

THE BRITISH ASSOCIATION OF UROLOGICAL SURGEONS Section of Oncology

Analyses of Nephrectomies performed between

January 1st and December 31st 2014

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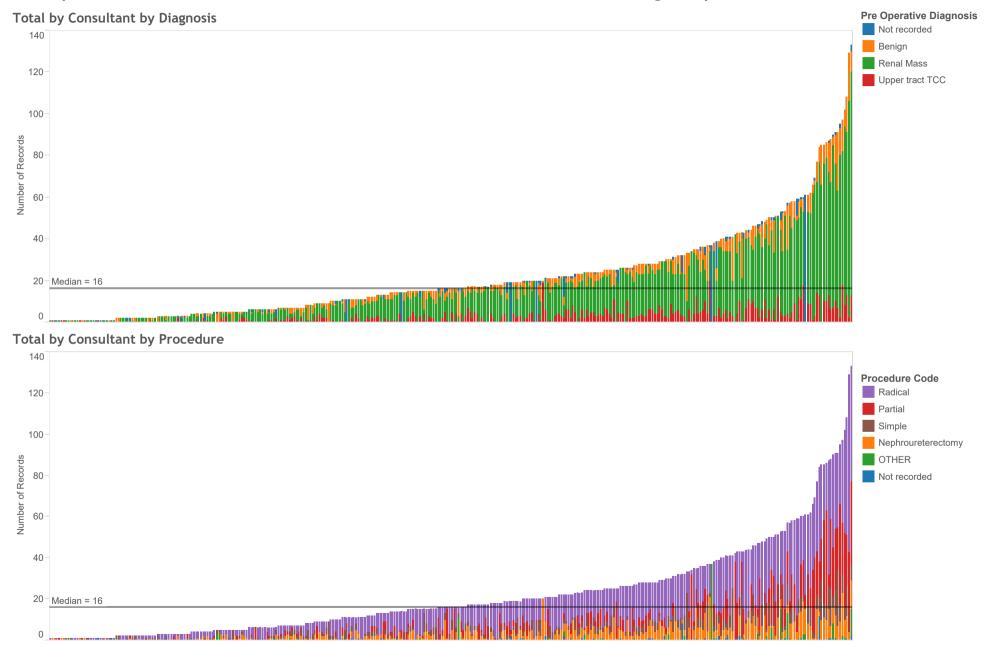
AUDIT RESULTS SUMMARY – Nephrectomy dataset (2014 data)

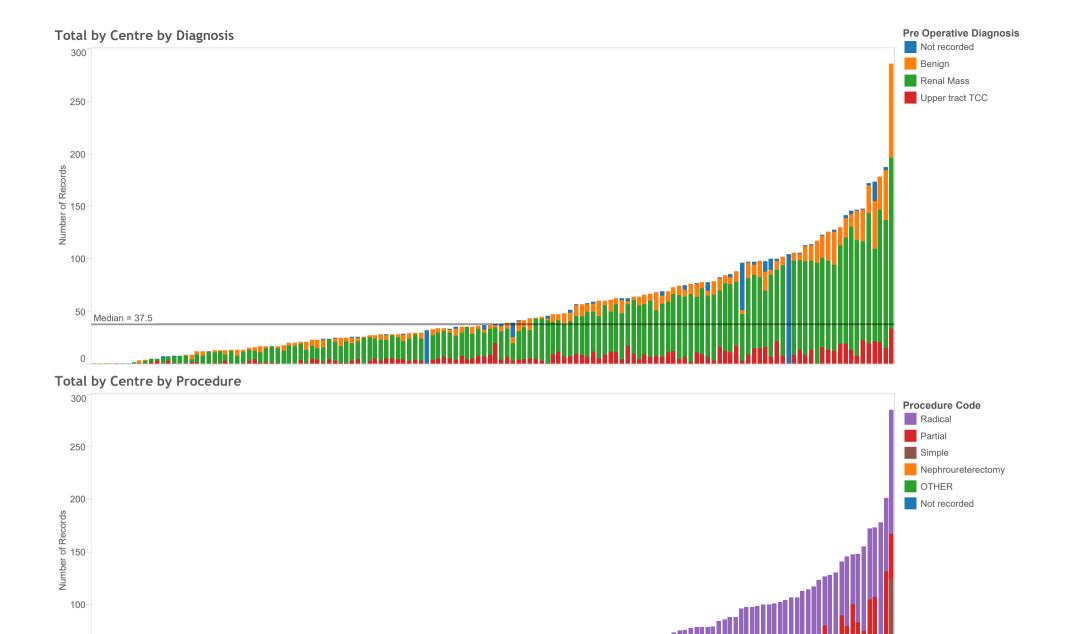
All the data presented here are a summary of the data extracted from the web-based database on 1st September 2015 and relate to operations performed during the whole of 2014. Once extracted the data was transferred to an AccessTM database for validation before being imported into TableauTM for generation of the analyses. The validation mainly comprised checks for duplicate and / or empty entries and invalid / inappropriate dates.

The data collection period was from 1 January 2014 to 31 December 2014.

- 7,703 procedures were recorded from 351 consultants at 140 sites, including 204 private patients from 54 consultants. (England only for 2014 was 7059)
- Median number of cases per consultant: 16 (range 1 133)
- Median number of cases per centre: 37.5 (range 1 286)
- 698 cases (9.9%) were bulk uploaded from other systems with the remaining data being entered on an individual patient basis.
- Hospital Episode Statistics (HES) for 2014 indicate that there were 8,168 nephrectomies undertaken by urologists in 2014, we captured data on 86% of the nephrectomies undertaken by urologists in England during 2014.

