

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

Analyses of Nephrectomies performed between

January 1st and December 31st 2018

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AUDIT RESULTS SUMMARY – Nephrectomy dataset (2018 data)

All the data presented here are a summary of the data extracted from the web-based database on 8th July 2019 and relate to operations performed during the whole of 2018. Once extracted the data was transferred to an Access™ database for validation before being imported into Tableau™ for generation of the analyses. The validation mainly comprised checks for duplicate and / or empty entries and invalid / inappropriate dates.

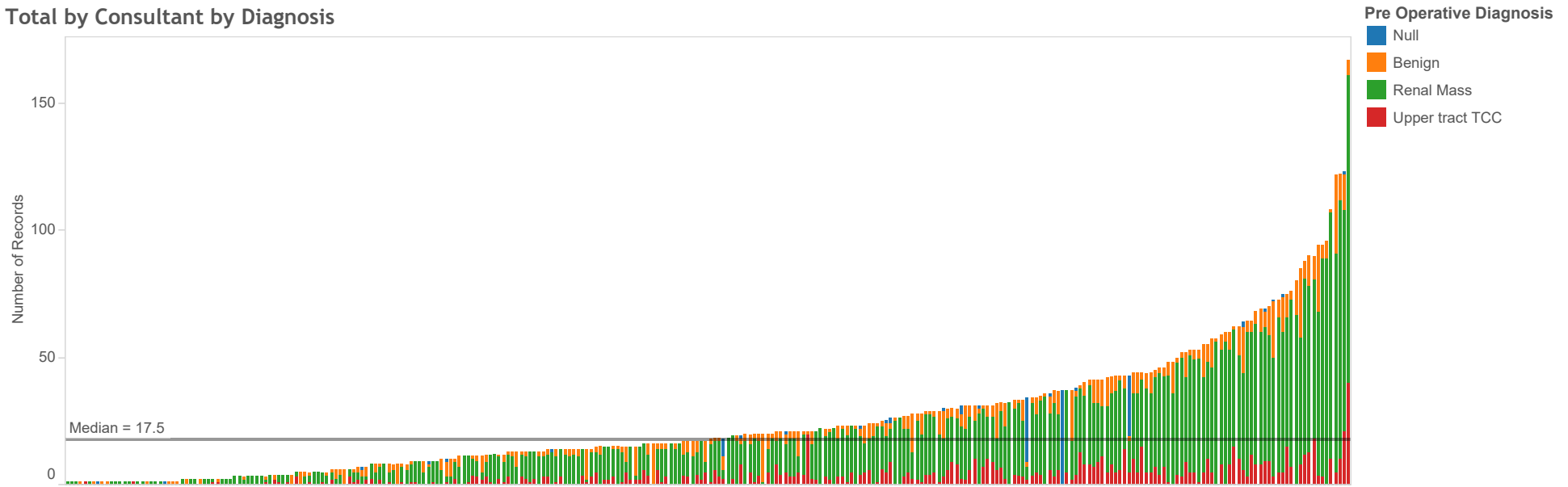
The data collection period was from 1 January 2018 to 31 December 2018.

- 7,396 procedures were recorded from 291 consultants at 129 NHS centres in the UK, including 260 private patients from 57 consultants. (England only for 2018 was 6,830)
- Median number of cases per consultant: 17.5 (range 1 – 167)
- Median number of cases per centre: 39 (range 1 - 437)
- 1292 cases (17.5%) were bulk uploaded from other systems with the remaining data being entered on an individual patient basis.
- Hospital Episode Statistics (HES) for 2018 indicate that there were 8,043 nephrectomies undertaken by urologists in 2018. Therefore, we captured data on 82% of the nephrectomies undertaken by urologists in England during 2018.

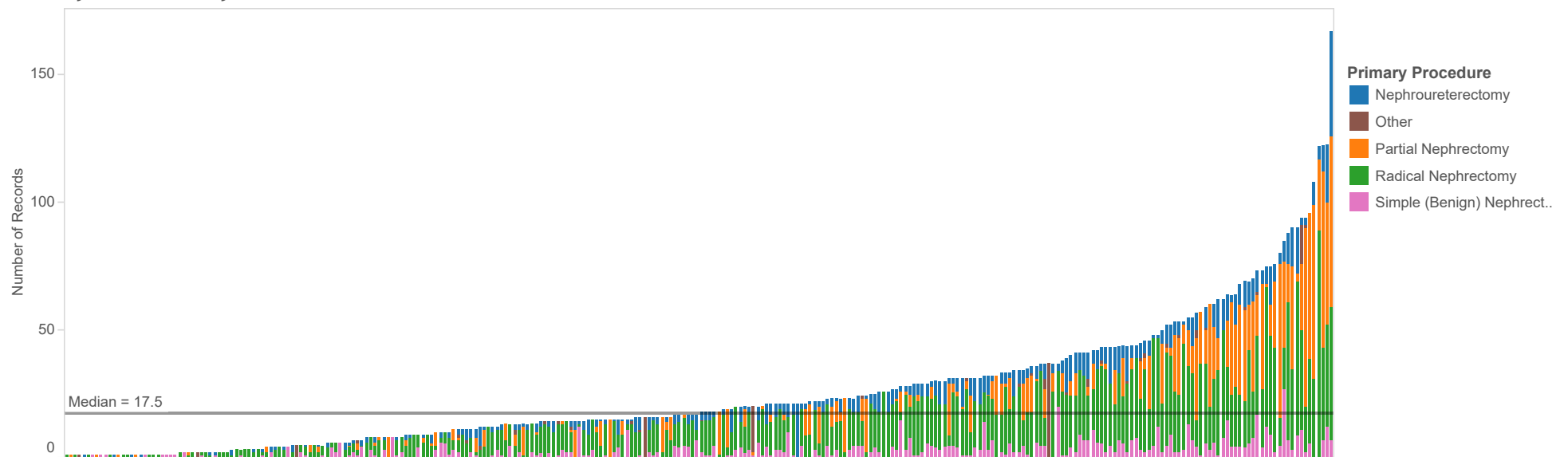
Total Returns for Procedures Performed Between 01/01/2018 and 31/12/2018

7,396 procedures from 291 Consultants from 129 NHS Centres in the UK - including 260 private cases from 57 consultants

