

**THE BRITISH ASSOCIATION OF
UROLOGICAL SURGEONS
Section of Oncology**

Analyses of Nephrectomies performed between

January 1st and December 31st 2015

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AUDIT RESULTS SUMMARY – Nephrectomy dataset (2015 data)

All the data presented here are a summary of the data extracted from the web-based database on 16th August 2016 and relate to operations performed during the whole of 2015. 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.

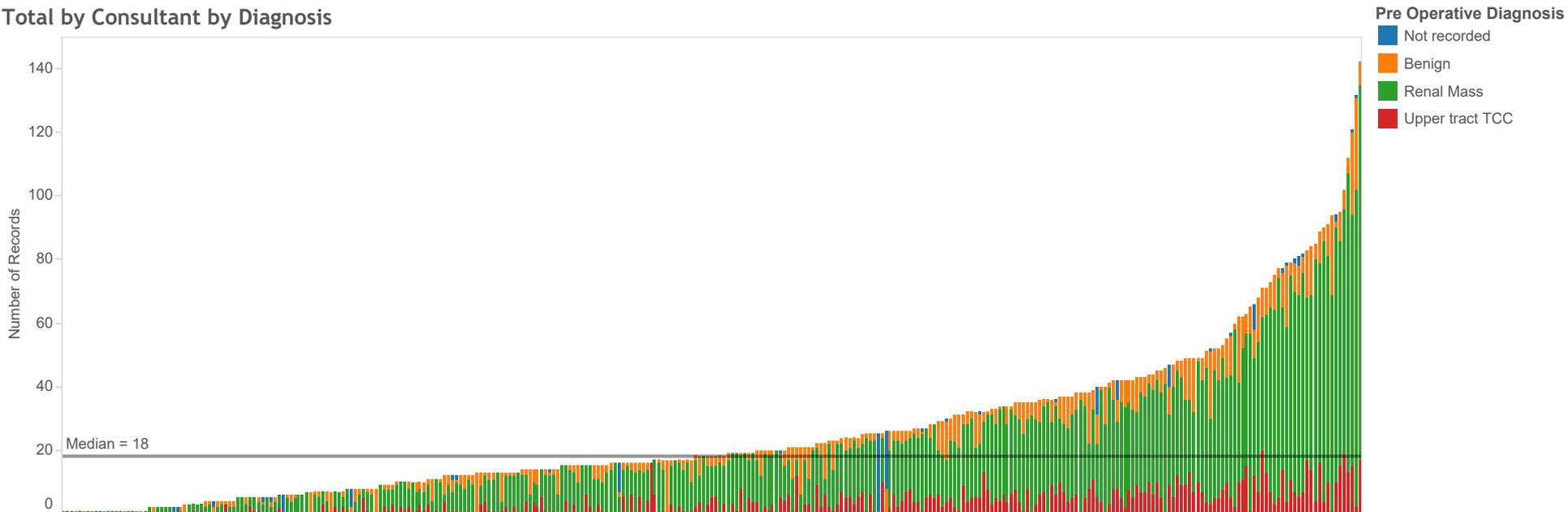
The data collection period was from 1 January 2015 to 31 December 2015.

- 8,324 procedures were recorded from 320 consultants at 147 sites, including 330 private patients from 74 consultants. (England only for 2015 was 7,650)
- Median number of cases per consultant: 18 (range 1 – 142)
- Median number of cases per centre: 37 (range 1 - 246)
- 465 cases (5.6%) 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 8,190 nephrectomies undertaken by urologists in 2015, we captured data on 93% of the nephrectomies undertaken by urologists in England during 2015.

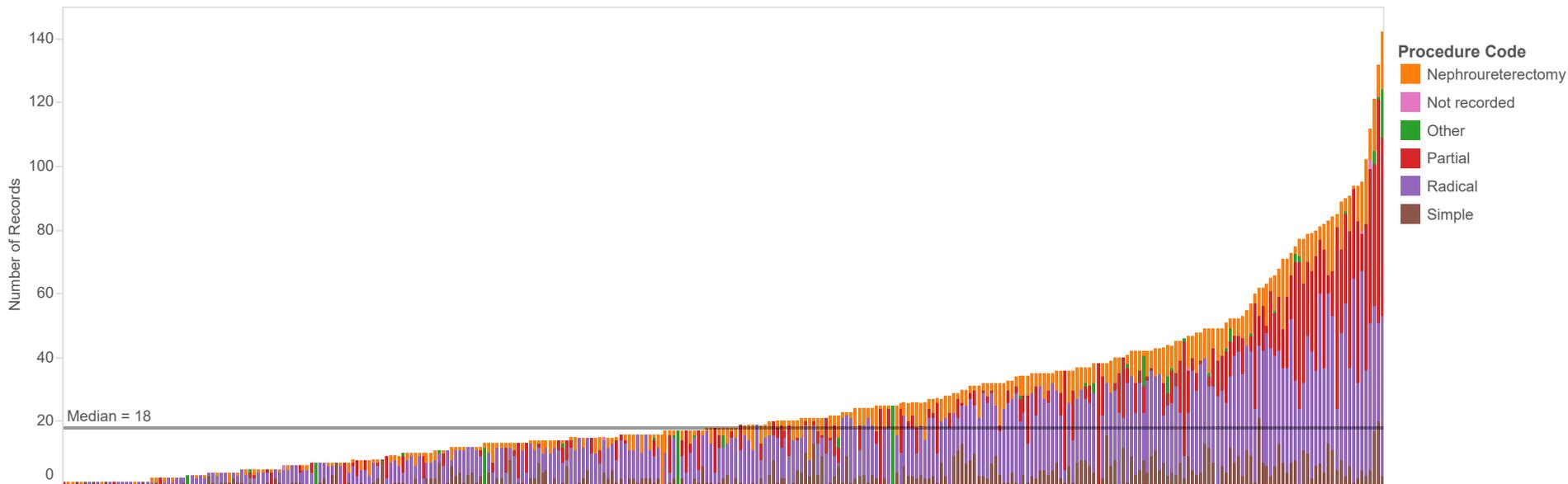
Total Returns for Procedures Performed Between 01/01/2015 and 31/12/2015

8324 procedures from 320 Consultants from 148 Centres in the UK - including 330 private cases from 74 consultants

