cancer performed by a specialist centre over a 1 year period, from 2014 to 2017.

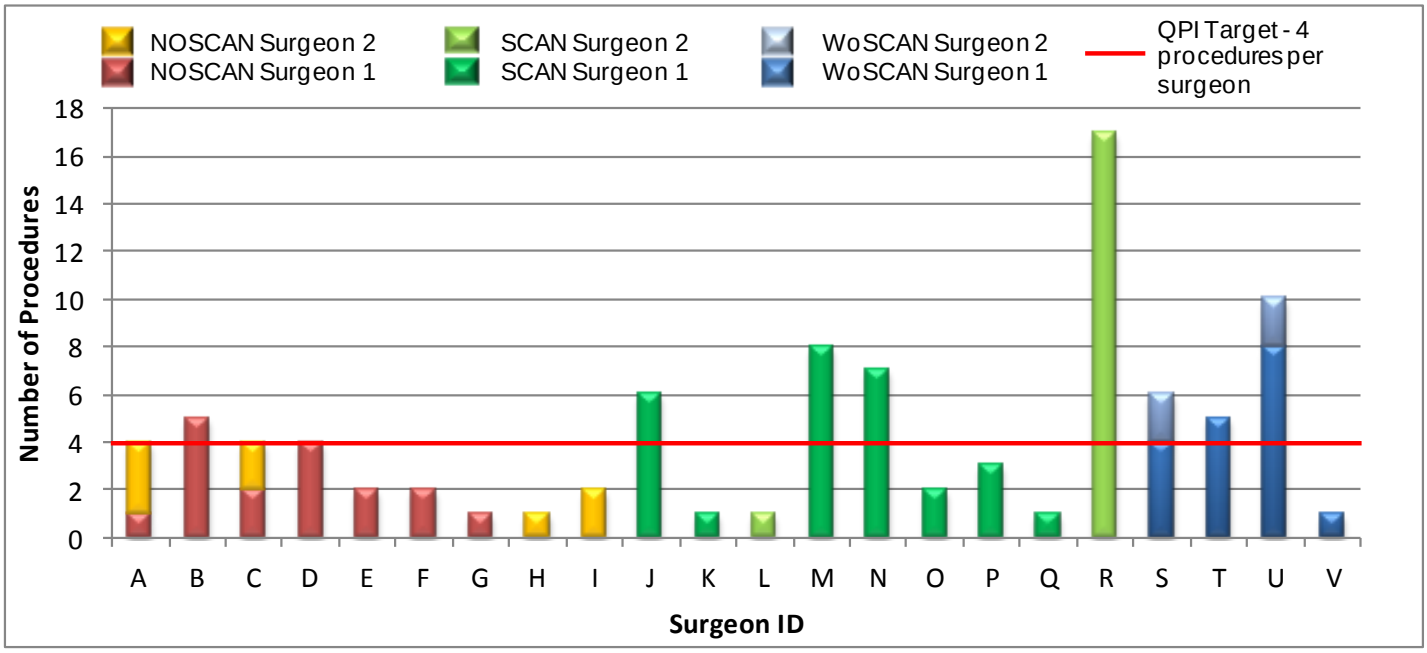


QPI 12a	Aberdeen	Inverness	Dundee	Edinburgh	Glasgow	Scotland
2014	16	7	9	28	39	99
2015	19	7	5	42	35	108
2016	13	2	2	35	23	75
2017	12	4	1	28	18	63

Aberdeen, Edinburgh and Glasgow centres met the target of 11 procedures. Inverness and Dundee were short of the target with 4 and 1 respectively. The trend indicates a reduction in the national volume of surgical procedures for pancreatic, duodenal and biliary tract cancer.

NHS Tayside stated that 8 partial or total pancreatectomies were performed at the Dundee centre, but 7 of these did not meet the QPI criteria. Going forward NHS Tayside will ensure that patients that requiring resectional pancreatic surgery are referred to a large volume centre.

Figure 26: Number of surgical resections for pancreatic, duodenal or biliary tract cancer performed by a specialist surgeon over a 1 year period (surgeon 1 or surgeon 2).



QPI 12b	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V
N1	1	5	2	4	2	2	1	0	0	6	1	0	8	7	2	3	1	0	4	5	8	1
N2	3	0	2	0	0	0	0	1	2	0	0	1	0	0	0	0	0	17	2	0	2	0
Total	4	5	4	4	2	2	1	1	2	6	1	1	8	7	2	3	1	17	6	5	10	1

N1 = Number of surgeries performed as operating surgeon 1
N2 = Number of surgeries performed as operating surgeon 2

In NOSCAN and SCAN, 4/9 surgeons met the target of 4 procedures. In WoSCAN 3/4 surgeons met the target. NHS Tayside reiterated the comment above, that patients requiring pancreatic resectional surgery will be referred to a high volume centre. NHS Lothian stated that it has been decided to have fewer surgeons performing these procedures.