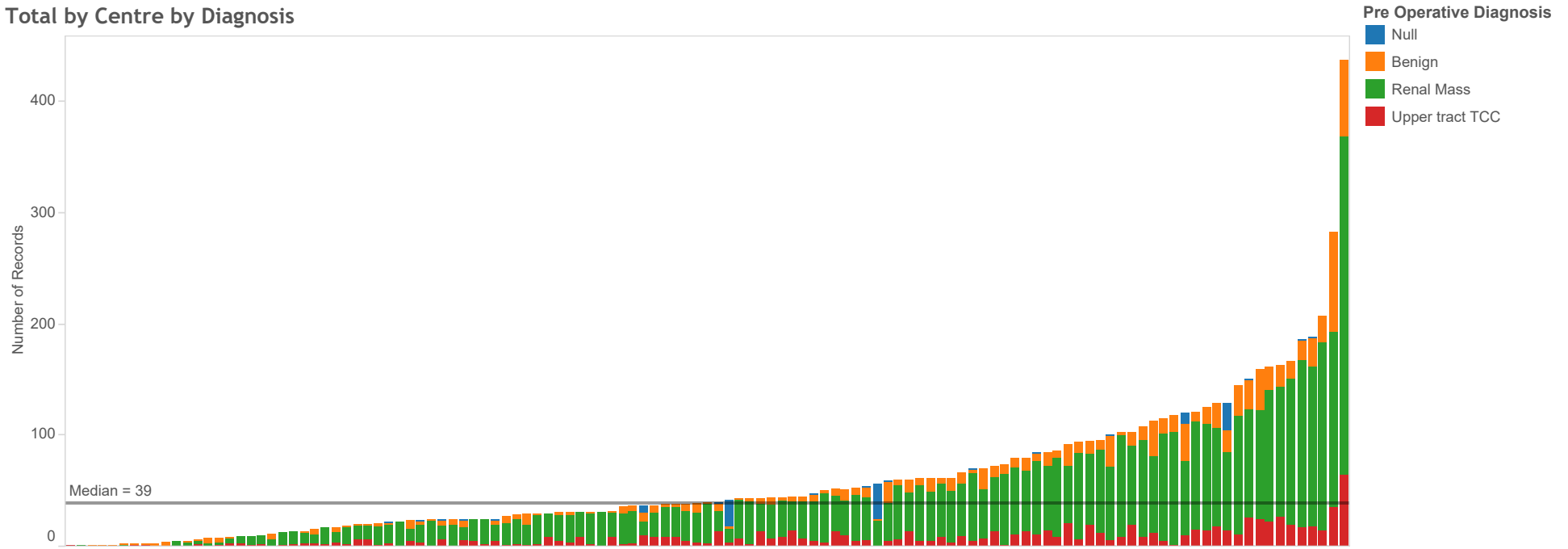
Total by Consultant by Diagnosis



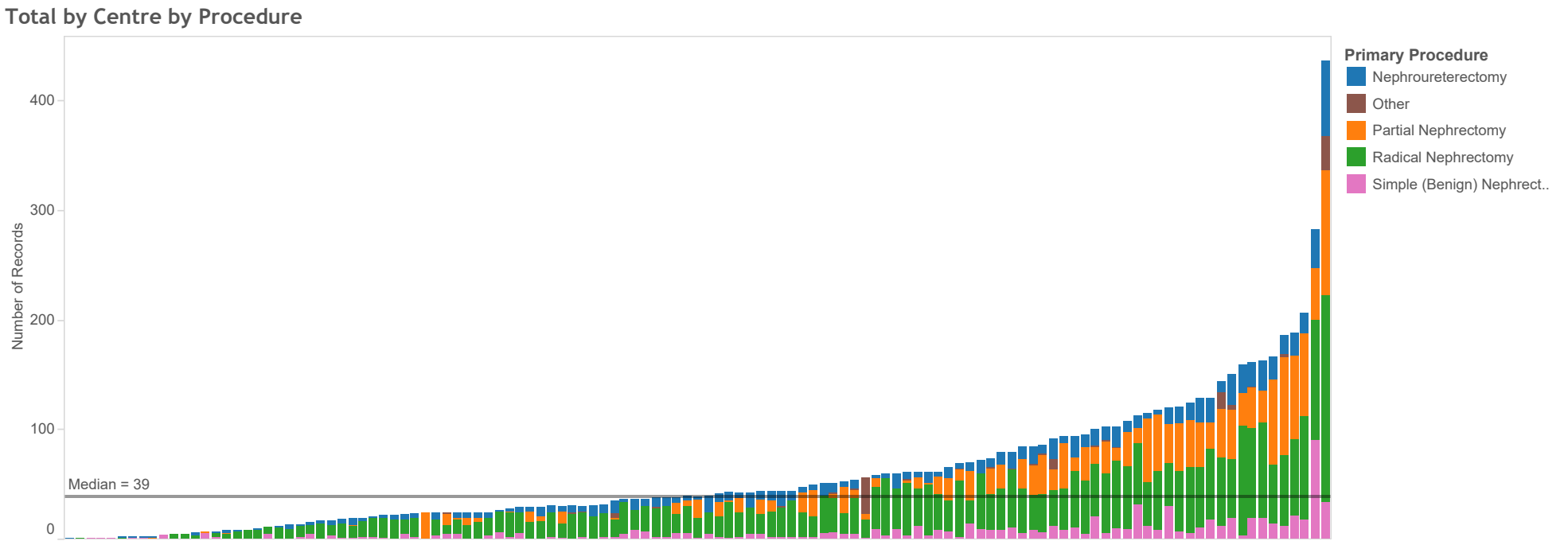
Total by Consultant by Procedure



Total by Centre by Diagnosis



Total by Centre by Procedure



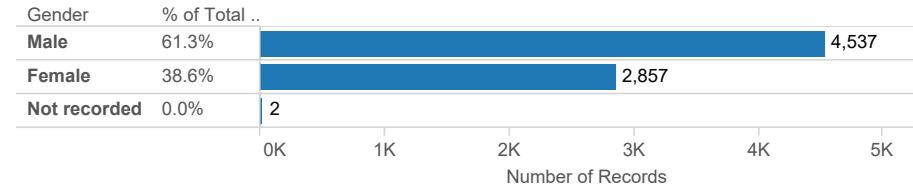
Pre-op Presentation

Pre Op Presentation	Number of Records	% of Total Number of Recor..
Haematuria	1,547	20.9%
Incidental	3,280	44.3%
Other	1,638	22.1%
Not recorded	931	12.6%
Grand Total	7,396	100.0%

