

# **Renal Cancer Quality Performance Indicators**

**Patients diagnosed during January 2012 to December 2014**

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## Introduction

The cancer strategy '[Beating Cancer: Ambition and Action](#)' published in March 2016 builds on the commitment made in the Better Cancer Care plan to 'develop a work programme which will define how we will take forward... quality indicators for cancer services' by further supporting a culture of continuous quality improvement in cancer care across NHSScotland. The new cancer strategy states a commitment to improving data collection to advance the quality and delivery of care for cancer patients.

To achieve this, the Scottish Cancer Taskforce established the National Cancer Quality Steering Group (NCQSG), which includes responsibility for:

- The development of small sets (approximately 10-15 indicators) of tumour specific national quality performance indicators (QPIs) as a proxy measure of quality care.
- Overseeing the implementation of the national governance framework that underpins the reporting of performance against these national QPIs.

The QPIs have been developed collaboratively with the three Regional Cancer Networks: North of Scotland Cancer Network ([NOSCAN](#)), South East Scotland Cancer Network ([SCAN](#)), West of Scotland Cancer Network ([WoSCAN](#)), [Information Services Division \(ISD\)](#), and Healthcare Improvement Scotland. The QPIs are published on the [Healthcare Improvement Scotland website](#).

These indicators, used to drive quality improvement in cancer care across NHSScotland are kept under regular review; NHS Boards will be required to report against QPIs as part of a mandatory [national cancer quality programme](#).

ISD support NHS Boards in improving the quality of local data collection and reporting through the production of data validation specifications, and measurability criteria for QPIs. The current data sets are outlined on the [Cancer Audit website](#).

A rolling programme of reporting is planned across many tumour sites. National reports will include comparative reporting of performance against QPIs at NHS Board level across NHS Scotland, trend analysis and survival analysis (where applicable). This approach will help overcome existing issues relating to the reporting of small volumes in any one year.

This report assesses performance against 9 [Renal Cancer](#) QPIs using clinical audit data relating to patients diagnosed with renal cancer for the period from January 2012 to December 2014.

## ***Data collection and analysis***

Renal cancer QPI data for patients diagnosed between January 2012 and December 2014 were collected by NHS Boards, supported by the regional cancer networks, and then analysed against the [Renal cancer measurability document](#). Aggregated analysed data were then submitted to ISD via a data collection template for collation to allow comparisons at NHS Board level.

To support the national reporting of QPIs and to provide context in their interpretation, an analysis of renal cancer survival was undertaken. A cohort of patients diagnosed with renal cancer during 2010 to 2012, and registered on the Scottish Cancer Registry, was used and linked to deaths data (up to December 2015) to provide 3 years of follow up for all patients (and up to 5 years of follow up for some).

## ***Data quality and completeness***

### *Small numbers:*

Where the number of cases meeting the denominator criteria for any indicator is between one and four, the percentage calculation has not been shown on any associated charts or tables. This is to avoid any unwarranted variation associated with small numbers and to minimise the risk of disclosure. Any charts or tables impacted by this are denoted with a dash (-). However, any commentary provided by NHS Boards relating to the impacted indicators will be included as a record of continuous improvement.

### *Baseline Review:*

Following analysis and reporting of year 1 QPI results, the data were reviewed with the aim of identifying any potential refinements to the QPIs which are required to ensure the QPIs are fit for purpose. Any refinements will be based clearly on the criteria set out below:

- QPIs may be revised only and cannot be added or removed.
- Any revisions to the QPI target level can only be made where it makes the QPI more challenging.
- New data items cannot be added to the tumour specific minimum core dataset and existing data items, and the associated data validations, cannot be amended.
- Measurability can be changed in order to ensure that the QPIs are reliable, valid and non-counterproductive, within the confines of the existing dataset.

Consequently, the information presented in this report has been subject to review and may be impacted by various issues raised consistent with the criteria above, which may affect the accuracy and comparability of these measures. Subsequent changes to the QPIs will be reflected in future reporting of these QPIs where accuracy and comparability is expected to improve.

The following changes to the renal cancer QPIs post baseline review should be considered when comparing performance across the three year period:

QPI 1 – criteria changed prior to the start of year 3 to remove the requirement to perform pelvic imaging. Therefore, it is likely that this change will improve the performance of some NHS Boards in year 3 and caution is advised when comparing across years.

QPI 4 – this QPI was added at the start of year 3

QPI 8 – at the start of year 2 the target for this QPI was changed from <5% to <2%.

Note that all QPI descriptions, definitions, targets and numbering in this report reflect the QPIs as at the start of year 3.

### *Formal Review:*

In order to ensure the success of the National Cancer QPIs in driving quality improvement in cancer care across NHS Scotland it is critical that the QPIs continue to be clinically relevant and focus on areas which will result in improvements to the quality of patient care.

It was proposed that a formal review of all QPIs should take place following 3 years national comparative reporting, with tumour specific Regional Clinical Leads undertaking a key role in determining the need and extent of the review required.

For renal cancer, this review has already taken place; revised renal cancer QPIs for implementation from year 4 onwards will be published in early autumn 2016, following public consultation. Any proposed changes to the QPIs as a result of this review will be noted in this report.

### *Private Patients:*

There may be differences across the regions in the inclusion or exclusion of private patients within this dataset. In WoSCAN, patients diagnosed privately, but treated within the NHS, are included in any figures reported by hospital of surgery/treatment but excluded when reported by hospital of diagnosis. This differs in the approach adopted by the other regions where private patients are also included in QPIs reported by NHS Board of diagnosis. These differences, though, will account for very small numbers across the regions.

### *Survival Analysis:*

The apparently lower survival from renal cell carcinoma in NHS Dumfries & Galloway (and, consequently, the South-East Scotland Cancer Network) prompted further investigation, with an initial focus on data quality. This found that the lower than expected reported survival for Dumfries and Galloway was likely to be the result of an anomaly of data collection by ISD Cancer Registration staff rather than evidence of a deficit in the quality of care. Specifically, it transpired that some patients' renal cancers had been coded as renal cell carcinomas, when the diagnosis had been based on imaging alone, without pathological verification. Pathological verification is less likely to be achieved in frail patients with multiple co-morbidities. On average, such patients are likely to have a worse prognosis. The inclusion of such patients in the figures for Dumfries & Galloway most likely accounts for the lower survival observed. This highlights the fact that a very specific set of selection criteria for survival analyses can result in survival estimates that may not be

comparable. In future, in the interests of comparability, it is recommended that survival analyses are carried out either on pathologically confirmed renal cell carcinomas only, or (preferably) on all renal cancers combined (excluding sarcomas, although these occur very rarely in the kidney).

Consequently, the survival analysis presented in this report will be reanalysed and an amendment issued in due course.

**Survival analysis revised as at 31 January 2017 to include all renal cancers combined.**

## Foreword from Renal Cancer Clinical Leads

The three Regional Cancer Networks (North of Scotland Cancer Network (NOSCAN), South East Scotland Cancer Network (SCAN), and West of Scotland Cancer Network (WOSCAN)) aim to promote the highest standards of cancer care and equity of access to cancer services across Scotland. The development and introduction of national Quality Performance Indicators (QPIs) across Scotland represents a major step forward for patients with Renal Cancer.

This is the first report of performance against the Renal Cancer QPIs at a national level and provides results from the first three years of QPI recording across the three Regional Cancer Networks. Results were discussed at the National Urology MCN Meeting and QPI Review held in March 2016.

In NOSCAN there have been difficulties in staffing and other resource allocation which impacted significantly on data collection in the first years of reporting, affecting QPI results in this region. This has focussed attention on the MDT meeting where much of the relevant data is recorded (particularly TNM staging and performance status) and there has been a significant improvement in data capture in NOSCAN over the last three years, as can be seen in the results for QPI 3.

Key points to note:

**QPI 1: Radiological Staging.** The requirement for CT scanning of the pelvis in year 1, which was not part of current practice, nor recommended by the European Association of Urology guidelines, impacted hugely on results from 2012 and 2013. There has been a marked improvement in results for QPI 1 since the QPI was amended so that CT scanning of the pelvis was no longer required for the QPI to be met, this is particularly apparent within the North of Scotland.

**QPI 2: Histological Diagnosis.** This QPI was extensively discussed at the National MCN Meeting and QPI Review in March 2016. It was noted that practice varies markedly across Scotland and that for some NHS Boards the MDT policy is to only biopsy pre-treatment in situations where this will definitely inform and alter patient management; where there is sufficient radiological indication that a patient with a renal tumour requires cryotherapy or RFA the histological biopsy is performed at the same time as the CT Guided GA focal therapy procedure. Therefore, some NHS Boards have not met the target for this QPI and amendments to this indicator are being considered at the Formal Review of Renal Cancer QPIs.

**QPI 4: Multi-Disciplinary Team (MDT) Meeting.** This is a new QPI for 2014 and is reported for only a single year. While performance against this QPI was generally high, this QPI was not met by all NHS Boards.

Performance of some QPIs are consistently high across all NHS Boards, for example **QPI 5 (Histological Grading)** was met across Scotland in 2014 indicating a very high level of systematic and high quality pathological reporting. It is noted that QPIs related to surgical management are particularly well met, for example **QPI 6 (Surgical Treatment)** was met across all regions, and all but one NHS Board, in 2014 showing total nephrectomy surgery was being performed appropriately across the country. Furthermore **QPI 7 (Nephron Sparing Surgery)** was met in all regions, although not all NHS Boards, in 2014.

It is encouraging that results for **QPI 8**, mortality within 30 days of first treatment for Renal Cell Carcinoma (RCC), are extremely low.

For **QPI 9**, which relates to patients presenting with metastatic RCC who receive SACT within 12 months of diagnosis, the target of 70% has not been met at a national level nor by any individual region. This may be attributed to the failure to record performance status at the time of MDT discussion and also the practice of withholding SACT until there is radiological evidence of progression of disease.

Following the National Urological Cancer Meeting in March 2016, the QPI Formal Review process was undertaken. As part of this review a number of new indicators have been developed, focusing specifically on surgical outcomes, which may prove much more challenging targets for NHS Boards to meet in future years. We are however confident that implementation of these new QPIs will drive further quality improvement in renal cancer services across NHSScotland.

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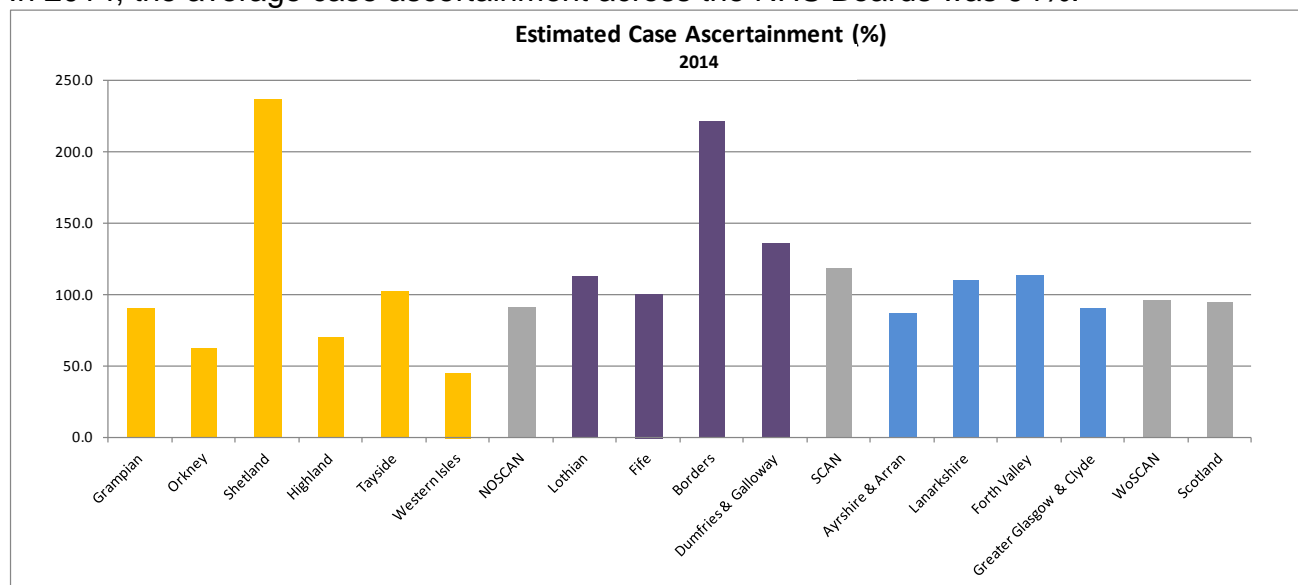


## Results and Commentary

### Case Ascertainment

Case ascertainment is a measure of data quality and is calculated by comparing the number of new patients captured by the cancer audit with a five year average of the numbers recorded on the cancer registry. A five year average is used for registry data as the information is not available until sometime after the year under examination. This is due to data collection and verification processes. As the number of cases will vary each year, it is possible for case ascertainment to be over or under 100%. Therefore, the figures presented should be seen as an indication only.

In 2014, the average case ascertainment across the NHS Boards was 94%:



	Records Diagnosed in 2014	Average No. of Cancer Registrations: 2009-2013	Estimated Case Ascertainment %
<b>NOSCAN</b>	<b>200</b>	<b>220</b>	<b>90.8</b>
Grampian	85	95	89.7
Orkney	1	2	62.5
Shetland	9	4	236.8
Highland	36	51	70.3
Tayside	68	67	102.1
Western Isles	1	2	45.5
<b>SCAN</b>	<b>255</b>	<b>216</b>	<b>118.1</b>
Lothian	143	127	112.4
Fife	53	53	100.4
Borders	27	12	221.3
Dumfries & Galloway	32	24	135.6
<b>WoSCAN</b>	<b>389</b>	<b>405</b>	<b>96.0</b>
Ayrshire & Arran	49	57	86.3
Lanarkshire	91	83	109.4
Forth Valley	49	43	112.9
Greater Glasgow & Clyde	200	222	90.1
<b>Scotland</b>	<b>791</b>	<b>841</b>	<b>94.0</b>

## Overall Performance Summary

The tables below summarise the overall performance across the country for each QPI for each of the 3 years.

