

Quality Performance Indicators Audit Report

Tumour Area:	Oesophageal and Gastric Cancer
Patients Diagnosed:	1 st January – 31 st December 2018
Published Date:	12 th December 2019
Clinical Commentary:	Professor Russell Petty North Cancer Upper GI Clinical Director



1. Upper GI Cancer in Scotland

Oesophageal cancer was the 9th most common type of cancer in Scotland in 2017 with over 970 cases diagnosed while gastric cancer is less common with 614 cases diagnosed in 2017¹. Incidences of both tumour types are higher in men than in women.

Incidence of oesophageal cancer have not changed significantly over the last 10 years¹. More notably, gastric cancer incidences have reduced dramatically since the 1980's, a trend that has continued in the last 10 years with incidences decreasing by 24% over this period¹. This decline is likely to have been affected by:

- A decrease in prevalence of infection with the bacterium *Helicobacter Pylori* (an infection which increases the risk of developing stomach cancer) perhaps as a result of improvements in social conditions and widespread use of antibiotics.
- The introduction of refrigeration, as this has reduced the need for potentially carcinogenic food preservatives.
- A reduction in the number of people smoking tobacco.

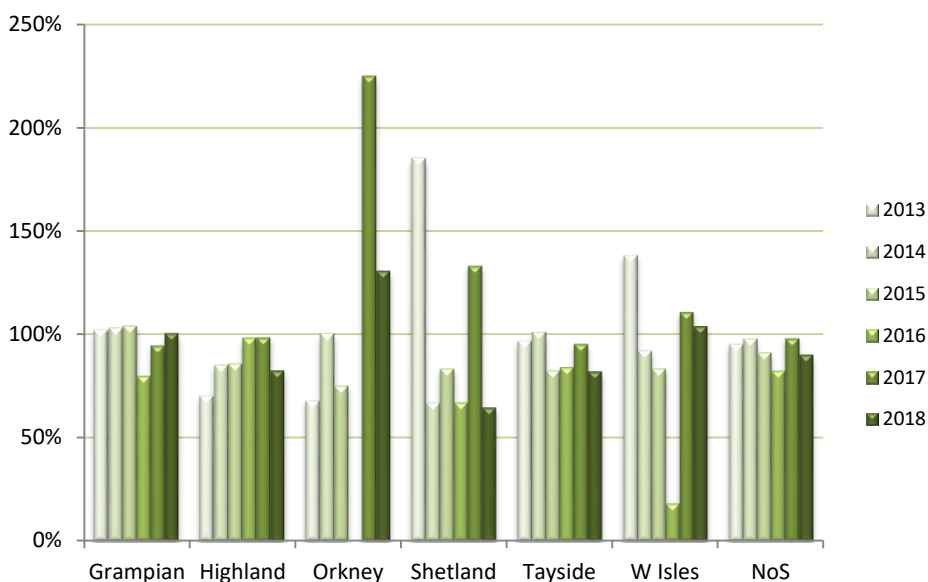
Relative survival for both oesophageal cancer and gastric cancer in Scotland is increasing². The table below shows the percentage change in one-year and five-year age-standardised survival rates for patients diagnosed in 1987-1991 compared to those diagnosed in 2007-2011.

	Relative survival at 1 year (%)		Relative survival at 5 years (%)	
	2007-2011	% change	2007-2011	% change
Oesophageal Cancer				
Male	40.0%	+ 16.3%	11.2%	+ 5.5%
Female	43.1%	+ 12.6%	15.6%	+ 5.4%
Gastric Cancer				
Male	43.5%	+ 16.8%	16.2%	+ 6.1%
Female	43.8%	+ 14.3 %	23.3%	+ 9.4%

Relative age-standardised survival for oesophageal and gastric cancer in Scotland at 1 year and 5 years showing percentage change from 1987-1991 to 2007-2011².

2. Patient Numbers and Case Ascertainment in the North of Scotland

A total of 371 cases of upper GI cancer diagnosed in the North of Scotland were recorded through audit between 1st January and 31st December 2018, 297 cases of oesophageal cancer and 74 cases of gastric cancer. Overall case ascertainment was good at 89.9%, although lower than the 2017 figure of 98.3%. Case ascertainment for each Board across the North of Scotland is illustrated below. Fluctuations in case ascertainment are expected in the island boards as a result of chance variation due to the small numbers of patients diagnosed.

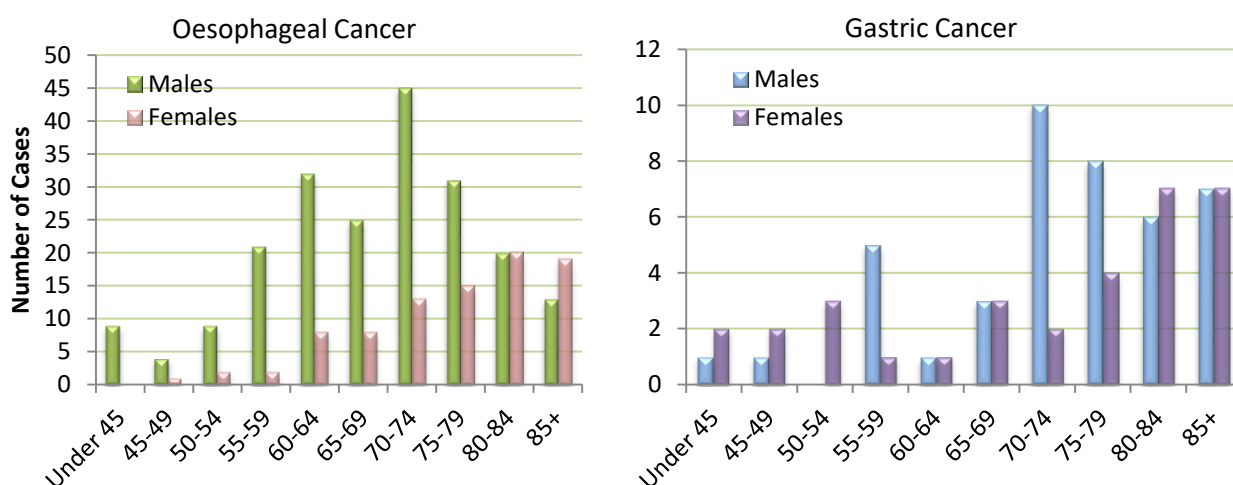


Case ascertainment by NHS Board for patients diagnosed with upper GI cancer 2013-2018.

	Grampian	Highland	Orkney	Shetland	Tayside	W. Isles	NoS
No. of Oesophageal Cancer Patients 2018	128	61	6	2	89	11	297
No. of Gastric Cancer Patients 2018	31	13	0	2	28	0	74
Total no. of Upper GI Patients 2018	159	74	6	4	117	11	371
Average ISD Cases (2013-17)	158.4	89.8	4.6	6.2	143.0	10.6	412.6
% Case ascertainment	100.4%	82.4%	130.4%	64.5%	81.8%	103.8%	89.9%

3. Age Distribution

The age distribution of patients diagnosed with oesophageal and gastric cancer in the North of Scotland in 2018 is shown below. Incidences of oesophageal and gastric cancer peaked in the 70-74 year age group for men and in the over 80 year age groups for women.



Age distribution of patients diagnosed with oesophageal and gastric cancer in North of Scotland 2018.

4. Performance against Quality Performance Indicators (QPIs)

Definitions for the QPIs reported in this section are published by Health Improvement Scotland³, while further information on datasets and measurability used are available from Information Services Division⁴. Data are largely presented by Board of diagnosis. However, surgical focussed QPIs (QPIs 7, 8, 9 and 10) are reported by hospital of surgery. Further QPI 14, clinical trials and research access, is reported by patients NHS Board of residence. Please note that where QPI definitions have been amended, results are not compared with those from previous years.

5. Governance and Risk

Governance is defined as the combination of structures and processes at all levels to lead on North quality performance including:

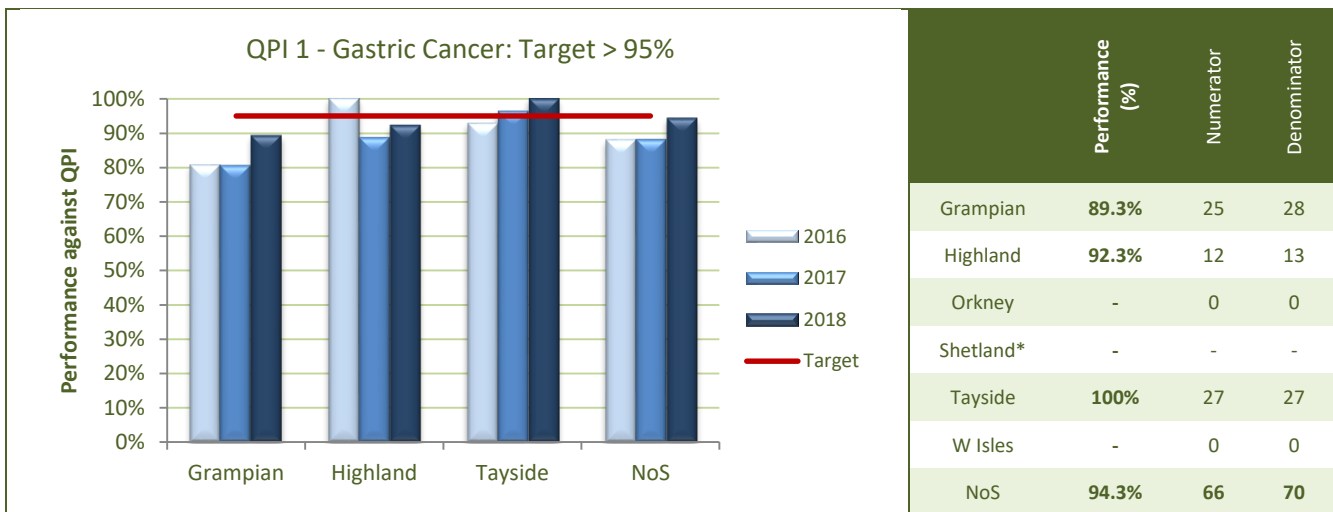
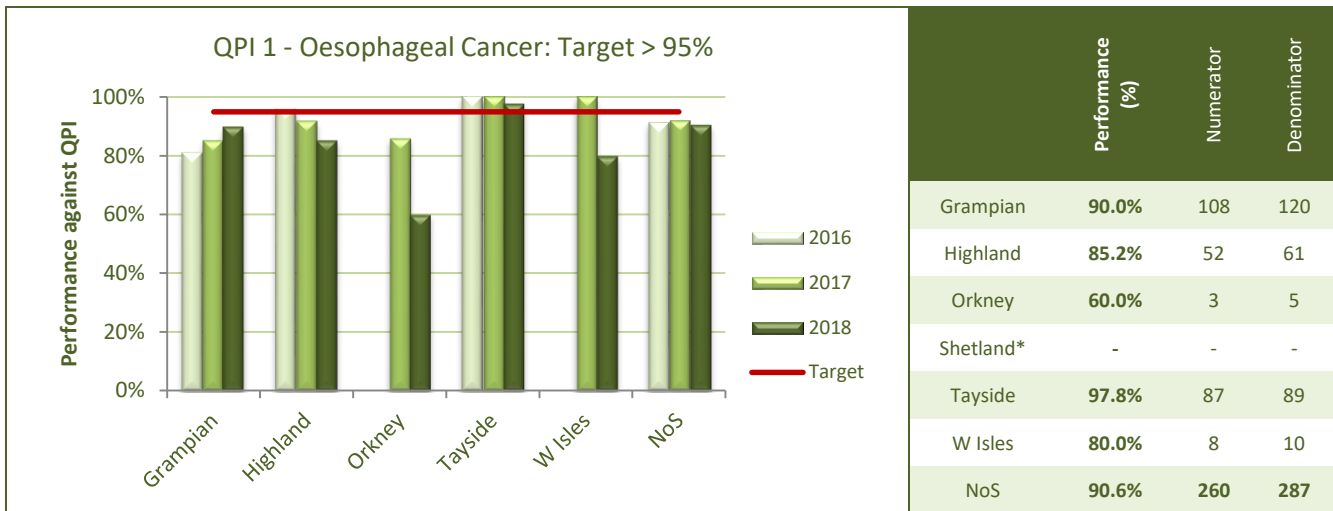
- Ensuring accountability for quality and required standards
- Investigating and taking action on sub-standard performance
- Identifying, sharing and ensuring delivery of best-practice
- Identifying and managing risks to ensure quality of care
- Driving continuous improvement

Our current governance structure provides assurance to the boards that risks associated QPIs are being addressed as an alliance. Clinical risks are discussed at the North Cancer Upper GI Pathway Board and North Cancer Clinical Leadership Group (NCCLG). Risk levels are jointly agreed. The NCCLG are presented with all available evidence and actions so they have all the information to define the risk in a collaborative way.