Age

Agegroup	% of Total Number of Recor..	Number of Records
41-50	11.50%	848
51-60	21.93%	1,618
61-70	29.54%	2,179
71-80	23.75%	1,752
<=40	6.98%	515
>80	6.30%	465
Grand Total	100.00%	7,377

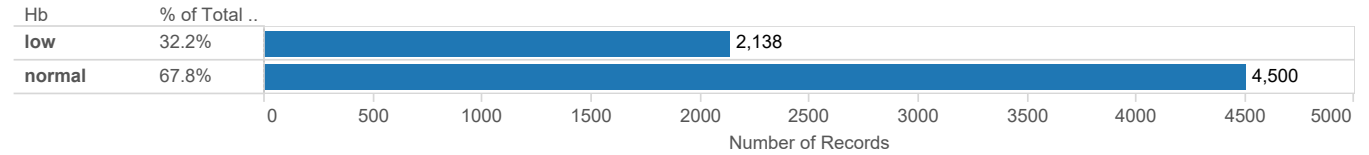
Gender



WHO Performance Status

Who Performance Status	Number of Records	% of Total Number of Recor..
0	3,875	52.39%
1	2,382	32.21%
2	556	7.52%
3	82	1.11%
4	15	0.20%
Not recorded	486	6.57%
Grand Total	7,396	100.00%

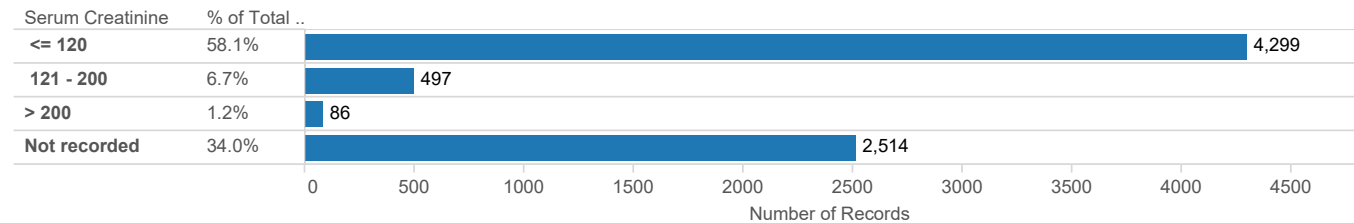
Hb at Operation



eGFR

Egfr Normal	Number of Records	% of Total Number of Recor..
Yes (>60)	3,818	51.62%
No	1,188	16.06%
Not recorded	2,390	32.31%
Grand Total	7,396	100.00%

Serum Creatinine



Diagnosis

Pre Operative Diagnosis (group)	Number of Records	% of Total Number of Recor..
Benign	1,065	14.40%
Renal Mass	5,277	71.35%
Upper tract TCC	936	12.66%
Not recorded	118	1.60%
Grand Total	7,396	100.00%

Non-Malignant Diagnosis

Non Malignant Diagnosis	Number of Records	% of Total Number of Recor..
Being performed as a donor	151	14.18%
Non-functioning kidney	474	44.51%
Polycystic	19	1.78%
Pyelonephritis	65	6.10%
Stone disease	73	6.85%
Xanthogranulomatous pyelonephritis	25	2.35%
Oncocytoma	14	1.31%
Other	76	7.14%
Not recorded	168	15.77%
Grand Total	1,065	100.00%

Post-Op Final Histological Diagnosis

PostOp Final Histological Diagnosis	Number of Records	% of Total Number of Recor..
Clear cell renal cell ca	3,545	47.93%
TCC	796	10.76%
Chromophobe	257	3.47%
Collecting duct	5	0.07%
Papillary	463	6.26%
Other Cancer	137	1.85%
Angiomyolipoma	60	0.81%
Oncocytoma	287	3.88%
Sarcoma	13	0.18%
Other benign	877	11.86%
Not recorded	956	12.93%
Grand Total	7,396	100.00%

Tstage

Tstage (group)	Number of Records	% of Total Number of Recor..
1	3,102	49.00%
2	673	10.63%
3	1,840	29.06%
4	105	1.66%
a	274	4.33%
is	11	0.17%
Not recorded / Unknown	326	5.15%
Grand Total	6,331	100.00%

Nstage

Nstage (group)	Number of Records	% of Total Number of Recor..
0	4,629	73.12%
1	176	2.78%
2	65	1.03%
Not recorded / Unknown	1,461	23.08%
Grand Total	6,331	100.00%

Mstage

Mstage (group)	Number of Records	% of Total Number of Recor..
0	3,812	60.21%
1	231	3.65%
Not recorded / Unknown	2,288	36.14%
Grand Total	6,331	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	82.6%	6,109
SpR	6.1%	454
Other	1.1%	80
Not recorded	10.2%	753
Grand Total		7,396