QPI Summary table – Renal Cancer by NOSCAN Health Boards for 2012 to 2014

	Grampian			Shetland			Orkney			Highland			Tayside			Western Isles			NOSCAN		
	2012	2013	2014	2012	2013	2014	2012	2013	2014	2012	2013	2014	2012	2013	2014	2012	2013	2014	2012	2013	2014
QPI 1 - 100%	31.7%	39.7%	94.4%	100.0%	14.3%	100.0%	*	*	-	64.5%	79.3%	91.2%	91.5%	50.0%	96.6%	*		-	60.8%	49.3%	93.7%
QPI 2 - 100%	45.5%	87.5%	61.5%	*	*	*	*	*	*	-	-	100.0%	20.0%	*	75.0%	*		*	31.6%	91.7%	74.1%
QPI 3 - 100%	30.1%	31.5%	52.9%	100.0%	100.0%	100.0%	-	*	-	100.0%	100.0%	100.0%	5.1%	45.7%	65.1%	*	*	-	38.4%	51.9%	67.7%
QPI 4 - 95%			94.0%			88.9%			-			83.3%			93.2%			-			91.5%
QPI 5 - 95%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	*	*	-	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	*		-	100.0%	100.0%	100.0%
QPI 6 - 100%	92.3%	92.9%	100.0%	-	100.0%	-	*	*	*	100.0%	100.0%	100.0%	*	44.4%	100.0%	*		*	96.6%	85.0%	100.0%
QPI 7 - 40%	-	-	62.5%	-	-	*	*	*	*	100.0%	80.0%	-	*	*	-	*		*	92.3%	66.7%	72.7%
QPI 8(i) - 5%	14.3%	0.0%	0.0%	*	*	*	*	*	*	*	-	-	-	-	0.0%	*		*	12.5%	0.0%	0.0%
QPI 8(ii) - 2%	2.0%	1.8%	3.2%	0.0%	0.0%	-	*	*	*	0.0%	0.0%	0.0%	2.1%	0.0%	0.0%	*		*	1.5%	0.7%	1.6%
QPI 8(iii) - 2%	*	-	*	*	*	*	*	*	*	-	-	-	*	-	*	*		*	-	0.0%	-
QPI 8(iv) - 2%	-	-	0.0%	*	*	*	*	*	*	-	*	*	*	*	*	*		*	-	-	0.0%
QPI 9 - 70%	-	-		-	-		*	*		-	66.7%		-	*		*			37.5%	62.5%	

QPI Summary table – Renal Cancer by SCAN Health Boards for 2012 to 2014

	Lothian			Fife			Borders			Dumfries & Galloway			SCAN		
	2012	2013	2014	2012	2013	2014	2012	2013	2014	2012	2013	2014	2012	2013	2014
QPI 1 - 100%	91.4%	86.5%	86.7%	90.3%	86.2%	83.3%	-	100.0%	95.0%	80.0%	75.0%	100.0%	87.8%	85.4%	88.6%
QPI 2 - 100%	61.5%	81.0%	79.2%	62.5%	-	-	-	-	-	-	100.0%	-	64.0%	86.2%	76.5%
QPI 3 - 100%	97.2%	99.2%	100.0%	100.0%	100.0%	100.0%	*	12.5%	96.3%	60.0%	63.3%	62.5%	93.9%	91.9%	94.9%
QPI 4 - 95%			94.4%			96.2%			96.3%			96.8%			95.3%
QPI 5 - 95%	100.0%	100.0%	100.0%	95.2%	100.0%	100.0%	-	-	100.0%	-	100.0%	100.0%	98.7%	100.0%	100.0%
QPI 6 - 100%	100.0%	100.0%	100.0%	100.0%	100.0%	95.2%	*	100.0%	*	100.0%	100.0%	*	100.0%	100.0%	99.1%
QPI 7 - 40%	60.0%	63.2%	45.8%	-		33.3%	*	*	*	*	-	*	64.3%	65.0%	42.4%
QPI 8(i) - 5%	-	0.0%	0.0%	-	-	-	*	*	-	-	-	-	11.1%	0.0%	0.0%
QPI 8(ii) - 2%	0.0%	2.5%	0.0%	3.8%	0.0%	0.0%	0.0%	0.0%	*	0.0%	0.0%	*	1.0%	1.5%	0.0%
QPI 8(iii) - 2%	-	*	*	-	-	-	*	*	*	*	*	*	-	-	-
QPI 8(iv) - 2%	0.0%	0.0%	-	*	*	*	*	*	-	*	*	-	0.0%	0.0%	0.0%
QPI 9 - 70%	18.8%	50.0%		26.3%	-		*	*		-	*		25.0%	45.0%	

QPI Summary table – Renal Cancer by WoSCAN Health Boards and Scotland for 2012 to 2014

	Ayrshire & Arran			Lanarkshire			Forth Valley			Greater Glasgow & Clyde			WoSCAN			Scotland		
	2012	2013	2014	2012	2013	2014	2012	2013	2014	2012	2013	2014	2012	2013	2014	2012	2013	2014
QPI 1 - 100%	100.0%	100.0%	100.0%	98.2%	89.8%	98.0%	70.8%	67.7%	73.9%	85.5%	90.1%	96.4%	88.9%	88.4%	95.0%	80.5%	76.8%	92.6%
QPI 2 - 100%	-	88.9%	100.0%	60.0%	81.8%	100.0%	-	66.7%	83.3%	80.0%	87.2%	87.0%	80.5%	84.6%	90.4%	64.7%	85.8%	82.3%
QPI 3 - 100%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	97.6%	100.0%	98.0%	90.8%	98.0%	99.0%	94.9%	99.0%	99.2%	79.1%	85.3%	90.6%
QPI 4 - 95%			100.0%			98.1%			95.8%			88.8%			92.8%			93.3%
QPI 5 - 95%	95.7%	95.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	98.8%	100.0%	99.4%	98.8%	100.0%	99.5%	99.4%	100.0%
QPI 6 - 100%	100.0%	100.0%	100.0%	97.2%	92.7%	100.0%	88.9%	100.0%	100.0%	100.0%	97.1%	100.0%	98.4%	96.5%	100.0%	98.7%	95.8%	99.6%
QPI 7 - 40%	50.0%	66.7%	*	50.0%	30.8%	30.0%	-	-	-	58.3%	55.0%	70.6%	54.3%	50.0%	58.3%	64.5%	56.3%	54.3%
QPI 8(i) - 5%	-	0.0%	-	-	0.0%	10.0%	-	-	0.0%	0.0%	5.6%	0.0%	5.6%	3.1%	4.5%	8.6%	1.9%	1.6%
QPI 8(ii) - 2%	0.0%	0.0%	0.0%	3.7%	2.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.9%	0.5%	0.0%	1.1%	0.8%	0.5%
QPI 8(iii) - 2%	*	*	-	*	*	*	*	*	*	-	-	*	-	-	-	0.0%	0.0%	0.0%
QPI 8(iv) - 2%	-	-	-	*	-	*	*	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
QPI 9 - 70%	-	71.4%		-	42.9%		-	75.0%		10.5%	60.0%		51.7%	59.3%		37.0%	56.3%	

- Data not shown due to small numbers

\* No data matching QPI criteria

Clinical Trials Summary Table for 2014 by Scottish Cancer Research Network (SCRN)

Clinical Trials		SCRN - North & East	SCRN - South East	SCRN - West
Interventional	> 7.5%	0.5%	3.7%	4.4%
Translational	> 15%	0.0%	25.5%	0.0%

- Met or exceeded target
- Target not met
- No data submitted

## Quality Performance Indicators

The following section includes a detailed summary of each of the renal cancer QPIs outlining the variation at NHS Board level. Charts are colour coded by reporting year or by network if reporting a single year. Where performance is shown to fall below the target, commentary from the relevant NHS Board is included to provide context to the variation. Unless otherwise stated, information in this report is shown by the Health Board of diagnosis. Further information at hospital level is available from the [data tables](#), where applicable.

### ***QPI 1: Radiological Diagnosis - Patients with renal cancer should have cross sectional imaging for staging of Renal Cell Carcinoma (RCC).***

Although definitive diagnosis of renal cell carcinoma requires pathological assessment, radiology suggests the diagnosis in almost all cases and is the first line of investigation. Patients with renal cell carcinoma should undergo CT with contrast to assess the extent of local and distant metastatic disease.

Numerator: Number of patients receiving active treatment\* with a diagnosis of RCC who undergo cross-sectional imaging (CT) of the chest, abdomen +/- pelvis (with contrast) before first treatment.

Denominator: All patients receiving active treatment \*(partial or radical nephrectomy, cryotherapy, radio frequency ablation or systemic therapy) with a diagnosis of RCC.

Exclusions:

- Patients who refuse treatment.
- Patients who underwent cross sectional imaging (CT) without intra venous (IV) contrast.
- Patients who died before first treatment.

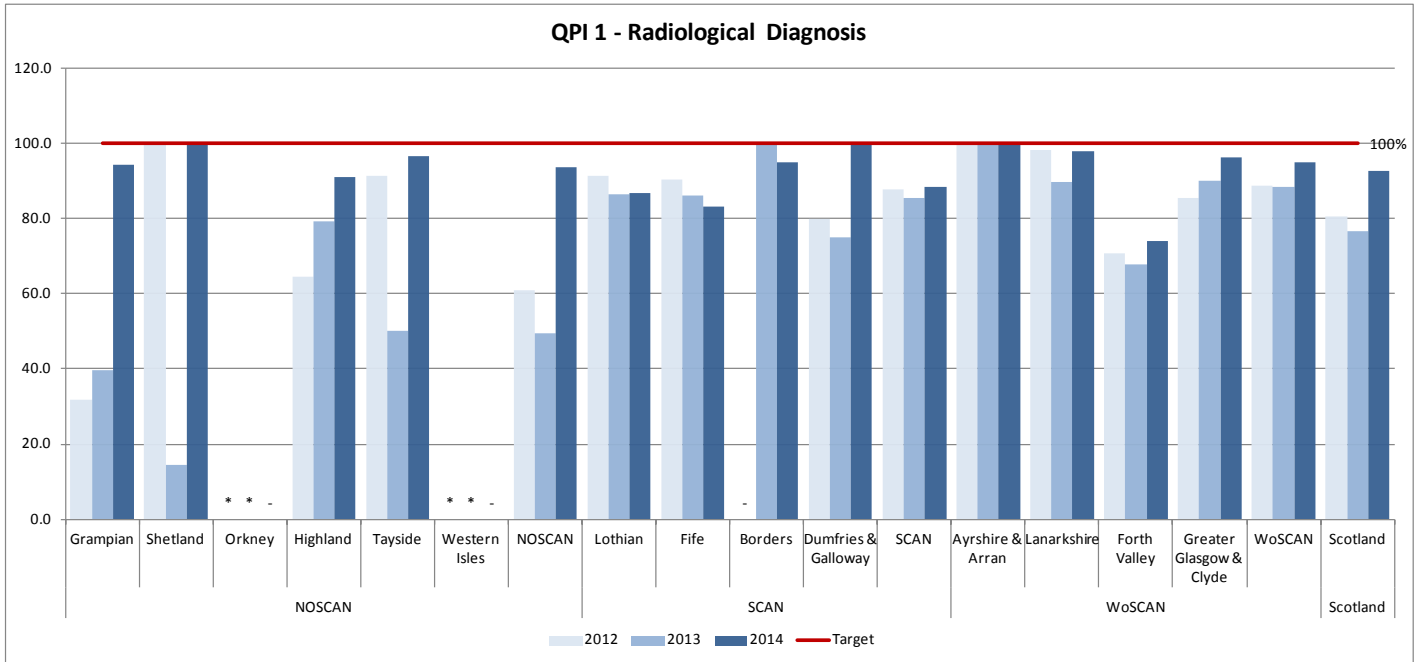
Target: 100%

In the third year of data collection there was a marked improvement in this measure compared with the previous two years. 93% of patients in 2014 received a CT of the chest, abdomen (with/without pelvis) compared with 81% and 77% in the previous 2 years. Overall, for Scotland, this is still below target but shows an improving trend.

At NHS Board level, only NHS Ayrshire & Arran met target in each of the 3 years but most Boards have generally improved. In particular, NHS Grampian shows a significant improvement from 32% in 2012 to 94% in 2014.

However, at the baseline review following year 1, there was discussion about the necessity to include pelvic scanning in the criteria for this QPI. This was cited by several NHS Boards (NHS Grampian, NHS Highland, NHS Shetland and NHS Tayside) as a contributing factor in the poor performance of this QPI in years 1 and 2. It was agreed that inclusion of pelvic scanning was not clinically necessary to determine staging. Consequently, the definition of the QPI was changed (as reflected in the descriptions above) to remove the requirement to include CT of the pelvis.

This change may have contributed to the improvement in performance in year 3 and, therefore, should be taken into account when comparing performance across the 3 year period.