- **Tolerate** - Accept the risk at its current level
- **Mitigate** - Reduce or mitigate the risk, in terms of reducing the likelihood of its occurrence or reducing the severity of impact if it does occur. This can be assessed through the action plans provided or the information provided is appropriate to prevent reoccurrence.
- **Escalate** - Escalate the risk to the appropriate committee and/or take further action as the mitigations were not suitable or there are no actions identified to mitigate the risk. This will be revisited by the NCCLG for further risk discussion.
- **Immediate** - Immediate action is required to prevent the risk reoccurring. This risk will have major impact on patient care delivery and the consequences thereafter. Very few risks should occur in this level.

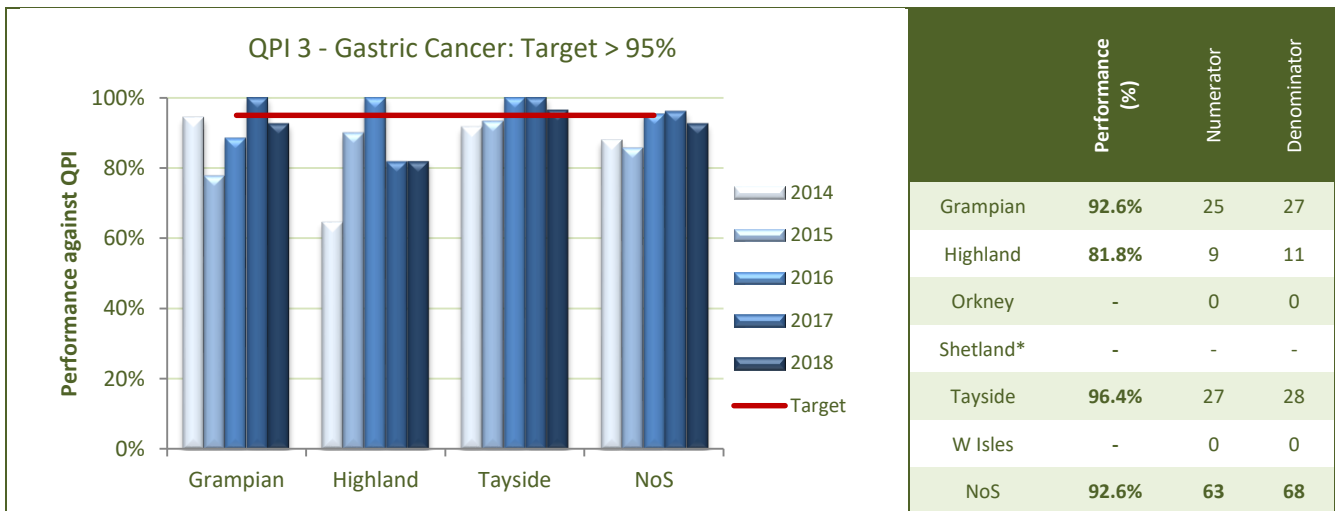
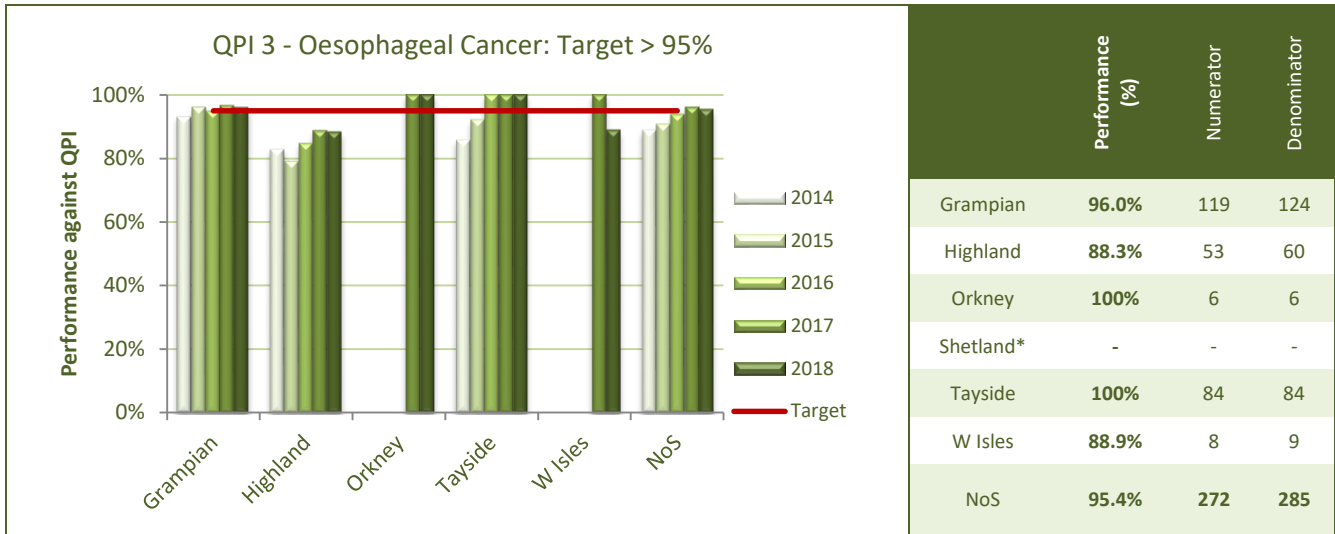
The full governance document on risk should be referred to in conjunction with this summary, which is available on the NCA website⁵.

QPI 1	Endoscopy
Proportion of patients with oesophageal or gastric cancer who have a histological diagnosis made within 6 weeks of initial endoscopy and biopsy	



Clinical Commentary	For oesophageal patients, the North of Scotland missed this target for a number of reasons, notably for five patients who did not receive a biopsy within six weeks of initial endoscopy, while the gastric patients who did not meet this standard required emergency or palliative treatment and did not proceed for a histological diagnosis. While we did not meet these targets in the North, our results are on par with the other Scottish regions and the national average, with consistent improvement in results reflecting the increasing number of patients receiving a biopsy for diagnosis and biomarker testing.
Actions	None
Risk Status	Mitigate

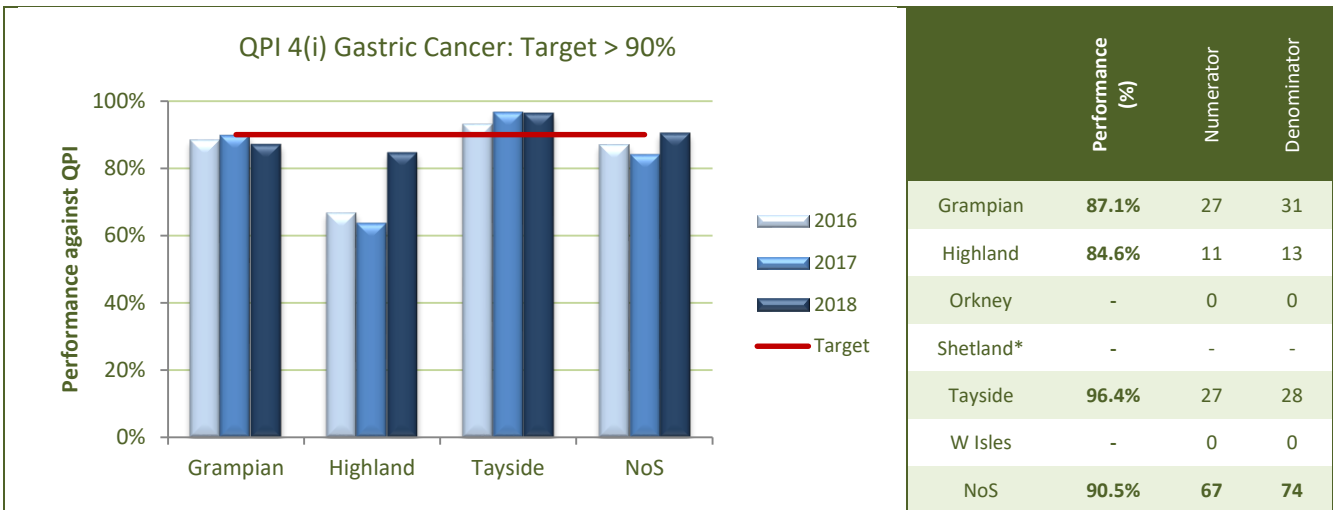
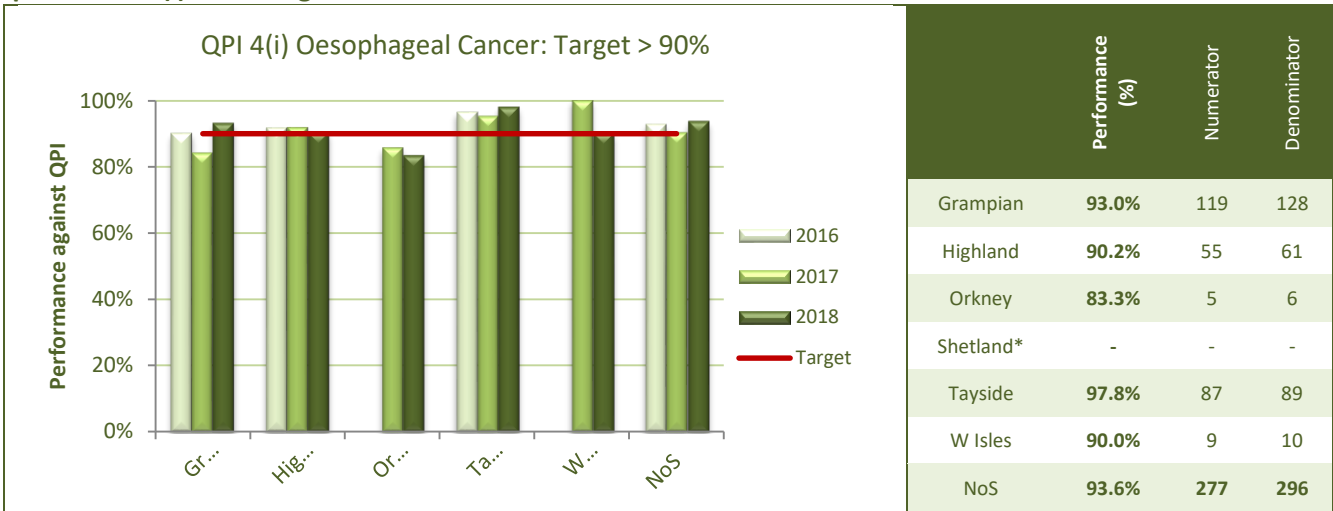
QPI 3	Multi-Disciplinary Team (MDT) Meeting
Proportion of patients with oesophageal or gastric cancer who are discussed at MDT meeting before definitive treatment.	