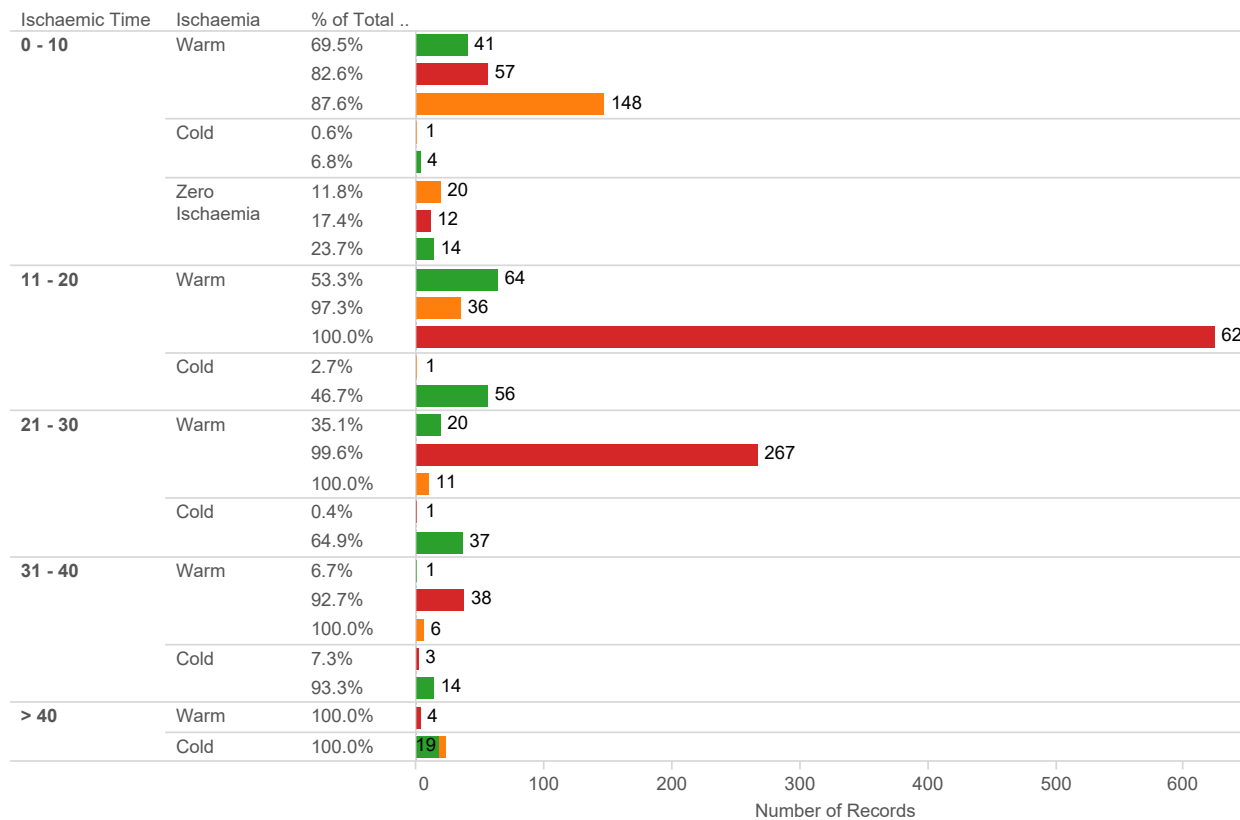
Procedure by Technique

Primary Procedure	Open		Laparoscopic		Robotic		Not recorded		Grand Total	
	Number of Records	% of Total Number of Records ..	Number of Records	% of Total Number of Records ..	Number of Records	% of Total Number of Records ..	Number of Records	% of Total Number of Records ..	Number of Records	% of Total Number of Records ..
Radical Nep..	750	20.20%	2,696	72.63%	199	5.36%	67	1.80%	3,712	100.00%
Partial Nephr..	373	21.80%	144	8.42%	1,162	67.91%	32	1.87%	1,711	100.00%
Nephrourete..	72	7.06%	786	77.06%	139	13.63%	23	2.25%	1,020	100.00%
Simple (Beni..	99	12.09%	653	79.73%	36	4.40%	31	3.79%	819	100.00%
Other	15	11.19%	67	50.00%	12	8.96%	40	29.85%	134	100.00%
Grand Total	1,309	17.70%	4,346	58.76%	1,548	20.93%	193	2.61%	7,396	100.00%

Indication for Partial Nephrectomies

Partial Indication	Technique (group)									
	Open		Laparoscopic		Robotic		Not recorded		Grand Total	
	Number of Records	% of Total Number of Records ..	Number of Records	% of Total Number of Records ..	Number of Records	% of Total Number of Records ..	Number of Records	% of Total Number of Records ..	Number of Records	% of Total Number of Records ..
Absolute	52	61.18%	3	3.53%	30	35.29%			85	100.00%
Elective	209	18.68%	80	7.15%	827	73.91%	3	0.27%	1,119	100.00%
Relative	44	30.14%	5	3.42%	97	66.44%			146	100.00%
Not recorded	68	18.84%	56	15.51%	208	57.62%	29	8.03%	361	100.00%
Grand Total	373	21.80%	144	8.42%	1,162	67.91%	32	1.87%	1,711	100.00%

Ischaemic Time



Tumour size by Procedure & Technique

		Primary Procedure											
Max Diamete..	Technique (g..	Radical Nephrectomy		Partial Nephrectomy		Nephroureterectomy		Other		Simple (Benign) Ne..		Grand Total	
		Number ..	% of Tot..	Number ..	% of Tot..	Number ..	% of Tot..	Number ..	% of Tot..	Number ..	% of Tot..	Number ..	% of Tot..
<=4	Open	31	14.76%	156	74.29%	20	9.52%	3	1.43%			210	100.00%
	Laparoscopic	463	56.39%	81	9.87%	275	33.50%			2	0.24%	821	100.00%
	Robotic	51	6.64%	666	86.72%	50	6.51%			1	0.13%	768	100.00%
>4 - 7	Open	91	51.12%	73	41.01%	12	6.74%	2	1.12%			178	100.00%
	Laparoscopic	918	87.85%	18	1.72%	107	10.24%	2	0.19%			1,045	100.00%
	Robotic	84	32.68%	147	57.20%	26	10.12%					257	100.00%
>7 - 10	Open	165	93.22%	10	5.65%	1	0.56%	1	0.56%			177	100.00%
	Laparoscopic	442	93.25%	1	0.21%	28	5.91%	2	0.42%	1	0.21%	474	100.00%
	Robotic	25	62.50%	11	27.50%	4	10.00%					40	100.00%
>10	Open	280	94.59%	12	4.05%	3	1.01%	1	0.34%			296	100.00%
	Not recorded	2	100.00%									2	100.00%
	Laparoscopic	195	90.28%	5	2.31%	15	6.94%			1	0.46%	216	100.00%
	Robotic	19	21.84%	64	73.56%	4	4.60%					87	100.00%
Not Recorded	Open	183	40.85%	122	27.23%	36	8.04%	8	1.79%	99	22.10%	448	100.00%
	Not recorded	65	34.03%	32	16.75%	23	12.04%	40	20.94%	31	16.23%	191	100.00%
	Laparoscopic	678	37.88%	39	2.18%	361	20.17%	63	3.52%	649	36.26%	1,790	100.00%
	Robotic	20	5.05%	274	69.19%	55	13.89%	12	3.03%	35	8.84%	396	100.00%
Grand Total		3,712	50.19%	1,711	23.13%	1,020	13.79%	134	1.81%	819	11.07%	7,396	100.00%

