North, South East and West of Scotland Cancer Networks

Brain and Central Nervous System Cancers
Scottish Adult Neuro Oncology Network

Audit Report

Brain and Central Nervous System Cancers Quality Performance Indicators

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 the performance of Adult Neuro-Oncology services using clinical audit data relating to patients diagnosed with brain and central nervous system (CNS) cancers across Scotland during 2017.

Twelve months of data were measured against the Brain and CNS Cancer quality performance indicators (QPIs) for the fourth consecutive year. QPI data has been presented alongside data for previous years where results have remained comparable after processes of review.

Background

The Scottish Adult Neuro-Oncology Network (SANON) was established in 2006 and is one of three national cancer networks in Scotland. The aim of the network is to link together health professionals, researchers, patients, their families and carers, social care, voluntary sector representatives and external companies to ensure the delivery of equitable, high quality and clinically effective care for patients in Scotland[7].

Brain and CNS cancers are relatively rare cancers with approximately 411 adult cases diagnosed in Scotland each year between 2012 and 2016[4]. The 2017 audit identified 361 patients diagnosed with a new primary cancer of the brain or CNS in Scotland.

The table below details the four MDTs which manage all cases of brain and CNS cancer in Scotland. There are five specialist centres carrying out neuro-oncology treatment in Scotland and these are considered the centres for specialist treatment, which includes surgery, chemotherapy and radiotherapy. Patients may receive diagnostic or palliative care in their local hospital where appropriate; however the majority of patients are referred to one of the four MDTs for specialist management.

Neuro-oncology MDT	Constituent Hospital(s)
Aberdeen/Inverness	Aberdeen Royal Infirmary (surgery and oncology) Raigmore Hospital – Inverness (oncology)
Dundee	Ninewells Hospital (surgery and oncology)
Edinburgh	Western General Hospital (surgery and oncology)
Glasgow	Queen Elizabeth University Hospital (surgery) and Beatson West of Scotland Cancer Centre (oncology)

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. 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 23rd May 2018. Analysis was performed centrally by the WoSCAN Information Team

Results

Results for each QPI are shown in detail in the main report and illustrate regional/treatment centre performance against each target and overall national results for each performance indicator. Results are presented graphically and the accompanying tabular format also highlights any missing data and its possible effect on any of the measured outcomes.

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 applied to indicate a denominator of zero and to distinguish between this and a 0% performance.

The summary of results over page shows the overall percentage performance for Scotland and individual performance by NHS Region or MDT/neuro-oncology centre.

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

Brain/CNS Cancer **Quality Performance Indicator (QPI)**	**Performance by Region of Diagnosis**								
	QPI target	**NOSCAN**		**SCAN**		**WoSCAN**		**SCOTLAND**	
QPI 1: Documentation of Performance Status – Proportion of newly diagnosed patients with brain/CNS cancer who have a documented WHO performance status at the time of multidisciplinary team (MDT) discussion.	95%	88.1% <		93.0% >		95.3% <		92.5% >	
		89	101	120	129	122	128	331	358
QPI 4: Neuropathological Diagnosis – Proportion of patients with brain/CNS cancer where the pathology report contains a full set of data items (as defined by the Royal College of Pathologists) including WHO Grade.	90%	95.5% <		100.0% >		87.5% <		94.4% >	
		64	67	103	103	84	96	251	266
QPI 8: Specialist Neuro-oncology Access – Proportion of patients with brain/CNS cancer undergoing oncological treatment (chemotherapy or radiotherapy) who are managed by a specialist neuro-oncologist.	100%	100.0% =		100.0% =		100.0% =		100.0% =	
		60	60	89	89	72	72	221	221
QPI 9: Access to Adjuvant Treatment – Proportion of patients with high grade glioma (WHO Grade III and IV) undergoing surgical resection who commence their oncological treatment (chemotherapy or radiotherapy) within 6 weeks of surgical resection**.**	95%	35.3% <		82.2% <		95.0% >		73.1% <	
		12	34	37	45	38	40	87	119
QPI 10: Radical Radiotherapy Planning Process – Proportion of patients with brain/CNS cancer undergoing radical radiotherapy for whom the radiotherapy planning process includes MRI fusion.	95%	80.4% <		98.3% <		100.0% >		93.3% <	
		37	46	58	59	45	45	140	150

Brain/CNS Cancer **Quality Performance Indicator (QPI)**	**Performance by Region of Diagnosis**								
	QPI target	**NOSCAN**		**SCAN**		**WoSCAN**		**SCOTLAND**	
QPI 11: Seizure Management – Proportion of patients with brain/CNS cancer presenting with seizures at diagnosis who are seen by a neurologist or a nurse with expertise in epilepsy management.	95%	85.2% <		78.6% <		60.0% <		76.4% <	
		23	27	33	42	12	20	68	89

Brain/CNS Cancer **Quality Performance Indicator (QPI)**	**Performance by Region of Surgery**								
	QPI target	**NOSCAN**		**SCAN**		**WoSCAN**		**SCOTLAND**	
QPI 7: Early Post-op Imaging - Proportion of patients with malignant glioma (with enhancing component on pre-operative imaging) who receive early post-operative imaging with MRI within 3 days (72 hours) of surgical resection.	90%	71.9% <		95.7% >		94.7% >		89.7% >	
		23	32	45	47	54	57	122	136

Brain/CNS Cancer **Quality Performance Indicator (QPI)**	**Performance by Region of Residence**								
	QPI target	**NOSCAN**		**SCAN**		**WoSCAN**		**SCOTLAND**	
QPI 13(i): Clinical Trials Access – Proportion of patients with brain/CNS cancer who CONSENT TO PARTICIPATE in a clinical trial.	15%	1.9%		9.8%		11.1%		8.3%	
		2	106	14	143	18	162	34	411
QPI 13(ii): Clinical Trials Access – Proportion of patients with brain/CNS cancer who are ENROLLED in a clinical trial.	NA	1.9%		4.2%		4.9%		3.9%	
		2	106	6	143	8	162	16	411

Conclusions and Action Required

The Scottish Adult Neuro-Oncology Network (SANON) is encouraged by the continued support and commitment of Network members to deliver a high quality service to brain/CNS cancer patients across the country. The results presented in this report demonstrate that patients with brain/CNS cancer receive a consistent and improving standard of care across all geographical locations. Case ascertainment and data capture is of a high standard enabling robust assessment of performance against QPIs.

The results presented within this report illustrate that some of the QPI targets set have been challenging for NHS Boards to achieve and there remains room for further service improvement, however it is encouraging that targets relating to specialist neuro-oncology access were consistently met by all regions in 2017. Additionally the target was met nationally for pathology reporting.

Where targets have not been met NHS Boards have provided detailed comment indicating valid clinical reasons. NOSCAN highlighted that staffing and resource issues have had a significant impact on QPI performance.

SANON, MDTs and neuro-oncology centres are asked to develop local Action/Improvement Plans in response to the findings presented in the report. A summary of actions for SANON, MDTs and neuro-oncology centres has been included within the Action Plan templates in the Appendix.

Actions required:

Data Quality

- All Regions/Boards to work with SANON in order to improve case ascertainment figures.

QPI 1: Documentation of Performance Status

- Aberdeen/Inverness MDT and Edinburgh MDT to ensure that performance status is documented for all patients at time of MDT discussion.

QPI 4: Neuropathological Diagnosis

- Glasgow MDT to provide detailed clinical feedback on cases not meeting the target.

QPI 7: Early Post-operative Imaging

- Aberdeen/Inverness MDT to ensure that all patients with malignant glioma have imaging requests sent promptly after surgery, and to review how provision of the radiology resource can be maximised to improve performance.

QPI 9: Access to Adjuvant Treatment

- Dundee MDT to provide feedback on cases not meeting the target, detailing the length and reason for delay in each case.
- Aberdeen/Inverness MDT and Dundee MDT to monitor the effectiveness of changes made on QPI performance and report findings to SANON.
- Edinburgh MDT to investigate strategies to improve performance over the winter period and provide feedback to SANON.