Total Returns for Procedures Performed Between 01/01/2014 and 31/12/2014 7703 procedures from 351 Consultants from 140 Centres in the UK - including 204 private cases from 54 consultants





Median = 37

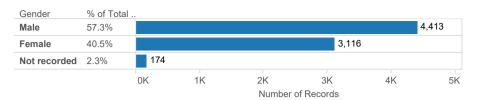
Pre-op Presentation

Pre Op Pres	N	% Total
Haematuria	1,966	25.5%
Incidental	3,022	39.2%
Other	2,202	28.6%
Not recorded	513	6.7%
Grand Total	7,703	100.0%

Age

<=40 538 7.0 41-50 951 12.4 51-60 1,595 20.9 61-70 2,234 29.2	, .
51-60 1,595 20.9	0/.
1,000 200	70
61-70 2,234 29.2	%
	%
71-80 1,856 24.3	%
>80 470 6.1	%
Grand Total 7,644 100.0	

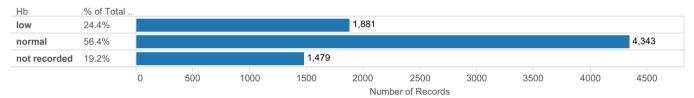
Gender



WHO Performance Status

Who Perfor	N	% Total
0	3,453	44.8%
1	2,101	27.3%
2	563	7.3%
3	96	1.2%
4	18	0.2%
Not recorded	1,472	19.1%
Grand Total	7,703	100.0%

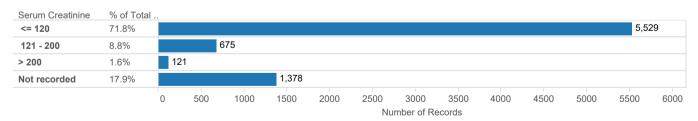
Hb at Operation



eGFR

Egfr Normal	N	% Total	
Yes (>60)	2,486	32.27%	
No	2,218	28.79%	
Null	2,999	38.93%	
Grand Total	7,703	100.00%	

Serum Creatinine



Diagnosis

Pre Operative Di	N	% Total
Renal Mass	5,318	69.0%
Upper tract TCC	953	12.4%
Benign	1,124	14.6%
Not recorded	308	4.0%
Grand Total	7,703	100.0%

Non-Malignant Diagnosis

Non Malignant Diagnosis	N	% Total
Being performed as a donor	104	9.3%
Non-functioning kidney	555	49.4%
Polycystic	44	3.9%
Pyelonephritis	97	8.6%
Stone disease	144	12.8%
Xanthogranulomatous pyelonephritis	6	0.5%
Other	118	10.5%
Null	56	5.0%
Grand Total	1,124	100.0%

Post-Op Final Histological Diagnosis

•	•		
Pre Operative Diagnosis (gr	FinalHistologicalDiagnosis	N	% Tota
Renal Mass	Clear cell renal cell ca	3,311	43.0%
	TCC	50	0.6%
	Angiomyolipoma	51	0.7%
	Chromophobe	228	3.0%
	Collecting duct	5	0.1%
	Other Cancer	50	0.6%
	Papillary	425	5.5%
	Sarcoma	18	0.29
	Oncocytoma	290	3.89
	Other benign	116	1.5%
	Not recorded	774	10.09
Upper tract TCC	Clear cell renal cell ca	28	0.49
	TCC	770	10.09
	Angiomyolipoma	1	0.09
	Other Cancer	17	0.29
	Papillary	9	0.19
	Sarcoma	1	0.09
	Other benign	20	0.39
	Not recorded	107	1.49
Benign	Clear cell renal cell ca	5	0.19
	TCC	6	0.19
	Angiomyolipoma	21	0.39
	Chromophobe	1	0.09
	Papillary	5	0.19
	Oncocytoma	7	0.19
	Other benign	898	11.79
	Not recorded	181	2.39
Not recorded	Clear cell renal cell ca	115	1.59
	TCC	25	0.39
	Angiomyolipoma	1	0.0
	Chromophobe	7	0.19
	Other Cancer	32	0.49
	Papillary	7	0.19
	Sarcoma	36	0.59
	Oncocytoma	5	0.19
	Other benign	28	0.49
	Not recorded	52	0.79

Tstage

Tstage (grou	N	% Total
0	106	1.6%
1	2,871	43.6%
2	842	12.8%
3	1,597	24.3%
4	132	2.0%
a	258	3.9%
is	1	0.0%
X	88	1.3%
Not recorded	684	10.4%
Grand Total	6,579	100.0%

Nstage

. 3		
Nstage	N	% Total
0	3,411	51.8%
1	143	2.2%
2	120	1.8%
3	2	0.0%
X	2,143	32.6%
Not recorded	760	11.6%
Grand Total	6,579	100.0%

Mstage

Mstage	N	% Total
0	3,070	46.7%
1	259	3.9%
X	2,512	38.2%
Not recorded	738	11.2%
Grand Total	6,579	100.0%

N.B. Pathological category used where available else clinical category

Grade of Operating Surgeon

Grade Of Main Operator	% of Total Number of					
Consultant	90.0%					6,930
SpR	6.8%	52	7			
Other	0.3%	25				
Not recorded	2.9%	221				
Grand Total						7,703
		0K	2K	4K	6K	8K
				Number of	Records	

Procedure by Technique

Technique	(aroun)

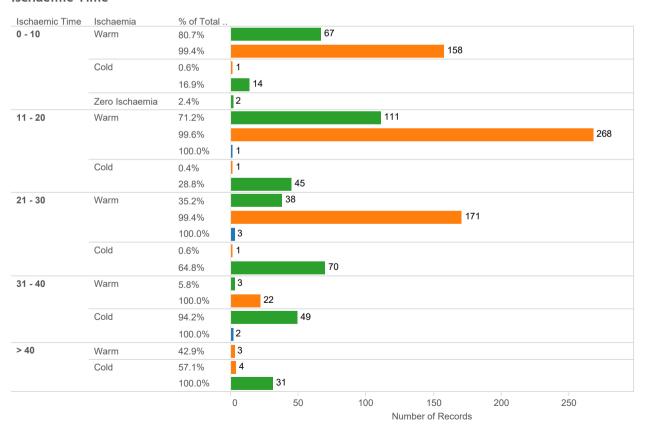
	Ope	n	Not reco	orded	Minimally	Invasive	Grand	Total
Procedure Code	N	% Total	N	% Total	N	% Total	N	% Total
Radical	1,035	52.2%	59	40.7%	2,978	53.4%	4,072	52.9%
Partial	611	30.8%	20	13.8%	802	14.4%	1,433	18.6%
Simple	133	6.7%	11	7.6%	762	13.7%	906	11.8%
Nephroureterectomy	132	6.7%	21	14.5%	922	16.5%	1,075	14.0%
Other	64	3.2%	9	6.2%	71	1.3%	144	1.9%
Not recorded	9	0.5%	25	17.2%	39	0.7%	73	0.9%
Grand Total	1,984	100.0%	145	100.0%	5,574	100.0%	7,703	100.0%