Operating Time by Procedure & Technique

		Primary Procedure											
Operating Ti..	Technique (group)	Radical Nephrectomy		Partial Nephrectomy		Nephroureterectomy		Other		Simple (Benign) Ne..		Grand Total	
		Number ..	% of Tot..	Number ..	% of Tot..	Number ..	% of Tot..	Number ..	% of Tot..	Number ..	% of Tot..	Number ..	% of Tot..
< 60 mins	Open	4	30.77%	7	53.85%					2	15.38%	13	100.00%
	Laparoscopic	93	70.45%	10	7.58%	8	6.06%	1	0.76%	20	15.15%	132	100.00%
	Robotic	5	16.67%	24	80.00%					1	3.33%	30	100.00%
1 - 2 hours	Open	126	47.73%	91	34.47%	8	3.03%	6	2.27%	33	12.50%	264	100.00%
	Laparoscopic	829	70.98%	44	3.77%	74	6.34%	3	0.26%	218	18.66%	1,168	100.00%
	Robotic	57	15.57%	294	80.33%	5	1.37%	2	0.55%	8	2.19%	366	100.00%
> 2 - 3 hours	Open	229	54.01%	140	33.02%	22	5.19%	2	0.47%	31	7.31%	424	100.00%
	Laparoscopic	941	64.50%	35	2.40%	250	17.14%	26	1.78%	207	14.19%	1,459	100.00%
	Robotic	72	10.71%	531	79.02%	50	7.44%	6	0.89%	13	1.93%	672	100.00%
	Not recorded	1	100.00%									1	100.00%
> 3 - 4 hours	Open	149	62.87%	56	23.63%	18	7.59%	1	0.42%	13	5.49%	237	100.00%
	Laparoscopic	293	51.22%	17	2.97%	187	32.69%	9	1.57%	66	11.54%	572	100.00%
	Robotic	35	14.29%	159	64.90%	47	19.18%	2	0.82%	2	0.82%	245	100.00%
	Not recorded	1	100.00%									1	100.00%
> 4 - 6 hours	Open	92	73.60%	18	14.40%	9	7.20%	2	1.60%	4	3.20%	125	100.00%
	Laparoscopic	85	38.81%	3	1.37%	111	50.68%	3	1.37%	17	7.76%	219	100.00%
	Robotic	14	17.72%	38	48.10%	23	29.11%	1	1.27%	3	3.80%	79	100.00%
> 6 hours	Open	21	80.77%			2	7.69%	1	3.85%	2	7.69%	26	100.00%
	Laparoscopic	9	37.50%			13	54.17%			2	8.33%	24	100.00%
	Robotic			4	66.67%	2	33.33%					6	100.00%
Grand Total		3,056	50.40%	1,471	24.26%	829	13.67%	65	1.07%	642	10.59%	6,063	100.00%

Blood Loss by Procedure & Technique

		Primary Procedure											
Measured Bl..	Technique (g..	Radical Nephrectomy		Partial Nephrectomy		Nephroureterectomy		Other		Simple (Benign) Ne..		Grand Total	
		Number ..	% of Tot..	Number ..	% of Tot..	Number ..	% of Tot..	Number ..	% of Tot..	Number ..	% of Tot..	Number ..	% of Tot..
< 500	Open	355	48.97%	256	35.31%	37	5.10%	7	0.97%	70	9.66%	725	100.00%
	Laparoscopic	2,147	63.63%	97	2.87%	605	17.93%	24	0.71%	501	14.85%	3,374	100.00%
	Robotic	178	13.25%	1,006	74.91%	124	9.23%	10	0.74%	25	1.86%	1,343	100.00%
	Not recorded	1	100.00%									1	100.00%
> 500 - 1000	Open	104	67.10%	28	18.06%	11	7.10%	4	2.58%	8	5.16%	155	100.00%
	Laparoscopic	64	65.31%	7	7.14%	15	15.31%	2	2.04%	10	10.20%	98	100.00%
	Robotic	4	11.11%	29	80.56%	2	5.56%			1	2.78%	36	100.00%
	Not recorded	1	100.00%									1	100.00%
> 1000 - 2000	Open	84	75.00%	19	16.96%	6	5.36%			3	2.68%	112	100.00%
	Laparoscopic	25	62.50%	8	20.00%	4	10.00%			3	7.50%	40	100.00%
	Robotic	3	21.43%	11	78.57%							14	100.00%
> 2000 - 5000	Open	53	79.10%	7	10.45%	3	4.48%			4	5.97%	67	100.00%
	Laparoscopic	5	55.56%	1	11.11%	2	22.22%			1	11.11%	9	100.00%
	Robotic			1	100.00%							1	100.00%
> 5000	Open	8	88.89%							1	11.11%	9	100.00%
	Laparoscopic	1	50.00%							1	50.00%	2	100.00%
Grand Total		3,033	50.66%	1,470	24.55%	809	13.51%	47	0.79%	628	10.49%	5,987	100.00%

Transfusion Rate

Blood Transfused	Number of Records	% of Total Number of Recor..
Not transfused	6,412	95.02%
Transfused	336	4.98%
Grand Total	6,748	100.00%

Transfusions by Procedure & Technique

		Primary Procedure											
Blood Transfused	Technique (group)	Radical Nephrectomy		Partial Nephrectomy		Nephroureterectomy		Other		Simple (Benign) Nephrectomy		Grand Total	
		Number of Records	% of Total Number of Records a..	Number of Records	% of Total Number of Records a..	Number of Records	% of Total Number of Records a..	Number of Records	% of Total Number of Records a..	Number of Records	% of Total Number of Records a..	Number of Records	% of Total Number of Records ..
Transfused	Open	178	77.39%	23	10.00%	14	6.09%	1	0.43%	14	6.09%	230	100.00%
	Laparoscopic	58	59.79%	6	6.19%	24	24.74%	1	1.03%	8	8.25%	97	100.00%
	Robotic	3	33.33%	6	66.67%							9	100.00%
Not transfused	Open	548	53.20%	333	32.33%	55	5.34%	13	1.26%	81	7.86%	1,030	100.00%
	Laparoscopic	2,473	62.78%	117	2.97%	722	18.33%	27	0.69%	600	15.23%	3,939	100.00%
	Robotic	170	11.80%	1,112	77.17%	119	8.26%	10	0.69%	30	2.08%	1,441	100.00%
	Not recorded	2	100.00%									2	100.00%
Grand Total		3,432	50.86%	1,597	23.67%	934	13.84%	52	0.77%	733	10.86%	6,748	100.00%

Clavien Dindo Grade III plus Complication Rate

Grade3Plus (group) (copy)	Number of Records	% of Total Number of Recor..
Grade III plus	160.0	18.33%
No	713.0	81.67%
Grand Total	873.0	100.00%