NHS Board/Region	Most Recent Year - 2014						Past % Performance	
	% Performance	Numerator	Denominator	NR for Numerator	NR for Exclusion	NR for Denominator	2012	2013
Grampian	94.4	67	71				31.7	39.7
Shetland	100.0	6	6				100.0	14.3
Orkney	-	-	-				*	*
Highland	91.2	31	34				64.5	79.3
Tayside	96.6	28	29			3	91.5	50.0
Western Isles	-	-	-		1		*	*
<b>NOSCAN</b>	<b>93.7</b>	<b>133</b>	<b>142</b>		<b>1</b>	<b>3</b>	<b>60.8</b>	<b>49.3</b>
Lothian	86.7	85	98				91.4	86.5
Fife	83.3	25	30	1		1	90.3	86.2
Borders	95.0	19	20				-	100.0
Dumfries & Galloway	100.0	18	18				80.0	75.0
<b>SCAN</b>	<b>88.6</b>	<b>147</b>	<b>166</b>	<b>1</b>		<b>1</b>	<b>87.8</b>	<b>85.4</b>
Ayrshire & Arran	100.0	34	34				100.0	100.0
Lanarkshire	98.0	50	51				98.2	89.8
Forth Valley	73.9	17	23				70.8	67.7
Greater Glasgow & Clyde	96.4	107	111			2	85.5	90.1
<b>WoSCAN</b>	<b>95.0</b>	<b>208</b>	<b>219</b>			<b>2</b>	<b>88.9</b>	<b>88.4</b>
<b>Scotland</b>	<b>92.6</b>	<b>488</b>	<b>527</b>	<b>1</b>	<b>1</b>	<b>6</b>	<b>80.5</b>	<b>76.8</b>

Source: Cancer audit

- Data not shown due to small numbers

\* No data matching QPI criteria

At the formal review post year 3, it was proposed that this change was reversed and the inclusion of pelvic imaging will be reinstated for future reporting of this QPI. The definition of the QPI will be altered slightly to allow for cases where diagnosis has been suggested from an earlier chest/abdomen CT and, therefore, a further scan is not clinically appropriate. To accommodate this tolerance, the target will be reduced to 90%. These changes will be implemented subject to approval post consultation.

***QPI 2: Histological Diagnosis - Patients with renal cancer not undergoing surgery should have a histological diagnosis prior to commencing treatment.***

With alternative minimally invasive therapies such as radio frequency ablation (RFA) and cryotherapy where the primary tumour is not resected, it is essential to make a histological or cytological diagnosis of renal carcinoma prior to treatment to avoid treating a non-malignant lesion.

Numerator: Number of patients with RCC for whom surgical resection is not first treatment who have a histological diagnosis (confirmed by biopsy) before first treatment.

Denominator: All patients with RCC for whom surgery is not first treatment.

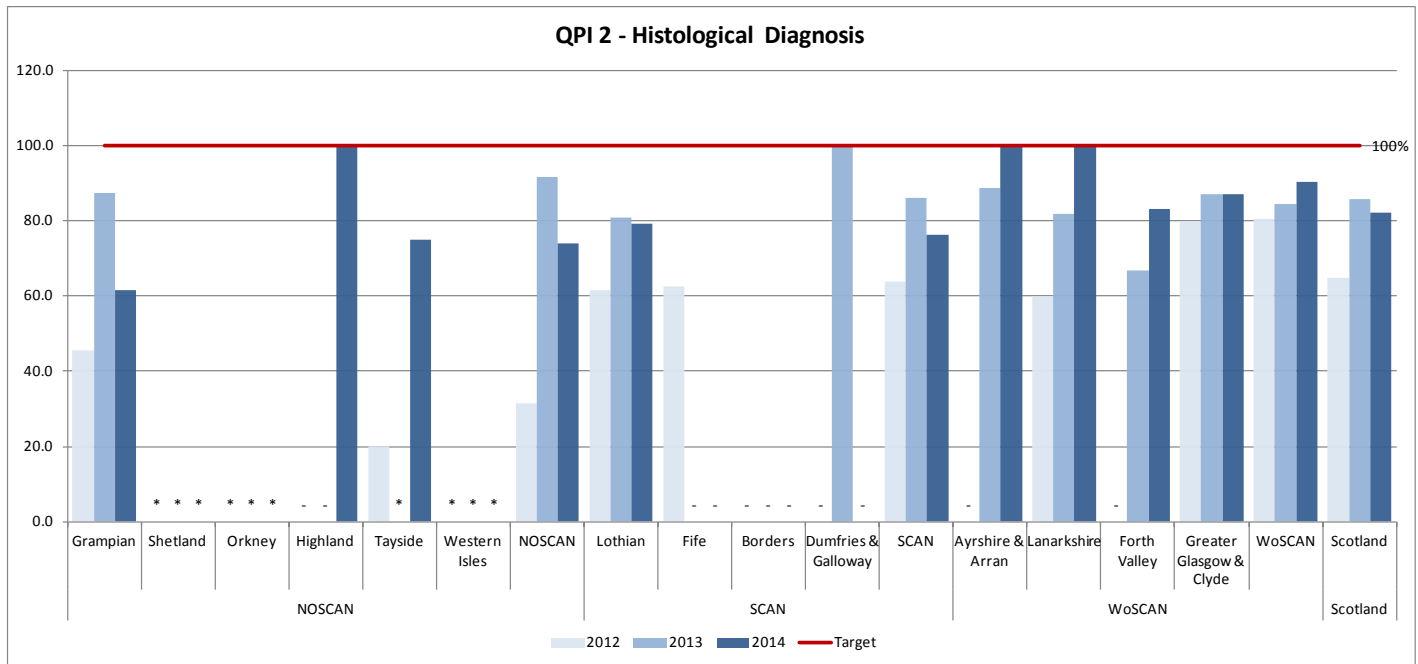
Exclusions:

- Patients who refuse treatment.
- Patients receiving supportive care only (not for active treatment).
- Patients receiving active surveillance.
- Patients who died before treatment.
- Histology not assessable.

Target: 100%

Across the three year period, no NHS Board managed to achieve target for this QPI. However, there is some evidence of improvement in 2014 with NHS Highland, NHS Ayrshire & Arran and NHS Lanarkshire achieving 100% histological diagnosis for all relevant patients in that year. At Scotland level, this translates to an improvement from 65% in 2012 to 82% in 2014.

The difficulty in achieving the 100% target was noted during the formal review process. To address this, the QPI will be split to monitor cryotherapy & RFA and SACT (Systemic Anti Cancer Therapy) separately and appropriate changes to the targets will be made. These changes will be in place for future reporting of this QPI, subject to approval post consultation.



NHS Board/Region	Most Recent Year - 2014						Past % Performance	
	% Performance	Numerator	Denominator	NR for Numerator	NR for Exclusion	NR for Denominator	2012	2013
Grampian	61.5	8	13				45.5	87.5
Shetland	*	*	*				*	*
Orkney	*	*	*				*	*
Highland	100.0	6	6				-	-
Tayside	75.0	6	8			3	20.0	*
Western Isles	*	*	*				*	*
<b>NOSCAN</b>	<b>74.1</b>	<b>20</b>	<b>27</b>			<b>3</b>	<b>31.6</b>	<b>91.7</b>
Lothian	79.2	19	24				61.5	81.0
Fife	-	-	-	1		1	62.5	-
Borders	-	-	-				-	-
Dumfries & Galloway	-	-	-				-	100.0
<b>SCAN</b>	<b>76.5</b>	<b>26</b>	<b>34</b>	<b>1</b>		<b>1</b>	<b>64.0</b>	<b>86.2</b>
Ayrshire & Arran	100.0	5	5				-	88.9
Lanarkshire	100.0	12	12				60.0	81.8
Forth Valley	83.3	10	12				-	66.7
Greater Glasgow & Clyde	87.0	20	23			2	80.0	87.2
<b>WoSCAN</b>	<b>90.4</b>	<b>47</b>	<b>52</b>			<b>2</b>	<b>80.5</b>	<b>84.6</b>
<b>Scotland</b>	<b>82.3</b>	<b>93</b>	<b>113</b>	<b>1</b>		<b>6</b>	<b>64.7</b>	<b>85.8</b>

Source: Cancer audit  
 - Data not shown due to small numbers  
 \* No data matching QPI criteria

In NOSCAN it was highlighted that in some cases not meeting target, the biopsy was performed at the time of the intervention rather than prior to treatment. Similarly, NHS Lothian noted some cases in 2013 that required urgent palliative radiotherapy prior to biopsy. This may account for some of the regional variability observed over the three years.

In NHS Lothian in 2014, 3 of the 5 patients not meeting the criteria for this QPI were still awaiting cryotherapy from the National service in Glasgow at the time of reporting. These patients all had biopsies taken but as the cryotherapy treatment date was not available the QPI was not met.

Additionally, NHS Highland and NHS Grampian stated that some cases were diagnosed using cytology or imaging rather than histology and, therefore, did not meet the criteria for this QPI.

**QPI 3: Clinical Staging - TNM - The TNM staging system should be used to stage patients with Renal Cell Carcinoma (RCC).**

The TNM stage of disease will aid in determining prognosis, choice of therapy and follow up.

Numerator: Number of patients diagnosed with RCC who were clinically staged using TNM staging system before first treatment.

Denominator: All patients with RCC.

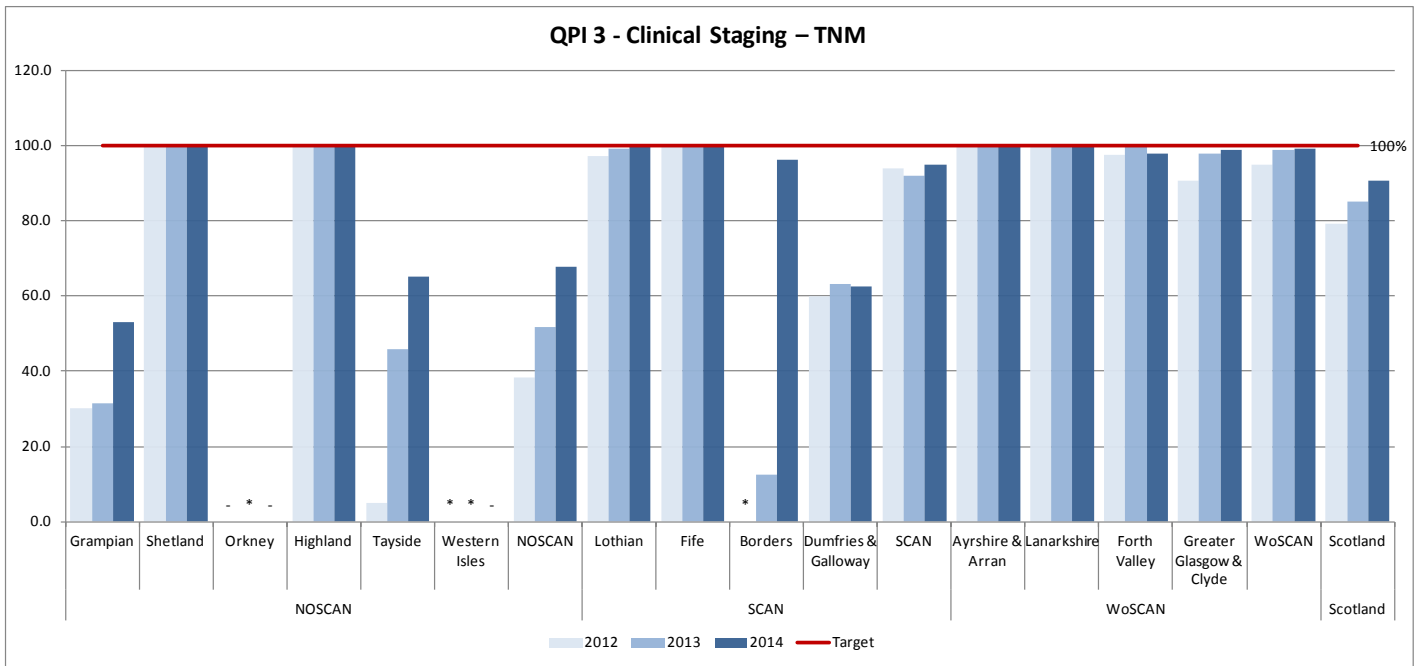
Exclusions: No exclusions

Target: 100%

Overall in Scotland there was a steady improvement across the three years in the proportion of patients being clinically staged, prior to first treatment. In 2014, 91% of patients in Scotland met this QPI up from 79% in 2012. However, this still falls short of the 100% target although several NHS Boards (NHS Shetland, NHS Highland, NHS Ayrshire & Arran and NHS Lanarkshire) met target consistently each year.

Many NHS Boards commented on the recording difficulties resulting in incomplete staging for some cases. In particular, NHS Grampian explained that, historically the clinical stage may be classified clinically rather than using TNM. TNM is available to the clinicians from the notes and scans and results, but had not been formally documented in a standard format. In future all clinically suspected/confirmed kidney cancers should have TNM recorded at the MDT discussion. This approach has also been adopted in NHS Tayside.





NHS Board/Region	Most Recent Year - 2014						Past % Performance	
	% Performance	Numerator	Denominator	NR for Numerator	NR for Exclusion	NR for Denominator	2012	2013
Grampian	52.9	45	85	38			30.1	31.5
Shetland	100.0	9	9				100.0	100.0
Orkney	-	-	-	1			-	*
Highland	100.0	36	36				100.0	100.0
Tayside	65.1	41	63			5	5.1	45.7
Western Isles	-	-	-				*	*
<b>NOSCAN</b>	<b>67.7</b>	<b>132</b>	<b>195</b>	<b>39</b>		<b>5</b>	<b>38.4</b>	<b>51.9</b>
Lothian	100.0	143	143				97.2	99.2
Fife	100.0	53	53				100.0	100.0
Borders	96.3	26	27	1			*	12.5
Dumfries & Galloway	62.5	20	32	12			60.0	63.3
<b>SCAN</b>	<b>94.9</b>	<b>242</b>	<b>255</b>	<b>13</b>			<b>93.9</b>	<b>91.9</b>
Ayrshire & Arran	100.0	48	48				100.0	100.0
Lanarkshire	100.0	91	91				100.0	100.0
Forth Valley	98.0	48	49	1			97.6	100.0
Greater Glasgow & Clyde	99.0	198	200				90.8	98.0
<b>WoSCAN</b>	<b>99.2</b>	<b>385</b>	<b>388</b>	<b>1</b>			<b>94.9</b>	<b>99.0</b>
<b>Scotland</b>	<b>90.6</b>	<b>759</b>	<b>838</b>	<b>53</b>		<b>5</b>	<b>79.1</b>	<b>85.3</b>

Source: Cancer audit

- Data not shown due to small numbers

\* No data matching QPI criteria

**QPI 4: Multi Disciplinary Team (MDT) Meeting - Patients with renal cell carcinoma should be discussed by a multidisciplinary team prior to definitive treatment.**

Evidence suggests that patients with cancer managed by a multi-disciplinary team have a better outcome.