Indication for Partial Nephrectomies

Techniqu	e (group)
Not recorded	Minimally

	Ope	n	Not reco	orded	Minimally	Invasive	Grand	Total
Partial Indication	N	% Total	N	% Total	N	% Total	N	% Total
Elective	354	17.8%	5	3.4%	594	10.7%	953	12.4%
Absolute	82	4.1%	1	0.7%	18	0.3%	101	1.3%
Relative	81	4.1%	2	1.4%	88	1.6%	171	2.2%
Null	1,467	73.9%	137	94.5%	4,874	87.4%	6,478	84.1%
Grand Total	1,984	100.0%	145	100.0%	5,574	100.0%	7,703	100.0%

Ischaemic Time



Technique (group) Not recorded

Minimally Invasive

Open

Tumour size by Procedure & Technique

Procedure Code

		Radi	cal	Parti	ial	Simp	ole	Nephrouret	erectomy	Oth	er	Not rec	orded	Grand	Total
Maximum Di	Technique (grou	N	% Total	N	% Total	N	% Total	N	% Total	N	% Total	N	% Total	N	% Total
< = 4	Open	286	7.0%	500	34.9%	115	12.7%	98	9.1%	59	41.0%	6	8.2%	1,064	13.8%
	Not recorded	26	0.6%	19	1.3%	6	0.7%	19	1.8%	7	4.9%	23	31.5%	100	1.3%
	Minimally Invasive	1,428	35.1%	727	50.7%	663	73.2%	718	66.8%	67	46.5%	32	43.8%	3,635	47.2%
> 4 - 7	Open	153	3.8%	80	5.6%			18	1.7%	1	0.7%			252	3.3%
	Not recorded	8	0.2%					2	0.2%			1	1.4%	11	0.1%
	Minimally Invasive	943	23.2%	51	3.6%			125	11.6%	1	0.7%	7	9.6%	1,127	14.6%
> 7 - 10	Open	260	6.4%	11	0.8%			7	0.7%	1	0.7%	2	2.7%	281	3.6%
	Not recorded	8	0.2%			1	0.1%							9	0.1%
	Minimally Invasive	415	10.2%	7	0.5%	1	0.1%	38	3.5%	1	0.7%			462	6.0%
> 10	Open	327	8.0%	10	0.7%	6	0.7%	7	0.7%	2	1.4%	1	1.4%	353	4.6%
	Not recorded	13	0.3%							1	0.7%	1	1.4%	15	0.2%
	Minimally Invasive	159	3.9%	14	1.0%	1	0.1%	26	2.4%					200	2.6%
Not recorded	Open	9	0.2%	10	0.7%	12	1.3%	2	0.2%	1	0.7%			34	0.4%
	Not recorded	4	0.1%	1	0.1%	4	0.4%			1	0.7%			10	0.1%
	Minimally Invasive	33	0.8%	3	0.2%	97	10.7%	15	1.4%	2	1.4%			150	1.9%
Grand Total		4,072	100.0%	1,433	100.0%	906	100.0%	1,075	100.0%	144	100.0%	73	100.0%	7,703	100.0%

Operating Time by Procedure & Technique

Procedure Code

		Radio	cal	Part	ial	Simp	ole	Nephrouret	erectomy	Oth	er	Not rece	orded	Grand	Total
Operating Ti	Technique (group)	N	% Total	N	% Total	N	% Total	N	% Total	N	% Total	N	% Total	N	% Total
< 60 mins	Open	11	0.3%	10	0.8%	3	0.4%	2	0.2%	2	1.6%			28	0.4%
	Not recorded	1	0.0%					2	0.2%					3	0.0%
	Minimally Invasive	109	3.0%	19	1.5%	38	4.8%	3	0.3%	6	4.8%	1	4.2%	176	2.6%
1 - 2 hours	Open	174	4.8%	208	16.9%	23	2.9%	12	1.3%	6	4.8%	4	16.7%	427	6.3%
	Not recorded	4	0.1%			1	0.1%	1	0.1%	2	1.6%			8	0.1%
	Minimally Invasive	945	26.2%	173	14.1%	280	35.2%	95	9.9%	20	16.0%	7	29.2%	1,520	22.6%
2 - 3 hours	Open	369	10.2%	208	16.9%	47	5.9%	42	4.4%	26	20.8%	3	12.5%	695	10.3%
	Not recorded	10	0.3%	7	0.6%	4	0.5%	2	0.2%	5	4.0%			28	0.4%
	Minimally Invasive	1,113	30.9%	330	26.8%	242	30.4%	320	33.5%	24	19.2%	3	12.5%	2,032	30.2%
3 - 4 hours	Open	201	5.6%	83	6.7%	21	2.6%	25	2.6%	14	11.2%	1	4.2%	345	5.1%
	Not recorded	3	0.1%	2	0.2%			1	0.1%					6	0.1%
	Minimally Invasive	412	11.4%	133	10.8%	95	11.9%	251	26.3%	8	6.4%	2	8.3%	901	13.4%
4 - 6 hours	Open	103	2.9%	24	1.9%	11	1.4%	19	2.0%	7	5.6%			164	2.4%
	Not recorded	5	0.1%	1	0.1%			1	0.1%					7	0.1%
	Minimally Invasive	118	3.3%	30	2.4%	27	3.4%	159	16.6%	2	1.6%	3	12.5%	339	5.0%
> 6 hours	Open	17	0.5%	3	0.2%	2	0.3%	9	0.9%	3	2.4%			34	0.5%
	Minimally Invasive	6	0.2%			2	0.3%	12	1.3%					20	0.3%
Grand Total		3,601	100.0%	1,231	100.0%	796	100.0%	956	100.0%	125	100.0%	24	100.0%	6,733	100.0%