Mortality rate (30 day)

30 Day mortality	Number of Records	% of Total Number of Recor..
No	7,372	99.68%
Yes	24	0.32%
Grand Total	7,396	100.00%

Clavien Dindo Grades by procedure & Technique

Clavien Dindo Grade Of Complicatio..	Primary Procedure	Technique (group)						Grand Total	
		Open		Laparoscopic		Robotic		Number of Records	% of Total Number of Records ..
		Number of Records	% of Total Number of Records ..	Number of Records	% of Total Number of Records ..	Number of Records	% of Total Number of Records ..	Number of Records	% of Total Number of Records ..
Grade IIIa	Radical Nephrectomy	15	50.00%	15	50.00%			30	100.00%
	Partial Nephrectomy	8	42.11%	3	15.79%	8	42.11%	19	100.00%
	Nephroureterectomy			12	92.31%	1	7.69%	13	100.00%
	Simple (Benign) Nephrectomy	2	33.33%	4	66.67%			6	100.00%
	Total	25	36.76%	34	50.00%	9	13.24%	68	100.00%
Grade IIIb	Radical Nephrectomy	9	45.00%	10	50.00%	1	5.00%	20	100.00%
	Partial Nephrectomy	7	43.75%	1	6.25%	8	50.00%	16	100.00%
	Nephroureterectomy	1	12.50%	7	87.50%			8	100.00%
	Simple (Benign) Nephrectomy	2	33.33%	3	50.00%	1	16.67%	6	100.00%
	Total	19	38.00%	21	42.00%	10	20.00%	50	100.00%
Grade IVa	Radical Nephrectomy	10	66.67%	4	26.67%	1	6.67%	15	100.00%
	Partial Nephrectomy					1	100.00%	1	100.00%
	Nephroureterectomy			1	100.00%			1	100.00%
	Simple (Benign) Nephrectomy	1	50.00%	1	50.00%			2	100.00%
	Total	11	57.89%	6	31.58%	2	10.53%	19	100.00%
Grade IVb	Radical Nephrectomy	1	33.33%	2	66.67%			3	100.00%
	Total	1	33.33%	2	66.67%			3	100.00%
Grade V	Radical Nephrectomy	6	54.55%	5	45.45%			11	100.00%
	Partial Nephrectomy	1	50.00%			1	50.00%	2	100.00%
	Nephroureterectomy	3	50.00%	3	50.00%			6	100.00%
	Other	1	100.00%					1	100.00%
	Total	11	55.00%	8	40.00%	1	5.00%	20	100.00%
Grand Total		67	41.88%	71	44.38%	22	13.75%	160	100.00%

Conversions

Primary Procedure

If Minimally Invasive Approach W..	Conversion Reason	Radical Nephrectomy		Partial Nephrectomy		Nephroureterectomy		Other		Simple (Benign) Nephrectomy		Grand Total	
		Number of Records	% of Total Number of Records ..	Number of Records	% of Total Number of Records ..	Number of Records	% of Total Number of Records ..	Number of Records	% of Total Number of Records ..	Number of Records	% of Total Number of Records ..	Number of Records	% of Total Number of Records ..
Yes	Adhesions	2	0.08%	1	0.96%	3	0.44%			1	0.18%	7	0.18%
	Bowel perforation	1	0.04%			1	0.15%					2	0.05%
	Difficult dissection	14	0.59%	4	3.85%	4	0.59%			11	2.00%	33	0.87%
	Failure to progress	11	0.46%			2	0.29%			2	0.36%	15	0.40%
	Haemorrhage	26	1.09%	2	1.92%	4	0.59%	1	1.54%	4	0.73%	37	0.98%
	Patient obesity	4	0.17%	1	0.96%							5	0.13%
	Size of tumour / mass	8	0.34%									8	0.21%
	Other	9	0.38%	1	0.96%					1	0.18%	11	0.29%
	Not recorded/ Applicable	2	0.08%			2	0.29%			1	0.18%	5	0.13%
	Total	77	3.23%	9	8.65%	16	2.35%	1	1.54%	20	3.64%	123	3.25%
No	Not recorded/ Applicable	2,310	96.77%	95	91.35%	665	97.65%	64	98.46%	530	96.36%	3,664	96.75%
	Total	2,310	96.77%	95	91.35%	665	97.65%	64	98.46%	530	96.36%	3,664	96.75%
Grand Total		2,387	100.00%	104	100.00%	681	100.00%	65	100.00%	550	100.00%	3,787	100.00%

Intra-operative Complications

Intraoperative Complications	Primary Procedure	Technique (group)							
		Open		Laparoscopic		Robotic		Grand Total	
		Number of Records	% of Total Number..	Number of Records	% of Total Number..	Number of Records	% of Total Number..	Number of Records	% of Total Number..
Yes	Radical Neph..	79	49.07%	73	45.34%	9	5.59%	161	100.00%
	Partial Neph..	15	32.61%	4	8.70%	27	58.70%	46	100.00%
	Nephroureter..	11	31.43%	18	51.43%	6	17.14%	35	100.00%
	Simple (Benig..	7	35.00%	12	60.00%	1	5.00%	20	100.00%
	Total	112	42.75%	107	40.84%	43	16.41%	262	100.00%
No	Radical Neph..	592	18.99%	2,344	75.20%	179	5.74%	3,117	100.00%
	Partial Neph..	314	20.78%	104	6.88%	1,093	72.34%	1,511	100.00%
	Nephroureter..	50	6.00%	662	79.38%	122	14.63%	834	100.00%
	Simple (Benig..	83	12.46%	551	82.73%	32	4.80%	666	100.00%
	Total	1,039	16.95%	3,661	59.74%	1,426	23.27%	6,128	100.00%
Null	Radical Neph..	79	18.20%	279	64.29%	11	2.53%	434	100.00%
	Partial Neph..	44	28.57%	36	23.38%	42	27.27%	154	100.00%
	Nephroureter..	11	7.28%	106	70.20%	11	7.28%	151	100.00%
	Simple (Benig..	9	6.77%	90	67.67%	3	2.26%	133	100.00%
	Total	143	16.40%	511	58.60%	67	7.68%	872	100.00%
Grand Total		1,294	17.82%	4,279	58.92%	1,536	21.15%	7,262	100.00%