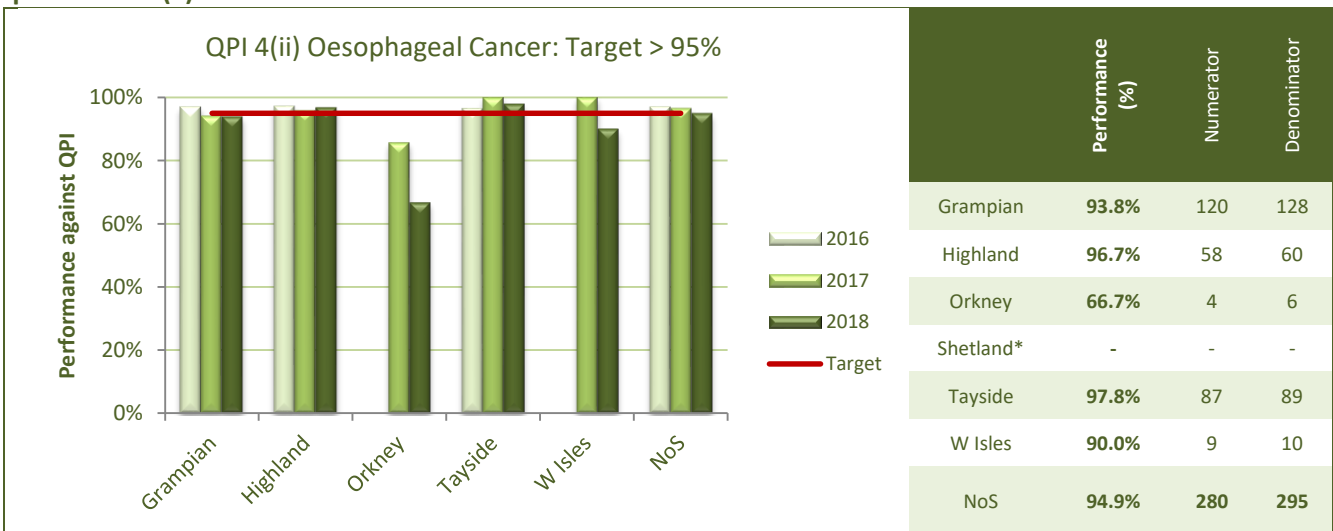
Clinical Commentary	<p>Of those patients who were not discussed at MDT meeting prior to treatment, this was due to the presentation of advanced or very symptomatic disease and the requirement for urgent or emergency treatment to address this. In these occasions, patients will ordinarily be discussed by a number of clinical colleagues but will not be advanced to the formal MDT discussion due to the requirement for immediate treatment to commence.</p> <p>While the North achieved the standard for oesophageal patients, the target for gastric patients was narrowly missed although patient management of these cases has been reviewed by boards and deemed appropriate in providing treatment to these patients prior to MDT discussion.</p>
Actions	None
Risk Status	Tolerate

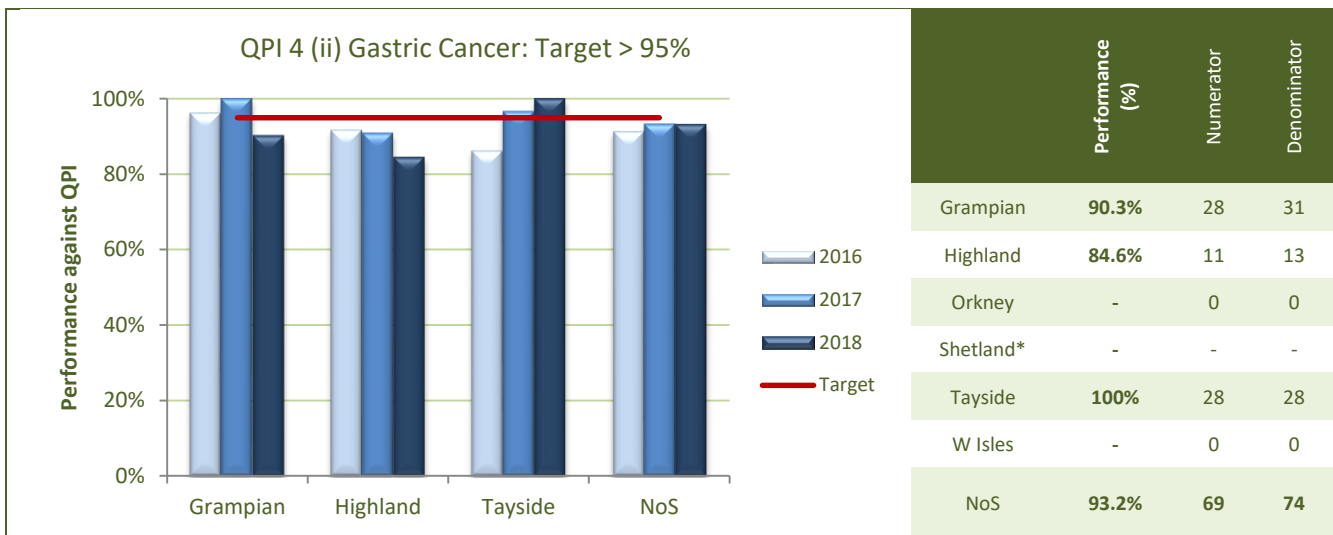
QPI 4	Staging and Treatment Intent
Proportion of patients with oesophageal or gastric cancer who have TNM stage and treatment intent recorded at MDT meeting prior to treatment	

Specification (i) TNM Stage



Specification (ii) Treatment Intent





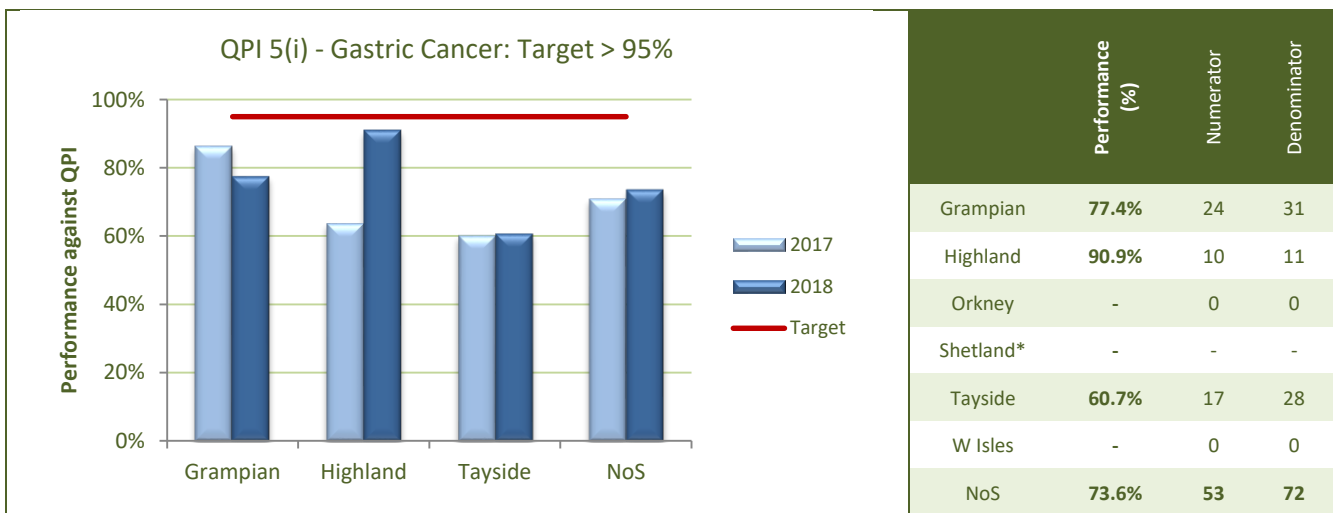
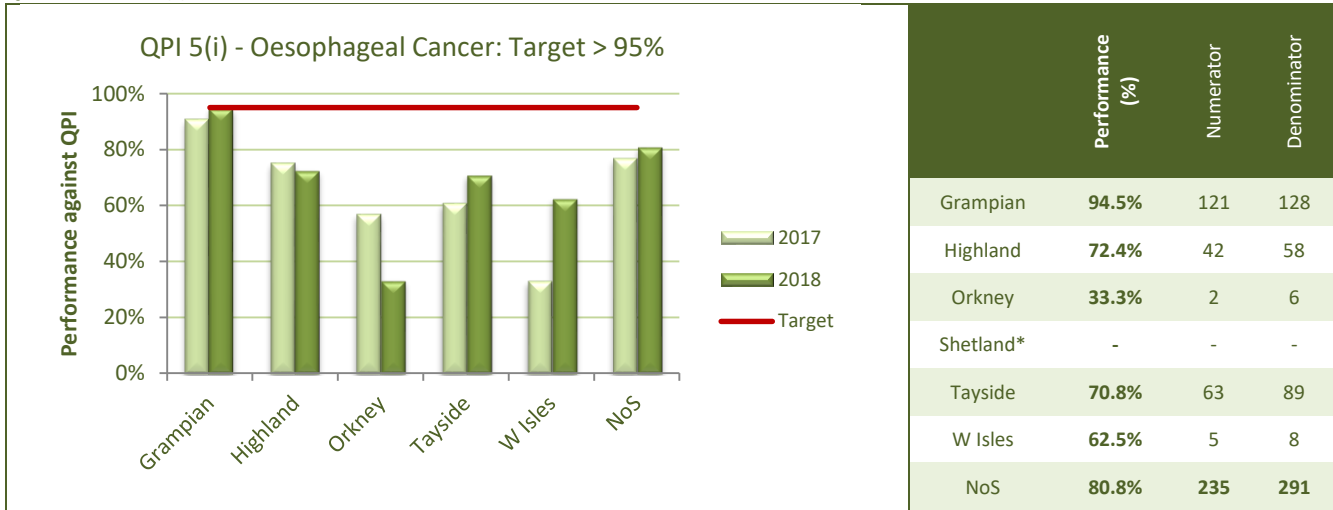
Clinical Commentary	<p>In general, the recording of TNM staging and treatment intent continues to improve across the North of Scotland. The targets for treatment intent were narrowly missed for both oesophageal and gastric patients, and the North of Scotland boards will be reminded to ensure this is recorded as part of the outcome of MDT discussions.</p> <p>It should also be noted that the recording of Treatment Intent should not preclude a review of this post-MDT, where patient's medical fitness for the suggested course of action is reviewed. Treatment decisions while these should be recorded, should not be set in stone and reflect patient-focussed care with adaptive management where required.</p>
Actions	<ol style="list-style-type: none"> 1. Through the NCUGIPB, MDTs to be reminded of the requirements to record TNM and Treatment Intent as outcomes of MDT discussions to ensure this can be included as part of clinical audit.
Risk Status	Mitigate