Numerator: Number of patients with renal cell carcinoma discussed at the MDT before definitive treatment.

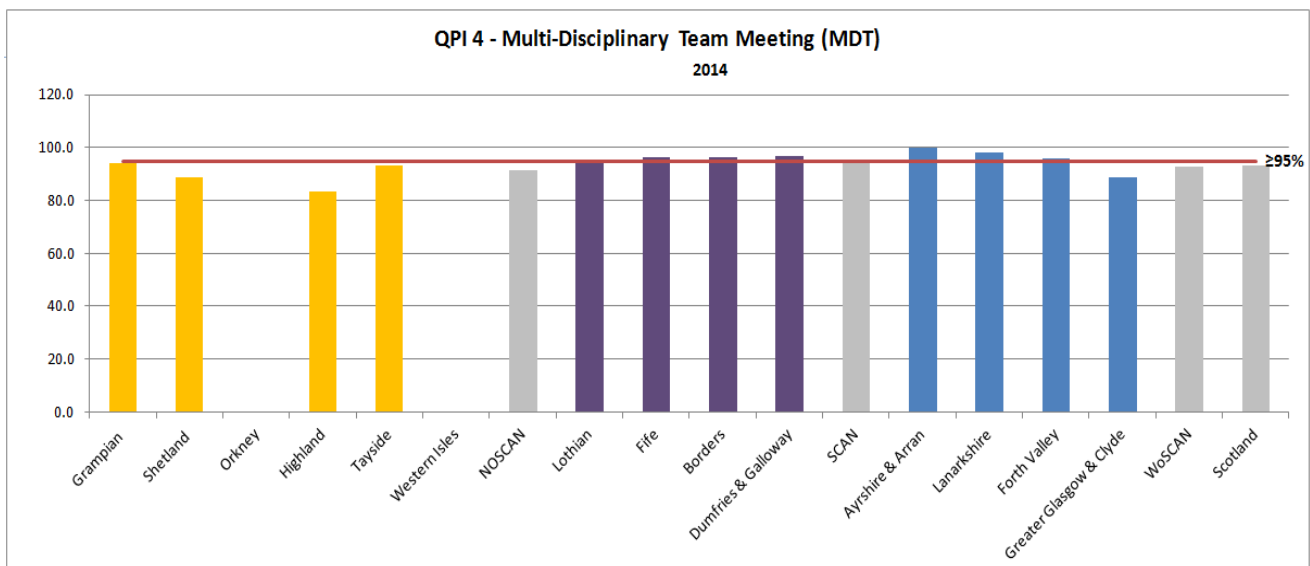
Denominator: All patients with renal cell carcinoma.

Exclusions:

- Patients who died before first treatment.

Target: 95%

This QPI was only introduced for renal cancer reporting in 2014. In Scotland, 93% of patients with renal cell carcinoma were discussed at MDT prior to treatment; just missing the target. Several NHS Boards, however, did meet the target: NHS Borders, NHS Dumfries & Galloway, NHS Ayrshire & Arran, NHS Lanarkshire, NHS Fife and NHS Forth Valley.



<b>2014</b>	% Performance	Numerator	Denominator	NR for Numerator	NR for Exclusion	NR for Denominator
Grampian	94.0	78	83			
Shetland	88.9	8	9			
Orkney	-	-	-			
Highland	83.3	30	36			
Tayside	93.2	55	59	1		5
Western Isles	-	-	-			
<b>NOSCAN</b>	<b>91.5</b>	<b>173</b>	<b>189</b>	<b>1</b>		<b>5</b>
Lothian	94.4	134	142			
Fife	96.2	51	53	2		
Borders	96.3	26	27			
Dumfries & Galloway	96.8	30	31			
<b>SCAN</b>	<b>95.3</b>	<b>241</b>	<b>253</b>	<b>2</b>		
Ayrshire & Arran	100.0	49	49			
Lanarkshire	98.1	53	54			
Forth Valley	95.8	46	48			
Greater Glasgow & Clyde	88.8	175	197		2	
<b>WoSCAN</b>	<b>92.8</b>	<b>323</b>	<b>348</b>		<b>2</b>	
<b>Scotland</b>	<b>93.3</b>	<b>737</b>	<b>790</b>	<b>3</b>	<b>2</b>	<b>5</b>

Source: Cancer audit

- Data not shown due to small numbers

Patients receiving best supportive care only were not discussed at the MDT prior to treatment in NHS Borders, NHS Dumfries & Galloway, NHS Shetland and NHS Lothian although in the former two Boards this did not impact meeting target for this QPI.

At the formal review, an amendment to the wording within the tolerance of the QPI was proposed to account for incidental findings following surgery.

***QPI 5: Histological Grading - Fuhrman grading system should be used to grade clear cell Renal Cell Carcinoma (RCC).***

Fuhrman grading acts as a surrogate marker of good pathological reporting of RCC and will dictate prognosis, treatment and follow up regimens.

Numerator: Number of patients with histological diagnosis of RCC on a surgical resection specimen whose clear cell RCC is graded using the Fuhrman grading system.

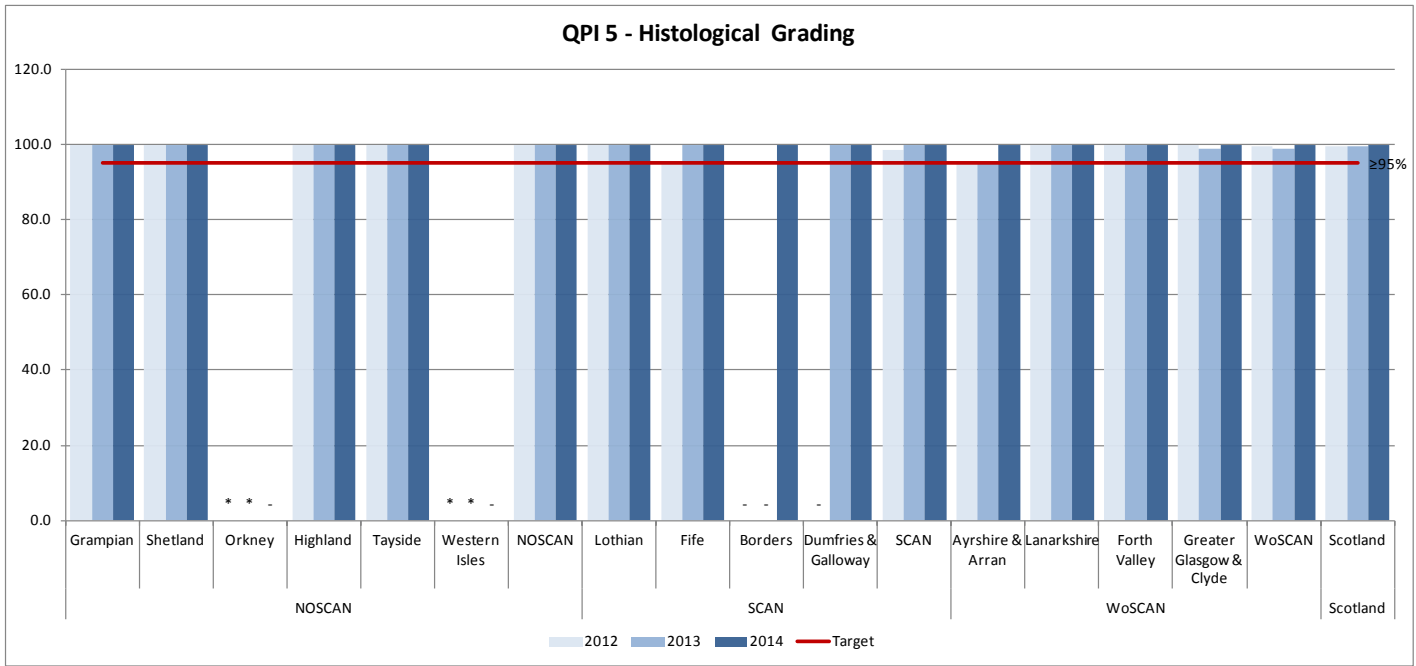
Denominator: All patients with clear cell RCC who undergo surgical resection.

Exclusions: No exclusions.

Target: 95%

In 2014, all NHS Boards achieved 100% for this QPI. Over the three year period, there were only 4 cases out of 1,097 in Scotland where histological grading using the Fuhrman system was not undertaken.

At the formal review, it was proposed that this QPI should be removed from future reporting as it was not felt to be promoting any further improvement in quality, given the consistent high achievement of the target level. This change will be implemented subject to approval post consultation. It was also noted that the Fuhrman grading system has been superseded by the ISUP (International Society of Urological Pathology) grading system. This may be relevant for future survival analysis of this tumour site.



NHS Board/Region	Most Recent Year - 2014						Past % Performance	
	% Performance	Numerator	Denominator	NR for Numerator	NR for Exclusion	NR for Denominator	2012	2013
Grampian	100.0	45	45				100.0	100.0
Shetland	100.0	6	6				100.0	100.0
Orkney	-	-	-				*	*
Highland	100.0	26	26				100.0	100.0
Tayside	100.0	25	25			3	100.0	100.0
Western Isles	-	-	-				*	*
<b>NOSCAN</b>	<b>100.0</b>	<b>104</b>	<b>104</b>			<b>3</b>	<b>100.0</b>	<b>100.0</b>
Lothian	100.0	69	69				100.0	100.0
Fife	100.0	26	26				95.2	100.0
Borders	100.0	12	12				-	-
Dumfries & Galloway	100.0	15	15				-	100.0
<b>SCAN</b>	<b>100.0</b>	<b>122</b>	<b>122</b>				<b>98.7</b>	<b>100.0</b>
Ayrshire & Arran	100.0	22	22				95.7	95.0
Lanarkshire	100.0	33	33				100.0	100.0
Forth Valley	100.0	12	12				100.0	100.0
Greater Glasgow & Clyde	100.0	79	79				100.0	98.8
<b>WoSCAN</b>	<b>100.0</b>	<b>146</b>	<b>146</b>				<b>99.4</b>	<b>98.8</b>
<b>Scotland</b>	<b>100.0</b>	<b>372</b>	<b>372</b>			<b>3</b>	<b>99.5</b>	<b>99.4</b>

Source: Cancer audit  
 - Data not shown due to small numbers  
 \* No data matching QPI criteria

**QPI 6: Surgical Treatment - Patients with non-metastatic renal cancer should receive appropriate surgical treatment.**

The standard of care for localised renal cancer not suitable for other therapeutic methods is operative radical nephrectomy. Radical nephrectomy may be carried out by open operation or laparoscopically, as determined by patient and tumour factors. Laparoscopic nephrectomy should however be discussed with patients where appropriate.

Numerator: Number of patients with T<sub>1-3</sub>N<sub>0</sub>M<sub>0</sub> RCC without evidence of metastatic disease at diagnosis who undergo radical nephrectomy (either by open or laparoscopic procedure).

Denominator: All patients with T<sub>1-3</sub>N<sub>0</sub>M<sub>0</sub> RCC without evidence of metastatic disease at diagnosis.

Exclusions:

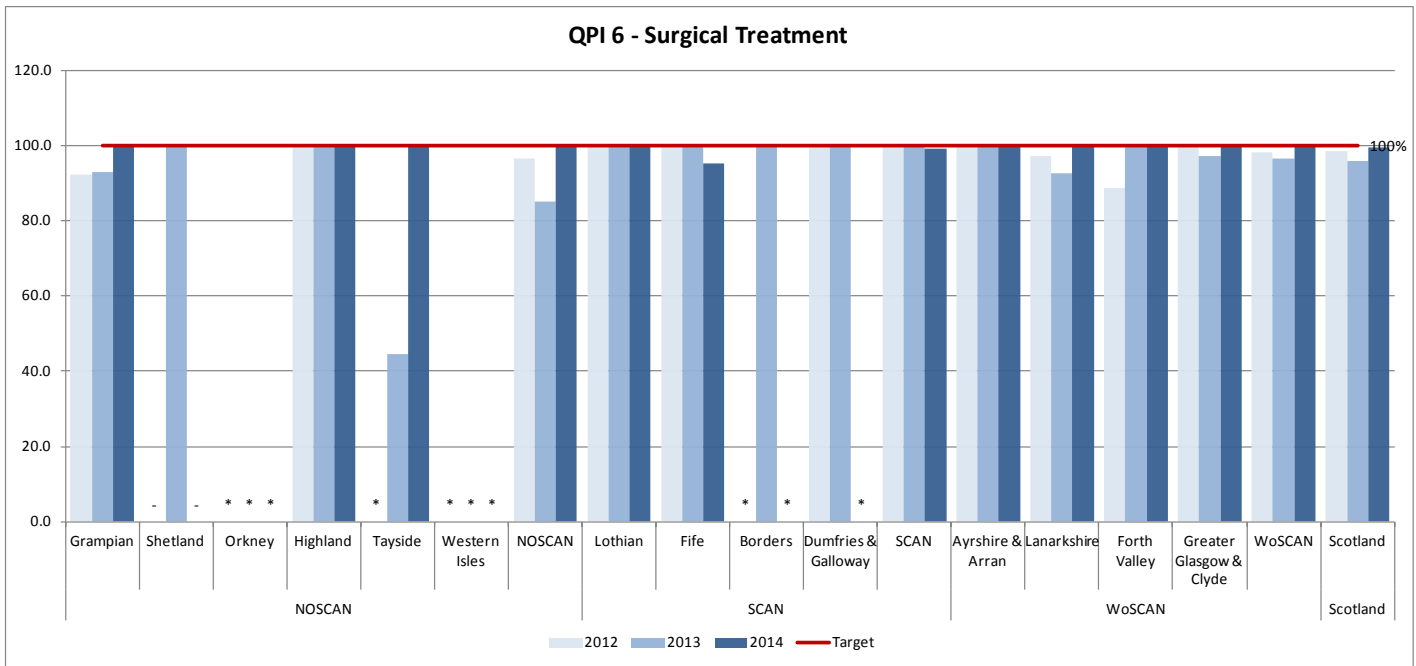
- Patients who refused treatment.
- Patients who undergo nephron sparing treatment (partial nephrectomy, cryotherapy or RFA).
- Patients receiving supportive care only (not for active treatment).
- Patients receiving active surveillance (no active treatment).
- Patients who died before treatment.