Blood Loss by Procedure & Technique

		Radio	cal	Parti	ial	Simp	ole	Nephrouret	erectomy	Othe	er	Not rec	orded	Grand	Total
Measured Bl	Technique (grou	N	% Total	N	% Total	N	% Total	N	% Total	N	% Total	N	% Total	N	% Total
< 500	Open	475	13.7%	420	34.5%	72	8.9%	73	7.9%	21	17.9%	2	8.7%	1,063	16.2%
	Not recorded	14	0.4%	9	0.7%	6	0.7%	7	0.8%	7	6.0%			43	0.7%
	Minimally Invasive	2,472	71.4%	633	52.0%	678	84.0%	764	82.2%	54	46.2%	15	65.2%	4,616	70.4%
> 500 - 1000	Open	170	4.9%	61	5.0%	21	2.6%	18	1.9%	14	12.0%	3	13.0%	287	4.4%
	Not recorded	2	0.1%											2	0.0%
	Minimally Invasive	99	2.9%	47	3.9%	17	2.1%	43	4.6%	1	0.9%			207	3.2%
> 1000 - 2000	Open	93	2.7%	19	1.6%	6	0.7%	7	0.8%	11	9.4%	2	8.7%	138	2.1%
	Not recorded	4	0.1%	1	0.1%									5	0.1%
	Minimally Invasive	46	1.3%	15	1.2%	4	0.5%	9	1.0%					74	1.1%
> 2000 - 5000	Open	58	1.7%	10	0.8%	3	0.4%	6	0.6%	8	6.8%			85	1.3%
	Minimally Invasive	17	0.5%	3	0.2%			2	0.2%					22	0.3%
> 5000	Open	9	0.3%							1	0.9%	1	4.3%	11	0.2%
	Not recorded	1	0.0%											1	0.0%
	Minimally Invasive	3	0.1%											3	0.0%
Grand Total		3,463	100.0%	1,218	100.0%	807	100.0%	929	100.0%	117	100.0%	23	100.0%	6,557	100.0%

Transfusion Rate

Blood Transfused N % Total Transfused 489 7.3% Not transfused 6,240 92.7% Grand Total 6,729 100.0%

Transfusions by Procedure & Technique

Procedure Code

		Rad	ical	Par	tial	Sim	ple	Nephrou	reterec	Oti	ner	Not red	corded	Grand	l Total
Number Of Units Of Blood Transfused	Technique (group)	N	% Total	N	% Total	N	% Total	N	% Total	N	% Total	N	% Total	N	% Total
Nil	Open	655	18.4%	491	39.1%	89	10.8%	83	8.8%	40	32.0%	3	12.5%	1,361	20.2%
	Not recorded	17	0.5%	9	0.7%	6	0.7%	8	0.8%	7	5.6%			47	0.7%
	Minimally Inv	2,571	72.3%	697	55.5%	698	84.8%	793	84.0%	57	45.6%	16	66.7%	4,832	71.8%
Minor (< = 2)	Open	122	3.4%	28	2.2%	12	1.5%	15	1.6%	7	5.6%	4	16.7%	188	2.8%
	Not recorded	1	0.0%	1	0.1%									2	0.0%
	Minimally Inv	67	1.9%	16	1.3%	6	0.7%	21	2.2%					110	1.6%
Moderate (>2 - 6)	Open	67	1.9%	8	0.6%	5	0.6%	6	0.6%	12	9.6%			98	1.5%
	Not recorded	2	0.1%											2	0.0%
	Minimally Inv	30	0.8%	6	0.5%	6	0.7%	14	1.5%					56	0.8%
Major (>6)	Open	17	0.5%			1	0.1%	2	0.2%	2	1.6%	1	4.2%	23	0.3%
	Not recorded	1	0.0%											1	0.0%
	Minimally Inv	7	0.2%					2	0.2%					9	0.1%
Grand Total		3,557	100.0%	1,256	100.0%	823	100.0%	944	100.0%	125	100.0%	24	100.0%	6,729	100.0%

Clavien Dindo Grade III plus Complication Rate

Grade3plus (group)	N	% Total
Grade III plus	228	3.1%
No	7,033	96.9%
Grand Total	7,261	100.0%

Clavien Dindo Grades

Technique (group)