QPI 10: Radical Radiotherapy Planning Process

- Aberdeen/Inverness MDT to investigate the MRI recording/data capture issue and provide feedback to SANON.
- Dundee MDT to review cases not meeting the target and provide detailed clinical feedback.
- Glasgow MDT to perform an audit to highlight the reasons why a cohort of patients receiving surgical resection did not progress to radiotherapy.

QPI 13: Clinical Trials Access

- SANON to identify potential barriers to trial recruitment, consider how best to communicate details of open trials to all centres and encourage clinicians to consider all patients for 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 SANON and any service or clinical issue which the SANON considers not to have been adequately addressed will be escalated to the NHS Board Territorial Lead Cancer Clinician and Regional Lead Cancer Clinician.

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

1. Introduction

The purpose of this report is to present an assessment of the performance of Adult Neuro-Oncology services using clinical audit data relating to patients diagnosed with brain and central nervous system (CNS) cancers across Scotland during 2017. Results are measured against the Brain and CNS Cancer Quality Performance Indicators[1] (QPIs) which were introduced for patients diagnosed on or after 1st January 2014.

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 National Managed Clinical Network (NMCN) for Brain and CNS Cancers and Information Services Division (ISD), the Brain and CNS Cancer QPIs[1] were published by Healthcare Improvement Scotland (HIS) in December 2013 and implemented for patients diagnosed on or after 1st January 2014. Data definitions[2] and measurability criteria[3] to accompany the Brain and CNS Cancer QPIs are available from the ISD website.

Twelve months of data were measured against the Brain and CNS Cancer QPIs for the fourth consecutive year. A process of baseline review was undertaken after the reporting of Year 1 data with a formal review process taking place after Year 3. This is to ensure that QPIs remain appropriate and fit for purpose. QPI data has been presented alongside data for previous years where results have remained comparable after processes of review. Future reports will continue to compare clinical audit data in successive years to further illustrate trends.

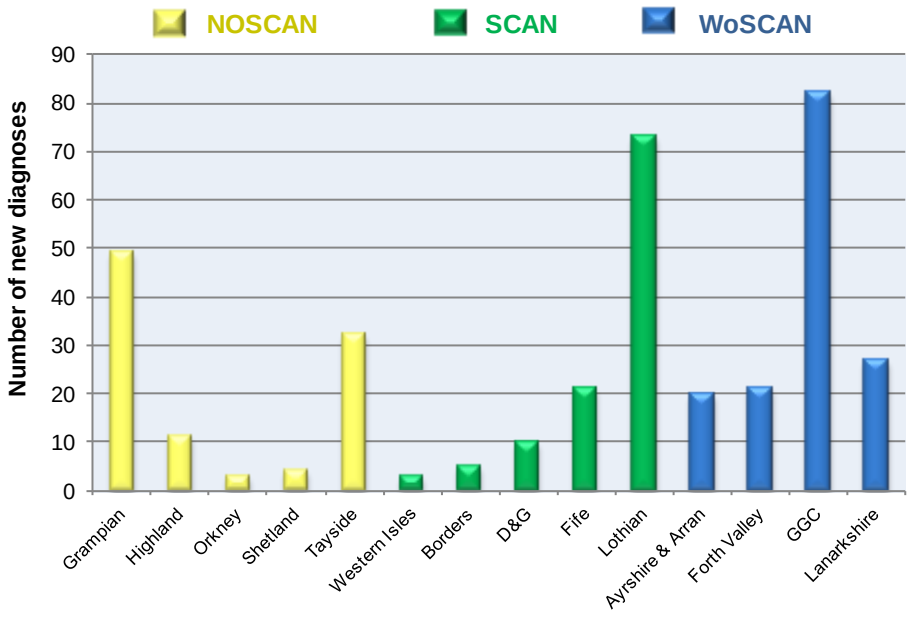
2. Background

The Scottish Adult Neuro-Oncology Network (SANON) was established in 2006 and is one of three national cancer networks in Scotland. The aim of the network is to link together health professionals, researchers, patients, their families and carers, social care, voluntary sector representatives and external companies to ensure the delivery of equitable, high quality and clinically effective care for patients in Scotland[7].

Brain and CNS cancers are relatively rare cancers with approximately 411 adult cases diagnosed in Scotland each year between 2012 and 2016[4]. The 2017 audit identified 361 patients diagnosed with a new primary cancer of the brain or CNS in Scotland.

The distribution of the 361 newly diagnosed cases in 2017 is presented in Figure 1 by location of diagnosis across the fourteen NHS Boards. The West of Scotland Cancer Network (WoSCAN) recorded 42% of new diagnoses in 2017 with 150 new cases of brain and CNS cancers captured by audit. This is in line with the adult population distribution in this region as 2017 mid-year population estimates[8] show that 46.1% of the Scottish adult population reside within West of Scotland (WoS) region. It should be noted that 21 of the cases diagnosed in the WoS, specifically NHS Forth Valley, are included in SCAN results throughout the report as these patients are managed through the Edinburgh MDT.

Figure 1: Number of patients diagnosed with brain or CNS cancer across Scotland by NHS Board, 2017.



NOSCAN	Grampian	Highland	Orkney	Shetland	Tayside	W. Isles	Total
Number of cases	49	11	3	4	32	3	102

SCAN	Borders	D&G	Fife	Lothian	Total
Number of cases	5	10	21	73	109

WoSCAN	AA	FV	GGC	Lanarkshire	Total
Number of cases	20	21	82	27	150

‡ Patients diagnosed in Forth Valley are managed through the Edinburgh MDT and are included in SCAN performance for QPI results.

The tumour morphology of cases diagnosed in the audit of 2017 data is detailed below in Table 1, and is classified according to the International Classification for Diseases for Oncology (ICD-O 3). The majority of cases have an astrocytic tumour morphology. Where cases are noted as "Not Applicable", no sample was sent to pathology for testing.

Table 1: Tumour morphology for patients diagnosed with brain or CNS cancer across Scotland by Region of Diagnosis, 2017.

	Region of Diagnosis							
	NOSCAN		SCAN		WoS		Scotland	
Tumour Type	n	%	n	%	n	%	n	%
Glioma	2	2.0%	0	0.0%	1	0.7%	3	0.8%
Astrocytic	61	59.8%	76	69.7%	99	66.0%	236	65.4%
Oligodendroglioma	8	7.8%	8	7.3%	8	5.3%	24	6.6%
Ependymal	0	0.0%	3	2.8%	2	1.3%	5	1.4%
Embryonal	1	1.0%	0	0.0%	1	0.7%	2	0.6%
Meningeal	1	1.0%	2	1.8%	1	0.7%	4	1.1%
Not Applicable	29	28.4%	20	18.3%	38	25.3%	87	24.1%
Total No of Pts	102		109		150		361	

Table 2 shows a description of the WHO classification of tumour grade. This is a scale to determine the aggressiveness of tumours and to estimate prognosis.

Table 2: Description of the WHO tumour grade classification.

Grade	Description
1	Tumours with low proliferative potential, a frequently discreet nature and a possibility of cure following surgical resection alone.
2	Generally infiltrating tumours low in mitotic activity but with a potential to recur.
3	Histological evidence of malignancy, generally in the form of mitotic activity, clearly expressed infiltrative capabilities and anaplasia.
4	Mitotically active, necrosis prone neoplasms, generally associated with a rapid pre- and post-operative evolution of the disease.

Table 3 illustrates the proportion of cases from the 2017 audit assigned to each tumour grade. The majority of cases are Grade 4 which is associated with poorer outcomes. Cases have been assigned as “Not Applicable” where no sample has been sent to pathology for analysis.