QPI 5

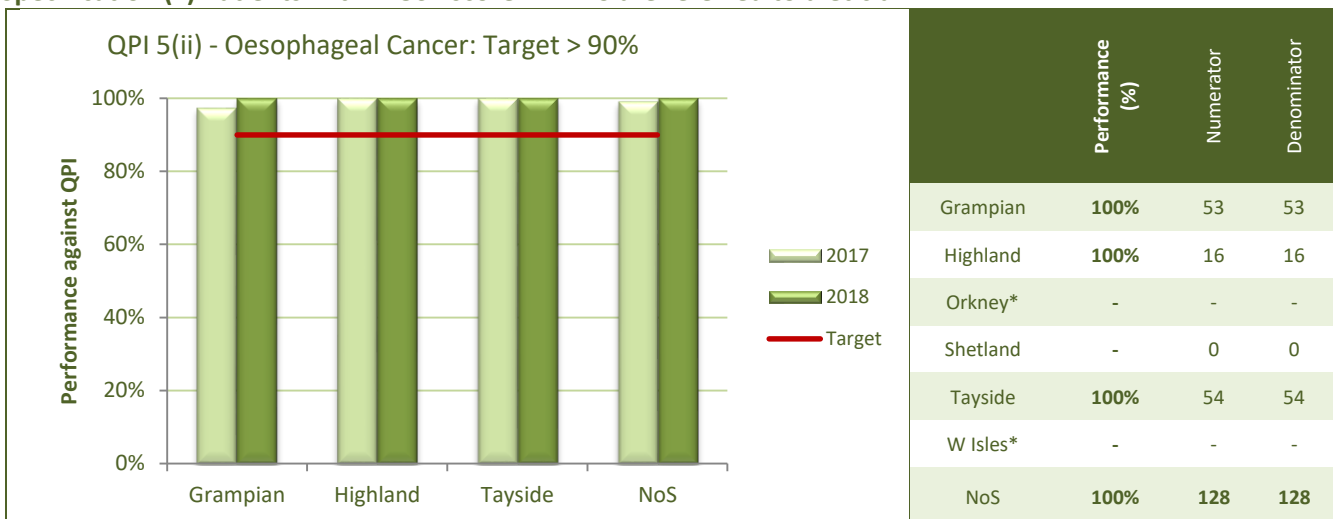
Nutritional Assessment

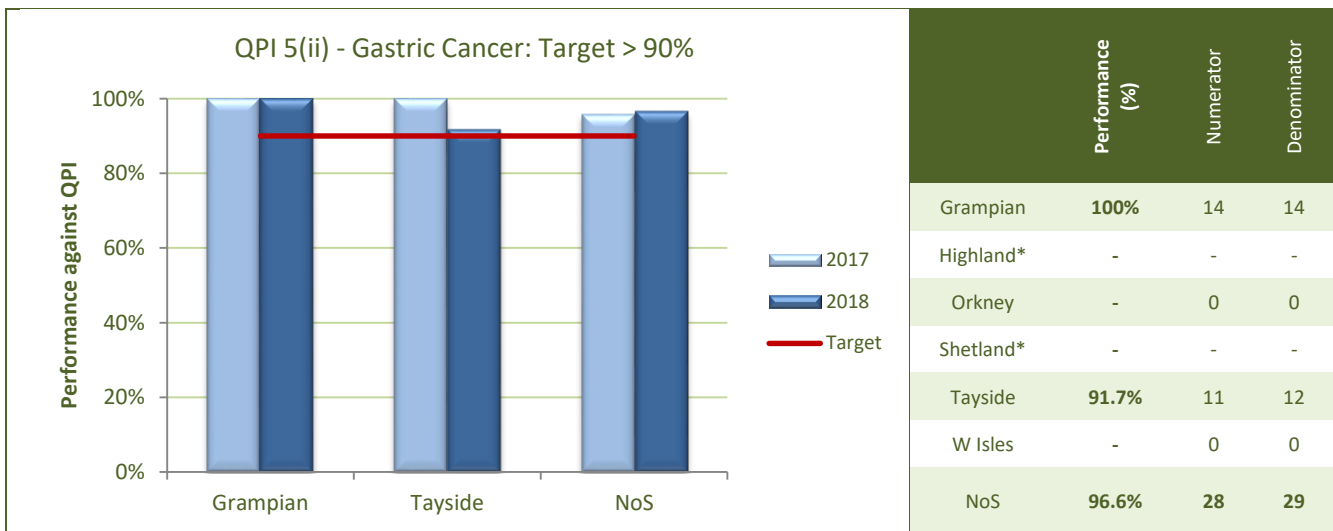
Proportion of patients with oesophageal or gastric cancer who undergo nutritional screening before first treatment and are referred to a dietician where appropriate.

Specification (i) MUST assessment before first treatment



Specification (ii) Patients with MUST score >2 who are referred to dietician

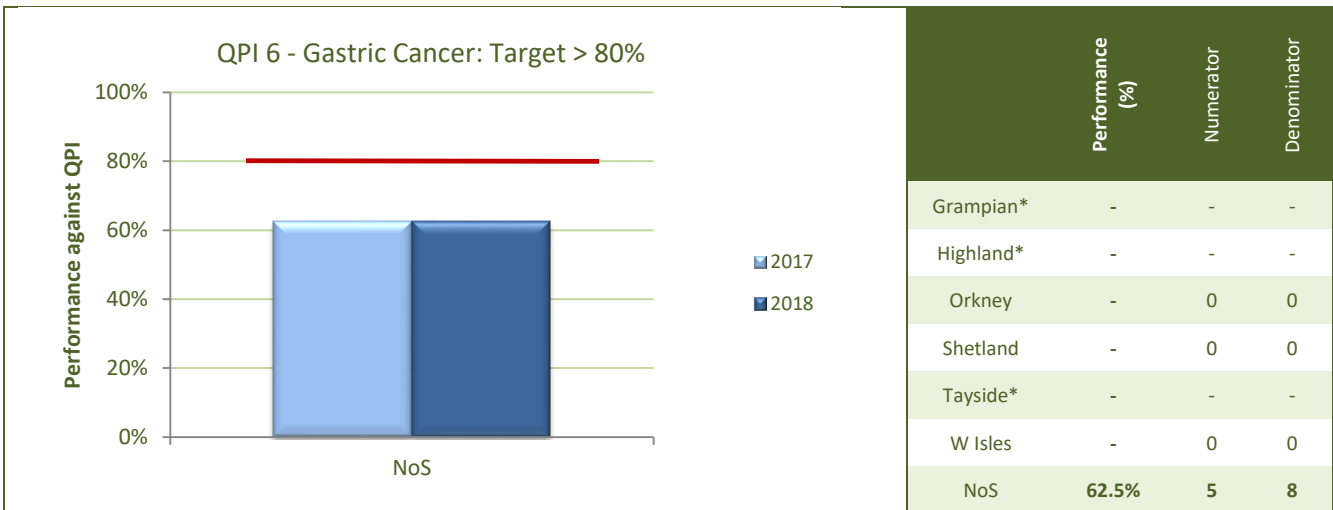
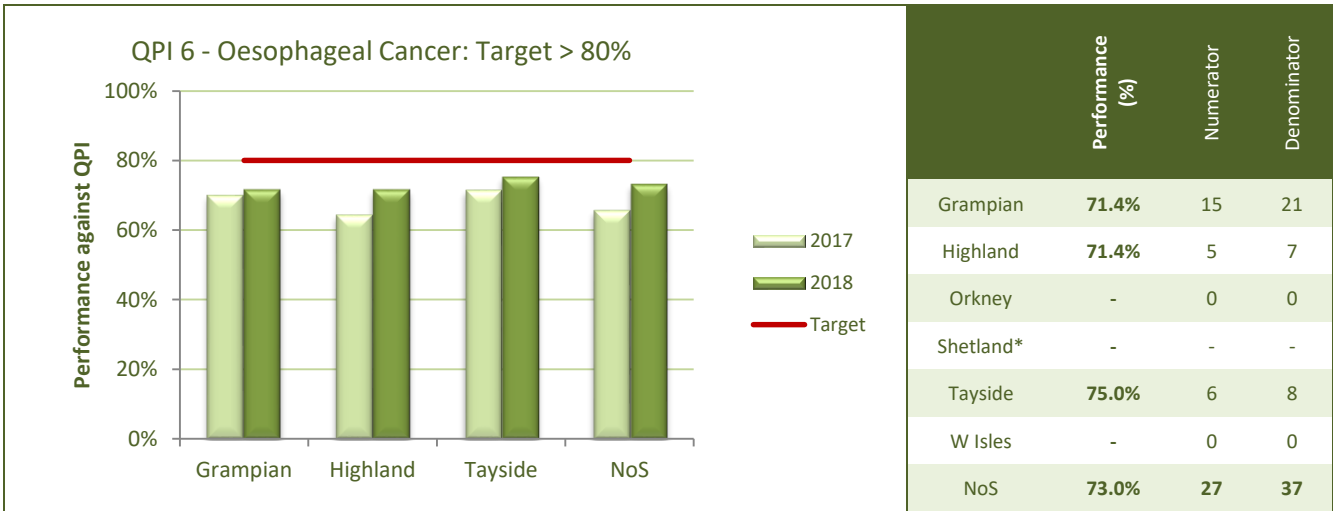




	Performance (%)	Numerator	Denominator
Grampian	100%	14	14
Highland*	-	-	-
Orkney	-	0	0
Shetland*	-	-	-
Tayside	91.7%	11	12
W Isles	-	0	0
NoS	96.6%	28	29

Clinical Commentary	<p>Data collection continues to be an issue for this QPI across Scotland. MUST assessments are routinely carried out within the Outpatient clinic, however patients do not meet this QPI if the assessment is carried out after first treatment, or where patients have refused this investigation.</p> <p>National results show that the North of Scotland remains ahead of the other regions in Scotland as no board in NHS Scotland achieved this standard. Work is required as part of the QPI formal review to ensure audit teams have access to this information. For specification (ii), the majority of patients with a MUST score greater than 2 were referred to a dietician, meeting the QPI target and ensuring those patients who require access to this resource are referred.</p> <p>The results for this QPI show that those patients assessed at a high risk of malnutrition are being referred to a dietician. There has been much discussion about refining this QPI to provide a better assessment of patients being referred to and seen by dieticians in Scotland, but data collection issues continue to be a key barrier to providing an accurate assessment of this.</p>
Actions	<ol style="list-style-type: none"> 1. NCUGIPB to work with North of Scotland audit and Upper GI teams to ensure this information is recorded. 2. Requirements for MUST assessment to be embedded in patient pathways and clinical management guidelines so this is undertaken before first treatment.
Risk Status	Mitigate

QPI 6	Appropriate Selection of Surgical Patients
Proportion of patients with oesophageal or gastric cancer who receive neo-adjuvant chemotherapy or chemoradiotherapy who then go on to have surgical resection	



Clinical Commentary

The North of Scotland did not meet these performance targets, and all patients who received neo-adjuvant chemotherapy who did not go on to have surgery have been reviewed.

For oesophageal patients, reasons for not proceeding to surgery including development of progressive disease, no significant reduction in tumour volume, patient choice and comorbidities discovered as part of surgical pre-assessment. Some patients who did not go on to have surgery instead had further radiotherapy or chemotherapy.

Three gastric patients who had neo-adjuvant chemotherapy did not progress for surgery, of these one opted to have radiotherapy instead of surgery while another died after completing chemotherapy but prior to surgery.