Specific Intra-operative Complications

Primary Procedure	Specific Intraoperative ..	Technique (group)			Grand T..
		Open	Laparos..	Robotic	
Radical Nephrectomy	Bleeding	40	41	2	83
	Bleeding,Bowel injury		1		1
	Bleeding,Other	8			8
	Bleeding,Pneumothorax	1			1
	Bleeding,Splenectomy	4	1		5
	Bowel injury	3	4	1	8
	Liver injury	1	3	1	5
	Liver injury,Other		1		1
	Pancreatic injury	1	1		2
	Pneumothorax	3	4	1	8
	Splenectomy	9			9
Other	8	16	3	27	
Not recorded	1	1	1	3	
Partial Nephrectomy	Bleeding	8	4	8	20
	Bleeding,Pneumothorax	1			1
	Bowel injury			2	2
	Liver injury			2	2
	Pneumothorax	3		1	4
	Splenectomy	1			1
	Other	2		14	16
Nephroureterectomy	Bleeding	8	8		16
	Bleeding,Other	1	2		3
	Bowel injury		1	1	2
	Pneumothorax			2	2
	Splenectomy	1			1
	Other	1	7	3	11
Simple (Benign) Nephrectomy	Bleeding	5	6	1	12
	Bleeding,Pneumothorax		1		1
	Pneumothorax	1	3		4
	Other		2		2
	Not recorded	1			1
Grand Total		112	107	43	262

Post-operative Complications

Postoperative Complications	Primary Procedure	Technique (group)							
		Open		Laparoscopic		Robotic		Grand Total	
		Number of Reco..	% of Total N..	Number of Reco..	% of Total N..	Number of Reco..	% of Total N..	Number of Reco..	% of Total N..
Yes	Radical Neph..	140	35.44%	240	60.76%	15	3.80%	395	100.00%
	Partial Neph..	92	42.20%	17	7.80%	109	50.00%	218	100.00%
	Nephrouret..	19	12.67%	115	76.67%	16	10.67%	150	100.00%
	Simple (Ben..	16	20.00%	63	78.75%	1	1.25%	80	100.00%
No	Radical Neph..	568	18.92%	2,255	75.12%	177	5.90%	3,002	100.00%
	Partial Neph..	251	18.66%	102	7.58%	992	73.75%	1,345	100.00%
	Nephrouret..	50	6.40%	614	78.62%	117	14.98%	781	100.00%
	Simple (Ben..	77	12.03%	530	82.81%	33	5.16%	640	100.00%
Not recorded	Radical Neph..	42	13.33%	201	63.81%	7	2.22%	315	100.00%
	Partial Neph..	30	20.27%	25	16.89%	61	41.22%	148	100.00%
	Nephrouret..	3	3.37%	57	64.04%	6	6.74%	89	100.00%
	Simple (Ben..	6	6.06%	60	60.61%	2	2.02%	99	100.00%
Grand Total		1,294	17.82%	4,279	58.92%	1,536	21.15%	7,262	100.00%

Specific Post-operative Complications

Primary Procedure	Specific Postoperative Complic..	Technique (group)			
		Open	Laparosc..	Robotic	Grand Tot..
Radical Nephrectomy	Bleeding / haemorrhage +/- Others	13	22	2	37
	Chest infection +/- Others	29	55	3	87
	Ileus +/- others	27	23	3	53
	Renal failure +/- others	6	7		13
	DVT / PE +/- others	4	2		6
	Problematic pain control +/- others	3	12		15
	Wound infection +/- others	11	35	3	49
	Other	45	80	4	129
	Not recorded	1	3		4
	Chest infection,Wound infection,Il..		1		1
	Problematic pain control,Renal fail..	1			1
Partial Nephrectomy	Bleeding / haemorrhage +/- Others	8	3	18	29
	Chest infection +/- Others	21	3	31	55
	Ileus +/- others	8	1	6	15
	Renal failure +/- others	1		1	2
	DVT / PE +/- others	2		1	3
	Problematic pain control +/- others	4	3	4	11
	Wound infection +/- others	15	2	1	18
	Other	31	5	44	80
	Not recorded	2		3	5
Nephroureterectomy	Bleeding / haemorrhage +/- Others	1	10	2	13
	Chest infection +/- Others	3	25	3	31
	Ileus +/- others	4	12		16
	Renal failure +/- others		4		4
	DVT / PE +/- others		4		4
	Problematic pain control +/- others		6		6
	Wound infection +/- others	2	17	3	22
	Other	9	35	8	52
	Not recorded		2		2
Simple (Benign) Nephrectomy	Bleeding / haemorrhage +/- Others	1	2		3
	Chest infection +/- Others	4	16		20
	Ileus +/- others	3	8	1	12
	Problematic pain control +/- others	1	6		7
	Wound infection +/- others	4	12		16
	Other	3	18		21
Not recorded		1		1	
Grand Total		267	435	141	843

Length of Stay

Technique (group)	Primary Procedure	Number of Records	% of Total Number of Recor..	Median Length Of Stay	Min. Length Of Stay	Max. Length Of Stay
Open	Radical Nephrectomy	716	10.41%	6	0	81
	Partial Nephrectomy	356	5.17%	5	1	44
	Nephroureterectomy	70	1.02%	8	3	64
	Simple (Benign) Nephrectomy	97	1.41%	6	2	51
	Other	15	0.22%	4	3	12
	Total		1,254	18.23%	6	0
Laparoscopic	Radical Nephrectomy	2,604	37.85%	3	0	83
	Partial Nephrectomy	139	2.02%	3	1	78
	Nephroureterectomy	755	10.97%	4	0	63
	Simple (Benign) Nephrectomy	631	9.17%	3	0	36
	Other	27	0.39%	3	1	9
	Total		4,156	60.41%	3	0
Robotic	Radical Nephrectomy	191	2.78%	2	0	93
	Partial Nephrectomy	1,103	16.03%	2	0	26
	Nephroureterectomy	130	1.89%	3	1	20
	Simple (Benign) Nephrectomy	34	0.49%	2	1	14
	Other	10	0.15%	2	1	10
	Total		1,468	21.34%	2	0
Not recorded	Radical Nephrectomy	2	0.03%	8	6	10
	Total		2	0.03%	8	6
Grand Total		6,880	100.00%	3	0	93