Table 3: Tumour grade for patients diagnosed with brain or CNS cancer across Scotland by Region of Diagnosis, 2017.

	Region of Diagnosis							
	NOSCAN		SCAN		WoS		Scotland	
Grade	n	%	n	%	n	%	n	%
1	1	1.0%	0	0.0%	1	0.7%	2	0.6%
2	7	6.9%	12	11.0%	11	7.3%	30	8.3%
3	15	14.7%	11	10.1%	12	8.0%	38	10.5%
4	50	49.0%	66	60.6%	88	58.7%	204	56.5%
Not Applicable	29	28.4%	20	18.3%	38	25.3%	87	24.1%
Total No of Pts	102		109		150		361	

The table below details the four MDTs which manage all cases of brain and CNS cancer in Scotland. There are five specialist centres carrying out neuro-oncology treatment in Scotland and these are considered the centres for specialist treatment, which includes surgery, chemotherapy and radiotherapy. Surgery is not performed in Inverness. Patients may receive diagnostic or palliative care in their local hospital where appropriate; however the majority of patients are referred to one of the four MDTs for specialist management.

Neuro-oncology MDT	Constituent Hospital(s)
Aberdeen/Inverness	**Aberdeen Royal Infirmary (surgery and oncology) Raigmore Hospital – Inverness (oncology)**
Dundee	**Ninewells Hospital (surgery and oncology)**
Edinburgh	**Western General Hospital (surgery and oncology)**
Glasgow	**Queen Elizabeth University Hospital (surgery) and Beatson West of Scotland Cancer Centre (oncology)**

2.1 Incidence and survival

Brain and CNS cancers are relatively rare cancers with approximately 411 cases diagnosed in Scotland each year between 2012 and 2016[4]. The percentage frequency of brain and CNS cancers in Scotland is comparatively low at 1.3% of all cancers diagnosed. It was ranked as the fifteenth most commonly diagnosed cancer in males and the nineteenth most commonly diagnosed cancer in females in Scotland in 2016[5].

The incidence of brain and CNS cancers has decreased in males by 6.3% in the ten years from 2006-2016, with a slight increase in the incidence for females of 0.3%. Overall there has been a decrease in incidence of 3.7%[5]. The mortality of Brain/CNS cancer has increased for both males and females in the ten years from 2006-2016 (males 1.1%, females 10.3%) with an overall increase of 4.5%[5]. Brain and CNS cancers are ranked as the fourteenth most common cause of death from cancer and accounted for 2.5% of all deaths from cancer in 2016[5].

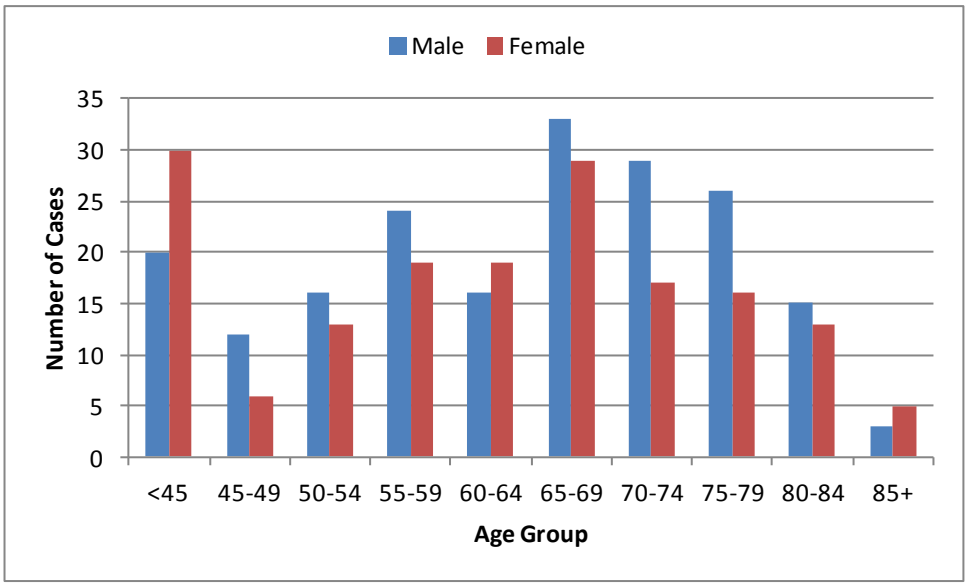
Relative survival at one year is increasing for brain and CNS cancers[6]. Table 1 shows the percentage change in survival rates for patients diagnosed between 1987 and 1991 compared to those diagnosed between 2007 and 2011.

Table 4: Percentage change in relative age-standardised survival for brain and CNS cancer in Scotland at 1 year and 5 years from 1987-1991 to 2007-2011. Source data: ISD[6]

	Relative survival at 1 year (%)		Relative survival at 5 years (%)	
	2007 – 2011	% change	2007 – 2011	% change
Male	41.2 %	+ 9.8 %	15.1 %	+ 1.0 %
Female	39.5 %	+ 7.7 %	15.8 %	- 0.8 %

This report includes all cases aged 16 and over and the age distribution for males and females diagnosed in 2017 in Scotland is illustrated in Figure 2. The incidence of brain and CNS cancer is higher for males in almost all age groups and approximately 5 males are diagnosed for every 4 female cases.

Figure 2: Number of patients diagnosed with brain and CNS cancers 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	20	12	16	24	16	33	29	26	15	3	194
Female	30	6	13	19	19	29	17	16	13	5	167

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. 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 23rd May 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 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 NHS 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.

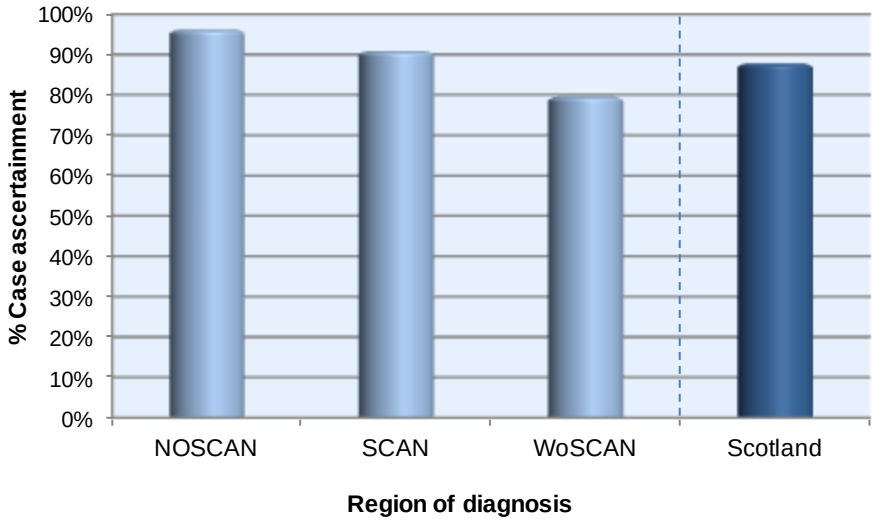
4. Results and Action Required

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 Information Services Division, National Services Scotland). Cancer Registry figures were extracted from ACaDMe (Acute Cancer Deaths and Mental Health), a system provided by Information Services Division (ISD). Cancer Registry figures are an average of the previous five years' figures to take account of annual fluctuations in incidence within NHS Regions.

Overall case ascertainment for Scotland is 87.8% which indicates good data capture and so overall results should be an accurate reflection of performance. Results range from 79.6% in WoSCAN to 96.2% in NOSCAN. The case ascertainment in WoSCAN (79.6%) indicates that further effort is required in order to improve data capture. 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 Region is illustrated in Figure 3.

Figure 3: Case ascertainment by region for patients diagnosed with brain and CNS cancers in Scotland in 2017.