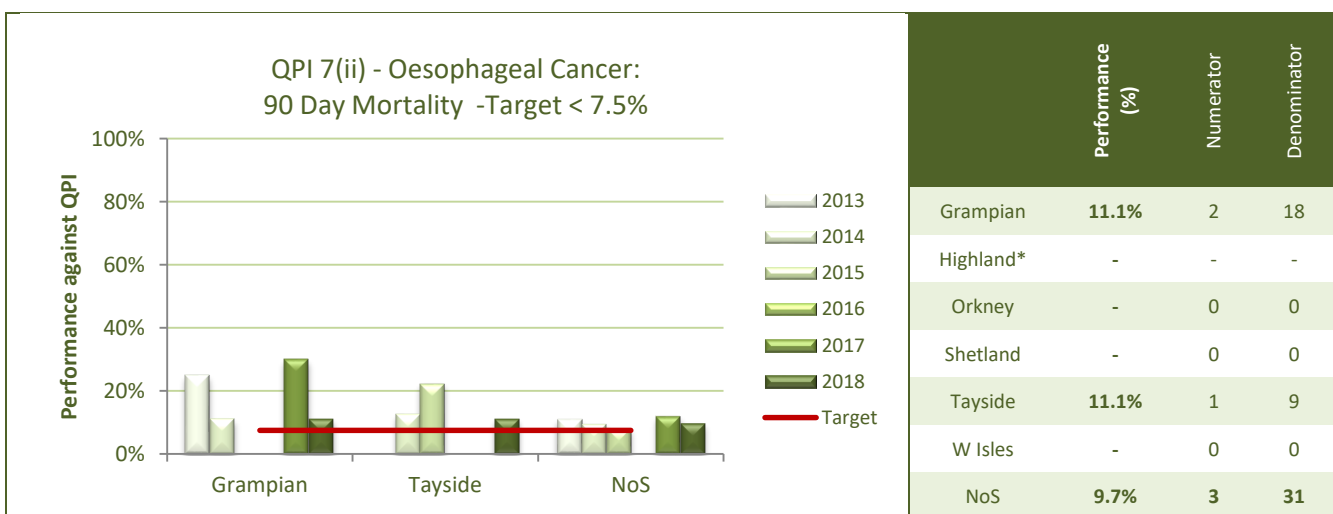
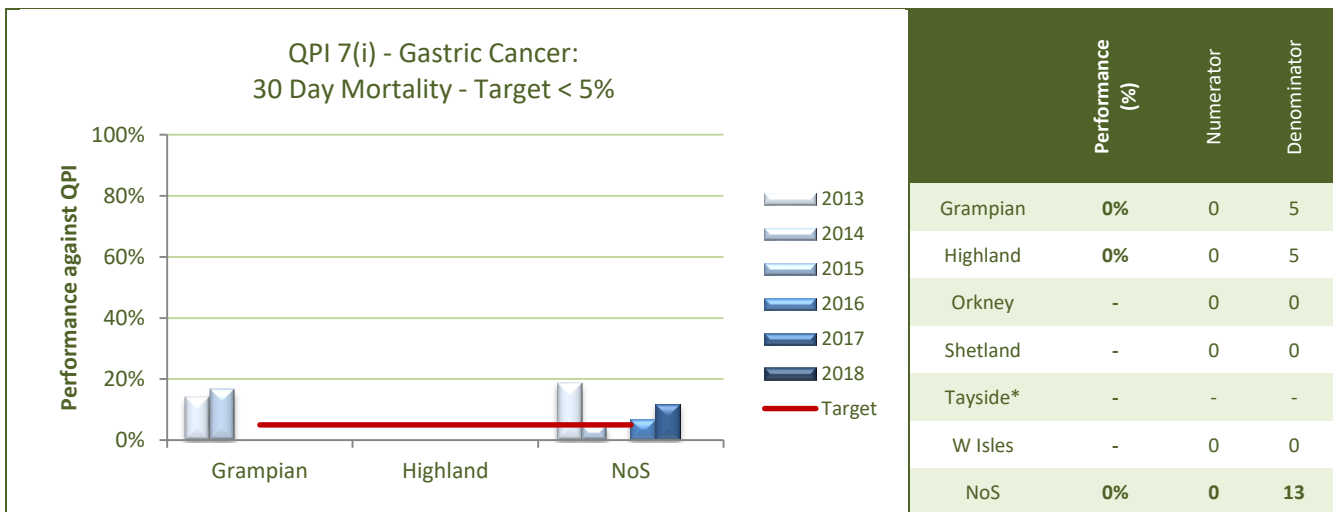
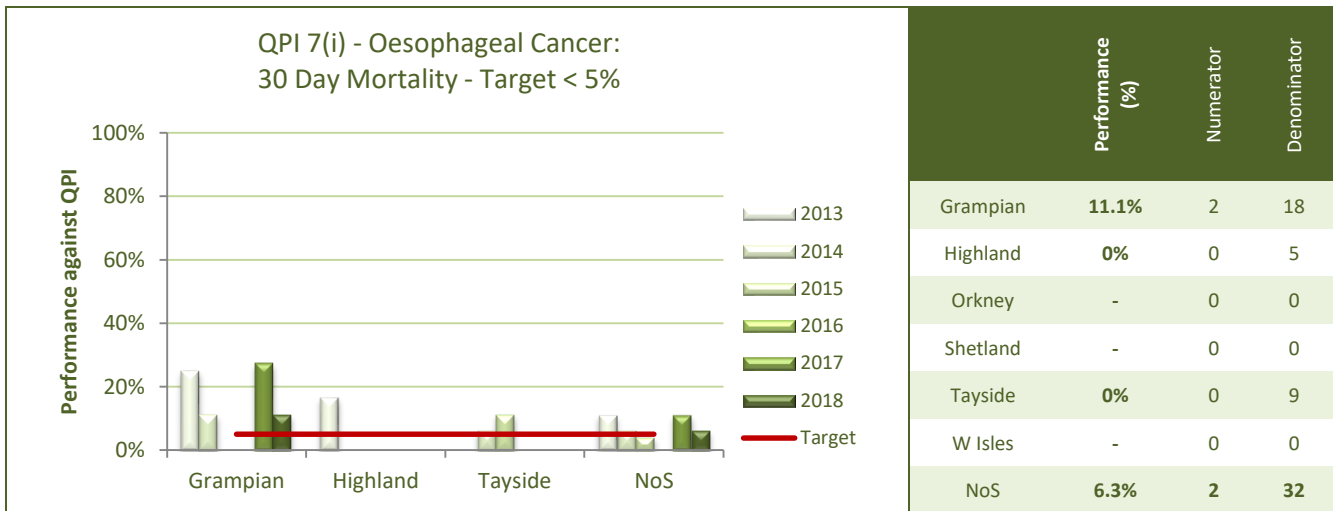
As discussed at the national Upper GI meeting in October 2019, this QPI reflected good practice of reassessing patients for surgery after neo-adjuvant chemotherapy and reassessing the risk and benefits of surgery versus that of alternative treatment options taking into account additional information now available from patient's response to and tolerance of neo-adjuvant treatment. We feel it is appropriate to revisit this decision and ensure that patients are aware from the outset that a decision to proceed to surgery will follow an assessment once they have completed

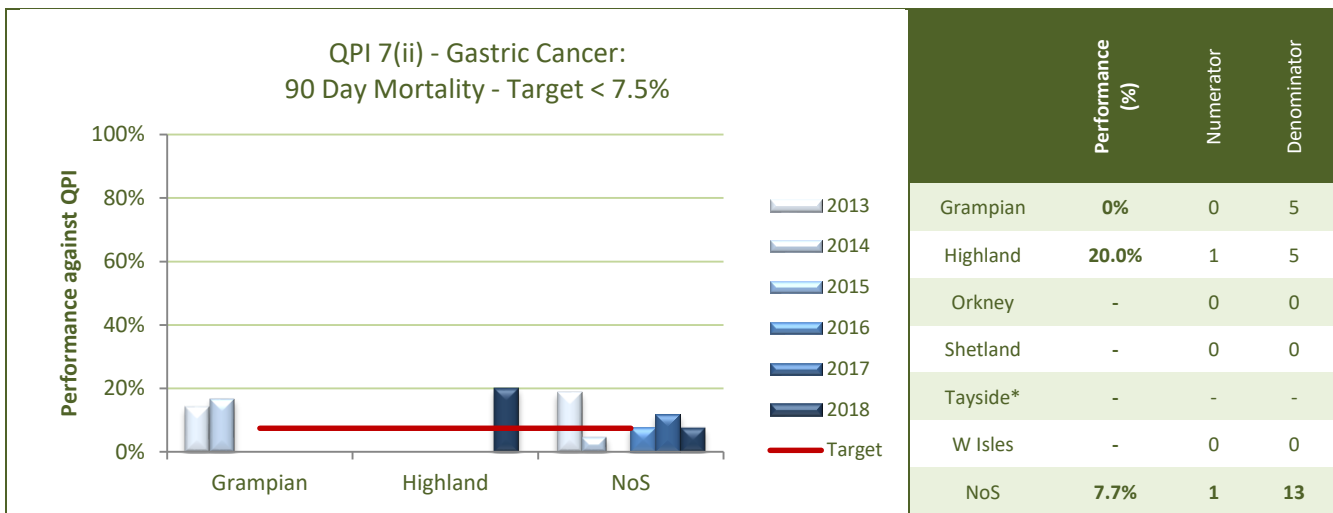
	chemotherapy. The risks and benefits of surgery require to be assessed to ensure the correct outcome for this group of patients.
Actions	1. NCUGIPB to monitor the surgical selection of patients and take further action to improve mortality.
Risk Status	Mitigate

QPI 7

30/90 Mortality Following Surgery

Proportion of patients with oesophageal or gastric cancer who die within 30 or 90 days of surgical resection for oesophageal or gastric cancer.



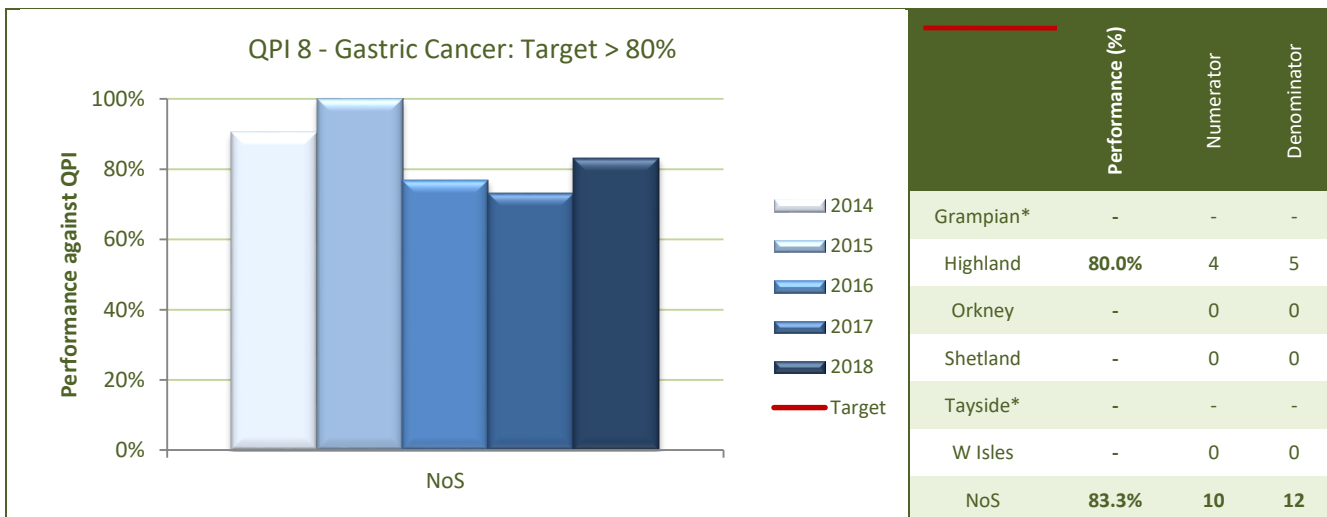
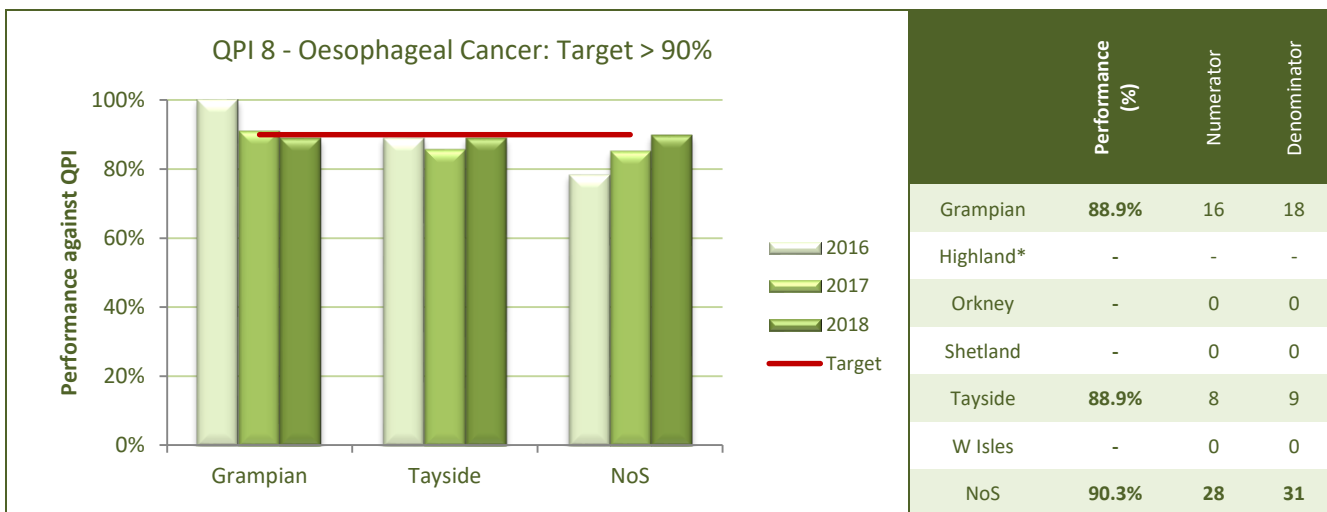