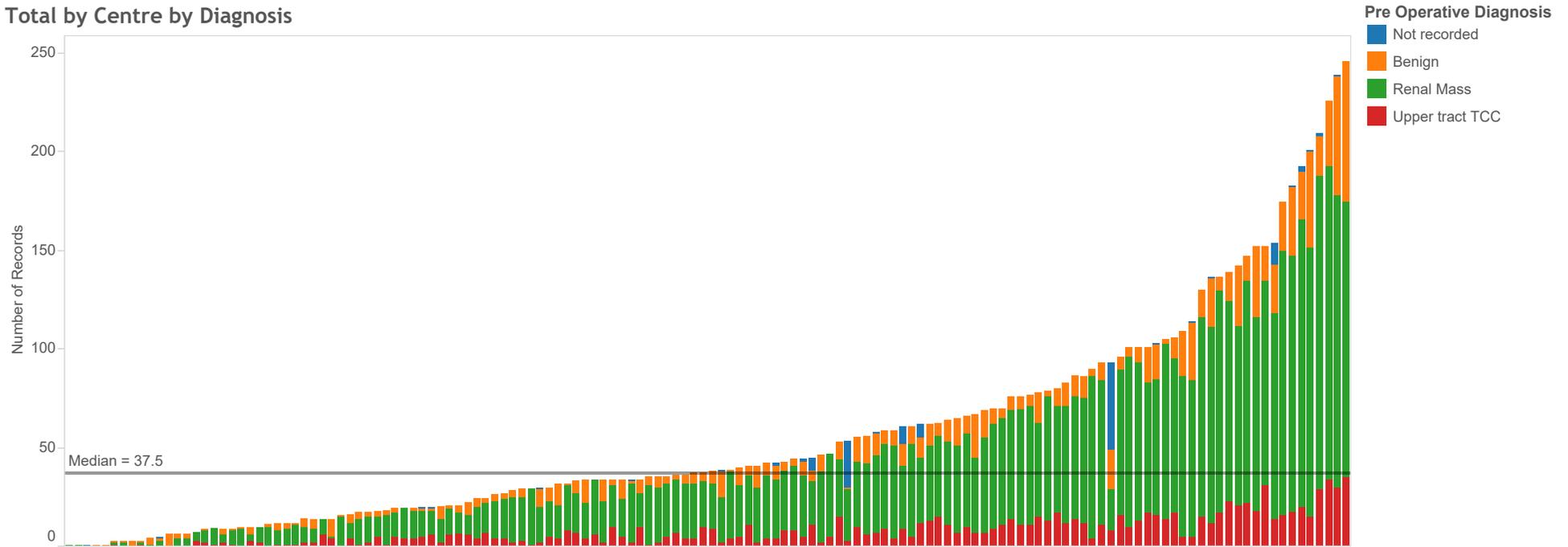
Total by Consultant by Diagnosis



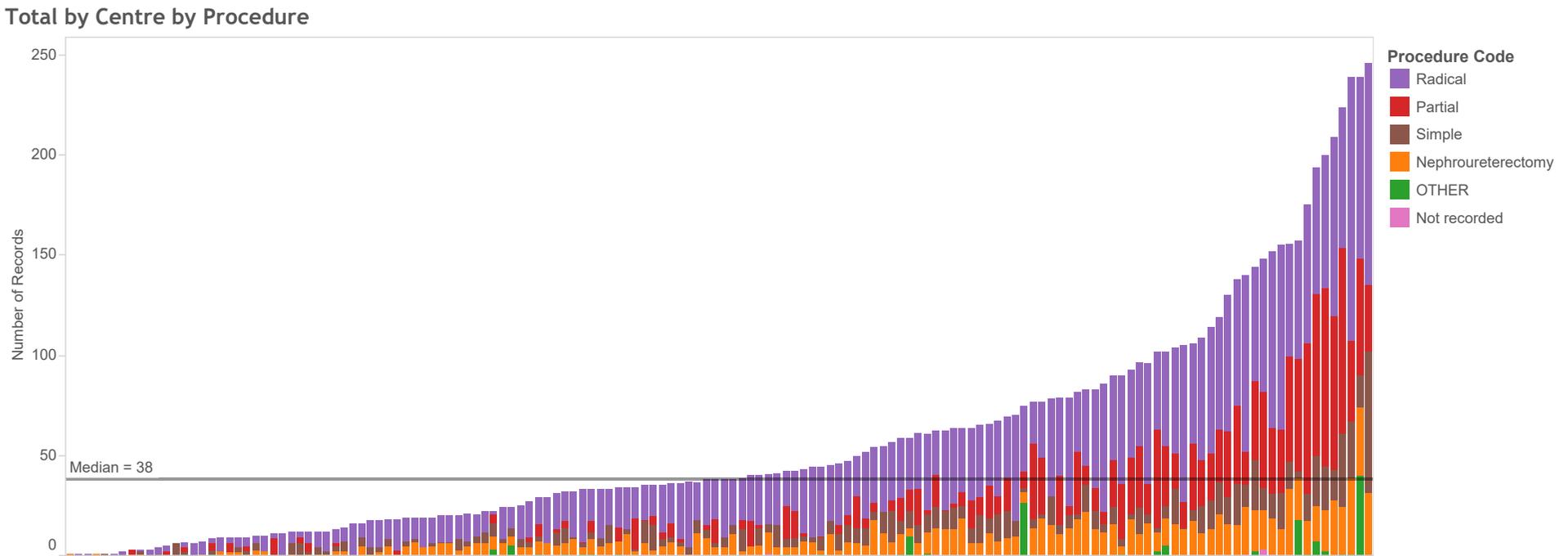
Total by Consultant by Procedure



Total by Centre by Diagnosis



Total by Centre by Procedure



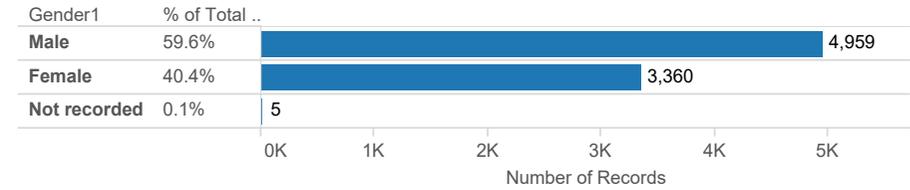
Pre-op Presentation

Pre Op Pres..	N	% Total
Haematuria	2,176	26.1%
Incidental	3,522	42.3%
Other	1,965	23.6%
Not recorded	661	7.9%
Grand Total	8,324	100.0%