					Technique				
		Оре	en	Minimally	Invasive	Not reco	orded	Grand	Total
Clavien Dindo Grade Of Co	Procedure Code	N	% Total	N	% Total	N	% Total	N	% Tota
Grade I	Radical	37	1.9%	117	2.1%			154	2.0%
	Partial	36	1.8%	14	0.3%	1	0.7%	51	0.7%
	Simple	9	0.5%	20	0.4%			29	0.4%
	Nephroureterectomy	10	0.5%	45	0.8%			55	0.7%
	Other	2	0.1%					2	0.0%
	Not recorded	2	0.1%	1	0.0%			3	0.0%
Grade II	Radical	88	4.4%	117	2.1%	3	2.1%	208	2.7%
	Partial	36	1.8%	24	0.4%	1	0.7%	61	0.8%
	Simple	16	0.8%	24	0.4%			40	0.5%
	Nephroureterectomy	18	0.9%	52	0.9%			70	0.9%
	Other			1	0.0%			1	0.0%
	Not recorded	1	0.1%					1	0.0%
Grade IIIa	Radical	11	0.6%	13	0.2%			24	0.3%
	Partial	14	0.7%	14	0.3%			28	0.4%
	Simple	4	0.2%	5	0.1%			9	0.1%
	Nephroureterectomy	3	0.2%	4	0.1%			7	0.1%
	Other			1	0.0%			1	0.0%
Grade IIIb	Radical	18	0.9%	19	0.3%	1	0.7%	38	0.5%
	Partial	8	0.4%	9	0.2%			17	0.2%
	Simple	4	0.2%	6	0.1%			10	0.1%
	Nephroureterectomy	4	0.2%	14	0.3%			18	0.2%
	Other			1	0.0%			1	0.0%
	Not recorded			1	0.0%			1	0.0%
Grade IVa	Radical	9	0.5%	16	0.3%			25	0.3%
0.000.00	Partial	4	0.2%		0.070			4	0.1%
	Simple	1	0.1%					1	0.0%
	Nephroureterectomy	4	0.1%	8	0.1%			12	0.2%
	Other	5	0.3%	Ü	0.170			5	0.1%
Grade IVb	Radical	2	0.1%					2	0.0%
0.000 175	Nephroureterectomy	-	0.170	1	0.0%			1	0.0%
Grade V	Radical	9	0.5%	3	0.1%			12	0.2%
Grade V		3	0.2%	1	0.0%			4	0.1%
	Simple	1	0.2%	7	0.0%			8	0.1%
	Nephroureterectomy Other	1	0.1%	1	0.1%			2	0.17
Not recorded	Radical	861	43.4%	2,693	48.3%	55	37.9%	3,609	46.9%
itot recorded	Partial	513	25.9%	741	13.3%	18	12.4%	1,272	16.5%
		96	4.8%	741		11			
	Simple				12.7%	21	7.6%	813	10.6%
	Nephroureterectomy	92	4.6%	791	14.2%		14.5%	904	11.7%
	Other	56	2.8%	67	1.2%	9	6.2%	132	1.7%
Grand Total	Not recorded	1,984	0.3%	5,574	0.7% 100.0%	25 145	17.2% 100.0%	7,703	0.9%

Conversions

Procedure Code

	Radio	cal	Part	ial	Simp	ole	Nephrouret	terectomy	Oth	er	Not rec	orded	Grand	Total
Conversion Reason	N	% Total	N	% Total	N	% Total	N	% Total	N	% Total	N	% Total	N	% Total
Adhesions	11	0.4%	3	0.4%	1	0.1%	3	0.3%					18	0.3%
Bowel perforation	1	0.0%											1	0.0%
Difficult dissection	27	0.9%	7	0.9%	8	1.0%	16	1.7%					58	1.0%
Failure to progress	10	0.3%	1	0.1%	3	0.4%	7	0.8%					21	0.4%
Haemorrhage	42	1.4%	7	0.9%	4	0.5%	13	1.4%					66	1.2%
Patient obesity	2	0.1%	1	0.1%									3	0.1%
Size of tumour / mass	12	0.4%	3	0.4%	3	0.4%							18	0.3%
Other	13	0.4%	6	0.7%	1	0.1%	2	0.2%	1	1.4%			23	0.4%
Not recorded	2,860	96.0%	774	96.5%	742	97.4%	881	95.6%	70	98.6%	39	100.0%	5,366	96.3%
Grand Total	2,978	100.0%	802	100.0%	762	100.0%	922	100.0%	71	100.0%	39	100.0%	5,574	100.0%

Intra-operative Complications

Technique (group)

					(3 -)				
		Оре	en	Minimally	Invasive	Grand Total			
Intraoperative Complicatio	Procedure Code	N	% Total	N	% Total	N	% Total		
Yes	Radical	79	4.0%	112	2.0%	193	2.5%		
	Partial	27	1.4%	25	0.4%	53	0.7%		
	Simple	9	0.5%	17	0.3%	26	0.3%		
	Nephroureterectomy	13	0.7%	29	0.5%	42	0.5%		
	Other	4	0.2%	1	0.0%	5	0.1%		
	Not recorded	2	0.1%			2	0.0%		
	Total	134	6.8%	184	3.3%	321	4.2%		
No	Radical	865	43.6%	2,679	48.1%	3,569	46.3%		
	Partial	539	27.2%	709	12.7%	1,257	16.3%		
	Simple	114	5.7%	716	12.8%	836	10.9%		
	Nephroureterectomy	107	5.4%	839	15.1%	952	12.4%		
	Other	56	2.8%	68	1.2%	131	1.7%		
	Not recorded	6	0.3%	24	0.4%	31	0.4%		
	Total	1,687	85.0%	5,035	90.3%	6,776	88.0%		
Not recorded	Radical	91	4.6%	187	3.4%	310	4.0%		
	Partial	45	2.3%	68	1.2%	123	1.6%		
	Simple	10	0.5%	29	0.5%	44	0.6%		
	Nephroureterectomy	12	0.6%	54	1.0%	81	1.1%		
	Other	4	0.2%	2	0.0%	8	0.1%		
	Not recorded	1	0.1%	15	0.3%	40	0.5%		
	Total	163	8.2%	355	6.4%	606	7.9%		
Grand Total		1,984	100.0%	5,574	100.0%	7,703	100.0%		

Specific Intra-operative Complications

Technique (group)