Clinical Commentary	<p>While focussed on surgical mortality, this QPI reflects a whole Upper GI team decision-making on the consideration of treatment. In the North, this QPI is a priority for us to monitor with mortality now being assessed on a three-year rolling average.</p> <p>Oesophageal – three patients died within 90 days and more work is planned to improve prehabilitation to ensure patients are appropriately prepared for surgery and the post-operative recovery.</p> <p>Gastric – one patient died within 90 days of surgery, resulting in a failure against the 7.5% tolerance. It is important to note that across Scotland, the number of patients having surgery for gastric cancer is reducing.</p> <p>Data for six years of reporting (2013-2018) shows an average surgical mortality rate of 7.0% (30 day) and 8.7% (90 day) for both gastric and oesophageal cancer, with an improvement in the last 3 year period (2016-18) with 30/90day mortality 6.3%/8.2% respectively in that period, compared to previous 3 years (2013-2015) with 30/90day mortality 7.7%/9.2% respectively in that period. Action is underway in the North to look at surgical outcomes and pathways and make an assessment on a sustainable model that improves mortality.</p>
Actions	<ol style="list-style-type: none"> 1. NCUGIPB to assess rolling average of 30 & 90-day mortality and make assessment of further action required to improve mortality – action plan in place. 2. NCUGIPB to input into the NoS Surgery Sub-Group looking at sustainability and equity of small volume surgery for cancer in the North. 3. NCA to escalate this issue to the NoS Medical Directors.
Risk Status	Immediate Risk

QPI 8

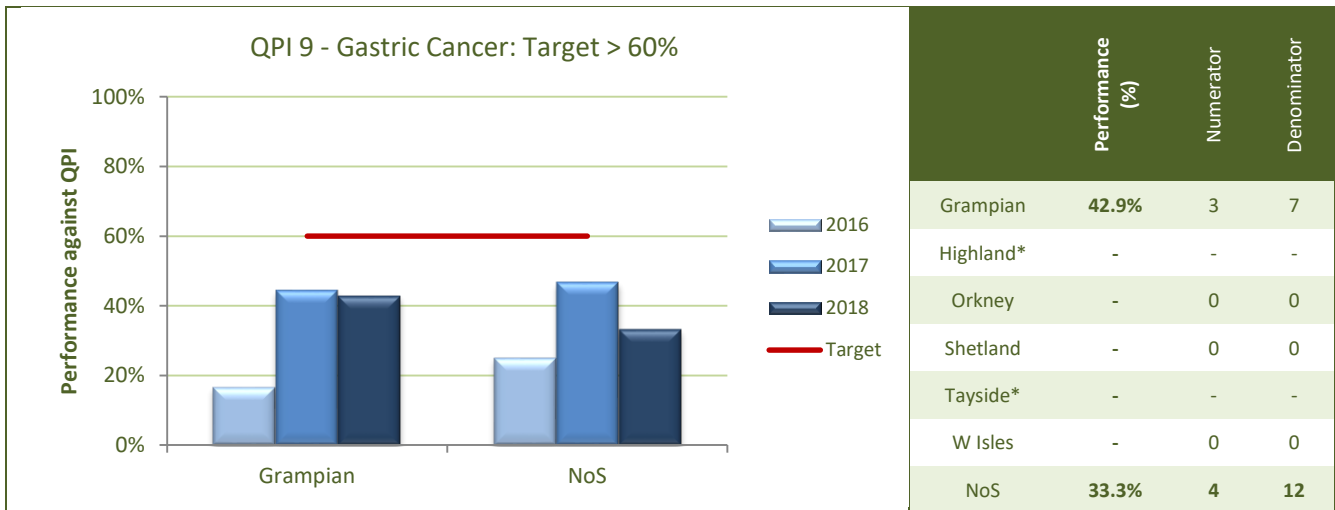
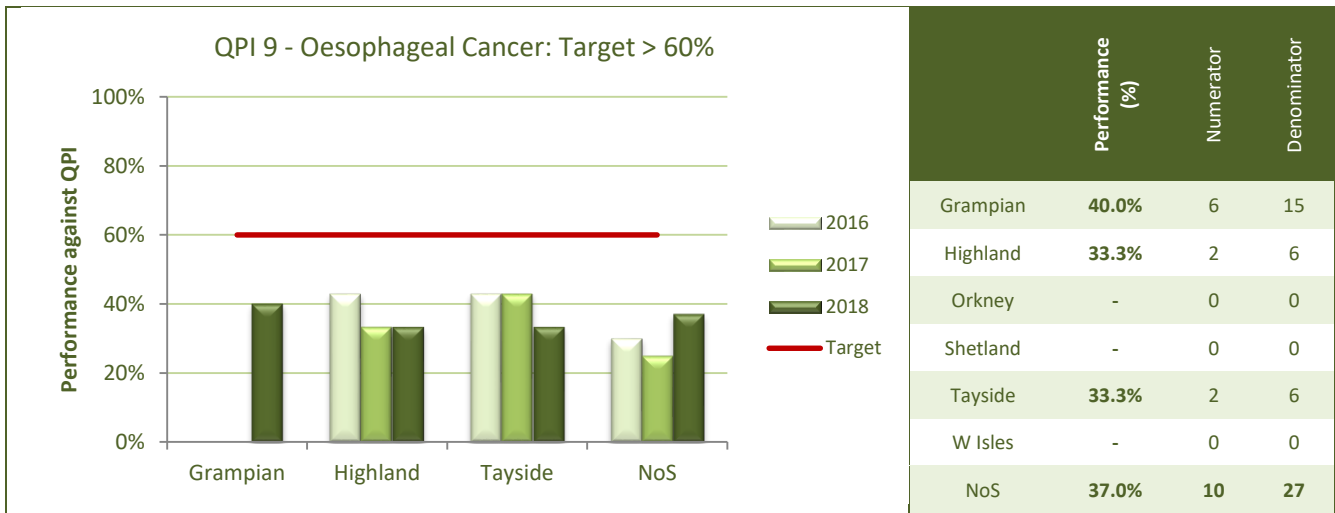
Lymph Node Yield

Proportion of patients with oesophageal or gastric cancer who undergo surgical resection where ≥ 15 lymph nodes are resected and pathologically examined.



Clinical Commentary	The North of Scotland achieved these targets for both oesophageal and gastric patients, ensuring at least 15 lymph nodes were resected and pathologically examined. For this QPI, results in the North exceed the Scottish average and represents the excellent surgical and pathology services available in our three cancer centres.
Actions	None
Risk Status	Tolerate

QPI 9	Length of Hospital Stay Following Surgery
Proportion of patients undergoing surgical resection for oesophageal or gastric cancer who are discharged within 14 days of surgical procedure.	
Results are calculated from SMR01 data and report patients having surgery in 2018.	



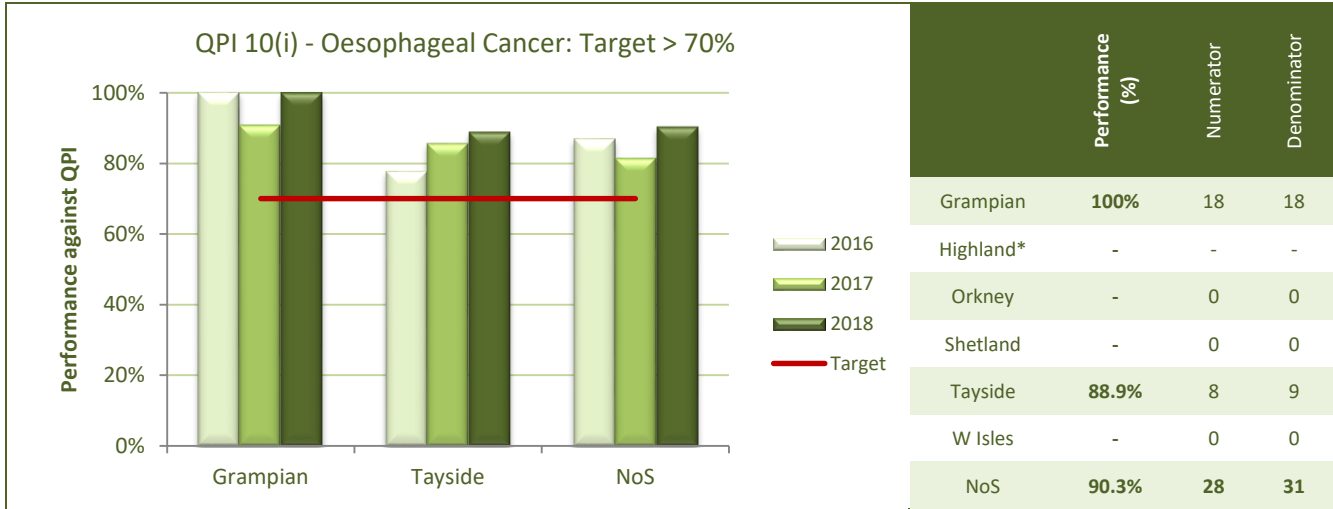
Clinical Commentary	<p>The North of Scotland continues to take a conservative approach to the discharge of patients following surgery; however boards are looking to optimise prehabilitation and enhanced recovery programmes to support early discharge for Upper GI surgery patients.</p> <p>There are geographical challenges in the achievement of this QPI and there are proposals to change the definition for discharge within 12 days for the fittest patients. All boards in the North will look to support the achievement of this QPI but it is recognised this target will continue to be challenging to achieve a 60% target for discharge within 14 days in the North.</p>
Actions	<ol style="list-style-type: none"> 1. NCUGIPB to ensure prehabilitation and enhanced recovery programmes are supported within the North.
Risk Status	Mitigate