Age

Agegroup	% Total	N
41-50	12.32%	1,021
51-60	20.87%	1,729
61-70	30.93%	2,562
71-80	22.40%	1,856
<=40	7.64%	633
>80	5.83%	483
Grand Total	100.00%	8,284

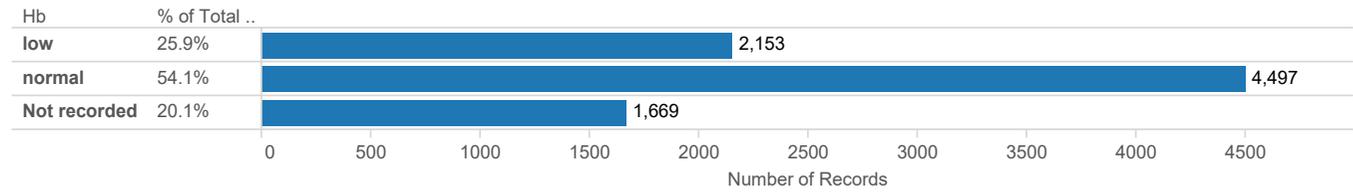
Gender



WHO Performance Status

Who Perfor..	N	% Total
0	3,811	45.78%
1	2,337	28.08%
2	554	6.66%
3	85	1.02%
4	12	0.14%
Not recorded	1,525	18.32%
Grand Total	8,324	100.00%

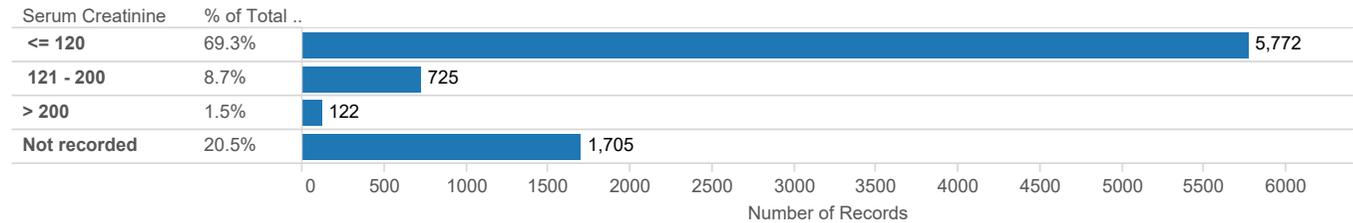
Hb at Operation



eGFR

Egfr Normal	N	% Total
Yes (>60)	304	3.65%
No	293	3.52%
Null	7,727	92.83%
Grand Total	8,324	100.00%

Serum Creatinine



Diagnosis

Pre Operative Diagnosis	N	% Total
Renal Mass	5,799	69.67%
Upper tract TCC	1,133	13.61%
Benign	1,269	15.25%
Not recorded	123	1.48%
Grand Total	8,324	100.00%

Non-Malignant Diagnosis

Non Malignant Diagnosis	N	% Total
Being performed as a donor	116	9.14%
Non-functioning kidney	629	49.57%
Polycystic	34	2.68%
Pyelonephritis	82	6.46%
Stone disease	132	10.40%
Xanthogranulomatous pyelonephritis	36	2.84%
Other	115	9.06%
Null	108	8.51%
Oncocytoma	17	1.34%
Grand Total	1,269	100.00%

Post-Op Final Histological Diagnosis

PostOp Final Histological Diagnosis	N	% Total
Clear cell renal cell ca	3,898	46.83%
TCC	1,020	12.25%
Chromophobe	273	3.28%
Collecting duct	7	0.08%
Papillary	516	6.20%
Other Cancer	91	1.09%
Angiomyolipoma	72	0.86%
Oncocytoma	348	4.18%
Sarcoma	21	0.25%
Other benign	1,127	13.54%
Not recorded	951	11.42%
Grand Total	8,324	100.00%

Tstage

Tstage (grou..	N	% Total
0	44	0.62%
1	3,470	49.18%
2	892	12.64%
3	1,863	26.41%
4	143	2.03%
a	348	4.93%
is	10	0.14%
X	114	1.62%
Not recorded	171	2.42%
Grand Total	7,055	100.00%

Nstage

Nstage1	N	% Total
0	3,323	47.10%
1	180	2.55%
2	96	1.36%
X	3,285	46.56%
Not recorded	171	2.42%
Grand Total	7,055	100.00%

Mstage

Mstage1	N	% Total
0	3,093	43.84%
1	243	3.44%
X	3,481	49.34%
Not recorded	238	3.37%
Grand Total	7,055	100.00%

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

Grade of Operating Surgeon

Grade Of Main Operator	% of Total Number of ..	Number of Records
Consultant	85.2%	7,090
SpR	8.1%	672
Other	0.5%	45
Not recorded	6.2%	517
Grand Total		8,324