Target: 100%

In years 1 and 2 some NHS Boards submitted data by location of diagnosis with all submitting by location of surgery in year 3. This should be taken into account when comparing performance across the 3 year period, although the impact should be minimal.

With the exception of NHS Fife, all NHS Boards achieved target for this QPI in 2014. However, there were a number of cases classed as 'Not recorded for denominator' in SCAN and NOSCAN and therefore it could not be determined whether these cases should be included in the denominator for measurement against this QPI.

At the formal review, it was agreed that a surgical outcome measure would be a better indicator of quality and therefore this QPI should be removed, subject to approval post consultation.



NHS Board/Region	Most Recent Year - 2014						Past % Performance	
	% Performance	Numerator	Denominator	NR for	NR for	NR for	2012	2013
				Numerator	Exclusion	Denominator		
Grampian	100.0	19	19			11	92.3	92.9
Shetland	-	-	-				-	100.0
Orkney	*	*	*				*	*
Highland	100.0	21	21				100.0	100.0
Tayside	100.0	12	12			4	*	44.4
Western Isles	*	*	*				*	*
<b>NOSCAN</b>	<b>100.0</b>	<b>55</b>	<b>55</b>			<b>15</b>	<b>96.6</b>	<b>85.0</b>
Lothian	100.0	87	87				100.0	100.0
Fife	95.2	20	21		1		100.0	100.0
Borders	*	*	*				*	100.0
Dumfries & Galloway	*	*	*			13	100.0	100.0
<b>SCAN</b>	<b>99.1</b>	<b>107</b>	<b>108</b>		<b>1</b>	<b>13</b>	<b>100.0</b>	<b>100.0</b>
Ayrshire & Arran	100.0	21	21				100.0	100.0
Lanarkshire	100.0	28	28				97.2	92.7
Forth Valley	100.0	11	11				88.9	100.0
Greater Glasgow & Clyde	100.0	61	61				100.0	97.1
<b>WoSCAN</b>	<b>100.0</b>	<b>121</b>	<b>121</b>				<b>98.4</b>	<b>96.5</b>
<b>Scotland</b>	<b>99.6</b>	<b>283</b>	<b>284</b>		<b>1</b>	<b>28</b>	<b>98.7</b>	<b>95.8</b>

Source: Cancer audit  
 - Data not shown due to small numbers  
 \* No data matching QPI criteria

It was noted by some NHS Boards (including NHS Grampian and NHS Tayside) that the large numbers of ‘not recorded’ and the performance of some Boards in years 1 and 2 were impacted by the poor recording of clinical TNM staging as discussed in QPI3. The improvement in year 3, therefore, may reflect to some extent the improvements in TNM documentation.

**QPI 7: Nephron Sparing Surgery - Patients with T1a renal cancer should receive Nephron Sparing Surgery (NSS).**

When compared with radical nephrectomy, NSS can achieve preserved renal function, decreased overall mortality, reduced frequency of cardiovascular events and increased quality of life for patients. Patients with T1a tumours should undergo nephron sparing surgery where appropriate, as clinical trials have shown that long term survival rates are comparable to those following radical surgery.

Numerator: Number of patients with T1a N<sub>0</sub>M<sub>0</sub> RCC undergoing NSS (laparoscopic partial nephrectomy or open procedure partial nephrectomy).

Denominator: All patients with T1a N<sub>0</sub>M<sub>0</sub> RCC.

Exclusions:

- Patients who refuse treatment.
- Patients who receive RFA/Cryotherapy
- Patients receiving supportive care only (not for active treatment).
- Patients receiving active surveillance (no active treatment).
- Patients who died before treatment

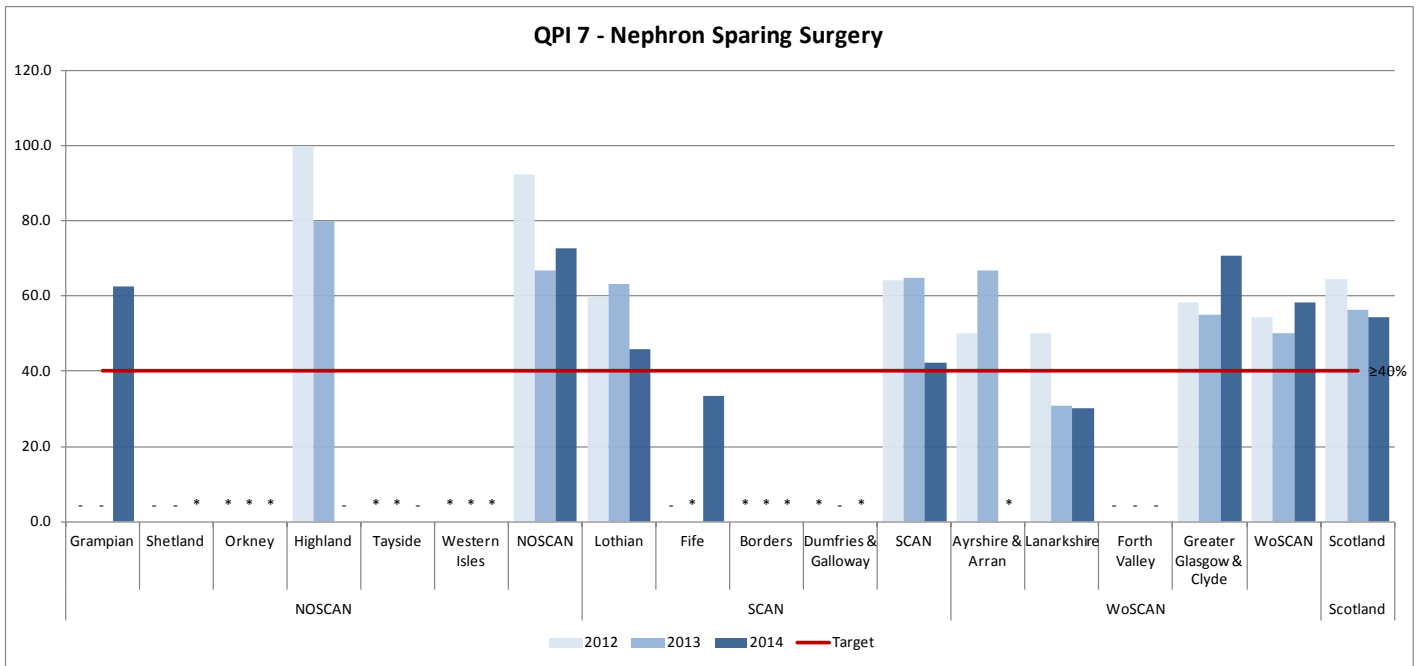
Target: 40%

In years 1 and 2 some NHS Boards submitted data by location of diagnosis with all submitting by location of surgery in year 3. This should be taken into account when comparing performance across the 3 year period, although the impact should be minimal.

With the exception of NHS Lanarkshire and NHS Fife, all NHS Boards exceeded the target in 2014. As with the previous QPI this measure was also impacted by the TNM recording issues discussed previously resulting in large numbers of 'not recorded' cases in SCAN and NOSCAN; although the improvements in this regard in year 3 should also be noted.

Given that the majority of NHS Boards managed to exceed the target consistently, the formal review group discussed raising the target for this QPI. Taking into account the existing exclusions categories and patient choice, the group proposed to raise the target to 60% for future reporting of this QPI.





NHS Board/Region	Most Recent Year - 2014						Past % Performance	
	% Performance	Numerator	Denominator	NR for Numerator	NR for Exclusion	NR for Denominator	2012	2013
Grampian	62.5	5	8			21	-	-
Shetland	*	*	*				-	-
Orkney	*	*	*				*	*
Highland	-	-	-				100.0	80.0
Tayside	-	-	-			3	*	*
Western Isles	*	*	*				*	*
<b>NOSCAN</b>	<b>72.7</b>	<b>8</b>	<b>11</b>			<b>24</b>	<b>92.3</b>	<b>66.7</b>
Lothian	45.8	11	24				60.0	63.2
Fife	33.3	3	9				-	*
Borders	*	*	*			1	*	*
Dumfries & Galloway	*	*	*			9	*	-
<b>SCAN</b>	<b>42.4</b>	<b>14</b>	<b>33</b>			<b>10</b>	<b>64.3</b>	<b>65.0</b>
Ayrshire & Arran	*	*	*				50.0	66.7
Lanarkshire	30.0	3	10				50.0	30.8
Forth Valley	-	-	-				-	-
Greater Glasgow & Clyde	70.6	24	34				58.3	55.0
<b>WoSCAN</b>	<b>58.3</b>	<b>28</b>	<b>48</b>				<b>54.3</b>	<b>50.0</b>
<b>Scotland</b>	<b>54.3</b>	<b>50</b>	<b>92</b>			<b>34</b>	<b>64.5</b>	<b>56.3</b>

Source: Cancer audit

- Data not shown due to small numbers

\* No data matching QPI criteria

As with previous QPIs, many NHS Boards commented on the lack of TNM documentation making it difficult to assess whether cases met the criteria for this QPI.

Additionally some NHS Boards (NHS Grampian, NHS Borders and NHS Lothian) noted that patient choice was a factor with some patients opting for radical nephrectomy which is not included in the criteria for this QPI.

## ***QPI 8: 30 Day Mortality - Proportion of patients who die within 30 days of first treatment for RCC.***

Treatment related mortality is a marker of the quality and safety of the whole service provided by the Multi Disciplinary Team (MDT).

Numerator: Number of patients who undergo minimally invasive (RFA, cryotherapy, SACT) or operative treatment as first treatment for RCC who die within 30 days of first treatment.

Denominator: All patients who undergo minimally invasive (RFA, cryotherapy, SACT) or operative treatment as first treatment for RCC.

Exclusions:

- Patients who undergo emergency surgery (nephrectomy).

Targets:

<5% for patients receiving SACT

<2% for patients receiving operative treatment, RFA and cryotherapy

Overall, for patients diagnosed with renal cancer between 2012 and 2014 the mortality rate within 30 days of first treatment was very low. The breakdown by treatment modality is shown below at Scotland level across the three-year period due to the small numbers involved.

### SACT (Systemic Anti Cancer Therapy)

Between 2012 and 2014, 3% of patients diagnosed with renal cancer in Scotland who received SACT as first treatment died within 30 days of treatment.

### Operative Treatment

Of the 1,352 patients receiving surgery as first treatment during 2012 – 2014 less than 1% (11 patients) died within 30 days.

The target for this QPI was reduced in year 2 from <5% to <2%.

In 2014, NHS Grampian missed target for this QPI due to the treatment of very high risk patients with high vena caval thrombus where surgery was the only option. It is noted that such surgery has a high morbidity and mortality rate which has impacted this QPI.

### RFA (Radio Frequency Ablation)

Over the 3 years there were only 19 patients across the country who received RFA as first treatment and all were alive 30 days after treatment.

### Cryotherapy

The 30-day mortality rate for patients receiving cryotherapy as first treatment over the 3 years was 0%.

Future reporting of this QPI may include 90 day mortality rates as proposed at the formal review.

***QPI 9: Systemic Therapy - Patients with advanced and/or metastatic renal cell carcinoma (RCC) should receive systemic therapy between diagnosis and death.***

Proportion of patients presenting with advanced and/or metastatic RCC who receive systemic anti-cancer therapy (SACT) for RCC within 12 months of diagnosis. Large randomised clinical trials have demonstrated clinical effectiveness of a variety of agents in this setting.

Numerator: Number of patients with RCC which is advanced and / or metastatic at time of diagnosis where at least 12 months have elapsed since diagnosis irrespective of whether or not they have died who receive first treatment with SACT, within 12 months of diagnosis.

Denominator: All patients with RCC which is advanced and / or metastatic at time of diagnosis where at least 12 months have elapsed since diagnosis irrespective of whether or not they have died.