				reciiiiqu	e (group)			
		Op	en	Minimally	Invasive	Grand Total		
Procedure Code	Specific Intraoperative C	N	% Total	N	% Total	N	% Total	
Radical	Bleeding	33	24.6%	58	31.5%	92	28.7%	
	Bleeding,Liver inj			1	0.5%	1	0.3%	
	Bleeding,Other	2	1.5%	2	1.1%	4	1.2%	
	Bleeding,Splenect	4	3.0%	1	0.5%	6	1.9%	
	Bowel injury	2	1.5%	5	2.7%	7	2.2%	
	Bowel injury,Other			1	0.5%	1	0.3%	
	Death on table	1	0.7%			1	0.3%	
	Liver injury	3	2.2%	5	2.7%	8	2.5%	
	Liver injury,Other			1	0.5%	1	0.3%	
	Other	13	9.7%	16	8.7%	29	9.0%	
	Pancreatic injury			2	1.1%	2	0.6%	
	Pancreatic injury,	1	0.7%			1	0.3%	
	Pneumothorax	7	5.2%	10	5.4%	17	5.3%	
	Splenectomy	11	8.2%	9	4.9%	20	6.2%	
	Null	2	1.5%	1	0.5%	3	0.9%	
Partial	Bleeding	10	7.5%	13	7.1%	23	7.2%	
	Bleeding,Liver inj					1	0.3%	
	Bleeding,Other	1	0.7%	1	0.5%	2	0.6%	
	Liver injury			1	0.5%	1	0.3%	
	Other	6	4.5%	10	5.4%	16	5.0%	
	Pneumothorax	9	6.7%			9	2.8%	
	Null	1	0.7%			1	0.3%	
Simple	Bleeding	5	3.7%	8	4.3%	13	4.0%	
	Bleeding,Other			2	1.1%	2	0.6%	
	Bleeding,Pneumo	1	0.7%			1	0.3%	
	Bowel injury	1	0.7%			1	0.3%	
	Bowel injury,Pneu			1	0.5%	1	0.3%	
	Other	1	0.7%	5	2.7%	6	1.9%	
	Pneumothorax	1	0.7%	1	0.5%	2	0.6%	
Nephrourete	Bleeding	6	4.5%	15	8.2%	21	6.5%	
	Bleeding,Bowel in			1	0.5%	1	0.3%	
	Bleeding,Pancrea			1	0.5%	1	0.3%	
	Bowel injury	1	0.7%	4	2.2%	5	1.6%	
	Bowel injury,Other	1	0.7%			1	0.3%	
	Other	1	0.7%	7	3.8%	8	2.5%	
	Pneumothorax	2	1.5%	1	0.5%	3	0.9%	
	Pneumothorax,Ot	1	0.7%			1	0.3%	
	Splenectomy	1	0.7%			1	0.3%	
Other	Bleeding	3	2.2%	1	0.5%	4	1.2%	
	Other	1	0.7%			1	0.3%	
Not recorded	Bleeding	2	1.5%			2	0.6%	
Grand Total		134	100.0%	184	100.0%	321	100.0%	

Post-operative Complications

Not recorded

Grand Total

		Technique (group)							
		Op	en	Minimally	Invasive	Grand	Total		
Postoperative Complicatio	Procedure Code	N	% Total	N	% Total	N	% Total		
Yes	Radical	178	9.0%	292	5.2%	474	6.2%		
	Partial	103	5.2%	57	1.0%	161	2.1%		
	Simple	38	1.9%	70	1.3%	108	1.4%		
	Nephroureterectomy	41	2.1%	136	2.4%	177	2.3%		
	Other	15	0.8%	4	0.1%	19	0.2%		
	Not recorded	1	0.1%	3	0.1%	4	0.1%		
No	Radical	739	37.2%	2,404	43.1%	3,160	41.0%		
	Partial	433	21.8%	640	11.5%	1,079	14.0%		
	Simple	82	4.1%	624	11.2%	712	9.2%		
	Nephroureterectomy	80	4.0%	715	12.8%	800	10.4%		
	Other	43	2.2%	65	1.2%	115	1.5%		
	Not recorded	6	0.3%	14	0.3%	20	0.3%		
Not recorded	Radical	118	5.9%	282	5.1%	438	5.7%		
	Partial	75	3.8%	105	1.9%	193	2.5%		
	Simple	13	0.7%	68	1.2%	86	1.1%		
	Nephroureterectomy	11	0.6%	71	1.3%	98	1.3%		
	Other	6	0.3%	2	0.0%	10	0.1%		

0.1%

100.0%

5,574

100.0%

1,984

Specific Post-operative Complications

Technic	

		Technique (group)								
		Ope	n	Minimally I	nvasive	Grand ¹	Total			
Procedure Code	Specific Postoperative Comp	N	% Total	N	% Total	N	% Total			
Radical	Bleeding / haemorrha	13.0	3.5%	23.0	4.1%	36.0	3.8%			
	Chest infection, Chest	35.0	9.3%	79.0	14.1%	116.0	12.3%			
	DVT / PE	5.0	1.3%	4.0	0.7%	9.0	1.0%			
	Ileus, Ileus, Bleeding /	31.0	8.2%	29.0	5.2%	60.0	6.4%			
	Renal failure	6.0	1.6%	12.0	2.1%	18.0	1.9%			
	Wound infection, Wou	23.0	6.1%	47.0	8.4%	71.0	7.5%			
	Other	56.0	14.9%	88.0	15.7%	145.0	15.4%			
	Not recorded	9.0	2.4%	10.0	1.8%	19.0	2.0%			
Partial	Bleeding / haemorrha	14.0	3.7%	17.0	3.0%	31.0	3.3%			
Раппа	Chest infection, Chest	24.0	6.4%	12.0	2.1%	37.0	3.9%			
	Chest infection, DVT /	1.0	0.3%	12.0	2.170	1.0	0.1%			
	,	1.0	0.3%			1.0	0.1%			
	Chest infection, lleus,	1.0	0.570	1.0	0.2%	1.0	0.1%			
	Chest infection, lleus,									
	DVT / PE	7.0	4.00/	1.0	0.2%	1.0	0.1%			
	Ileus, Ileus, Bleeding /	7.0	1.9%	2.0	0.4%	9.0	1.0%			
	Renal failure	1.0	0.3%			1.0	0.1%			
	Renal failure,Other	1.0	0.3%			1.0	0.1%			
	Wound infection, Wou	13.0	3.5%			13.0	1.4%			
	Other	39.0	10.4%	24.0	4.3%	63.0	6.7%			
	Not recorded	2.0	0.5%			2.0	0.2%			
Simple	Bleeding / haemorrha	4.0	1.1%	3.0	0.5%	7.0	0.7%			
	Chest infection, Chest	6.0	1.6%	14.0	2.5%	20.0	2.1%			
	Chest infection.Woun			1.0	0.2%	1.0	0.1%			
	DVT / PE			1.0	0.2%	1.0	0.1%			
	Ileus, Ileus, Bleeding /	3.0	0.8%	6.0	1.1%	9.0	1.0%			
	Wound infection, Wou	6.0	1.6%	11.0	2.0%	17.0	1.8%			
	Wound infection, Rena	0.0	1.070	1.0	0.2%	1.0	0.1%			
	Other	18.0	4.8%	22.0	3.9%	40.0	4.2%			
						12.0				
Manharia	Not recorded	1.0	0.3%	11.0	2.0%	11.0	1.3%			
Nephrourete		1.0	0.3%	10.0	1.8%		1.2%			
	Chest infection, Chest	8.0	2.1%	35.0	6.2%	43.0	4.6%			
	Chest infection, lleus,	1.0	0.3%			1.0	0.1%			
	Chest infection, lleus,			1.0	0.2%	1.0	0.1%			
	DVT / PE			2.0	0.4%	2.0	0.2%			
	Ileus, Ileus, Bleeding /	8.0	2.1%	17.0	3.0%	25.0	2.7%			
	Renal failure	1.0	0.3%	3.0	0.5%	4.0	0.4%			
	Renal failure,Other			1.0	0.2%	1.0	0.1%			
	Wound infection, Wou	4.0	1.1%	17.0	3.0%	21.0	2.2%			
	Other	17.0	4.5%	48.0	8.5%	65.0	6.9%			
	Not recorded	1.0	0.3%	2.0	0.4%	3.0	0.3%			
Other	Bleeding / haemorrha	1.0	0.3%	2.0	0.4%	3.0	0.3%			
	Chest infection, Chest	2.0	0.5%			2.0	0.2%			
	lleus, lleus, Bleeding /	1.0	0.3%			1.0	0.2%			
	Renal failure	2.0	0.5%			2.0	0.1%			
	Renal failure,Other	1.0	0.3%			1.0	0.1%			
	Wound infection,Blee	1.0	0.3%		0 101	1.0	0.1%			
	Other	7.0	1.9%	2.0	0.4%	9.0	1.0%			
Not recorded	Wound infection, Wou			1.0	0.2%	1.0	0.1%			
	Other	1.0	0.3%	2.0	0.4%	3.0	0.3%			
Grand Total		376.0	100.0%	562.0	100.0%	943.0	100.0%			