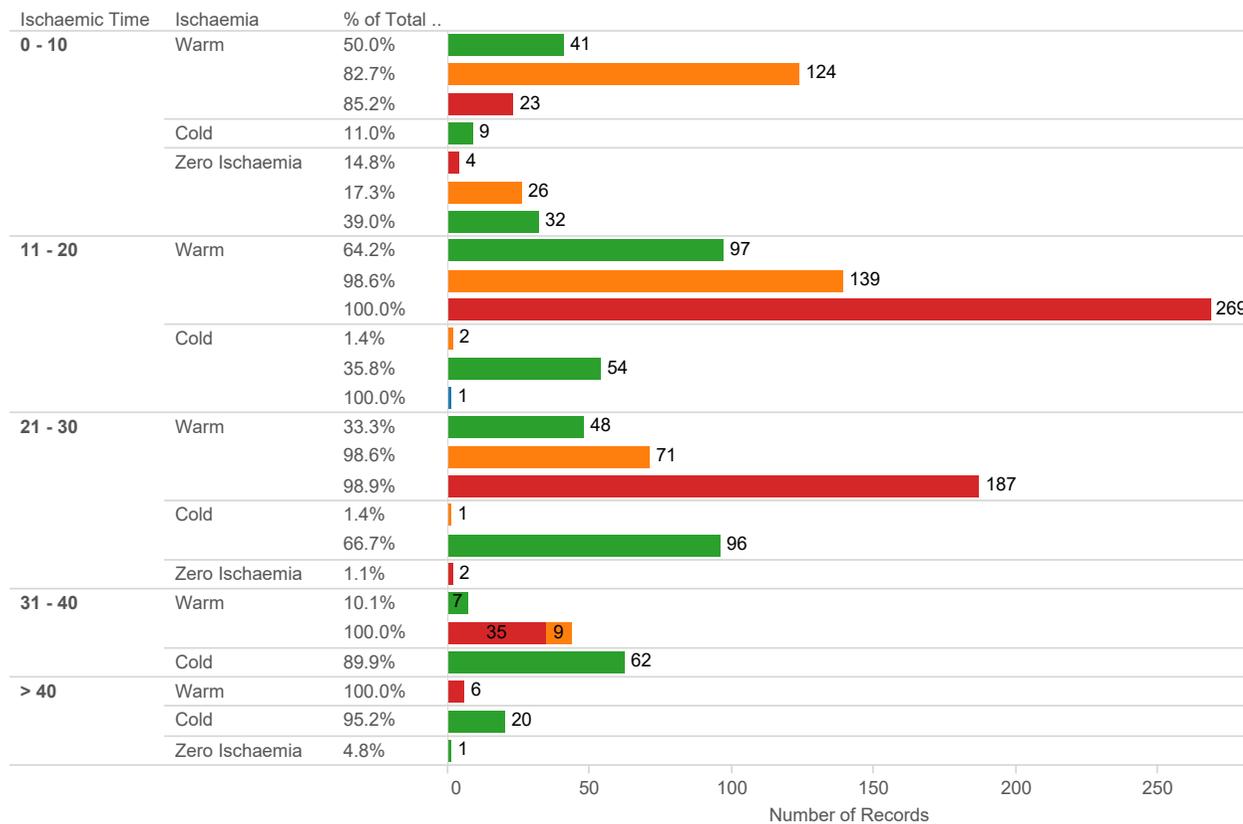
Procedure by Technique

Procedure C..	Open		Laparoscopic		Robotic		Not recorded		Grand Total	
	N	%	N	%	N	%	N	%	N	%
Radical	999	23.55%	3,129	73.76%	46	1.08%	68	1.60%	4,242	100.00%
Partial	628	36.15%	457	26.31%	627	36.10%	25	1.44%	1,737	100.00%
Simple	141	14.39%	818	83.47%	8	0.82%	13	1.33%	980	100.00%
Nephrourete..	120	9.81%	1,035	84.63%	46	3.76%	22	1.80%	1,223	100.00%
Other	14	10.37%	81	60.00%	4	2.96%	36	26.67%	135	100.00%
Not recorded			4	57.14%			3	42.86%	7	100.00%
Grand Total	1,902	22.85%	5,524	66.36%	731	8.78%	167	2.01%	8,324	100.00%

Indication for Partial Nephrectomies

Partial Indication	Technique (group)									
	Open		Laparoscopic		Robotic		Not recorded		Grand Total	
	N	%	N	%	N	%	N	%	N	%
Elective	388	33.83%	305	26.59%	453	39.49%	1	0.09%	1,147	100.00%
Absolute	82	67.77%	16	13.22%	23	19.01%			121	100.00%
Relative	70	42.68%	39	23.78%	55	33.54%			164	100.00%
Not recorded	88	28.85%	97	31.80%	96	31.48%	24	7.87%	305	100.00%
Grand Total	628	36.15%	457	26.31%	627	36.10%	25	1.44%	1,737	100.00%

Ischaemic Time



Tumour size by Procedure & Technique

Max Diamete..	Technique (g..	Procedure Code										Grand Total			
		Radical		Partial		Simple		Nephroureterectomy		Other		Not recorded		N	%
		N	%	N	%	N	%	N	%	N	%	N	%		
<=4	Open	114	20.32%	367	65.42%	17	3.03%	59	10.52%	4	0.71%			561	100.00%
	Not recorded	3	33.33%	1	11.11%			1	11.11%	1	11.11%	3	33.33%	9	100.00%
	Laparoscopic	745	44.64%	276	16.54%	79	4.73%	546	32.71%	19	1.14%	4	0.24%	1,669	100.00%
	Robotic	10	2.04%	459	93.67%			21	4.29%					490	100.00%
>4 - 7	Open	130	46.76%	132	47.48%			15	5.40%	1	0.36%			278	100.00%
	Laparoscopic	1,149	84.24%	44	3.23%	5	0.37%	162	11.88%	4	0.29%			1,364	100.00%
	Robotic	23	20.35%	81	71.68%			8	7.08%	1	0.88%			113	100.00%
>7 - 10	Open	240	89.89%	15	5.62%			12	4.49%					267	100.00%
	Laparoscopic	552	90.94%	6	0.99%	4	0.66%	44	7.25%	1	0.16%			607	100.00%
	Robotic	3	33.33%	6	66.67%									9	100.00%
>10	Open	374	96.14%	6	1.54%	1	0.26%	6	1.54%	2	0.51%			389	100.00%
	Laparoscopic	224	87.16%	5	1.95%			27	10.51%	1	0.39%			257	100.00%
	Robotic	3	27.27%	8	72.73%									11	100.00%
Not Recorded	Open	141	34.64%	108	26.54%	123	30.22%	28	6.88%	7	1.72%			407	100.00%
	Not recorded	65	41.14%	24	15.19%	13	8.23%	21	13.29%	35	22.15%			158	100.00%
	Laparoscopic	459	28.21%	126	7.74%	730	44.87%	256	15.73%	56	3.44%			1,627	100.00%
	Robotic	7	6.48%	73	67.59%	8	7.41%	17	15.74%	3	2.78%			108	100.00%
Grand Total		4,242	50.96%	1,737	20.87%	980	11.77%	1,223	14.69%	135	1.62%	7	0.08%	8,324	100.00%