NHS Greater Glasgow and Clyde commented that the performance is related to a reduction in case volume and the addition of a new surgeon to the team. The downward trend in volume is recognised by most units in Scotland and the UK. NHS Greater Glasgow and Clyde have decided to concentrate volume between three surgeons. A move towards two consultant working in line with most other resectional work will also go towards improving performance.

NHS Highland stated that they have reduced the number of surgeons undertaking major pancreatic resection to two. The Board cited the fluctuating number of cases as a factor for not meeting the targets.

Actions:

- NHS Tayside to confirm that patients requiring resectional pancreatic surgery will be routinely referred to a high volume centre.

QPI 13: Clinical Trials 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[7].

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[7].

QPI 13:	All patients should be considered for participation in available clinical trials/research studies, wherever eligible.
Description:	Proportion of patients diagnosed with HPB cancer who are consented for a clinical trial/research study.
Numerator:	Number of patients diagnosed with HPB cancer consented for a clinical trial/research study.
Denominator:	All patients diagnosed with HPB cancer.
Exclusions:	• No exclusions
Target:	15%

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

The denominator for this QPI is identified by using a 5 year average of Scottish Cancer Registry data.

Table 4: Proportion of patients consented for clinical trials for HPB cancer by NHS Board of residence.

Upper GI	Consented (QPI target 15%)		
	N	D	%
NOSCAN	11	352	3.1%
SCAN	15	416	3.6%
WoSCAN	39	653	6.0%
Not Recorded	2	-	-
Scotland	67	1421	4.7%

No regions met the 15% target for patients consented for clinical trials. The overall national performance was 4.7%.

Table 5: List of clinical trials carried out in 2017 and the number of patients with HPB cancer consented for each clinical trial.

Project Title	Consented 2017
CANC – 4627: Medi4736 Pancreatic	-
CANC 4818	-
CANC - 4997	10
CANC 5230	-
ECMC BIOMARKER	-
ESPAC-4	8
ESPAC-5F: European Study Group for Pancreatic Cancer – Trial 5F	-
FACT	-
FAK-PD1 v1	-
INCYTE, Efficacy and Safety of INCB054828 in Cholangiocarcinoma	-
NCRN – 3131: EPOCH TheraSphere in Metatstatic Colorectal Carcinoma of the Liver (TS102)	-
NCRN – 3137 STOP HCC	-
Phase 1 Trial LY3143921 solid tumours	-
PIONEER	6
POLO	-
RTL Advanced Study	5
SCOPE 2	-
SPARC: SBRT pre-operatively for pancreatic cancer	-
The MENAC Trial	6
TOFFEE	-
Total	***67***

- Denominator is less than 5

A list of active national clinical trials will be produced by the MCN in an effort to improve the accessibility and visibility of clinical trials for patients and referring clinicians.

Actions:

- MCN to produce and maintain a list of active national clinical trials.

5. Conclusions

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 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.

Analysis of 2017 audit data demonstrates a continual commitment to provide an equitable and consistent standard of care for HPB cancer patients across Scotland. Improvements in data quality and completeness have been observed in recent years facilitating more meaningful data analysis and national comparison to help inform NMCN activity. The results presented illustrate that many of the QPI targets set have been challenging for NHS Boards to achieve, however it is noted that there is improved performance for some QPIs in 2017. It is encouraging that performance has improved in QPIs related to mortality rates.

Where QPI targets were not met NHS Boards have provided detailed commentary. In the main these indicate valid clinical reasons or that, in some cases, patient choice or co-morbidities have influenced patient management.

There are a number of actions required as a consequence of this assessment of performance against QPIs. Some of these relate to data quality improvement, specifically in relation to the documentation of information (following CT or MRI) to enable correct management decisions to be made by the multidisciplinary team. NHS Highland and NHS Western Isles are requested to provide feedback on QPIs where the target was not met.

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

Action Required:

QPI 1: Multi-Disciplinary Team (MDT) Meeting

- All Boards to ensure that patients are discussed at MDT prior to definitive treatment where it is clinically appropriate, including where patients are for supportive care only.
- NHS Greater Glasgow and Clyde to ensure that all patients discussed at local MDTs are referred to the regional NHS GGC MDT meeting.

QPI 2: Diagnosis and Staging of HCC

- NHS Lothian to inform staff of the importance of a full CT chest/abdomen/pelvis for staging purposes.
- All Boards to ensure full information is recorded where clinically appropriate.

QPI 4: Palliative Treatment for HCC

- NHS Grampian to work towards improving documentation at time of MDT discussion.

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

- NHS Lothian to remind staff that CT chest/abdomen/pelvis is required for full staging of disease.

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

- NHS Fife to provide detailed clinical feedback on cases not meeting the target.

QPI 12a/b: Volume of Cases per Centre/Surgeon

- NHS Tayside to confirm that patients requiring resectional pancreatic surgery will be routinely referred to a high volume centre.

QPI 13: Clinical Trials Access

- NMCN to produce and maintain a list of active national clinical trials.