Exclusions:

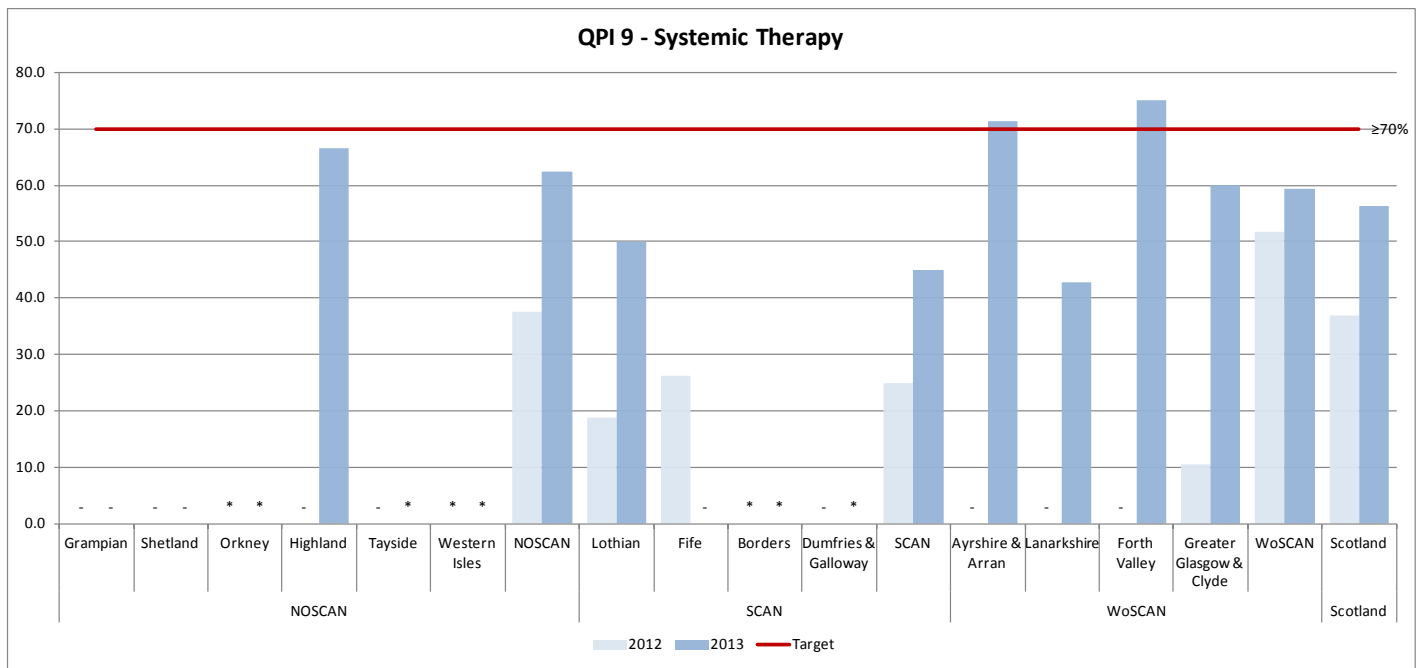
- Patients documented to have performance status 2, 3 or 4 at time of diagnosis.
- Patients documented to have refused systemic treatment.
- Patients enrolled in clinical trials.

Target: 70%

Due to the 12-month time lag from diagnosis to first treatment in this QPI only two years of data are available for reporting.

Overall in Scotland in 2014, 56% of patients with advanced RCC received SACT as first treatment within 12 months of diagnosis. This is significantly below the target of 70% but shows improvement from 37% in 2012.

At the formal review, it was proposed that further discussion with Oncology colleagues should take place to determine what changes are required to this QPI in line with updated evidence and clinical practice. Therefore, it is possible that this QPI will change in future reporting.



NHS Board/Region	Most Recent Year - 2013						Past % Performance
	% Performance	Numerator	Denominator	NR for Numerator	NR for Exclusion	NR for Denominator	2012
Grampian	-	-	-		1	19	-
Shetland	-	-	-				-
Orkney	*	*	*				*
Highland	66.7	4	6	3	1		-
Tayside	*	*	*			3	-
Western Isles	*	*	*				*
<b>NOSCAN</b>	<b>62.5</b>	<b>5</b>	<b>8</b>	<b>3</b>	<b>2</b>	<b>22</b>	<b>37.5</b>
Lothian	50.0	9	18		4		18.8
Fife	-	-	-				26.3
Borders	*	*	*			7	*
Dumfries & Galloway	*	*	*			1	-
<b>SCAN</b>	<b>45.0</b>	<b>9</b>	<b>20</b>		<b>4</b>	<b>8</b>	<b>25.0</b>
Ayrshire & Arran	71.4	5	7				-
Lanarkshire	42.9	6	14			7	-
Forth Valley	75.0	6	8			2	-
Greater Glasgow & Clyde	60.0	18	30			12	10.5
<b>WoSCAN</b>	<b>59.3</b>	<b>35</b>	<b>59</b>			<b>21</b>	<b>51.7</b>
<b>Scotland</b>	<b>56.3</b>	<b>49</b>	<b>87</b>	<b>3</b>	<b>6</b>	<b>51</b>	<b>37.0</b>

Source: Cancer audit

- Data not shown due to small numbers

\* No data matching QPI criteria

Several patients in NHS Borders, NHS Lothian, NHS Fife, NHS Greater Glasgow & Clyde and NHS Lanarkshire are included in the calculation of this QPI however their performance status was not recorded and it is possible that some of these cases should have been excluded from the analysis. This will have had a detrimental effect on performance where ineligible cases have been included in the denominator for QPI 9. These NHS Boards also stated that patient fitness was a reason for some patients not receiving SACT treatment.

## Clinical Trials

Access to Clinical Trials is a common issue for all cancer types; therefore, a generic QPI was developed to measure performance across the country. Further details on the development and definition of this QPI can be found [here](#). Specifically for renal cancer, the QPI is defined as follows and Appendix A3 contains a list of renal cancer trials into which patients have been recruited in Scotland during 2014/15. Information is shown by each Scottish Cancer Research Network (SCRN).

### **Clinical Trials Access: Proportion of patients with Renal cancer who are enrolled in an interventional clinical trial or translational research.**

All patients should be considered for participation in available clinical trials, wherever eligible.

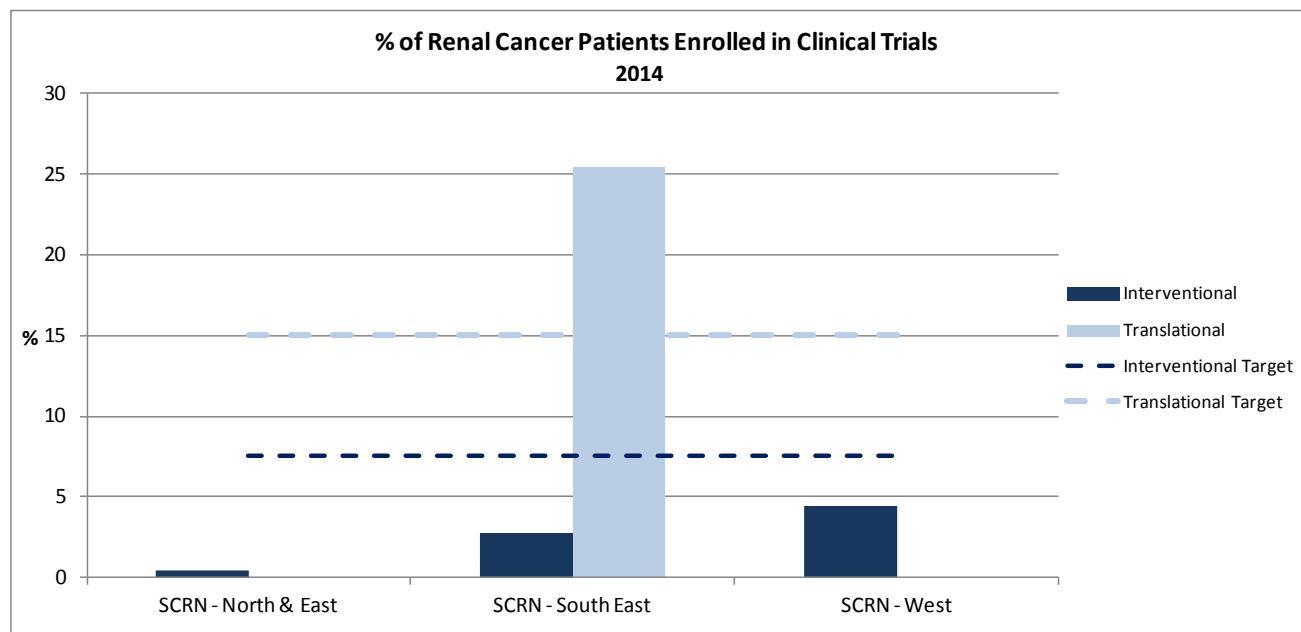
Numerator: Number of patients with renal cancer enrolled in an interventional clinical trial or translational research.

Denominator: All patients with renal cancer

Exclusions: No exclusions.

Target: Interventional clinical trials – 7.5%  
Translational research – 15%

The aspiration is to enrol a minimum of **7.5%** of patients into Interventional Clinical Trials and **15%** into Translational research.



		SCRN - North & East	SCRN - South East	SCRN - West
<b>Interventional</b>	No. Patients enrolled	1	6	18
	%	0.5%	2.8%	4.4%
<b>Translational</b>	No. Patients enrolled	0	55	0
	%	0.0%	25.5%	0.0%
<b>Average no. of cancer registrations (2009 - 2013)</b>		220	216	405

The QPI targets for clinical trials are 7.5% for interventional trials and 15% for translational trials. It should be noted that these targets are ambitious, particularly with the move towards more targeted trials.

All cancer patients in Scotland are considered for potential participation in the open trials currently available. However, as with other cancer specific studies, consequent to the demise of larger general trials and the advent of genetically selective trials that only target small populations of patients, many of the cancer trials that are currently open to recruitment in Scotland have very select eligibility criteria. Consequently they will only be available to a small percentage of the total number of people who were diagnosed with cancer.

During 2014 NOSCAN had a reduced number of consultants specialising in renal cancer. All the patients diagnosed with renal cancer passing through the cancer centres in NOSCAN will have been assessed for eligibility for clinical trials: further enquiry indicates that of patients diagnosed with renal cancer in the North of Scotland during 2014, 3 (1.4%) patients were screened for interventional trials during the reporting period.

Due to the increasing complexity of trials and time burden needed to run them effectively, and a lack of clinical and research support to run such further trials, it is not currently possible to open a greater number (and thereby to have a greater scope) of available trials in the North of Scotland. Constraints imposed by the commercial trial sponsors also limit the number of trials it is possible to open in smaller cancer centres such as those in the NOSCAN region. However a large number of feasibility requests for trials are continually being reviewed by all consultants and if an expression of interest is submitted, the chances that the site will be selected for running the trial are high.

## Survival Analysis

To support the national reporting of QPIs and to provide context in their interpretation, an analysis of renal cancer survival was undertaken. A cohort of patients diagnosed with renal cancer during 2010 to 2012, and registered on the Scottish Cancer Registry, was used and linked to deaths data (up to December 2015) to provide 3 years of follow up for all patients (and up to 5 years of follow up for some).

There follows a series of survival curves showing the variation in survival rates for this cohort of patients by the following key criteria:

- Age Group
- Gender
- Fuhrman Grade
- Deprivation category (SIMD)
- Regional cancer network

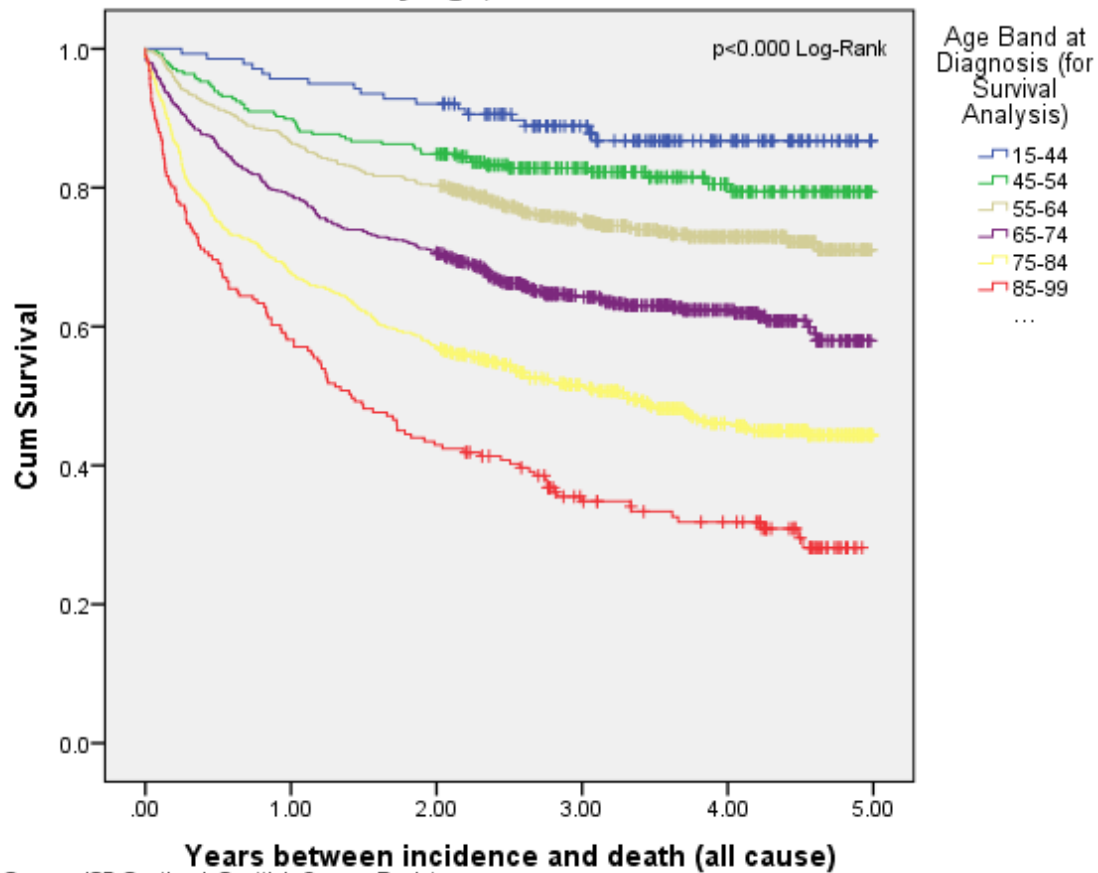
Further details on this analysis, including patient characteristics, analysis criteria and additional survival curves are available in the [data tables](#).

As stated on page 5, an anomaly in data collection has significantly impacted these figures and the data will be re-analysed and re-issued at a later date.