0.6%

7,703 100.0%

Length of Stay

Technique (group)	Procedure Code	N	% Total	Median	Minimum	Maximum
Open	Radical	958	13.7%	6	0	87
	Partial	531	7.6%	6	0	67
	Simple	122	1.7%	7	0	65
	Nephroureterectomy	116	1.7%	9	0	98
	Other	53	0.8%	10	0	77
	Not recorded	8	0.1%	6	4	21
	Total	1,788	25.5%	6	0	98
Minimally	Radical	2,748	39.2%	3	0	99
Invasive	Partial	754	10.7%	3	0	69
	Simple	697	9.9%	3	0	52
	Nephroureterectomy	845	12.0%	5	0	72
	Other	59	0.8%	2	0	32
	Not recorded	37	0.5%	3	1	19
	Total	5,140	73.2%	4	0	99
Not recorded	Radical	46	0.7%	6	1	23
	Partial	14	0.2%	5	2	8
	Simple	6	0.1%	3	1	7
	Nephroureterectomy	15	0.2%	5	2	12
	Other	7	0.1%	1	1	48
	Not recorded	2	0.0%	7	4	10
	Total	90	1.3%	5	1	48
Grand Total		7,018	100.0%	4	0	99

Nuclear Grade of Parenchymal Tumours

margins

	Posi	tive	Negative		Not red	orded	Grand Total		
nucleargrade	N	% Total	N	% Total	N	% Total	N	% Total	
G1	4	2.3%	158	5.1%	14	0.8%	176	3.6%	
G2	45	26.0%	1,159	37.7%	141	8.5%	1,345	27.4%	
G3	62	35.8%	1,202	39.1%	164	9.9%	1,428	29.1%	
G4	44	25.4%	315	10.2%	62	3.7%	421	8.6%	
Null	18	10.4%	244	7.9%	1,281	77.1%	1,543	31.4%	
Grand Total	173	100.0%	3,078	100.0%	1,662	100.0%	4,913	100.0%	

Grade of Urothelial Tumours

Grade of urothelial tumour	N	% Total
G1	31	3.6%
G2	289	34.0%
G3	492	57.8%
Not recorded	39	4.6%
Grand Total	851	100.0%

Late Complications

Late Complications (all cases at most recent follow-up)	N	% Total
None	1,125	81.6%
DVT	3	0.2%
Renal impairment	48	3.5%
Wound	22	1.6%
Wound hernia	13	0.9%
Wound hernia,Other	1	0.1%
Wound hernia, Renal impair	1	0.1%
Wound pain	18	1.3%
Wound pain,Other	1	0.1%
Other	37	2.7%
Not recorded	109	7.9%
Grand Total	1,378	100.0%

Follow-Up

Adjuvant management

Adjuvant management (at most recent follow-up - malignancies only)	N	% Total
None	620	57.6%
Clinical trial	11	1.0%
Immunotherapy	2	0.2%
Observation	299	27.8%
TKI's	24	2.2%
Other	30	2.8%
Not recorded	91	8.4%
Grand Total	1,077	100.0%

Status at most recent follow-up

Time to Follow -up (group)

		<= 6 months		> 6 mo	> 6 months Not recorded		orded	Grand Total	
Fustatus	Fupatientstatus	N	% Total	N	% Total	N	% Total	N	% Total
Alive with no evidence of renal cancer	Alive	758	77.2%	327	84.1%	7	0.1%	1,092	14.2%
Alive with local recurrence of renal cancer	Alive	7	0.7%	5	1.3%			12	0.2%
Alive with lymph node involvement by renal cancer	Alive	9	0.9%	2	0.5%			11	0.1%
Alive with metastatic disease	Alive	52	5.3%	24	6.2%	1	0.0%	77	1.0%
Discharged to GP / Other consultant	Alive	89	9.1%	9	2.3%	2	0.0%	100	1.3%
Other	Alive	20	2.0%	10	2.6%	1	0.0%	31	0.4%
	Died in followup	46	4.7%	12	3.1%			58	0.8%
	died in hospital	1	0.1%					1	0.0%
	Not recorded					6,321	99.8%	6,321	82.1%
Grand Total		982	100.0%	389	100.0%	6,332	100.0%	7,703	100.0%