	NOSCAN	SCAN	WoSCAN	Scotland
Cases from audit	102	130	129	361
ISD Cases (2011-2015 average)	106	143	162	411
% Case ascertainment	96.2%	90.9%	79.6%	87.8%

Action:

- All Regions/Boards to work with SANON in order to improve case ascertainment figures.

4.2 Performance against Quality Performance Indicators (QPIs)

Results of the analysis of Brain and CNS Cancer Quality Performance Indicators are set out in the following sections. Graphs and charts have been provided where this aids interpretation and, where appropriate, numbers have also been included to provide context.

Data are presented for each QPI by region of diagnosis or by location of treatment (neuro-oncology centre) both graphically and in tabular format, with performance also shown as an overall national representation. Years 2-4 data is presented alongside Year 1 data where measurement has remained comparable following the baseline review process. Year 4 data has been presented alongside data for previous years where measurement has remained comparable after formal review.

A number of QPIs are not reported this year due to a large number of measurability changes and the addition of new data items. These QPIs will be reported next year based on 2018 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 applied to indicate a denominator of zero and to distinguish between this and a 0% performance.

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

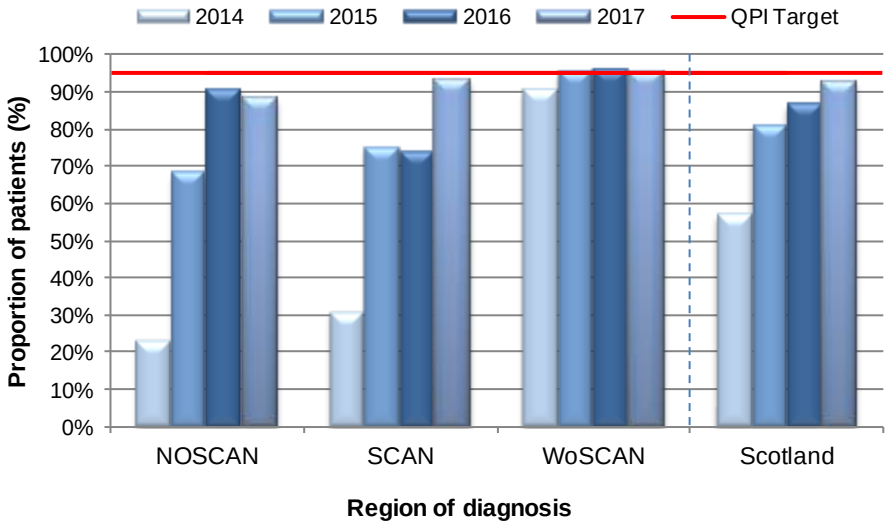
QPI 1: Documentation of Performance Status

Performance status is an important prognostic indicator in patients with brain/CNS cancer. Accurate communication of performance status is vital in guiding complex management decisions, including recruitment into clinical trials[1]. In patients referred from other sites, who have not yet met a member of the neuro-oncology MDT, an estimated performance status should be given based on the available information from the referring site[1].

The tolerance within the 95% target against QPI 1 accounts for situations where there is insufficient information from the referring site to estimate the World Health Organisation (WHO) performance status.

QPI 1:	Patients with newly diagnosed brain/CNS cancer should have a WHO performance status documented at time of diagnosis.
Description:	Proportion of newly diagnosed patients with brain/CNS cancer who have a documented WHO performance status at the time of MDT discussion.
Numerator:	Number of newly diagnosed patients with brain/CNS cancer discussed at MDT meeting with a documented WHO performance status at the time of MDT discussion.
Denominator:	All newly diagnosed patients with brain/CNS cancer discussed at MDT meeting.
Exclusions:	None
Target:	95%

Figure 4: Proportion of newly diagnosed patients with brain/CNS cancer who have a documented WHO performance status at the time of MDT discussion, 2014 to 2017.



QPI 1	Performance (%)	Numerator	Denominator	Not Recorded Numerator	Not Recorded Exclusions	Not Recorded Denominator
NOSCAN	88.1%	89	101	0	0	0
SCAN	93.0%	120	129	0	0	0
WoSCAN	95.3%	122	128	4	0	0
Scotland	92.5%	331	358	0	0	0

WoSCAN met the 95% target with 95.3%. NOSCAN and SCAN were short of the target with 88.1% and 93.1% respectively. The overall national performance was 92.5%, showing year on year improvement. Centres have provided feedback on cases not meeting the target.

The Aberdeen centre commented that in almost all cases, the performance status was known by the referring clinician but was not formally documented in the MDT proforma. The importance of performance status documentation has been re-enforced to referrers and the MDT by the Chairman.

The Edinburgh centre noted improved completion of the Karnofsky Performance Status (KPS) compared to previous years, but question the accuracy of performance status estimation within the region. The audit facilitator, MDT coordinator and MDT Chair will identify missing values and estimate the patient performance status based on all available information.

Action:

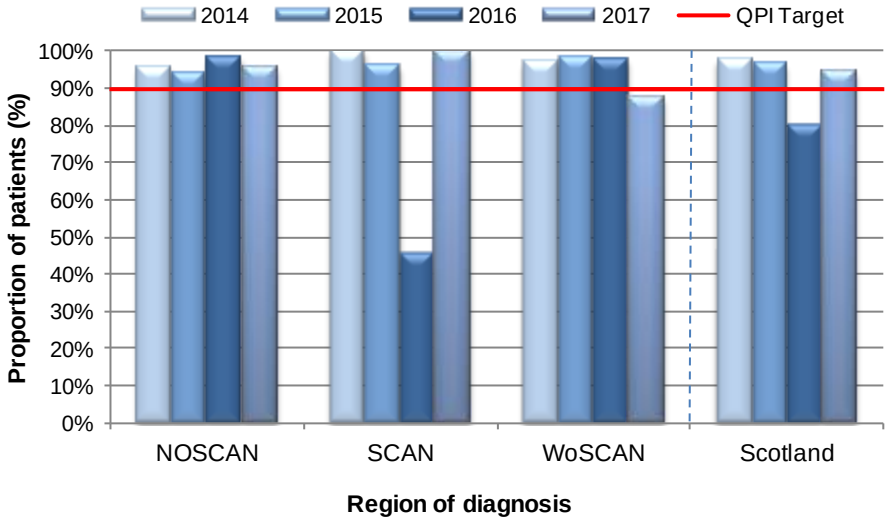
- Aberdeen/Inverness MDT and Edinburgh MDT to ensure that performance status is documented for all patients at time of MDT discussion.

QPI 4: Neuropathological Diagnosis

Accurate and robust standardisation of tumour diagnosis is required for appropriate patient management. Neuropathologists should report to the standards defined by the Royal College of Pathologists in 'Standards and Datasets for Reporting Cancers: Dataset for Tumours of the Central Nervous System, including Pituitary Gland.' [1]

QPI 4:	All pathology reports for brain/CNS cancer should contain full pathology information (including WHO grade) to inform patient management.
Description:	Proportion of patients with brain/CNS cancer where the pathology report contains a full set of data items (as defined by the Royal College of Pathologists).
Numerator:	Number of patients with a histological diagnosis of brain/CNS cancer where histological pathology report contains all data items.
Denominator:	All patients with a histological diagnosis of brain/CNS cancer.
Exclusions:	None.
Target:	90%

Figure 5: Proportion of patients with brain/CNS cancer where the pathology report contains a full set of data items (as defined by the Royal College of Pathologists), 2014 to 2017.



QPI 4	Performance (%)	Numerator	Denominator	Not Recorded Numerator	Not Recorded Exclusions	Not Recorded Denominator
NOSCAN	95.5%	64	67	0	0	0
SCAN	100.0%	103	103	0	0	0
WoSCAN	87.5%	84	96	0	0	0
Scotland	94.4%	251	266	0	0	0

NOSCAN and SCAN met the 90% target with 95.5% and 100.0% respectively. WoSCAN were short of the target with a performance of 87.5%. The overall national performance was 94.4%.