QPI 10

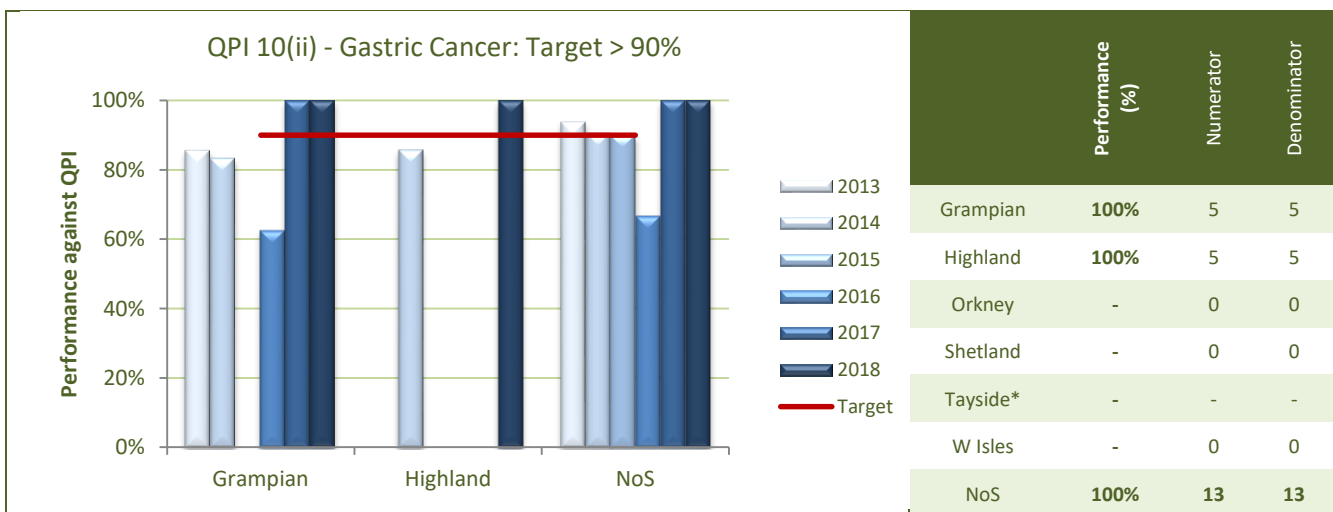
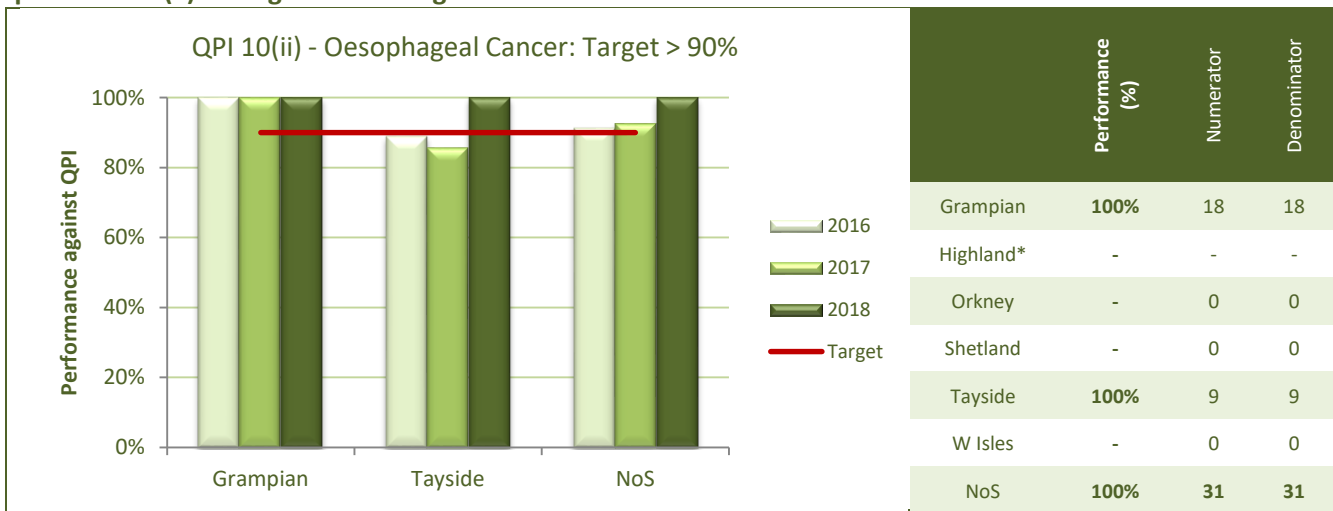
Resection Margins

Proportion of patients with oesophageal or gastric cancer who undergo surgical resection in which surgical margin is clear of tumour, i.e. negative surgical margin.

Specification (i) – Circumferential Margin

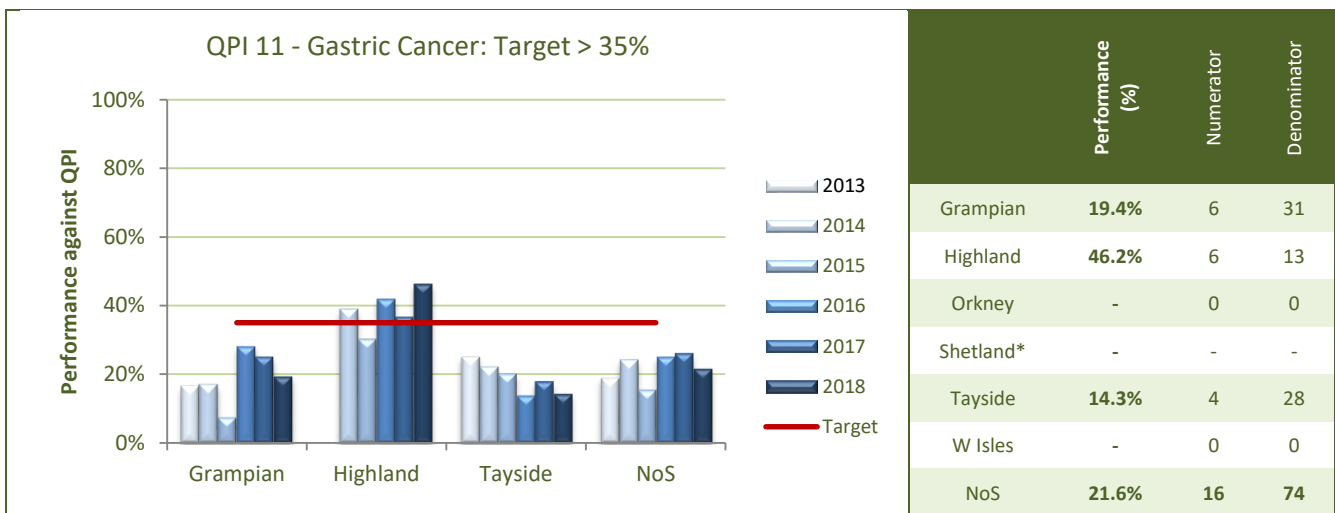
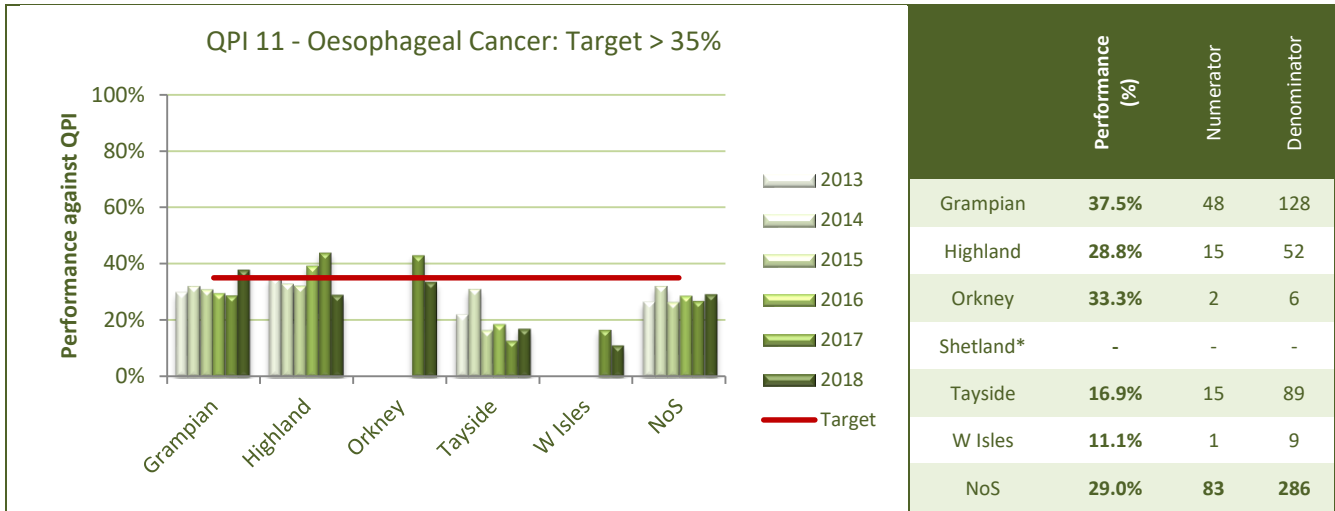


Specification (ii) – Longitudinal Margin



Clinical Commentary	These results reflect the excellent surgical service in the North of Scotland with all three specifications achieved within the North's cancer centres, with performance above the Scottish average for all three specifications.
Actions	None
Risk Status	Tolerate

QPI 11	Curative Treatment Rates
Proportion of patients with oesophageal or gastric cancer who undergo curative treatment.	



Clinical Commentary	<p>At the national meeting held in October 2019, there was agreement that this QPI target will never be achieved without a widespread transformation and investment in Upper GI cancer services. There are questions about whether this QPI is achievable as the numbers across Scotland in the six years of reporting show averages below the target.</p> <p>For Oesophageal, the North results of 29% is above the Scottish average of 24% and the best of all three Scottish regions for 2018 patients. For Gastric, the North's 21.6% is above the 19% Scottish average.</p> <p>The target reflects an aspiration but none of the Scottish regions are likely to achieve this QPI and this will be discussed as part of the next formal review of QPIs currently ongoing.</p>
Actions	<ol style="list-style-type: none"> 1. NCUGIPB to represent concerns on the achievement of this QPI as part of the formal review process in November 2019.
Risk Status	Mitigate

QPI 12	30 / 90 Day Mortality Following Oncological Treatment
Proportion of patients with oesophageal or gastric cancer who die within 30 or 90 days of oncological treatment for oesophageal or gastric cancer.	