Operating Time by Procedure & Technique

Operating Ti..	Technique (group)	Procedure Code										Grand Total			
		Radical		Partial		Simple		Nephroureterectomy		Other		Not recorded		N	%
		N	%	N	%	N	%	N	%	N	%	N	%		
< 60 mins	Open	4	23.53%	6	35.29%	5	29.41%	1	5.88%	1	5.88%			17	100.00%
	Laparoscopic	72	57.14%	10	7.94%	40	31.75%	2	1.59%	2	1.59%			126	100.00%
	Robotic					1	50.00%	1	50.00%					2	100.00%
1 - 2 hours	Open	208	43.15%	214	44.40%	49	10.17%	8	1.66%	3	0.62%			482	100.00%
	Laparoscopic	1,022	66.23%	110	7.13%	283	18.34%	107	6.93%	20	1.30%	1	0.06%	1,543	100.00%
	Robotic	18	9.94%	150	82.87%	3	1.66%	7	3.87%	3	1.66%			181	100.00%
	Not recorded	1	33.33%					1	33.33%			1	33.33%	3	100.00%
> 6 hours	Open	16	66.67%	2	8.33%	1	4.17%	4	16.67%	1	4.17%			24	100.00%
	Laparoscopic	7	25.00%	3	10.71%	3	10.71%	15	53.57%					28	100.00%
	Robotic			3	75.00%			1	25.00%					4	100.00%
> 2 - 3 hours	Open	353	52.06%	231	34.07%	48	7.08%	42	6.19%	4	0.59%			678	100.00%
	Laparoscopic	1,239	58.03%	215	10.07%	299	14.00%	352	16.49%	30	1.41%			2,135	100.00%
	Robotic	15	4.40%	301	88.27%	4	1.17%	20	5.87%	1	0.29%			341	100.00%
	Not recorded			1	50.00%					1	50.00%			2	100.00%
> 3 - 4 hours	Open	215	60.22%	85	23.81%	19	5.32%	36	10.08%	2	0.56%			357	100.00%
	Laparoscopic	450	48.86%	44	4.78%	102	11.07%	318	34.53%	7	0.76%			921	100.00%
	Robotic	10	8.33%	98	81.67%			12	10.00%					120	100.00%
> 4 - 6 hours	Open	118	67.43%	21	12.00%	11	6.29%	23	13.14%	2	1.14%			175	100.00%
	Laparoscopic	131	39.10%	18	5.37%	37	11.04%	146	43.58%	3	0.90%			335	100.00%
	Robotic	2	4.76%	35	83.33%			5	11.90%					42	100.00%
Grand Total		3,881	51.64%	1,547	20.58%	905	12.04%	1,101	14.65%	80	1.06%	2	0.03%	7,516	100.00%

Blood Loss by Procedure & Technique

Measured Bl..	Technique (g..	Procedure Code										Grand Total			
		Radical		Partial		Simple		Nephroureterectomy		Other		Not recorded		N	%
		N	%	N	%	N	%	N	%	N	%	N	%	N	%
< 500	Open	487	43.83%	448	40.32%	95	8.55%	71	6.39%	10	0.90%			1,111	100.00%
	Laparoscopic	2,740	57.92%	369	7.80%	718	15.18%	862	18.22%	41	0.87%	1	0.02%	4,731	100.00%
	Robotic	42	6.57%	541	84.66%	8	1.25%	44	6.89%	4	0.63%			639	100.00%
	Not recorded	2	50.00%					1	25.00%	1	25.00%			4	100.00%
> 500 - 1000	Open	181	62.20%	70	24.05%	19	6.53%	20	6.87%	1	0.34%			291	100.00%
	Laparoscopic	86	47.78%	21	11.67%	21	11.67%	51	28.33%	1	0.56%			180	100.00%
	Robotic			40	95.24%			2	4.76%					42	100.00%
	Not recorded			1	100.00%									1	100.00%
> 1000 - 2000	Open	147	74.24%	27	13.64%	13	6.57%	11	5.56%					198	100.00%
	Laparoscopic	55	64.71%	9	10.59%	11	12.94%	10	11.76%					85	100.00%
	Robotic			6	100.00%									6	100.00%
> 2000 - 5000	Open	67	81.71%	7	8.54%	2	2.44%	4	4.88%	2	2.44%			82	100.00%
	Laparoscopic	12	66.67%			1	5.56%	4	22.22%	1	5.56%			18	100.00%
	Robotic	1	20.00%	4	80.00%									5	100.00%
> 5000	Open	11	84.62%			1	7.69%	1	7.69%					13	100.00%
	Laparoscopic	2	100.00%											2	100.00%
Grand Total		3,833	51.74%	1,543	20.83%	889	12.00%	1,081	14.59%	61	0.82%	1	0.01%	7,408	100.00%

Transfusion Rate

Blood Transfusi..	N	% Total
Not transfused	6,945	93.26%
Transfused	502	6.74%
Grand Total	7,447	100.00%

Transfusions by Procedure & Technique

Blood Transfused	Technique (g..	Procedure Code										Grand Total			
		Radical		Partial		Simple		Nephroureterect..		Other		Not recorded		N	%
		N	%	N	%	N	%	N	%	N	%	N	%	N	%
Transfused	Open	243	77.14%	32	10.16%	13	4.13%	25	7.94%	2	0.63%			315	100.00%
	Laparoscopic	101	60.12%	14	8.33%	15	8.93%	37	22.02%	1	0.60%			168	100.00%
	Robotic			17	89.47%			2	10.53%					19	100.00%
Not transfused	Open	668	46.94%	540	37.95%	117	8.22%	87	6.11%	11	0.77%			1,423	100.00%
	Laparoscopic	2,789	57.52%	359	7.40%	744	15.34%	907	18.70%	49	1.01%	1	0.02%	4,849	100.00%
	Robotic	41	6.14%	572	85.63%	8	1.20%	43	6.44%	4	0.60%			668	100.00%
	Not recorded	2	40.00%	1	20.00%			1	20.00%	1	20.00%			5	100.00%
Grand Total		3,844	51.62%	1,535	20.61%	897	12.05%	1,102	14.80%	68	0.91%	1	0.01%	7,447	100.00%

Clavien Dindo Grade III plus Complication Rate

Grade3Plus (..	N	% Total
Grade III plus	213	2.86%
No	7,240	97.14%
Grand Total	7,453	100.00%