The Dundee centre has provided feedback on a small number of cases which did not meet the target. It was noted that full pathology is always received, but some results take more time i.e. genetic testing.

The Glasgow centre did not provide feedback on the cases not meeting the target.

Action Required:

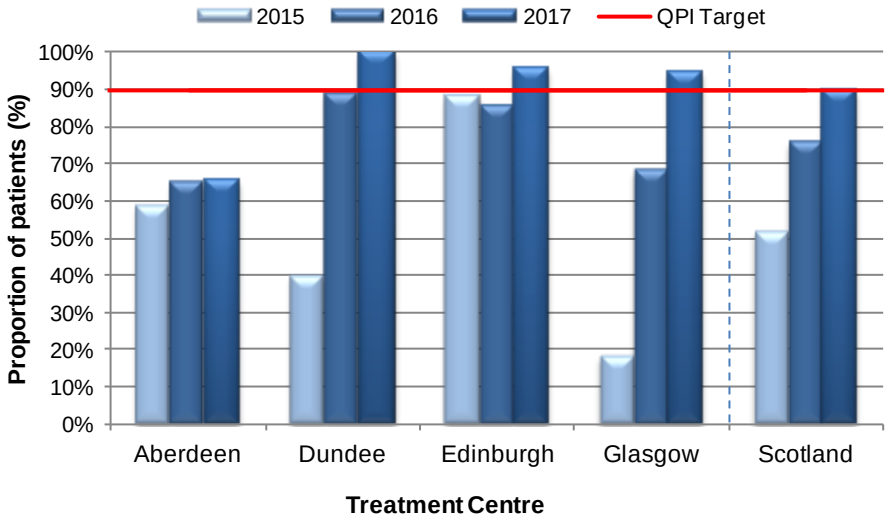
- Glasgow MDT to provide detailed clinical feedback on cases not meeting the target.

QPI 7: Early Post-operative Imaging

Post-operative imaging is important for a number of reasons; it provides a measurement of surgical performance and helps to determine whether and what type of further treatment is required. It also helps to assess prognosis[1]. Imaging should be carried out within 72 hours to enable reliable assessment of the extent of the resection. MRI is the preferred imaging modality for patients with glioma. After this time, changes in the tumour resection bed confound estimation[1].

QPI 7:	Patients with malignant glioma (with enhancing component on pre-operative imaging) undergoing surgical resection should be subject to early post-operative imaging.
Description:	Proportion of patients with malignant glioma (with enhancing component on pre-operative imaging) who receive early post-operative imaging with MRI within 3 days (72 hours) of surgical resection.
Numerator:	Number of patients with malignant glioma (with enhancing component on pre-operative imaging) undergoing surgical resection receiving MRI within 3 days (72 hours) of surgical resection.
Denominator:	All patients with malignant glioma (with enhancing component on pre-operative imaging) undergoing surgical resection.
Exclusions:	• Patients who are unable to undergo an MRI scan. • Patients who refuse an MRI scan. • Patients undergoing biopsy only.
Target:	90%

Figure 6: Proportion of patients with malignant glioma (with enhancing component on pre-operative imaging) who receive early post-operative imaging with MRI within 3 days (72 hours) of surgical resection, 2015 to 2017.



QPI 7	Performance (%)	Numerator	Denominator	Not Recorded Numerator	Not Recorded Exclusions	Not Recorded Denominator
Aberdeen	65.4%	17	26	0	0	0
Dundee	100.0%	6	6	0	0	0
Edinburgh	95.7%	45	47	0	0	0
Glasgow	94.7%	54	57	0	0	0
Scotland	89.7%	122	136	0	0	0

Dundee (100.0%), Edinburgh (95.7%) and Glasgow (94.7%) centres all met the 90% target. The Aberdeen centre was short of the target with 65.4%. The overall national performance was 89.7%, showing year on year improvement.

The Aberdeen centre has provided feedback on cases not meeting the target. In the majority of cases there was a delay in making the MRI request post operatively, but MRI was performed within 5 days. In a small number of cases an MRI was not performed due to clinical suspicion and patient fitness. Education has been provided to the entire Neurosurgery team regarding the importance of prompt post operative MRI. There are hospital wide pressures on the MRI department which have increased since the implementation of a new Metastatic Spinal Cord Compression pathway. It is suggested that radiology resources must be increased in order to fulfil hospital demand, and improve QPI performance.

Actions:

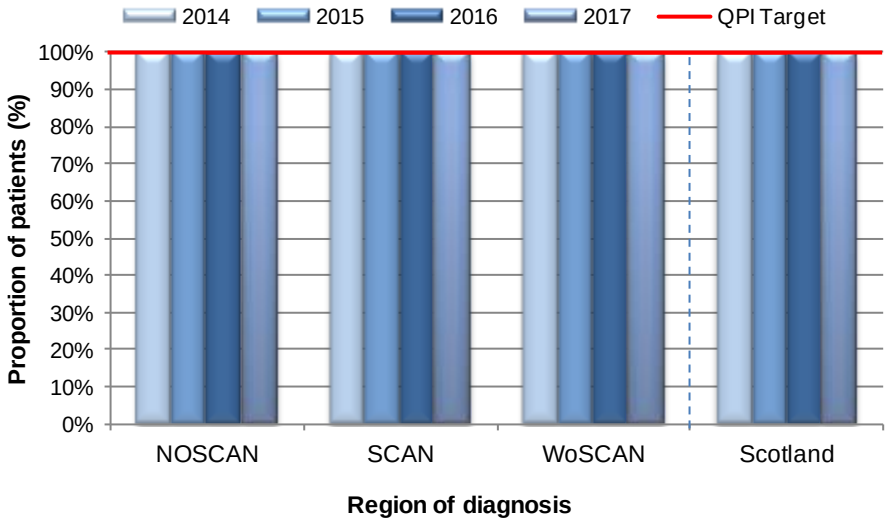
- Aberdeen/Inverness MDT to ensure that all patients with malignant glioma have imaging requests sent promptly after surgery, and to review how provision of the radiology resource can be maximised to improve performance.

QPI 8: Specialist Neuro-oncology Access

Non-surgical management of patients with brain and CNS tumours is increasingly complex. Radiotherapy and systemic therapy are evolving rapidly, particularly with regard to the emergence of new radiological technologies and novel prognostic and predictive molecular markers[1]. Psychosocial aspects of care are also complex. All patients should therefore be under the care of a clinical oncologist with a special interest in tumours of the brain and CNS[1].

QPI 8:	Patients with brain/CNS cancer undergoing oncological treatment should be managed by a site specialist neuro-oncologist.
Description:	Proportion of patients with brain/CNS cancer undergoing oncological treatment (chemotherapy or radiotherapy) who are managed by a specialist neuro-oncologist.
Numerator:	Number of patients with brain/CNS cancer undergoing oncological treatment (chemotherapy or radiotherapy) who are managed by a specialist neuro-oncologist.
Denominator:	All patients with brain/CNS cancer undergoing oncological treatment (chemotherapy or radiotherapy).
Exclusions:	None.
Target:	100%

Figure 7: Proportion of patients with brain/CNS cancer undergoing oncological treatment (chemotherapy or radiotherapy) who are managed by a specialist neuro-oncologist, 2014 to 2017.