Nuclear Grade of Parenchymal Tumours

Nuclear grade	Margins1						Grand Total	
	Positive		Negative		Not recorded		Number of Records	% of Total Number of Recor..
	Number of Records	% of Total Number of Recor..	Number of Records	% of Total Number of Recor..	Number of Records	% of Total Number of Recor..		
G1	6	2.25%	156	58.43%	105	39.33%	267	100.00%
G2	28	2.39%	464	39.56%	681	58.06%	1,173	100.00%
G3	20	1.64%	250	20.48%	951	77.89%	1,221	100.00%
G4	6	1.43%	39	9.31%	374	89.26%	419	100.00%
Not recorded	28	3.24%	328	37.96%	508	58.80%	864	100.00%
Grand Total	88	2.23%	1,237	31.36%	2,619	66.40%	3,944	100.00%

Grade of Urothelial Tumours

Urothelial Tumour Grade	Number of Records	% of Total Number of Recor..
G1	25.0	3.14%
G2	226.0	28.39%
G3	412.0	51.76%
Not recorded	133.0	16.71%
Grand Total	796.0	100.00%

Late Complications

Fulatecomplications	Number of Records	% of Total Number of Recor..
None	1,031	78.76%
Renal impairment	11	0.84%
Renal impairment,Other	1	0.08%
Wound	13	0.99%
Wound hernia	3	0.23%
Wound pain	8	0.61%
Wound pain,Other	1	0.08%
DVT	1	0.08%
Other	16	1.22%
Not recorded	224	17.11%
Grand Total	1,309	100.00%

Follow-Up

Adjuvant management

Fuadjuvantmanagement	Number of Records	% of Total Number of Recor..
None	436	33.31%
Clinical trial	14	1.07%
Immunotherapy	5	0.38%
Observation	536	40.95%
TKI's	17	1.30%
Other	26	1.99%
Not recorded	275	21.01%
Grand Total	1,309	100.00%

Status at most recent follow-up

Fustatus	Fupatientstatus	Time to Follow -up							
		<= 6 months		> 6 months		Not recorded		Grand Total	
		Number of Records	% of Total Number of Records ..	Number of Records	% of Total Number of Records ..	Number of Records	% of Total Number of Records ..	Number of Records	% of Total Number of Records ..
Alive with no evidence of renal cancer	Alive	568	64.99%	327	76.05%	3	60.00%	898	68.60%
Alive with local recurrence of renal cancer	Alive	6	0.69%	1	0.23%			7	0.53%
Alive with lymph node involvement by renal cancer	Alive	5	0.57%	1	0.23%			6	0.46%
Alive with metastatic disease	Alive	22	2.52%	11	2.56%			33	2.52%
Discharged to GP / Other consultant	Alive	86	9.84%	12	2.79%	1	20.00%	99	7.56%
Not recorded	Alive	169	19.34%	72	16.74%	1	20.00%	242	18.49%
	Died in followup	18	2.06%	6	1.40%			24	1.83%
Grand Total		874	100.00%	430	100.00%	5	100.00%	1,309	100.00%

Participating Hospital Centres 2018

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

Addenbrooke's Hospital, Cambridge
Aintree University Hospital, Liverpool
Alexandra Hospital, Redditch
Arrowe Park Hospital, Wirral
Barking, Havering & Redbridge University Hospital
Basildon University Hospital, Essex
Basingstoke and North Hampshire Hospital
Bedford Hospital
Blackpool Victoria Hospital
Bradford Royal Infirmary
Broomfield Hospital, Chelmsford
Castle Hill Hospital, Hull
Charing Cross Hospital, London
Chelsea & Westminster Hospital, London
Cheltenham General Hospital
Chesterfield Royal Hospital
Christie Hospital
Churchill Hospital, Oxford
Colchester General Hospital
Cumberland Infirmary, Carlisle
Darent Valley Hospital, Kent
Derriford Hospital, Plymouth
Diana, Princess of Wales Hospital, Grimsby
Doncaster Royal Infirmary
East Surrey Hospital, Redhill

Eastbourne District General Hospital
Epsom General Hospital, Surrey
Forth Valley Royal Hospital, Larbert
Freeman Hospital, Newcastle
Frimley Park Hospital
George Eliot Hospital, Nuneaton
Glasgow Royal Infirmary
Guy's & Thomas's Hospital
Halton General Hospital, Runcorn
Heartlands Hospital, Birmingham
Hereford County Hospital
Huddersfield Royal Infirmary
Ipswich Hospital, Suffolk
James Cook University Hospital, Middlesbrough
Kent & Canterbury Hospital
Kettering General Hospital
King's Mill Hospital, Nottinghamshire
Kingston Hospital, London
Leicester General Hospital
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
Morrison Hospital, Swansea
Musgrove Park Hospital, Taunton
New Cross Hospital, Wolverhampton
Ninewells Hospital, Dundee
Norfolk & Norwich University Hospital
North Manchester General Hospital
North Middlesex Hospital, London
Northampton General Hospital
Northwick Park Hospital
Nottingham City Hospital
Pinderfields General Hospital, Wakefield
Princess Elizabeth Hospital, Guernsey
Princess Royal Hospital, Haywards Heath
Queen Alexandra Hospital, Portsmouth
Queen Elizabeth Hospital, Birmingham
Queen Elizabeth University Hospital, Glasgow
Rotherham Hospital
Royal Blackburn Hospital
Royal Alexandra Hospital, Paisley
Royal Berkshire Hospital, Reading
Royal Bournemouth General Hospital
Royal Cornwall Hospital, Truro
Royal Derby Hospital

Royal Devon & Exeter Hospital
Royal Free Hospital, London
Royal Hallamshire Hospital, Sheffield
Royal Hampshire County Hospital, Winchester
Royal Liverpool University Hospital
Royal Marsden Hospital, London
Royal Preston Hospital
Royal Shrewsbury Hospital
Royal Stoke University Hospital
Royal Sussex County Hospital, Brighton
Russells Hall Hospital, Dudley
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 Queen Elizabeth Hospital, King's Lynn
The Royal Oldham Hospital
Torbay Hospital, Torquay

University College Hospital, London
University Hospital of North Tees, Stockton-on-Tees
University Hospital of Wales, Cardiff
University Hospital, Ayr
Walsall Manor Hospital
Walsgrave Hospital, Coventry
Warrington District General Hospital
Western General Hospital, Edinburgh
Whiston Hospital, Prescot
Worthing Hospital
Wycombe Hospital, High Wycombe
Wythenshawe Hospital, Manchester
York Hospital