Clavien Dindo Grades

Clavien Dindo..	Procedure Code	Open		Laparoscopic		Technique (group)		Grand Total			
		N	%	N	%	Not recorded	Robotic	N	%		
Grade I	Radical	27	0.2	98	0.8			125	1.0		
	Partial	32	0.5	11	0.2		19	62	1.0		
	Simple	4	0.2	16	0.8		1	21	1.0		
	Nephroureterectomy	6	0.2	31	0.8		2	39	1.0		
	Other			1	1.0			1	1.0		
Grade II	Radical	73	0.4	117	0.6			190	1.0		
	Partial	56	0.5	14	0.1		39	109	1.0		
	Simple	14	0.5	17	0.5			31	1.0		
	Nephroureterectomy	19	0.2	56	0.7		4	79	1.0		
	Other			3	1.0			3	1.0		
Grade IIIa	Radical	8	0.3	19	0.7			27	1.0		
	Partial	14	0.5	8	0.3		6	28	1.0		
	Simple	4	0.8	1	0.2			5	1.0		
	Nephroureterectomy			10	1.0			10	1.0		
Grade IIIb	Radical	17	0.5	19	0.5			36	1.0		
	Partial	14	0.5	9	0.3		4	27	1.0		
	Simple	2	0.3	5	0.7			7	1.0		
	Nephroureterectomy	2	0.1	13	0.8		1	16	1.0		
	Other	1	1.0					1	1.0		
Grade IVa	Radical	9	0.5	11	0.6			20	1.0		
	Partial	1	0.3	1	0.3		1	3	1.0		
	Simple			1	1.0			1	1.0		
	Nephroureterectomy	2	0.4	3	0.6			5	1.0		
	Other	2	1.0					2	1.0		
Grade IVb	Radical	1	0.3	2	0.7			3	1.0		
	Partial						1	1	1.0		
	Simple	1	0.5	1	0.5			2	1.0		
	Nephroureterectomy			1	1.0			1	1.0		
Grade V	Radical	4	0.4	5	0.6			9	1.0		
	Partial			1	0.5		1	2	1.0		
	Simple	1	1.0					1	1.0		
	Nephroureterectomy	1	0.2	5	0.8			6	1.0		
Not recorded	Radical	860	0.2	2,858	0.7	68	0.0	46	0.0	3,832	1.0
	Partial	511	0.3	413	0.3	25	0.0	556	0.4	1,505	1.0
	Simple	115	0.1	777	0.9	13	0.0	7	0.0	912	1.0
	Nephroureterectomy	90	0.1	916	0.9	22	0.0	39	0.0	1,067	1.0
	Other	11	0.1	77	0.6	36	0.3	4	0.0	128	1.0
	Not recorded			4	0.6	3	0.4			7	1.0
Grand Total		1,902	0.2	5,524	0.7	167	0.0	731	0.1	8,324	1.0

Conversions

Conversion	Conversion Reason	Procedure Code										Grand Total			
		Radical		Partial		Simple		Nephroureterectomy		Other				Not recorded	
		N	%	N	%	N	%	N	%	N	%	N	%	N	%
Yes	Adhesions	7	53.85%	1	7.69%	2	15.38%	2	15.38%	1	7.69%			13	100.00%
	Difficult dissection	19	33.93%	9	16.07%	19	33.93%	9	16.07%					56	100.00%
	Failure to progress	22	62.86%	4	11.43%	7	20.00%	2	5.71%					35	100.00%
	Haemorrhage	51	77.27%	1	1.52%	7	10.61%	6	9.09%	1	1.52%			66	100.00%
	Patient obesity	3	100.00%											3	100.00%
	Size of tumour / mass	20	90.91%	2	9.09%									22	100.00%
	Other	9	56.25%	1	6.25%	2	12.50%	3	18.75%	1	6.25%			16	100.00%
	Not recorded / Applicable	4	100.00%											4	100.00%
	Total	135	62.79%	18	8.37%	37	17.21%	22	10.23%	3	1.40%			215	100.00%
No	Haemorrhage			1	100.00%									1	100.00%
	Not recorded / Applicable	2,724	57.21%	355	7.46%	715	15.02%	901	18.92%	65	1.37%	1	0.02%	4,761	100.00%
	Total	2,724	57.20%	356	7.48%	715	15.01%	901	18.92%	65	1.36%	1	0.02%	4,762	100.00%
Grand Total	2,859	57.44%	374	7.51%	752	15.11%	923	18.55%	68	1.37%	1	0.02%	4,977	100.00%	

Intra-operative Complications

Intraoperativ..	Procedure C..	Technique (group)							
		Open		Laparoscopic		Robotic		Grand Total	
		N	%	N	%	N	%	N	%
Yes	Radical	93	43.66%	116	54.46%	4	1.88%	213	100.00%
	Partial	37	49.33%	10	13.33%	28	37.33%	75	100.00%
	Simple	8	30.77%	17	65.38%	1	3.85%	26	100.00%
	Nephroureter..	14	32.56%	27	62.79%	2	4.65%	43	100.00%
	Other	2	50.00%	2	50.00%			4	100.00%
	Total	154	42.66%	172	47.65%	35	9.70%	361	100.00%
	No	Radical	851	22.72%	2,853	76.16%	40	1.07%	3,746
Partial		552	36.32%	392	25.79%	575	37.83%	1,520	100.00%
Simple		129	14.40%	760	84.82%	7	0.78%	896	100.00%
Nephroureter..		105	9.69%	936	86.35%	43	3.97%	1,084	100.00%
Other		12	12.90%	76	81.72%	4	4.30%	93	100.00%
Not recorded				1	50.00%			2	100.00%
Total		1,649	22.46%	5,018	68.36%	669	9.11%	7,341	100.00%
Not recorded	Radical	55	19.43%	160	56.54%	2	0.71%	283	100.00%
	Partial	39	27.46%	55	38.73%	24	16.90%	142	100.00%
	Simple	4	6.90%	41	70.69%			58	100.00%
	Nephroureter..	1	1.04%	72	75.00%	1	1.04%	96	100.00%
	Other			3	7.89%			38	100.00%
	Not recorded			3	60.00%			5	100.00%
	Total	99	15.92%	334	53.70%	27	4.34%	622	100.00%
Grand Total		1,902	22.85%	5,524	66.36%	731	8.78%	8,324	100.00%