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

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

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

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

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Appendix: 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

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

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

QPI No.	Action Required	Health Board Action Taken	Timescales		Lead	Progress/Action Status	Status (see Key)
			Start	End			
	Ensure actions mirror those detailed in Audit Report.	*Detail specific actions that will be taken by the NHS Board.*	*Insert date*	*Insert date*	*Insert name of responsible lead for each specific action.*	*Provide detail of action in progress, change in practices, problems encountered or reasons why no action taken.*	*Insert No. from key above*.
1	Ensure that patients are discussed at MDT prior to definitive treatment where it is clinically appropriate, including where patients are for supportive care only.						
2	Ensure full information is recorded where clinically appropriate.						
4	NHS Grampian to work towards improving documentation at time of MDT discussion.						

Action / Improvement Plan

Area:	Inverness Centre/ NHS Highland and NHS Western Isles
Action Plan Lead:	
Date:	

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

QPI No.	Action Required	Health Board Action Taken	Timescales		Lead	Progress/Action Status	Status (see Key)
			Start	End			
	Ensure actions mirror those detailed in Audit Report.	*Detail specific actions that will be taken by the NHS Board.*	*Insert date*	*Insert date*	*Insert name of responsible lead for each specific action.*	*Provide detail of action in progress, change in practices, problems encountered or reasons why no action taken.*	*Insert No. from key above*.
1	Ensure that patients are discussed at MDT prior to definitive treatment where it is clinically appropriate, including where patients are for supportive care only.						
2	Ensure full information is recorded where clinically appropriate.						

Action / Improvement Plan

Area:	Dundee Centre/ NHS Tayside
Action Plan Lead:	
Date:	

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

QPI No.	Action Required	Health Board Action Taken	Timescales		Lead	Progress/Action Status	Status (see Key)
			Start	End			
	Ensure actions mirror those detailed in Audit Report.	*Detail specific actions that will be taken by the NHS Board.*	*Insert date*	*Insert date*	*Insert name of responsible lead for each specific action.*	*Provide detail of action in progress, change in practices, problems encountered or reasons why no action taken.*	*Insert No. from key above*.
1	Ensure that patients are discussed at MDT prior to definitive treatment where it is clinically appropriate, including where patients are for supportive care only.						
2	Ensure full information is recorded where clinically appropriate.						
12	Confirm that patients requiring resectional pancreatic surgery will be routinely referred to a high volume centre.						

Action / Improvement Plan

Area:	Edinburgh Centre/ NHS Borders, NHS Dumfries & Galloway, NHS Fife, NHS Forth Valley and NHS Lothian
Action Plan Lead:	
Date:	

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

QPI No.	Action Required	Health Board Action Taken	Timescales		Lead	Progress/Action Status	Status (see Key)
			Start	End			
	Ensure actions mirror those detailed in Audit Report.	*Detail specific actions that will be taken by the NHS Board.*	*Insert date*	*Insert date*	*Insert name of responsible lead for each specific action.*	*Provide detail of action in progress, change in practices, problems encountered or reasons why no action taken.*	*Insert No. from key above*.
1	Ensure that patients are discussed at MDT prior to definitive treatment where it is clinically appropriate, including where patients are for supportive care only.						
2	Ensure full information is recorded where clinically appropriate.						
2	NHS Lothian to inform staff of the importance of a full CT chest/abdomen/pelvis for staging purposes						
6	NHS Lothian to remind staff that CT chest/abdomen/pelvis is required for full staging of disease.						
7	NHS Fife to provide detailed clinical feedback on cases not meeting the target.						

Action / Improvement Plan

Area:	Glasgow Centre/ NHS Ayrshire & Arran, NHS Greater Glasgow & Clyde, NHS Lanarkshire
Action Plan Lead:	
Date:	

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

QPI No.	Action Required	Health Board Action Taken	Timescales		Lead	Progress/Action Status	Status (see Key)
			Start	End			
	Ensure actions mirror those detailed in Audit Report.	*Detail specific actions that will be taken by the NHS Board.*	*Insert date*	*Insert date*	*Insert name of responsible lead for each specific action.*	*Provide detail of action in progress, change in practices, problems encountered or reasons why no action taken.*	*Insert No. from key above*.
1	Ensure that patients are discussed at MDT prior to definitive treatment where it is clinically appropriate, including where patients are for supportive care only.						
1	NHS Greater Glasgow and Clyde to ensure that all patients discussed at local MDTs are referred to the regional NHS GGC MDT.						
2	Ensure full information is recorded where clinically appropriate.						

Action / Improvement Plan

Area:	Brain/CNS 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			
	Ensure actions mirror those detailed in Audit Report.	*Detail specific actions that will be taken by the NHS Board.*	*Insert date*	*Insert date*	*Insert name of responsible lead for each specific action.*	*Provide detail of action in progress, change in practices, problems encountered or reasons why no action taken.*	*Insert No. from key above*.
13	MCN to produce and maintain a list of active national clinical trials.						

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