QPI 8	Performance (%)	Numerator	Denominator	Not Recorded Numerator	Not Recorded Exclusions	Not Recorded Denominator
NOSCAN	100.0%	60	60	0	0	0
SCAN	100.0%	89	89	0	0	0
WoSCAN	100.0%	72	72	0	0	0
Scotland	100.0%	221	221	0	0	0

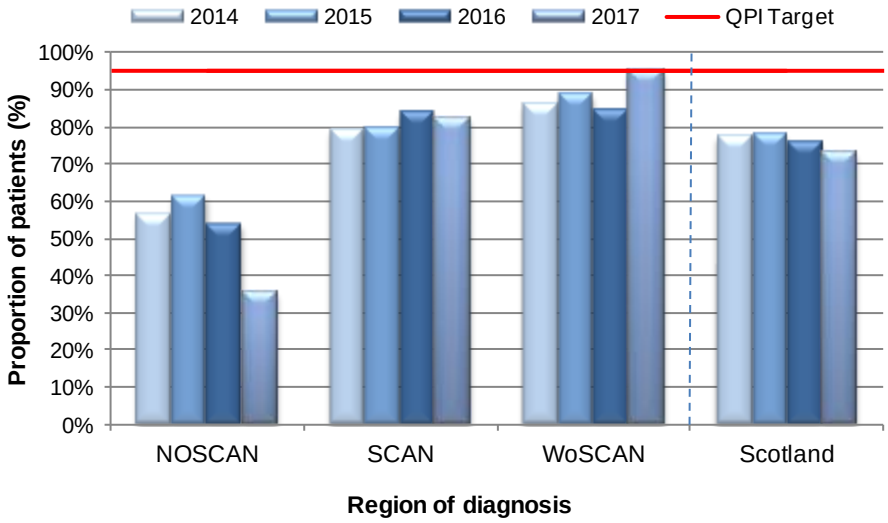
All regions met the 100.0% target. All regional and national performances have been 100% in each year of audit.

QPI 9: Access to Adjuvant Treatment

Evidence demonstrates a negative impact on patient outcome if adjuvant treatment is delayed. It has been reported that by delaying oncological treatment, the risk of death increased by 8.9% for each week from the date of first surgery[1]. In addition, evidence shows that patients commencing radiotherapy within 6 weeks of the date of surgery had improved overall survival. Hence a maximum interval of 6 weeks between surgery and first day of radiotherapy is recommended[1].

QPI 9:	The maximum time between surgical resection and oncological treatment for patients with high grade glioma (WHO Grades III and IV) should be 6 weeks.
Description:	Proportion of patients with high grade glioma (WHO Grade III and IV) undergoing surgical resection who commence their oncological treatment (chemotherapy, radiotherapy or chemoradiotherapy) within 6 weeks of surgical resection.
Numerator:	Number of patients with high grade glioma (WHO Grades III and IV) who undergo oncological treatment (chemotherapy, radiotherapy or chemoradiotherapy) who commence oncological treatment within 6 weeks of surgery.
Denominator:	All patients with high grade glioma (WHO Grades III and IV) who undergo oncological treatment (chemotherapy, radiotherapy or chemoradiotherapy).
Exclusions:	None
Target:	95%

Figure 8: Proportion of patients with high grade glioma (WHO Grade III and IV) undergoing surgical resection who commence their oncological treatment within 6 weeks of surgery, 2014 to 2017.



QPI 9	Performance (%)	Numerator	Denominator	Not Recorded Numerator	Not Recorded Exclusions	Not Recorded Denominator
NOSCAN	35.6%	12	34	0	0	0
SCAN	82.2%	37	45	0	0	0
WoSCAN	95.0%	38	40	0	0	0
Scotland	73.1%	87	119	0	0	0

WoSCAN was the only region to achieve the 95% target with 95.0%. SCAN achieved 82.6%, whilst the NOSCAN result was significantly short of the target at 35.6%. The overall national performance was 73.1%. Whilst the national performance looks to have declined over the last three years, it is important to note that the national performance in 2017 is influenced by the poor performance in NOSCAN.

SANON undertook an audit of patients receiving oncological therapy to better understand the factors impacting on performance in the North of Scotland. The analysis showed that the Aberdeen and Dundee centres performed to the same level within the audit period, and so were affected equally by staffing and resource issues across the region. Centres have provided feedback on cases not meeting the target.

The Aberdeen centre stated that, in the majority of cases, treatment was started just outwith the 6 week window. In a small number of cases, treatment commencement was delayed due to concurrent medical problems. The oncology clinic has been moved to allow sufficient time for planning and access to CT scanning. The Aberdeen centre has identified additional pressure from radiotherapy planning time and having a single neuro-oncologist to manage patients. The addition of a new oncologist to the department is expected to improve future performance.

The Dundee centre highlighted a lack of radiotherapy resources and staff contributing to lengthy waiting times. The centre currently has three linear accelerators and will soon be down to two machines for around six months while a new one is installed. This is expected to cause further delay. While it is appreciated that this resource issue influences performance, SANON requests that further detail is provided to detail the length and reason for delay experienced for each case not meeting the target.

The Edinburgh centre cited concurrent ill health and delay over the winter period as reasons for patients not meeting the target. The General Manager of the cancer centre will investigate strategies to improve performance during the winter period.

Actions:

- Dundee MDT to provide feedback on cases not meeting the target, detailing the length and reason for delay in each case.
- Aberdeen/Inverness MDT and Dundee MDT to monitor the effectiveness of changes made on QPI performance and report findings to SANON.
- Edinburgh MDT to investigate strategies to improve performance over the winter period and provide feedback to SANON.

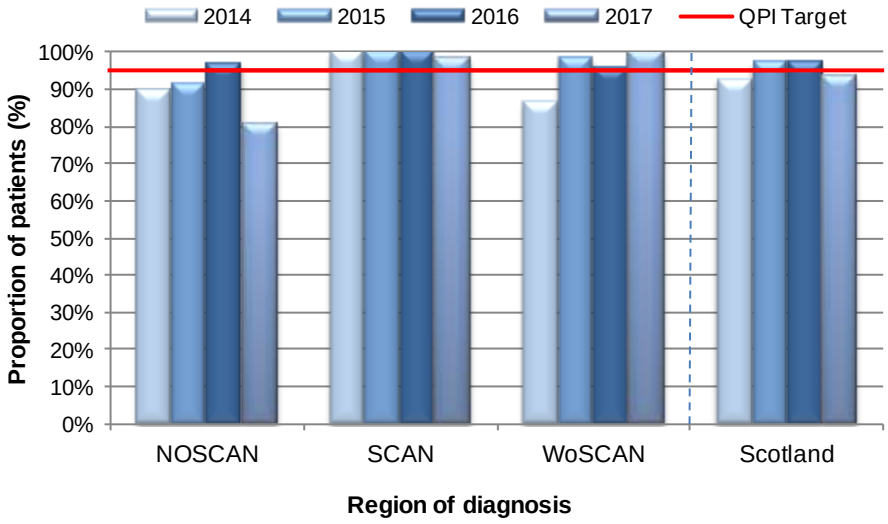
QPI 10: Radical Radiotherapy Planning Process

Determining the Gross Target Volume is a critical process in the radiotherapy planning of patients with primary brain/CNS cancer. Radiotherapy planning CT scans provide very limited information on the extent of the primary tumour and attempts to utilise anatomical MRI information by 'side-by-side' visual assessment are usually inaccurate[1].

MRI fusion enables the superior anatomical and physiological information provided by MRI to be accurately combined with planning CT data sets in order to optimise gross tumour volume (GTV) delineation. MRI fusion has been shown to reduce inter-observer variation in target delineation of high grade gliomas and a number of studies have shown that target volumes determined by CT alone frequently underestimate tumour extent[1].

QPI 10:	The radical radiotherapy planning process for patients with brain/CNS cancer should include MRI fusion.
Description:	Proportion of patients with brain/CNS cancer undergoing radical radiotherapy for whom the radiotherapy planning process includes MRI fusion.
Numerator:	Number of patients with brain/CNS cancer undergoing radical radiotherapy for whom radiotherapy planning includes MRI fusion.
Denominator:	All patients with brain/CNS cancer undergoing radical radiotherapy.
Exclusions:	• Patients who are unable to undergo an MRI scan. • Patients who refuse an MRI scan.
Target:	95%

Figure 9: Proportion of patients with brain/CNS cancer undergoing radical radiotherapy for whom the radiotherapy planning process includes MRI fusion, 2014 to 2017.