Specific Intra-operative Complications

Procedure Code	Specific Intraoperative Com..	Technique (group)				
		Open	Laparos..	Robotic	Grand T..	
Radical	Bleeding	53	69	1	123	
	Bleeding,Bowel injury		1		1	
	Bleeding,Liver injury		1		1	
	Bleeding,Other	1	4		5	
	Bleeding,Splenectomy	1	1		2	
	Bowel injury	3	8		11	
	Bowel injury,Pneumothorax	1			1	
	Liver injury	1	3		4	
	Other	13	21	3	37	
	Pancreatic injury,Splenectomy	1			1	
	Pneumothorax	5	4		9	
	Splenectomy	11	3		14	
	Null		1		1	
	Pancreatic injury,Splenectomy..	1			1	
Splenectomy,Other	2			2		
Partial	Bleeding	12	3	13	28	
	Bleeding,Other	2	1		3	
	Bleeding,Pneumothorax	1			1	
	Bleeding,Splenectomy			1	1	
	Liver injury	1		1	2	
	Other	12	6	11	29	
	Pneumothorax	5		2	7	
	Pneumothorax,Other	1			1	
	Splenectomy	2			2	
	Bowel injury,Pancreatic injury,..	1			1	
	Simple	Bleeding	2	9		11
		Bleeding,Other		1		1
Bleeding,Pneumothorax		1	1		2	
Bowel injury		1			1	
Other		3	4	1	8	
Pancreatic injury,Splenectomy		1			1	
Pneumothorax			1		1	
Null			1		1	
Nephroureterectomy	Bleeding	4	10		14	
	Bleeding,Bowel injury	1			1	
	Bleeding,Other	1			1	
	Bleeding,Splenectomy	1			1	
	Bowel injury	2	4		6	
	Liver injury		2		2	
	Other	3	9	2	14	
	Pneumothorax		2		2	
	Splenectomy	2			2	
Other	Bleeding		1		1	
	Other	2	1		3	
Grand Total		154	172	35	361	

Post-operative Complications

Postoperativ..	Procedure C..	Technique (group)						Grand Total	
		Open		Laparoscopic		Robotic		N	%
Yes	Radical	158	35.35%	287	64.21%	2	0.45%	447	100.00%
	Partial	127	51.63%	46	18.70%	73	29.67%	246	100.00%
	Simple	28	37.84%	45	60.81%	1	1.35%	74	100.00%
	Nephroureter..	33	20.12%	124	75.61%	7	4.27%	164	100.00%
	Other	2	28.57%	4	57.14%	1	14.29%	7	100.00%
No	Radical	750	22.14%	2,593	76.56%	42	1.24%	3,387	100.00%
	Partial	437	34.33%	324	25.45%	511	40.14%	1,273	100.00%
	Simple	104	12.55%	718	86.61%	7	0.84%	829	100.00%
	Nephroureter..	77	8.23%	820	87.61%	38	4.06%	936	100.00%
	Other	12	13.48%	73	82.02%	3	3.37%	89	100.00%
Not recorded							1	100.00%	
Not recorded	Radical	91	22.30%	249	61.03%	2	0.49%	408	100.00%
	Partial	64	29.36%	87	39.91%	43	19.72%	218	100.00%
	Simple	9	11.69%	55	71.43%			77	100.00%
	Nephroureter..	10	8.13%	91	73.98%	1	0.81%	123	100.00%
	Other			4	10.26%			39	100.00%
Not recorded			4	66.67%			6	100.00%	
Grand Total		1,902	22.85%	5,524	66.36%	731	8.78%	8,324	100.00%

Specific Post-operative Complications

Procedure Code	Specific Postoperative Complic..	Technique (group)				Grand Total		
		Open	Laparosco..	Robotic		N	%	
Radical	Bleeding / haemorrhage +/- Others	12	23			35		
	Chest infection +/- Others	49	52			101		
	DVT / PE & DVT / PE,Other	2	5			7		
	Ileus +/- others	18	31			49		
	Renal failure	8	14			22		
	Wound infection +/- other	16	56			72		
	Problematic pain control+/- Others	13	15	1		29		
	Other	37	88	1		126		
	Not recorded	3	3			6		
	Partial	Bleeding / haemorrhage +/- Others	21	7	14		42	
Chest infection +/- Others		32	7	12		51		
DVT / PE & DVT / PE,Other		5	1	1		7		
Ileus +/- others		6	3	2		11		
Renal failure		2		3		5		
Wound infection +/- other		10	2	7		19		
Problematic pain control+/- Others		12	4	4		20		
Other		36	20	28		84		
Not recorded		3	2	2		7		
Simple		Bleeding / haemorrhage +/- Others	2	3			5	
	Chest infection +/- Others	3	13			16		
	Ileus +/- others	4	2			6		
	Renal failure		1			1		
	Wound infection +/- other	7	10			17		
	Problematic pain control+/- Others	2	3			5		
	Other	9	12	1		22		
	Not recorded	1	1			2		
	Nephroureterectomy	Bleeding / haemorrhage +/- Others	2	7	2		11	
		Chest infection +/- Others	9	36	1		46	
DVT / PE & DVT / PE,Other				1		1		
Ileus +/- others		6	16			22		
Renal failure		2	9			11		
Wound infection +/- other		1	21	1		23		
Problematic pain control+/- Others		2	2			4		
Other		10	32	2		44		
Not recorded	1	1			2			
Other	Chest infection +/- Others		1			1		
	Renal failure	2				2		
	Problematic pain control+/- Others			1		1		
	Other		2			2		
Not recorded		1			1			
Grand Total		348	506	84		938		

Length of Stay

Technique (g..	Procedure Code	N	% Total	Median	Minimum	Maximum
Open	Radical	933	12.05%	6	0	76
	Partial	590	7.62%	5	0	77
	Simple	135	1.74%	6	1	65
	Nephroureterectomy	114	1.47%	7	0	28
	Other	13	0.17%	7	2	51
	Total	1,785	23.05%	6	0	77
Laparoscopic	Radical	2,997	38.70%	3	0	82
	Partial	415	5.36%	3	0	30
	Simple	784	10.12%	3	0	63
	Nephroureterectomy	977	12.62%	5	0	42
	Other	77	0.99%	2	0	64
	Not recorded	3	0.04%	5	2	7
Total	5,253	67.83%	3	0	82	
Robotic	Radical	44	0.57%	3	1	9
	Partial	600	7.75%	3	1	35
	Simple	8	0.10%	4	1	13
	Nephroureterectomy	45	0.58%	4	2	16
	Other	4	0.05%	2	1	2
	Total	701	9.05%	3	1	35
Not recorded	Radical	2	0.03%	20	3	37
	Nephroureterectomy	1	0.01%	4	4	4
	Other	1	0.01%	2	2	2
	Not recorded	1	0.01%	1	1	1
	Total	5	0.06%	3	1	37
Grand Total	7,744	100.00%	4	0	82	

Nuclear Grade of Parenchymal Tumours

Nuclear grade	Margins1						Grand Total	
	Positive		Negative		Not recorded		N	%
	N	%	N	%	N	%		
G1	10	4.72%	93	43.87%	109	51.42%	212	100.00%
G2	29	1.90%	485	31.80%	1,011	66.30%	1,525	100.00%
G3	33	2.08%	397	25.02%	1,157	72.90%	1,587	100.00%
G4	5	1.00%	60	12.02%	434	86.97%	499	100.00%
Not recorded	10	2.24%	151	33.86%	285	63.90%	446	100.00%
Grand Total	87	2.04%	1,186	27.78%	2,996	70.18%	4,269	100.00%