**Specification (i) Curative Treatment
Chemoradiotherapy**

	Oesophageal Cancer						Gastric Cancer					
	30 Day Mortality Target < 5%			90 Day Mortality Target < 7.5%			30 Day Mortality Target < 5%			90 Day Mortality Target < 7.5%		
	Performance (%)	Numerator	Denominator	Performance (%)	Numerator	Denominator	Performance (%)	Numerator	Denominator	Performance (%)	Numerator	Denominator
Grampian	0%	0	27	3.7%	1	27	-	0	0	-	0	0
Highland	0%	0	11	0%	0	11	-	0	0	-	0	0
Orkney*	-	-	-	-	-	-	-	0	0	-	0	0
Shetland*	-	-	-	-	-	-	-	0	0	-	0	0
Tayside*	-	-	-	-	-	-	-	0	0	-	0	0
W Isles*	-	-	-	-	-	-	-	0	0	-	0	0
NoS	0%	0	45	2.2%	1	45	-	0	0	-	0	0

Peri-operative Chemotherapy

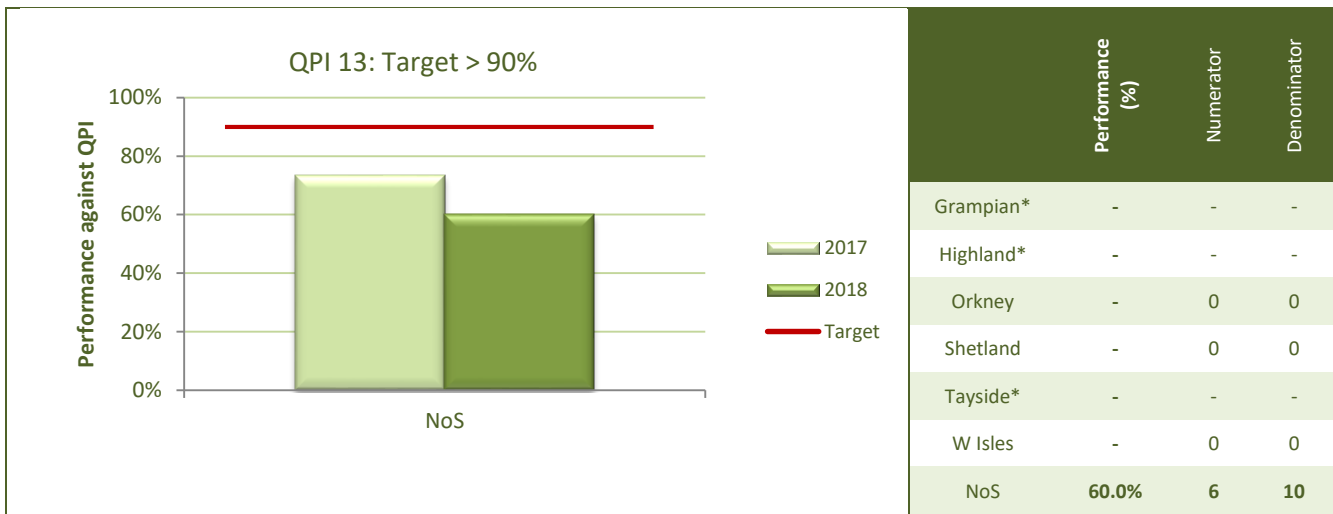
	Oesophageal Cancer						Gastric Cancer					
	30 Day Mortality Target < 5%			90 Day Mortality Target < 7.5%			30 Day Mortality Target < 5%			90 Day Mortality Target < 7.5%		
	Performance (%)	Numerator	Denominator	Performance (%)	Numerator	Denominator	Performance (%)	Numerator	Denominator	Performance (%)	Numerator	Denominator
Grampian*	0%	0	19	11.1%	2	18	-	-	-	-	-	-
Highland*	0%	0	7	0%	0	7	-	-	-	-	-	-
Orkney	-	0	0	-	0	0	-	0	0	-	0	0
Shetland*	-	-	-	-	-	-	-	0	0	-	0	0
Tayside*	0%	0	8	0%	0	8	-	-	-	-	-	-
W Isles	-	0	0	-	0	0	-	0	0	-	0	0
NoS	0%	0	35	5.9%	2	34	11.1%	1	9	11.1%	1	9

Specification (ii) – Palliative Chemotherapy

	Oesophageal Cancer Target < 5%			Gastric Cancer Target < 5%		
	Performance (%)	Numerator	Denominator	Performance (%)	Numerator	Denominator
Grampian*	9.5%	2	21	-	-	-
Highland*	15.4%	2	13	-	-	-
Orkney	-	0	0	-	0	0
Shetland	-	0	0	-	0	0
Tayside	16.7%	3	18	0%	0	7
W Isles*	-	-	-	-	0	0
NoS	12.7%	7	55	0%	0	12

Clinical Commentary	<p>Mortality in the North of Scotland is being assessed on a three-year rolling average by the NCUGIPB to monitor fluctuations in this data and assess if any further action is required.</p> <p>Mortality for patients undergoing chemoradiotherapy with curative intent was within tolerance in the North of Scotland, with one oesophageal patient dying within 90 days of treatment.</p> <p>One oesophageal patient died after surgery, while one gastric patient died two days after completing chemotherapy.</p> <p>Mortality for oesophageal patients undergoing palliative chemotherapy was above tolerance with seven patients dying within 30-days. All cases have been reviewed and no clinical management concerns identified. At the October 2019 national Upper GI meeting, there was agreement to progress updating the previous survival analysis data to look at trends over time and identify if there is any difference in practice within Scotland that can be identified by looking at this data. It was acknowledged that the poor prognosis of this group of patients means that failure of palliative chemotherapy to gain cancer control can result in rapid disease progression and that reflecting the target for this QPI will be discussed as part of the formal QPI review process.</p>
Actions	<ol style="list-style-type: none"> 1. NCUGIPB to assess rolling average of 30 & 90-day mortality and make assessment of further action required to improve mortality. 2. NCA to request Upper GI survival analysis is revisited with updated data and a national group is formed to interpret the results.
Risk Status	Mitigate

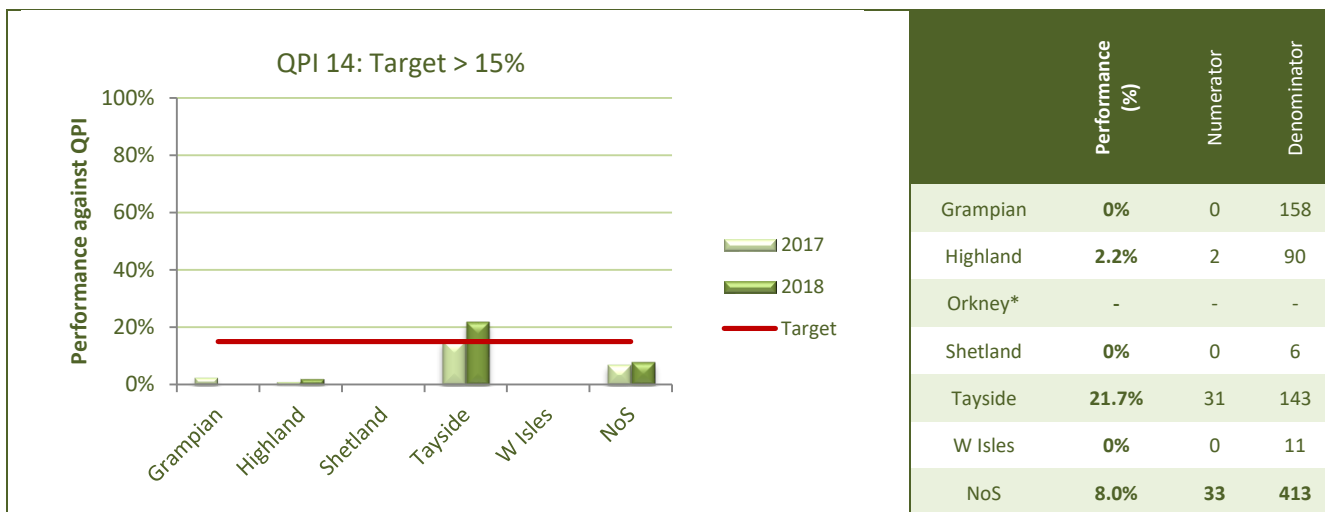
QPI 13	HER2 Status for Decision Making in Advanced Gastric and Gastro-oesophageal Junction Cancer
Proportion of patients with metastatic gastric or gastro-oesophageal junction adenocarcinoma undergoing first line palliative chemotherapy as their initial treatment for whom the HER2 status is reported prior to commencing treatment.	



Clinical Commentary	<p>Four metastatic patients did not have their HER2 status reported prior to commencing treatment.</p> <p>This QPI includes only metastatic (cM1) patients being considered for palliative chemotherapy while the SMC-approved indication for Trastuzumab and hence HER2 testing includes both locally-advanced and metastatic stages receiving palliative chemotherapy. Accordingly, this QPI does not accurately capture the relevant clinical activity or quality standard and should include patients with locally advanced and metastatic stage who receive palliative chemotherapy. This will give a better indication of this activity and will be proposed as part of the formal review of the Upper GI QPIs.</p>
Actions	<ol style="list-style-type: none"> NCA proposed changes to this QPI as part of the formal review of QPIs in November 2019.
Risk Status	Mitigate

QPI 14 Clinical Trials and Research Study Access

Proportion of patients with upper GI cancer who are consented for a clinical trial / translational research.



Clinical Commentary	Trials recruitment continues to be a challenge across all tumour groups. NHS Tayside continue to shine in this area with over a fifth of patients consented for a clinical trial or research study- and are the only health Board in Scotland meeting this QPI target for UGI cancers . Arrangements for greater collaboration between North of Scotland cancer centres is to be facilitated through the North Cancer Upper GI Pathway Board (NCUGIPB).
Actions	<ol style="list-style-type: none"> 1. All NHS Boards to consider opening relevant clinical trials in their tumour areas. When this is not possible patient referrals to other sites for access to clinical trials should be considered. 2. NCA to circulate a list of clinical trials available in the North of Scotland to UGI colleagues.
Risk Status	Mitigate

4. References

1. Information Services Division. Cancer Incidence and Prevalence in Scotland (to December 2017), 2019. Available at:
2. ISD, NHS National Services Scotland. Cancer Survival in Scotland, 1987-2011. March 2015. Available at: <https://www.isdscotland.org/Health-Topics/Cancer/Publications/2015-03-03/2015-03-03-CancerSurvival-Report.pdf?15243166686>
3. Scottish Cancer Taskforce, 2015. Upper GI Cancer Clinical Performance Indicators, Version 3.0. Health Improvement Scotland. Available at http://www.healthcareimprovementscotland.org/our_work/cancer_care_improvement/program_me_resources/cancer_qpis.aspx
4. <http://www.isdscotland.org/Health-Topics/Cancer/Cancer-Audit/>
5. https://www.nrhc.scot/uploads/tiny_mce/NCA/NCA%20Governance/NCA-GOV-QPI-Process-Explained.pdf

Appendix 1: Clinical Trials and Research Studies open for recruitment in the North of Scotland in 2018

Trial	Principle Investigator	Patients consented
A Phase III, Randomized, Double-blind Trial of Pembrolizumab (MK-3475) (SCH-900475) plus Chemotherapy (XP or FP) versus Placebo plus Chemotherapy (XP or FP) as Neoadjuvant/Adjuvant Treatment	Russell Petty (Tayside)	Y
Add Aspirin	Douglas Adamson (Tayside) Russell Mullen (Highland)	Y
LUD2015-005 in Oesophageal Cancer	Russell Petty (Tayside)	Y
Observational study in Gastric patients receiving Nivolumab in EAMS	Russell Petty (Tayside)	Y
OCCAMS	Russell Petty (Tayside)	Y
Pembrolizumab/Placebo Plus Trastuzumab Plus Chemo in HER2+ Gastric/GEJ	Russell Petty (Tayside)	Y
PLATFORM	Russell Petty (Tayside)	Y
ROCS	Douglas Adamson (Tayside)	Y
FGFR	Russell Petty (Tayside)	N
GO2	Russell Petty (Tayside)	N
JAVELIN Gastric 100	Russell Petty (Tayside)	N
NeoSCOPE: Neoadjuvant - Study of Chemoradiotherapy in OesoPhagEal Cancer	Paddy Niblock (Tayside)	N
RTL Advanced Study	Leslie Samuel (Grampian)	N
SCOPE 2	Lucy Wells (Grampian) Douglas Adamson (Tayside)	N