QPI 10	Performance (%)	Numerator	Denominator	Not Recorded Numerator	Not Recorded Exclusions	Not Recorded Denominator
NOSCAN	80.4%	37	46	1	0	0
SCAN	98.3%	58	59	1	1	0
WoSCAN	100.0%	45	45	0	0	1
Scotland	93.3%	140	150	2	1	1

NOSCAN was short of the 95% target with 80.4%. SCAN and WoSCAN met the target with 98.3% and 100.0% respectively. The overall national performance was just short of the target at 93.3%.

The Aberdeen/Inverness MDT reviewed Inverness patients who did not meet the target and found that all patients should have met the QPI. For these patients the MRI fusion scan is performed in Aberdeen, with the radiotherapy delivered in Raigmore. It seems that the part of this process performed in Aberdeen is not showing up in the Inverness system required for the collection of audit data. The Aberdeen/Inverness MDT should investigate how this data capture issue can be rectified and provide feedback to SANON.

Detailed feedback on cases not meeting the target has not been provided for the Dundee centre.

It has been noted that there appears to be a difference in the proportion of patients receiving surgical resection who go on to have radiotherapy in the WoS compared to the rest of the country. SANON would like to explore this further and request that the Glasgow MDT performs an audit to highlight the reasons why these patients did not progress to radiotherapy after surgical resection.

Actions:

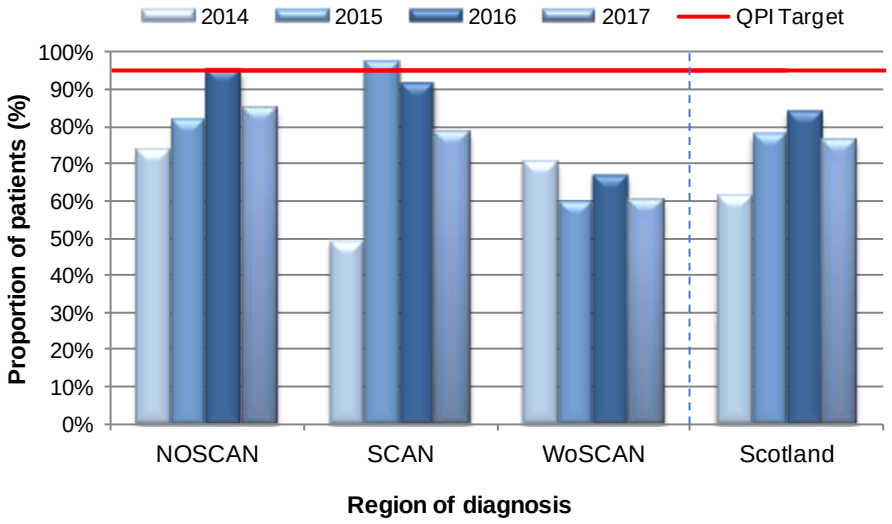
- Aberdeen/Inverness MDT to investigate the MRI recording/data capture issue and provide feedback to SANON.
- Dundee MDT to review cases not meeting the target and provide detailed clinical feedback.
- Glasgow MDT to perform an audit to highlight the reasons why a cohort of patients receiving surgical resection did not progress to radiotherapy.

QPI 11: Seizure Management

The diagnosis of epilepsy is more accurate when made by a medical practitioner who specialises in epilepsy, resulting in better patient outcomes. Access to a nurse with expertise in epilepsy management enhances quality of life for patients and gives a more patient-centred approach to care[1].

QPI 11:	Patients with brain/CNS cancer presenting with seizures at diagnosis should be seen by a neurologist and/or a nurse with expertise in epilepsy management.
Description:	Proportion of patients with brain/CNS cancer presenting with seizures at diagnosis who are seen by a neurologist or a nurse with expertise in epilepsy management.
Numerator:	Number of patients presenting with seizures at diagnosis seen by a neurologist or a nurse with expertise in epilepsy management.
Denominator:	All brain/CNS cancer patients presenting with seizures at diagnosis.
Exclusions:	None.
Target:	95%

Figure 10: Proportion of patients with brain/CNS cancer presenting with seizures at diagnosis who are seen by a neurologist or a nurse with expertise in epilepsy management.



QPI 11	Performance (%)	Numerator	Denominator	Not Recorded Numerator	Not Recorded Exclusions	Not Recorded Denominator
NOSCAN	85.2%	23	27	2	0	2
SCAN	78.6%	33	42	0	0	0
WoSCAN	60.0%	12	20	0	0	0
Scotland	76.4%	68	89	2	0	2

No regions met the 95% target (NOSCAN 85.2%, SCAN 78.6%, WoSCAN 60.0%). All regions showed a decline in performance on the previous year. The overall national performance was 76.4%. Centres have provided feedback on cases not meeting the target.

The Aberdeen centre reviewed the small number of cases not meeting the target and highlighted reasons including patients seen just out with the 2 week target window and patients managed well on current therapy. The Aberdeen centre noted overall improvement from 2014, but stated that the target will remain a challenge given local resource issues.

The Edinburgh centre stated that the majority of cases were for best supportive care and therefore were not seen by the team. In future referrers of patients for best supportive care will be guided to local epilepsy services for support.

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[1].

Clinicians are therefore encouraged to enter patients into well designed trials and to collect longer term follow up data.

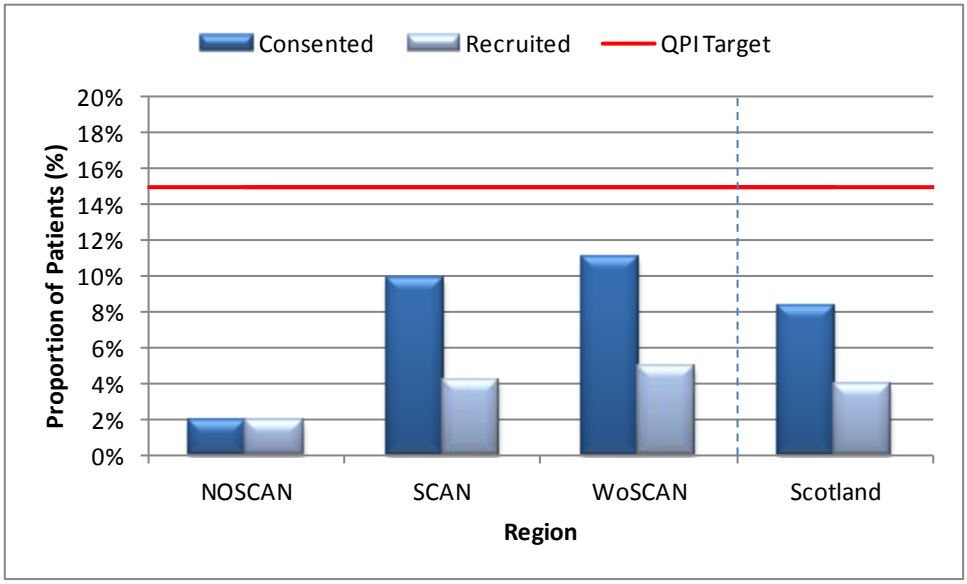
High accrual activity into clinical trials is used as a goal of an exemplary clinical research site.

The measurement of this QPI focuses on those patients who have consented in order to reflect the intent to join a clinical trial and demonstrate the commitment to recruit patients. Often patients can be prevented from enrolling within a trial due to stratification of studies and precise inclusion criteria identified during the screening process.

The clinical trials QPI is measured utilising Scottish Cancer Research Network (SCRN) data and ISD incidence data, as this 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[1].

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

Figure 11: Proportion of patients consented for and recruited into clinical trials for brain/CNS cancer by NHS Board of residence, 2017



	Consented Target 15%			Recruited		
	N	D	%	N	D	%
NOSCAN	2	106	1.9%	2	106	1.9%
SCAN	14	143	9.8%	6	143	4.2%
WoSCAN	18	162	11.1%	8	162	4.9%
Scotland	**34**	**411**	**8.3%**	**16**	**411**	**3.9%**

N: Number of patients consented/enrolled in trials.