Participating Hospital Centres 2014

We are grateful to consultants from the following Centres / trusts who returned data for these analyses:

Aberdeen Royal Infirmary

Addenbrooke's Hospital, Cambridge
Aintree University Hospital, Liverpool

Airedale Hospital Alexandra Hospital

Altnagelvin Area Hospital, Londonderry

Arrowe Park Hospital, Wirral

Barking, Havering And Redbridge University

Hospital

Barnet Hospital
Barnsley Hospital

Basildon University Hospital, Essex

Basingstoke and North Hampshire Hospital

Bedford Hospital Belfast City Hospital

Blackpool Victoria Hospital Bradford Royal Infirmary

Broomfield Hospital, Chelmsford

Burnley General Hospital Castle Hill Hospital, Hull

Causeway Hospital, Coleraine

Charing Cross Hospital

Chelsea & Westminster Hospital, London

Cheltenham General Hospital

Christie Hospital

Churchill Hospital, Oxford
City Hospital Birmingham
Colchester General Hospital

Countess of Chester Hospital

Craigavon Area Hospital, Portadown

Darent Valley Hospital, Kent Derriford Hospital, Plymouth

Diana, Princess of Wales Hospital, Grimsby

Doncaster Royal Infirmary

Dorset County Hospital, Dorchester

East Surrey Hospital, Redhill

Eastbourne District General Hospital Epsom General Hospital, Surrey Forth Valley Royal Hospital, Larbert Freeman Hospital, Newcastle

Frimley Park Hospital

Gartnavel General Hospital, Glasgow George Eliot Hospital, Nuneaton

Glan Clwyd Hospital, Rhyl

Gloucestershire Royal Hospital, Gloucester

Good Hope Hospital, Sutton Coldfield

Guy's & Thomas's Hospital Hammersmith Hospital Harrogate District Hospital Heartlands Hospital, Birmingham **Hereford County Hospital**

Hinchingbrooke Hospital, Huntingdon

Huddersfield Royal Infirmary

Ipswich Hospital, Suffolk

James Paget University Hospital, Great

Yarmouth

Kent and Canterbury Hospital Kettering General Hospital King's College Hospital, London

King's Mill Hospital, Nottinghamshire

Kingston Hospital, London Leicester General Hospital Leighton Hospital, Cheshire Lincoln County Hospital Lister Hospital, Stevenage

Luton & Dunstable University Hospital

Maidstone Hospital

Manchester Royal Infirmary

Medway Maritime Hospital, Gillingham

Milton Keynes Hospital

Monklands District General Hospital, Airdrie

Morriston Hospital, Swansea

Musgrove Park Hospital, Taunton

New Cross Hospital, Wolverhampton

Ninewells Hospital, Dundee

Noble's Hospital, Isle of Man

Norfolk And Norwich University Hospital

North Manchester General Hospital

North Middlesex Hospital, London

Northampton General Hospital

Northern General Hospital, Sheffield

Northwick Park Hospital

Nottingham City Hospital

Peterborough City Hospital

Pinderfields General Hospital, Wakefield

Princess Alexandra Hospital, Harlow

Princess Elizabeth Hospital, Guernsey

Queen Alexandra Hospital, Portsmouth

Queen Elizabeth Hospital, Birmingham

Queen Margaret Hospital, Dunfermline

Raigmore Hospital, Inverness

Rotherham Hospital

Royal Albert Edward Infirmary, Wigan

Royal Alexandra Hospital, Paisley

Royal Berkshire Hospital, Reading

Royal Bolton Hospital

Royal Bournemouth General Hospital

Royal Cornwall Hospital, Truro

Royal Derby Hospital

Royal Devon and Exeter Hospital

Royal Free Hospital, London

Royal Glamorgan Hospital

Royal Hallamshire Hospital, Sheffield

Royal Hampshire County Hospital, Winchester

Royal Lancaster Infirmary

Royal Liverpool University Hospital

Royal Marsden Hospital, London

Royal Preston Hospital

Royal Shrewsbury Hospital

Royal Surrey County Hospital, Guildford

Royal Sussex County Hospital, Brighton

Royal United Hospital, Bath

Russells Hall Hospital, Dudley

Salford Royal Hospital

Salisbury District Hospital

Sandwell District General Hospital, West

Bromwich

Scarborough General Hospital

South Glasgow University Hospital

South Tyneside District Hospital

Southampton General Hospital

Southend Hospital

Southmead Hospital, Bristol

Southport And Ormskirk Hospitals

St Bartholomew's Hospital, London

St George's Hospital, London

St James's Hospital, Dublin

St James's University Hospital, Leeds

St Mary's Hospital, London

St Peter's Hospital, Chertsey

St Richard's Hospital, Chichester

Stepping Hill Hospital, Stockport

Sunderland Royal Hospital

The Great Western Hospital, Swindon

The James Cook University Hospital,

Middlesbrough

The Queen Elizabeth Hospital, King's Lynn

The Royal Oldham Hospital

Torbay Hospital, Torquay

University College Hospital, London

University Hospital of North Staffordshire

University Hospital of North Tees

University Hospital of Wales, Cardiff

Victoria Hospital, Kirkcaldy

Walsall Manor Hospital

Walsgrave Hospital, Coventry

Warrington District General Hospital

Watford General Hospital

West Cumberland Hospital, Whitehaven

West Suffolk Hospital, Bury St. Edmunds

Western General Hospital, Edinburgh

Westmorland General Hospital, Kendal

Wexham Park Hospital, Slough

Whipps Cross University Hospital, London

Whiston Hospital, Prescot

Whittington Hospital, London

Withington Community Hospital, Manchester

Worthing Hospital

Wrexham Maelor Hospital

Wycombe Hospital, High Wycombe

Wythenshawe Hospital, Manchester

York Hospital

Ysbyty Gwynedd Hospital, Bangor