**Survival analysis revised as at 31 January 2017 to include all renal cancers combined.**

1). Survival Rates by Age Group (age at diagnosis)

**Observed (KM) survival - Renal Cancers (All cause deaths), Scotland, by Age, Both Sexes**



	Total Patients	Deaths	%	1-Year Survival (%)	3-Year Survival (%)	5-Year Survival (%)
15-44	139	17	2%	95.7	88.9	86.8
45-54	277	51	6%	89.9	82.8	79.4
55-64	578	149	16%	86.5	75.3	71.0
65-74	664	245	27%	78.9	64.2	58.0
75-84	607	315	35%	67.7	51.4	44.3
85+	191	130	14%	58.1	34.8	28.1

Survival estimates standardised to the European Cancer Patient Population (EUROCARE-4)

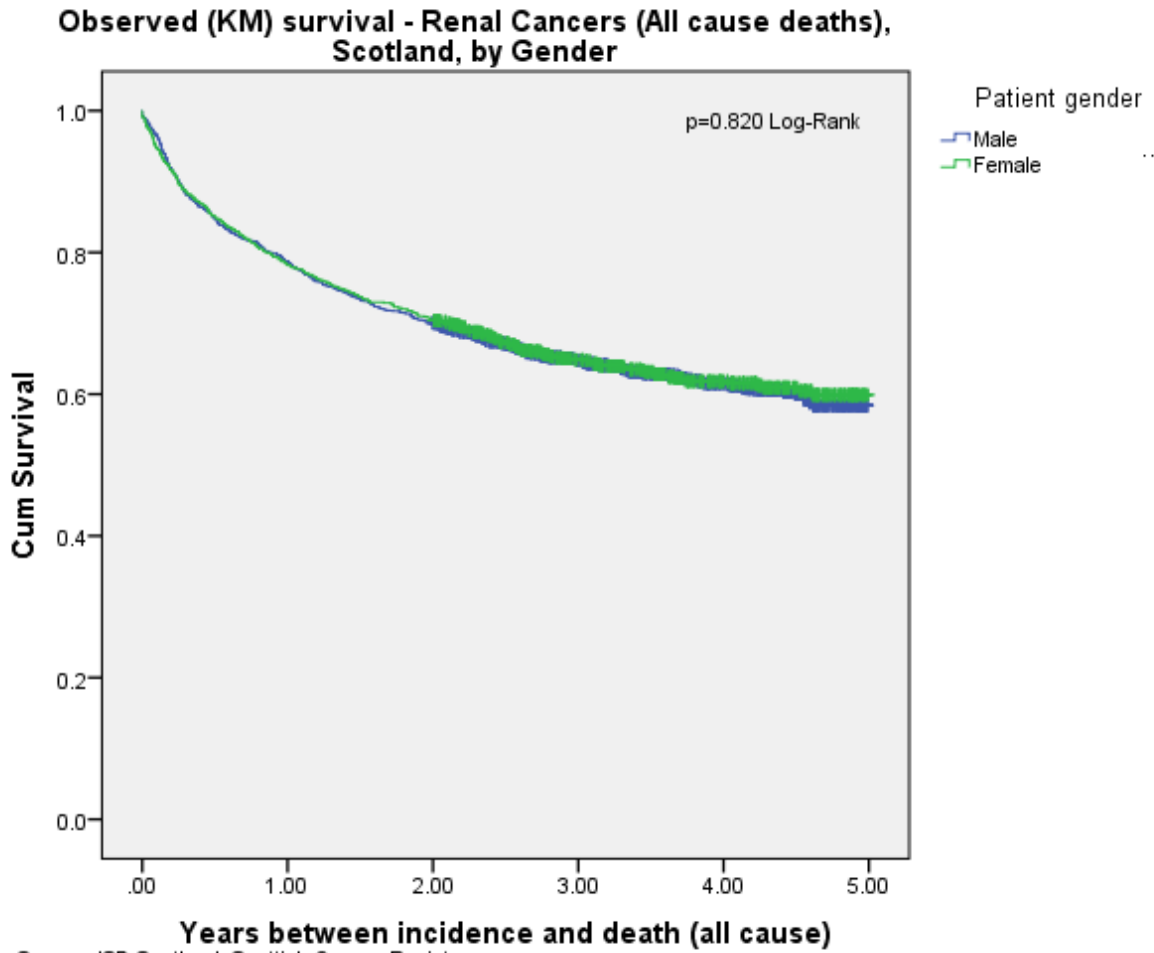
All ages 15+	84.8	73.7	69.4
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$p < 0.000$  Log-Rank

Figure 1 shows the survival rates for patients diagnosed with renal cancer across a range of age bands (age at diagnosis) at 1, 3 and 5 year intervals.



2). Survival Rates by Gender



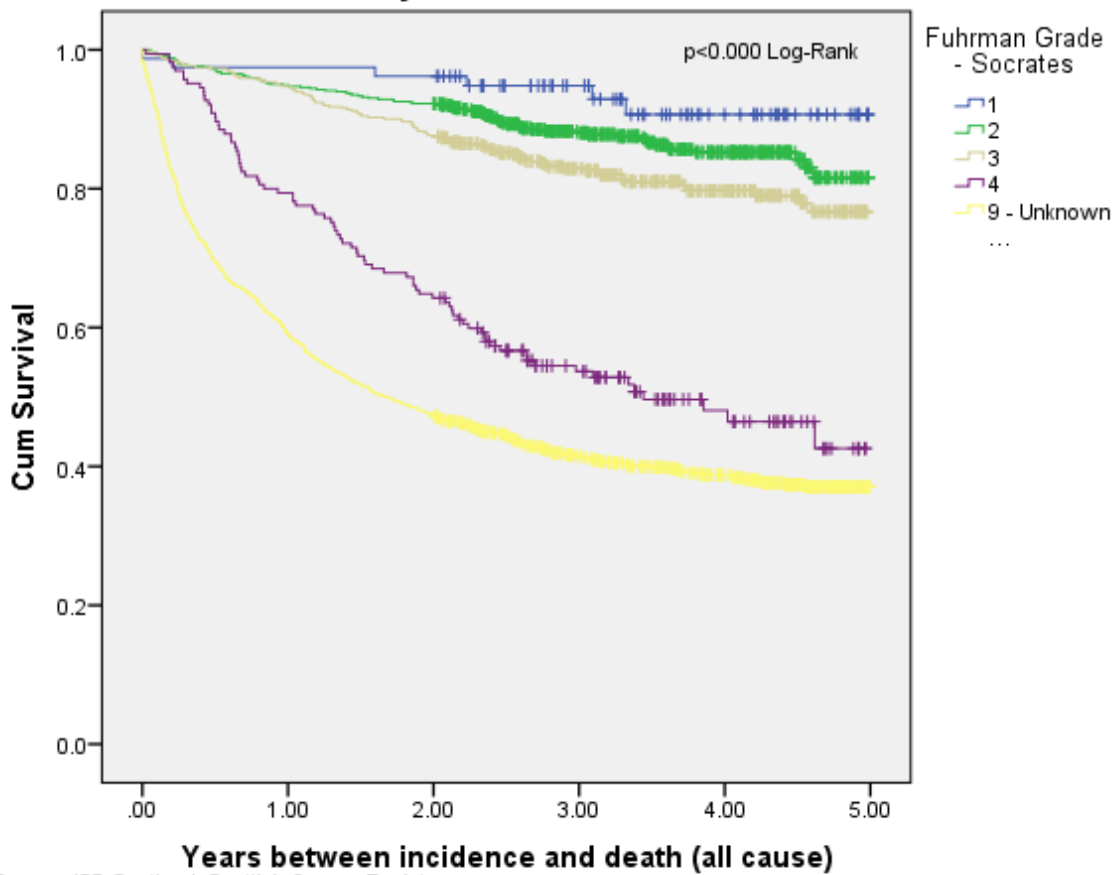
	Total Patients	Deaths	%	1-Year Survival (%)	3-Year Survival (%)	5-Year Survival (%)
Male	1428	531	59%	78.7	64.7	58.4
Female	1028	376	41%	78.2	64.9	59.9

p=0.820 Log-Rank

Figure 2 shows that there are no significant differences in the survival rates for males and females diagnosed with renal cancer.

3). Survival Rates by Fuhrman Grade

Observed (KM) survival - Renal Cancers (All cause deaths), Scotland, by Fuhrman Grade



Source: ISD Scotland, Scottish Cancer Registry

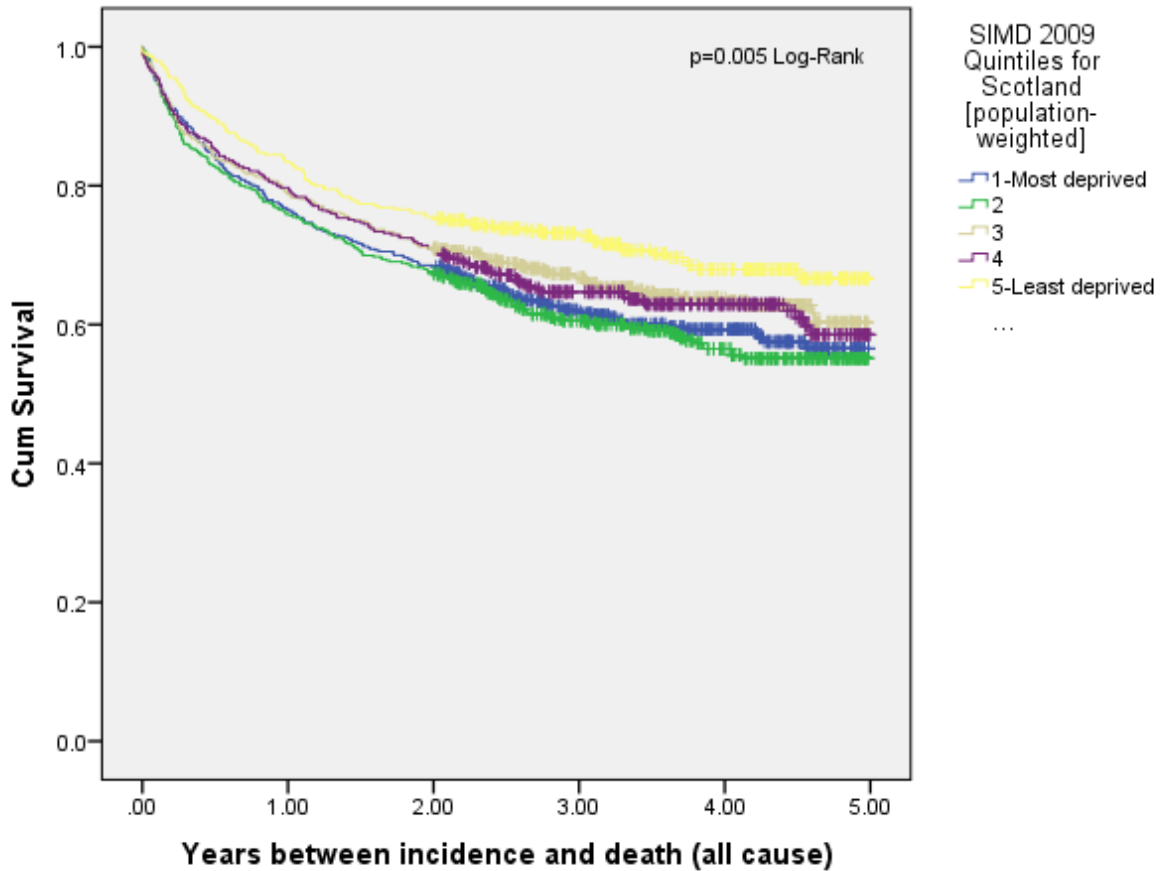
	Total Patients	Deaths	%	1-Year Survival (%)	3-Year Survival (%)	5-Year Survival (%)
1	79	6	1%	97.5	94.8	90.7
2	645	85	9%	94.9	88.1	81.6
3	512	96	11%	94.7	82.9	76.7
4	165	82	9%	79.4	53.7	42.6
9- Unknown	1055	638	70%	59.1	41.4	37.1

$p < 0.000$  Log-Rank

Figure 3 shows that, as expected, survival rates decrease sharply with increasing cancer grade.

4). Survival Rates by Deprivation Category (SIMD)

**Observed (KM) survival - Renal Cancers (All cause deaths), Scotland, by deprivation quintile (SIMD 2009)**



Source: ISD Scotland, Scottish Cancer Registry

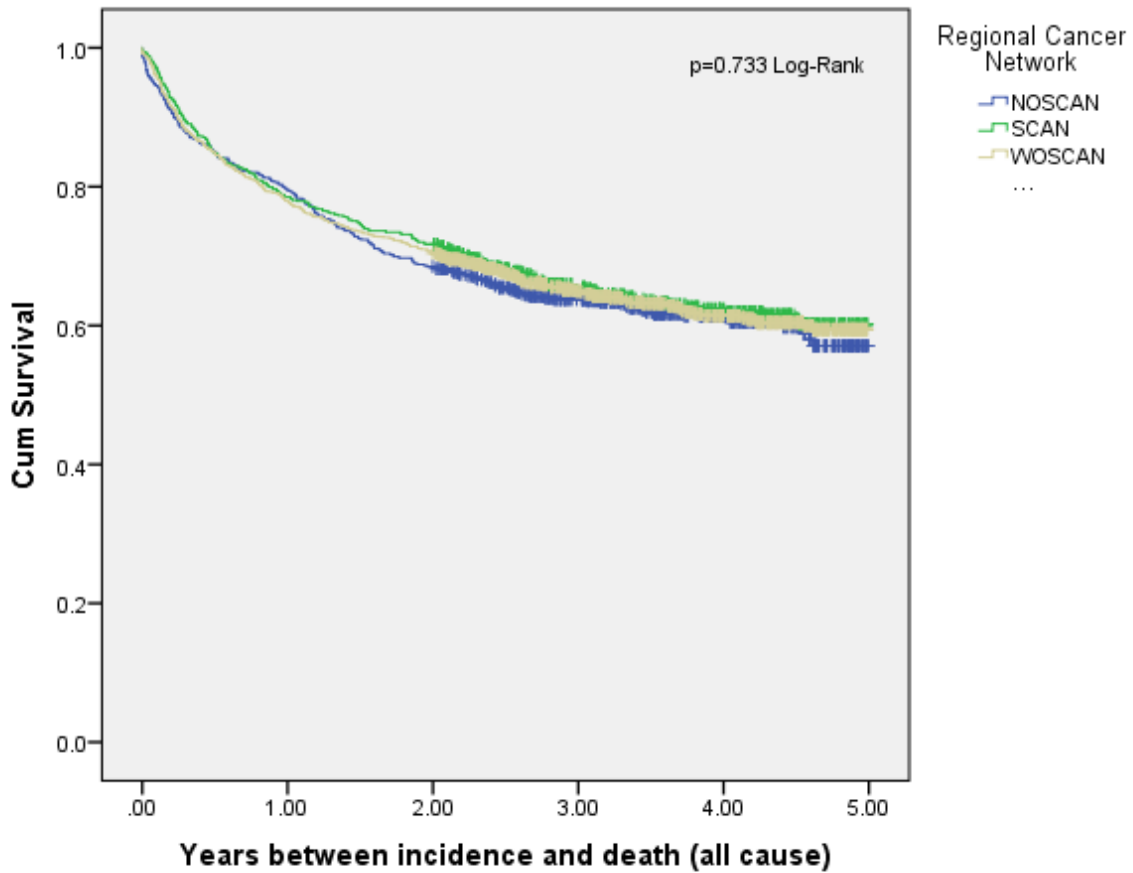
	Total Patients	Deaths	%	1-Year Survival (%)	3-Year Survival (%)	5-Year Survival (%)
1 - Most deprived	553	218	24%	76.5	61.8	56.5
2	559	230	25%	75.8	60.5	55.1
3	506	178	20%	78.9	66.7	60.3
4	458	168	19%	79.7	64.7	58.6
5 - Least deprived	380	113	12%	83.4	72.8	66.6

p=0.005 Log-Rank

The impact of deprivation on renal cancer survival rates is shown in Figure 4. There is no clear correlation between decreasing 5-year survival rate and increasing levels of deprivation.