D: Cancer registry data (5-year average)

%: Percentage of patients enrolled in clinical trials.

No regions met the 15% target for patients consented for clinical trials. Feedback from treatment centres highlighted a lack of available open trials. The overall national performance was 8.3%.

Table 5: List of clinical trials with number of patients consented for each trial in 2017.

Project Title	Consented 2017
CamBMT1	-
Checkmate 498	-
Checkmate 548	-
FACT	-
Intellance 1- A phase Iib/III study of ABT414 for newly diagnosed glioblastoma	9
PARADIGM	-
PARADIGM – 2	10
SIOP CNS GCT II	-
VIBES	-
Total	***34***

- Denominator is less than 5

Feedback suggests that there is a lack of available trials which is reflected in the QPI performance. Better notification to clinicians around available trials would aid centres/regions to improve the QPI performance through increased consenting and recruitment of patients. Centres will continue to assess patient suitability for inclusion in clinical trials.

Actions:

- SANON to identify potential barriers to trial recruitment, consider how best to communicate details of open trials to all centres and encourage clinicians to consider all patients for clinical trials.

5. Conclusions

The development of national QPIs for brain and CNS cancers will help drive continuous quality improvement in patient care whilst ensuring that activity is focussed on those areas that are most important in terms of improving survival and patient experience. In addition, the introduction of QPIs and the associated governance structure will facilitate regular monitoring and reporting of data to ensure equitable care across the country.

The Scottish Adult Neuro-Oncology Network (SANON) is encouraged by the continued support and commitment of Network members to deliver a high quality service to brain/CNS cancer patients across the country. The results presented in this report demonstrate that patients with brain/CNS cancer receive a consistent and improving standard of care across all geographical locations. Case ascertainment and data capture is of a high standard enabling robust assessment of performance against QPIs.

The results presented within this report illustrate that some of the QPI targets set have been challenging for NHS Boards to achieve and there remains room for further service improvement, however it is encouraging that the target relating to specialist neuro-oncology access was consistently met by all regions in 2017. Additionally the target was met nationally for pathology reporting.

Where targets have not been met NHS Boards have provided detailed comment indicating valid clinical reasons. NOSCAN highlighted that staffing and resource issues have had a significant impact on QPI performance.

SANON, MDTs and neuro-oncology centres are asked to develop local Action/Improvement Plans in response to the findings presented in the report. A summary of actions for SANON, MDTs and neuro-oncology centres has been included within the Action Plan templates in the Appendix.

Actions required:

Data Quality

- All Regions/Boards to work with SANON in order to improve case ascertainment figures.

QPI 1: Documentation of Performance Status

- Aberdeen/Inverness MDT and Edinburgh MDT to ensure that performance status is documented for all patients at time of MDT discussion.

QPI 4: Neuropathological Diagnosis

- Glasgow MDT to provide detailed clinical feedback on cases not meeting the target.

QPI 7: Early Post-operative Imaging

- Aberdeen/Inverness MDT to ensure that all patients with malignant glioma have imaging requests sent promptly after surgery, and to review how provision of the radiology resource can be maximised to improve performance.

QPI 9: Access to Adjuvant Treatment

- Dundee MDT to provide feedback on cases not meeting the target, detailing the length and reason for delay in each case.

- Aberdeen/Inverness MDT and Dundee MDT to monitor the effectiveness of changes made on QPI performance and report findings to SANON.
- Edinburgh MDT to investigate strategies to improve performance over the winter period and provide feedback to SANON.

QPI 10: Radical Radiotherapy Planning Process

- Aberdeen/Inverness MDT to investigate the MRI recording/data capture issue and provide feedback to SANON.
- Dundee MDT to review cases not meeting the target and provide detailed clinical feedback.
- Glasgow MDT to perform an audit to highlight the reasons why a cohort of patients receiving surgical resection did not progress to radiotherapy.

QPI 13: Clinical Trials Access

- SANON to identify potential barriers to trial recruitment, consider how best to communicate details of open trials to all centres and encourage clinicians to consider all patients for 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 SANON and any service or clinical issue which the SANON considers not to have been adequately addressed will be escalated to the NHS Board Territorial Lead Cancer Clinician and Regional Lead Cancer Clinician.

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

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 brain and CNS cancers for their contribution to the clinical audit process.

Abbreviations

AA	NHS Ayrshire & Arran
ACaDMe	Acute Cancer Deaths and Mental Health
CEL	Chief Executive Letter
CNS	Central Nervous System
CT	Computed Tomography
D&G	NHS Dumfries & Galloway
eCASE	Electronic Cancer Audit Support Environment
FV	NHS Forth Valley
GGC	NHS Greater Glasgow and Clyde
GTV	Gross Tumour Volume
HIS	Healthcare Improvement Scotland
ISD	Information Services Division
KPS	Karnofsky Performance Status
MCN	Managed Clinical Network
MDT	Multidisciplinary Team
MGMT	O6-methylguanine-DNA methyltransferase
MRI	Magnetic Resonance Imaging
NCQSG	National Cancer Quality Steering Group
NMCN	National Managed Clinical Network
NOSCAN	North of Scotland Cancer Network
QPI(s)	Quality Performance Indicator(s)
RCAG	Regional Cancer Advisory Group
SANON	Scottish Adult Neuro-Oncology Network
SCAN	South East of Scotland Cancer Network
VMAT	Volumetric Modulated Arc Therapy
WHO	World Health Organisation
WoS	West of Scotland
WoSCAN	West of Scotland Cancer Network

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Appendix: NHS Board Action Plans

A summary of actions has been provided within the Audit Report. Neuro-oncology centres should populate the template with relevant actions and completed Action Plans should be returned to WoSCAN within two months of publication of this report.

Action / Improvement Plan

Area:	Aberdeen/Inverness MDT
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*.
Data Quality	Work with SANON in order to improve case ascertainment figures.						
1.	Ensure that performance status is documented for all patients at time of MDT discussion.						
7.	Ensure that all patients with malignant glioma have imaging requests sent promptly after surgery, and to review how provision of the radiology resource can be maximised to improve performance.						
9.	Monitor the effectiveness of changes made on QPI performance and report						

QPI No.	Action Required	Health Board Action Taken	Timescales		Lead	Progress/Action Status	Status (see Key)
			Start	End			
	findings to SANON.						
10.	Investigate the MRI recording/data capture issue and provide feedback to SANON						

Action / Improvement Plan

Area:	Dundee MDT
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*.
Data Quality	Work with SANON in order to improve case ascertainment figures.						
9.	Provide feedback on cases not meeting the target, detailing the length and reason for delay in each case.						
9.	Monitor the effectiveness of changes made on QPI performance and report findings to SANON.						
10.	Review cases not meeting the target and provide detailed clinical feedback.						

Action / Improvement Plan

Area:	Edinburgh MDT
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*.
Data Quality	Work with SANON in order to improve case ascertainment figures.						
1.	Ensure that performance status documented for all patients at time of MDT discussion.						
9.	Investigate strategies to improve performance over the winter period and provide feedback to SANON.						

Action / Improvement Plan

Area:	Glasgow MDT
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*.
Data Quality	Work with SANON in order to improve case ascertainment figures.						
4.	Provide detailed clinical feedback on cases not meeting the target.						
10.	Perform an audit to highlight the reasons why a cohort of patients receiving surgical resection did not progress to radiotherapy.						

Action / Improvement Plan

Area:	SANON
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*.
Data Quality	Work with Boards/Regions to improve case ascertainment figures.						
13.	Identify potential barriers to trial recruitment, consider how best to communicate details of open trials to all centres and encourage clinicians to consider all patients for clinical trials.						