Grade of Urothelial Tumours

Urothelial Tumour Grade	N	% Total
G1	42	4.12%
G2	335	32.84%
G3	555	54.41%
Not recorded	88	8.63%
Grand Total	1,020	100.00%

Follow-Up

Late Complications

Fulatecomplications	N	% Total
None	1,429	78.95%
Other	50	2.76%
Renal impairment	30	1.66%
Renal impairment,Other	3	0.17%
Wound	20	1.10%
Wound hernia	13	0.72%
Wound,Wound hernia,Other	1	0.06%
Wound,Wound pain,Other	1	0.06%
Wound pain	25	1.38%
DVT	1	0.06%
Not recorded	237	13.09%
Grand Total	1,810	100.00%

Adjuvant management

Adjuvant management (at ..	N	% Total
None	983	54.31%
Clinical trial	20	1.10%
Immunotherapy	4	0.22%
Observation	496	27.40%
TKI's	33	1.82%
Other	28	1.55%
Not recorded	246	13.59%
Grand Total	1,810	100.00%

Status at most recent follow-up

Fustatus	Fupatientstatus	Time to Follow -up (group)							
		<= 6 months		> 6 months		Not recorded		Grand Total	
		N	% Total	N	% Total	N	% Total	N	% Total
Alive with no evidence of renal cancer	Alive	842	67.74%	375	66.14%			1,217	14.62%
Alive with local recurrence of renal cancer	Alive	11	0.88%	2	0.35%			13	0.16%
Alive with lymph node involvement by renal cancer	Alive	6	0.48%					6	0.07%
Alive with metastatic disease	Alive	58	4.67%	26	4.59%			84	1.01%
Discharged to GP / Other consultant	Alive	187	15.04%	33	5.82%			220	2.64%
Other	Alive	99	7.96%	108	19.05%			207	2.49%
	Died in followup	38	3.06%	22	3.88%			60	0.72%
	Died in hospital (in another re..	2	0.16%					2	0.02%
	Not recorded			1	0.18%	6,514	100.00%	6,515	78.27%
Grand Total		1,243	100.00%	567	100.00%	6,514	100.00%	8,324	100.00%

Participating Hospital Centres 2015

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

Aberdeen Royal Infirmary	Countess of Chester Hospital	Kent and Canterbury Hospital
Addenbrooke's Hospital, Cambridge	Craigavon Area Hospital, Portadown	Kettering General Hospital
Aintree University Hospital, Liverpool	Cumberland Infirmary, Carlisle	King's College Hospital, London
Airedale Hospital	Darent Valley Hospital, Kent	King's Mill Hospital, Nottinghamshire
Alexandra Hospital, Redditch	Derriford Hospital, Plymouth	Kingston Hospital, London
Arrove Park Hospital, Wirral	Diana, Princess of Wales Hospital, Grimsby	Leicester General Hospital
Barking, Havering And Redbridge University Hospital	Doncaster Royal Infirmary	Lincoln County Hospital
Basildon University Hospital, Essex	Dorset County Hospital, Dorchester	Lister Hospital, Stevenage
Basingstoke and North Hampshire Hospital	East Surrey Hospital, Redhill	Luton & Dunstable University Hospital
Beaumont Hospital, Dublin	Eastbourne District General Hospital	Maidstone Hospital
Bedford Hospital	Epsom General Hospital, Surrey	Manchester Royal Infirmary
Belfast City Hospital	Forth Valley Royal Hospital, Larbert	Medway Maritime Hospital, Gillingham
Blackpool Victoria Hospital	Freeman Hospital, Newcastle	Milton Keynes Hospital
Bradford Royal Infirmary	Frimley Park Hospital	Monklands District General Hospital, Airdrie
Broomfield Hospital, Chelmsford	Furness General Hospital, Barrow-in-Furness	Morrison Hospital, Swansea
Burnley General Hospital	Gartnavel General Hospital, Glasgow	New Cross Hospital, Wolverhampton
Castle Hill Hospital, Hull	George Eliot Hospital, Nuneaton	Ninewells Hospital, Dundee
Charing Cross Hospital, London	Guy's & Thomas's Hospital	Norfolk And Norwich University Hospital
Chelsea & Westminster Hospital, London	Harrogate District Hospital	North Manchester General Hospital
Cheltenham General Hospital	Heartlands Hospital, Birmingham	North Middlesex Hospital, London
Christie Hospital	Hereford County Hospital	Northampton General Hospital
Churchill Hospital, Oxford	Huddersfield Royal Infirmary	Northwick Park Hospital
City Hospital Birmingham	Ipswich Hospital, Suffolk	Nottingham City Hospital
Colchester General Hospital	James Paget University Hospital, Great Yarmouth	Pinderfields General Hospital, Wakefield
		Princess Alexandra Hospital, Harlow

Princess Elizabeth Hospital, Guernsey
Queen Alexandra Hospital, Portsmouth
Queen Elizabeth Hospital, Birmingham
Queen Elizabeth University Hospital, Glasgow
Rotherham Hospital
Royal Blackburn 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 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 Stoke University Hospital
Royal Sussex County Hospital, Brighton

Royal United Hospital, Bath
Salford Royal Hospital
Salisbury District Hospital
Sandwell District General Hospital, West
Bromwich
Scarborough General Hospital
Scunthorpe General Hospital
Southampton General Hospital
Southend Hospital
Southmead Hospital, Bristol
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 London Hospital
Torbay Hospital, Torquay

University College Hospital, London
University Hospital of North Tees, Stockton-
on-Tees
University Hospital of Wales, Cardiff
University Hospital, Ayr
Victoria Hospital, Kirkcaldy
Walsall Manor Hospital
Walsgrave Hospital, Coventry
Warrington District General Hospital
Watford General Hospital
West Hertfordshire Hospitals NHS Trust
Western General Hospital, Edinburgh
Wexham Park Hospital, Slough
Whipps Cross University Hospital, London
Whiston Hospital, Prescot
Withington Community Hospital, Manchester
Worthing Hospital
Wrexham Maelor Hospital
Wycombe Hospital, High Wycombe
Wythenshawe Hospital, Manchester
York Hospital
Ysbyty Gwynedd Hospital, Bangor