5). Survival Rates by Regional Cancer Network

**Observed (KM) survival - Renal Cancers (All cause deaths), Scotland, by Network of Diagnosis**



Source: ISD Scotland, Scottish Cancer Registry

	Total Patients	Deaths	%	1-Year Survival (%)	3-Year Survival (%)	5-Year Survival (%)
NOSCAN	641	244	27%	79.6	63.8	57.1
SCAN	629	228	25%	78.5	65.5	60.2
WOSCAN	1186	435	48%	77.9	64.9	59.4

p=0.733 Log-Rank

Figure 5 shows the survival rates by regional network of residence. No adjustment for demographics, tumour staging, index tumour sites, deprivation scores, or any allowance for competing causes of death within regions was undertaken.

## List of abbreviations

QPI	-	Quality Performance Indicator
ISD	-	Information Services Division
NOSCAN	-	North of Scotland cancer network
WoSCAN	-	West of Scotland cancer network
SCAN	-	South East Scotland cancer network
MDT	-	Multidisciplinary team
SCRN	-	Scottish Cancer Research Network
SIMD	-	Scottish Index of Multiple Deprivation
SACT	-	Systemic Anti Cancer Therapy
CT	-	Computed Tomography scan
RCC	-	Renal Cell Carcinoma
TNM	-	Tumour, Node & Metastases (a cancer staging classification)

List of Tables

<b>Table No.</b>	<b>Name</b>	<b>Time period</b>	<b>File &amp; size</b>
<u>Data Tables</u>	Renal Cancer QPI Data Tables	Jan 2012 – Dec 2014	Excel [449kb]
<u>Survival Analysis</u>	Renal Cancer Survival Analysis	2010 - 2012	Excel [460kb]

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## Further Information

Further information on Cancer Quality Performance Indicators can be found on the [Cancer QPI](#) section of the ISD website.

## Rate this publication

Please [provide feedback](#) on this publication to help us improve our services.

Appendix

**A1 – Background Information**

The purpose of the cancer quality work programme and the roles and responsibilities of each organisation are outlined in Chief Executives Letter ([CEL 06](#)). This document also provides details of the data collection, quality assurance and governance processes that are critical to the reporting of QPIs.

**A2 – Renal Cancer QPIs**

The table below shows the list of Renal Cancer QPIs applicable to this publication. Please note that revisions to these QPIs may have been made since the initial data collection – refer to the [Healthcare Improvement Scotland website](#) for the latest version of these QPIs.

QPI	Numerator	Denominator	Exclusions	Target
QPI 1: Radiological Diagnosis	Number of patients receiving active treatment* with a diagnosis of RCC who undergo cross-sectional imaging (CT) of the chest, abdomen +/- pelvis (with contrast) before first treatment.	All patients receiving active treatment *(partial or radical nephrectomy, cryotherapy, radio frequency ablation or systemic therapy) with a diagnosis of RCC.	Patients who refuse treatment. Patients who underwent cross sectional imaging (CT) without intra venous (IV) contrast. Patients who died before first treatment.	100%
QPI 2: Histological Diagnosis	Number of patients with RCC for whom surgical resection is not first treatment who have a histological diagnosis (confirmed by biopsy) before first treatment.	All patients with RCC for whom surgery is not first treatment.	Patients who refuse treatment. Patients receiving supportive care only (not for active treatment). Patients receiving active surveillance. Patients who died before treatment. Histology not assessable.	100%
QPI 3: Clinical Staging	Number of patients diagnosed with RCC who were clinically staged using TNM staging system before first treatment.	All patients diagnosed with RCC.	No exclusions.	100%
QPI 4: Multi-Disciplinary Team Meeting (MDT)	Number of patients with renal cell carcinoma discussed at the MDT before definitive treatment.	All patients with renal cell carcinoma.	Patients who died before first treatment.	95%
QPI 5: Histological Grading	Number of patients with histological diagnosis of RCC on a surgical resection specimen whose clear cell	All patients with clear cell RCC who undergo surgical resection.	No exclusions.	95%



	RCC is graded using the Fuhrman grading system.			
QPI 6: Surgical Treatment	Number of patients with T <sub>1-3</sub> N <sub>0</sub> M <sub>0</sub> RCC without evidence of metastatic disease at diagnosis who undergo radical nephrectomy (either by open or laparoscopic procedure).	All patients with T <sub>1-3</sub> N <sub>0</sub> M <sub>0</sub> RCC without evidence of metastatic disease at diagnosis.	Patients who refused treatment. Patients who undergo nephron sparing treatment (partial nephrectomy, cryotherapy or RFA). Patients receiving supportive care only (not for active treatment). Patients receiving active surveillance (no active treatment). Patients who died before treatment.	100%
QPI 7: Nephron Sparing Surgery	Number of patients with T <sub>1a</sub> N <sub>0</sub> M <sub>0</sub> RCC undergoing NSS (laparoscopic partial nephrectomy or open procedure partial nephrectomy).	All patients with T <sub>1a</sub> N <sub>0</sub> M <sub>0</sub> RCC.	Patients who refuse treatment. Patients who receive RFA/Cryotherapy Patients receiving supportive care only (not for active treatment). Patients receiving active surveillance (no active treatment). Patients who died before treatment	40%
QPI 8: 30 Day Mortality	Number of patients who undergo minimally invasive (RFA, cryotherapy, SACT) or operative treatment as first treatment for RCC who die within 30 days of first treatment.	All patients who undergo minimally invasive (RFA, cryotherapy, SACT) or operative treatment as first treatment for RCC.	Patients who undergo emergency surgery (nephrectomy).	<5% (SACT) <2% (RFA, cryotherapy,operative treatment)
QPI 9: Systemic Therapy	Number of patients with RCC which is advanced and / or metastatic at time of diagnosis where at least 12 months have elapsed since diagnosis irrespective of	All patients with RCC which is advanced and / or metastatic at time of diagnosis where at least 12 months	Patients documented to have performance status 2, 3 or 4 at time of	70%

	whether or not they have died who receive first treatment with SACT, within 12 months of diagnosis.	have elapsed since diagnosis irrespective of whether or not they have died.	diagnosis. Patients documented to have refused systemic treatment.  Patients enrolled in clinical trials.	
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### A3 – Renal Cancer Clinical Trials

The list of interventional and translational clinical trials into which patients were recruited during the audit period for renal cancer patients in Scotland across the Scottish Cancer Research Networks is shown below. Further details on these clinical trials are available from the relevant SCRNs.

Study Type	Study Title	SCRN - North & East	SCRN - South East	SCRN - West
Interventional	METEOR	✓	✓	✓
	A-PREDICT		✓	
	CARMENA			✓
	CONSERVE study			✓
	Evaluation of Biomarkers for Prognosis of Renal Cell Carcinoma			✓
	Pazopanib in patients with renal cancer (PaZ02)			✓
	STAR Standard vs Modified Drug Therapy in Renal Cancer			✓
	ZEBRA			✓
Translational	Scottish Collaboration On Translational Research into Renal Cell Cancer (SCOTRRCC)		✓	

**A4 – Publication Metadata (including revisions details)**

<b>Metadata Indicator</b>	<b>Description</b>
Publication title	Renal Cancer Quality Performance Indicators
Description	This report shows the performance of NHS Boards against nine Renal Cancer QPIs for the period January 2012 to December 2014. Relevant commentary from NHS Boards is also included to provide local context to the data.
Theme	Health and Social Care
Topic	Cancer services
Format	PDF Document
Data source(s)	Cancer audit, Cancer registry, SMR01
Date that data are acquired	February 2016
Release date	
Frequency	Every 3 years
Timeframe of data and timeliness	Data covering patients diagnosed between January 2012 and December 2014.
Continuity of data	First release of QPI data
Revisions statement	This is the first release of Renal Cancer QPI data. It is expected that QPI definitions and measurability documents will evolve and therefore future publications may contain revisions to previously published information.
Revisions relevant to this publication	Survival analysis revised as at 31 January 2017 to include all renal cancers combined. See page 5 of publication for further information.
Concepts and definitions	QPI definitions and measurability criteria are available from the <a href="#">Cancer Audit</a> section of the <a href="#">ISD website</a> .
Relevance and key uses of the statistics	The reporting of performance against these national QPIs is underpinned by a national governance framework that aims to use these data to improve cancer services in Scotland.
Accuracy	Information on the accuracy of some of the national datasets used within this publication is available on the <a href="#">ISD website</a> .  ISD only receives aggregate data from each NHS Board to populate these indicators (with the exception of SMR based indicators and case ascertainment). Derivations of the figures and data accuracy are matters for individual NHS Boards.
Completeness	For the reporting period, information based on the SMR01 data completeness can be found <a href="#">here</a> . 100% of QPI aggregate data was returned.
Comparability	The national dataset and data definitions in conjunction with the final quality performance indicators and the accompanying measurability document were agreed in public engagement to ensure data collection is comparable across the country.
Accessibility	It is the policy of ISD Scotland to make its web sites and

	products accessible according to <u>published guidelines</u> .
Coherence and clarity	Statistics for each QPI are presented consistently in chart and table format at NHS Board level, with national figures and performance targets included for comparison and clarity.
Value type and unit of measurement	The units of measure include numbers and percentages.
Disclosure	The <u>ISD protocol on Statistical Disclosure Protocol</u> is followed.
Official Statistics designation	Official Statistics
UK Statistics Authority Assessment	Not currently put forward for assessment
Last published	First release
Next published	2019
Date of first publication	23/08/16
Help email	<a href="mailto:johnconnor@nhs.net">johnconnor@nhs.net</a>
Date form completed	27/07/2016

## A5 – Early Access details (including Pre-Release Access)

### **Pre-Release Access**

Under terms of the "Pre-Release Access to Official Statistics (Scotland) Order 2008", ISD are obliged to publish information on those receiving Pre-Release Access ("Pre-Release Access" refers to statistics in their final form prior to publication). The standard maximum Pre-Release Access is five working days. Shown below are details of those receiving standard Pre-Release Access and, separately, those receiving extended Pre-Release Access.

### **Standard Pre-Release Access:**

- Scottish Government Health Department
- NHS Board Chief Executives
- NHS Board Communication leads

### **Early Access for Management Information**

These statistics will also have been made available to those who needed access to 'management information', i.e. as part of the delivery of health and care:

- Members of the National Cancer Quality Operational Group
- Members of the National Cancer Quality Steering Group

### **Early Access for Quality Assurance**

These statistics will also have been made available to those who needed access to help quality assure the publication:

- Members of the National Cancer Quality Operational Group
- Members of the National Cancer Quality Steering Group
- Regional and NHS Board Renal Cancer Clinical Leads
- Network Lead Clinicians

## A6 – ISD and Official Statistics

### About ISD

Scotland has some of the best health service data in the world combining high quality, consistency, national coverage and the ability to link data to allow patient based analysis and follow up.

Information Services Division (ISD) is a business operating unit of NHS National Services Scotland and has been in existence for over 40 years. We are an essential support service to NHSScotland and the Scottish Government and others, responsive to the needs of NHSScotland as the delivery of health and social care evolves.

**Purpose:** To deliver effective national and specialist intelligence services to improve the health and wellbeing of people in Scotland.

**Mission:** Better Information, Better Decisions, Better Health

**Vision:** To be a valued partner in improving health and wellbeing in Scotland by providing a world class intelligence service.

### Official Statistics

Information Services Division (ISD) is the principal and authoritative source of statistics on health and care services in Scotland. ISD is designated by legislation as a producer of 'Official Statistics'. Our official statistics publications are produced to a high professional standard and comply with the Code of Practice for Official Statistics. The Code of Practice is produced and monitored by the UK Statistics Authority which is independent of Government. Under the Code of Practice, the format, content and timing of statistics publications are the responsibility of professional staff working within ISD. ISD's statistical publications are currently classified as one of the following:

- National Statistics (i.e. assessed by the UK Statistics Authority as complying with the Code of Practice)
- National Statistics (i.e. legacy, still to be assessed by the UK Statistics Authority)
- Official Statistics (i.e. still to be assessed by the UK Statistics Authority)
- other (not Official Statistics)

Further information on ISD's statistics, including compliance with the Code of Practice for Official Statistics, and on the UK Statistics Authority, is available on the [ISD website](#).